Parental Feeding Styles Related to the Stunting in Sleman, Indonesia

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ABSTRACT

The study aimed to determine the correlation between parental feeding style and stunting in toddlers. This study was an observational method with a cross-sectional design. The population of this study were all mothers of toddlers who were in the Minggir Puskesmas (Public Health Center) working area. The sample size in this study was 114 mothers of toddlers, and the sample was chosen using the cluster random sampling technique. Determination of parenting style variables based on demandingness and responsiveness scores. There are four categories of parental feeding styles, namely democratic, authoritarian, permissive, and neglect parenting. Anthropometric measurements of toddlers were carried out directly, and interviews using the parental feeding style questionnaire that had been tested for validation and reliability. That the data was analyzed with Fisher's Exact test. The Fisher's Exact test revealed that there was a correlation between parental feeding styles approaches to the stunting incidence with the value of p=0.000 (p<0.05). The parental feeding style that mostly applied to cause stunting is the neglect-feeding style (8.8%). Parents should further improve their parenting patterns by always paying attention to food intake, especially the amount, frequency of feeding, and type of food.

Keywords: feeding style, parenting style, stunted, toddler

INTRODUCTION

Stunting is a chronic nutritional problem in children under five years old characterized by a low ratio of length or height to age according to a z-score of -3 SD to <-2 SD (stunted) and <-3 SD (severely stunted) (MoH RI 2020a). According to WHO (World Health Organization), the prevalence of stunting in toddlers was as high as 22% or as many as 149.2 million of children in 2020 (WHO 2020). South-East Asia Regional (SEAR) was ranked sixth in the world in the prevalence of stunting in toddlers, as much as 27.3% or as many as 15.3 million in 2020 (WHO 2020). Based on the Survey of Toddlers' Nutritional Status in Indonesia (Survey Status Gizi Balita Indonesia-SSGBI), the prevalence of stunting in Indonesia is as much as 26.2%. This figure is relatively high because it passes the threshold of stunting from (WHO 2020) which is less than 20% (MoH RI 2020b). The result from the data of Nutritional Status Monitoring (Pemantauan Status Gizi-PSG) showed that the prevalence of stunting in toddlers in Sleman Regency reached 11.9% in 2017, lowered to 11.0% in 2018 and again, lowered to 8.4% in 2019. Although there

was a decline in the percentage of the prevalence of stunting in 2019, the number of toddlers in monitoring was still high, which was as many as 58,521 toddlers, compared to 55,055 toddlers in 2018. One of the *Puskesmas* (Public Health Centre) in Sleman Regency, namely *Puskesmas* Minggir, had a prevalence of stunting in toddlers as much as 15.8%, which can be categorized as high seen from the strategic plan of Sleman Regency, which is 11.5% (Dinkes Sleman 2020).

It is proven from the research that the lack of food intake, inadequate parenting style, short-stature genetics, failure to exclusively breastfed, failure to get early breastfeeding initiation (*Inisiasi Menyusu Dini*-IMD), inadequate sanitation, low birth weight (*Berat Badan Lahir Rendah*-BBLR), and anemic pregnant mothers are the factors which lead to stunting (Ernawati 2020).

Nutritional status is also indirectly influenced by various factors, such as food availability, parenting style, parental education level, and healthcare (Bella *et al.* 2020). Based on the finding of one of the researches in Sleman Regency, there was a significant correlation between parenting style on feeding and stunting

status (Melcita *et al.* 2016). Based on the finding of the research from Harahap & Handayani (2022) in Riau, one of the factors which became the risk factor of stunting occurrence was parenting style on feeding (Harahap & Handayani 2022). This is in line with the finding of the research conducted by Lailayah in the work area of *Puskesmas* Dapet in Gresik, showing a significant corellation between parenting style in feeding and stunting occurrence on toddlers aged 2–5 years (Lailiyah *et al.* 2021).

Parental style of feeding has the aspects of demandingness and responsiveness. Democratic parenting describes a balance of high demandingness and responsiveness, where mothers are active in encouraging children to eat while still providing good responsiveness by providing affection and warmth. Authoritarian parenting has a high demandingness aspect but low responsiveness, indicating that mothers who demand or invite children are high but mothers are less responsive in meeting children's food needs. Permissive parenting has low demandingness and high responsiveness. This shows that the mother is less demanding for the child to eat but the mother gives the opportunity and freedom to the child to choose their own food. A neglectful parenting style is a combination of low demandingness aspect and low responsiveness aspect. Low demand demonstrates that the mother neglects the children and frees the children to consume food without any demand, while low response demonstrates that the mother is not responsive enough in fulfilling children's intake needs. Based on Baurmind theory, there are four types of parenting styles employed by parents to their children, namely democratic, authoritarian, permissive, and neglectful (Gafoor & Kurukkan 2014).

Based on the elaboration above, one of the factors leading to stunting is the parenting style of feeding. Parenting style on feeding is the behaviour of mothers in caretaking the children: feeding daily meals that can affect children's nutrition. This study used Fisher's exact test to determine the corellation between two categorical variables.

METHODS

Design, location, and time

The design of the research was cross-sectional. This research was conducted in

Posyandu (Integrated Health Care) in the work area of Puskesmas (Public Health Center) Minggir, Sleman Regency. There are five villages in the area, namely Desa Sendang Agung, Sendang Mulyo, Sendang Arum, Sendang Sari, and Sendang Rejo. This research was conducted in March 2023. This research has been granted ethical feasibility from the Research Ethics Committee of the Faculty of Health, 'Aisyiyah University Yogyakarta (2627/KEP-UNISA/III/2023).

Sampling

The population in this study were all mothers who had children under five in the working area of the *Puskesmas*. The sample size in this study used the proportion estimation formula and then added 10%, so the sample of this study was 114 mothers of toddlers. The sampling technique used in this study was cluster random sampling, namely sampling by taking representatives from each village taken randomly. The inclusion criteria in this study were mothers who had toddlers in the work area of the *Puskesmas* Sleman Regency and mothers who had toddlers aged 1–5 years. Exclusion criteria in this study were toddlers who had a history of genetic diseases.

The questionnaire on parenting style on feeding has been through validity and reliability test using the product moment formula with a total of 24 questions. The result was pronounced valid with a score of 0.04 and pronounced reliable with Cronbach's Alpha score of 0.90. The instruments were pronounced valid and reliable. The "favorable" statement "always" was given the score of 4, "often" was given the score of 3, "sometimes" was given the score of 2, and "never" was given the score of 0. For "unfavorable" statement, "always" was given the score of 0, "sometimes" was given the score of 2, "seldom" was given the score of 3, and "never" was given the score of 4. The calculation of Demandingness (D) and Responsiveness (R) answers from each respondent yielded the total questionnaire score. The total score from the entire respondents was counted for their median. Then, based on the median value, each respondent's answer score was classified into four categories: democratic parenting style (D value>median and R>median), authoritarian parenting style (D value>median and R<median), permissive parenting style (D

value<median and R>median), and neglectful parenting style (D and R-value<median) (Astuti 2014). The free variable in this research was parenting style on feeding with an ordinal measurement scale, while the bound variable in this research was stunting occurrence on toddlers with a nominal measurement scale. Determining the variable of parenting style on feeding was based on the demandingness and responsiveness scores. The categories of parenting styles feeding were divided into four kinds, namely parenting democratic style, authoritarian parenting style, permissive parenting style, and neglectful parenting style. The tool to measure the variable was the questionnaire of parenting style on feeding, consisting of 17 demandingness questions and 7 responsiveness questions, in which the questionnaire would be filled according to the result of the interview with the toddlers' mothers. The variable of stunting occurrence in toddlers was a bound variable measured based on the result of anthropometric measurement of the toddlers, which then was interpreted based on the indicator of height/age (height according to age) employing WHO-Anthro application. This variable was grouped into two categories, namely stunting and normal. According to the WHO anthropometric classification, nutritional status is categorized if the z-score value is <-3 SD (severely stunted), -3 SD to <-2 SD (stunted), -2 SD to +3 SD (normal) and >+3 SD (high).

Data collection

The data source in this study is primary data, which is data found in the field. The primary data collection process began with explaining the purpose and objectives of the study to the participants. Anthropometric measurements were assisted by *Posyandu* cadres in each village and two enumerators. Anthropometric measurements were assisted by *Posyandu* cadres in each village and two enumerators. The data collected included mother's education level, mother's occupation, feeding parenting style, and the incidence of stunting in the Minggir *Puskesmas* working area.

Data analysis

Categorical data analysis is presented in the form of numbers and frequencies. Fisher's Exact test used to determine the association between parental feeding style and stunting showed a significant correlation if the p-value was 0.005 measured by licensed statistic software stata version 13. The requirements of the Fisher's Exact test requires are that the Expected value is less than 5 and the data scale is categorical. Fisher's exact test was employed to observe the relationship between parenting style on feeding and stunting occurrence.

RESULTS AND DISCUSSION

This research was conducted in *Posyandu* (Integrated Health Care) in the work area of *Puskesmas* (Public Health Center) Minggir, Sleman Regency. From the research conducted, the data obtained from 114 respondents were explained. Based on Table 1, it can be seen that the majority of mothers who are senior high school/equal graduates (n=47, 41.2%) and mothers who are housewives (n=74, 64.9%).

Based on Table 2 about the characteristics of the toddlers, it can be seen that there were 58 male (50.9%), and majority of the toddlers have normal nutritional status (n=90, 78.9%). However, these were 24 toddlers who were stunting (21.1%).

The aspect of parenting style on feeding

Among stunting children, parental feeding style of low demandingness was greater than those with parental feeding style high demandingness (Table 3).

The result of the statistical test employing Fisher's Exact shows a significant degree as much as p=0.000 by determining a significant degree p<0.05. The result of the analysis illustrates a significant correlation between parenting style on feeding and stunting occurrence in toddlers in the work area of *Puskesmas* Minggir (Table 4).

Stunting is a condition where toddlers have less length or height when compared to age due to chronic malnutrition (long-term malnutrition) caused by insufficient nutritional intake as a result of feeding that is not in accordance with nutritional needs (MoH RI 2020b).

According to Diana Baumrind's theory, parenting is parents educating, caring for, guiding, and protecting children in achieving the maturity process. The most important parenting has good behavior, especially infulfillment of nutrition. Inadequate feeding leads to inadequate food intake. Nutrient deficiencies, especially energy and protein nutrients, are a direct factor because

Table 1. The characteristics of the mothers of the toddlers

Variable	n	%
Mother's education		
Elementary school/equal	4	3.5
Junior high school/equal	42	36.8
Senior high school/equal	47	41.2
Associate's/Bachelor's degree	21	18.4
Mother's occupation		
Housewive	74	64.9
Farmer	9	7.9
Entrepreneur	25	21.9
Civil servants	6	5.3
Total	114	100.0

physical growth in children will be inhibited (Pratama *et al.* 2019). Another research showed the correlation between parenting style on feeding with stunting occurrence with a p value of 0.001 (Wibowo *et al.* 2023). This research is in line with the research conducted by Syafei (2022), stating that there was a significant correlation between parenting style on feeding with stunting.

Based on the results of the study, the majority of toddlers who experienced stunting (8.8%) had mothers with neglectful parenting, while the majority of toddlers who did normal (58.8%) had mothers with democratic parenting. A Neglectful parenting style is a combination of low demandingness aspect and low responsiveness aspect. Low demand demonstrates that the mother neglects the children and frees the children to consume food without any demand, while low response demonstrates that the mother is not responsive enough in fulfilling children's intake needs. Thus, they can influence the children's nutritional status. The research from Gunawan stated that the parenting style for feeding children with stunting was mostly neglectful (as many 39.2%). Gunawan stated that neglectful parenting style was shown in the form of mothers who neglected their children while eating at any time and neglected the children when the children did not want to eat, which caused unfulfilled nutritional needs in children (Gunawan *et al.* 2020). The research from Wardani stated that the majority of toddlers with stunting had a neglectful parenting style (44.4%), with p-value of 0.003, meaning that there was a significant correlation between parenting style on feeding with stunting occurrence. In the research data, it was found that there was a lack of maternal role in demanding children to eat (Wardani & Andari 2022).

The questionnaire on parental style of feeding has the aspects of demandingness and responsiveness. The aspect of demandingness is the tendency of parents to demand, control, and monitor childcare. In contrast, the aspect of responsiveness is the tendency of parents to demonstrate warmth, acceptance, and involvement in childcare.

Based on the finding of this research, mothers who employ a democratic parenting style, as many 58.8% and have proven to have children without stunting. The democratic parenting style found in this research illustrates that there is balance in the aspect of high demandingness and responsiveness where the mothers actively encourage the children to eat. At the same time, still providing good responses towards children's intake needs by giving love and warmth. This study is in line with previous research stating that most democratic parenting patterns were found in as many (60.0%) in toddlers with good nutritional status (Rahmiati & Yuliati 2023). For toddlers with non-stunting, this research is in line with the previous research where (86.7%) implemented a

Table 2. The characteristics of the toddlers

Variable	n	%		
Sex				
Male	58	50.9		
Female	56	49.1		
Nutritional status				
Stunting	24	21.1		
Normal	90	78.9		
Total	114	100.00		

Parental feeding styles related to stunting

Table 3. The distribution of the frequency in the aspect of parenting style on feeding

	Nutritional status				m . 1	
Parenting style aspect	Stunting		Normal		Total	
	n	%	n	%	n	%
Demandingness						
Low	13	11.4	12	10.5	25	21.9
High	11	9.7	78	68.4	89	78.1
Responsiveness						
Low	13	11.4	16	14	29	25.4
High	11	9.7	74	64.9	85	74.6
Total	24	21.1	90	78.9	114	100

democratic parenting style. Based on the research finding, mothers who demanded their children to eat while balancing it with high responsiveness made toddlers finish their meals without stress (Ramadhani & Novera 2022). Mothers who implement a democratic parenting style have 5.1 times more potential to have toddlers without stunting (Rahman 2018).

Based on the analysis, this research finds that the prevalence of authoritarian parenting style is as much as 2.6% in toddlers with stunting with p=0.000. Authoritarian parenting style happens when mothers are too demanding to the children but are not responsive enough to the

children's needs, thus affecting their children's nutritional status. In another research, it was even found that authoritarian parenting style had in an even bigger prevalence, which was 46.8% with p=0.005 (Rifdi *et al.* 2021). Another research also found that authoritarian parenting style was 34.1% proven to be significant to stunting in toddlers, with p=0.019 (Darussalam *et al.* 2023). Those researches explain that the authoritarian parenting style is prone to causing stunting in toddlers. It is due to high demand (which shows the mothers' demand for the children to eat is very high) and low responsiveness, which shows that the mothers are not responsive enough to fulfill

Table 4. The correlation between parenting style on feeding and stunting occurrence in the work area of *Puskesmas* Minggir

	Nutritional status				T-4-1		
Parenting style on feeding	Stunting		Normal		- Total		p
_	n	%	n	%	n	%	_
Neglectful	10	8.8	2	1.8	12	10.5	0.000^{*}
Permissive	4	3.5	6	5.3	10	8.8	
Autoritarian	3	2.6	15	13.2	18	15.8	
Democratic	7	6.1	67	58.8	74	64.9	
Total	24	21.1	90	79.1	114	100	

^{*}Significant value (p<0.05)

the children's intake needs because the mothers do not push for a balanced meal to the children.

Meanwhile, in the permissive parenting style, it found that 3.5% of toddlers with stunting. In several previous researches, in toddlers with stunting, it was found that the mothers implemented a permissive parenting style (62%) (Christiana et al. 2022). In line with the previous research, toddlers with stunting had mothers with permissive parenting styles as much as 67.3% (Luarsih et al. 2023). The research explains that a permissive parenting style might lead to stunting because, in this parenting style, there is a combination of low demandingness and high responsiveness. The low aspect of demandingness shows that the mothers are not enough to force and demanding the children to eat, while the high responsiveness shows that the mothers give a chance and freedom to the children to choose their food.

Stunting occurrence in toddlers is directly caused by food intake, which is influenced by the mother's parenting style. This research proves that parenting style affects toddlers' nutritional status, such as being underweight, stunting, and wasting in the first year (Mongkolchati & Phuphaibul 2016). In line with the research from Hidayati & Pratiwi (2022), there is a significant correlation between parenting style on feeding and stunting occurrences by stating, that a good parenting style on feeding depends on the skill of the mothers in arranging the menu to fulfil toddler's nutritional needs (Hidayati & Pratiwi 2022).

daily life, the parenting style implemented by parents is multidimensional, meaning that parents can implement a democratic parenting style on particular occasions. However, parents can also use authoritarian, permissive, and even neglectful parenting style. The implementation of parenting styles by the parents can be influenced by various factors, social and environmental (Yıldız & Duru 2020). Sometimes, parents need to be authoritarian to increase their demands towards their children for adequate feeding. In different atmosphere, parents are needed to be permissive when children need a more fun feeding atmospheres and need warmth from the parents. Therefore, parents must adapt to the kind of parenting style which is adapted to the condition so that they can maintain their children's normal nutritional status.

CONCLUSION

Based on the objectives of the study, it can be concluded that there is a significant relationship between the two variables, namely parenting patterns in feeding with the incidence of stunting in the Minggir *Puskesmas* working area.

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DECLARATION OF CONFLICT OF INTERESTS

The authors have no conflict of interest.

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