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Modeling of Stunting Events Based on Nutritional Status of Elementary School Students

Abstract Background: The purposes of this study were to describe the variables that influence the stunting events and to find a model of stunting events in elementary school students using logistic regression analysis. Methods: This study uses a survey method. The respondents were elementary school students.

The data in this study were obtained using observation, questionnaires and interviews techniques. The data analysis used was a binary logistic regression test with the category of stunting and normal children. Parameter estimation was tested using Maximum Likelihood Estimation (MLE) so that parameters were obtained that could explain the occurrence of stunting and to test the suitability of the model used the stepwise method.

Results: Variables that influence the incidence of stunting include family income, energy adequacy level, protein adequacy level, maternal education level, energy consumption habits, and protein consumption habits. The mathematical model of stunting event which is found illustrates $Z = 10.081 - 2.494X_3 - 2.343X_4 - 1.794X_5$ where, 10,081 are constants, X_3 = Protein Adequacy Rate, X_4 = Maternal Education Level, X_5 = Energy Consumption Habits.

$P_i = 1 / (1 + e^{-z})$ is the probability for each individual stunting child and the probability for a normal child is $1 - P_i$. Conclusion: Logistic regression equation model can be used for decision making in determining the category of stunting student. The probability of stunting occurrence in elementary school students in Gorontalo is significantly affected by the level of protein adequacy, maternal education level and energy consumption habits
Keywords: Modeling, Stunting, Nutritional Status, Elementary School Students

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Introduction Malnutrition is now an acute problem specifically in the Asian region.

According to a 2017 report by the World Health Organization (WHO), the United Nations Children's Fund (UNICEF) and the World Bank Group stated that more than half of all stunted children, almost half of all overweight children and more than two thirds of all wasted children live in the region^{1,2}. Although there are few follow-up studies from childhood to adult age, substantial evidence suggests an association between stunting and present cognitive ability school performance in children from low-income and middle income countries³.

Globally in 2017, 151 million children under the age of five (22%) were stunted (too short for their age), with three quarters of the WHO South-East Asia Region or WHO African Region⁴. Child undernutrition and stunting remain serious public health problems in Indonesia⁵. With an average prevalence of stunting toddlers in 2005-2017 of 36.4%, Indonesia is the third country with the highest prevalence in the Southeast Asia / South-East Asia Regional (SEAR)⁶.

In Gorontalo province, the percentage of nutritional status of stunting children in 2017 is 31.7% with characteristics of acute-chronic nutritional problems⁷. Stunting is a child who is too short for his or her age. It is important to pay special attention to the incidence of stunting because the condition of this growth disorder can lead to increased morbidity and mortality, loss of physical growth potential, reduced neurodevelopmental and cognitive function and the risk of chronic disease in adulthood⁸.

Observational human studies indicate stunting can be associated with nutritionally poor, mainly plant-based diets⁹. In an effort to deal with stunting problems, decision making certainly must involve and utilize data or tables that must be translated qualitatively. Preparation of data in a more continuous and objective form is needed so that new data is obtained around the existing data - but not as observational data - then we can interpret new data based on old data¹⁰. For this reason, observation data needs to be expressed model shape.

This study was conducted to describe the variables that influence the stunting events and to find a model of stunting events in elementary school students using logistic regression analysis. Logistic regression which is one of the most used statistical analyzes in multivariable models especially in medical research¹¹. Logistic regression analysis is

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one of the mathematical model approaches used to analyze between one or several independent variables with a dependent variable category that is dichotomous or binary.

The dichotomous categorical variables are variables that have two values of variation, for example satisfied - not satisfied, smoking - not smoking and others. In logistic regression, the independent variable may be a mixture of categorical and numerical variables. But the independent variable should be used in the form of categorical because in interpreting the results of the analysis will be easier 12.

Methods This study uses a survey method. The respondents were elementary school students. Sampling is done in stages, namely from the selection of schools, classes and students. Determination of school samples is done purposively. Elementary School 24 of Gorontalo was chosen with the consideration that in this school there were students who had a tendency to problems in nutritional status.

Based on preliminary observations, 10 out of 25 students in Elementary School 24 of Gorontalo were stunted. From the results of data collection in the Tomulabutao Selatan sub-district - where the Elementary School 24 is located - regarding socio-economic conditions, as many as 35% of the residents do not have jobs which affect the family's economic condition.

From the interviews of eating habits of Elementary School 24 students, 19 of the 25 students had high energy consumption habits and 15 students consumed moderate protein. The total number of students in this school from grade 1 to grade 6 is 185 students. Determination of class samples considering students who have been able to be interviewed, so that students who are the sample of the study are students in grades 4, 5 and 6. The total number of students in these classes is 75 students and all of them are used as research samples.

Data collection methods used were observation, questionnaires and interviews. Observations were made to directly measure the height, weight and age of students who became the study sample. Height was measured by a microtoise tool and a height-for-age 5 to 19 years table. The microtoise tool is generally used for children who can stand with 0.1 cm accuracy.

In addition, observations were also made to assess the nutritional status of students

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using anthropometric measurements. Anthropometry is a simple tool for assessing nutritional status in individuals and communities and offers the advantages of objective evidence with relatively low technology 13. The anthropometric index used is height according to age because height is an anthropometry that describes skeletal development.

This index describes the nutrition of the past and is closely related to socio-economic status 14. The questionnaire and interview methods were used to determine family income, socio-economic, and food consumption habits by using 24-hour food recall and food frequency forms. The research analysis methods consisted of univariate, bivariate and multivariate analysis.

Univariate analysis was used to describe the characteristics of elementary school students. Bivariate analysis was used to select each independent variable with the dependent variable through a simple logistic regression test. If the results of the bivariate test have a value of $p < 0.25$ then the variable can be included in the multivariate model. But it is possible for the $p \text{ value} > 0.25$ to remain multivariate if the variable is substantially important. Multivariate analysis is used to analyze many variables simultaneously.

In this study, multivariate analysis used a logistic regression test to predict the value of the dependent variable. The purpose of logistic regression analysis is to get the best and simplest model that can describe the relationship of the independent variable with the dependent variable 12.

The symbolic model of logistic regression is formulated as follows: $P = \frac{e^{X_1\beta_1 + X_2\beta_2 + \dots + X_n\beta_n}}{1 + e^{X_1\beta_1 + X_2\beta_2 + \dots + X_n\beta_n}}$ Where P is the probability of someone included in the stunting category or not. X1 is family income, X2 is the level of energy sufficiency, X3 is the level of protein sufficiency, X4 is maternal education level, X5 is the energy consumption habit, and X6 is the protein consumption habit.

In the case of a stunting event P is the probability of a stunting child and $1 - P$ is the probability of a normal child. The estimation of logit model is done by using the Maximum Likelihood (ML) method. The Maximum Likelihood (ML) method is used to find the regression coefficient so that the probability of occurrence of the dependent variable can be as high as possible or as much as possible. The criteria are the smaller the value of -2LL, the better the model and vice versa the greater the value of -2LL then

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the less the model.

Results Characteristics of students in this study include energy consumption habits, protein consumption habits, maternal education level, and family income. Based on energy consumption habits, 43 respondents or 57.33% had high habits, while those with moderate habits were 32 respondents or 42.66% of the overall study sample. For the characteristics of protein consumption habits, 44 respondents or 58.66% had high protein consumption habits while those with moderate protein consumption habits were 31 respondents or 41.33%.

On the educational characteristics of mothers, respondents who were highly educated were 54 respondents or 72% while those with low education were 21 or 28%. For the family income characteristics, respondents who have a high-income family are 49 respondents or 65.33% while those with low income are 26 respondents or 34.66% of the total study sample. In this study, all student characteristics were used as variables that influenced the incidence of stunting.

In addition there are 2 main variables, namely the level of energy sufficiency and the level of protein sufficiency. Thus 6 independent variables that influence the incidence of stunting include X1 = family income, X2 = energy adequacy level, X3 = protein adequacy level, X4 = maternal education level, X5 = energy consumption habits, and X6 = protein consumption habits.

The six variables were selected using bivariate analysis through a simple logistic regression test. The test result of each variable show a value of p value <0.25 . Bivariate analysis of family income factors with stunting event has p value = 0,000 (p value <0.25), energy adequacy level with stunting event has a value of p value = 0,000 (p value <0.25), protein adequacy level with stunting event has p value = 0.000 (p value <0.25), maternal education level with stunting events has a p value = 0.000 (p value <0.25), energy consumption habits with stunting events have a p value = 0,000 (p value <0.25), and proteins consumption habits factors with stunting events have a p value = 0.022 (p value <0.25). Thus the six variables can be included in the multivariate model.

The modeling process of stunting events is done through the logistic regression statistical test using the SPSS program. Table 1 displayed information about predictive accuracy of 56%. Predictive accuracy is obtained based on previously determined independent and dependent variable data.

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Thus there is an independent variable that affects the dependent variable of the stunting event¹⁵. The value of the stunting event consists of 2 categories, namely stunting and normal. In this study, 6 independent variables were determined, namely X1 = family income, X2 = energy adequacy level, X3 = protein adequacy level, X4 = maternal education level, X5 = energy consumption habits, and X6 = protein consumption habits. Table 2 displayed statistical information about the estimated model.

By using the stepwise method, in the third step 3 independent variables are produced which significantly influence the dependent variable with each sig value (0.021), sig (0.000) and sig (0.000). Table 3 gave information about the model's goodness of fit. The value of Cox & Snel R Square is 0.507. This means that the three independent variables in the logit model can explain the incidence of stunting by 50.7%.

Whereas based on Nagelkerke R square the size is 0.68. This figure showed that the three independent variables in the logistic model can explain the incidence of stunting by 68%. The Chi Square test on the Hosmer and Lemeshow test showed that it is not significant so the predicted probability is in accordance with the observed probability.

Table 4 described the overall prediction accuracy of 88%. While the accuracy of predictions of normal students and stunting is 85.7% and 90.9% respectively. Table 5 presents the results of the process of selecting independent variables included in the equation through the Stepwise method. There are 3 independent variables in the equation that influence the decision of the student in the stunting category, namely the Protein Consumption Level (PCL) with the level of sig. (0.001), Maternal Education Level (MEL) sig. (0.002) and Energy Consumption Habits (ECH) sig. (0.023).

Protein Consumption Habits (PCH), Energy Adequacy (EA), and Family Income (FI) variables were not included in the logistic regression equation because they were not significant. The logistic regression model produced is $Z = 10,081 - 2,494X_3 - 2,343X_4 - 1,794X_5$, where the number 10,081 is a constant, the X3 coefficient -2,292, the coefficient of X4 -2,343, and the coefficient X5 -1,794.

$P_i = 1 / (1 + e^{-z})$ is the probability for each individual stunting child and the probability for a normal child $1 - P_i$. Discussion Based on the results of data collection through observation, interviews, and questionnaires as well as measuring the nutritional status of energy and protein consumption habits, 6 variables were determined to influence the

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incidence of stunting.

These variables are X1 = family income, X2 = energy adequacy level, X3 = protein adequacy level, X4 = maternal education level, X5 = energy consumption habits, and X6 = protein consumption habits. Based on the processed data, the mathematical model of stunting is $Z = 10,081 - 2,494X3 - 2,343X4 - 1,794X5$ where, 10,081 are constants, X3 = Protein Adequacy Level, X4 = Maternal Education Level, X5 = Energy Consumption Habits. The first variable that affects is the level of protein adequacy.

Protein needs of children aged 6-15 years are increasing because it is widely used for new cell growth, tissue maintenance and replacement of damaged cells including brain cells, bones, muscles, then the formation of important body components such as enzymes, hormones, red blood cells¹⁶. Children with the level of protein adequacy less can be caused by protein intake into the body <60gr, the frequency of eating in a day is only twice.

Children who have enough are good with a protein intake ≥ 60 gr per day and the frequency of eating children three times a day. Most types of food from protein sources consumed by Elementary School 24 students are fish, tofu, fermented soybean and eggs with a frequency of 1-3 times a day. The limitation of this unbalanced food intake causes the child to get sick often, his motor and intellectual abilities are low compared to normal children.

In accordance with observations around 34.66% of children are less agile and responsive in answering simple questions given. The level of education is very influential on changes in attitudes and healthy behavior, because it makes it easier for someone to absorb information and implement behavior in daily life. The level of maternal education is related to the level of care given to children.

Parenting practices are closely related to maternal education is the practice of choosing family food especially for children¹⁷. The variable energy consumption habits influence the incidence of stunting of elementary school students. The habit of consuming staple foods such as rice is an energy source. Nutrients are important part of the health and growth¹⁸.

Generally children consume food according to their own preferences without regard to what nutrients are contained in these foods. The results of this study indicate that there

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is a relationship between energy consumption habits and the incidence of stunting. Children rarely consume energy sources of food such as corn, cassava and potatoes while eating frequently are rice, noodles, bread and biscuits.

The main function of carbohydrates is to provide body energy¹⁹. Sources of carbohydrates are whole grains or cereals, tubers, dried beans and sugar. Conclusion The variables that can affect the incidence of stunting are family income, energy adequacy level, protein adequacy level, maternal education level, energy consumption habits, and energy consumption habits.

The logistic regression equation model as a result of the findings can be used for decision making in determining whether a child includes the stunting or normal category. The probability of stunting in Gorontalo elementary school students is significantly influenced by factors such as protein adequacy level, maternal education and food consumption habits.

Acknowledgments The authorshereby would like to thank the Health Department of Gorontalo Province for their valuable assistance during field work. Conflict of interest statement The authors have no conflicts of interest to declare for this study. Funding The authors would like to thank Research and Community Service Institution of Gorontalo State University for financial support of this study.

References Victor P. Child nutrition issues in Southeast Asia. The Asian Post web site; 2018. [updated 3 Feb 2018; cited 17 Mar 2018]; Available from: <https://theasianpost.com/article/child-nutrition-issues-southeast-asia-0>
Unicef/WHO/World Bank. Levels And Trends In Child Malnutrition. Joint Child Malnutrition Estimates, 2017 Edition. 2017; [cited 21 Jun 2018]; Available from: <https://www.who.int/nutgrowthdb/estimates2016/en/> Victora CG, Adair L, Fall C, Hallal PC, Martorell R, Richter L, et al., for the maternal and child undernutrition study group.

Maternal and child undernutrition: consequences for adult health and human capital. Series Maternal and child undernutrition 2. 2008; 371; 340-357 World Health Organization. World health statistics 2018: monitoring health for the SDGs, Sustainable Development Goals; 2018. [cited 21 Jun 2018]; Available from: https://www.who.int/gho/publications/world_health_statistics/2018/en/ Hall C, Bennett C, Crookston B, Dearden K, Hasan M, Linehan M, et al., Maternal Knowledge of Stunting in Rural Indonesia.

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International Journal of Child Health and Nutrition. 2018; 7; 139-145
Kementerian Kesehatan RI. BuletinJendela Data danInformasiKesehatan. 2018; [cited 27 Oct 2018]; Available from:
<http://www.depkes.go.id/download.php?file=download/pusdatin/buletin/Buletin-SIK-2016.pdf> Kementerian Kesehatan RI. HasilPemantauan Status Gizi (PSG) Tahun 2017. Kementerian Kesehatan RI website; 2018. [cited 27 Oct 2018]; Available from:
http://www.kesmas.kemkes.go.id/assets/upload/dir_519d41d8cd98f00/files/Buku-Saku-Nasional-PSG-2017_975.pdf deOnis M, BrancaF. Childhood stunting: a global perspective. *Matern Child Nutr.* 2016; 12 (Suppl. 1):12–26 Millward DJ.

Nutrition, infection and stunting: the roles of deficiencies of individual nutrients and foods, and of inflammation, as determinants of reduced linear growth of children. *Nutrition Research Reviews.* 2017; 30(1): 50-72 Parhusip HA. Pemodelan Statistika (Dari Data ke Model dan Analisisnya Untuk Data Pertanian). Training of Trainer Field School of Traditional Climate Forecasting with Local Wisdom Pranata Mangsa based Pranata Mangsa 21 Software for Effective Pattern Planting and Pest Early Detection; Apr 11; 2015 Bujang MA, Sa'at N, Sidik TMI, Joo LC.

Sample Size Guidelines for Logistic Regression from Observational Studies with Large Population: Emphasis on the Accuracy Between Statistics and Parameters Based on Real Life Clinical Data. *Malays J Med Sci.* 2018; 25(4): 122–130. Riyanto A. Statistik Inferensial Untuk Kesehatan. Yogyakarta: Nuha Medika; 2013. Veghari G. The Relationship of Ethnicity, Socio-economic Factors and Malnutrition in Primary School Children in North of Iran: A Cross-sectional Study. *J Res Health Sci.*

2013; 13(1): 58-62 Supriasa IDN, Bakri B, Fajar I. Penilaian Status Gizi. Jakarta: Penerbit Buku Kedokteran EGC; 2001. Widarjono A. Analisis Statistika Multivariat Terapan. Yogyakarta: UPP STIM YKPN; 2010. Devi N. Gizi Anak Sekolah. Jakarta. Kompas; 2012. Suharjo. Berbagai Cara Pendidikan Gizi. Jakarta. Bumi Aksara; 2003 Niga DM, Purnomo W, Hidayati SN.

Relationship Between Feeding Practices with the Incidence of Stunting in Children Ages 1-2 Years in the Region of Health Center OeboboKupang. *International Journal of Preventive and Public Health Sciences.* 2016; 2(3): 10-13 Sunita A. Prinsip Dasar Ilmu Gizi. Jakarta: Gramedia Pustaka Utama; 2009. Tables Table 1. Accuracy of Constant Predictions Observed _Predicted __ _Decision of stunting events __ _Stunting _Normal _Percentage

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Correct (%) _ _Step 0 _Decision on the incidence of stunting _Stunting Normal _0 0 _33
 42 _ 0 100 _Overall Percentage _ 56 _ _ Table 2.Omnibus Tests of Model Coefficients
 Step _Chi-square _df _Sig. _ _1 _34.605 _1 _0.000 _ _34.605 _1 _0.000 _ _34.605 _1 _0.000 _
 _2 _16.617 _1 _0.000 _ _51.222 _2 _0.000 _ _51.222 _2 _0.000 _ _3 _5.329 _1 _0.021 _ _
 _56.551 _3 _0.000 _ _56.551 _3 _0.000 _ _ Table 3.Goodness of Fit Model, Hosmer and
 Lemeshow Test Step _-2Log likelihood _Cox & Snell R Square _Nagelkerke R Square
 _Chi-square _df _Sig. _ _1 _69.092 _363 _486 _0.000 _0 _ _2 _55.284 _470 _630 _2.534 _2
 _282 _ _3 _49.882 _507 _680 _2.542 _4 _637 _ _ Table 4.Accuracy classification of
 stunting events Observed _Predicted _ _Decision of stunting events _ _Stunting
 _Normal _Percentage Correct (%) _Step 1 _Stunting _Normal _26 _7 _78.8 _ _ _6 _36
 _85.7 _ _Overall Percentage _ _82.7 _Step 2 _Stunting _Normal _26 _7 _78.8 _ _ _6
 _36 _85.7 _ _Overall Percentage _ _82.7

_ _Step 3 _Stunting _Normal _30 _3 _90.9 _ _ _6 _36 _85.7 _ _Overall Percentage _ _
 _88.0 _ _ Table 5.Variables in the Equation _ _B _Df _Sig. _ _Step 1 _PCL _-310 _1 _0.00 _ _
 _Constant _4.74 _1 _0.00 _Step 2 _PCL _-3.14 _1 _0.00 _ _MEL _-2.48 _1 _0.00 _ _
 _Constant _8.31 _1 _0.00 _Step 3 _PCL _-2.49 _1 _0.01 _ _MEL _-2.34 _1 _0.00 _ _PCH
 _-179 _1 _0.04 _ _Constant _10.08 _1 _0.00 _ _

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