

The Effect of Diet Patterns, Food Security and Clean and Healthy Living Behavior (PHBS) on the Incidence of Stunting In Lontar Village, Tirtayasa District, Serang Regency In 2024

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Article Info	ABSTRACT
<p>Keywords: Stunting, Diet, PHBS, Food Security and SmartPLS</p>	<p>Stunting is a condition where a toddler has a height that is lower than it should be according to age. Diet, Clean and Healthy Living Behavior (PHBS) and Food Security are some of the factors that play a major role in stunting. The purpose of this study was to determine the direct and indirect effects of the relationship between Diet, Clean and Healthy Living Behavior and Food Security on Stunting Incidence. The research design was carried out with a case study to determine the effect of diet, food security and clean and healthy living behavior on the incidence of toddler Stunting in Lontar Village, Tirtayasa District, Serang Regency in 2024. The population of this study were toddlers aged 2-5 years who had their height measured in January - August 2024 totaling 3,598 toddlers. Consisting of a case population, namely toddlers with Stunting as many as 229 toddlers. The results of the study on the indirect effect of PHBS (X2) on Stunting Incidence (Y), through Food Security (Z) were 0.015. P-Values = 0.341 > 0.05, it is concluded that Food Security (Z) does not significantly mediate the relationship between PHBS (X2) and Stunting Incidence (Y), and the indirect effect of Dietary Patterns (X1) on Stunting Incidence (Y), through Food Security (Z) is 0.127. P-Values = 0.035 < 0.05, it is concluded that Food Security (Z) significantly mediates the relationship between Dietary Patterns (X1) and Stunting Incidence (Y). Dietary Patterns, PHBS and Food Security have a very significant influence on stunting incidence in Lontar Village, Tirtayasa District, Serang Regency. Of the three direct variables, the Dietary Pattern variable is the one with the largest value that greatly influences stunting incidence, which is 49.4%. While the two indirect variables for the mediation relationship of Food Security do not significantly affect the relationship between PHBS and Stunting Incidence, Food Security has an effect and significantly mediates the relationship between Dietary Patterns and Stunting Incidence.</p>
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INTRODUCTION

Stunting is a condition where a toddler has a height that is lower than it should be according to age under five years (toddlers) due to malnutrition and infection, especially in the First 1,000 Days of Life (HPK), namely from the fetus to the toddler aged 23 months.¹ The results of the Basic Health Research (RISKESDAS) in 2018 showed a decrease in the prevalence of Toddler Stunting at the national level by 6.4% over a 5-year period, namely from 37.2% (2013) to 30.8% (2018). Meanwhile, for normal toddlers there was an increase from 48.6% (2013) to 57.8% (2018).

The 2016 Global Nutrition Report noted that the prevalence of Stunting in Indonesia is ranked 108 out of a total of 132 countries. In the previous report, Indonesia was listed as one of 17 countries experiencing stunting.² In the Southeast Asia region, the prevalence of Stunting in Indonesia is the second highest, after Cambodia.³ Stunting and other nutritional problems are estimated to reduce Gross Domestic Product (GDP) by around 3% per year.⁴

Based on Riskesdas 2018, there are 2 provinces that have a prevalence of Stunting above 40%. DKI Jakarta Province is one of the provinces that has a prevalence of Stunting below 20%, which is classified as moderate and low. In addition to Stunting, the prevalence of wasting in several provinces has a very high prevalence of above 10%. This is the largest incident of acute malnutrition, with a high risk of death, which is 10 times greater than normal toddlers.⁵

Efforts to accelerate the reduction of Stunting continue to be carried out starting from the Central Government to the Regional Government. Reducing and preventing Stunting rates in Indonesia is the task of all elements of the nation who must be involved and play an active role in accelerating the reduction of Stunting rates in Indonesia. The Banten Provincial Government is committed to accelerating the reduction of Stunting as shown by the Prevalence of Stunting which is used as a regional indicator and is thematic development, so that reducing Stunting becomes the focus and priority of development in Banten Province. This can be proven by the achievement of reducing Stunting Prevalence in 2022, which is 20 percent, down 4.5 percent from 2021 (SSGI, 2022).

The reduction in the prevalence of Stunting is one of the target indicators as Mission 1, namely Realizing a Prosperous Society with Noble Morals, Culture, Health and Intelligence in the Banten Province Regional Development Plan document as stipulated in the Banten Province Governor Regulation Number 3 of 2022 concerning the Banten Province Regional Development Plan for 2023 - 2026. Accelerating the reduction of Stunting is one of the priorities of the Banten Province RPD for 2023 - 2026 which is broken down into annual targets set through Banten Governor Regulation Number 8 of 2022 concerning the Banten Province Regional Government Work Plan for 2023. The thematic approach to the 2023 Banten Province RKPD is carried out in order to prioritize (both focus and locus) activities, so that it can accelerate handling efforts so that regional problems and development targets can be realized according to what is planned. The development themes in the 2023 RKPD are as follows:

1. Regional Food Security;

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2. Reducing Unemployment through vocational education and Entrepreneurship;
3. Accelerating Stunting Reduction;
4. Control of Pollution and Damage to the Cibanten Watershed;
5. Government Performance Management.

In Serang Regency, stunting in toddlers is still high, especially in the area of Lontar Village, Tirtayasa District, which is one of the stunting loci. Based on data from 2023, out of 438 toddlers, 331 toddlers are potential for stunting. Good nutritional quality for toddlers from the fulfillment of the needs of all aspects of toddler growth and development so that a good future is achieved and there is no growth failure due to malnutrition. ⁶

Stunting in the Lontar Village area, Tirtayasa District, most of them occur at the age of 12-59 months. There are still children with Stunting who are often sick. Based on the results of interviews conducted with nutrition officers from the Tirtayasa Health Center and several cadres at 10 integrated health posts in the Tirtayasa Health Center work area, the cause of Stunting in the health center work area is caused by inappropriate feeding by mothers and the influence of the environment and public awareness of Healthy and Clean Lifestyle Patterns (PHBS) and also the socio-economic conditions of the community on the availability of food. The pattern of parents feeding their toddlers is inappropriate, and the amount of nutritional intake in food does not match the nutritional needs of toddlers and socio-economic factors which are the main factors in supporting the sustainability of PHBS and the fulfillment of nutrition in food ingredients which are sources of nutritional intake for toddlers.

Malnutrition in toddlers can cause delayed brain development and decreased immunity to infectious diseases.⁷ The accumulative process of lack of food and nutrient intake in the long term is Stunting.⁸ However, the current problem found with the occurrence of Stunting in toddlers aged 2-5 years has not been proven in the Lontar Village area, Tirtayasa District, Serang Regency. Toddler diet is very important in the growth process. Nutrition is closely related to health and intelligence. If a toddler is deficient in nutrition, it will be easy to get infected and the toddler's growth will also be disrupted, thin body, malnutrition and even short toddlers (Stunting) can occur, so a good diet also needs to be developed to avoid lack of nutrients.⁹

Provision of (MP-ASI) due to low household food security.¹⁰ Household food security can be influenced by several factors, namely education, income and parental employment.¹¹ Households that have vulnerable food security cause inadequate food availability and access so that food supplies and toddler food intake are not met. Insufficient food intake in the long term can have an impact on nutritional status.¹² The results of Safitri's study in 2017 stated that families who experience food insecurity mostly have stunted toddlers.¹³ Other studies also state that households that are food insecure are at 2.7 times greater risk of having stunted toddlers.¹⁴

Based on the 2023 Serang Regency Food Vulnerability Map, several villages are grouped into six priority categories. Priority 1 is the main priority that represents the highest level of vulnerability, while priority 6 is the priority that provides relatively high food security. In other words, priority area (village) 1 is more vulnerable to food insecurity than other areas

(villages) and therefore requires immediate attention. However, this does not mean that the food supply is not guaranteed for the entire population in priority area 1 (village). Conversely, this does not mean that the food supply is guaranteed for the entire population in priority area 6 (village).

Lontar Village, Tirtayasa District, Serang Regency is one of the villages included in the grouping of villages with low resilience, so it is included in the village area with priority 3. Villages that are vulnerable to priority 3 food insecurity are generally caused by:

1. Agricultural land ratio
2. Ratio without clean water
3. Ratio of underprivileged population

PHBS is a health behavior that must be carried out by the entire family with the aim of improving health.¹⁵ According to the Indonesian Ministry of Health in 2007, PHBS is all health behavior and activities carried out consciously by oneself or the entire family. This is so that they can play an active role in society. Clean and Healthy Living Behavior at Home is an effort to help household members know, want, and practice clean and healthy living behavior.¹⁷

There are 10 PHBS indicators in Households, ¹⁸:

1. Childbirth assisted by health workers;
2. Providing exclusive breastfeeding for toddlers;
3. Weighing infants and toddlers every month;
4. Using clean water;
5. Wash hands with clean water and soap;
6. Using a healthy toilet;
7. Eradicating mosquito larvae at home;
8. Eat fruit and vegetables every day;
9. Do physical activity every day;
10. No smoking in the house.

PHBS is one of the indicators to assess the performance of the district/city government in the health sector, namely the achievement of 70% of healthy households. Based on the STBM achievement data of the Tirtayasa Health Center, Serang Regency in 2023 to January 2024 in Lontar Village, Tirtayasa District, out of 928 heads of families examined, 295 had healthy toilets, this shows that only 30% are aware of PHBS. The assessment data on the PHBS indicators carried out by the Tirtayasa Health Center, Serang Regency, shows that the number of households included in the healthy category is 522 families out of 1,001 families that were coached, around 52% have implemented the PHBS indicators.

Stunting intervention is an effort to monitor child growth and development through proper nutrition, stimulation of child growth and development and optimal health to protect young children from disease, and provision of JKN facilities to help them overcome disease. Further improvements are needed in preventing growth retardation in young children. Factors that influence stunting need to be considered, such as diet, PHBS, and food security.

The determinants of stunting are directly and indirectly influenced by several indicators that cannot be analyzed by path analysis or multiple regression analysis. Because the variables cannot be measured directly (latent variables), it is difficult to analyze or analyze the relationships that occur between indicators. latent variables.

Structural Equation Modeling(SEM) is a better analytical and predictive technique because it allows analysis at the deepest level of the variables or models being investigated. This method allows for a more comprehensive picture of research events. Partial least squares (PLS) is an SEM analysis method that has the advantage of being able to represent a comprehensive model while measuring existing relationships, and can provide results that are tailored to the research question.

In this study, researchers used SEM-PLS analysis to measure dietary patterns, PHBS and food security variables related to the incidence of stunting in early childhood as latent variables that cannot be measured directly and to identify significant relationships with stunting. We identified determinants that influence the incidence of stunting, the best indicators to identify stunting and its causative factors. These determinants can be identified.

Formulation of the problem

Based on the explanation above, this study aims to determine the extent to which the most dominant factors influence the occurrence of stunting in toddlers in Lontar Village, Tirtayasa District, Serang Regency, Banten Province. Clean and healthy living behavior (PHBS) is associated with access to clean water sources, clean water quality, access to sanitation facilities, household waste disposal and household food security (food insecurity and SEM-PLS analysis), allowing for more detailed analysis for more concrete efforts towards climate change mitigation.

Research purposes

The purpose of this research is to:

1. Identifying eating patterns, food security, clean and healthy living behavior (PHBS) and stunting incidents;
2. Knowing the influence of diet on the incidence of stunting;
3. Knowing the influence of food security on the incidence of stunting;
4. Knowing the influence of clean and healthy living behavior (PHBS) on the incidence of stunting;
5. To determine the magnitude of the direct and indirect influence of dietary patterns, food security, clean and healthy living behavior (PHBS) on the incidence of stunting.

Scope of Research

In this study, the author took the object of research on mothers and toddlers in Lontar Village, Tirtayasa District, Serang Regency. The scope of this study is only on variables related to the incidence of Stunting in toddlers in Lontar Village, Tirtayasa District, Serang Regency which are related to eating patterns, food security and PHBS, indirectly affecting the incidence of Stunting.

Benefits of research

The results of this study as information are expected to be a reference for developing science for toddler nutrition problems, especially to increase knowledge about the occurrence of stunting in toddlers based on eating patterns, food security and PHBS.

METHOD

This research was conducted with a case study to determine the effect of diet, food security and clean and healthy living behavior on the incidence of stunting in toddlers in Lontar Village, Tirtayasa District, Serang Regency in 2024. The population of this study was toddlers aged 2-5 years whose height measurements were carried out in January - August 2024, totaling 3,598 toddlers. Consisting of a case population, namely toddlers with Stunting, as many as 229 toddlers. A sample is a portion or representative of the population being studied and can describe the condition or characteristics of the population. A sample is a study population selected to be the subject of research.

Sample size According to Arikunto, (2019), if the population is more than 100 people, then 10% - 15% or 15% - 25% or more of the population can be taken.¹⁹ In this study, the population was 229, so according to this opinion, the number of samples taken in this study was 25%. So it can be calculated $229 \times 25\% = 55.25$ rounded up to 60 samples. The sample of this study was obtained from data from the Health Center in Tirtayasa Regency, and the case criteria were height measured by TB/U measurement in January to August 2024 with severe growth retardation of all children aged between 2 and 5 years or malnourished and domiciled in Tirtayasa District. The sample must meet the required criteria. The sample of interest is part of the target group that is directly tested. This group includes subjects who meet the inclusion and exclusion criteria.

The inclusion and exclusion criteria for this research sample are as follows:

1. Inclusion Criteria
Children aged 2-5 years who live in Lontar Village, Tirtayasa District, Serang Regency, were measured for height/age and interviewed.
2. Exclusion Criteria
 - a. Children with congenital abnormalities at the age of 0 months
 - b. Children with a history of premature birth Low birth weight (LBW)

Data collection techniques are carried out through observation, especially by observing the activities, behavior, and conditions of the people being observed by observing. Observation techniques are carried out directly and indirectly. Direct observation is carried out by researchers at the research location, while indirect observation is carried out through notes written by research participants. This observation can be participatory or non-participatory, depending on the context of the research location. Interviews are conducted with the aim of obtaining detailed information about the attitudes, experiences, perceptions and knowledge of survey participants. Data collection will be carried out by the survey administrator through direct observation and interviews using closed questionnaires with each question answered on a Likert scale.

The survey has five answer choices and respondents can only choose one answer. The Likert scale is arranged based on the content of individual question elements. Secondary data was obtained through literature searches, relevant scientific journal articles, and reports from several agencies, the Health Office, the Central Statistics Agency, the Regency Government and the Lontar Village Government. The measurement consists of 43 questionnaires, each with answer choices a, b, c, d, and e. The survey variables consist of four elements, with each variable containing several closed questions with available answer choices. A Likert scale is used to answer each question.

Data processing

Data collection was carried out by village mobilization team (TPD) officers in each work area who were trained by researchers in filling out questionnaires, interview procedures and selecting respondents. Primary data were collected through observation and interviews using questionnaires and anthropometric measurements of children aged 2–5 years, while secondary data were obtained from the Tirtayasa Health Center Program Manager, Serang Regency Stunting Task Force, Tirtayasa District Officers, Central Statistics Agency, Village Mobilization Team (TPD) and Lontar Village Midwives. The data processing process was carried out after the primary and secondary data were collected using the Excel program.

The data will be processed based on the validation of each variable and then interpreted using the output of the analysis results from the data processing computer application (SmartPLS). Considerations in using the smartPLS program analysis include determining the effect of independent variables on dependent variables on dependent variables. Predicting / exploring theory development, the measurement model is reflective, the structural model is complex and the number of research hypotheses is very large, the sample size is flexible and certain data assumptions (data distribution) are needed to check data normality.

This study is a path analysis using four variables. Based on the results of the model development in this study, the model is divided into three substructures, and each substructure has independent variables, dependent variables, and intervening/mediating variables. The path diagram represents the hypothetical path. The path used in the hypothesis is based on three independent variables (dietary pattern variable path, food security path, and PHBS path) and one intervening variable (food security).

Intervening variables is a variable that affects the relationship between the independent variable and the dependent variable in such a way that an indirect relationship is created. This variable is located between the independent variable and the dependent variable so that it does not explain or directly affect the dependent variable.

SmartPLS SEM Analysis Stages

Evaluation of Measurement Model (Outer Model)

Research on the influence of diet, food security and PHBS on the incidence of Stunting, was analyzed using SEM SmartPLS to determine whether or not there is a direct influence of accessibility on the incidence of Stunting in Lontar Village, Tirtayasa District, Serang Regency in 2024. The accessibility variable consists of diet (X1), PHBS (X2) and food security (Z). Evaluation in SEM SmartPLS consists of 2 models, namely the structural model and the

measurement model. Evaluation of the measurement model is carried out before the structural model. The evaluation of the outer PLS model in this study can be seen in the Figure.

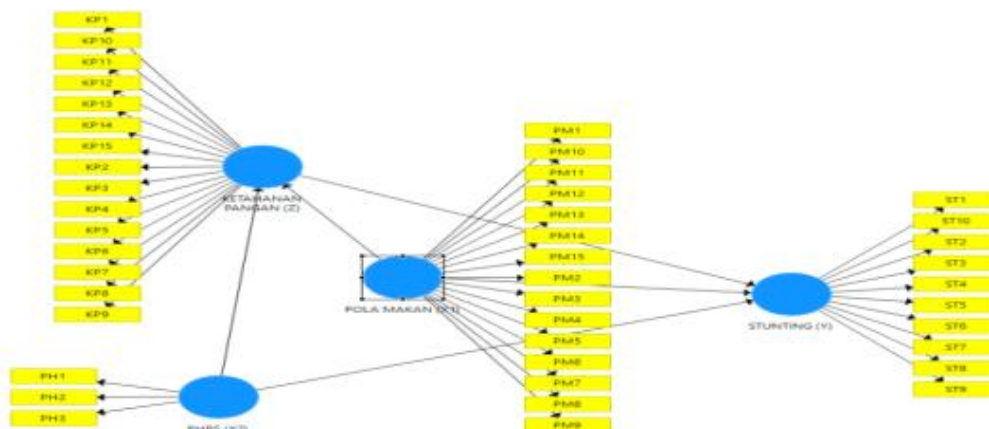


Figure 1. Outer Model of Stunting Incidents

Figure 1. is an outer model, there are variables that each have indicators, namely the Eating Pattern (PM) variable has fifteen indicators consisting of types of food (PM1, PM2, PM3, PM4, PM5), amount of food (PM6, PM7, PM8, PM9, PM10) and meal schedule (PM11, PM12, PM13, PM14, PM15). The PHBS (PH) variable has three indicators consisting of 10 PHBS criteria (PH1), the age of the child when weaned / stopped breastfeeding (PH2) and visits to the integrated health post (PH3). The food security access (KP) variable has fifteen indicators consisting of physical aspects (KP1, KP2, KP3, KP4, KP5), economic aspects (KP6, KP7, KP8, KP9, KP10) and social aspects (KP11, KP12, KP13, KP14, KP15).

Outer model analysis consists of several tests, namely validity and reliability tests. Validity tests in this study use convergent validity and discriminant validity. Convergent validity tests or convergent validity tests are assessed based on factor loading scores and Average variable extracted (AVE). Discriminant validity tests or discriminant validity tests are carried out according to Fornell-Lacker. The research model is said to have discriminant validity if the AVE value for each construct is higher than the relationship between the construct and other constructs in the research model.

Loading Factor

Convergent Validity from the measurement model with reflective indicators can be seen based on the value of the factor loading indicator. The way to test the validity of the discriminant with reflective indicators is by looking at the cross loading value for each variable must be > 0.70.

Average extracted variables (AVE)

The reflective indicator needs to be tested for convergent validity by looking at the Average variable extracted (AVE) value. The AVE value must be above 0.50 to achieve good convergent validity.

Discriminant Validity Test

Discriminant validity can be evaluated using the cross loading value. An indicator is declared to meet discriminant validity if the cross loading value of the indicator on the variable

has a greater value than the indicator value on other variables. In addition to assessing the correlation of indicators on variables with other variables, there are measurements between construct variables in assessing discriminant validity. Fornell-Larcker discriminant validity testing is carried out to assess the correlation between construct variables so that the assessment results can be said to have good discriminant validity if the correlation value between construct variables is greater than the value on other construct variables and has a value greater than the Average variable extracted (AVE) value on the correlation of variables between construct variables.

Reliability Test

Reliability testing is done by looking at the Cronbach's alpha and Composite Reliability values. The Cronbach's alpha and Composite Reliability values must be above 0.7 so that the reliability is good.

Evaluation of Structural Model Results (Inner Model)

R-square (R²) Value Test

The initial step in assessing the PLS model is to look at the R-square for each endogenous latent variable which functions to determine the level of variation in changes in exogenous variables to endogenous variables that have a substantive influence. The R-square values (0.75), (0.50) and (0.25) can be interpreted as (strong), (moderate) and (weak) modeled on a number of design options that can be explained in the model. The higher the R-square value, the better the prediction model of the research model.

Q-Square Value Test (Q²)

Testing the Q-square (Q²) value or predictive relevance value for the construct model has benefits in measuring the quality of the path model in PLS which is calculated by the blindfolding procedure and shows cross-validated redundancy. The Q² test functions to measure the level of how good the observation value is produced by the model and also the indicator estimate. If the Q² value > 0 indicates that the model has a predictive relevance value. While if the Q² value < 0 indicates that the model lacks predictive relevance. Predictive relevance values of 0.02, 0.15, and 0.35 indicate that the latent variable predictor has a weak, medium and large influence.

Hypothesis Testing.

The significance of the estimated prediction model provides information about the relationship between exogenous variables and endogenous variables. In testing the structural model hypothesis, it can be done by looking at the t-statistic and p-value test values. The hypothesis testing of this study is the direct influence of the construct of eating patterns, food security and PHBS on the incidence of Stunting. Furthermore, for the indirect effect, it is explained by the total effect value, namely a description of the direct influence plus the indirect influence through the intervening variable which in this case is the food security variable, or is a description of the influence of eating patterns and PHBS on the incidence of Stunting through food security.

RESULTS AND DISCUSSION

The following are the results of research on the characteristics of toddlers and parents. The characteristics of toddlers in this study are shown through gender and toddlers. The characteristics of parents studied include maternal education, maternal occupation, and family income. The results of the study show that the majority of toddlers *Stunting* have an age of 24-35 months. This is because at that age range children become more active in exploring the surrounding environment which causes an increase in nutritional needs and tends to put anything in their mouths, making them susceptible to malnutrition and susceptible to infectious diseases.

Table 1. Characteristics of Toddlers and Parents in the Stunting Group.

Variables	Stunting Nutritional Status n %
Gender	
Woman	34 (57 %)
Man	26 (43 %)
Toddler Age	
24 - 35 Months	52 (87 %)
36 - 47 Months	7 (12 %)
48 - 59 Months	1 (2 %)
Mother's Education Level	
Did not finish elementary school	0 (0 %)
Graduated from elementary school/Islamic elementary school/equivalent	32 (53 %)
Graduated from junior high school/junior high school/Islamic junior high school/equivalent	17 (28 %)
Graduated from high school/vocational high school/equivalent	11 (18%)
PT.	0 (0 %)
Mother's Job	
Doesn't work	57 (95 %)
Self-employed	0 (0 %)
Farmer/Laborer	1 (2 %)
Private employees	2 (3 %)
civil servant	0 (0 %)
Other	0 (0 %)
Family Income	
Low < 4,601,988	60 (100 %)
Enough > 4,601,988	0 (0 %)

The characteristics of toddlers' gender listed in Table 1 show that most toddlers with growth retardation are girls. The mother's education level is an important aspect of family health. Mothers play an important role in shaping their children's eating habits and thus influencing their children's growth, development, and health. A well-educated mother is expected to maintain healthy eating habits for her family and ensure the availability of food in sufficient quantities and types.

High maternal education affects mothers' behavior and attitudes in meeting their children's nutritional needs. Mothers with higher education tend to be more open about health issues and are more likely to access and understand nutritional information for their children. The more educated a mother is, the more likely she is to choose nutritious and high-quality foods to help her child meet his or her daily needs.

Stunting cases in this study also occurred among children whose mothers were relatively "well educated". Maternal education is not always accompanied by adequate nutritional knowledge. Factors that cause this condition include poor parenting practices from parents, insufficient family income, and increased household responsibilities. Parents who do not work can spend time with their children, they can prepare food for their children, and prepare home-cooked food for them. In addition, mothers also have time to routinely visit the integrated health post every month to find out about their children's health and nutrition.

Toddler Family Income Research has shown that most cases of stunting occur in young children whose family income is <4,601,988, so low-income households with young children are at higher risk of stunting than high-income households. Family income is often determined by the extent to which families can meet their primary, secondary, and tertiary needs. Higher household income makes it easier to meet needs, while lower income makes it difficult for households to meet daily needs. There is a widespread trend among low-income households to purchase foods containing carbohydrates, such as grains, because they are cheaper than protein sources.

As a result, the nutritional needs of early childhood are not optimally met, which results in disrupted growth and development of early childhood and ultimately causes nutritional problems in early childhood.

Interpretation of Results

***Outer loading* or Loading**

Outer loading is a value that explains the relationship (correlation) between an indicator and its latent variable. The higher the outer loading, the closer the relationship between the indicator and its latent variable. Outer loading values > 0.7 are acceptable. While outer loading values < 0.4 are always eliminated from the analysis process. Outer loading values > 0.7, means 0.72 ≈ 50% of the variability of an indicator can be explained or absorbed by its latent variable.

Table 3. Outer Loading

KEJADIAN STUNTING (Y)	KETAHANAN PANGAN (Z)	PHBS (X2)	POLA MAKAN (X1)
KT1	0.737		
KT10	0.813		
KT11	0.794		
KT12	0.782		
KT13	0.777		
KT14	0.763		
KT15	0.741		
KT2	0.768		
KT3	0.795		
KT4	0.771		
KT5	0.765		
KT6	0.721		
KT7	0.762		
KT8	0.812		
KT9	0.735		
PH1		0.908	
PH2		0.862	
PH3		0.871	
PM1			0.880
PM10			0.788
PM11			0.729
PM12			0.733
PM13			0.711
PM14			0.782
PM15			0.787
PM2			0.884
PM3			0.739
PM4			0.868
PM5			0.878
PM6			0.747
PM7			0.915
PM8			0.765
PM9			0.703
ST1	0.772		
ST10	0.906		
ST2	0.710		
ST3	0.725		
ST4	0.874		
ST5	0.852		
ST6	0.864		
ST7	0.841		
ST8	0.766		
ST9	0.894		

Based on the outer loading results in table 3, all outer loading values are > 0.7, which means that all indicators are maintained in the next analysis process.

Average extracted variables (AVE)

Average extracted variable (AVE) is a value (on average) that explains how well a latent variable or construct can explain the variables of its indicators. The higher the AVE, the better a latent variable or construct is in explaining the variables of its indicators. AVE > 0.5 means that a latent variable or construct has absorbed information from its indicators more than 50%. The minimum limit of AVE is 0.5, AVE value > 0.5 is acceptable.

Table 4. Average value of extracted variables (AVE)

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
STUNTING INCIDENT (Y)	0.946	0.949	0.954	0.678
FOOD SECURITY (Z)	0.951	0.956	0.956	0.592
PHBS (X2)	0.860	0.921	0.912	0.776
DIET PATTERN (X1)	0.959	0.969	0.963	0.635

Based on the AVE results in Table 4, all AVE values are > 0.5, which means that the Stunting latent variable has absorbed variables from each indicator > 50%.

Composite Reliability

In the context of PLS-SEM, Composite Reliability is a more appropriate measure of reliability, compared to Cronbach's Alpha. In addition to Cronbach's Alpha, there are other measures that can be used to test unidimensionality (single dimension), Dillon-Goldstein's rho (also called Composite Reliability). Dillon-Goldstein's rho is considered better than Cronbach's Alpha because the Dillon-Goldstein's measure takes into account the extent to which the

latent variables explain the indicator block. The accepted Composite Reliability value is > 0.7 , or in other words, the Dillon-Goldstein's rho value > 0.7 is considered a block of indicators as unidimensional. Based on the Composite Reliability results in Table 4, all Composite Reliability values are > 0.7 .

Cross-loading & Fornel-Larcker Discriminant Validity

Discriminant validity tests the extent to which a construct is truly different from another construct. There are 2 approaches in conducting discriminant validity testing :

Comparing the outer loading value of an indicator to its latent variable and the outer loading value of the indicator to other latent variables. This approach is called cross loading. In this approach, the outer loading value of an indicator to its latent variable must be greater than the outer loading value of the indicator to other latent variables. In this approach, it is tested whether an indicator is really better at measuring its latent variable than other latent variables. In other words, testing whether there are any swapped indicators.

Comparing the average square root value of extracted variables (AVE) of a latent variable to the correlation value between the latent variable and other latent variables. This approach is the Fornell-Larcker approach. In this approach, the square root value of a latent variable must be greater than the correlation value between the latent variable and other latent variables.

Table 5. Discriminant Validity based on the Fornell-Larker approach.

	STUNTING INCIDENT (Y)	FOOD SECURITY (Z)	PHBS (X2)	DIET PATTERN (X1)
STUNTING INCIDENT (Y)	0.823			
FOOD SECURITY (Z)	0.573	0.770		
PHBS (X2)	0.431	0.244	0.881	
DIET PATTERN (X1)	0.694	0.610	0.297	0.797

Because the square root value of AVE for each latent variable is greater than the correlation value between the latent variable and other latent variables, the instrument/questionnaire that has been designed has good discriminant validity based on the Fornell-Larcker approach.

Table 6. Discriminant Validity based on the Cross-loading approach.

	STUNTING INCIDENT (Y)	FOOD SECURITY (Z)	PHBS (X2)	DIET PATTERN (X1)
KT1	0.371	0.737	0.216	0.471
KT10	0.556	0.813	0.263	0.522
KT11	0.305	0.794	0.061	0.365
KT12	0.536	0.782	0.159	0.434
KT13	0.387	0.777	0.173	0.481
KT14	0.427	0.763	0.140	0.520
KT15	0.439	0.741	0.179	0.426
KT2	0.246	0.768	0.221	0.357
KT3	0.314	0.795	0.207	0.379

	STUNTING INCIDENT (Y)	FOOD SECURITY (Z)	PHBS (X2)	DIET PATTERN (X1)
KT4	0.319	0.771	0.224	0.312
KT5	0.367	0.765	0.213	0.332
KT6	0.488	0.721	0.180	0.520
KT7	0.564	0.762	0.214	0.521
KT8	0.377	0.812	0.135	0.571
KT9	0.607	0.735	0.203	0.590
PH1	0.420	0.352	0.908	0.375
PH2	0.350	-0.001	0.862	0.223
PH3	0.353	0.197	0.871	0.144
PM1	0.666	0.547	0.220	0.880
PM10	0.484	0.386	0.118	0.788
PM11	0.436	0.254	0.208	0.729
PM12	0.434	0.389	0.208	0.738
PM13	0.492	0.414	0.166	0.711
PM14	0.505	0.510	0.204	0.782
PM15	0.526	0.497	0.177	0.787
PM2	0.669	0.594	0.320	0.884
PM3	0.474	0.504	0.140	0.739
PM4	0.678	0.604	0.403	0.868
PM5	0.634	0.600	0.354	0.878
PM6	0.539	0.368	0.318	0.747
PM7	0.709	0.679	0.346	0.915
PM8	0.479	0.373	0.194	0.765
PM9	0.369	0.312	-0.030	0.703
ST1	0.772	0.495	0.314	0.609
ST10	0.906	0.460	0.371	0.580
ST2	0.710	0.258	0.307	0.516
ST3	0.725	0.327	0.305	0.579
ST4	0.874	0.602	0.313	0.594
ST5	0.852	0.582	0.310	0.585
ST6	0.864	0.506	0.513	0.573
ST7	0.841	0.554	0.320	0.516
ST8	0.766	0.413	0.433	0.579
ST9	0.894	0.456	0.338	0.570

In cross-loading testing, comparing the loading value between indicators and their latent variables, and the loading value between indicators and other latent variables. In cross-loading testing, it is expected that the loading value between indicators and their latent variables is higher than the loading value between indicators and other latent variables. So it can be concluded in Table 6. that the loading value between each indicator variable and its latent variable is higher than other latent variables.

**Structural Model Testing (Structural Model / Inner Model) Significance Test
 Direct and Indirect Influence (Mediation)**

Next, a significance test is carried out, to test whether diet, PHBS and food security have a significant effect on the incidence of Stunting.

Table 7. Significance Test of Influence.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
FOOD SECURITY (Z) -> STUNTING INCIDENCE (Y)	0.215	0.233	0.115	1,863	0.032
PHBS (X2) -> STUNTING INCIDENT (Y)	0.232	0.223	0.089	2,600	0.005
PHBS (X2) -> FOOD SECURITY (Z)	0.068	0.078	0.122	0.558	0.289
DIET PATTERN (X1) -> STUNTING INCIDENCE (Y)	0.494	0.482	0.117	4.208	0.000
DIET PATTERNS (X1) -> FOOD SECURITY (Z)	0.590	0.599	0.073	8.114	0.000

Based on Table 7, the results obtained are:

1. The path coefficient value (Original Sample) of Food Security (Z) on Stunting Incidence (Y) is 0.215, positive, which means that Food Security (Z) has a positive effect on Stunting Incidence (Y). P-Values = 0.032 < 0.05, so it is concluded that Food Security (Z) has a significant effect on Stunting Incidence (Y). Based on these results, the results obtained are that Food Security (Z) has a positive and significant effect on Stunting Incidence (Y).
2. The path coefficient value (Original Sample) of PHBS (X2) on Stunting Incidence (Y) is 0.232, positive, which means that PHBS (X2) has a positive effect on Stunting Incidence (Y). P-Values = 0.005 < 0.05, so it is concluded that PHBS (X2) has a significant effect on Stunting Incidence (Y). Based on these results, the results obtained are that PHBS (X2) has a positive and significant effect on Stunting Incidence (Y).
3. The path coefficient value (Original Sample) of PHBS (X2) on Stunting Incidence (Y) is 0.068, positive, which means that PHBS (X2) has a positive effect on Food Security (Z). P-Values = 0.289 > 0.05, so it is concluded that PHBS (X2) does not have a significant effect on Food Security (Z). Based on these results, the results obtained are that PHBS (X2) has a positive and insignificant effect on Food Security (Z).
4. The path coefficient value (Original Sample) of Dietary Pattern (X1) on Stunting Incidence (Y) is 0.494, positive, which means that Dietary Pattern (X1) has a positive effect on Stunting Incidence (Y). P-Values = 0.000 < 0.05, so it is concluded that Dietary Pattern (X1) has a significant effect on Stunting Incidence (Y). Based on these results,

the results obtained are that Dietary Pattern (X1) has a positive and significant effect on Stunting Incidence (Y).

- The path coefficient value (Original Sample) of Dietary Pattern (X1) on Food Security (Z) is 0.590, positive, which means that Dietary Pattern (X1) has a positive effect on Food Security (Z). P-Values = 0.000 < 0.05, so it is concluded that Dietary Pattern (X1) has a significant effect on Food Security (Z). Based on these results, the results obtained are that Dietary Pattern (X1) has a positive and significant effect on Food Security (Z).

Table 8. r-square value

	R Square	Adjusted R Square
STUNTING INCIDENT (Y)	0.565	0.542
FOOD SECURITY (Z)	0.377	0.355

In Table 8. r-square value (coefficient of determination). The r-square value is a value that states how much the independent variable is able to explain the variable of the dependent variable. The r-square value on the latent variable Food Security (Z) is 0.377, which means that the variables Diet (X1) and PHBS (X2) are able to explain the variable of the dependent variable Food Security (Z) by 37.7%. While the r-square value on the latent variable PHBS (Y) is 0.565, which means that the variables Diet (X1), PHBS (X2) and Food Security (Z), are able to explain the variable of the dependent variable Stunting Incident (Y) by 56.5%.

Table 9. Mediation Test

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
PHBS (X2) -> FOOD SECURITY (Z) -> STUNTING INCIDENT (Y)	0.015	0.022	0.036	0.409	0.341
DIET PATTERNS (X1) -> FOOD SECURITY (Z) -> STUNTING INCIDENT (Y)	0.127	0.139	0.070	1,815	0.035

Based on the results of the mediation test in Table 9.

- The indirect effect of PHBS (X2) on Stunting Incidence (Y), through Food Security (Z) is 0.015 (Original Sample column). The P-Values = 0.341 > 0.05, so it is concluded that Food Security (Z) does not significantly mediate the relationship between PHBS (X2) and Stunting Incidence (Y). In other words, PHBS (X2) indirectly does not significantly affect Stunting Incidence (Y), through Food Security (Z).
- The indirect effect of Dietary Pattern (X1) on Stunting Incidence (Y), through Food Security (Z) is 0.127 (Original Sample column). The P-Values = 0.035 < 0.05, so it is concluded that Food Security (Z) significantly mediates the relationship between Dietary Pattern (X1) and Stunting Incidence (Y). In other words, Dietary Pattern (X1) indirectly, significantly affects Stunting Incidence (Y), through Food Security (Z).

CONCLUSION

From the results of the study, it can be concluded that Diet, PHBS and Food Security have a very significant influence on the incidence of stunting in Lontar Village, Tirtayasa District, Serang Regency. Of the three direct variables, the Diet variable is the one that has the largest value that greatly influences the incidence of stunting, which is 59%. While the two indirect variables, for the mediation relationship of Food Security do not significantly affect the relationship between PHBS and Stunting, but Food Security has an influence and significantly mediates the relationship between Diet and Stunting.

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