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Effectiveness of Nutrition Education on Nutrition Parenting of Mother with Stunting Toddlers

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Abstract: ***Background: Nutrition Parenting is one of the factors that contribute to the incidence of stunting. Reducing the incidence of stunting requires a paradigm change from intervention s that focus on children to mothers and families. Education is needed to change behavior that can lead to improving the nutritional health of mothers and their children. Aim: To find out of the effectiveness of nutrition education on nutrition parenting styles of mother with stunting toddlers. Method: This study used a quasi experiment with a non equivalent pretest-postest with control group. Sample size was 60 mothers who had stunting toddlers in Jakarta. 60 mothers were divided into intervention group who were given nutrition education and control group without nutrition education. Nutrition Parenting was measured twice, before intervention (pre-test) and after intervention (post-test) on the 7th day. Data analysis was conducted using wilxcoxon and chi square. Result: The result showed that nutrition parenting in experimental group improved in a positive way. Nutrition Parenting in the intervention group had a significant difference with the p value 0,029 (p<0,05). Thus nutrition education could be used as an alternative intervention to improve health behavior in preventing stunting.***

Keywords: nutritional education, nutrition parenting, stunting

1. Introduction

Indonesia is faced with a double nutritional burden, namely children experiencing problems with excess nutrition or obesity and malnutrition problems such as anemia, wasting and stunting [1]. Stunting is defined as a condition of children in which height for age is below minus two standard deviations (<-2SD) from the WHO Median standard [2]. The incidence of stunting in the world in 2018 was 149 million (21.9%). In 2018, more than half of stunting children in the world came from Asia (55%) with the proportion of stunting in Southeast Asia was 25% [3]The prevalence of severe stunting and stunting children aged 0-59 months in Indonesia in 2013 was 18% and 19.2%. The incidence of severe stunting children has decreased in 2018 to 11.5%, but the prevalence of stunting has increased to 19.3% [4].

Stunting can occur as a result of malnutrition, especially during the first 1000 days of life [5]. Poor nutrition in the first 1,000 days of a child's life can lead to stunted growth, which is linked to impaired cognitive abilities and reduced school and work performance [6]. Among the many factors that affect children's health and nutrition, including stunting, supplementary feeding is the most important. Stunting usually starts and increases among children 6-23 months of age where at this age children have a high demand for nutrients but often suffer from the quantity, quality and diversity of food. Exposure to pathogens due to the introduction of unhygienic food can cause disease and reduce the body's ability to absorb nutrients. However, although complementary feeding is a complex set of behaviors with many dimensions, diet diversity over the critical period of 6-23 months had been shown to be the aspect most consistently correlated with child growth [7,8,9]. Family characteristics and nutritional care (attitudes and behavior) in the family also had a relationship with the incidence of stunting in children under five [10].

In overcoming nutritional problems, there are two solutions that can be done, namely by specific and sensitive interventions. One of the sensitive interventions is to increase the knowledge and abilities of parents on matters related to nutrition [1]. Parenting patterns and nutritional status were strongly influenced by the understanding of parents in managing health and nutrition in their families. Therefore, education is needed in order to change behavior that can lead to improving the nutritional health of mothers and their children [11]. Previous research states that there was an effect of nutrition education with discussions on food parenting, psychosocial, hygiene and sanitation [12]. Reducing the incidence of stunting requires a paradigm shift from interventions that focus solely on babies and children to those that reach mothers and families and improve the environment and nutrition [13].

2. Review of Literature

2.1 Stunting

Stunting is a chronic nutritional disorder, as stated by WHO that the height index for age is less than -2 SD (moderate) or below -3 SD (severe stunting) [14,15]. The impact of the incidence of stunting refers to the WHO conceptual framework covering short-term and long-term impacts in the form of health, developmental and economic aspects. Short-term impacts on health aspects include mortality and morbidity, developmental aspects include cognitive, psychomotor and language development. In the economic aspect, it includes health costs for caring for children who are sick. The long-term impact on the health aspect includes physical posture as an adult, obesity and reproductive health, developmental aspects include school performance and less

than optimal learning capacity, the economic aspect includes work capacity and work productivity [16]. The majority of children's brain development is complete at 2 years of age and malnutrition during this period can increase the risk of developmental and cognitive delays in children [17]

2.2 Nutrition Education

Nutrition education is providing information related to food and nutrition through a media that is useful for increasing nutritional knowledge and nutritional intake. Nutrition education can increase nutritional and food intake and improve diet. Education is one of the factors that stimulate the realization of health behavior [18]. Nutrition education maked an impact on maternal feeding practices, psychosocial, hygienic sanitation and eating patterns [13, 19]

3. Method

This study used a quasi experiment with a non equivalent pretest-postest with control group. The Sample size was 60 mothers who had stunting toddlers in Jakarta. 60 mothers were divided into intervention group who were given nutritional education (nutrition during pregnancy, breastfeeding, guidelines for balanced nutrition for toddlers, principles of feeding for toddlers, food preparation and storage, household clean and healthy behavior) and control group without nutritional education. The research instrument was questionnaire that contains parenting style variables using a modified questionnaire by Mirayanti which refers to Green and Engel's theory [20, 21]. Parenting style was measured twice, before intervention (pre-test) and after intervention (post-test). Intervention activities were carried out in 2 meetings. Each meeting consist of two sessions, namely the first session of lectures and discussions then followed by the second session of demonstrations. Parenting style re-measured on the 7th day. *Data analysis was conducted using wilxcoxon and chi square*. Values of $p<0.05$ were considered significant. The study was explained to the patients, and permissions from participants were sought by informed consent, while confidentiality and anonymity were assured. Participants had the right to withdraw from the study at any time. The study has been approved to be established by Ethics Commission of Health Research and Development Sint Carolus School of Health Science.

4. Result

Table 1 presents the characteristics of two groups. Majority of mothers are in the young adult age range (70%) with secondary education (46.7%) and do not work (88.3%). Majority of mothers have children aged 24-35 months (51.7%), female (53.3%) with severe stunting (63.3%).

Table 1: Participants' Characteristic (n=60)

No	Demographic variables	Experimental Group (n=30)		Control Group (n=30)		Total (n=60)
		F	%	F	%	n (%)
Mother's characteristics						
1	Age					
	Young adult	23	76,7	19	63,3	42 (70%)
	Middle adult	7	23,3	11	36,7	18 (30%)
2	Educational status					
	Primary	8	26,7	18	60	26 (43,3%)
	Secondary	17	56,7	11	36,7	28 (46,7%)
	University	5	16,6	1	3,3	6 (10%)
3	Occupation status					
	Work	3	10	4	13,3	7 (11,7%)
	No work	27	90	26	86,7	53 (88,3%)
Children's characteristics						
4	Age					
	12-23 months	5	16,7	6	20	11 (18,3%)
	24-35 months	16	53,3	15	50	31 (51,7%)
	36-47 months	3	10	4	13,3	7 (11,7%)
	48-59 months	6	20	5	16,7	11 (18,3%)
5	**Sex**					
	Male	13	43,3	15	50	28 (46,7%)
	Female	17	56,7	15	50	32 (53,3%)
6	**Nutritional status**					
	Stunting	10	33,3	12	40	22 (36,7%)
	Severe stunting	20	66,7	18	60	38 (63,3%)

Table 2 infers the nutrition parenting in experimental group improve in a positive way. Nutrition Parenting in the intervention group reflects a significant difference with the p value 0,029 ($p<0,05$). Whereas, nutrition Parenting within the control group does not show any significant difference with p value 0,414.

Table 2: Difference Pre and Post Nutrition Parenting (n=60)

Variable	Experimental Group (n=30)			Control Group (n=30)		
	Not Good	Good	p value	Not Good	Good	p value
Before	17	13	0,029	18	12	0,414
After	8	22		20	10	

Table 3 reflects difference analysis nutrition parenting between two groups. It is found there is no significance difference of nutrition parenting between Experimental and control group with the p value 0,559 (p value >0,005)

Table 3: Difference between post test of parenting style

Variable	Group	Not Good	Good	p value
Difference parenting style	Control Group	20	10	0,559
	Experimental Group	8	22	

5. Discussion

The results showed that there were significant differences in nutrition parenting before and after nutrition education, namely in the form of increased nutrition parenting. This shows that nutrition education has been given an influence on changes in parenting style in fulfilling nutrition. Result in this study similar with Samnil (2017) that conclude there is an affect of nutrition education with group discussions on eating, psychosocial, hygiene and sanitation patterns [12]. Another study conducted by Azria and Husnah (2016) explained that there was an increase in maternal behavior and knowledge about balanced nutrition after health education [22]. Previous study shows that there is an effect of education on knowledge and prevention stunting [23] Education is part of health education that are needed as an effort to increase knowledge and awareness in addition to knowledge of attitudes and actions [24]. Education may result in a wide range of favorable behavior - mostly related to childcare, which may play a role in improving child health [25]. Moreover some South Asian studies found that greater household decision-making power among women is conducive for child health and nutrition [26, 27]. Based on the differences in nutrition parenting between the two groups, it was seen that greater increase in nutrition parenting in the intervention group but there was no significant difference between two groups. Health education can help people to control their own health by influencing, enabling and reinforcing decisions or actions in accordance with their own values and goals that are oriented towards changing individual behavior and attitudes [24].

6. Conclusion

It can be concluded that there was an increase in nutrition parenting after nutrition education. Thus nutrition education could be used as an alternative intervention to improve health behavior in preventing stunting.

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