



Mothers' parenting patterns on stunting cases in toddlers: A case from Cirebon Health Center, West Java, Indonesia

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ABSTRACT

Background: A recent survey conducted in 2021 noted a high stunting incident was found in Cirebon, West Java of Indonesia, reached to 30.6%, even higher compare to the provincial rate (24.5%). It has been known that parenting patterns and nutritional status are greatly influenced by the mother's understanding of managing health and nutrition for their baby in order to lower the stunting case.

Aims: This study is to analyze the association between mother's parenting patterns and stunting in toddlers age 24-48 month in Cirebon Municipality.

Methods: A total of 68 mothers have been selected using the consecutive sampling from a health facility in Cirebon City, Indonesia. This research uses survey and descriptive methods with a quantitative approach to examine the impact of mother's parenting patterns on stunting incidence in toddlers aged 24-48 months. This research also uses secondary data in the form of KIA (Mother and Child Health) records to identify the stunting cases among the respondents. Statistical analysis was employed to find how significant the variables affecting to the others.

Results: From the questionnaire, it was found that the majority of participants were mothers aged 26-35 years old, and only graduated from high school or lower, and most of them were not working mothers. The stunting incidence found in this health center reached to 58.8 %. While only 36.8% of mothers exhibits well parenting pattern, the majority may show sufficient level (52.9%). Even only 10.3% of respondents correspond with low parenting pattern, however all of them found with stunting incidence. From statistical analysis, it is noted that mothers' parenting pattern significantly affecting stunting cases in toddlers (p value = 0.001).

Conclusion: This recent study concludes that parenting pattern significantly contributes to the number of stunting cases in toddler aged 24-48 months. The statistical analysis found mothers with well parenting pattern lower chance of having a stunted child. The data highlights the importance of knowledge and attitude will benefit in reducing the total number of stunted children in Cirebon city, Indonesia.

Keywords: *Parenting pattern; Stunting; Mothers; Toddlers; Indonesia.*

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1. Introduction

Based on World Health Organization (WHO)'s definition, stunting is characterized by a child's impaired growth and development due to several factors including nutritional intake, infections, or insufficient stimulation. The Ministry of Health of Indonesia defines stunting as when a child under five has height-for-age, weight-for-age, and height-for-body-weight Z-score values of less than -2 SD (stunted) and less than -3 SD (severely stunted). Fitriani & Darmawi (2022) describe that children under two years old (Baduta) with stunting may have a suboptimal level of intelligence.

The short-term impacts of stunting may include effects on intelligence, physical growth, and metabolic health. In the long term, stunting can lead to decreased cognitive abilities, lower learning achievement, and compromised immunity leading to increased susceptibility to illnesses, and a higher risk of cardiovascular diseases, cancer, stroke, and disabilities in old age (Pratiwi, Masrul, & Yerizel, 2016).

According to WHO estimates on the prevalence of stunted toddlers, up to 22%, or over 149.2 million toddlers worldwide, were stunted in 2020. A survey conducted by the Indonesian Nutrition Status Study (SSGI), the stunting rate in Indonesia in 2022 reached 21.6%. Looking to the national data, it is important to look deep to the situation in the study area, where it is found in 2021 the stunting rate in Cirebon City reached to 30.6%, even higher compare to the stunting rate in West Java (24.5%). In 2022, the Cirebon Official website estimated the stunting rate in Kesambi District reached the third highest in the Cirebon Municipality, reaching 429 cases of stunting (Ministry of Health, 2018).

Parenting pattern is one of the dominant factors that cause stunting indirectly. Parenting patterns and nutritional status are greatly influenced by the mother's understanding of managing health and nutrition in her family. Education is needed to change behavior that can lead to improved healthy nutrition for mothers and children (Rosuliana, 2022). The parenting pattern given by the mother to the child is related to the state of health (both physical and mental), nutritional status, education, knowledge and skills of roles in the family, and the mother's customs. Health status is one aspect of parenting that can influence children's nutritional status to improve (Bella et al., 2020).

The causes of stunting include toddlers with a history of low birth weight, history of infectious diseases, parenting patterns regarding nutrition, exclusive provision of breast milk, availability of food and clothing, parental education, culture, and economics. Behavior related to inadequate or bad parenting can also cause stunting specifically the mother's lack of knowledge about fulfilling her nutrition during pregnancy, and even the nutritional preparations that must be fulfilled when preparing for pregnancy and after giving birth to increase good breast milk production (Noorhasanah, 2021).

The first thousand days of birth are the golden period, namely the critical period in growth and development. Lack of attention from parents, especially mothers, during this critical period resulted in failure of optimal growth and development which will carry over into adulthood permanently. If the breastfeeding pattern is not correct or complementary breast milk food (MP-ASI) does not meet the body's nutritional needs, the baby will experience growth problems. As age increases, nutritional intake is lower than requirements, and the high burden of infectious diseases in early life means that the majority of babies in Indonesia continue to experience a decline in nutritional status with a peak decline at approximately 24-48 months of age (Herianti & Elwindra, 2017). It becomes very important to study and analyze the association between mother's parenting patterns and stunting in toddlers age 24-48 month in Cirebon Municipality.

2. Methods

Study design

This research uses survey and descriptive methods with a quantitative approach to examine the impact of mother's parenting patterns on stunting incidence in toddlers aged 24-48 months. Drajat Health Center of Cirebon City, West Java, Indonesia, was selected since it has been considered with high stunting rate compared with the provincial rate. This study has been ethically approved by the Ethic Committee of Faculty of Medicine, Universitas Swadaya Gunung Jati, following the seven WHO standards, with number No.14/EC/FKUGJ/V/2023, on May 15th, 2023.

Population and samples

This research was conducted in April-June 2023 in the Drajat Community Health Center Area, Cirebon Municipality. Respondents in the research sample were mothers with toddlers aged 24-48 months, had a KIA (Mother and Child Health) record, residence of the Drajat Cirebon Community Health Center area, and selected using consecutive sampling technique.

Measurement

The data was carried out by researchers using a set of questionnaire distributed to the mother that met the criteria. The children with stunting were measured the height based on the age. Respondents' characteristics have been documented. This study observes the parenting pattern among the respondents, and measured the relationship with the stunting cases in the sampling location.

Data collection

The respondents' characteristics and parenting pattern among the participated parents were collected using questionnaire. The data was then analyzed statistically using univariate and bivariate analysis with spearman test. This research also uses secondary data in the form of KIA (Mother and Child Health) records to identify the stunting cases among the respondents. Research data collection was carried out after obtaining a letter of ethical approval from the research ethics commission of the faculty of medicine Swadaya Gunung Jati University.

Analysis data

The research results are presented in the form of a textual table. Statistical analysis used univariate and bivariate analysis with spearman test. Validity and reliability testing using SPSS is declared valid with result >0.63 . The theories presented led to reflective indicators being used in this study.

3. Results

The number of respondents taken was 68 respondents using the consecutive sampling method who met the inclusion and exclusion criteria. The characteristics of the respondents in this study were described based on age, highest level of education, and occupation. The data used in this research is primary data obtained directly by researchers through questionnaires. The questions in the questionnaire have been tested for validity and reliability. With valid results for all question items and reliable reliability results (alpha coefficient value 0.877).

Table 1. Frequency Distribution of Respondent Characteristics

Variables	n	%
Age		
17-25 years old	6	8.8
26-35 years old	46	67.6
36-45 years old	15	22.1
46-55 years old	1	1.5
Mother's Education		
SD (Elementary School)	7	10.3
SMP (Junior High)	9	13.2
SMA/SMK (Senior High)	51	75.0
S1(Bachelor's Degree)	1	1.5
Mother's Occupation		
Housewife	50	73.5
Entrepreneur	9	13.2
Employee	9	13.2
Total	68	100.0

Index: n = number, % = percentage

Based on Table 1, it states that the most respondents were in the 26-35 year age group, namely 46 respondents (67.6%), while the fewest were in the 46-55 year age group, namely 1 respondent (1.5%) there was 1 respondent (1.5%) aged 46-55 years. Based on the mother's education, it was found that the majority of mothers' last education was SMA/SMK, 51 respondents (75.0%), and there were 7 respondents (10.3%) whose last education was elementary school. Based on maternal occupation, it was found that the majority of mothers' occupation was as a housewife, 50 respondents (75.3%).

Table 2. Parenting Pattern Frequency Distribution

Parenting Pattern	f	%
Well	25	36.8
Sufficient	36	52.9
Low	7	10.3
Total	68	100.0

Index: f = frequency, % = percentage

Based on Table 2, it shows that the frequency distribution of respondents with good maternal parenting patterns was 25 respondents (36.8%). There were 7 respondents (10.3%) who had poor parenting patterns, while the majority of parents have sufficient parenting patterns (52.9%).

Table 3. Stunting Frequency Distribution

Stunting	f	%
Stunting	40	58.8
Normal	28	41.2
Total	68	100

Index: f = frequency, % = percentage

Based on Table 3, it shows the frequency distribution of stunting incidents in children under five in the Drajat Community Health Center area, with the Stunting category there were 40 respondents (58.8%). There were 28 respondents in the Normal category (41.2%).

Table 4. Cross-tabulation between Parenting Pattern and Stunting

		Stunting		Total	p-value	
		Stunting	Normal			
Parenting Pattern	Well	N	9	16	25	0.001
		%	36.0	64.0	100	
	Sufficient	N	24	12	36	
		%	66.7	33.3	100	
	Low	N	7	0	7	
		%	100	0.0	100	
Total	N	40	28	68		
	%	58.8	41.2	100		

Table 4 shows that, of the 25 respondents with good parenting patterns there are 9 cases of stunting (36%) with stunting nutritional status. Among the 36 respondents with sufficient parenting patterns, there were 24 stunting incidents (66.7%). This study notes that all parents with deficient parenting pattern, it was found with stunting incidents (100%). The results of the Spearman test shows a significance value (p-value) of 0.001, which shows that statistically there is a relationship between parenting patterns and the incidence of stunting in toddlers aged 24-48 months in the Drajat Community Health Center area.

4. Discussion

The results of this research analysis show that there were 25 respondents (36.8%) who had good parenting patterns whilst there are 7 poor parenting patterns (10.3%). This shows that there are still poor parenting patterns given by mothers to their toddlers in the Cirebon’s local community. From this study, it is noted that half of respondents in the Drajat Community Health Center area recorded with sufficient parenting pattern (52.9%).

Parenting pattern is the care given by parents or other caregivers in the form of attitudes and behavior in terms of closeness to the child, feeding, caring for, maintaining cleanliness, giving affection, and so on. This parenting interaction is good communication and all actions that support the creation of closeness between mother and child. With sufficient or even full time given by the mother to her toddler, it will provide a sense of

comfort and good attention from the mother, thereby supporting efforts to maintain the toddler's health and nutritional status. A close, intimate, and harmonious relationship between parents and children (toddlers) is an absolute requirement to ensure harmonious growth and development, physical, mental, and psychosocial.

Mothers who provide good psychosocial stimulation to children have a positive effect on the child's nutritional status. Parenting patterns are one of the indirect factors that support the achievement of good status for children under five (Rusdi & Mariyona, 2019). This is in line with research conducted by Bella et al (2020) which concluded that there is a significant relationship between feeding habits and stunting incidents. Providing food in a good and healthy way by controlling the portion of food consumed will improve the nutritional status of children. Good food for children must meet the requirements for adequate energy and nutrients according to age, a balanced menu pattern with available food ingredients, the child's eating habits and tastes, food forms and portions adapted to the child's condition and paying attention to personal and environmental hygiene (Bella et al., 2020). Additionally, it is noted that that mothers' knowledge on causes and preventions of diarrhea will significantly reduce the diarrhea incidence rate to their under-five children (Lwin & Putra, 2018)

A cross sectional study with 100 mothers in the a local Health Center in Cirebon city found that education, working status and knowledge were significantly related with nutritional status of infants aged 6 to 24 months (Alfiana, Pratiwi, & Sanif, 2019). The majority of mothers in the Cirebon local community were housewife only graduated from high school or lower. A qualitative study conducted by Bakara and Fikawati (2018) among mothers with 0-6 months infants in a district health center found that early age mother may not receive a complete Early Breast Feeding (EFB) knowledge and significantly having lack of knowledge on exclusive breastfeeding and low perception of insufficient breast milk. It becomes important since a significant relationship was found between exclusive breastfeeding and the incidence of stunting (Pratama & Irwandi, 2021).

It is noted that families that implement bad parenting habits (poor parenting patterns) have a 9 times chance of having bad nutritional status. Parenting patterns are important in the child's growth and development process. One of the factors that influence a child's growth and development is the presence of psychosocial factors which include important things in a child's life, namely the importance of stimulation in parenting. A good parenting pattern is an illustration of the child's positive interaction with the main caregiver (mother) which plays a role in the child's emotional and psychological development, thereby creating normal child development.

The role of parents as early as possible is to establish a sense of security in their children. This is realized through physical and psychological contact from the time the child is born until the process of growth and development. Lack of parental love in the first years has a negative impact on children's growth and development physically, mentally and emotionally (Bella et al., 2020).

The results of this study based on measurements of nutritional status, namely weight, height, and BMI of toddlers, showed that the incidence of stunting was 40 cases (58.8%). This shows that the prevalence of stunting in the Drajat Community Health Center, Cirebon City, remains a public health problem. This is in accordance with the Indonesian Ministry of Health's report which states that Indonesia placed the third highest country in the world and the highest country in Southeast Asia for the prevalence of stunting. The average prevalence of stunted toddlers in Indonesia in 2005-2017 was 36.4%. The prevalence of stunting under five in Indonesia in 2016 was 27.5% and increased by 29.6% in 2017. According to the Indonesian Nutrition Status Study (SSGI) in 2022, the stunting rate in Indonesia in 2022 reached 21.6 % (Ministry of Health, 2018).

Stunting is a serious health problem because it is associated with the risk of morbidity and death and suboptimal brain development in children. Stunting threatens the development of the nation's next generation, thereby reducing a nation's productive capacity in the future (Bappenas, 2017). If not handled properly, stunting will become a risk factor for increased mortality rates, cognitive abilities, low motor development, and even imbalance in body functions. Apart from that, stunting is also associated with an increased risk of decreased intellectual abilities, and productivity and an increased risk of degenerative diseases in the future. Children with stunting will tend to be more susceptible to infectious diseases, thereby increasing the risk of experiencing a decline in the quality of learning.

The results of this research are in line with research by Rosuliana et al (2022), which showed that there was a significant relationship between maternal parenting in terms of feeding and cases of stunting in children aged 12-59 months at one of the Bima Regency Health Centers. Another research conducted by Bella et al (2020) showed that the proportion of stunting under-five children in poor families in Palembang City was 29%. There is a significant relationship between feeding habits, parenting habits, hygiene habits, and habits of getting health services and the incidence of toddler stunting. Another study conducted by Noorhasanah et al (2021), showed results that as many as 55.7% of respondents with poor parenting patterns had short and very short children and there was a relationship between maternal parenting patterns and the incidence of stunting in children aged 12-59 months (Bella et al., 2020; Noorhasanah, 2021; Rosuliana, 2022).

The results of this research analysis also show that there are 7 toddlers experiencing poor parenting patterns and 7 (100.0%) of these toddlers have stunting. The parenting pattern applied by the mother will affect the growth and development of toddlers because malnutrition during the toddler years will be irreversible (cannot be returned), so during the toddler year's quality food intake is needed to prevent stunting. The better the parenting pattern, the better the nutritional status of the child (Bella *et al.*, 2020; Pratiwi, Masrul, & Yerizel, 2016).

Parenting pattern plays important role in toddlers' nutritional status, including family's ability to provide time, attention and support to meet the physical, mental and social needs of children growing in the family. Parenting patterns for children are applied in several ways, for example providing breast milk and quality complementary foods, psychosocial stimulation, environmental hygiene and sanitation practices, caring for children when they are sick, in this case health practices at home and patterns of seeking health services. This study found that bad parenting pattern significantly affecting the stunting incidence in Cirebon where high number of stunting cases was measured.

If we try to draw how exclusive breastfeeding has been implemented in Indonesia, it is still far from expectations. Nationally, the coverage of babies receiving exclusive breastfeeding in 2017 was 61.33%. However, this figure has not reached the exclusive breastfeeding coverage target set by the government, namely 80%. This is due to the lack of public knowledge regarding the importance of exclusive breastfeeding, babies who are given additional food before the age of 6 months and lack of nutrition from breastfeeding mothers so that breast milk production decreases. In this study, we found that the lack of exclusive breastfeeding strongly correlated with the variable maternal parenting patterns, and moderately related with the incidence of stunting.

Mothers who apply a democratic parenting pattern will give their children the opportunity to choose the food they like, but still supervise them. Democratic parenting is considered the most ideal parenting pattern, especially for toddlers who are experiencing a period of growth and development. Having discussions among parents regarding eating will play an effective role in controlling children's nutritional intake because parents pay attention to nutritional needs and balance, this causes children's growth to be ideal and the risk of stunting or other nutritional problems can be reduced (UNICEF, 2019). It should be noted also that information sharing by the family and the support to the mothers are very essential to the mothers in providing adequate nutrition for their babies (Tiasna & Astuti, 2017).

Future research can examine other determinants affecting stunting incidents, including external and internal factors. Not only low birth weight, future studies need to cover the birth interval since this factor also significantly related with severe stunting incidence (Suwarni *et. al.*, 2023).

5. Conclusion

This recent study concludes that parenting pattern significantly contributes to the number of stunting cases in toddler aged 24-48 months. The statistical analysis found mothers with well parenting pattern lower chance of having a stunted child. The data highlights the importance of knowledge and attitude will benefit in reducing the total number of stunted children in Cirebon city.

Conflict of Interest

The authors declare no conflicts of interest for the results.

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