Factors Affecting The Implementation of Balanced Nutrition in Toddlers in Sisumut Village, Kotapinang District, Labuhan Batu Selatan Regency

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ABSTRACT

Background: Nutritional problems are issues that occur throughout every stage of life, starting from the womb (fetus), infancy, childhood, adulthood, to old age. The aim of this study was to analyze the factors influencing the application of nutrition-conscious principles at the household level on the nutritional status of children under five.
Methods: This research was an analytic survey with a cross-sectional study design. The study was conducted in Sisumut Village, Kota Pinang Subdistrict, South Labuhan Batu Regency, using a total sampling technique involving 50 mothers with children under five. Data were analyzed using chi-square and logistic regression tests.
Results: The study found that the application of balanced nutrition was influenced by knowledge ($p = 0.020$), attitude ($p = 0.012$), economic status ($p = 0.000$), dietary restrictions ($p = 0.000$), and health worker counseling ($p = 0.000$).
Conclusion: It is concluded that the application of balanced nutrition is influenced by factors such as knowledge, attitude, economic status, dietary restrictions, and counseling by health workers. Therefore, it is expected that pregnant women and families can allocate time to attend nutrition counseling provided by health workers to enhance maternal knowledge on how to address undernutrition issues, as well as regularly seek information on good nutrition for toddlers.
Keywords: Balanced Nutrition Implementation, Under-Five Children

INTRODUCTION

Nutritional problems in children under five are chronic issues that occur in many countries, especially in developing nations with low income levels both economically and socio-culturally (Fau, Nasution, and Hadi, 2019). According to data from the World Health Organization in 2015, nutritional problems are considered a major concern in global population health. Therefore, this issue has become one of the key points in the global agreement of the Sustainable Development Goals (SDGs), where each country is expected to gradually reduce the number of malnutrition or undernutrition cases to reach 15% by the year 2030 (Organization, 2015).

In the National Medium-Term Development Plan (RPJMN) 2015–2019, the goals and targets of efforts to improve the nutritional status of the population were: 1) the prevalence of underweight in children under five reduced from 19.6% to 17.0%; 2) the prevalence of stunting (short and very short) in children under two years old decreased from 32.9% to 28.0%; 3) the prevalence of wasting in children under five reduced from 12% to 9.5%; 4) the prevalence of anemia in pregnant women decreased from 37.1% to 28.0%; and 5) the percentage of low birth weight (LBW) infants reduced from 10.2% to 8.0% (Nasional, 2014). Based on the 2017 Nutritional Status Monitoring (PSG) data, the prevalence of severe malnutrition in

Indonesia was 3.8%. Additionally, 14.0% of children experienced moderate malnutrition, while 80.4% had good nutrition and 1.8% were obese (Dasar, 2018). There was a significant increase of 8.1% in underweight (W/A) cases (both moderate and severe). Stunting cases also increased by 9.3%, which is far above the national average. Meanwhile, for obesity, nearly all districts and cities were categorized as having no problem or only mild problems (Dasar, 2018).

According to data from the Provincial Health Office of North Sumatra, the proportion of newborns receiving early initiation of breastfeeding (EIB) was 63.9%. Compared to PSG 2016 data, there was a decrease in EIB coverage. The proportion of infants exclusively breastfed under 5 months of age was 46.5%. Compared to PSG 2016 (59%), this shows a decrease of 2.5%. The proportion of toddlers receiving Vitamin A capsules was 97.2%, an increase of 6.7% compared to PSG 2016 (93.5%). The proportion of toddlers receiving the Maternal and Child Health (MCH) book was 88.8%, an increase of 0.7% compared to PSG 2016 (88.1%). The proportion of toddlers weighed more than 4 times in the past 6 months was 81.3%, an increase of 13.9% from PSG 2016 (67.4%). The proportion of underweight toddlers receiving supplementary feeding was 45.5%, a significant increase of 26.5% compared to PSG 2016 (19.0%) (Utara, 2017).

Given the magnitude of nutritional and health problems, as well as the variation in contributing factors across regions, a comprehensive and integrated program is needed at the district, provincial, and national levels (Anto, Hamalding, and Marhtyni, 2017). The implementation of Balanced Nutrition Guidelines at the household level is expected to contribute to health development in particular, and to community development in general. Nutritional problems occurring at the family level are closely related to family behavior (Hariyadi and Ekayanti, 2012). The implementation of Balanced Nutrition Guidelines at the household level was initiated with the aim of enabling families to recognize, prevent, and overcome nutritional problems at the family/household level through behaviors such as regular weight monitoring, consuming a diverse diet, cooking with iodized salt, and consuming micronutrient supplements as recommended (Indonesia, 2018).

Balanced Nutrition Guidelines have been introduced and disseminated to the public. The results of a scientific review presented in the 2015 Academic Manuscript indicate that there are numerous issues and obstacles in the dissemination of balanced nutrition, resulting in the expectation of changing community nutritional behavior towards balanced nutrition not being fully achieved. Food consumption remains unbalanced in both quantity and quality, and clean and healthy living behaviors are still inadequate (Indonesia, 2018).

Based on a preliminary survey conducted by the researchers in Kota Pinang Subdistrict, South Labuhan Batu Regency in 2019, by weighing 10 children under five, it was found that 6 of them had weight-for-age measurements below the red line, indicating undernutrition status. Through interviews with the mothers of these children, it was revealed that only 4 mothers implemented balanced nutrition guidelines at home, while the other 4 admitted not practicing these guidelines. In general, nutritional adequacy in most households in Kota Pinang Subdistrict, South Labuhan Batu Regency, remains low. The aim of this study is to analyze the factors influencing the implementation of balanced nutrition in children under five in Sisumut Village, Kota Pinang Subdistrict, South Labuhan Batu Regency.

MATERIALS AND METHOD

This research employed a quantitative study design with a cross-sectional approach. The study was conducted in

Sisumut Village, Kota Pinang Subdistrict, South Labuhan Batu Regency, in 2019. The data collection period spanned from January 17 to February 27, 2019. The population consisted of all mothers with children under five in the Sisumut area, totaling 129 individuals. A purposive sampling technique was used, with a sample size of 50 mothers. The survey data were analyzed using Chi-Square tests and logistic regression.

RESULTS

Table 1. Distribution of Respondent Characteristics in Sisumut Village, Kota Pinang Subdistrict, South Labuhan Batu Regency

Age (Year)	n	%
17-25	8	16,00
26-35	19	18,00
36-45	23	46,00
Education Level		
Elementary School (SD)	2	4,00
Junior High School (SMP)	11	22,00
Senior High School (SMA)	25	50,00
Higher Education (HE)	12	26,00
Occupation		
Housewife (IRT)	13	26,00
Farmer	9	18,00
Entrepreneur	15	30,00
Totak	**50**	**100**

Based on Table 1, it is known that out of 50 respondents, the majority were aged 36–45 years, totaling 23 respondents (46.0%). Meanwhile, 8 respondents (16.0%) were aged 17–25 years, and 19 respondents (38.0%) were aged 26–36 years. Regarding education level, most respondents had completed senior high school (SMA), accounting for 25 respondents (50.0%). Additionally, 12 respondents (24.0%) had a higher education degree, 11 respondents (22.0%) had completed junior high school (SMP), and 2 respondents (4.0%) had only completed elementary school (SD).

In terms of occupation, among the 50 respondents, the majority were self-employed (entrepreneurs), totaling 13 respondents (26.0%). The same number (13 respondents, 26.0%) were civil servants, and another 13 respondents (26.0%) were housewives. Meanwhile, 9 respondents (18.0%) worked as farmers.

Based on Table 2 below, it is shown that among the 50 respondents studied, most had low knowledge levels, accounting for 40 respondents. Among these 40 respondents, 12 (24.0%) had low knowledge but their children had good nutritional status, while 28 (56.0%) had low knowledge with children experiencing poor nutritional status. The results of the statistical test showed a significance value of $p = 0.020 < 0.05$, indicating that there is a significant relationship between knowledge and the application of balanced nutrition. Among the 50 respondents studied, the majority exhibited negative attitudes, totaling 32 respondents. Of these 32 respondents, 8 (16.0%) had a negative attitude while their children had good nutritional status, whereas 24 respondents (48.0%) had a negative attitude and their children had poor nutritional status. Based on the statistical test, the significance value was $p = 0.012 < 0.05$, indicating that there is a significant influence of attitude on the implementation of balanced nutrition in Sisumut Village, Kota Pinang Subdistrict, South Labuhan Batu Regency.

Among the 50 respondents, most had

low dietary restriction awareness, with a total of 35 respondents. Of these 35 respondents, 6 (12.0%) had dietary restrictions and their children had good nutritional status, while 29 respondents (58.0%) had dietary restrictions and their children had poor nutritional status. Based on the statistical test, the significance value was p = 0.000 < 0.05, indicating a significant influence of dietary restrictions on the implementation of balanced nutrition in children under five.

Out of the 50 respondents studied, the majority had received information from health worker counseling, totaling 37 respondents. Among them, 8 (16.0%) had received counseling and their children had good nutritional status, while 29 respondents (58.0%) had received counseling and their children had poor nutritional status. The statistical test result showed a significance value of p = 0.000 < 0.05, indicating that counseling by health workers significantly influences the implementation of balanced nutrition in children under five in Sisumut Village, Kota Pinang Subdistrict, South Labuhan Batu Regency, in 2019.

Table 2. Analysis of Factors Influencing the Implementation of Balanced Nutrition in Children Under Five in Sisumut Village, Kota Pinang Subdistrict, South Labuhan Batu Regency

Knowledge	Balanced Nutrition Implementation						p v*alue*
	Good		Poor		Total		
	n	%	n	%	n	%	
Good	7	14,0	3	6,0	10	100	0,020
Poor	12	24,0	28	56,0	40	100	
Total	19	38,0	31	62,0	50	100	
Sikap	**Balanced Nutrition Implementation**						**p v*alue***
	Good		**Poor**		**Total**		
	n	%	n	%	n	%	
Positive	11	22,0	7	14,0	18	100	0,012
Negative	8	16,0	24	48,0	32	100	
Total	**19**	**38,0**	**31**	**62,00**	**50**	**100**	
Food Restrictions	**Balanced Nutrition Implementation**						**p v*alue***
	Good		**Poor**		**Total**		
	n	%	n	%	n	%	
None	13	26,0	2	4,0	15	100	0,000
Present	6	12,0	29	58,0	35	100	
Total	**19**	**38,0**	**31**	**62,0**	**50**	**100**	
Ekonomi	**Balanced Nutrition Implementation**						**p v*alue***
	Good		**Poor**		**Total**		
	n	%	n	%	n	%	
High >Rp.2.500.000	15	30,0	6	12,0	21	100	0,000
Low <Rp.2.500.000	4	8,0	25	50,0	29	100	
Total	**19**	**38,0**	**31**	**62,0**	**50**	**100**	

Health Worker Counseling	Balanced Nutrition Implementation						p v*alue*
	Good		Poor		Total		
	n	%	n	%	n	%	
Good	11	22,0	2	4,0	13	100	0,000
Poor	8	16,0	29	58,0	37	100	
Total	**19**	**38,0**	**31**	**62,0**	**50**	**100**	

Based on Table 3 below, it can be seen that the logistic regression analysis identified five (5) variables that significantly influence the implementation of balanced nutrition in children under five, with p-values < 0.05. The variable with the strongest influence was socioeconomic status, with a significance value of 0.006 and an odds ratio (OR) of 15.449 (95% CI = 0.344–6.947). This indicates that families with low socioeconomic status are 15.449 times more likely not to implement balanced nutrition in children under five compared to families with higher socioeconomic status in Sisumut Village, Kota Pinang Subdistrict, South Labuhan Batu Regency.

Table 3. Multivariate Analysis of Balanced Nutrition Implementation

Variable	B	P *vlue*	Exp(B)OR	95%CI for Exp(B)
Knowledge	-0,681	0,031	0,506	0,022-11,697
Attitude	-17,272	0,999	0,000	0,000-0
Socioeconomic Status	2,738	0,006	15,449	0,344-6,947
Food Restrictions	4,609	0,035	10,408	1,377-1,706
Health Worker Counseling	-0,686	0,733	0,503	0,010-5,850

DISCUSSION

Knowledge enables individuals to absorb information and implement it in daily behavior and lifestyle. Several factors influence a person's knowledge in practicing healthy behavior, including age, education, and experience (Notoatmodjo, 2003). As individuals mature, their cognitive and functional capabilities develop, resulting in enhanced ability to think, learn, and act—thereby increasing knowledge. Similarly, a mother's knowledge in fulfilling her child's nutritional needs is often influenced by her educational level, which affects her role in preparing family meals, child-rearing, and caregiving (Sada, Hadju, and Dachlan, 2012).

According to the researchers' assumption, maternal knowledge plays a crucial role in determining behavior and skills related to daily food selection at the household level. An individual's level of nutritional knowledge significantly affects attitudes and behavior in food choices, which ultimately impacts the nutritional status of their toddlers.

Attitude reflects an individual's preference or aversion toward an object. Attitudes are often shaped through personal experiences or those of closely related individuals. Nutritional attitude refers to one's disposition toward nutritional values. However, a positive

attitude toward health values does not always manifest in concrete actions. This discrepancy can be attributed to various reasons, such as being busy with work, lack of time, never having received nutrition counseling, distance to access services, or adherence to inherited family eating traditions. Berdasarkan asumsi peneliti, sikap gizi yang baik akan menciptakan sikap positif seseorang dalam menyusun menu yang baik untuk dikonsumsi. Semakin banyak pengetahuan gizi ibu, maka ia akan semakin memperhitungkan jenis dan jumlah makanan yang diperolehnya untuk dikonsumsi oleh keluarganya. Keterampilan dalam memilih makanan dapat diartikan sebagai kecakapan yang dimiliki seseorang dalam memilih makanan mulai dari memilih menu sampai pada pola dan frekuensi makan khususnya balita(Fatmah and Nasution, 2012). Berdasarkan asumsi peneliti, keterampilan tersebut diharapkan dapat mempengaruhi tingkah laku seseorang, khususnya ibu dalam memilih makanan yang dikonsumsi sehari-hari agar dapat memenuhi kebutuhan dan kecukupan nutrisi keluarganya sehari-hari. Dari uraian yang dikemukakan diatas, maka pengertian pengetahuan dan keterampilan pemilihan makanan sehari-hari adalah kemampuan yang dimiliki ibu untuk mencukupi status gizi balita sehingga menghasilkan perubahan tingkah laku yang meliputi pengetahuan dan keterampilan dalam memilih makanan yang dikonsumsi sehari-hari. Apabila akses pangan ditingkat rumah tangga terganggu, terutama akibat kemiskinan, maka penyakit kurang gizi (malnutrisi) pasti akan muncul. Kemiskinan atau pendapatan keluarga yang rendah sangat berpengaruh kepada kecukupan gizi keluarga. Kekurangan gizi berhubungan dengan sindroma kemiskinan. Tanda-tanda sindroma kemiskinan antara lain berupa penghasilan yang sangat rendah sehingga tidak dapat mencukupi kebutuhan sandang, pangan, kualitas dan kuantitas gizi makanan yang rendah. Dalam penanganan status gizi anak, keluarga memiliki peran yang sangat penting hal ini dikarenakan di dalam lingkungan keluarga menjadi tempat bagi anak untuk memaksimalkan tumbuh kembangnya, serta memenuhi gizinya. Keluarga yang memiliki fungsi keluargayang baik dan memiliki ikatan emosional yang baik dapat menunnjang pertumbuhan dan perkembangan.

A child’s nutritional status is not only affected by helminth infections but also by several other factors, including poor personal hygiene, low parental knowledge, and individual demographic characteristics. In addition to these factors, the eating habits of school-aged children also play a significant role, particularly when breakfast and lunch are often consumed irregularly or in inappropriate settings. These habits can have adverse effects, such as decreased nutritional adequacy and weakened immune function (Hadi et al., 2019). Helminthiasis remains a widespread public health issue globally. Parasitic worm infections may result in nutrient loss, including deficiencies in calories and protein, as well as blood loss. Such infections can hinder physical development, intellectual growth, and work productivity, while also weakening the immune system, making individuals more susceptible to other illnesses. Nutrition is one of the key determinants of human resource quality and development (Hadi, Manggabarani, and Said, 2019). In some communities, cultural beliefs influence food practices, especially regarding certain dietary restrictions for young children. For example, salt is one of the foods often avoided. The practice of adding salt to food for children under one year of age is considered unnecessary. Excessive salt intake in infants can be harmful because their kidneys are not yet mature enough to process the excess sodium in the body.

Excessive salt intake can damage an infant’s kidneys, as their renal systems are

not yet mature enough to process the surplus sodium in the body. In addition to salt, flavor enhancers and sauces are also discouraged in toddler meals. According to the Ministry of Health of the Republic of Indonesia's Dietary Mineral Adequacy Guidelines, the recommended maximum daily salt intake for children is as follows: for ages 1–3 years, 1 gram per day; for ages 4–6 years, 1.2 grams per day; for ages 7–9 years, 1.2 grams per day; and for children aged 10 years and above, 1.5 grams per day.

Similarly, sugar intake for toddlers under the age of one is not necessary. This is because sugar can increase the caloric content of food without providing essential nutrients and may negatively affect oral and dental health. Moreover, several studies have indicated that excessive sugar consumption and frequent intake of sweet foods during early childhood can increase the risk of obesity and chronic diseases in later life. Therefore, it is important to provide sugar according to the recommended daily intake for children to support healthy growth and long-term well-being.

According to the researchers' assumption, certain dietary restrictions on specific food items—although such foods may be nutritionally beneficial—can hinder the nutritional intake required by toddlers. In general, there are no dietary prohibitions for toddlers who are not experiencing complications or other illnesses. However, unnecessary restrictions may impede the fulfillment of toddlers' nutritional needs, ultimately posing risks to their health, growth, and development. Therefore, it is essential to provide mothers with clear explanations regarding the benefits of various foods and the potential dangers of unnecessary dietary restrictions.

Health workers, as educators, must be capable of delivering health education and counseling to the community, particularly concerning food-related myths that prevail in the working area of Puskesmas Peulimbang. The development of maternal education classes should not only aim to improve mothers' knowledge but also correct misconceptions held by families and the broader community. Although it may be challenging—especially in remote areas where mystical beliefs are deeply rooted—this process of enlightenment must be persistently pursued to support child health and nutrition. The findings of a study by Ranika Harahap (2014) indicate a significant relationship between health worker counseling and nutrition-conscious behavior among families with undernourished and severely malnourished children in the working area of Lalang Village Health Center in 2014. The study showed that families engaged in toddler weighing (68%), consumed a diverse diet (41.9%), used iodized salt (9.3%), and provided vitamin A capsules (74.4%) (Harahap, 2014). The role of community health volunteers (*kader*) is crucial, as they are responsible for the implementation of *posyandu* programs. If the *kader* are inactive, the *posyandu* activities become ineffective, which may result in the failure to detect nutritional problems in infants and toddlers at an early stage.

A health worker, in addition to being professionally competent, must also possess sufficient experience, knowledge, and communication skills. These qualities help mothers feel more comfortable discussing matters related to their own health and that of their children. The support provided by health professionals significantly influences mothers' behavior, particularly in administering complementary feeding (MP-ASI) to their infants (Fau, Nasution, and Hadi, 2019). While this support is indeed essential for mothers with young children, it is even more effective when accompanied by adequate knowledge about the importance of appropriate feeding practices.

CONCLUSION

This study concludes that the implementation of balanced nutrition in

children under five is influenced by several factors, including knowledge, attitude, economic status, food restrictions, and health worker counseling. It is recommended that mothers allocate time to attend nutrition education sessions conducted by health professionals to enhance their understanding of balanced nutrition issues within the family.

REFERENCES

1. Anto, Hamalding, H. and Marhtyni (2017) 'Management of Consumption Pattern toward Children's Nutritional Status', *Atlantis Press (Advances in Social Science, Education and Humanities Research (ASSEHR))*. doi: doi:10.2991/icest-17.2017.15.
2. Dasar, R. K. (2018) 'Badan penelitian dan pengembangan kesehatan', *Kementrian kesehatan RI*.
3. Fatmah, F. and Nasution, Y. (2012) 'Peningkatan Pengetahuan dan Keterampilan Kader Posbindu dalam Pengukuran Tinggi Badan Prediksi Lansia, Penyuluhan Gizi Seimbang dan Hipertensi Studi di Kecamatan Grogol Petamburan, Jakarta Barat', *Media Medika Indonesiana*, 46(1), pp. 61–68.
4. Fau, S. Y., Nasution, Z. and Hadi, A. J. (2019) 'Faktor Predisposisi Ibu Usia Remaja Terhadap Pemberian ASI Eksklusif pada Bayi di Kecamatan Luahagundre Maniamolo Kabupaten Nias Selatan', *MPPKI (Media Publikasi Promosi Kesehatan Indonesia): The Indonesian Journal of Health Promotion*, 2(3), pp. 165–173.
5. Hadi, A. J. *et al.* (2019) 'The Effect of the Implementation of a Planned Peer Group Session Model on Obesity Prevention Among Students of an Integrated Islamic Primary School in Makassar', *Pakistan J Nutr*, 18(9), pp. 882–887.
6. Hadi, A. J., Manggabarani, S. and Said, I. (2019) 'Tatalaksana Pola Konsumsi Terhadap Status Gizi Anak Taman Kanak-Kanak', *MPPKI (Media Publikasi Promosi Kesehatan Indonesia): The Indonesian Journal of Health Promotion*. doi: 10.31934/mppki.v2i1.523.
7. Harahap, R. (2014) 'Gambaran Perilaku Sadar Gizi Pada Keluarga Yang Memiliki Balita Gizi Kurang dan Gizi Buruk Yang Ada Di Wilayah Kerja Puskesmas Desa Lalang Tahun 2014.'
8. Hariyadi, D. and Ekayanti, I. (2012) 'Analisis pengaruh perilaku keluarga sadar gizi terhadap stunting di Propinsi Kalimantan Barat', *Teknologi dan Kejuruan: Jurnal teknologi, Kejuruan dan Pengajarannya*, 34(1).
9. Indonesia, D. K. R. (2018) 'Pedoman umum gizi seimbang', *Jakarta: Departemen Kesehatan*.
10. Nasional, B. P. P. (2014) 'Rencana pembangunan jangka menengah nasional (RPJMN) 2015-2019', *Peraturan Presiden Republik Indonesia Nomor*, 2.
11. Notoatmodjo, S. (2003) 'Pendidikan dan perilaku kesehatan'. Jakarta: Rineka Cipta.
12. Organization, W. H. (2015) *Health in 2015: from MDGs, millennium development goals to SDGs, sustainable development goals*. World Health Organization.
13. Sada, M., Hadju, V. and Dachlan, D. M. (2012) 'Hubungan Body Image, Pengetahuan Gizi Seimbang, Dan Aktifitas Fisik Terhadap Status Gizi Mahasiswa Politeknik Kesehatan Jayapura', *Media Gizi Masyarakat Indonesia*, 2(1), pp. 44–48.
14. Utara, D. K. P. S. (2017) 'Profil Kesehatan Provinsi Sumatera Utara Tahun 2017', *Medan: Dinkes Sumatera Utara*.