RESEARCH ARTICLE

Knowledge and action related to stimulation development of stunted children

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Abstract

Abstract

Objective: To analyse the correlation of parental knowledge and parental stimulation with toddler stunting.

Method: The cross-sectional study was conducted in April 2020 at the Tlanakan Health Centre, Pamekasan Regency, Indonesia, and comprised mothers of stunted children aged 6-36 months who had no comorbid disease. Data was collected using a questionnaire and a checklist. Data was analysed SPSS with Spearmen Rank correlation.

Results: Of the 186 mothers, 125(67.2%) were aged 20-30 years, and 168(90.3%) were housewives. Among the children, 97(52.2%) were boys and 89(47.8%) were girls. The largest age group was that of 25-36 months 80(43%). There was a significant correlation of parental knowledge and stimulation with the development of stunting toddlers (p=0.001).

Conclusion: Parental knowledge and actions of developmental stimulation by parents were related to the quality of development of the stunted children.

Keywords: Growth disorders**,** Stunting, Child development, Parental knowledge. (JPMA 73: S-59 [Suppl. 2]; 2023)

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Introduction

Stunting is a state of chronic malnutrition that requires a long time for children to develop and recover.[1-3] in the South Asian region, stunting has been found to be closely related to poor child development at an early age.[4-5] Several studies also show that nutritional deficiencies from the prenatal phase to early childhood can cause neurological disorders and brain development disorders that can affect motor, language and personal social development.[6] The negative impact of delayed child development continues across the child's life, which has an impact on the quality of life[7].Stunting hinders development because the formation of brain cells is very rapid from when the foetus is still in the womb till the child is three years old, and strategies to increase developmental stimulation efforts that can be carried out by mothers tend to have a synergistic positive impact on the development of such children in the early age. [8]

Parents should immediately recognise abnormalities in their child's development.[9-10] According to a study, parental behaviour in Tlanakan District towards providing developmental stimulation to children is not in accordance with the stimulation principle as they tend to use loud, high-pitched voices while stimulating the children. Parents with stunted children are expected to increase efforts to optimise the development of stunting children so that they may have age-appropriate development.[11]

Developmental disorders in the world have been increasing every year[12]. The incidence in Indonesia in 2018 was 12%, while stunting was 24.6%.[13] Screening for early detection of child development in East Java reached 79.7%[14] and prevalence of stunting in East Java reached 33%.[13].The number of stunted children in Pamekasan area in 2019 was 8968, with Pamekasan Regency being the second highest among the 38 districts in East Java.[15]

Parents with stunting children only focussed on treatment to ensure anthropometric growth, but parents are less aware of stimulation efforts.[11] Some parents think that developmental delays are natural because later the child will develop automatically.[16] Excessive parental protection hinders the development of children.[17] Parental knowledge can affect parenting and stimulation; with higher knowledge, parents can direct their children as early as possible which will affect children's thinking power to imagine.[18,19]

According to the health belief model (HBM), which consists of three components of perception, one of which is threat, stunting is a description of chronic malnutrition status that can threaten child development.[8] Parents take developmental stimulation actions influenced by driving factors and perceptions of beliefs; often called cues to action.[20] Background factors of the HBM theory that are considered to have an effect on a person's health behaviour include the mother's level of education and knowledge regarding the development of stunted children.[21] The active role of parents in child development is needed,

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especially in stunted children aged <3 years[7]. Government efforts in optimising child development, like providing stimulation, and detection and intervention services for growth and development, are included in the minimum service standards in the health sector.[22]

The current study was planned to analyse the correlation of parental knowledge and parental stimulation with toddler stunting.

Subjects and methods

The cross-sectional study was conducted in April 2020 at the Tlanakan Health Centre, Pamekasan Regency, Indonesia. After approval from the ethics review committee of the Faculty of Nursing, Universitas Airlangga, the sample size was determined on the basis of formula for cross-sectional studies.[23] The sample was raised using probability with cluster random sampling technique.

Thus, included were mothers and stunted children aged <5 years and having no comorbidity.

Data was collected using questionnaires and check lists sent through Google Forms. Before filling out the questionnaire, respondents received an explanation of the aims, benefits, risks and contacts of researchers who could be contacted. If mothers were willing, they were asked to sign the consent form to become respondents.

The parental knowledge questionnaire was designed based on the Knowledge of Infant Development Inventory (KIDI) [24] which had 15 items related to child development according to age, stimulation measures and children's nutritional needs (stunting). The questionnaire used the Guttman scale,[25] with true-false answers. The correct answer for a positive statement was scored 1, otherwise it was scored 0. For negative statements, if it was true, it was scored 0, and, if false, it was scored 1. The questionnaire was tested for validity and reliability and Cronbach alpha value 0.913 was noted.

The 10-item parents' stimulation action questionnaire was based on literature[26]. It measured and categorised using 4-point Likert scales, ranging from never=0 to always=3 for positive questions, and from never=3 to always=0 for negative elements. All the questions were valid and reliable with Cronbach alpha value 0.92.

Data was also obtained from the institutional database. The subjects were enrolled using an absent draw based on the institutional data.

It took approximately 15-20 minutes for the questionnaires to be filled out. The respondents received a souvenir in the form of a lunch box after filling out the questionnaire.

Data was analysed using SPSS with Spearmen Rank correlation and the significance level was <0.05.

Results

Of the 186 mothers, 125(67.2%) were aged 20-30 years, and 168(90.3%) were housewives. Among the children, 97(52.2%) were boys and 89(47.8%) were girls. The largest age group was that of 25-36 months 80(43%) (Table 1). Parental knowledge was good in 64(34.4%) cases (Table 2), while the level of parental stimulation was good in 45(24.2%) cases. Besides, child development showed deviation in 64(34.4%) cases (Table 4).

There was a significant correlation of parental knowledge and stimulation with the development of stunting toddlers (p=0.001) (Table 5).

Table-1: Demographic characteristics of the respondents.

Characteristics	Category	n (%)
Gender	Boys	97 (52.2)
	Girls	89 (47.8)
	Total	186 (100)
Children's age (months)	6-8	23 (12.4)
	9-11	14 (7.5)
	12-18	38 (20.4)
	19-24	31 (16.7)
	25-36	80 (43.0)
Total		186 (100)
Children's education	Not at school yet	181 (97.3)
	Playgroup	5 (2.7)
	Total	186 (100)
Mother's' age (years old)	20-30	125 (67.2)
	31-40	51 (27.4)
	41-60	10 (5.4)
Total		186 (100)
Mother's education	Elementary school	25 (13.4)
	Junior high school	86 (46.2)
	Senior high school	68 (36.6)
	Bachelor	7 (3.8)
Total		186 (100)
Mother's Occupation	Housewives	168 (90.3)
	Farmer	18 (9.7)
Total		186 (100)

Table-2: Knowledge about stimulation among the mothers.

Level of knowledge	n (%)
Good	64 (34.4)
Moderate	52 (28.0)
Less	70 (37.6)
Total	186 (100)

Table-3: Level of stimulation among the mothers.

Stimulation	n (%)
Good stimulation	45 (24.2)
Moderate stimulation	65 (34.9)
Low stimulation	76 (40.9)
Total	186 (100)

Table-4: Children's development.

Children's development	n (%)
Normal	60 (32.3)
Doubt	62 (33.3)
Deviation	64 (34.4)
Total	186 (100)

Table-5: Correlation between mother's knowledge and children's development.

Mother's knowledge	Children development			
	Deviation	Doubt	Normal	Total
	n (%)	n (%)	n (%)	n (%)
Less	51 (27.4)	4 (2.2)	15 (8.1)	70 (37.6)
Moderate	5 (2.7)	41 (22)	6 (3.2)	52 (28.0)
Good	8 (4.3)	17 (9.1)	39 (21.0)	64 (34.4)
	64 (34.4)	62 (33.3)	60 (32.3)	186 (100)
		$p = 0.000$		
		$r = 0.496$		

Discussion

There was a significant relationship between mother's knowledge and the development of stunted toddlers, with the correlation coefficient between the two variables having moderate and positive strength. The correlation with moderate strength means that the relationship between parental knowledge and child development can be reversed. The current study showed that some respondents having good knowledge had children having deviation in their development experience, while some had low knowledge, but their children's development was in accordance with their age. This is because there are other factors that affect child development and parental knowledge. [27.] Generally speaking, however, low parental knowledge will increase the risk of delays in children.[28.] The better the value of parental knowledge, the child's development is according to age, and the worse the value of parental knowledge, the child's development will experience deviations.[29] Children with parents with low knowledge will be at risk for suspected motor delays[30]. Parents who have good knowledge of child development through internet access greatly affect the quality of child development, and the opposite is true of parents with lack of knowledge.[31]

The current study also indicated a significant relationship between parental stimulation measures and the development of stunted children, and the relationship was moderate and unidirectional. However, the study also showed that some respondents who carried out stimulation actions did not have children whose development was according to age, and, on the contrary, some respondents who did good stimulation had children whose development was delayed.

The role of parents is very important in planning children's growth and development.[16,32] There is a significant relationship between family factors and parenting actions provided by parents on the future development of children.[33] The ability to provide stimulation is related to the development of children aged 1-3 years. Providing repeated and continuous stimulation in every aspect of a child's development means more opportunities for children to grow and develop optimally.[34] The quality of parenting, a warm and responsive environment, and the stimulation provided by parents greatly encourage the quality of successful and age-appropriate child development.[35]

Conclusion

Low level of parental knowledge could cause delayed child development or developmental deviations. Developmental stimulation by parents was one of the factors found to be associated with the development of stunted children.

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