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

Dewi Nopiska Lilis, Ruwayda Ruwayda, M.Dody Izhari

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 Olah 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 from of Youth Health application and flipcharts can equally increase adolescents’ knowledge about early marriage.

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 [12, 14].

According to the Badan Pusat Statistik (2019), the rate of early marriage in the Jambi Province is high. The province ranked 9th 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 Olah. 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.

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

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>6 (20.0)</td>
<td>12 (40.0)</td>
</tr>
<tr>
<td>Female</td>
<td>24 (80.0)</td>
<td>18 (60.0)</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-14</td>
<td>13 (43.3)</td>
<td>20 (66.7)</td>
</tr>
<tr>
<td>15-18</td>
<td>17 (56.7)</td>
<td>10 (33.3)</td>
</tr>
<tr>
<td>Education level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>1 (3.33)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Second</td>
<td>10 (33.3)</td>
<td>20 (66.7)</td>
</tr>
<tr>
<td>Junior high</td>
<td></td>
<td>10 (33.3)</td>
</tr>
<tr>
<td>Senior High</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 receiving counseling, which is 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

<table>
<thead>
<tr>
<th>Level of knowledge</th>
<th>Intervention group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>Before</td>
<td>After</td>
</tr>
<tr>
<td>Good</td>
<td>18 (60%)</td>
<td>24 (80%)</td>
</tr>
<tr>
<td>Poor</td>
<td>12 (40%)</td>
<td>6 (20%)</td>
</tr>
</tbody>
</table>

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 Kamrani Riska (20), 91.76% of female senior high school students knew about the risks of early marriage, and 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 in from of adolescent health application and flipcharts can assist health education is in fact an alternative learning approach in order to meet the needs of teenagers and to optimize their abilities, 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.

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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