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PRECONCEPTION STUNTING PREVENTION EDUCATION IN PREMARITAL CLASSES ON THE KNOWLEDGE AND ATTITUDES OF PROSPECTIVE BRIDES

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ABSTRACT

Background: The incidence of stunting remains a major child health problem and a primary focus. Approximately 21.6% of children under five in Indonesia suffer from stunting. Stunting prevention is a much more effective approach that can be achieved by optimizing the role of mothers, one of which is through the preconception phase.

This study aims to determine the effect of health education on stunting prevention during the preconception period on the knowledge and attitudes of prospective brides regarding stunting and stunting prevention.

Methods: The research method was quasi-experimental design. This study took place in the Office of Religious Affairs (KUA) in Agam Regency, Pakan Kamih and IV districts. The population and sample of the study were prospective brides. 64 prospective brides became samples of this study who taken using consecutive sampling. The intervention in this study was health education booklet, namely: Catin Cegah Stunting. Measurement of knowledge and attitudes was carried out before and after the intervention using a questionnaire.

Results: The results showed that knowledge and attitudes before and after the intervention obtained a p Value of 0.00 (<0.05), so it can be concluded that there is a significant difference in knowledge and attitude between before and after the intervention.

Conclusion: This study found that there was significant difference in knowledge and attitude between before and after the intervention. Health workers can use the “Catin Cegah Stunting” module as one of the educational media that can be used to improve knowledge and attitudes related to stunting and stunting prevention.

INTRODUCTION

Stunting rates in West Sumatra remain a major child health problem and a primary focus. Based on data from the Indonesian Nutrition Status Survey (SSGI) 2024, the incidence of stunting in West Sumatra was reported to be 24.9% among children under five, which is higher than the national stunting prevalence of 19.8%. Several stunting priority areas (*lokus stunting*) in West Sumatra also have stunting rates far above the provincial and national levels, including Solok Regency (29.5%), Pasaman Regency (29.1%), and Agam Regency (27.0%) (1). Stunting in children is not merely characterized by short stature but also involves various consequences, including increased morbidity, increased mortality, and long-term impacts (2). Stunting can lead to increased morbidity and mortality, impaired child development and learning ability, a higher risk of infections and non-communicable diseases, reduced work capacity, increased risk of chronic diseases, and impaired cognitive development (3,4,5,6).

The WHO conceptual framework explains that the causes of stunting are broadly divided into four groups: family and household factors, breastfeeding practices, inadequate complementary feeding, and a history of infectious diseases in children (2). Maternal factors also contribute to the occurrence of stunting. Mothers with a low Body Mass Index (BMI) are considered a risk factor that may influence the occurrence of stunting (7). Infants with a history of low birth weight (LBW) are also at risk of developing stunting (8). Maternal age and short birth intervals are additional factors associated with stunting (9). Stunting may occur due to inadequate fetal growth, which is commonly characterized by a birth weight that is inappropriate for gestational age at birth. Babies born prematurely have a greater risk of experiencing stunting (10). Stunting prevention is a much more effective approach than stunting treatment. Prevention can be achieved by optimizing the role of mothers during the golden period of child development, which is divided into three phases: the preconception phase, prenatal phase, and infant–toddler phase (11).

The preconception period, which refers to the time before conception occurs, represents an important window of opportunity to improve maternal and fetal health outcomes. By addressing potential risk factors and optimizing health before pregnancy, interventions during the preconception period become essential to reduce risks and promote healthy development from the earliest stage (12). By focusing on the preconception period, healthcare providers and individuals can address potential risk factors that may negatively affect pregnancy outcomes and children's future health. This may involve interventions such as optimizing nutrition, managing chronic medical conditions, ensuring up-to-date vaccinations, identifying and addressing genetic risks, and promoting healthy lifestyle choices (13). In Indonesia, preconception care is currently commonly provided as part of premarital health examinations, which include screening for sexually transmitted infections and assessment of women's hemoglobin status. These health examinations are usually accessed by couples to obtain the required health certificate for marriage registration (14). This indicates a recognized misconception among healthcare providers, where preconception care is considered merely a simple health examination rather than comprehensive care to support women's readiness for pregnancy (15).

Preconception care is recognized as having the potential to improve reproductive and pregnancy outcomes. This review identified the positive benefits of preconception education and counseling on maternal knowledge, self-efficacy, health locus of control, and risk-related behaviors (16). Previous studies have found that several health education topics can be optimized for preconception couples to improve their knowledge regarding stunting prevention during the preconception period, including nutritional status during the preconception period, supplementation during the preconception period, and lifestyle during the preconception period (17). Based on the background above, education during the preconception period is an important strategy as one of the efforts to prevent stunting during the First 1,000 Days of Life. The research problem formulation is as follows: "What is the effect of education related to stunting and stunting prevention during the preconception period on the knowledge and attitudes of preconception women as an effort to prevent stunting?"

METHOD

The research method used was a quantitative approach with a quasi-experimental design, using a One-Group Pretest–Posttest Design. This design aims to examine the effect of health education on stunting and stunting prevention during the preconception period by measuring the knowledge and attitudes of prospective brides before (pre-test) and after (post-test) receiving education about stunting and stunting prevention strategies that can be implemented during the preconception period. This study will be conducted from May to September 2025 at the Office of Religious Affairs (KUA) in Agam Regency.

The intervention in this study involves delivering educational materials about stunting and stunting prevention during the preconception period, which were developed based on the findings of previous research conducted in the preceding year. The main topics covered include: the definition of stunting, causes of stunting, the risks and impacts of stunting, and stunting prevention during the preconception period, including nutritional status during the preconception period, supplementation during the preconception period, and lifestyle during the preconception period. Health education will be provided using a health education module delivered for 30 minutes, integrated into the prospective bride and groom (premarital) class conducted at the KUA. The measurement of knowledge and attitudes was conducted before and after the intervention using the same questionnaire, which had previously undergone validity and reliability testing. The pre-test measurement was carried out prior to the intervention, while the post-test was conducted one week after the intervention.

The study population and sample consisted of female prospective brides (bride-to-be candidates). The inclusion criteria in this study were: female prospective brides attending premarital preparation classes at the KUA, willing to participate as research respondents, able to read and write, and able to communicate well. The exclusion criteria were female prospective brides who did not complete the given intervention. Sampling was conducted using a sample size formula for a single population to estimate the mean. Based on the sample size calculation above, the minimum required sample size is 64 participants. The sampling method used was consecutive sampling, in which participants who met the inclusion and exclusion criteria were recruited sequentially until the required sample size was achieved.

Data analysis was conducted using a computer with SPSS for Windows to test the hypothesis. Prior to analysis, a normality test using the Kolmogorov–Smirnov test was performed. Data were considered normally distributed if the significance value was greater than 0.05 ($p > 0.05$). For data that were not normally distributed, a non-parametric statistical test was used, with the Wilcoxon Signed-Rank Test applied for bivariate analysis. If the data were normally distributed, the paired sample t-test was used to analyze differences in knowledge and attitude scores before and after the intervention. The null hypothesis (H_0) was rejected if the p-value was less than the significance level ($\alpha \leq 0.05$).

RESULT AND DISCUSSION

The following results describe the characteristics of toddlers and parents. The characteristics of toddlers in this study are shown by gender and age. The characteristics of parents examined include maternal education, maternal occupation, and family income.

Education, Maternal Occupation, and Family Income:					
No	Sociodemographic Characteristics	Intervention		Kontrol	
		(f)	%	(f)	%
age					
1	Reproductive (20-35 tahun)	28	87.5	29	90.6
2	High risk (<20 tahun dan >35 tahun)	4	12.5	3	9.4
education					
1	Low (SD s/d SMA)	20	62.5	18	56.2
2	High (Perg. Tinggi)	12	37.5	14	43.8
Working status					
1	Not working	13	40.6	11	34.4

2	working	19	59.4	21	65.6
	Total	32	100.0	32	100.0

Table 1 shows that, in terms of age, in the intervention group the majority of respondents were of reproductive age, and similarly, almost all respondents in the control group were also of reproductive age. Regarding education, more than half of the respondents in the intervention group had a low level of education, and the same pattern was observed in the control group, where more than half of the respondents also had a low level of education. In terms of occupation, more than half of the respondents in the intervention group were employed, and similarly, in the control group, more than half of the respondents were also employed.

A univariate analysis comparing the mean knowledge and attitude scores before and after the intervention was conducted in both the intervention and control groups, with the following results:

Variabel	n	Mean	Std. Deviation	Minimum	Maximum
Knowledge of intervention group					
pre test	32	6.2	2.693	2	11
post test	32	10.9	1.873	8	14
Knowledge of control group					
pre test	32	6.4	2.39	1	12
post test	32	7.56	2.09	4	12
attitude of intervention group					
pre test	32	44.25	7.812	31	53
post test	32	60.72	4.706	57	70
attitude of control group					
pre test	32	43.31	6.2	34	57
post test	32	46.31	6.3	35	58

Table 2 shows that the mean knowledge score in the intervention group before the intervention was 6.2, with a minimum value of 2 and a maximum value of 11. After the intervention, the mean knowledge score in the intervention group increased to 10.9, with a minimum value of 8 and a maximum value of 14. In the control group, the mean knowledge score before the intervention was 6.4, with a minimum value of 1 and a maximum value of 12, while after the intervention, the mean knowledge score increased to 7.56, with a minimum value of 4 and a maximum value of 12. Regarding attitudes, the mean attitude score in the intervention group before the intervention was 44.25, with a minimum value of 31 and a maximum value of 53. After the intervention, the mean attitude score in the intervention group increased to 60.72, with a minimum value of 57 and a maximum value of 70. In the control group, the mean attitude score before the intervention was 43.31, with a minimum value of 34 and a maximum value of 57, while after the intervention, the mean attitude score was 46.31, with a minimum value of 35 and a maximum value of 58.

This study is in line with the study conducted by Irwanti which showed that the majority of pregnant women (60%) had insufficient knowledge about stunting (17 A previous study conducted by Moudy, which assessed the level of knowledge among mothers with toddlers regarding stunting, found that more than half

of the respondents (51.1%) had poor knowledge related to stunting (18). This study also aligns with the findings of Jelita in a study titled “Overview of Mothers’ Knowledge About Stunting in Children Under Two Years (Baduta) at Manganitu Health Center, Sangihe Islands District.” The results showed that 58.6% of respondents answered incorrectly on items related to chronic malnutrition as a cause of stunting, and 53.4% incorrectly answered that stunted children are more susceptible to disease. The study concluded that mothers’ knowledge about stunting in children under two years in the working area of Manganitu Health Center, Sangihe Islands District, was in the low category (19)

This study is also in line with the research conducted by Faridah (2023), which showed a significant increase in knowledge scores before and after the intervention in the intervention group, namely 13.7 before the intervention and 17.6 after the intervention. In the control group, there was also an increase in the mean scores before and after the intervention; however, the difference was much smaller. The mean knowledge score before the intervention in the control group was 14.2, and the mean knowledge score after the intervention was 16.2 (20).

The bivariate analysis of differences in knowledge and attitudes in the intervention and control groups is presented in Table 3 as follows:

Variabel	n	Mean	SD	P <i>value</i>
knowledge				
Intervention	32	10.91	1.873	0.000
Control	32	7.56	2.094	
attitude				
Intervention	32	60.72	4.706	0.000
Control	32	46.31	6.317	

The statistical test results showed a difference in knowledge between the intervention and control groups; therefore, it can be concluded that there is a statistically significant difference in knowledge between the intervention and control groups. The statistical test results for attitudes also showed a difference between the intervention and control groups; thus, it can be concluded that there is a statistically significant difference in attitudes between the intervention and control groups.

Knowledge about stunting, particularly among women of reproductive age, is very important. In addition, the level of nutritional knowledge among women of reproductive age plays a role in nutritional problems in Indonesia, one of which is stunting (21). Therefore, it is essential for women of reproductive age to have good knowledge about stunting, including its impacts and prevention efforts. Efforts to improve knowledge about stunting can be carried out through health education. Education can motivate individuals to improve their knowledge, in this case knowledge about stunting (22). Health education can be delivered using various media, including visual, audio, and audiovisual media. In this study, visual media in the form of modules was used, combined with audio through direct counseling.

Stunting prevention can begin with the attitudes of women of reproductive age (WRA) before pregnancy. An individual with a positive attitude toward nutrition tends to demonstrate good behaviors in meeting their nutritional needs, and vice versa. Increasing knowledge about stunting prevention among prospective mothers is an effort that can be carried out to prevent stunting from an early stage. Mothers with a positive attitude are expected to be able to make appropriate food choices to meet their children’s nutritional needs, thereby breaking the cycle of stunting in the life cycle (23).

This study is in line with the research conducted by Suleman, which examined the effect of educational media on stunting prevention regarding mothers’ knowledge, attitudes, and practices toward stunting and its prevention. The study explained that health education using lecture methods, lecture combined with leaflets, and lecture combined with videos had a significant effect on increasing the knowledge of mothers with toddlers (p -value = 0.000) (24). A previous study entitled “Effects of The First

1000 Days of Life Module for Premarital Women on Knowledge and Attitudes in Preventing Stunting” also showed results consistent with this study. The results of the study indicated that the Independent T-test produced a p-value for knowledge of 0.002. The First 1000 Days of Life module was found to be more effective in improving knowledge on stunting prevention compared to premarital classes alone (25).

This study is also in line with the research conducted by Dewi Septi Medinawati, entitled “The Effect of the ‘Acenting Seni’ Educational Application on Knowledge and Attitudes Toward Early Stunting Prevention Among Women of Reproductive Age 20–25 Years.” The results of this study showed an improvement in attitudes before and after the intervention using the “Acenting Seni” media. The Wilcoxon Rank Sum test results indicated a significant difference in attitude scores between the pretest, posttest 1, and posttest assessments among the study respondents, with a p-value < 0.005 (26).

AUTHOR CONTRIBUTIONS

All authors contributed to the development and execution of this study. Lady wizia, as the lead author, played a primary role in conceptualizing and designing the study, curating and analyzing the data, preparing the original draft, Suci Rahmadheny creating visualizations to present the findings, and Lauda Dwi Pratiwi editing the manuscript, as well as selecting relevant studies, organizing and synthesizing the data, and reporting the results. manuscript.

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