



Effects of the Youth Health Application and Flipcharts on Adolescents' Knowledge about Early Marriage: A Quasi-Experiment Study

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Abstract

Background: Early marriage affects both the children who are married and their future offspring, and might lead to intergenerational poverty. This study aimed to determine effects of using the Youth Health application and flipcharts on adolescents' knowledge about early marriage.

Methods: This quasi-experiment study with a pretest-posttest design was done on 60 adolescents from the Penyengat Olak Health Center, Muaro Jambi Regency (Indonesia) from March to May 2021. The subjects were recruited through convenience sampling method and then allocated into intervention (n=30) and control (n=30) groups. The subjects in the intervention group received an educational program about early marriage using the Youth Health application, while the control group received flipcharts developed by the Ministry of Health with the same educational content. Knowledge of adolescents was assessed using a 20-item questionnaire before and three days after the intervention. A total score of less than 10 and more than 10 indicated poor and good knowledge, respectively. Data were analyzed with SPSS (version 16) using the Wilcoxon test and Mann-Whitney t-test. P-values less than 0.05 were considered statistically significant.

Results: At baseline, 18 subjects (60%) in the intervention group and 17 subjects (56%) in the control group had good knowledge of early marriage. After the intervention, 24 subjects (80%) in the intervention group and 20 subjects (66%) in the control group had good knowledge of early marriage. The mean score of adolescents' knowledge about early marriage increased from 15.7 ± 2.5 to 17.3 ± 2.1 in the intervention group ($P=0.001$). The mean score of adolescents' knowledge about early marriage also increased from 15.7 ± 2.4 to 16.7 ± 2.4 in the control group ($P=0.001$). Moreover, there was no significant difference in the adolescents' knowledge about early marriage between the two groups ($P=0.78$).

Conclusion: Providing education in form of Youth Health application and flipcharts can equally increase adolescents' knowledge about early marriage.

Highlights:

What is current knowledge?

The number of cases of early marriage lately is very alarming
The government should be able to socialize regulations governing the marriage age for a woman
Providing education from adolescent health applications and flipcharts can also increase adolescent knowledge about early marriage.

What is new here?

Methods of socializing about early marriage in adolescents can use adolescent health applications and flipcharts

Introduction

Marriage is an important event in an individual's life and a symbol of agreement between a man and a woman, based on equal rights and obligations of both parties (1). Although marriage should be carried out at an adult age when a person generally have good physical and psychological readiness to form a family, early marriage occurs in some parts of the world, especially in developing countries (2-5). Although the Declaration of Human Rights in 1954 explicitly opposed child marriage, ironically, the practice of early marriage is still ongoing in various parts of the world, which reflects the neglected protection of the rights of young people (6, 7). In this regard, laws are often ineffective or broken by the customs and traditions that govern the social norms of a community (8).

In 2018, one of nine Indonesian women aged 20-24 years old were married before age of 18. The number of these women was estimated at around 1.220.900, which places Indonesia amongst the 10 countries with the highest absolute number of child marriages in the world. In the past decade, there has been only a small decline (3.5%) in the rate of child marriages in Indonesia. The prevalence of child marriage decreased by 5.76% in rural areas and by less than 1% in urban areas (9).

Recent statistics indicate that early marriage is still a social problem in Indonesia. Data from Bappenas showed that 34.5% of Indonesian children marry early. This is corroborated by the PLAN international study, which showed that 33.5% of children aged ≥ 18 years were married at the age of 15-16 years. Early

marriage can lead to various problems including domestic violence, disruption of reproductive health, problems with childbirth, and psychological problems (10, 11). Child marriage is associated with low educational achievement and often lowers the level of schooling because of new responsibilities. Early marriage occurs for several reasons, including low socioeconomic status and inability to pay high school fees. As a result, parents decide to marry off their children to reduce the household's economic burden. Marriage seems to be the most viable solution because their children will be supported by their partner (12, 13).

Pregnancy at the age of <17 years increases the risk of medical complications in both the mother and the baby. Pregnancy at a very young age was found to be correlated with maternal mortality and morbidity. It is stated that girls aged 10-14 years have a five-fold higher risk of maternal mortality or childbirth compared to those aged 20-24 years, while this risk doubles in those aged 15-19 years. A child's body is not ready for the process of pregnancy or childbirth, which increase the risk of obstructed labor and obstetric fistula. A fistula is a damage to the female organs that causes urine or feces to leak into the vagina. Women aged less than 20 years are highly susceptible to obstetric fistula. Obstetric fistula can also occur due to sexual intercourse at an early age (5, 14).

According to the Badan Pusat Statistik (2019), the rate of early marriage in the Jambi Province is high. The province ranked 9th out of 34 provinces of Indonesia in terms of early marriage. Muaro Jambi Regency in the Jambi Province has several villages and sub-districts, one of which is Penyengat Olak. This village is also a target area of the Department of Midwifery, Poltekkes, Ministry of Health, Jambi. Preliminary data from the Muara Jambi Regency showed that as many as 68 teenagers aged less than 18 years were married. To increase public awareness about the risks of early marriage, preventive efforts are needed (15, 16). Nevertheless, health counseling for adolescents is still not optimal or evenly distributed. Health education can increase knowledge and prevent deviations in reproductive health cases. In addition, the selection of methods and media in health education will determine the success of counseling. One of the efforts to raise public awareness is to improve public knowledge with applications that incorporate animated videos. The Youth Health This application contains counseling for healthy adolescent reproductive readiness and the impact of early marriage in terms of health and socio-economics (17-19). This study aimed to determine effects of using the Youth Health application and flipchart on knowledge of adolescents about early marriage.

Methods

This quasi-experiment study with a pretest-posttest design was done between March and May 2021. Of 81 adolescents with records in the Penyengat Olak Health Center, Muaro Jambi Regency (Indonesia), 60 eligible females were recruited through convenience sampling method. Then, the subjects were allocated into intervention (n=30) and control (n=30) groups. The minimum sample size required for this study was calculated using the G*Power program, considering effect size of 0.7, α -value of 0.05, power of 0.84, and sample group ratio of 1. Inclusion criteria consisted of age between 10 and 18 years, residing at Penyengat Olak district in Muaro Jambi Regency, living with parents, and being single (Figure 1). The study was performed in accordance with the ethical considerations of the Helsinki Declaration.

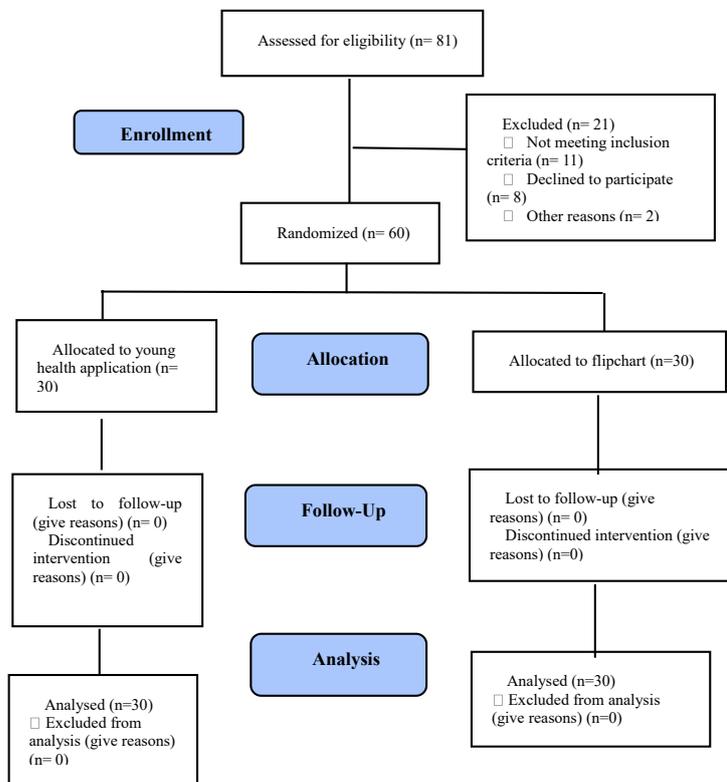


Figure 1. The CONSORT flow diagram

After explaining the research objectives and ensuring confidentiality of personal information, written informed consent was obtained from all participants. The subjects in the intervention group received an educational program about early marriage using the Youth Health application, while the control group received flipcharts developed by the Ministry of Health with the same educational content. The Youth Health application is a learning platform that incorporates videos on sexual and reproductive health, premarital information, and diseases of the reproductive system.

Data were collected using a knowledge questionnaire before and three days after the intervention. The questionnaire was distributed via Google forms and included 20 items that assess knowledge of adolescents about early marriage. The answers were scored based on a 2-point Guttman scale ranging from 0 (incorrect) to 1 (correct). A total score of less than 10 and more than 10 indicated poor and good knowledge, respectively. This knowledge questionnaire was adopted from a previous study (19), with a correlation coefficient of 0.239 and a reliability coefficient of 0.8190.

The collected data were analyzed with SPSS (version 16) using the Mann-Whitney U test. P-values less than 0.05 were considered statistically significant.

Results

The mean age of subjects was 16.16±4.46 years (range: 10 to 18 years). Table 1 shows the characteristics of the subjects in the study groups.

Table 1: Characteristics of research respondents

Variable	Intervention group	Control group
	Number (%)	Number (%)
Sex		
Male	6 (20.0)	12 (40.0)
Female	24 (80.0)	18 (60.0)
Age (years)		
10 -14	13 (43.3)	20 (66.7)
15-18	17 (56.7)	10 (33.3)
Education level		
Primary school	1 (3.33)	0 (0.0)
Junior high school	10 (3.33)	20 (66.7)
Senior High school	19 (63.3)	10 (33.3)

The mean score of adolescents' knowledge about early marriage increased from 15.7±2.5 to 17.3±2.1 in the intervention group (P=0.001). The mean score of adolescents' knowledge about early marriage also increased from 15.7±2.4 to 16.7±2.4 in the control group (P=0.001). After the intervention, 24 subjects in the intervention group and 20 subjects in the control group had good level of knowledge about early marriage (Table 2).

Table 2: Comparative distribution of adolescents' knowledge about early marriage before and after the intervention

Level of knowledge	Intervention group		Control group	
	Before	After	Before	After
Good	18 (60%)	24 (80%)	17(56%)	20 (66%)
Poor	12 (40%)	6 (20%)	13(44%)	10 (34%)

Based on the results of the Mann-Whitney U test, there was no significant difference in the adolescents' knowledge about early marriage between the two groups (P=0.78).

Discussion

The results of this study showed that educational training using the Youth Health application and flipcharts resulted in 90% and 53.3% improvement of knowledge about early marriage, respectively. The results of the bivariate analysis showed no significant difference between the Youth Health application method and the flipchart in increasing adolescents' knowledge about early marriage. In a study by Kamriani Riska (20), 91.76% of female senior high school students knew about the risks of early marriage to pregnancy, which is in line with our findings. Similarly, in a study by Novitasari et al. (21), the level of knowledge about early marriage improved from sufficient to good in most participants after receiving counseling. Counseling videos about early marriage address problems that often occur in the environment around respondents so that it will attract more interest and attention (20, 22). Audio-visual media are easier to understand and more interesting compared with other platforms (23).

The mean score of knowledge also increased significantly in the control group, indicating that the flipcharts were as effective as the Youth Health application in increasing the knowledge of adolescents about early marriage. This may be due to the fact that both videos and flipcharts involve the sense of sight. About 75-87% of human knowledge is obtained through the eyes (24). Interactive Extension media are needed to foster interest in learning, improve understanding, and help memorizing and overcoming language difficulties. Providing education materials in forms of interactive media can promote interest and motive learning (25, 26).

The process of media-assisted health education is in fact an alternative learning approach in order to meet the needs of teenagers and to optimize their abilities, reasoning, skills, and knowledge about early marriage. The use of leaflets is immaculate for helping students learn since they are feasible to read and can be taken anywhere.

Given that adolescents are still less active in socializing the risks of early marriage, it is necessary for healthcare workers to form an integrated service post for adolescents to assist socialization about early marriage.

In this study, the questionnaires were distributed via Google forms, so that there was no direct contact between the participants and the researchers. It is highly recommended to distribute questionnaires directly to participants to help clarify any misunderstands of the questions by the respondent.

Conclusion

Providing education in from of adolescent health application and flipcharts can equally increase adolescents' knowledge about early marriage.

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Ethical statement

The study obtained approval from the Ethics Committee of Commission of the Ministry of Health, Jambi, Indonesia (Registration number: LB.02.06/2/173/2021).

Conflict of interest

The authors declare that there is no conflict of interest

Author contributions

DNL and RU designed the study and collected the data. MDI and RU performed data analysis and contributed to drafting the manuscript. All authors made critical revisions to the paper for important intellectual content.

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