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Kelas Edukasi Menyusui Ibu Hamil (KEMIH): Its Correlation to The Improvement of Knowledge, Self-Efficacy, and Breast Milk Production of Post-Partum Mothers

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ABSTRACT

There have been many educational programs or media used to introduce exclusive breastfeeding. However, the reality on the ground shows that around 40% of people, especially mothers, do not understand exclusive breastfeeding. Moreover, many mothers who have been educated continue to give formula milk because of misunderstandings, such as myths. For this reason, strengthening mothers' self-efficacy needs to be carried out since it is one of the determining factors for the success of exclusive breastfeeding. Therefore, it is highly necessary to have a maternal assistance program that starts during pregnancy to strengthen the mother's self-efficacy and continues to guide the mother after giving birth through exclusive breastfeeding. The objective of this study was to assess the effectiveness of Kelas Edukasi Menyusui Ibu Hamil (KEMIH) (English: The Breastfeeding Education Class for Pregnant Women) to increase knowledge, self-efficacy, and breast milk production of post-partum mothers. In this study, the researchers applied a quasi-experimental design. In addition, the employed approach was two groups with control. The number of samples was 61 respondents who met the pre-defined criteria (29 respondents in the intervention group and 31 respondents in the control group). The instruments in this study were modules, self-efficacy questionnaires, and electric breast pumps. The results showed that there were significant differences in the three variables, in which the obtained p-values were 0.000 (< 0.05) for the increase in knowledge, 0.012 (< 0.05) for the increase in mother's self-efficacy, and 0.000 (< 0.05) for the increase in breast milk production. This indicates that the KEMIH program is effective in increasing the knowledge, self-efficacy, and breast milk production of mothers. In conclusion, it is important to provide education and strengthen maternal self-efficacy so that mothers are more confident in breastfeeding. In addition to education programs, mothers need to have strong support from their families and health workers for the success of the breastfeeding process.

Keywords: Breast Milk Production; Educational Class; Self-Efficacy

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INTRODUCTION

Breastfeeding is the most important first health promotion strategy for infants and provides many benefits for both mother and child. All infants should be exclusively breastfed during the first six months of life and up to two years, with the inclusion of supplementary foods, according to the American Academy of Pediatrics.[1] This is based on compelling evidence that breastfeeding has benefits for infants, mothers, and society sustainably. Short-term benefits for children are reduced mortality and morbidity and protection against childhood infections[2]. Meanwhile, the long-term benefits are increased intelligence and possibly decreased incidence of non-communicable diseases and obesity [3].

Based on data from the World Health Organization (WHO) in 2020, the average rate of exclusive breastfeeding globally is around 44% of the 50% target of exclusive breastfeeding[4]. Currently, the percentage of infants less than 6 months of age receiving exclusive breastfeeding in Indonesia is 69.7%[5]. Additional barriers to nursing include a lack of awareness, the existence of social norms, inadequate family and social support, shyness, maternal attitudes against breastfeeding, lactation issues, employment, and issues with the health care system[1]. Mothers' low knowledge about breastfeeding and not being too exposed to breastfeeding-related interventions are significant predictors of low self-efficacy in breastfeeding mothers[6]. A previous study has shown that there is a relationship between high breastfeeding self-efficacy, longer breastfeeding duration, and higher rates of breastfeeding exclusivity[7].

Moreover, some studies support the concept that choices in infant feeding provide optimal results if carried out early in the pregnancy or even preconception period [8]. Women who lack confidence in their ability to breastfeed are up to 3 times more likely to stop breastfeeding earlier than they would like. Therefore, timely intervention, the implementation of correct health education strategies, and self-confidence (self-efficacy) building need to be carried out as early as possible [7].

There have been many educational programs or media used to introduce exclusive breastfeeding[9]. However, the reality in the field shows that many people, especially mothers, still do not understand exclusive breastfeeding[10]. Moreover, many mothers who have been educated continue to give formula milk because of misunderstandings, such as myths. Although various efforts have been made, the rate of breastfeeding is still varied and less than optimal. In addition, cultural attitudes/beliefs also influence breastfeeding practices [11]. Addressing the determinants of breastfeeding, such as breastfeeding self-efficacy, is beneficial in improving breastfeeding outcomes in addition to efforts to improve current public health [12].

Numerous studies have demonstrated that interventions that boost nursing self-efficacy have beneficial effects on breastfeeding. A study conducted by Gerhardsson [13] presents that an intervention needs to be carried out to increase mothers' breastfeeding self-efficacy and exclusive breastfeeding rates. For this reason, the researchers held *Kelas Edukasi Menyusui Ibu Hamil* (KEMIH) (English: The Breastfeeding Education Class for Pregnant Women) because mothers need to receive early

breastfeeding mentoring education to support the breastfeeding process and encourage mothers to give exclusive breastfeeding starting from the pregnancy period.

METHODS

The researchers applied a quasi-experimental design. In addition, the employed approach was two groups with control. This study was conducted from January to December 2020. The research was conducted at the Ulaweng Community Health Center, South Sulawesi. The number of samples was 61 respondents who met the pre-defined criteria (29 respondents in the intervention group and 31 respondents in the control group). The intervention group was given treatment in form of *Kelas Edukasi Menyusui Ibu Hamil* (KEMIH) (English: The Breastfeeding Education Class for Pregnant Women). Meanwhile, the control group received a Maternal and Child Handbook (MCH). The sampling technique used in this study was purposive sampling, in which the inclusion criteria were primigravida pregnant women, third-trimester mothers, families willing to accompany the education process, and mothers willing to take the education class. The research instruments consisted of an educational module, a self-efficacy questionnaire with 10 questions, and electric breast pumps for measuring breast milk. Breast milk measurement was carried out on the 14th postpartum day. The collected data was then analyzed with the SPSS version 16 application using an independent t test to assess the comparison of the intervention and control groups.

RESULTS

The following are research results presented in the form of a characteristic table with bivariate analysis using an independent t-test.

Table 1. Characteristics of Respondents in the Intervention and Control Groups

Variables	Intervention (n=29)	Control (n=32)
	n (%) / Mean ± SD	**n (%) / Mean ± SD**
Age (years)	26.44 ± 5.05	27.43 ± 5.67
Mid-Upper Arm Circumference (MUAC) (cm)	23.99 ± 4.59	25.26 ± 2.77
Education		
No school	0 (0)	4 (12.5)
Elementary School	5 (17.2)	6 (18.8)
Junior High School	4 (13.8)	4 (12.5)
Senior High School	16 (55.2)	16 (50.0)

Variables	Intervention (n=29)	Control (n=32)
	n (%) / Mean ± SD	**n (%) / Mean ± SD**
Higher Education	4 (13.8)	2 (6.2)
Income (rupiah per month)		
Above Minimum Wage	16 (55.2)	15 (46.9)
Under Minimum Wage	13 (44.8)	17 (53.1)
Employment		
Housewife	17 (58.6)	21 (65.6)
Working	12 (41.4)	11 (34.4)

Table 1 shows the characteristics of respondents in the intervention and control groups. In the intervention group, the average age of the respondents was 26.44 ± 5.05 years, while in the control group, the average was 27.43 ± 5.67 years. In addition, in the intervention group, the average mid-upper arm circumference was 23.99 ± 4.59 cm, while in the control group, the average was 25.26 ± 2.77 cm. In both the intervention and control groups, the highest number of mothers' education was in the "senior high school" category, namely 16 (55.2%) and 16 (50%), respectively. Concerning family income, mothers, in the intervention group, were mostly in the category above the regional minimum wage, namely 16 (55.2%). In the control group, they were mostly in the category below the regional minimum wage, namely 17 (53.1%). Apart from that, concerning employment, the participants in both groups were mostly housewives, namely 17 (58.6%) in the intervention group and 21 (65.6%) in the control group.

Table 2. The Analysis of Differences in Knowledge, Self-Efficacy, and Breast Milk Production in the Intervention and Control Groups

Variables	**Mean ± SD Pretest**	**Mean ± SD Posttest**	Δ	***P***
Knowledge				
Intervention (n = 29)	73.96 ± 9.19	85.86 ± 5.98	11.9	0.000*
Control (n = 32)	67.5 ± 8.79	75.93 ± 6.77	8.43	
Self-Efficacy				
Intervention (n = 29)	72.69 ± 7.15	80.04 ± 4.53	7.34	0.012*
Control (n = 32)	72.35 ± 6.50	76.83 ± 5.08	4.48	
Breast Milk Production				
Intervention (n = 29)	-	439.41 ± 87.61	-	0.000*
Control (n = 32)	-	263.88 ± 111.06	-	

p = Unpaired T-Test

Table 2 shows the differences in knowledge, self-efficacy, and milk production between mothers in the intervention and control groups. In the intervention group, the average increase in knowledge is 11.9. Meanwhile, in the control group, it is 8.43. For the self-efficacy variable, in the intervention group, the average increase is 7.34, while in the control group, it is only 4.48. Likewise, concerning breast milk production, there are differences between the two groups. In the intervention group, the average breast milk production is 439.41 ± 87.61 ml. Meanwhile, in the control group, it is 263.88 ± 111.06 ml.

Apart from that, the results of the bivariate analysis show that there are significant differences in the three variables, in which the obtained *p*-values were 0.000 (< 0.05) for the increase in knowledge, 0.012 (< 0.05) for the increase in mother's self-efficacy, and 0.000 (< 0.05) for the increase in breast milk production. This indicates that the KEMIH program is effective for increasing the knowledge, self-efficacy, and breast milk production of mothers.

DISCUSSION

The Relationship between the KEMIH Program and the Increase in Knowledge

The results of this study indicate that the obtained average increases in knowledge are 11.9 in the intervention group and 8.43 in the control group. In addition, the bivariate analysis of the knowledge variable shows that there is a significant difference between the two groups ($p = 000 < 0.05$).

This indicates a greater increase in knowledge in the intervention group. This is due to the provision of an education program through modules and the provision of skills related to breastfeeding techniques through demonstration and simulation processes[14]. Therefore, there is an increase in knowledge that is greater than that in the control group. However, in the control group, we also found an increase in knowledge but not higher than what was in the intervention group. This is due to the provision of education through the Maternal and Child Handbook (MCH) so that they still have increased knowledge at the posttest [15].

The use of media in the form of audio-visual is considered more capable of achieving learning objectives because it can stimulate the senses of hearing and sight while attracting more attention [16]. In this study, apart from the module, methods with demonstrations and simulations can help mothers remember the material given in the education program. This is in line with the theory that a person will remember 20% of what is heard, 50% of what is seen, and 80% of what is heard, seen, and immediately done [17,18].

Several factors can affect the mother's knowledge, such as the mother's education, social culture, and family support. High mothers' education will make it easier for them to process the knowledge provided and be more rational in thinking [19]. Meanwhile, social culture is related to myths in the mother's family which makes mothers listen more to the myths that already exist in their family

than the education provided. Furthermore, the support factor, especially from health officers and families, will maintain the mother's knowledge. Apart from that, the knowledge recall and individuals who always remind mothers will make them remember the series of learning materials that have been given.

The Relationship between the KEMIH Program and the Increase in Self-Efficacy

In this study, for the self-efficacy variable, in the intervention group, the average increase is 7.34, while in the control group, it is only 4.48. Furthermore, bivariate analysis shows a *p*-value of 0.012 (< 0.05), indicating that there is a difference in the increase in self-efficacy in the two groups.

A mother's confidence in her capacity to nurse her child and make the decision to do so is known as self-efficacy of breastfeeding mothers or self-confidence in breastfeeding, which can also serve to overcome difficulties in breastfeeding [12]. Breastfeeding mothers need confidence in breastfeeding their babies until a certain time. The self-efficacy of breastfeeding mothers can support the success of breastfeeding. The higher the self-efficacy of breastfeeding in the mother is, the higher the success rate of breastfeeding will be. Conversely, the lower self-efficacy of breastfeeding in mothers when experiencing difficulties in breastfeeding can cause mothers to not be able to breastfeed or replace it with formula milk [20].

Several factors may influence the mother's self-efficacy, such as past experiences, support from others (e.g., friends, family, health workers, and lactation consultants), and mother's physiological responses (e.g., fatigue, stress, and anxiety). The mother's self-efficacy may affect the choice of food types in infants [21]. Even though the mother has good knowledge but low self-efficacy, it will also hinder the mother's ability to give exclusive breastfeeding. In addition, family factors also play an important role in breastfeeding. Experiences from other family members (e.g., in-law sisters or siblings) will be taken into consideration by the mother. Therefore, family support for increasing the mother's self-efficacy plays an important role [7].

Previous research has indicated that moms who are primiparous and mothers who have previously breastfed their child for fewer than six months should receive special attention and breastfeeding support. The only modifiable factor linked to increasing breastfeeding frequency and exclusive breastfeeding, particularly at 4-6 weeks following delivery, is breastfeeding moms' self-efficacy. As a result, assistance from health professionals helps moms before, during, and after giving delivery.

The Relationship between the KEMIH Program and the Increase in Breast Milk Production

In this study, there are differences between the two studied groups. In the intervention group, the average breast milk production is 439.41 ± 87.61 ml. Meanwhile, in the control group, it is 263.88

± 111.06 ml. Furthermore, bivariate analysis shows a *p*-value of 0.000 (< 0.05), indicating that there is a difference in breast milk production in the intervention and control groups.

Knowledge is one of the variables that determines health behavior, along with conventions, attitudes, and other influences that come from an individual or group. The availability of facilities, together with the conduct and attitudes of health professionals, all contribute to and reinforce the development of behavior [7]. Along with beliefs, attitudes, and values, predisposing factors include knowledge. The availability of facilities, meanwhile, can be considered a supportive factor. Additionally, the driving force is categorized as the conduct and attitudes of health professionals. These three variables impact a person's health-related behavior [8]..

Kelas Edukasi Menyusui Ibu Hamil (KEMIH) (English: The Breastfeeding Education Class for Pregnant Women) is a program to increase knowledge of pregnant women. It is expected to change the mother's breastfeeding behavior during the breastfeeding process. In addition to knowledge, support from the family of health officers will also guide the mothers until the breastfeeding period as an effort to succeed in exclusive breastfeeding [22].

The two critical processes of breastfeeding—milk production (the milk production reflex) and milk release (the let down reflex)—are both governed by hormones controlled by the hypothalamus [23].. The mother's emotions and the brain's instructions govern how the hypothalamus functions, just like it does with other hormones. Therefore, the mother's calm mental and emotional states have a significant impact on the breastfeeding process. Stress causes depression, unease, anxiety, sadness, and tension in the psyche, which eventually affects the nursing process. Compared to mothers who are not anxious, anxious mothers express less milk [24].

Each time the baby sucks the breast, it stimulates sensory nerve endings around the breast, thereby stimulating the anterior pituitary gland to produce prolactin. Prolactin will enter the bloodstream and then into the breast, causing the secretory cells in the alveolus (breast milk factory) to produce milk. Prolactin will be in the bloodstream for 30 minutes after being inhaled so that prolactin can stimulate the breasts to produce milk for the next drink [25].

In this study, socio-economic factors also play a role in the production of mother's milk. This condition can affect the level of stress or anxiety in the mother. There are 13 respondents (44.8%) in the intervention group and 17 respondents (53.1%) in the control group whose family income is below the regional minimum wage. This situation may affect the physiological condition of the mother. In this case, despite having undergone the intervention, they may still have less breast milk production.

CONCLUSION AND SUGGESTION

From this research, it can be concluded that the Breastfeeding Education Class for Pregnant Women (KEMIH) effectively increases knowledge by 11.9%, breastfeeding self-efficacy by 7.34%, and

increasing breast milk production in mothers, namely 439.41 ml.. This study also notes that it is important to involve all parties in efforts to increase exclusive breastfeeding, especially family members and health workers.

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