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Article

risk factor of stunting based on WHO conceptual framework on Childhood Stunting

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A B S T R A C T

Background: The stunting rate in Indonesia in 2022 was 21.6%. I was reduced when compared to the SSGI data in 2021 of 24.4%. Stunting prevention is a much more effective step than stunting treatment itself. Prevention of stunting can be done by optimizing the role of mothers in the golden phase of child development. Stunting can be prevented by implementing infant and child feeding, which consists of Early Initiation of Breastfeeding (IMD), exclusive breastfeeding, and timely initiation of complementary feeding. Unfortunately, the achievement of this component of infant and child feeding practices is still far from the target. In 2022, the percentage of infants who received exclusive breastfeeding was 69.7%. **Objective** of this study is to analyze the risk factors for stunting based on the WHO Conceptual Framework on Childhood Stunting..

Methods: It was an analytic observational study using a case–control design, which examines the relationship between research factors or exposures and disease by comparing a case group (stunted children under five years of age) with a control group (children under five years of age with normal growth).

Results: The results of the Chi-square test indicate a statistically significant association between exclusive breastfeeding and the occurrence of stunting in children (p-value = 0.04), no statistically significant association between breastfeeding for two years and the occurrence of stunting in children (p-value = 0.36), ignificant association between the timely provision of complementary feeding (MP-ASI) and the occurrence of stunting in children (p-value = 0.001). no statistically significant association between the appropriateness of infectious deasese history and the occurrence of stunting in children (p-value = 0.93).

Conclusion: This study found that Exclusive breastfeeding and timely complementary feeding were significantly associated with stunting, while breastfeeding for two years and infectious disease history showed no significant association.

INTRODUCTION

Stunting, which is a failure to thrive that refers to children who are too short for their age, is associated with chronic malnutrition. Stunting is used as one of the target indicators of child nutrition achievement [1]. In 2022, the WHO estimates that the global incidence of stunting is 22.3%. In Southeast Asia, the incidence of stunting is higher than the global incidence, where

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stunting is estimated to affect 26.4% of children under five [2]. Data from the Indonesian Nutrition Status Survey (SSGI) 2022, the stunting rate in Indonesia has decreased compared to the previous year. The stunting rate in Indonesia in 2022 was 21.6%. This figure is reduced when compared to the SSGI data in 2021 of 24.4% and the 2018 Basic Health Research (Riskesdas) data which showed a stunting rate of 20.8%. The stunting rate appears to be decreasing from year to year, but a joint commitment is still needed to achieve the target of reducing stunting to 14% by 2024 [3]. Stunting in children is not just short stature, but more broadly causes short and long-term problems and consequences that affect a child's health and quality of life. Increased morbidity rates, increased mortality rates are short-term consequences of stunting for the health sector. Stunting also affects child development, both cognitive, motor and language development. Stunting will also affect the economy with increased health costs incurred as a result of illness. Stunting also has long-term consequences associated with health, social and economic development. Stunting is associated with an increased risk of degenerative diseases, decreased reproductive function, decreased learning capacity and achievement and decreased work productivity [4].

Stunting prevention is a much more effective step than stunting treatment itself. Prevention of stunting can be done by optimizing the role of mothers in the golden phase of child development. The golden phase of child development for stunting prevention is divided into three phases which include: preconception phase, prenatal phase and infant-toddler phase. Various roles can be played by mothers in preventing stunting, including: fulfilling maternal, fetal, infant, and child nutrition, initiating early breastfeeding, exclusive breastfeeding, and appropriate complementary foods, optimizing the environment for child development, optimizing family support, and avoiding various psychosocial factors that can be detrimental during pregnancy, growth, and child development [5]. The Government of Indonesia implements a nutrition-specific program aimed at addressing direct causes, which consists of nine points: supplementary feeding for pregnant women and underweight children; blood supplementation tablets for adolescents, women of childbearing age, and pregnant women; breastfeeding promotion and counseling; infant and young child feeding promotion and counseling; malnutrition management; growth monitoring and promotion; micronutrient supplementation; antenatal screening and immunization; and management of sick children. The implementation of stunting prevention programs can be maximized with cross-sectoral cooperation, such as Family Planning to increase promotion of parenting for the First 1000 Days of Life (1000 HPK), the Ministry of Religion to increase premarital guidance [6].

Promotion and Counseling of Infant and Young Child is determined as a specific nutrition program that aims to address the direct causes of stunting that are maximized in the first 1000 days of life [6].Feeding in Children and Infants is a factor causing stunting that can be changed through education on Infant and Young Child Feeding recommended by WHO [7]. Education on infant and young child feeding has an influence in increasing the knowledge of mothers who have toddlers regarding feeding in infants and children [8]. Previous research still focused on providing education to groups of mothers of toddlers, while several important points related to infant and young child feeding should be known by mothers since the prenatal period, so that promotive and preventive practices will be implemented better.

METHOD

This research was quantitative with a quasi-experimental design, with a pre and post-test design without a control group which aims to test the effect of Infant and young child Feeding education by measuring the knowledge and attitudes of mothers before (pre-test) and after (post-test) about the practice of proper feeding in children as a prevention of stunting. The intervention in this study was the delivery of Infant and Young Child Feeding material developed from a module issued by WHO, namely: Infant and Young Child Feeding Counseling: An Integrated Course. Measurement of knowledge and attitudes was carried out before and after the intervention using the same questionnaire, where the questionnaire had passed the validity and reliability

test. The pre-test measurement was carried out before the intervention was given, while the post-test was carried out after the intervention was given for 1 week.

This study took place in the Kapau and IV Koto Health Center. The population and sample of the study were pregnant women. The inclusion criteria in this study were pregnant women in the third trimester who attended the Mother's Class, were willing to be research respondents, were able to read and write and were able to communicate well, while the exclusion criteria for the study were pregnant women who did not complete the intervention given. Sampling was carried out using the sample size formula in a single population for the average estimate, 57 pregnant women became samples of this study.

Data analysis was performed by computer using SPSS for Windows program to test the hypothesis. Before being analyzed, a normality test was performed with Kolmogorov-Smirnov, the data was categorized as normal if the calculated r was greater than the table r (> 0.05). Data that were not normally distributed were subjected to nonparametric statistical tests, the bivariate analysis used was the Wilcoxon Signed Rank test. Normally distributed data, bivariate analysis used the paired sample t-test to analyze the differences in knowledge and attitude scores before and after the intervention. The Null Hypothesis (Ho) is rejected if the p value is less than the α value ($p \leq 0.05$)

RESULT DAN DISCUSSION

The univariate test of the comparison of the average knowledge and attitudes before and after the intervention is explained using the following table:

Table 1

Variabel	n	Mean	Std. Deviation	Minimum	Maximum
knowledge					
pre test	57	6.21	2.630	1	12
post test		10.91	1.735	8	14
attitude					
pre test	57	43.46	7.204	31	57
post test		63.18	4.774	53	72

The table above shows that the average knowledge of the group before the intervention was 6.21, with a standard deviation of 2,630, with a minimum value of 1 and a maximum value of 8. In the knowledge variable after the intervention, the average knowledge of respondents was 10.91 with a standard deviation of 1,735, with a minimum value of 8 and a maximum value of 14. The attitude variable before the intervention showed that the average attitude of respondents was 43.46 with a standard deviation of 7,204, a minimum value of 31 and a maximum value of 57. The attitude variable after the intervention showed that the average attitude of respondents after the intervention was 63.18 with a standard deviation of 4,774, a minimum value of 53 and a maximum value of 72.

Knowledge is the result of understanding, and this occurs after people feel a certain object through human senses, namely sight, hearing, smell, taste, and touch. The majority of humans gain knowledge through the eyes and ears. Knowledge becomes a very important area in shaping a person's actions (overt behavior). Increasing knowledge will change perceptions, habits, and beliefs, based on experience and several studies, long-lasting behavior depends on knowledge, awareness, positive attitudes [9]. Therefore, increasing knowledge of cognitive aspects, in this case the knowledge of pregnant women is important to prevent stunting problems since pregnancy related to feeding babies and children.

Knowledge is one of the factors related to stunting. This is supported by research conducted by Juharin in 2024 which showed that there was a significant relationship ($p < 0.05$) between maternal knowledge and stunting in children [10]. This study is also supported by research conducted by Fadare O (2019) which showed that maternal knowledge about health and nutrition has a positive and significant relationship with the z score of height according to age and the z score of weight according to

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height [11]. Research conducted by Saadah (2022) shows that maternal knowledge is one of the factors causing stunting. This study explains that mothers with good characteristics experience an increase in knowledge about preventing and controlling stunting by 0.42 times (p = 0.01). Mothers with good knowledge increase maternal commitment by 0.23 (p = 0.01), and mothers with good commitment reduce stunting by 0.45 (p = 0.01). Furthermore, mothers with good knowledge increase family support by 0.24 (p=0.01) [12].

Bivariate test of differences in knowledge and attitudes before and after the intervention is explained in the following table:

	mean	SD	n	p *value*
Knowledge				
Pre-test	6.21	2.630	57	0.000
Post-test	10.91	1.735		
Attitiude				
Pre-test	43.46	7.204	57	0.000
Post-test	63.18	4.774		

The results of the statistical test of the difference in knowledge before and after the intervention obtained a ρ Value of 0.00 (<0.05), so it can be concluded that there is a significant difference in knowledge between before and after the intervention. The statistical results also explain that the difference in attitudes before and after the intervention obtained a ρ Value of 0.00 (<0.05), so it can be concluded that there is a significant difference in attitudes between before and after the intervention.

Stunting prevention can be done by optimizing mothers in the three main phases of the golden period of child growth. These phases include the preconception phase, the prenatal phase, and the infant-toddler phase. The various roles of mothers include fulfilling the nutrition of mothers, fetuses, infants, and children, initiating early breastfeeding, providing exclusive breastfeeding, and providing appropriate complementary foods, optimizing the environment for child growth and development, optimizing family support, and avoiding various psychosocial factors that can interfere with child growth and development [5].

Research conducted by Deviatin (2021) on determinants that influence stunting prevention behavior in pregnant women shows that the knowledge and attitudes of pregnant women contribute to maternal behavior in preventing stunting [13].Knowledge is the result of understanding, and this occurs after humans feel a certain object through the five human senses, namely sight, hearing, smell, taste, and touch. Human knowledge is mostly obtained through the eyes and ears, while cognitive knowledge plays an important role in forming open behavior. Increasing knowledge will change perceptions, habits, and beliefs [9]. Several studies have shown that long-lasting behavior depends on knowledge, awareness, positive attitudes and vice versa [14]. Therefore, increasing cognitive aspects, in this case, the knowledge of pregnant women is important as one way to prevent stunting problems in society.

Health education is a dynamic process of behavioral change, to change human behavior that includes components of knowledge, attitudes, or actions related to healthy living goals both individually, in groups, and in society, as well as the use of existing health service facilities appropriately and appropriately [15]. Efforts to increase knowledge about stunting can be done through health education. Education can motivate someone to increase knowledge, in this case knowledge about stunting [16]. Health education can be done using various media including visual, audio, and audiovisual media. This study uses visual module media that is collaborated with audio through direct counseling. Health education is an increasingly important element in health promotion efforts that has been proven by many relevant studies. Health Education is strongly correlated with a person's knowledge regarding prevention, diagnosis, treatment, and prognosis of a disease. Health Education can contribute to ensuring a healthy life and improving well-being for all ages [17].

The results of this study are in line with the study conducted by Permatasari (2021) entitled The effect of nutrition and reproductive health education of pregnant women in Indonesia using quasi experimental study showing that providing nutrition

and reproductive health education through small groups with interactive methods can improve the knowledge, attitudes, and practices of pregnant women (p-value = 0.001) [18]. This study is also in line with the study conducted by Suleman (2021) who tested the effect of educational media on stunting prevention on mothers' knowledge, attitudes and actions towards stunting and stunting prevention. This study explains that health education using lecture method media, lecture and leaflet methods, lecture and video methods have an effect on increasing the knowledge of mothers who have toddlers (p-value = 0.000) [19]

Previous research entitled "Effects of The First 1000 Days of Life Module For Premarital Women Against Knowledge and Attitudes to Prevent Stunting" also had results that were in line with this study. The results of the study showed that the results of the Independent T-test obtained a p value of knowledge = 0.002. The first 1000 days of life module had a greater effect on increasing knowledge of stunting prevention than premarital classes alone. This study also showed that the Independent T-test obtained a p value of attitude = 0.02. The first 1000 days of life module had a greater effect on increasing attitudes to prevent stunting than premarital classes alone [20].

Research by Annisa Nuraini in 2021 entitled "Effect of Health Education Video on Knowledge about Stunting among Women in Childbearing Age" had results that were in line with this study. This study showed that out of a total of 211 women included as samples in this study, Educational videos about stunting were proven to significantly increase respondents' knowledge about stunting (p = 0.000) [21].A study entitled "Prevention of Stunting Through Health Education in Parents of Pre-School Children" conducted by Astarani in 2020, also showed the same results as this study. The results of this study indicate that there is an influence of health education about stunting on the knowledge of parents of preschool children at Setia Bakti Kindergarten, Kediri (ρ = 0.000) [22].

This study is also in line with the study conducted by Dewi Septi Medinawati (2022), entitled The influence of the educational media application "Acenting Seni" on knowledge and attitudes to prevent stunting early in women of childbearing age 20-25 years. The results of this study indicate that there is an increase in attitudes between before and after the "Acenting Seni" media intervention was given. The results of the Wilcoxon Rank Sum test showed that there was a significant difference in scores between the pretest, posttest1, and posttest attitudes of the study respondents with a result of p <0.005 [23].

CONCLUSION

This study shows the influence of health education using the infant young child feeding module media on the knowledge and attitudes of pregnant women towards stunting and stunting prevention by providing proper feeding practices for children. It is recommended that health workers optimize health education for pregnant women about stunting and stunting prevention through infant ypung child feesing.

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