

RESEARCH STUDY

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Factor Analysis of Stunting Toddler Feeding Patterns using Transcultural Nursing Approach

Analisis Faktor Pola Makan pada Balita Stunting dengan Pendekatan Transcultural Nursing

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ABSTRACT

Background: In 2022, prevalence of stunting in Indonesia reach 21.6%. The direct causes of stunting was nutritional intake. The problem of nutritional intake was related to the cultural practices of Indonesian, so this research used a transcultural nursing.

Objectives: This study aimed to identify factors influencing feeding patterns in stunting children based on transcultural nursing.

Methods: Cluster sampling was used for this cross-sectional with 145 mother-child pairs. The independent variables were maternal education, economics, regulations and policies, cultural values and lifestyle, social and family support, religiosity and philosophy and technology. The dependent variable was feeding pattern. The instrument used was a questionnaire. Spearman Rho (p -value=0.05) was used to analyze the relationship between variables.

Results: Economic factors ($p=0.031$; $r=0.250$), government policies and norms ($p=0.034$; $r=0.180$), cultural and lifestyle values ($p=0.001$; $r=0.540$), social support and family ($p=0.000$; $r=0.270$), religious and philosophical beliefs ($p=0.000$; $r=0.321$), and technological developments ($p=0.002$; $r=0.210$) were associated with feeding pattern, no correlation between feeding pattern and mother's education ($p=0.689$).

Conclusions: Economy, regulation and policy, cultural value and lifestyle, religiosity and philosophy, social support and family, and technology associated stunting child's feeding pattern. Cultural beliefs and lifestyle were the most important factors for stunting children's feeding patterns so it is envisaged that paramedics continue to expand their preventive and persuasive efforts by providing health consultations to moms and families.

INTRODUCTION

The impact of stunting in the short term is disruption of brain development, intelligence, physical growth disorders and metabolic disorders¹. The long-term impacts of stunting include poor health, increased risk of developing non-communicable diseases, and poor cognitive and educational achievements achieved in childhood². Stunting in Indonesia is a public health issue related to long-term dietary deficiencies¹. Stunting is considered a public health issue when the prevalence affects 20% or more, as defined by the World Health Organization (WHO)³. Stunting affects over 162 million children worldwide who are less than five years old. Sub-Saharan Africa and South Asia are home to over two-thirds and one-third of the world's stunted children, respectively⁴. Based on data from the 2022 Indonesian Nutritional Status study, stunting rate in Indonesia for toddlers reached 21.6%. In East Java, stunting in toddlers reached 19.2%, and in Malang Regency, stunting in

toddlers reached 23%. One of the factors that influence stunting is nutritional intake⁵.

Feeding patterns can provide an overview of nutritional intake, including the type, amount and schedule of meals to meet nutritional needs⁶. Feeding patterns at each age are different. According to research conducted by Subarkah, most toddlers with the right feeding pattern have normal nutritional status⁷. A mother with a good feeding pattern shows that the mother has given the right food to the toddler, namely, the food given is appropriate to the child's age and meets the child's nutritional needs⁸. Behavioral factors related to malnourished children in Sumenep Regency are still related to local habits and culture⁹. Providing the wrong food can be one of the causes of high rates of malnutrition in society¹⁰.

The culture of the people of Malang Regency to date includes the culture of early feeding with the term *lotheh* (banana rice), giving *lontong*, "*gedhang gaji*"

during infancy so that children grow quickly and become strong. The tradition of feeding and drinking young coconut and honey is used as baby food. Based on a preliminary study conducted on March 10, 2023, it was found that from 20 mothers with toddlers, 90% of mothers gave early complementary food when the child was less than 6 months old in the form of mashed banana rice. They said that giving early complementary food was recommended by his parents, a family tradition. Apart from that, 3 mothers said they often give instant noodles as a substitute for rice for toddlers' consumption. This habit is because toddlers experience food difficulties, such as not liking vegetables and rarely consuming eggs, milk, and meat, so mothers prefer to give toddlers instant noodles, which they prefer so they are full and not fussy.

High risk of disease and disability in old age and uncompetitive work quality result in low economic productivity¹¹. The results of interviews with Janti Community Health Center nutrition program implementers in March 2023 showed that efforts to overcome the problem of stunting took the form of providing additional food. The efforts made to date have not solved the problem of stunting toddlers. Thus, researchers need to conduct research on analyzing factors related to feeding patterns in stunted toddlers based on the transcultural nursing theory approach, which emphasizes the significant role of health workers implementing culture-based interventions in promoting a culture that can improve the nutritional status of toddlers. Several studies analysed factors in feeding patterns using a transcultural nursing approach. The results were factors influencing eating patterns, namely economics, culture, lifestyle and technology¹². There are 7 factors in transcultural nursing theory that influence culture related to health behavior, consisting of educational, economic, regulations and policies, cultural values and lifestyle, social and family support, religiosity and philosophy, and technology¹³. The purpose of this study was to identify factors that influence feeding patterns in stunting children based on transcultural nursing.

METHODS

The type of research carried out was quantitative using a cross-sectional approach. The population of this study was 279 stunting aged 12-36 months and their mothers. Researchers have determined sample criteria: mothers who have stunted children (aged 12-36 months), mothers who can read and write, and mothers who live permanently in the research area. The total sample in this study was 145 children and their mothers. The research location was the Janti Health Center Work Area. In this study, the sampling technique used was probability sampling, cluster sampling type, which was obtained from 64 respondents in Bandungrejosari Village, 39 respondents in Sukun Village, and 42 respondents in Tulusrejo Village.

This study obtained the prevalence or effect of a phenomenon by conducting correlation analysis between independent variables, namely educational factors,

economic factors, regulatory and policy factors, social and family support factors, cultural values and lifestyle factors, religiosity and philosophy factors, and technological factors with the dependent variable is the feeding pattern of stunted toddlers.

Parameters for feeding patterns, namely the number of meals, types of food and meal schedules, were in the appropriate category if total score 55-100% and inappropriate if total score less than 55%¹⁴, maternal education is in the basic education category, namely elementary and middle school, secondary education, namely high school and higher education, namely college education. Economic parameters, namely the impact of income on health and the use of income to meet the food needs of toddlers in the categories of not enough less than <55%, enough 55-75%, good >75%. The regulatory and policy parameters are the mother's attitude towards policies and regulations for posyandu and immunization with categories of not enough less than <55%, enough 55-75%, good >75%. Parameters of cultural values and lifestyle are the ability to prepare food, food taboos and beliefs about food with the cultural value category being positive if $T > T$ mean and negative if $T < T$ mean. The parameters of social and family support are emotional support, appreciation support, cognitive support and material support with categories of not enough less than <55%, enough 55-75%, good >75%. The parameters of religiosity and philosophy are the religion adhered to, the way of looking at disease, the method of treatment/religious habits that have a positive effect on health with a positive religiosity and philosophy score if $T \geq T$ mean and negative if $T < T$ mean. Technological parameters are access to print media, electronics and health services in the categories of not enough less than <55%, enough 55-75%, good >75%¹⁴.

The tools used in this research are: 1). Microtoise to measure the height of toddlers over 2 years old; 2). Body length measuring tool to measure the height of toddlers under 2 years old; 3). WHO Antro 2011 software to determine stunting toddlers. The research instrument uses a questionnaire. This questionnaire was developed independently and has been tested for validity and reliability. Data analysis used Spearman's rho (rs) test. The error level (α value) is set at 0.05 with a confidence level of 95% if p -value ≤ 0.05 then it can be said that there is a meaningful relationship between the two variables so that H_1 is accepted, whereas if p -value $> \alpha = 0.05$ then meaning there is no significant relationship between the two variables, so H_1 is rejected. The level of relationship between two variables, is as follows: 0.00-0.199 (very low), 0.20-0.399 (low), 0.40-0.599 (medium), 0.60-0.799 (strong), 0.80- 1,000 (very strong) This research has received an ethics certificate from KEPK Faculty of Medicine And Health Sciences UIN Maulana Malik Ibrahim Malang with number 287/eC/KEPK-FKIK/2023.

RESULTS AND DISCUSSION

Table 1 explains the factors that influence feeding patterns. This table will explain the relationship between the dependent variable and the independent variable.

Table 1. Analysis Result Factors that Influence Feeding Pattern Stunting Children in Janti Health Center, 2023

Variable	Feeding Pattern						Analysis Bivariat
	Appropriate		Inappropriate		Total		
	n	%	n	%	n	%	
Mothers Education							
Basic Education	27	18.6	3	2.1	30	20.6	<i>Spearman's rho=0.034</i> $\rho=0.689$
Secondary Education	100	69	1	0.7	101	69.7	
Higher Education	14	9.7	0	0	14	9.7	
Economy							
Not Enough	11	7.6	3	2.1	14	9.7	<i>Spearman's rho=0.250</i> $\rho=0.031$
Enough	38	26.2	1	0.7	39	26.9	
Good	92	63.3	0	0	92	63.4	
Regulation and Policies							
Not Enough	11	7.6	3	2.1	14	9.7	<i>Spearman's rho=0.180</i> $\rho=0.034$
Enough	20	13.8	0	0	20	13.8	
Good	110	75.9	1	0.7	111	76.6	
Cultural Value and Lifestyle							
Negative	52	35.9	4	2.8	56	38.6	<i>Spearman's rho=0.540</i> $\rho=0.001$
Positive	89	61.4	0	0	89	61.4	
Social and Family Support							
Not Enough	1	0.7	3	2.1	4	2.8	<i>Spearman's rho=0.270</i> $\rho=0.000$
Enough	73	50.3	1	0.7	74	51	
Good	67	46.2	0	0	67	46.2	
Religiosity and Philosophy							
Negative	26	17.9	4	2.8	30	20.7	<i>Spearman's rho=0.321</i> $\rho=0.000$
Positive	115	79.3	115	79.3	115	79.3	
Technology							
Not Enough	38	26.2	2	1.4	40	27.6	<i>Spearman's rho=0.210</i> $\rho=0.02$
Enough	70	48.3	2	1.4	72	49.7	
Good	33	22.8	0	0	33	22.8	

There was no correlation between mother's level of education and stunting toddler in this research. Leininger's theory of transcultural nursing states that the more educated a client is, the more likely the client's opinions are grounded. People can adopt a way of life that is healthier for them from another culture¹³. George's study in Nigeria suggests that a mother's level of education influences kid's nutritional condition, with poor levels of education among mothers being the primary cause of child malnutrition¹⁵. The results of the research conducted by Sholikhah state that there is no significant relationship between maternal education and the nutritional status of toddlers in rural and urban areas¹⁶. This research result contrast with Kim and Subramanian which explains that education and socio-economics influence children's nutrition, involves food shortages and inadequate access to care and food for children. In this research, most mothers made adequate use of technology by regularly attending the *posyandu* and making use of the available health care facilities. Currently, most mothers can access nutrition through electronic media so there is no relationship between education and knowledge because mothers can search for information about nutrition themselves¹⁷.

The research results show a relationship between economic factors and feeding patterns in stunted toddlers. The transcultural nursing theory explains that factors that influence a person's economic value are family income, other sources of income, health insurance, and the impact of income on health¹⁸. According to Subarkah's research, high income will determine good purchasing power⁷. Conversely, low

income will reduce purchasing power. This research aligns with Hagos's research that family income spent to improve children's nutritional status by buying quality food can prevent malnutrition in children¹⁹.

The research results show a relationship between regulatory and policy factors and feeding patterns for stunted toddlers. *Posyandu* can increase knowledge about nutrition and health²⁰. *Posyandu* in the Janti Community Health Center working area is held regularly once a month. Every month, active toddlers at the *posyandu* receive weight measurements, health checks, provision of additional food and nutritional counseling. Of course, this is quite helpful for health services for mothers and toddlers. Toddlers measured for height based on age were found to be stunted and recorded by *posyandu* cadres. Then, the village midwife reported them to the nutritionist section at the Community Health Center so that respondents could consult with nutritionists and get supplementary feeding for toddlers. According to Wijayanti's research, *posyandu* and complete immunization are factors related to being underweight, stunting and wasting²¹.

The study's findings show a relationship between cultural norms, dietary habits, and the prevalence of stunting in young children. According to transcultural nursing theory, culture is the learned and shared norms or practices of a group's members that provide direction for thinking, acting, and decision making¹³. A belief that healthy food is important for children's development and a lack of faith in food taboos like eggs, fish, and chicken are examples of the positive cultural and lifestyle values shared by respondents in this research. These findings

support Isnatri's studies, which found a connection between cultural values and Lifestyle and eating habits in children with malnutrition and low nutritional status. 52% of respondents with negative cultural and lifestyle values in this study reported, among other things, a history of early complementary feeding with young coconut water, a belief that giving more rice than side dishes and vegetables is good for health, and a belief that their children experience stunting due to the inheritance of their parents' diet²².

The research results show a relationship between social and family support factors and feeding patterns in stunted toddlers. According to the transcultural nursing theory, social and family functions as a support system for its members and are shown to improve health and the adaptation process¹³. Social and family factors include family attention/support for the mother in providing food, psychosocial stimulation, and child health practices. The head of the family or husband plays an important role in a family, including providing motivational education and facilitating the wife when giving food to children²³.

In this study, adequate and good social and family Support supports and makes it easier for mothers to carry out activities related to feeding patterns for stunted toddlers. The results of the research conducted by Nurhayati, who states that social factors and good family attachment increase appropriate maternal behavior²⁴. Isnatri's study, which contradicts this finding, found no association between social and familial support characteristics and eating habits in undernourished children. For the most part, this is since respondents do have enough social and familial support, but they are nonetheless feeding their children in an unhealthy way. Mothers in Indonesia require more social and familial support when it comes to feeding their children because of the cultural norm that everyone pitches in²².

The results of the research show that there is a relationship between religiosity and philosophy factors and feeding patterns in stunted toddlers. Transcultural nursing theory posits that a person's religion may serve as a powerful drive to value truth more than anything else, even one's own life. It makes one more receptive and modest¹³. Religiosity and philosophy include the religion one adheres to, the way one views disease and the methods of treatment/religious habits that positively affect health. A person's religiosity can influence every person's behavior, including health, in feeding toddlers. In this study, most respondents had positive religiosity & philosophy and influenced appropriate maternal behavior in feeding stunted toddlers. In this study, the mother's religiosity influences her calm pattern of caring for her child and what the mother gives to her child. The results of the research conducted, which states that most mothers have positive religiosity & philosophy in the form of perspective and care provided by respondents to their babies²⁵.

The study's findings show a relationship between technological variables to abnormal eating habits in children who are at risk of stunting. The transcultural nursing hypothesis posits that technology variables are among the cultural influences on individual behavior¹³. Health technology is an infrastructure that allows individuals to choose or obtain offers that solve problems

in health services²⁶. Technological factors as a source of information are anything that becomes an intermediary in conveying information and influencing capabilities. The development of electronic and print media has now grown very rapidly. Information about appropriate feeding patterns for children can be found in electronic or print media.

Kim and Subramanian, in their research, also stated that nutrition in children involves adequate access to care and food for children¹⁷. Adequate use of technology in this research was due to respondents using electronic media to find the right feeding patterns for toddlers. However, based on the research results, it was found that the lowest score utilized print media (books, magazines, etc.). Most people polled said that they seldom use print media as a source of information. As a result, the trend toward employing technology to better toddlers' nutritional status necessitates the use of print media (leaflets, pamphlets, etc.) in health education on healthy eating. These findings echo those of Astuti's work in the Godean subdistrict, which found that mothers might benefit from exposure to more educational materials thanks to the ease with which modern media could be accessed²⁷. The advantage of this research is that the researcher directly measured the toddler's height so that the data obtained was valid.

CONCLUSIONS

The eating habits of children at risk of stunting are affected by various social, cultural, religious, economic, and technological factors. Most closely linked to children's poor eating habits are cultural norms and ways of living. Information regarding providing nutritious food to toddlers should be given to mothers and families, so that families also gain knowledge about feeding patterns for stunted toddlers. This information will influence family behavior in guiding mothers in child care, namely feeding stunting toddlers. Increasing the use of print media (leaflets, booklets, etc.) in technology, so that mothers make more use of technology to increase knowledge about feeding patterns for toddlers which can improve the nutritional status of toddlers.

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Conflict of Interest and Funding Disclosure

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