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Research

Feeding Practice with Preventing Stunting on *Keluarga Harapan* Program Recipients in Pangkajene and Islands Districts

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ABSTRACT

Background: Stunting is a condition where toddlers are shorter in length and height than their age. Percentage of stunting children in Pangkajene and Islands Districts with the highest percentage of 29.10% and the number of PKH recipients in 2019 as many as 16,498. The purpose of this study was to determine the relationship between Feeding Practice and the incidence of stunting on Keluarga Harapan Program recipients in Pangkajene and Islands Districts.
Subjects and Method: The type of research used is observational with a cross sectional study design. The independent variable in this study is stunting and the dependent variable are feeding practice, Low Birth Weight and Economic status. The research location was carried out in Pangkajene and Islands Districts. The population in this study was all infants or toddlers from PKH recipient parents in Pangkajene and Islands Districts as many as 2,946 people in 2019 - 2021. The research sample was infants or toddlers from PKH parents who had participated in the Family Development Session as many as 71 people with the purposive method sampling. Primary data was collected using a questionnaire while secondary data was obtained from the social service of Pangkajene and Islands Districts. This study using the chi square test.
Results: Incidence of stunting was higher in respondents with irregular feeding practice than in regular feeding practice (OR=0.54; CI 95% 0.33 to 0.91; p=0.024). The incidence of stunting was higher at low birth weight compared to toddlers with normal birth weight (OR= 0.41; CI 95% 0.23to 0.73; p = 0.001). The incidence of stunting is higher in economic status below the provincial minimum wage < Rp. 3,103,800 compared to economic status > Rp. 3,103,800 (OR = 2.25; CI 95% 1.16 to 4.38; p=0.01).
Conclusion: Low economic status has a risk of 2.252 times experiencing stunting.

Keywords: feeding practice, low birth weight, stunting

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BACKGROUND

Stunting is a condition in which toddlers are shorter in length and height than their age. One of the targets of the Sustainable Development Goals (SDGs) is to reduce the stunting rate by 40% by 2025, which is the second sustainable development goal to eliminate hunger and malnutrition and achieve food security by 2030. Socio-economic status and educational status of fathers and mothers are related with the family's ability to provide highly nutritious food, especially protein sources to prevent stunting. Consuming growth milk (GUM) can prevent stunting in

children in Indonesia (Sjarif et al., 2019).

A study found that the high prevalence of stunting (21.1%), underweight (15.4%) and wasting (3.6%) in children required interventions that focused on improving nutrition and education (Wasihun et al., 2018). Individuals with or without intellectual disability can be used to estimate a child's visual logical reasoning and identify stunting risk factors associated with poor cognitive development and dementia risk later in life (Togas et al., 2020). According to Habimana et al. (2019) stated that the main factors of stunting in children under 5 years in the Eastern and Western provinces of Rwanda are nutrition, child sex, child's age, place of residence, mother's education, source of drinking water, maternal age, mother's job, duration of breastfeeding, household wealth index and toilets together (Habimana and Biracyaza, 2019).

The percentage of stunting under five in the world, 55% comes from Asia and 39% comes from Africa. Of the 83.6 million stunted children under five in Asia, 58.7% came from South Asia and 0.9% came from Central Asia. Indonesia is the third country with the highest prevalence of stunting in the Southeast Asia/South-East Asia Regional (SEAR) region of 36.4% based on WHO data (Kemenkes RI, 2018).

Factors associated with stunting in Indonesia are low birth weight, low parental height, low maternal education, higher family members, male sex, living in urban areas and low sanitation. Stunting that occurs before the age of 2 years causes low cognitive abilities and academic achievement (Gunardi et al., 2017). The target of stunting prevalence in children under five in Indonesia in 2020 is 24.1%. From 34 provinces, it was shown that from 11,499,041 children under five whose nutritional status was measured based on height for age, it was found that 11.6% of children under five experienced stunting and this result exceeded the predetermined target. The percentage of stunted children in the province of South Sulawesi is 23.22% and Pangkajene and Island District with the highest percentage of 29.10% (Kementerian Kesehatan RI Badan Penelitian dan Pengembangan, 2019).

The 2019 data is 15.10%, with the number of families receiving the Keluarga Harapan Program (PKH) as many as 16,498 and Non-Cash Food Assistance (BPNT) as many as 23,966 in Pangkajene and Islands districts. PKH is a poverty alleviation program known as Conditional Cash Transfers (CCT) that makes a significant contribution to the priority goals of public health, particularly in health services, maternal and child health, and health equity. Innovation from the Ministry of Health and the Ministry of Social Affairs in overcoming health problems for the poor in Indonesia with the Family Development Session (FDS) educational intervention for PKH participants which aims to provide a stimulus to change the behavior of the poor, especially in eradicating stunting. The purpose of this study was to determine the relationship between Feeding Practice and the incidence of stunting on Keluarga Harapan Program recipeents in Pangkajene and Islands Districts.

SUBJECTS AND METHOD

1. Study Design

The type of research used is observational with a cross sectional study design. The research location was carried out in Pangkajene and Islands Districts

2. Population and Sample

The population in this study was all infants or toddlers from PKH recipient parents in Pangkajene and Islands Districts as many as 2,946 people in 2019 - 2021. The research sample was infants or toddlers from PKH parents who had participated in the Family

Development Session as many as 71 people with the purposive method sampling.

3. Study Variables

The independent variable in this study is stunting and the dependent variable are feeding practice, Low Birth Weight and Economic status.

4. Operational Definition of Variables

Stunting in this study is a condition experienced by toddlers when height measurements show at <=-2.0 height-for-age z-score. Feeding practice is an action taken by parents in fulfilling nutrition from the food consumed by the child according to his age based on the type of food consumed, the amount of food consumed, and the child's eating schedule. LBW is a toddler's weight at birth below 2,500 grams. Economic status is the income of parents who are below the provincial minimum wage standard of 3,103,800 rupiah.

5. Study Instruments

The instrument used in this study was a questionnaire. Stunting data for PKH recipients was obtained from the social services of the Pangkajene and Islands districts. Data on feeding practice, history of LBW and family economic status were obtained based on the results of observations and information from respondents.

6. Data analysis

The statistical test used to determine the relationship between the dependent variable and the independent variable by looking at the chi-square value. Variable with $p < 0.05$ means that it has a relationship with the incidence of stunting.

7. Research Ethics

Research ethical issues including informed consent, anonymity, and confidentiality, were addressed carefully during the study process.

RESULTS

1. Sample Characteristics

Based on table 1, it can be seen that of the 71 respondents, 50.7% were stunted and 49.3% were not stunted. In the variable feeding practice, 46.5% of respondents with good feeding practice and more than half (53.5%) with sufficient feeding practice, 45.1% of respondents with a history of LBW 2,500g and as many as 54.9% with a history of LBW <2,500g. In addition, the economic status of the family is more than half below the provincial minimum wage (64.8%) and 35.2% with income above the provincial minimum wage.

Table 1. Distribution of Stunting, Feeding Practice, Low Birth Weight, and Economic Status among Keluarga Harapan Program Recipients in Pangkajene and Islands District

Research Variable	N	%
Stunting		
Yes	36	50.7
No	35	49.3
Feeding Practice		
Regular	34	47.9
Irregular	37	52.1
Low Birth Weight		
≥2,500 grams	32	45.1
<2,500 grams	39	54.9
Economic Status		
< Rp 3,103,800	46	64.8
≥ Rp 3,103,800	25	35.2

2. Bivariate Analysis

Based on table 2, it can be seen that the incidence of stunting is more in respondents with irregular feeding practice (66.7%) compared to regular feeding practice (33.3%) with p= 0.024. The incidence of stunting was more in respondents with LBW <2,500g (75.0%) compared to LBW ≥2,500g (25.0%) with a p= 0.001. The incidence of stunting is more in respondents with economic status < Rp 3,103,800 (80.6%) compared to economic status ≥Rp 3,103,800 (19.4%) with a p= 0.010. The results of statistical test analysis of each variable obtained p <0.05, thus Ho is rejected or it can be concluded that feeding practices, low birth weight and family economic status are related to stunting. However, low economic status is 2.252 times the risk of stunting compared to economic status above the provincial minimum wage.

Table 2. Relationship between Feeding Practice, LBW and Economic Status with Stunting Incidence in Recipients of the Keluarga Harapan Program in Pangkajene and Islands Districts.

Independent Variable	Stunting				Total		OR 95% CI	p
	Yes		No					
	n	%	n	%	n	%		
Feeding Practice								
Regular	12	33.3	22	62.9	34	100	0.54 (0.33-0.91)	0.024
Irregular	24	66.7	13	37.1	37	100		
Low Birth Weight								
≥ 2,500 g	9	25.0	23	65.7	32	100	0.41; (0.23-0.73)	0.001
< 2,500 g	27	75.0	12	34.3	39	100		
Economic Status								
< Rp 3,103,800	29	80.6	17	48.6	32	100	2.25; (1.16-4.38)	0.010
≥ Rp 3,103,800	7	19.4	18	51.4	39	100		

DISCUSSION

Keluarga Harapan Program (PKH) is a poverty alleviation program known as Conditional Cash Transfers (CCT) that makes a significant contribution to the priority goals of public health, particularly in health services, maternal and child health, and health equity. Innovation from the Ministry of Health and the Ministry of Social Affairs in overcoming health problems for the poor in Indonesia with the Family Development Session (FDS) educational intervention for PKH participants which aims to provide a stimulus to change the behavior of the poor, especially in eradicating stunting. Family Development Session (FDS) is a structured learning and empowerment process for the community to strengthen the behavior change of beneficiary families in the fields of health, education, economy and family welfare.

FDS empowerment materials in the health sector are about nutrition, services for pregnant and lactating women, infant and adolescent services, feeding practice, clean and healthy living behavior. In the field of education, among others, about being great parents, understanding early childhood behavior and learning, improving children's good behavior, playing as a way for children to learn, improving children's language skills, helping children succeed in school. In the field of economics on how to manage family finances, savings and credit, micro, small and medium enterprises, entrepreneurship and marketing. In the field of child protection regarding child protection, children's rights, including children with special needs, prevent domestic violence.

The practice of feeding is identical to the amount, type and frequency of children's food. Complementary feeding is started at 6-23 months. Inappropriate complementary feeding practices can result in poor nutrition (Baye et al., 2020). Child feeding and complementary feeding practices should focus on the first 1,000 days of life (Nsereko et al., 2018). Complementary foods should be diverse and have high nutritional value and are easily accessible for all people (Baye et al., 2020). Feeding practices greatly affect the nutritional development of children. To assess appropriate feeding practices WHO recommends using eight core indicators of infant and child feeding (PMT), namely early initiation of breastfeeding. Exclusive breastfeeding for six months; continue breastfeeding at one year; introduction of solid, semi-solid, or soft foods; minimum food diversity; minimum feeding frequency; acceptable minimum diet; and consumption of iron-rich or iron-fortified foods (Mya et al., 2019).

Community-based health education in urban to rural areas in China prioritizes exclusive breastfeeding, feeding practices and MCH assistance. In addition, infectious diseases and feeding practices are factors that can affect children's physical and mental development (Liang et al., 2018). Malnutrition can occur due to food shortages, limited access to balanced nutrition for both mother and child, and child feeding practice (Wasihun et al., 2018).

In this study, it was found that diet was related to the incidence of stunting in recipients of the Keluarga Harapan Program in Pangkajene and Island District with a p= 0.024. This is the same as research Briaux et al. (2020) there is no significant impact on children's feeding practices but food diversity is associated with child development (p= 0.031) (Briaux et al., 2020). Suboptimal feeding practices in childhood are one of the main causes of stunting in children in South Asian countries. Ocialization to pregnant women, the provision of iron-folate and calcium supplementation during pregnancy and lactation is very necessary in antenatal and postnatal health care services (Mistry etal., 2019). In the period of complementary feeding, children consume small amounts of food, given their small gastric capacity. Therefore, complementary foods must have a high nutrient density with the amount of each nutrient per 100 kcal of food to support optimal physical growth and brain development (Aguayo, 2017).

In contrast to the study of Briaux et al. (2020) which found that there was no significant impact of the practice of feeding children with stunting (p = 0.031). The research of Novitasari et al. (2020) also found that there was no relationship between maternal feeding practices and stunting in children in Depok (p>0.05). This is because most mothers pay less attention to signs of hunger, provide food that is not in accordance with the tastes expected by the child, and encourage children to eat a lot or limit their food (Novitasari and Wanda, 2020).

In this study, it was found that the economic status of the family was related to the incidence of stunting in the recipients of the Keluarga Harapan Program in Pangkajene and Islands District with a p value of 0.001. Soekatri et al. (2020) showed the overall prevalence of stunting was 31.4%. Indonesia's high prevalence of stunting is also associated with parental education, socioeconomic status and child morbidity (Soekatri et al., 2020). Father's education and household socioeconomics also affect children's health, nutrition and medical care outcomes. Access to clean water, drinking water and good sanitation can reduce overall child morbidity, stunting, and mortality caused by infectious diseases in children (Vikram and Vanneman, 2019).

A study conducted in Ethiopia found that the prevalence of stunting, underweight and wasting is very high. So that maximum handling is needed in over-coming malnutrition in children and the economic status of the family (Abdulahi et al., 2017).

Strengthening health systems in the East and West provinces is needed to improve maternal and child health by tackling poverty and increasing access to food. The household wealth index of stunting children in the eastern and western provinces shows (33.21%) stunting children were born from the poorest families in the western provinces while in the eastern provinces the majority (24.22%) stunting children were born from poor households. From stunting children in East and West provinces and most of them were born to mothers with basic education (Habimana and Biracyaza, 2019). Poverty eradication, women's education, and nutriation programs for households are important strategies in overcoming malnutrition in children. Socio-economic factors and nutritional status of parents are the main factors causing stunting ($p< 0.001$) (Li et al., 2020).

In this study, it was found that low birth weight was associated with stunting in the recipients of the Keluarga Harapan Program in Pangkajene and Island District with $p= 0.010$. Beal et al. (2018) stated that children born to short mothers, low education, low birth weight and living in poverty are factors that can cause stunting in Indonesia (Beal et al., 2018). The prevalence of underweight (37%) in the study area was very high. Differences in the nutritional status of children are caused by socio-economic factors, children's eating habits, environmental hygiene, and cultural differences between communities (Nikièma et al., 2017). Women with poor nutrition and poor health care are more likely to give birth to children with low birth weight. it is also strongly related to the socioeconomic status of the mother's family (Vikram and Vanneman, 2019). Those with LBW have a much higher chance of experiencing stunting 1.72 times. LBW is a strong predictor of the three malnutrition indexes (Ntenda, 2019). The risk of giving birth to a LBW baby was found to be significantly higher for mothers living in rural areas than in urban areas due to differences in their respective lifestyles (Mehare and Sharew, 2020). In addition, overweight children were three times more likely to be stunted than normal weight children (OR: 3.21; CI 95% 1.50 to 6.90).

Feeding practice, family income and a history of low birth weight have a relationship with the incidence of stunting in Pangkajene and the islands. But of the three, family income has a very large risk of 2,252 times the incidence of stunting. A high level of income affects the quality and purchasing power of foodstuffs in the family.

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CONFLICT OF INTEREST

We declare that there is no conflict of interest in the process of this research

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