

Nutrition Awareness: Family Practices In Indonesian Borderland

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Poor family nutritional practice is one of the major leading causes of stunting in children aged 0-59 months. Good family nutrition practices are one of the primary keys to prevent stunting. It can also reduce the prevalence of stunting and the impact it has on families, which are included in the category of stunting risk families. This study aimed to investigate nutrition-aware family practices at Haliwen Health Center, A6mbua-one of the border areas of the Republic of Indonesia (RI) and Democratic Republic of Timor Leste (DRTL). This is a descriptive study with a cross-sectional design, conducted at the Haliwen Health Center, Belu Regency, East Nusa Tenggara Province, Indonesia. A total of 147 families with children aged 0-59 months, were selected by purposive sampling. Most mothers (60%) gave exclusive breastfeeding to infants aged 0-6 months, most mothers (78%) firstly gave complementary feeding to infants at the age of >6 months, most families (94%) ate a variety of nutritional sources, most families (56%) used iodized salt, most infants (95%) aged 6-11 months and children 12-59 months received vitamin A supplements, most (88%) pregnant women received iron supplement at least 90 tablets during pregnancy, most postpartum mothers (72%) received two capsules of vitamin A supplements. 58.5% of families at the Haliwen Health Center had implemented >75% nutrition-aware family indicators. However, none of them had performed 100% nutrition-aware family indicators. Sustainable assistance needs to be improved to reach 100% nutrition-aware family implemented in all families.

Keywords: Nutrition-aware Family, Stunting, Borderland

INTRODUCTION

Good family nutrition practices are one of the primary keys to prevent stunting. In addition, it can also reduce the prevalence of stunting and the impact it has on families, which are included in the category of stunting risk families.

Globally, the prevalence of stunting has decreased. However, stunting is still a major nutritional problem in poor and developing countries such as Indonesia. Good family nutrition practice becomes one of the main keys to reducing stunting prevalence and its impacts. According to the Ministry of Health of the Republic of Indonesia, in 2018, the stunting rate in Indonesia was 30.8%. This number is spread across all provinces in Indonesia. The results of national basic health research showed that the province with the highest prevalence of stunting in Indonesia is East Nusa Tenggara Province, with a stunting majority of 51.7% in 2013, decreasing to 42.6% in 2018, and increasing to 43.8% in 2019. According to the secondary data form Health Office of East Nusa Tenggara Provinsi, the prevalence of stunted children in Belu regency in 2019, 2020, and 2021 are 22.3%, 21.2%, and 17.9% respectively. This figure is still far from the 14% reduction target set by the Ministry of Health of the Republic of Indonesia.

The focus of stunting reduction interventions in Indonesia has been recently stipulated in Presidential Regulation Number 72 of 2021, namely family-based interventions. This means that the intervention focuses on changing behavior and practices for families at risk of stunting. Those included in the category of stunting risk families are families who have teenage girls, pregnant women, postpartum mothers, babies aged 0-6 months, and toddlers. This improvement needs to be done to gain optimal nutritional status.

Optimal nutritional status is a requirement for the formation of quality human resources. Children who experience stunting can cause various negative impacts such as impairment in brain development, low learning abilities, and long-term impairment such as an increased risk of poor health status, short adult stature and is linked with high risk of developing degenerative disorders like diabetes mellitus and hypertension. Adult obesity is also proven to be long term impact of childhood stunting.

Stunting is caused by various factors such as low-income family parenting practices, poor access to health services, economic socio-cultural factors, poor environmental sanitation, and lack of family access to nutritious food. Multifactor causes stunting, but family health practices determine the nutritional status of children under five.

Various research results report that stunting is mostly caused by a lack of family awareness of imbalance nutrition in the first 1,000 days of life. For people in border areas, this problem is worsen by poverty, low educational status, and low family income.

This study is essential to support the regional action plan to accelerate stunting reduction in Belu Regency. This is because the study of family nutrition practices can be used as a reference in policy formulation. In addition, this study can provide family-based interventions in the context of accelerating stunting reduction.

This study aimed to investigate the practice of nutrition-aware families in Haliwen Health Center, Belu Regency, the border areas of the Republic of Indonesia (RI) and Democratic Republic of Timor Leste (DRTL).

6 METHODS

This is a descriptive study with a cross-sectional design. This study was conducted on 147 families with children aged 0-59 months at the Haliwen Health Center, Belu Regency, East Nusa Tenggara Province, Indonesia.

The study was conducted from September to October 2021. The sample selection began with selecting a village in the working area of the Haliwen Health Center, which had the highest stunting cases in Kakuluk Mesak District and obtained 9 Posyandu in Kabuna Village in the active site of the Haliwen Health Center. In Indonesia language, Posyandu is an acronym which stands for Pos Pelayanan Terpadu. Posyandu is integrated service post which provide an integrated essential health service in maternal and child health, including nutrition, family planning, vaccine and disease control. The posyandu was selected in Kabuna village by stratified random sampling, and five posyandu were selected, namely Manubaun, Weraihenek 1, Weraihenek 2, Haliwen, and Bautasik.

$$n_i = \frac{N_i}{N} \times n$$

$$\text{Stratum Sampel Size} = \frac{\text{Group Size (Stratum)}}{\text{Population Size}} \times \text{Sampel Size}$$

$$\begin{aligned}\text{Posyandu Manubaun} &= \frac{54}{235} \times 147 = 34 \\ \text{Posyandu Weraihenek 1} &= \frac{33}{235} \times 147 = 21 \\ \text{Posyandu Weraihenek 2} &= \frac{37}{235} \times 147 = 23 \\ \text{Posyandu Haliwen} &= \frac{85}{235} \times 147 = 53 \\ \text{Posyandu Bautasik} &= \frac{26}{235} \times 147 = 16\end{aligned}$$

Figure 1. Stratified Random Sampling Formulas

The sample in this study were 147 family members, selected by purposive sampling from a total population of 235 people spread over five selected posyandu. The single variable in this study was the practice of nutrition-aware family determined by the Ministry of Health of the Republic of Indonesia (Departemen Kesehatan RI, 2008) with modified indicators as follows: (1) exclusive breastfeeding for infants aged 0-6 months; (2) the age of the toddler given complementary feeding; (3) family and toddlers eat a variety of nutritional sources; (4) the family uses iodized salt; (5) infants aged 6-11 months and children 12-59 months received vitamin A supplements; (6) pregnant women receive at least 90 iron tablets during pregnancy; (7) postpartum mothers receive two capsules of vitamin A supplements.

Data were collected by a set questionnaire containing 7 nutrition-aware family indicators. The data collection process takes into account the rules and ethics of research. It is done by providing information and consent through the signing of informed consent. Respondents involved in this study

expressed their willingness before filling out the questionnaire. Data were analyzed by univariate analysis to describe the number and percentage of each indicator of a nutrition-aware family.

RESULTS AND DISCUSSION

Table 1. The result of family characteristics

No.	Family Characteristics	n	%
1.	Mother's age (years old)		
	15 - 25	144	29.9
	26 - 35	82	55.8
	36 - 46	21	14.3
2.	Mother's education level		
	Uneducated	17	11.6
	Primary School	40	27.2
	Junior High School	17	11.6
	Senior High School	51	34.7
	Higher Education	22	15
3.	Mother's Employment Status		
	Unemployment	102	69.4
	State Employee (PNS/TNI/POLRI)	3	2
	Farmer	22	15
	Trader	5	3.4
	Private Employee	15	10.2
4.	Husband's Employment Status		
	Unemployment	12	8.2
	State Employee (PNS/TNI/POLRI)	4	2.7
	Farmer	89	60.5
	Trader	8	5.4
	Private Employee	34	23.1
5.	Family Income		
	≤ IDR 1.950.000	117	79.6
	> IDR 1.950.000	30	20.4

Table 1 shows that most mothers (55.8%) are at the range of 26 – 35 years old, and most mothers (34.7%) has attended Senior High School. Most mothers (69.4) are unemployment. The data about Husband's employment status also shows that most Husbands (60.5%) are farmers. These conditions reflected in family income. The data shows that most of families (79.6) earn ≤ IDR 1.950.000 of monthly income.

The results of the univariate analysis of nutrition-aware family indicators

Table 2. The distribution of Nutrition-Aware Family Indicators

No.	Nutrition-Aware Family Indicator	Yes		No	
		n	%	n	%
1.	Exclusive breastfeeding for babies aged 0-6 months	88	60	59	40
2.	Infants receive complementary feeding at the age of > 6 months	114	78	33	22
3.	Families and children eat a variety of nutritional sources	138	94	9	6
4.	Families use iodized salt	82	56	65	44
5.	Infants aged 6-11 months and children 12-59 months receive vitamin A supplements	140	95	7	5
6.	Pregnant women get at least 90 iron tablets during pregnancy	130	88	17	12
7.	Postpartum mothers get two capsules of vitamin A	106	72	41	18

Table 2 showed that most mothers (60%) gave exclusive breastfeeding to infants aged 0-6 months. Most mothers (78%) firstly gave complementary feeding to infants at the age of >6 months, most families and children (94%) a variety of nutritional sources, most families (56%) used iodized salt, most (95%) infants aged 6-11 months and children 12-59 months received vitamin A supplements, most (88%) pregnant women received iron tablets at least 90 tablets during pregnancy, most postpartum mothers (72%) received two capsules of vitamin A supplements.

The result of the univariate analysis of nutrition-aware family practice

Table 3. The distribution of Nutrition-Aware Family Practices

No.	Nutrition-aware family practice	n	%
1.	Poor ($\leq 75\%$)	61	41.5
2.	Good ($>75\%$)	86	58.5
	Total	147	100

Table 3 showed that 58.5% of families had performed >75% nutrition-aware family indicators at Kabuna Village. Kabuna is the working area of the Haliwen Community Health Center (Puskesmas). Kabuna is a village, located in Belu District, which is one of the border areas between Indonesia and East Timor. This study shows the characteristics of border communities, especially mothers, most of whom have completed high school education but there are still mothers who have never attended formal education. This has an impact on the type of work done. The data shows that more than half of the mothers involved in this study were unemployed. The job in question is a type of work that makes money. This is not supported optimally by husbands, most of whom have a livelihood as farmers. This condition causes a lack of income that can be generated to support family life, including health matters, and fulfill family nutrition adequacy. Low income also has an impact on poor nutrition practices in the family.

This study shows the practices of Kadarzi. Kadarzi is an acronym which stands Keluarga Sadar Gizi. Kadarzi means nutrition-aware family, is a program initiated by the Ministry of Health of the Republic of Indonesia as one of the solutions to the nutritional problem in Indonesia. A Nutrition-aware Family is a family that can recognize, prevent, and overcome nutritional problems in every member of their family.

The results showed that most mothers gave exclusive breastfeeding to infants aged 0-6 months. Exclusive breastfeeding means only breast milk without additional food until six months. Exclusive breastfeeding is proven to be effective in reducing the risk of stunting. Breast milk contains carbohydrates, water, fat, protein, and essential nutrients that contribute to the growth and development of toddlers.

Giving the complementary feeding to children >6 months contributes to the growth and development of toddlers. At the age of >6 months, breast milk cannot meet children's daily nutritional needs. The results of previous studies reported that toddlers who complementary feeding at the age of >6 months showed a lower risk of stunting. Contrarily, giving complementary feeding at the age of <6 months may have a negative impact because the digestive system of babies <6 months is still not perfect, so it disturbs the absorption of the nutrients.

The results showed that most families and toddlers ate a variety of nutritional sources. They are consuming various sources of essential nutrients to maintain body functions. Children under five is a golden period. It is the most important stage of growth and development, where the brain and physical growth occurs rapidly. Lack of nutritional intake at this age will impact growth failure and is irreversible, so adequate nutrition is needed to support children's growth.

Another factor that impacts stunting is the consumption of iodized salt. The results of this study showed that most families consume iodized salt. Iodine is an important micronutrient that plays an important role in synthesizing the hormone thyroxine by thyroid gland. Thyroxine hormone plays a role in metabolic control and growth processes, so iodine deficiency will interfere with the growth process of toddlers. Previous findings proved that the lack of consumption of iodized salt increased the

risk of stunting in children under five by 3%. The absence of iodine in food had an impact on the growth failure of children.

One of the micronutrients that play a role in the childrens' growth is vitamin A. Most infants aged 6-11 months and children age 12-59 months have received vitamin A supplements. Vitamin A plays a role in metabolic processes, but the body itself does not produce vitamin A. Vitamin deficiency can cause growth failure manifested by stunting. The results of previous studies had proven that vitamin A deficiency is a determinant of stunting in toddlers.

Maternal factors also play a role in causing stunting, especially during the pregnancy process. This study showed that most pregnant women received at least 90 iron tablets during pregnancy. Iron tablet supplementation was significantly associated with a reduced risk of stunted and severe stunted in children. A study in South Asia showed that receiving supplemented iron tablets earlier in pregnancy increased the growth of toddlers living in poor and developing countries.

Vitamin A supplementation of as much as two capsules in postpartum mothers is also one of the determinants of reducing stunting in toddlers. The only source of nutrition for infants aged 0-6 months is breast milk, so mothers with vitamin A deficiency will not be able to provide enough food for their babies. It will impact growth failure that will be seen at the age of toddlers.

CONCLUSIONS

This study showed that most families had implemented nutrition-aware family indicator. However, none of them had performed 100% nutrition-aware family indicators. The efforts to assist and promote health at the Haliwen Health Center need to be improved so that the nutrition-aware family indicator can be 100% implemented by all families.

This was a descriptive study. Continuous research needs to be conducted in order to get the complex situations and to analyze the determinant factors of nutrition-aware family practices in Indonesian borderland area.

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