Analysis of Education, Nutrition, Parenting and Social Economy towards Stunting in Middle Aceh and Pidie District

Zulkifli[1], Fitrah Afandi[2], Eddy Munawar[3], Syafruddin[4]

[1,4]Faculty of Economics, Syiah Kuala University Banda Aceh, Aceh, Indonesia, 23111
[2]PKP BEST Syiah Kuala University Banda Aceh, Aceh, Indonesia, 23111
[3]National Population and Family Planning Agency, Aceh, Indonesia, 23111

Abstract— Stunting among toddlers in Middle Aceh and Pidie district is the most common case in Aceh Province, Indonesia. This case occurs inseparable from the primary and secondary factors experienced by the sufferer's family, one of which is the level of education, nutritional intake, parenting and social economy conditions of the community. Thus, this has an impact on child development. This study aims to determine the relationship of education, nutrition, parenting and social economy towards stunting toddlers that occur in Middle Aceh and Pidie Districts. This study adopted an analytical method by applying a cross-sectional approach. The study population (sample) consisted of 75 toddlers with stunting and normal in each district. The dependent variable studied was stunting toddlers; the independent variables were education, nutrition, parenting, and social economy. Based on the research results obtained by the following equation: $Y = 21,880 + 0.008 X1 - 0.211 X2 - 0.026 X3 - 0.024 X4$. Hypothesis testing revealed that the educational variable is directly proportional to the stunting case while the nutritional, parenting and social economy variables are inversely proportional to the stunting case. The contribution of the variables used in this study simultaneously affects 83.6% of the cases of stunting and otherwise is influenced by other variables outside this study.

Keywords—Education: nutrition: parenting: social economy: stunting.

I. INTRODUCTION

Developed countries will be achieved if the availability of quality human resources. Creating quality human beings is inseparable from efforts to develop optimal health. Maternal and child health services are the priority in health development. This is based on the consideration that a healthy child will produce quality humans. However, improvement efforts of health problems to improve the quality of human resources are considered too late if they start when the child enters school. Therefore, children's health is essential to be considered early whether from the womb until he/she is a toddler, or often called the "Window of Opportunity".

All things to be achieved cannot be separated from the nutritional intake provided to children so that it gives an impact on the child's growth in the future. Nutrition is one of the important factors that determine the level of human health and well-being. Good nutrition if there are a balance and harmony between physical development and mental development of children. The level of optimal nutritional status will be achieved if the optimal nutritional needs are met. When we see the current phenomenon that occurs in the community, we need to ask whether the nutritional intake and the amount of food consumption that is fulfilled by children among our society are fulfilled. Because when we view the impact resulting from a lack of nutritional intake and the amount of food consumption obtained by children will result in easy disease and abnormal growth of one of them is stunting.

Stunting is described as a toddler who has a lower height than the standard height for toddlers of his/her age. Stunting is one of the characteristics that indicate a recurring nutritional problem and for a long period. Stunting in early childhood is known to have lower levels of intelligence, motor skills, and neurosensory integration and a higher risk of degenerative diseases.

From the result of the researcher conducted by Riskesdas 2013 showed a higher national stunting prevalence of 35.6%. Specifically, the Riskesdas data also showed the prevalence of stunting at the age of 2-3 years in West Java was 45.9% while in Indonesia was 42.38%. The contributing factors to stunting are the height of the father; the history of low birth weight; poor nutrition history; lack of use of integrated health post and hygiene behavior; discrepancies in the provision of complementary foods as well as the quantity and quality of nutritional food provided is lacking; breastfeeding practices and feeding practices.

The result of UNICEF 2017 study, various obstacles cause the high number of stunting toddlers aged 6-23 months in Indonesia, one of the main obstacles is inadequate knowledge and improper nutrition practices. Specifically, it was explained that knowledge and practice which were the main obstacles were the lack of exclusive breastfeeding and the lack of suitable complementary feeding. Nutrition education is a part of health education activities, defined as a planned effort to change the behavior of individuals, families, groups, and communities in the health sector.

When viewed from stunting toddlers that occur in Aceh, Aceh is ranked third nationally for stunting toddlers, under East Nusa Tenggara (NTT) and West Sulawesi. Based on data from the Aceh Health Service 2018, it shows that the regions of Middle Aceh and Pidie District are the largest contributors to stunting toddlers. The distribution of cases that occurred in the Middle Aceh District were 63 cases in Linge District, Silih Nara 59 cases, Ketol 45 cases, Atu Lintang 40 cases and Kute Panang 39 cases. For Pidie District 1,461 cases, the

6

distribution of cases occurred in Kembang Tanjong, Tangse, Mutiara Timur, Simpang Tiga, and Tiro Districts
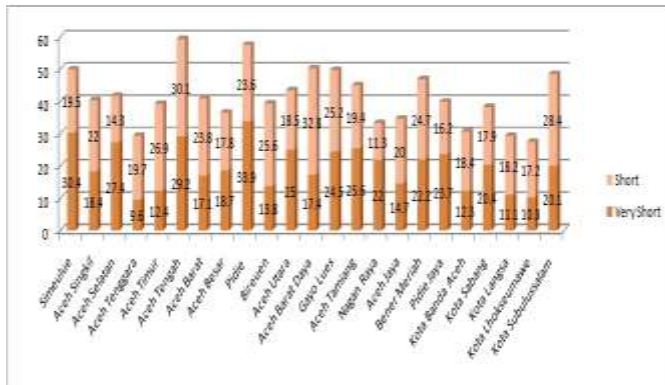

Figure 1.Stunting Distribution in Aceh.

II.   RESEARCH QUESTION

Is there any relationship among education, nutrition, parenting and social economy to the case of stunting toddlers that occurred in Middle Aceh and Pidie Districts?

III.   RESEARCH PURPOSE

The purpose of this study is to determine the relationship between education, nutrition, parenting and socioeconomic to stunting toddler's cases that occurred in Middle Aceh and Pidie Districts.

IV.   LITERATURE REVIEW

Stunting is a chronic malnutrition problem caused by a lack of nutritional intake in a long time due to feeding inappropriate food that is not following nutritional needs. Stunting can occur when the fetus is still in the womb and only appears when the child is two years old. Stunting is nutritional status based on the BB / U or TB / U index wherein the anthropometric standard assessment of the nutritional status of children, the measurement results are at a threshold (Z-Score) <-2 SD to -3 SD (short/stunted) and <-3 SD (very short / severely stunted) (Trihono et al., 2015).

Stunting is caused by multi-dimensional factors and not only due to malnutrition experienced by pregnant women and toddlers. In more detail, several factors that influence the incidence of stunting can be described as follows:

a.   Direct Factors

*   *Maternal factor*

A maternal factor can be caused by poor nutrition during preconception, pregnancy, and lactation. It is also influenced by maternal statures such as maternal age too young or too old, short, infection, young pregnancy, mental health, BBLR, IUGR and preterm labor, close birth distance, and hypertension (Fikawati et al., 2017)

*   *Genetic factor*

Genetic factors are the basis for achieving the results of the growth process. Through genetics in the fertilized egg, quality and quantity of growth can be determined. This is characterized by the intensity and speed of division, the degree of tissue sensitivity to stimulation, puberty age and the

cessation of bone growth (Narsikhah, 2012). According to Amigo et al., in Narsikhah (2012) one or both parents who are short due to pathological conditions (such as growth hormone deficiency) have genes in chromosomes that carry short traits that increase the chances of children inheriting the gene and growing into stunting. However, if the parents are short due to nutrient deficiencies or illness, the possibility of the child can grow to normal height as long as the child is not exposed to other risk factors.

*   *Food supply*

Poor food quality includes poor micronutrient quality, lack of diversity and food intake sourced from animal foods, non-nutritive content, and low energy in complementary foods. Inadequate feeding practices include infrequent feeding, inadequate feeding during and after illness, too light food consistency, inadequate quantity of food, inadequate feeding. Evidence shows a more varied dietary diversity and consumption of food from animal sources is associated with improved linear growth. Recent analysis shows that households that adopt a diverse diet, including supplementary nutrition, enriched diets will increase nutrient intake and reduce the risk of stunting (Fikawati et al., 2017).

*   *Exclusive breastfeeding*

Problems related to breastfeeding practices include Delayed Initiation, not applying exclusive breastfeeding, and early stopping consumption of Breast milk. A study proves that delaying the initiation of breastfeeding (Delayed initiation) will increase infant mortality. Exclusive breastfeeding is defined as breastfeeding without supplementation of food or other drinks, whether in the form of water, juice, or milk other than breast milk. The Indonesian Pediatrician Association (IDAI) recommends exclusive breastfeeding during the first 6 months to achieve optimal growth and development. After six months, the baby gets adequate complimentary food while breast milk is continued until the age of 24 months. Continuous breastfeeding for two years significantly contributes to the intake of essential nutrients in infants (Fikawati et al, 2017).

b.   Indirect Factors

*   *Social economy Factors*

Low economic status is considered to have a significant impact on the likelihood of children becoming thin and short (UNICEF, 2013). According to Bishwakarma in Khoirun et al (2015), the low economic status of the family will affect the choice of food that is consumed so that it usually becomes less varied and few in number, especially in foods that function for growing children such as sources of protein, vitamins, and minerals, thereby increasing the risk of less nutrition.

*   *Level of education*

According to Sulastri (2012), low maternal education can affect parenting and child care. It also influences the selection and method of serving food to be consumed by their children. The provision of appropriate ingredients and diet for toddlers to improve nutritional status will be realized if the mother has a good level of nutritional knowledge. Mothers with low education will find trouble to absorb nutritional information so that children can be at risk of stunting.

7

• *Mother's nutritional knowledge*

Sulastri (2012) explains that low nutritional knowledge can hamper efforts to improve nutrition in both families and the community aware of nutrition means not only knowing nutrition but also must understand and be willing to act. The level of knowledge possessed by someone about the need for nutrients affects the amount and type of food consumed. Nutrition knowledge is one of the factors that can affect food consumption and nutritional status. Mothers who have sufficient nutritional knowledge will pay attention to their children's nutritional needs to grow and develop optimally.

• *Environmental factors*

The home environment can be caused by stimulation and activities that are not strong, poor application and care, food insecurity, improper food allocation, lack of caregiver education. Children who come from households that do not have good water and sanitation facilities are at risk of being stunting (Putri and Sukandar, 2012)

V. RESEARCH METHOD

Research Location

This study was implemented in the Middle Aceh and Pidie District of Aceh Province, Indonesia. It was carried out on toddlers in sub-districts where endemic stunting occurred by adopting observational analytic methods and cross-sectional approach.

Sampling Techniques and Sample Size

The sampling technique used is a nonprobability sampling technique. The nonprobability technique is a technique used for sampling from a population by not providing equal opportunities for all members of the population to be sampled. The type of sample collection technique used in nonprobability is purposive sampling. Purposive sampling is a sampling technique with certain considerations, such as research costs, the source of the data must be obtained from the experts the authorities, as well as the data obtained, must be socialization about the problem to be investigated. There were 75 samples taken from each study area that were divided into normal toddlers and stunting toddlers.

Data Analysis

Data processing in this study was carried out using the SPSS application. The validation testers in this study used the Pearson product-moment method. In the SPSS Program to test the validity of an indicator on a variable is by looking at the Correlation value for each construct indicator. Reliability testing is undertaken by looking at the value of Cronbach's alpha. Cronbach's alpha value is greater than 0.7 for confirmatory research and 0.6-0.7 for exploratory research. Cronbach's alpha for values below 0.5 has low reliability, values 0.5-0.7 have moderate reliability, 0.7-0.9 has high reliability, and above 0.9 has perfect reliability (Priyatno, 2013).

The analytical model employed in this study is the Multiple Linear regression analysis models in which this model is to determine the effect of independent variables on the dependent variable. To find out the correlation among variables by looking at the determination coefficient mainly measures to what extent the ability of the model can explain varieties of the dependent variable. Hypothesis testing is a method to assess t and f values.
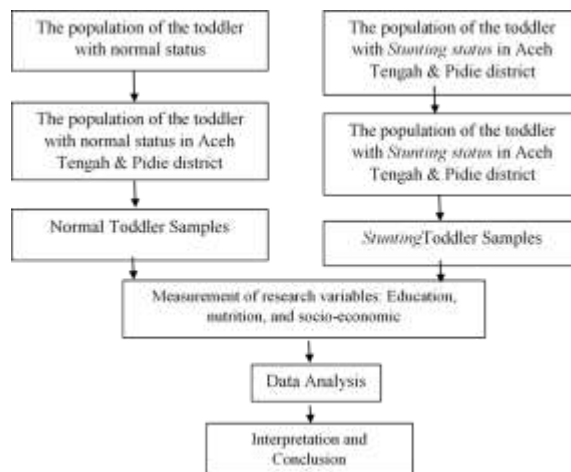

Figure 2. Research Framework

VI. RESULT

Respondent Characteristics

The selection of research location is based on information from relevant agencies, in this case, the population agency of the study area district (Pidie District and Middle Aceh District). The location selection is based on the number of stunting cases that occurred in the area. For detailed research location data contained in the table below:

TABLE I. Research Location of Pidie District

No	Village Name	Total Population	Health Center at Sub-District Level	Community Health Sub-center	Total Toddlers	Doctor	Nurse	Midwife
1	Mutiara Timur	35,641	2	5	713	3	9	52
2	Tiro/Truseb	8,220	1	3	164	2	14	19
3	Kembang Tanjong	22,373	1	4	447	4	17	28
4	Simpang Tiga	23,505	1	3	470	3	11	45

TABLE II. Research Location of Middle Aceh District

No	Village Name	Total Population	Community Health Center	Community Health Sub-center	Total Toddlers	Doctor	Nurse	Midwife
1	Linge	10,263	2	7	847	1	15	31
2	Pegasing	20,119	1	5	1,668	2	12	52
3	Kute Panang	7,266	1	6	743	-	8	29
4	Kebil	13,108	2	6	1,387	1	25	42
5	Celala	9,528	1	2	1,051	1	8	18

From the table data above, it can be seen that the number of health facilities in each research district is very adequate and it is supported by sufficient medical personnel, but there is one district in Middle Aceh that is not available by doctors but can be assisted by other medical staff such as nurses and midwife. According to information from the family planning facility (KB) and health workers in the study area, every toddler receives an integrated health post service every month and it is also facilitated with additional food for toddlers who are already present at the integrated health post.

8

The respondents in the study are parents of toddlers, in this case, the mother of normal toddlers and stunting sufferers. The age level of respondents in this study is shown in Figure 3 below:
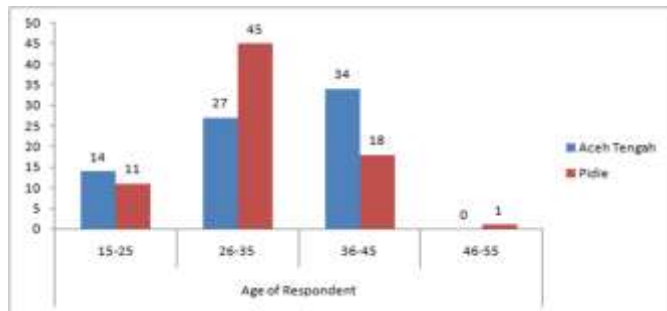

Figure 3. Age of the respondents

If we look in the picture above, the dominant number of respondents are productive mothers whose ages are vulnerable between 26-45 years both in Middle Aceh District and in Pidie District, while the highest number of vulnerable respondents aged 26-35 years in Pidie District was 45 respondents, while the majority of respondents in Middle Aceh District were among the vulnerable aged 36-45 years as many as 34 respondents, but there was 1 respondent in Pidie District who became the respondent of this research over the age of 46 years.

When viewed from the work occupied by each respondent in this study can be seen from the table below.

TABLE III. Respondent Occupation

The table above shows that generally, the research respondents worked as farmers and housewives. Most housewives from Pidie District were 50 respondents or 66.7% of the total respondents, while in Middle Aceh District were 26 respondents or 34.7% of the total respondents. For the work of the farmer, most respondents are in Middle Aceh District as many as 43 respondents or 57.3% while in Pidie District 14 respondents or 18.7%.

TABEL IV. Number of Respondent Children

The number of children in the family-owned by respondents in this study varied between 1-8 people, but the number of children in the most common families is 2 people with 27 respondents or 36% in Middle Aceh District, 23 respondents or 30% in Pidie District. For the highest number of children from this study, there were 8 children as many as 1 respondents, namely in Pidie District. For complete data on

the number of children owned by respondents can be seen from the table above.

Variable Validity Test Results

A validity test is an indicator that must be tested firstly, this is needed to validate the research instrument whether or not it can continue with the research conducted. According to Sugiyono (2014), "factor analysis is undertaken by correlating the total factor score with the total score. If the correlation of each factor is positive and the amount is above the "r" table, then the factor is a strong construct, so based on the analysis of these factors, it can be concluded that the instrument has good construction validity ". In this study, we took a sample of 150 samples from 2 districts namely Pidie and Middle Aceh District, so that the 'r' table obtained was 0.1593. There are two statements for education, 3 statements for nutrition, 10 statements for parenting and 5 for social economy statements. All statements in this research questionnaire among education, nutrition, parenting and social have good construction validity because the value of 'r' count is greater than 0.1593 and a positive correlation value.

Reliability Test

The reliability test aims to find out whether the data collection tool or research instrument shows the level of accuracy, the accuracy of the stability or consistency of the tool in expressing certain symptoms of a group of individuals even though they are carried out at different times (Sugiyono 2014).

According to Priyatno (2013), a measuring device is said to be reliable if the tool is in measuring a symptom at different times always showing the same results. Thus, a reliable tool consistently gives the same size results. The reliability test method that is often used is Cronbach's Alpha. This method is very suitable for use on a scale or stretch score. According to Priyatno (2013), decision making for the reliability test is as follows:

• Cronbach's alpha <0.60 = poor reliability
• Cronbach's alpha 0.6 - 0.79 = reliability is accepted
• Cronbach's alpha 0.8 = good reliability

From the results of the reliability test of education, nutrition, parenting, and social economy variables, the value of Cronbach's alpha is accepted and good. This shows the level of accuracy, the accuracy of stability or consistency of questions about all parameters can be used in this study and accordance with the theory.

TABLE V. Reliability Results of All Test Parameters

Variable	*Cronbach's alpha*	Reliabilities Test
Education	.726	accepted
Nutrition	.783	accepted
Parenting	.798	accepted
Social economy	.826	good

Determination Coefficient

The coefficient of determination is intended to find out how much the model's ability to explain the dependent variable. If the coefficient of determination (R^2) is greater or closer to 1, it can be said that the ability of the independent variable (X) is large to the dependent variable (Y)

9

TABLE VI. Determination Coefficient

Model Summary

The coefficient of determination is 0.836 (R-squared) and 0.831 (Adjusted R-square). In this study, R-squared is used due to the independent variable is more than one, which means that 83.60% of the independent variables can explain the dependent variable simultaneously. This means that the rise and fall of the number of stunting cases in the study area amounted to 83.60%, which is determined by education, nutrition, parenting, and social economy. The remaining 16.4% (100% - 83.60%) is determined by other factors outside this study.

Hypothesis Testing Using the F Test

Hypothesis testing using the F test shows that the independent variables included in the model influence the dependent variable.

TABLE VII. F-Test

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	16.231	4	4.058	27.804	.000(a)
	Residual	21.162	145	.146		
	Total	37.393	149			

Hypothesis Testing Using the T Test

For t table testing in this study using df 4 = t (α / 2; n-k - 1) = t 0.05 / 2; 150-4-1 = (0.025; 145), then t table is obtained 1.976.

For t table testing in this study using df 4 = t (α / 2; n-k - 1) = t 0.05 / 2; 150-4-1 = (0.025; 145), then t table is obtained 1.976.

TABLE VIII. T-test

The estimated value of the t-test for each variable is as follows:

- The educational variable has a positive and significant effect on stunting cases in the study area. This is consistent with the hypothesis seen from the t-count greater than the t-table (7,878> 1,976) at a significant level of 96 percent, which means accepting an alternative hypothesis (Ha). So that the level of education is directly proportional to the case of stunting in the study area.
- Nutrition variables have a negative and significant effect on stunting cases in the study area. This is contrary to the hypothesis that seen from the t-count is smaller than t-table (-7,271 <-1,976) at a significant level of 5 percent, which means accepting the null hypothesis (Ho). So, it can be

concluded that the higher the nutrition the lower the case of stunting in the research area.
- The parenting variable has a negative and significant effect on stunting cases in the study area. This is contrary to the hypothesis where seen from the t-count is smaller than t-table (-7.357 <-1.976) at a significant level of 5 percent, which means accepting the null hypothesis (Ho), which means the better the parenting, the lower the stunting case in the research area.
- The social economy variable has a negative and significant effect on stunting cases in the study area. This is contrary to the hypothesis that seen from the t-count is smaller than t-table (-9.414 <-1.976) at a significant level of 5 percent which means accepting the null hypothesis (Ho) which means that the higher the Social economy community, the lower the case of stunting in the study area.

TABLE IX. Regression Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.880	.393		7.334	.000
	Education	.008	.020	.024	7.878	.004
	Nutrition	-.211	.021	-.647	-7.271	.002
	Parenting	-.026	.011	-.149	-7.357	.001
	Social economy	-.024	.010	-.153	-9.414	.002

Based on the results of the linear regression equation formula above, it can be interpreted as follows:

1. Regression equation to estimate the relationship of education, nutrition, parenting, and social economy to stunting toddlers in Middle Aceh District and Pidie District are as follows:

    Y = 21.880 + 0.008 X1 - 0,211 X2 - 0,026 X3 - 0,024 X4

2. The magnitude of the constant (a) is 21,880, it means that if it is assumed that the level of education, nutrition, and parenting and social economy variables is equal to zero, then the case of stunting 21,880.

3. The estimated coefficient of education level (b1) is 0.008, which means if an increase in education level of 1 (one) will increase the number of stunting cases in the study area by 0.008 (assuming variables b2 (nutrition), b3 (parenting), and b4 (social economy) is constant).

4. Nutrition estimation coefficient (b2) is -0.211, which means that if nutritional increase is 1 (one), it will result in a reduction in the number of stunting cases in the study area by 0.211 (assuming variables b1 (education), b3 (parenting), and b4 (socioeconomic) is constant).

5. The estimated coefficient of parenting (b3) is -0.026, which means that if an increase in parenting is 1 (one) it will result in a reduction in the number of stunting cases in the study area by 0.026 (assuming the variables b1 (education), b2 (nutrition), and b4 (social economy) is constant).

6. The social economy estimation coefficient (b4) is -0.024 which means that if social economy increase is 1 (one) it will result in a reduction in the number of stunting cases in the study area by 0.024 (assuming the variables b1 (education), b2 (nutrition), and b3 (parenting), is constant).

Based on the purpose of this study is to determine the relationship among education, nutrition, parenting and social economy toward stunting cases that occur in Middle Aceh

District and Pidie District, the following conclusions can be drawn:

- The estimated value of the t-test for each variable is as follows:
- The educational variable has a positive and significant effect on stunting cases in the study area. This is consistent with the hypothesis seen from the t-count greater than the t-table (7,878> 1,976) at a significant level of 96 percent, which means accepting an alternative hypothesis (Ha). So that the level of education is directly proportional to the case of stunting in the study area.
- Nutrition variables have a negative and significant effect on stunting cases in the study area. This is contrary to the hypothesis that seen from the t-count is smaller than t-table (-7,271 <-1,976) at a significant level of 98 percent, which means accepting the null hypothesis (Ho). So, it can be concluded that the higher the nutrition the lower the case of stunting in the research area.
- The parenting variable has a negative and significant effect on stunting cases in the study area. This is contrary to the hypothesis where seen from the t-count is smaller than t-table (-7.357 <-1.976) at a significant level of 99 percent, which means accepting the null hypothesis (Ho), which means the better the parenting, the lower the stunting case in the research area.
- The social economy variable has a negative and significant effect on stunting cases in the study area. This is contrary to the hypothesis that seen from the t-count is smaller than t-table (-9.414 <-1.976) at a significant level of 98 percent which means accepting the null hypothesis (Ho) which means that the higher the Social economy community, the lower the case of stunting in the study area.

Based on the results of the linear regression equation formula from the research results obtained

1. Regression equation to estimate the relationship of education, nutrition, parenting, and social economy to stunting toddlers in Middle Aceh District and Pidie District are as follows:

 $Y = 21.880 + 0.008 X1 - 0,211 X2 - 0,026 X3 - 0,024 X4$

2. The magnitude of the constant (a) is 21,880, it means that if it is assumed that the level of education, nutrition, and parenting and social economy variables is equal to zero, then the case of stunting 21,880.
3. The estimated coefficient of education level (b1) is 0.008, which means if an increase in education level of 1 (one) will increase the number of stunting cases in the study area by 0.008 (assuming variables b2 (nutrition), b3 (parenting), and b4 (social economy) is constant).
4. Nutrition estimation coefficient (b2) is -0.211, which means that if nutritional increase is 1 (one), it will result in a reduction in the number of stunting cases in the study area by 0.211 (assuming variables b1 (education), b3 (parenting), and b4 (socioeconomic) is constant).
5. The estimated coefficient of parenting (b3) is -0.026, which means that if an increase in parenting is 1 (one) it will result in a reduction in the number of stunting cases in the study area by 0.026 (assuming the variables b1

(education), b2 (nutrition), and b4 (social economy) is constant).

6. The social economy estimation coefficient (b4) is -0.024 which means that if social economy increase is 1 (one) it will result in a reduction in the number of stunting cases in the study area by 0.024 (assuming the variables b1 (education), b2 (nutrition), and b3 (parenting), is constant).

VII. FURTHER RESERACH

1. The data retrieved in this study only represent two districts endemic to stunting, and further research should be conducted throughout Aceh so that complex data can be obtained and appropriate policies can be taken to reduce the rate of stunting.
2. A further researcher can add other variables that are not used in this study, to improve the factors that cause stunting cases in Aceh.
3. BKKBN Aceh Province and the Regional Government can continuously improve the socialization program and technical guidance for the community and field technical staff on stunting prevention and control and provide understanding to the public regarding the factors that cause stunting. When we refer to the results of this study, it turns out that educational factors cannot suppress the number of stunting cases in the study area, but are directly proportional.
4. The results of this study can be used as a reference for solving stunting cases in Aceh so that Aceh is free of stunting.

REFERENCES

[1] Badan Pusat Statistik Middle Aceh,. "Middle Aceh Dalam Angka". Middle Aceh: Badan Pusat Statistik. 2019
[2] Badan Pusat Statistik Pidie, "Pidie in numbers". Pidie: Badan Pusat Statistik. 2019.
[3] Bishwakarma, R. *Spatial Inequality in children Nutrition in Nepal: Implications of Regional Context and Individual/Household Composition.* (Disertasi, University College Park, United States). Diakses hdl.handle.net/1903/1168. 2011.
[4] Dinkes Provinsi Aceh. "Profil Kesehatan Provinsi Aceh Tahun 2018".Dinas Kesehatan Provinsi Aceh. Banda Aceh. 2018.
[5] Duwi Priyatno, "Analisis Korelasi, Regresi, dan Multivariate dengan SPSS". Cetakan 1. Jakarta. 2013.
[6] Fikawati, Sandra "Gizi Anak dan Remaja". Depok: Rajawali Pers; Depok. 2017
[7] Https://teumuleh.id/2017/04/27/stunting-dan-masa-depan-generasi-aceh
[8] Ghozali, Imam. "Aplikasi Analisis Multivariate dengan Program SPSS". (Edisi Ke 4). Semarang: Badan Penerbit Universitas Diponegoro. Semarang. 2014
[9] Nasikhah, R. *Faktor-faktor Resiko Kejadian Stunting pada Balita Usia 24-36 bulan di Kecamatan Semarang Timur*. Artikel Penelitian.Program Studi Ilmu Gizi Universitas Diponegoro. Semarang. 2012.
[10] Riskesdas" Riset Kesehatan Dasar 2013. Badan Penelitian dan Pengembangan Kesehatan Kementerian Kesehatan RI". Jakarta 2013.
[11] Sugiyono, "Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D". Alfabeta. Bandung. 2014
[12] Sulastri, Delmi. *Faktor Determinan Kejadian Stunting Pada Anak Usia Sekolah Di Kecamatan Lubuk Kilangan Kota Padang*. Fakultas Kedokteran Universitas Andalas : Padang.2012
[13] Trihono, "Pendek (stunting) di Indonesia, Masalah dan Solusinya". Badan Penelitian dan pengembangan Kesehatan.Jakarta : 23-37. 2015.
[14] UNICEF, 2017. Stunted Pada Balita. Public Health.