

The Impact of Health Education on Parenting Self-Efficacy among Early-married Women

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Abstract— Adolescent-marriage has a strong correlation with poor outcomes on women's health, such as experiencing psychological stress and lack of ability in taking care of their children. This study aimed to investigate the impact of health education on young mothers' knowledge and attitude of parenting, and also to identify the effect on parenting self-efficacy (PSE). **Design:** a quasi-experimental and nonequivalent pre-test and post-test control group design was conducted. **Setting:** The respondents were recruited from data in the mother and baby cohort book in a community health center in Temanggung, Central Java, Indonesia. Subjects were allocated in one of the groups using cluster random sampling, with the village as the random unit. **Participants:** 37 and 31 young mothers participated in intervention group and control group respectively. **Intervention:** Health education about parenting was given individually for subjects in the intervention group. **Measurements and findings:** PSE was measured pre and post-test using Maternal Self-Efficacy Questionnaire. Data analysis was conducted using independent samples t-test. The results showed that the improvement score of PSE in the intervention group was higher than in the control group ($p=0.000$). The difference of parenting knowledge post-test between the intervention and control group was 0.000 ($p<0.05$). Meanwhile, the difference of parenting attitude between the groups was 0.348 ($p>0.05$). **Key conclusions:** the improvement score of PSE and knowledge about parenting in the intervention group was higher than the control group. There is no difference in score changing of parenting attitude in both groups. There is a correlation between family support and mother's occupation with PSE. **Implications for practice:** nurses and midwives need to give parenting health education for early-married women in a structured way to improve their PSE.

Keywords-parenting self-efficacy; early-marriage; health education

I. INTRODUCTION

Early marriage is a marriage before the age of 18, both formal and informal [1]. Early or young marriage is still a common practice in several countries, including Indonesia. Data from UNICEF revealed that more than 700 women globally (or 1 in 3 women) marry in their child or young age [1]. Meanwhile, in Indonesia among women aged 10-54 years old, there were 2.6% of them who got married at the age of less than 15. Also, there were 23.9% of women who got married at the age 15-19 years old [2].

Young marriage is closely related to poor health outcomes for women. Maternal mortality among women aged 15-19 is high, which is 70,000 death per year worldwide. There are also many psychology and knowledge problems faced by early married women. A study in a province in Indonesia concluded that adolescents who have married suffered from psychological distress, coping mechanism inability, lack of parenting ability, and low self-esteem [3]. Another research in Ghana about experiences of pregnancy and childbearing at adolescents revealed that even though pregnancy at adolescent age is common, but there is a need to give education about parenting techniques that should be delivered in sexual education programs to prepare them to become a mother. That is why early-married parents need to be given education about parenting so that they will have self-efficacy in parenting.

Parenting self-efficacy (PSE) is parental confidence in their capability to influence their children and the environment in ways that will increase the children's development and success [4]. There is a limited study of interventions to improve PSE, especially for early-married mothers. Mostly, the studies to improve PSE were conducted for parents from all age range, not limited to young mothers. For example, a study by Bloomfield & Kendall to 356 parents who were involved in parenting programs concluded that the parenting programs were useful to increase PSE, both directly after the programs and also after the follow-up [5]. Other parenting programs such as Triple Positive Parenting Program (Triple P) was also effective in improving PSE [6].

Health education is considered as one method that can improve PSE and parents' knowledge about parenting. This is because health education can influence the behavior and the lifestyle of the individual or community through the educational impact on predisposing factors (such as knowledge and attitude), enabling factors and reinforcing factors (for example family and community support) [7]. Health education can be delivered through different methods: individual, group and mass (public). The literature review that has been carried out found that there is a limited research on health education for early married women using the individual method.

II. METHODS

This research aimed to determine the effect of health education about parenting on the knowledge and attitudes of mothers about parenting, and the impact of the education on

PSE. The hypotheses of this study were: the improvement of the parenting knowledge, parenting attitude, and PSE in the group that receives health education is higher than the group that does not receive the education. This study also intended to test the hypotheses that there is a correlation between mother's education, employment, family income, baby's gender and age, family support, and PSE.

The research used quasi-experimental or controlled trials without randomization design [8] with nonequivalent pre-test and post-test control group approach. The project has received ethical approval from the Ethic Committee of Medical Faculty, Universitas Gadjah Mada.

A. Setting

This study was conducted in Gemawang, the District of Temanggung, Central Java, Indonesia. Gemawang sub-district has 10 villages that spread in 6711 hectares of the territory. Each village located from the nearest to the most far from the capital district. The most far villages located in 4,5-5 kilometres from the capital of Gemawang. Some areas of each village are located nearby, only separated by a road, but some other areas are separated by a coffee plantation.

In Temanggung, Gemawang is the area that had the highest early marriage percentage. There were 189 women married at the age of <19 years old [9].

B. Participants

The population of the study was women between 15-20 years old who married at the age of 18, and have an infant baby (or babies). The women from the population were included in the research if: they are willing to be respondents, they are married and first-time marriage was performed at the age of 18, they have an infant(s) whose age were 0-1 year, they are willing to be involved in the research until the end of the project, and they never received health education about parenting before. Whilst the exclusion criteria in the study were: a mother who suffered from mental or physical illness, a mother whose baby has mental or physical disease, and mothers who do not follow the research process until the end.

Subjects were recruited from the data in mother and baby cohort book¹ from every village in Gemawang Community Health Center working area. The total population from 10 Villages in the area were 84 mothers. The sampling technique that is used to obtain the study sample was cluster sampling, with the village as its random unit. After a simple random sampling was performed, four villages were chosen as intervention group (n=37) and other four villages as the control group (n=31).

Having chosen as the respondents in both groups, the researcher alongside with the educator came to each mother's house to explain about the research and asked for the informed

¹ Mother and baby cohort book is a registry book of mothers and babies in every village in a Community Health Centre service area. It contains information of mother and baby, including: identity of mother, baby and the husband/father of the baby, the address, the current age of the mother and the age at first marriage, the mother's obstetry status, the the date of birth of the baby, and the baby's gender. The book is kept and filled by the village's midwife.

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consent. All of the respondents who had contacted were willing to participate in the project and signed the informed consent form.

C. Intervention

The intervention in this study was health education about parenting using individual approach. The content of the education include: baby (0-1 year) development both physically and psychologically, principles and recommendations for caring of the baby, playing as a method to care for the baby, how to breastfeed, bath, and maintain the health of the baby, and how to improve self-efficacy of the mothers.

The educator is the village's midwife. The village midwife is a midwife placed in every village in Indonesia to help the government in maintaining mother's and baby's health in the community. Before the health education is delivered, the midwives were given a training session on how to improve PSE. The health education for the respondents was delivered using lecture and discussion method. It was conducted in two sessions, with each session last for around 60 minutes; the first session was performed after the pre-test, while the second one was conducted around seven days after the first session. The researcher (first researcher) followed and facilitated the interventions. Two weeks following the health education, the respondents were contacted again to do the post-test. After the post-test, each respondent received Rp 30,000 (around the US \$ 2.2) as an incentive for participating the study.

The health education above were given to the intervention group, while for the control group were given the booklet only (without health education after the pre-test). However, after the study, the control group also given the same health education. They also received the same incentive as the intervention group after the study.

D. Data Collection

The data was collected during August-October 2015. PSE was measured using Maternal Self-Efficacy Scale from Teti & Gelfand [10]. This questionnaire consists of 10 questions in 4 Likert scale, ranging from 1 (not good at all/I do not understand my baby at all) to 4 (Very good/I understand my baby almost every time). The instrument has been validated and is also reliable with the Cronbach's alpha value=0.86 [10].

The knowledge, attitude and family support were measured using questionnaire compiled by the researcher based on the literature. These instruments have been tested for its validity and reliability, and they were all valid and reliable. The reliability value for the questionnaire to measure parenting knowledge was 0.684. Whereas the Cronbach's alpha value for parenting attitude instrument was 0.602, and for family support questionnaire was 0.900.

E. Data Analysis

The univariate analysis was conducted to determine the frequency distribution of respondents' characteristics; whereas, the bivariate analysis was performed to determine the differences of variables between the intervention and control group. An independent samples t-test was performed to know

the difference change in PSE scores between the groups. Whereas, the Mann-Whitney test was used to determine the difference of parenting knowledge and attitude between the groups. The correlation tests used were Pearson correlation, Spearman-rank and coefficient contingency. The data analysis was conducted using a computer program

III. FINDINGS

All of the study subjects completed the research process, so that all of the respondents were analyzed and none was excluded from the analysis (Fig.1).

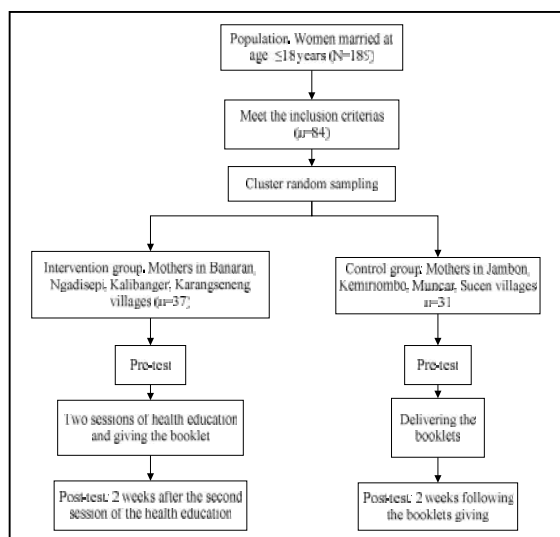


Figure 1. Research Process Flowchart

The characteristics of the study sample include the current mother's age, mother's age at marriage, educational level, occupation, income, the number of children, the baby's age and gender are summarized in Table 1.

Table 1. Characteristics of the Respondents

| Characteristics | Intervention group Mean±SD (Min-Max) n(%) | Control group Mean±SD (Min-Max) n(%) | p value |
|----------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------|---------|
| Current age of mothers (years) | 18.5±1.2(16-20) | 18.6±1.1(16-20) | 0.346 |
| Mothers' age at marriage (years) | 16.9±0.1(14-18) | 17.1±0.9(15-18) | 0.822 |
| Education | | | 0.560 |
| Elementary school | 5(13.5) | 5(16.1) | |
| Junior high school | 25(67.6) | 19(61.3) | |
| Senior high school | 7(18.9) | 7(22.6) | |
| Income per month | | | 0.601 |
| Less than minimum district wage (Rp 1,178,000 or US \$ 86) | 33(89.2) | 27(87.1) | |
| Same or more than minimum district wage (Rp 1,178,000 or US \$ | 4(10.8) | 4(12.9) | |
| Mothers' occupation | | | 0.096 |
| Unemployed | 28(75.68) | 27(87.1) | |
| Employed | 9(24.32) | 4(12.9) | |
| Number of children | | | 0.064 |
| 1 child | 36(97.3) | 31(100) | |
| 2 children | 1(2.7) | 0,0 | |
| Children's gender | | | 0.725 |
| Male | 17(45.9) | 15(48.4) | |
| Female | 20(54.1) | 16(51.6) | |
| Children's age (months) | 6.6±3.9(0.5-12) | 4.9±3.8(0.1-12) | 0.82 |
| Family support | 81.2±8.1(58-94) | 80.1±13.4(52-96) | 0.05 |

Based on Table 1, all respondents' characteristics in intervention and control group were homogenous (p>0.05). Mothers who were involved in the study were still young with the age average of 18.5 years in the intervention group, and 18.6 years in the control group. All of the respondents completed schools, mostly completed junior high school.

Most subjects were unemployed, and the average income of the family was less than or equal to minimum district wage (Rp 1,178,000 or around US \$ 86 per month). Almost all of the respondents only had one child, except for one mother who currently has two children. The average age of infants were 6.6 months and 4.9 months in intervention and control group respectively, with the youngest age of the baby was four days.

Table 2 represents the statistical test results of the parenting knowledge, attitudes and PSE variables, which were measured before the intervention (pre-test). The knowledge and attitude variables in the intervention group were normally distributed, but not in the control group, so the statistical test that was used was Mann-Whitney test; whereas the PSE data were normally distributed, so the independent samples t-test was used.

Table 2. Difference of Knowledge, Attitude and PSE Pre-test Score between Intervention and Control Groups

| | Intervention Group | | | Control Group | | | p-value |
|-----------|--------------------|------------------|-------------|---------------|------------------|-------------|---------|
| | n | Median (Min-Max) | Mean ±SD | n | Median (Min-Max) | Mean ±SD | |
| Knowledge | 37 | 36.0 (28-40) | | 31 | 34.0 (26-42) | | 0.066 |
| Attitude | 37 | 46.0 (28-55) | | 31 | 49.0 (28-58) | | 0.059 |
| PSE | 37 | | 31.05 ±2.01 | 31 | | 29.29 ±5.53 | 0.100 |

Table 2 reveals that there was no significant difference in the knowledge, attitude and PSE variables pre-test between the intervention and control group (p>0.05).

The differences of parenting knowledge and attitudes between the groups were assessed two weeks after the health education (in the intervention group) and two weeks after the Booklets were given to the control group. Table 3 summarizes the results of Mann-Whitney test of the parenting knowledge and attitudes variables, as well as the results of independent samples t-test of the PSE variables post-test in both groups.

Table 3 Difference of Knowledge, Attitude, and PSE Post-test Score between Intervention and Control Group

| | Intervention Group | | | Control Group | | | p-value |
|-----------|--------------------|------------------|------------|---------------|------------------|-----------|---------|
| | n | Median (Min-Max) | Mean±SD | n | Median (Min-Max) | Mean ±SD | |
| Knowledge | 37 | 40.0 (32-42) | | 31 | 36.0 (26-42) | | 0.000 |
| Attitude | 37 | 53.0 (43-60) | | 31 | 50.0 (28-60) | | 0.348 |
| PSE | 37 | | 34.46±3.19 | 31 | | 30.0±5.35 | 0.000 |

Based on Table 3, post-test score difference in the parenting knowledge between the intervention and control group was significant (p<0.05), whereas the result of parenting attitudes showed that even though there are increasing median as well as minimum and maximum scores in the intervention group, the

difference was not significant ($p>0.05$). Table 3 also reveals that the increasing score of PSE in the intervention group is higher than the control group ($p=0.000$).

The correlation between family support, mother's education, family income, the number of children and PSE were tested using Pearson test (for family support variable) and Spearman-rank (for other variables). The results were presented in Table 4.

Table 4. The Correlation between PSE and Family Support, Mother's Education, Family Income, Number of Children

| Correlation between Variables | r | p-value |
|-------------------------------|-------|---------|
| PSE and: | | |
| Family support | 0.358 | 0.003 |
| Mother's education | 0.058 | 0.638 |
| Family income | 0.088 | 0.478 |
| Number of children | 0.233 | 0.141 |

Table 5 below presents the correlation between mother's occupation, baby's gender and PSE that were analyzed using coefficient contingency test.

Table 5. The Correlation between PSE and Mother's Occupation and Baby's Gender

| Correlation between Variables | C | p-value |
|-------------------------------|-------|---------|
| PSE and: | | |
| Mother's occupation | 0.294 | 0.040 |
| Baby's gender | 0.263 | 0.079 |

Table 4 and Table 5 show that there is a correlation between family support and PSE, and also between mother's occupation and PSE. There is no significant correlation between PSE and other variables.

IV. DISCUSSION

Maternal age at first marriage in this study is 16.9 years averagely in the intervention group, and 17.1 years in the control group. The youngest age at marriage was 14 years. The District of Gemawang, Temanggung, is a rural area which has a high number of early marriages. The fact that Gemawang as a rural area has a high number of early-marriage, is in accordance with the result of Indonesia health survey in 2012 and the Indonesia National Family Planning Coordination Body which stated that people who live in rural areas have higher early marriages number than they who live in urban areas, and therefore the fertility rates in rural areas were two times higher than in urban areas [11].

In this research, more than 80% respondents have low income. A study conducted by Baharudin to 60 Malay mothers found out that mother's occupation did not have a correlation to parenting knowledge, but family income correlated to parenting knowledge and stimulation to children [12]. Meanwhile, another study by Winter et al. concluded that there was no significant correlation between mother's parenting knowledge score and education nor family income [13]. In addition, Elder found that in African-American and Europe-American people who have low income, there was a correlation between low income and self-efficacy. However, this

correlation was mediated by depression among Europe-American [14].

Another characteristic of the respondents is their baby's sexual category. The babies' data showed that more than a half babies are girls, with an average age is more than four months. Troutman et al. [15] suggested that male infants tend to be more finicky than girls infants, but the relationship between baby's gender and PSE remain unclear [16], [17]. Grimes argued that although the sex of the baby does not contribute to PSE and the interaction of parents and children, but the baby's temperament plays mediating role between knowledge and self-efficacy [17]. While a research by Salonen et al. showed that women with fussy babies shows an increase in PSE at 16 weeks post-partum. The increase of PSE could happen because mother or anyone who can cope with difficult and challenging situations (such as fussy or temperamental babies) would feel an accomplishment which leads to increased self-efficacy [16].

Health education that was given to mothers increases the mothers' parenting knowledge. The improvement is shown by the increasing post-test score of parenting knowledge variable in the intervention group, which was significantly different from the post-test score in the control group ($p<0.05$; Table 3). The researcher observed that during the health education sessions, mothers seemed to actively listen and actively discussed about their parenting problems. This is in accordance with Maulana [18] who argued that discussion and participation are the next steps after information is given. The information and communication flow two ways, not only one way. It means that the subjects who actively participated in discussion would have a deeper understanding of the information which leads to a better behavior.

This study result is similar with previous researches which concluded that health education impacts the knowledge. For an example is study by Hanafi et al. [19] to 360 pregnant women who attended an antenatal clinic in Saudi Arabia. The research revealed that in the intervention group, respondents who were given individual health education in the clinic had a higher score in their breastfeeding knowledge score than the group which was given usual antenatal care. The same result also showed by Wang et al. [20] who suggested that health education increased the participants' knowledge about pregnancy and labor.

In this research, there is an increase in parenting attitude score both in the intervention and control group. However, the difference between the groups is not significant, as evidenced by the p-value of more than 0.05 (Table 3). Among all of the respondents in both groups, the pre-test score of parenting attitude revealed that the median score could be considered as a positive attitude. The median score is 46.0 in the intervention group, and 49.0 in the control group, with the possible range score is 15-60. So, the high score at pretest could contribute to the insignificant difference of attitude score between both groups.

This study does not support the results of previous studies showing that health education influences attitude, for example the studies conducted by Wang et al. [20] and Hanafi et al. [19]. However, other studies found that there is no correlation between health education and attitudes, or there is no

significant attitude change between intervention and control group after being given health education. A study by Malhotra et al. [21] to 136 subjects who prepare food on campuses in India showed that health education using posters and interactive sessions could increase the knowledge about washing hands but did not significantly affect the respondents' attitude. Similarly, research conducted by Chi et al. [22] about the effects of sexual education on knowledge and attitude of students in China, concluded that there was a significant improvement in knowledge about reproductive health, but there was no change in the attitude of the respondents.

Another barrier for the attitude change was the time chosen to do the education. Niven [23] argues that it is easy to affect a person's attitude at the time of attitude's formation than if the attitude has been formed. In this study, respondents have cared for their babies for around six months averagely, so that it could be considered that the attitude has been formed. The effect of health education on the mothers' attitude in child care could be different when parenting attitude is just formed, which is during pregnancy and the early post-partum period. This is consistent with the study result from Grimes [17] which stated that health education on mothers which performed earlier (during prenatal or shortly after the postpartum period) tends to improve the attitude and behavior of the mother in caring for their children, and further reduce the risk of negative behavior of mother to her child.

This health education with individual approach has a positive influence on the PSE improvement of mothers. Statistically, there is a significant difference in the mean score of PSE increase between the intervention and control group (Table 3). It means that health education using the individual method is effective in increasing PSE on young mothers. With this individual approach, mothers can learn better because the information conveyed could be tailored to the problems faced by each mother during the discussion session. If a mother has problems regarding parenting, she could discuss with the educator, and the educator could give supports for mothers to find a solution. Finally, based on her awareness and understanding, the mother will change her behavior. Through the individual session, the respondent and educator can discuss parenting issues faced by each respondent. Thus the discussion can directly lead to the ability and effort that could be done individually by mothers, which is effective in improving PSE [24].

Another result of this study is that there is a significant correlation between family support and PSE. Family support is a very important factor that is needed by almost every person to help overcome the difficulties, and also to maintain and improve mental health [4]. Family support plays as a protective factor against the stressor for parents as well as for children [25]. Lack of social and family support can make parents feel that the quality of their parenting capability is lower compared to when there is support available for them.

Family, especially parents, is very important source of support for new parents. Leahy-Warren [26] stated that the support received from the biological mother would give more contribution to the improvement of PSE. Support from the mother can increase PSE through her experience about

childcare and verbal support, so that the new parent will be greatly helped in parenting. The fact that family support could improve PSE, is consistent with the researcher's observation and the information from the educators that the young mothers are still living together with her parents. It makes possible for the respondents to obtain support from their mothers.

In Indonesian culture, extended family with strong bond and support, is one of the characteristics of the families. In extended family, including the respondents in Gemawang who still lives with their parents, the parents could be great supports for the new and young mothers. However, since the parent (the grandmother of the baby) cares for the babies in most of the time, it could be resulted in low self-efficacy for the mother to take care the baby by herself. So, a health education to support the mother's self-efficacy is important.

Beside that, health education using individual method in the respondent's house is a suitable method because the respondent and the other family members could join the education sessions. This is a good opportunity to educate all of family members to care for the baby in the same way. Another benefit is that due to many myths that are still believed in Indonesian culture, the health education at home will be a chance to educate them about the truth of the myths and straighten the wrong opinions.

V. CONCLUSIONS AND IMPLICATIONS

This research shows that the score improvement of parenting knowledge and PSE in the intervention group is higher than in the control group. However, there is no difference in the score changing (pretest-posttest) of parenting attitude between both groups. This study also reveals that there is a significant correlation between family support and PSE, and between mother's occupation and PSE.

To improve a better health service, it is recommended for nurses and midwives to give parenting health education for young mothers in a systematic way so that early-married mothers will have a deeper understanding and confidence regarding parenting. There is a need to do a follow-up study about PSE and parenting practice or behavior using observational method. Another study that can be done to compare with this study is a similar research but using a task-specific PSE measure, since this study used Maternal Self-Efficacy Questionnaire which measures PSE on domain specific.

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