# HOUSEHOLD CHARACTERISTICS AND NUTRITIONAL STATUS OF CHILDREN TO CHILDREN IN COASTAL FAMILY IN BENGKULU PROVINCE

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#### ABSTRACT

Coastal areas have a lot of natural wealth potential. Malnutrition among children under five years old in fishing families is greater than in farming families. Family characteristics such as education, knowledge, work and family income are the most important parts in ensuring family food security, so it is necessary to know the characteristics and nutritional status of toddlers in coastal families in Bengkulu province. The research method is descriptive analytic through cross sectional approach. With the sample is the mother who had children under five in the locus and not stunting loci on the coast of Bengkulu province totaling 479. The data that has been collected is processed with the Statistical Package for the Social Science (SPSS) program, then analyzed by Univariate. The result of the research is that most of the characteristics of children under five are < 3 years old. Gender is mostly female. Mother's characteristics factors are mostly < 35 years old, while most of them have low education. Almost all mothers of toddlers do not work. Meanwhile, the majority of family incomes are still below the minimum wage. Of the three indicators of WAZ, HAZ and WHZ, Bengkulu coastal families have public health problems. Characteristics of families with low categories. The food security factor of food diversity is mostly food security, the analysis of the total food available in the medium category and the analysis of the highest food quality are utilized. It is hoped that the characteristics and risk factors for exposure to community malnutrition in children under five years of age in coastal areas are a concern and need further researchers with different research.

Keywords: children, household, nutritional status, toddlers, coastal

## INTRODUCTION

The potential wealth of coastal areas should be able to prosper the lives of coastal communities, but in fact the most coastal communities' economic conditions are at low economic levels, including in meeting the nutritional needs of families (Sutrisno, 2014). Malnutrition among children under five years of age in fishing families is 80% higher than in farming families (Lusiana & Maryanto, 2014). Acute nutrition problems are related to the mother's upbringing of her toddler, mother's knowledge obtained from the education process as well as the ability to access information that is implemented in daily life. The nutritional status of toddlers depends on nutritional intake, mother's level of knowledge, family economic level, mother's education, parenting and food security (Rahmawati et al., 2019).

Family characteristics such as education, knowledge, work and family income are the most

important part in ensuring family food security (Mutisya et al., 2016). Families with a better level of education and knowledge will easily receive and understand information, including information about health such as improving nutrition. Education is associated with the incidence of stunting in children under five (Saputri & Rusman, 2022). The level of education also affects the occurrence of stunting, children born to parents with higher education are less likely to experience stunting than children born to parents with low education. In line with this, research in Nepal also shows that children born to educated parents are less likely to be stunted compared to children with uneducated parents. In line with this, research in Nepal also shows that children born to educated parents are less likely to be stunted compared to children with uneducated parents (Akombi et al., 2017). Research conducted by Haile states that children born to parents who have higher education tend to be more receptive to health education. (Haile et al., 2016). Education level affects the incidence of stunting in toddlers in the highlands of Parepare City (Saputri & Rusman, 2022).

Socioeconomic status is a combined measure of the economic and social position of an individual or family relative to others, based on income, education, and occupation. Socioeconomic conditions are socio-cultural aspects that greatly affect health status and also affect disease patterns, such as malnutrition which is more common among people with low economic status. Household income and parental education are higher risk factors for stunting. Income level with the incidence of stunting in children under five (Saputri & Rusman, 2022). Food intake is linked to socioeconomics and culture. Socioeconomics and culture can influence the nutritional intake of individual people and communities. (Sekhon, 2014). Intake of protein and vitamin A is increased by being given local supplementary food (Yuliantini et al., 2018)

Rathnayake, et al. (2012) with their study in Sri Lanka showed the diversity of food consumption as an indicator that can represent the nutritional adequacy of the community. Capanzana, et al. (2018) stated the prevalence in the Philippines coastal households of wasting in children aged 0-60 months was 7.9%. Derso, et al. (2017) stated that the prevalence of stunting (58.1%) and wasting (91.7%) in children aged 6-24 months in Ethiopia was correlated with gender and parental income. While a study of children under five in Kenya showed that on average households with stunted children compared to households with normal growth differed significantly in Food Diversity Score and household food insecurity access (HFIAS), but did not differ in Agricul-tural Biodiversity (M'Kaibi et al., 2017).

Indonesia has a problem of undernutrition and over nutrition in children under five. Growth in the first 1000 days of life is the main focus in public health and determines the optimal quality of growth and development. The failure of growth and development that occurs during this period will affect the quality of health in the future, namely adulthood (Wijayanti & Sumarmi, 2017). Late handling will result in even more problems. Indonesia could experience a lost generation and stunting children have a risk, namely Non-Communicable Diseases in adulthood, although they can still be corrected when they are toddlers.

Prevalence of stunted children toddlers in Indonesia is 29.9% and Bengkulu Province 27.9% (Ministry of Health, 2018). The acceleration of stunting reduction is a National Priority Activity that has been implemented since 2018 until 2020. The regulations that have been carried out in Bengkulu Province are the determination of the Rafflesia Action Acceleration Team in an effort to reduce stunting in 2018-2020. (Rayeuk et al., 2019). Result of 2017 Nutritional Status Assessment, none of the districts/cities in Bengkulu were included in the Mild category according to WHO standards. Nutritional Status Assessment (NSA) 2017 results, districts or cities in coastal areas of Bengkulu province experienced an increase in the prevalence of Height for Age Z-score measurements by more than 20.0% (Ministry of Health, 2018). The question is how is the food security of Bengkulu coastal households and whether stunting occurs a lot in coastal communities. From the background of these problems, it is necessary for researchers to analyze the characteristics of coastal households and anthropometry based on the weight and height of toddlers in Bengkulu Province.

## **METHODS**

This study used a descriptive analytic research design with a cross sectional approach. The sample in this study were mothers who had toddlers at the stunting locus and not the stunting locus on the coast of Bengkulu province. Sampling of research subjects was carried out using a quota sampling technique, namely by selecting sample subjects based on the proportion of 479 coastal families with inclusion criteria, namely mothers who have children under five who do not suffer from comorbidities or congenital diseases, want to take part in research, have husbands. The research was conducted from December 2021 to February 2022. Data processing was analyzed through the Statistical for the Social Science (SPSS) program, then in this processing using the Univariate type of analysis. The questionnaire is an instrument used in research

Data Collection in real time from respondents and research informants using a list of questions that had been prepared. Primary data was obtained from a sample of housewives in selected villages. Anthropometric data on height and weight were collected by measuring the child's height using a digital scale and microtoise. Complementary data were obtained from the provincial and district health offices and profiles from related agencies which could provide supporting information for this study. In conducting the research, data was collected using several methods, namely: Questionnaire using a list of questions that were compiled according to the research topic. Measurement of nutritional status with 3 indicators of nutritional status, namely Height/Age, Weight/ Age and Weight/Height Z-score. The Identification and Analysis phase was carried out by in-depth interviews with interview guidelines. The approach used in this research is quantitative analysis. The results of univariate analysis in this study are presented in tabular form to identify indicators on the variable of characters. The results of the research data analysis are presented in tabular form characteristics, nutritional status. Data analysis with univariate analysis.

#### RESULTS

#### **Children Characteristics**

Toddler age can be grouped into infants (0-2 years), children aged 2-3 years, and preschool (> 3-5 years). Meanwhile, according to WHO, the group of toddlers is 0-60 months of toddlers and toddlers, so the researchers grouped > 3 years and < 3 years (Adriani & Bambang, 2014) shows the age of children < 3 years 160 people (64.3%) with areas categorized as loci, while in areas not loci aged < 3 years 122 people (53.1%).

According to the Ministry of Health (2008), gender is an internal factor for a person's nutritional needs. Table 1 describes the distribution of the sex characteristics of the sample, most of which are women. A total of 118 people were 160 people (47.3%) in the locus category area, while in the non-locus area there were 117 women (50.8%). Law No. 2 of 1992 A health insurance members provide reimbursement to the insured for medical treatment and health checks. The ownership of health insurance for children under five years old showed that 240 people (96.3%) had insurance in areas categorized as loci, while 195 people (84.7%).

# **Mother Characteristics**

Mothers as individuals play a role and are responsible for and accept their position in society. This period begins at the age of 18 years to 40 years with the occurrence of physical, productive and psychological changes, productive and psychological changes occurring. The risk of giving birth to the mother increases after the age of 35 years. The results showed that the mother was still

Table 1.	Characteristic Frequency Distribution of
	Coastal Households in Bengkulu Province

	e					
Variable	Locus		No Locus		Amount	
variable	n	%	n	%	n	%
Child Characteristics						
Child Age						
< 3 years	160	64.3	122	53.1	282	59.9
3 years	89	35.7	108	46.9	197	41.1
Gender						
Man	131	52.6	113	49.2	244	50.9
Woman	118	47.4	117	50.8	235	49.1
Insurance Ownership						
Have	240	96.3	195	84.7	435	90.2
Do not have	9	3.7	35	12.3	44	9.8
Mother Characteristic	es					
Mother's Age						
< 35 years old	160	64.3	168	26,9	328	68.5
35 years old	89	35.7	62	73.1	151	31.5
<b>Mother's Education</b>						
Low $t < SMP$ )	96	38.5	131	56.9	249	52.0
High (>Junior High)	153	61.5	99	43.1	230	48.0
Mother's work status						
Working	49	19.7	27	11.7	76	15.9
Not Working	200	80.4	203	88.3	403	84.1
Family Characteristic	S					
Income Low < 2,238.094	133	53.4	109	47.4	242	51.5
Height >2.238.094	116	46.6	121	52.6	237	49.5

classified as of productive age. Characteristics of maternal age showed that more than half of maternal age <35 years 160 people (65.8%) with areas categorized as loci, while in non-locus areas, maternal age <35 years 168 people (73%).

National Education System No. 20 years. 2003 states that formal education is a structured and multilevel education starting from basic education, secondary education, and higher education (Kharimina, 2016). Mother's education is still low in both locus and non- locus areas. In the table above, the education of school mothers > SMP 153 people (61.4%) in areas categorized as locus and in non-locus areas, some of them did not go to school as many as 131 people (56.9%). From the table it can be seen that 200 people (80.3%) do not work in areas categorized as loci, while in non-working areas there are 27 people (11.7%) and 203 people (88.2%) who do not work).

#### **Family Characteristics**

Determination of UMR (Upah Minimum Regional/Regional Minimum Wage) based on Regulation of the Minister of Manpower and Transmigration Number 7 of 2013 concerning Minimum Wage. From the table, it is found that family income shows low <UMR/month as many as 133 people (53.4%) with areas categorized as locus, while in non-locus areas, income is high > UMR/month 121 people (52.6%). The total number of age loci is 249 people and 230 people are not loci.

#### Mother's Knowledge

Knowledge is the result of knowing someone through the learning process and can change previous behavior. Mother's knowledge of nutrition plays a role in optimizing the nutritional status of children. The government holds programs through counseling and others to assist the community in overcoming nutritional problems (Susanti, 2018). Mother's knowledge was categorized based on the score of the questions from the mother's knowledge questionnaire about stunting which consisted of 15 questions then categorized as good knowledge if the score was >70%.

From Table 4.2 it can be seen that most of the mothers in the locus category have poor knowledge of 157 people (63.1%), while in the non-locus area the knowledge of mothers is not good 129 people (56.7%).

#### **Toddler Nutritional Status**

Nutritional status is a measure of the fulfillment of nutritional needs obtained from the intake and use of nutrients by the body. Nutritional status in the study was determined by anthropometric measurements. Based on the table above, the nutritional indicators of W/A show that there are 5 people (2.3%) of bad nutrition and 209 people (97.6%) of good nutrition status with areas categorized as loci, while in areas not locus of malnutrition are 10 people. (4.3%) and good nutritional status of 220 people (95.6%). The nutrition indicator for H/A shows that there are 16 people (6.4%) stunting and 233 people (93.5%) with normal nutritional status with areas categorized as loci. The nutritional indicators of W/H show that there are 12 children under five with poor nutritional status (4.8%) and 237 people (95.1%) with normal nutritional status with areas categorized as loci.

## **Food Security**

Law No. 18 of 2012 states that the condition of fulfilling food for a nation and for each person is the meaning of food security. Family food security is the family's ability to meet food needs household members in terms of quantity, quality and variety according to local culture. Access to family food security to meet nutritional needs is influenced by

Table 2. Frequency Distribution of Mother Toddler Knowledge in Coastal Households in Bengkulu Province.

X7*.1.1.	Locus		No I	locus	Amount	
Variable	Ν	%	Ν	%	Ν	%
Mother's Knowledge						
Well	92	36.9	101	43.9	193	40.3
Not good	157	63, 1	129	56.1	286	59.7

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Variabel	n	%	n	%	n	%
Weight/Age						
More Nutrition	35	14.1	10	4.3	419	9.4
Good Nutrition	209	83.9	210	91.3	4	87.5
Malnutrition	1	0.4	3	1.3	11	0.8
Malnutrition	4	1.6	7	3.0	45	2.3
Height/Age						
Tall	13	5.2	3	1.3	16	3.3
Normal	220	88.4	203	88.3	42	88.3
Short	0	0	4	1.7	34	0.8
Very short	16	6.4	20	8.7	36	7.6
Weight/Height						
Fat	8	3.2	10	7.2	18	3.8
Normal	229	91.9	205	82.3	434	90.6
Thin	9	3.7	0	0	9	1.8
Very thin	3	1.2	15	6.5	18	3.8

Table 3. Toddler Nutritional Status in Coastal Households in Bengkulu Province

income which affects purchasing power (Natalia, et al., 2013).

The table shows 249 families in the locus category area with severe vulnerability as many as 18 people (7.2%), 70 people (28.1%), mild vulnerability 86 people (34.5%) and food insecurity 75 people (30.1%), while from 230 families with areas not locus of severe vulnerability as many as 23 people (10%), 112 people (58.7%) moderately vulnerable, 91 people with mild vulnerability (39.6%) and food insecure 4 people (1.7%). The quantity of food showed that most of the medium levels were 177 people (70.5 %) in areas categorized as loci, while those in non-locus areas showed low levels of 37 people (16.5%). Food quality showed that it was used by 163 people (65.4%), with areas categorized as loci, while in non-locus areas, 81 people (35.2%) were not used. The total number of age loci is 249 people and 230 people are not loci.

# DISCUSSION

#### **Characteristics of Toddlers**

Optimal growth including the development of a person's brain and intelligence is influenced by nutritious food which ultimately affects the quality of human resources (Auliya & Budiono, 2015). An understanding of stunting in the community in Bengkulu Province related to health problems is very important to consider as a determining factor towards the success of health programs that aim to improve the quality of life of individuals and communities.

The prevalence of stunting in Bengkulu decreased from 17% to 13%. The decline in the stunting rate only reached 4% between 2013 and 2018. The prevalence of malnutrition is still high but cases are still low. So that Bengkulu is included in the province that has public health problems. The policy to improve community nutrition that has been carried out in Bengkulu province includes the problem of stunting. Stunting is a growth disorder due to malnutrition in children under five years old (Rahayu, Pamungkasari, & Wekadigunawan, 2018).

Stunting can also be defined as anthropometry based on the index of Body Length for Age (H/A) or Height for Age (H/A) with a threshold (z score) between -3 SD to <-2 elementary schools. Stunting is measured as nutritional status by taking into account the height or length of the body, age, and gender of toddlers. Problems The main causes of stunting include stunted growth in the womb, inadequate intake of nutrients to support rapid growth and development in infancy and childhood and frequent infections during early life (Vaktskjold et al., 2010).

In addition, research results In addition, research results Kusumawati et al research, the

factors that influence stunting are mostly because children have infectious diseases, children have low body length at birth, supplementary feeding that is not appropriate for age accompanied by the consistency of their food and children who are overweight. Low birth weight at birth. Gender also determines the size of a person's nutritional needs. Men need more energy and protein than women. Men are more capable of doing heavy work that women are not accustomed.

Several studies in developing countries show that babies and girls tend to be less likely to experience stunting and the number of baby girls who survive is higher than baby boys in most developing countries and also in Indonesia. Girls hit puberty two years earlier than boys, and two years is also the peak-speed difference between the sexes. A cohort study in Ethiopia shows that baby boys are twice as likely to experience stunting as baby girls. 30 Boys are more at risk of stunting and underweight than girls.

Several studies in sub-Saharan Africa show that 22 preschool boys are more at risk of stunting than their female counterparts. In this case, it is not known what the reason is. 31 In two studies conducted in three different countries, namely Libya. 32 as well as Bangladesh and Indonesia, indicating that the prevalence of stunting is greater in boys than girls. The results of other studies show that the sex of the child is a strong predictor of stunting in children aged 0-23 months and 0-59 months. Girls have a lower risk than boys.

Factors that cause stunting include diarrhea, unavailability of latrines, children aged 12-24 months, and mothers who do not receive vitamin A supplementation after birth (Derso et al., 2017). Factors related to the incidence of stunting include male gender, poverty, children suffering from diarrhea, LBW, BMI (Akombi et al., 2017). Factors related to stunting are male children and mothers with a height of less than 150cm (Ali et al., 2017). Characteristics of toddlers with age < 3 years and female sex are a concern in growth and development so that special attention needs to be given to them mothers to maximize child nutrition and maternal nutrition during pregnancy.

#### **Characteristics of Mother Toddler**

The characteristics of the mother indicate that there are several factors that characterize the respondents, ranging from age, education, income, knowledge, and ownership of health insurance. In the data above, we can note that about 479 people were collected in each of the 14 regions in Bengkulu, in the data analyzed, the education of the mother was still mostly low. Education can bring a person to achieve good insight and knowledge.

According to (Sugiarta et al, 2019) Education functions in developing capabilities and shaping the attitude and behavior of the nation as a dignified individual in the context of educating the nation's life, its function is also to eliminate people's ignorance and backwardness. Highly educated people will have insight and wider knowledge when compared to those with low education. The higher the level of education, the easier it is to accept the concept of living independently, creatively and sustainably. The level of education greatly affects the ability of recipients of nutritional information (Kusumawati, 2004).

Research in Nepal states that children born to parents with low education are more likely to suffer from stunting than children whose parents are educated. In line with Haile research, children born to highly educated parents tend to get health education more easily during pregnancy, for example in the importance of meeting nutritional needs during pregnancy and exclusive breastfeeding for 6 years. The risk factors for stunting are children aged 24-35 months, children suffering from anemia, children who have mothers and fathers with low education, low economic levels (Haile et al., 2016).

Knowledge possessed by an individual towards an object contains two aspects, namely positive aspects and negative aspects. Balanced nutrition is food consumed by individuals daily that is diverse and meets 5 groups of nutrients in sufficient quantities, not excessive and not lacking (Directorate General of BKM, 2012). A balanced menu is the consumption of food to meet the body's needs for nutrients. Malnutrition in one food by providing a balanced menu can be fulfilled by other foods. For this reason, providing a balanced menu with a variety of foods is needed to meet nutritional adequacy (Almatsier, 2013). Knowledge is very closely related to education. Someone who is highly educated will also be knowledgeable.

Increasing one's knowledge is not absolutely obtained through formal education, but can also be obtained in non-formal education. So someone who has low education does not mean that his knowledge is absolutely low. Syafdinawaty research results (2014) The majority of mothers who have children under five with poor nutritional status are mothers who have low education. Mother's education can affect the nutritional status of toddlers because of the mother's education level determines the mother's attitude and way of dealing with various problems. Mothers play an important role in the health and development of children. This is shown by the fact that, among others, children of mothers who have a higher educational background, children are easier to receive broader insights about nutrition and children will have the opportunity to live and grow better (Supariasa, 2012).

Research by Tantri and Yowsa (2021) states that there is a relationship between the level of education of the mother with the nutritional status of children under five. The mother is the determinant of the type, type and method of processing food that will be consumed in the family. Lack of maternal education can lead to a lack of knowledge of mothers where the variety of food served is also reduced. Education can open insight and think rationally. The level of education also determines whether or not humans easily receive and interpret information about nutritional needs that can be obtained. Mothers who have higher education will more easily accept broad insights about nutritional needs and easily accept changes in knowledge, while low education causes limitations in understanding the nutritional needs of toddlers and will be slower in dealing with nutritional problems for toddlers (Wenny et al, 2021)). Parental education is one of the important factors in nutritional status, because with good education parents can receive all information from

outside about how a mother cares for and provides food to her child (Nurmaliza, et al 2018).

Research conducted by Milah & Zaqiah, (2019) states that the level of education of individuals or community groups influences the level of knowledge possessed, higher education will affect a person's knowledge, mother's knowledge about foods that contain nutrients, choose healthy foods, avoid foods that are already plentiful. Processed is very necessary in order to prevent disturbances in nutritional status. Nining (2014) states the relationship between mother's education and the incidence of stunting in toddlers. Education is very influential on the nutritional status of toddlers because some parents with low education also only work for a minimum wage so that it can cause economic problems in meeting the nutritional needs of toddlers.

Age can affect a person's mindset and grasping power. As people get older, the mindset and grasping power of a person will be more developed accompanied by the experience that has been passed, so that the knowledge gained is getting better. Work is an activity that must be done every day. The work environment can affect people in increasing their knowledge and experience either directly or indirectly.

## **Family Characteristics**

Azwar (2000), quoted by Manurung (2009), said that family income is the amount of money generated and spent in financing household needs for one month. Adequate family income can support the behavior of family members in obtaining services according to their needs. Coastal areas have economic potential with their wealth, namely abundant marine products and other biodiversity for tourism and industry. The natural wealth of coastal areas is rich, but the welfare of the people is still at a lower economic level than other mainland communities, including in fulfilling nutrition (Widodo, 2011).

Birch et al. (2001) explained that if the food provided by parents is low, the food intake received by the child is also low. Therefore, it can be concluded that low feeding contributes to the nutritional adequacy that children receive (Erna & Erni, 2020:44). In Indonesia, stunting results from the interaction of various factors, not only influenced by individual circumstances, but at the level of the household, community and environment (Wicaksono & Harsanti, 2020). The factors that cause stunting are low birth weight, male gender, infants with a history of disease, and low economic levels (Aryastami et al., 2017). Factors causing stunting are protein intake, birth weight, parents' education, father's occupation, and family's economic status. Another determinant factor in the occurrence of nutritional problems is poverty. Poverty can have a reciprocal effect as a source of nutritional problems, poverty causes malnutrition. Conversely, individuals who are malnourished will become unproductive due to their physical condition and decreased cognitive function which will affect the economic level of the family. So that in turn causes a slowdown in economic growth and encourages the process of poverty.

## Mother's Knowledge

Balanced nutrition is a daily food composition that contains nutritional elements in the type, amount and frequency that meet the needs of the body, and fulfill the principle of food diversity, clean living behavior and maintaining normal body weight to prevent nutritional problems and perform physical activity (Kemenkes, 2014). Balanced nutrition for toddlers is fully regulated by the mother so that it is based on the mother's knowledge in processing and compiling food menus for toddlers according to their needs. Mother's knowledge about balanced nutrition also affects the nutritional status of children under five. Mother is a determinant of food consumed by toddlers, lack of knowledge of mothers about balanced nutrition can be the cause of nutritional problems in toddlers. It is undeniable that maternal factors play an important role in providing and serving nutritious food in the family, thus affecting the nutritional status of children (Yuhansyah, 2019)

Balanced nutrition is food consumed by individuals daily that is diverse and meets 5 groups of nutrients in sufficient quantities, not excessive and not lacking (Directorate General of BKM, 2012). A balanced menu is the consumption of food to meet the body's needs for nutrients. Malnutrition in one food by providing a balanced menu can be fulfilled by other foods. For this reason, providing a balanced menu with a variety of foods is needed to meet nutritional adequacy (Almatsier, 2013).

Santander (2017) also shows that the level of knowledge of mothers in fulfilling balanced nutrition for under-fives in the less category increases in terms of knowledge of the function of nutrients and only a few mothers know how to process vegetables properly. Mardiana (2020), shows that the factors that influence the nutritional status of toddlers aged 2-5 years are mother's knowledge, duration of breastfeeding, mother's education, parenting, and the diet given to children. Mother's ignorance of the nutritional needs of children can result in nutritional intake of children not being met properly, so the child's growth and development process will be hampered, children can experience malnutrition (Djaen, 2012).

Research shows there are still 8 mothers who have children under five with abnormal nutritional status, this is because some mothers only know about balanced nutrition but do not apply it in daily life. The reason is that the economic factor is not sufficient to buy food ingredients to complete the nutrients for children under five and there are also some mothers whose children under five do not want to eat the food that has been prepared, such as vegetables, very few children under five who want to eat vegetables without being created.

Mothers with poor knowledge 9 of them have toddlers with abnormal nutritional status, this is in line with the theory put forward by Yuhansyah (2019) that lack of mother's knowledge about balanced nutrition can be the cause of nutritional problems in toddlers. It is undeniable that the mother's factor plays an important role in providing and serving nutritious food in the family, so that it affects the nutritional status of the child. It is served modestly but the frequency of eating the child can be 3-4 times a day so that the nutritional status is still normal.

Good nutritional knowledge will cause a person to be able to arrange a good food menu for consumption. The more knowledge the mother increases, the more she will understand the type and amount of food to be consumed by all family members, including toddlers. A good diet for toddlers is supported by good knowledge of maternal nutrition. A good level of knowledge of maternal nutrition will encourage mothers to determine foods that contain the nutritional content needed by their children. The more knowledge the mother has, the higher the mother's ability to choose and plan food with the right variety and combination in accordance with the recommended nutritional requirements (Bur et al, 2019).

This study is in line with the results of Galuh research (2017). The results obtained are a relationship between mother's knowledge about the fulfillment of balanced nutrition for children and the nutritional status of children aged 1-3 years. This study is also in line with the results of research by Nur et al (2019), there is a relationship between mother's behavior about balanced nutrition and the nutritional status of children, which means that the less knowledge of mothers about balanced nutrition, the less nutritional status of children. From the results of Yuli research (2016), it shows that the proportion of undernutrition in children under five with mothers with low education is much higher than those with mothers with higher education, so that with good maternal knowledge, the nutritional status of children under five becomes normal.

## **Toddler Nutritional Status**

Nutritional status describes the condition of the human body which is the impact of the food or food consumed and the use of nutrients in the body. The study assessed nutritional status with 3 indicators, namely weight for age (W/A), height for age (H/A), and weight for height (W/H). The results of the study showed that of the three indicators used, the indicators for weight/age, height/age, and weight/height, where the nutritional status of toddlers according to the indicator for height/age was short at 0.8% and very short at 7.6% with a result of 8, 4% which means that more than 5% of the prevalence of malnutrition in coastal families in Bengkulu Province is included in the category of toddler nutritional status according to height/age of acute stunting. The nutritional status indicator for underweight/TB toddlers is 1.8% and very underweight 3.8% with a result of 5.6% which means that more than 5% of the prevalence of wasting in Bengkulu Province is included in the category of under-five nutritional

status. Toddlers according to weight/height acute thin. In accordance with WHO standards, an area is said to be in the good category if the prevalence of stunting under five is less than 20% and the prevalence of under-five is less than 5%.

An area is said to be experiencing acute nutritional problems if the prevalence of stunting under five is less than 20% and the prevalence of under-five is 5% or more (WHO, 1997). Compared to the character of nutritional problems in Indonesia based on the distribution of nutritional status of children under five, SSGI 2021 from 34 provinces in Bengkulu Province is a province that is in the Chronic category (Stunted > 20% and Waste <5%). The results of nutritional status using the weight/height index or weight/pb prevalence of very thin and wasted children in Bengkulu Province, namely severely underweight only 6.4% and underweight 7.7%. It is suspected that there has been a significant increase in the nutritional status of toddlers using the index W/H in Bengkulu Province. This will have an impact on the basic health status of the region and prevent the collapse of children in the region.

Indonesia is still facing nutritional problems that have a serious impact on the quality of Human Resources (HR), including children under five. The nutritional problems referred to include failure to thrive early in life such as low birth weight (LBW), wasting (poor nutrition), and stunting which will greatly impact a child's subsequent growth. Malnourished toddlers will later experience educational failures and cognitive barriers that can have an impact on low productivity in adulthood (Indonesian Basic Health Research, 2018). Soetjiningsih (2012), growth is a continuous process from conception to adulthood which is influenced by genetics and the environment. Growth and development in infancy can be easily observed. While the fastest growth occurs in the fetus, aged 0-1 year and puberty. Intake of nutrients is necessary for the process of growth and development. Every child has the same pattern of development, but the pace is different. Inadequate nutritional intake can cause growth failure and less than optimal physical development. In accordance with WHO standards, an area is said to be in the good category if the prevalence of stunting under five is less than 20% and the prevalence of underYuliantini et al., Media Gizi Indonesia (National Nutrition Journal) Special Issue: The 2nd Bengkulu International Conference on Health (B-ICON 2022) 2023.18(1SP): 61–71 https://doi.org/10.20473/mgi.v18i1SP. 61–71

five is less than 5%, then an area is said to have acute NU.

# **Food Security**

Factors of food security most of the diversity of food is food security, analysis of the medium category of food quantity and analysis of the highest food quality are used. The food security factor of food diversity is mostly food security, which is 59.9%, the analysis of the quantity of food in the medium category is 75.9%, and the analysis of the highest food quality is used 65.1%. Research conducted by Damayanti & Khoirudin (2016) stated that there are things that can affect food security in an area, namely income, education level of the head of the household and the number of individuals in the family which have a good influence on food security if this is more in the positive direction.

Income is an influential component when deciding the amount of financial use for families in fulfilling household food. If income increases, the consumption of food consumed can vary which will determine better nutrition fulfillment (Aritonang, Margawati, & Dieny, 2020). A diverse diet with sufficient and safe nutritional content is commonly called a diverse, nutritious, balanced and safe food menu. If diet can directly affect the fulfillment of various nutrients, it will affect nutritional conditions or nutritional status (Putri, 2012).

# CONCLUSION

Most of the characteristics of children under five are < 3 years old. Gender is mostly female. Mother's Characteristics Factors are mostly <35 years old, while most of them have high education. Almost all mothers of toddlers do not work. Meanwhile, the majority of family incomes are still below the minimum wage. Of the three indicators of W/A, H/A, and W/H, more than 5% prevalence of wasted in Bengkulu Province is included in the category of acute wasted nutritional status of toddlers. Thus, Bengkulu coastal families have public health problems. Characteristics of families with low categories. The food security factor of Most of the diversity of food is food security, analysis of food quantity in the medium category and analysis of the highest food quality are used. It is expected to know the characteristics and determinants of the risk of malnutrition in toddlers on the coast areas are a concern and need further research with different research methods.

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For further research, further increase knowledge and insight by applying the knowledge obtained so that they can understand nutrition in society, especially the problem of stunting in toddlers

# REFERENCE

- Agnes, R.L., Hertanto, W.S, Kartasurya, M.I. (2018). Risk Factors of Stunting among Children Aged 2-5 Years in Ridge And Coastal. J. Gipas, 2(1), 2599-2465. http://jos. unsoed. air conditioning. id/index. php/jgps
- Ahmadi A, Moazen M, Mosallaei Z, Mohammadbeigi A, Amin-lari F. (2014). Nutrient Intake and Growth Indices for Children at Kindergartens in Shiraz. Iran. *Journal of Pakistan Medicine* Association. 64(3), 316-321.
- Akombi, BJ, Agho, KE, Hall, JJ, Merom, D., Astell-Burt, T., & Renzaho, AMN. (2017). Stunting and severe stunting among children under-5 years in Nigeria: A multilevel analysis. *BMC Pediatrics*, 17 (1), 1–16. https://doi.org/10.1186/ s12887-016-0770-z
- Ali, Z., Saaka, M., Adams, AG, Kamwininaang, SK, & Abizari, AR. (2017). The effect of maternal and child factors on stunting, wasting and underweight among preschool children in Northern Ghana. *BMC Nutrition*, 3 (1), 1–13. https://doi.org/10.1186/s40795-017-0154-2
- Aryastami, NK, Shankar, A., Kusumawardani, N., Besral, B., Jahari, AB, & Achadi, E. (2017). Low birth weight was the most dominant predictor associated with stunting among children aged 12-23 months in Indonesia. *BMC Nutrition*, 3 (1), 1–6. https://doi.org/10.1186/s40795-017-0130-x
- Capanzana, MV, Aguila, DV, Gironella, GMP, & Montecillo, KV. (2018). Nutritional status of children ages 0-5 and 5-10 years old in households headed by fisherfolks in the Philippines. Archives of Public Health, 76 (1), 1–8. https://doi.org/10.1186/s13690-018-0267-3

Yuliantini et al., Media Gizi Indonesia (National Nutrition Journal) Special Issue: The 2nd Bengkulu International Conference on Health (B-ICON 2022) 2023.18(1SP): 61–71 https://doi.org/10.20473/mgi.v18i1SP. 61–71

- Department of health. (2018). Main Results of Basic Health Research 2018. *Basic Health Research* , 1–100.
- Derso, T., Tariku, A., Biks, GA, & Wassie, MM. (2017). Stunting, wasting and associated factors among children aged 6-24 months in Dabat health and demographic surveillance system site: A community based cross-sectional study in Ethiopia. *BMC Pediatrics*, *17* (1), 1–9. https:// doi.org/10.1186/s12887-017-0848-2
- Haile, D., Azage, M., Mola, T., & Rainey, R. (2016). Exploring spatial variations and factors associated with childhood stunting in Ethiopia: Spatial and multilevel analysis. *BMC Pediatrics*, *16* (1), 1–14. https://doi.org/10.1186/s12887-016-0587-9
- Indonesian Ministry of Health. (2018). Nutritional status monitoring pocket book. *Nutritional Status Monitoring Handbook 2017*, 7–11.
- Lusiana, I., & Maryanto, S. (2014). The Determinant Factors Associated With The Malnutrition Incidences Of Children 12-59 Months Old At Mulyasari Village Losari Cirebon. *Journal Of Nutrition And Health*, 6 (11), 39-51.
- M'Kaibi, FK, Steyn, NP, Ochola, SA, & Du Plessis, L. (2017). The relationship between agricultural biodiversity, dietary diversity, household food security, and stunting of children in rural Kenya. *Food Science and Nutrition*, 5 (2), 243–254. https://doi.org/10.1002/fsn3.387
- Mutisya, M. *et al.* (2016) 'The effect of education on household food security in two informal urban settlements in Kenya: a longitudinal analysis', *Food Security*, 8(4), pp. 743–756. doi: 10.1007/s12571-016-0589-3.
- Rahmawati, FN, Mulyaningsih, T., & Daerobi, A. (2019). The Influence of Household Characteristics, Food Diversity, Environment on the Nutritional Status of Toddlers. *Indonesian Public Health Media*, 15 (4), 367. https://doi. org/10.30597/mkmi.v15i4.7929
- Rathnayake, KM, Madushani, P., & Silva, K. (2012). Use of dietary diversity score as a proxy

indicator of nutrient adequacy of rural elderly people in Sri Lanka. *BMC Research Notes*, 5, 2–7. https://doi.org/10.1186/1756-0500-5-469

- Rayeuk, IDI, Falah, D., Falah, D., Falah, D., Ulim, S., & Falah, D. (2019). STUNTING VILLAGE LOCATION IN 2019. 1, 1–14.
- Saputri, A., & Rusman, ADP (2022). Socio-Economic Analysis with Stunting Incidence in the Highlands of Parepare City. *Scientific Journal of Humans and Health*, 5 (1), 503– 510.
- Singh Sekhon, B. (2014). Nanotechnology in agrifood production: An overview. Nanotechnology, Science and Applications, 7 (2), 31–53. https:// doi.org/10.2147/NSA.S39406
- Supadmi, S., & Balai. (2013). Unbalanced food consumption patterns are related to malnutrition (stunting) in adolescents in the province of Central Java. *Journal of Chemical Information and Modeling*, 53 (9), 1689–1699.
- Sutrisno, E. (2014). Implementation of Coastal Resource Management Based on Integrated Management of Coastal Areas for Fishermen's Welfare (Study in Fisherman's Village Cangkol, Lemahwungkuk Village, Lemahwungkuk District, Cirebon City) □. Journal of Legal Dynamics, 14 (1), 1–12. https://doi. org/10.1158/1078-0432.CCR-06-2072
- Wicaksono, F., & Harsanti, T. (2020). Determinants of stunted children in Indonesia: A multilevel analysis at the individual, household, and community levels. *Public Health*, *15*(1), 48–53. https://doi.org/10.21109/kesmas.v15i1.2771
- Wijayanti, R., & Sumarmi, S. (2017). growth of children from mothers who received multimicronutrient supplements and children from mothers who received iron folate supplements DURING PREGNANCY (Follow-up study in Probolinggo Regency, East Java). *The Indonesian Journal of Public Health*, *11* (1), 1. https://doi.org/10.20473/ijph.v11i1.2016.1-13
- Yuliantini, E., Kamsiah, & Meriwati. (2018). "Fishbean" Biscuits as an Alternative to Local MPASI. 6 (1).