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ANALYSIS OF FEEDING DIFFICULTY RISK FACTORS IN CHILDREN AGED 24-36 MONTHS

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Abstract: Feeding difficulty was a condition where the child was unable to eat and refuses certain foods. Feeding difficulties in children could be caused by organic factors related to health problems in children and non-organic factors related to nutritional factors and psychosocial factors. This study aimed to analyze non-organic risk factors including history of exclusive breastfeeding, time of initiation of complementary feeding, history of complementary feeding 6-24 months, pattern of child feeding as a cause of feeding difficulties in children aged 24-36 months. The research was conducted in Banyumanik Village with 39 respondents. This research method was an observational analytic study with a cross-sectional approach with a consecutive sampling method. Data regarding exclusive breastfeeding, time of initiation of complementary feeding, history of complementary feeding, pattern of child feeding, and children's eating difficulties were obtained from interviews with mothers who had children aged 24-36 months. Data analysis was performed using the chi-square statistical test. The results showed that there was no significant relationship between exclusive breastfeeding and the time at which complementary foods were given and the incidence of feeding difficulties in children aged 24-36 months (p=0.653, p=0.457) and there was a significant relationship between history of complementary foods and feeding patterns. with the incidence of eating difficulties in children aged 24-36 months (p=0.03, p=0.000). Giving complementary foods that were not suitable could cause difficulty eating in children. Provision of appropriate MPASI could help children in the process of learning to eat and getting used to good eating habits in children. Eating behavior that was not in accordance with the basic feeding rules caused eating difficulties in children. Data analysis was performed using the chi-square statistical test.

Keywords: feeding difficulty, nutritional factors, psychosocial factors

Introduction

Nutritional intake is a direct determinant of growth and development as well as child survival. The existence of eating disorders in children will have an impact on feeding difficulties which will have a negative impact on child development.(Judarwanto,2012) According to WHO (2019), 2.7% of child deaths each year or 45% of all child mortality cases are associated with malnutrition in children. One aspect that triggers malnutrition is poor eating patterns caused by difficulty eating in children.(WHO,2020)

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Referring to the 2018 Indonesian Basic Health Research (RISKESDAS) it was reported that the level of malnutrition in Indonesia in toddlers aged 0-59 months was 3.9% while the percentage of malnutrition was 13.8%.(Ministry of National Development,2019) The prevalence of children aged 0-59 months affected by malnutrition in 2018 in Central Java Province is still quite large, namely 16.8%.(Central Bureau of Statics,2018) In the city of Semarang, the prevalence of nutritional status for toddlers in 2019 shows an undernutrition rate of 2.33% and severe malnutrition of 0.3%.(sSemarang City Health Office,2020) Data from the Semarang City Health Office for 2020 shows the prevalence of stunting in children 0-59 months in Banyumanik Village, namely 2.30% with 1.06% of children being thin and 0.15% being very thin. One of the factors causing this nutritional problem is inadequate food consumption and inappropriate feeding practices for children.(Ministry of National Development Planning,2019)

Feeding difficulty is a condition where a child is reluctant to eat, or it becomes difficult to consume food or drink in the type and amount according to physiological (natural and reasonable) age, namely starting from opening the mouth without being forced, chewing, swallowing until it is absorbed in the digestive tract properly without coercion or without the need to be given certain vitamins and drugs. In general, the causes of eating difficulties are divided into 2 factors, namely organic and non-organic factors.(Saidah and Dewi, 2020) Organic factors/organic disorders are health problems that occur in children. The disorders in question are congenital abnormalities, disorders of the digestive system, respiratory system, and nervous system as well as psychological disorders.(Goday et al., 2019) While non-organic factors are divided into several aspects such as nutritional factors and psychosocial factors. Nutritional factors are related to history of exclusive breastfeeding, time of initiation of complementary feeding and history of complementary feeding 6-24 months, while psychosocial factors are related to feeding patterns in children.(Saidah and Dewi, 2020)

The most frequent cause of eating difficulties is the provision of wrong nutrition related to composition, texture, and feeding procedures. .(IDAI, 2015) Affiliated Program for Children Developmentat George Town University, it is stated that there are 6 forms of eating difficulties in children, namely only wanting pureed food or liquid food: 27.3%, difficulty in chewing, sucking or swallowing: 24.1%, strange and unusual eating habits: 23.4 % do not like a variety of different foods: 11.1% delay in eating alone: 8.0%, and mealtime tantrums: 6.1%.(Judarwanto, 2011)

From the explanation above, the reason the author chose the age of 24-36 months is because the critical feeding period and the feeding period of up to 2 years have been fulfilled. Thus, it can describe the complete history of ASI and MPASI. The critical period for the development of eating skills is at the age of 6-9 months.(R and Yuliarti K, 2015) In addition, in previous studies no one has ever conducted research related to eating difficulties at that age. One study stated that eating difficulties often occur at the age of 12 – 47.9 months. (Van der Horst et al., 2016)

Materials and Methods

The research was conducted in Banyumanik Village from November to December 2021. This research used an observational analytic research type with a cross sectional approach. The research population is mothers who have children aged 24-36 months in the Banyumanik Village. The sample size in study II was 39 people. Sampling using consecutive sampling technique.

The inclusion criteria in this study were mothers who had children aged 24-36 months, mothers who cared for their children directly, and mothers who had children who were not sick. While the inclusion criteria in this study were mothers who had children with structural/functional disorders of the digestive system such as cleft lip, cleft palate, labiognatopalatoschisis, short tongue frenulum, macroglossia, esophageal atresia, stomatitis, tonsillitis, chronic diarrhea, structural/function disorders of the digestive system. respiratory diseases such as pulmonary tuberculosis, central nervous system disorders or neurological disorders such as cerebral palsy, and other diseases such as congenital heart disease and Down syndrome.

The instruments in this study were interview guides related to history of exclusive breastfeeding, time of initiation of complementary feeding, history of complementary feeding 6-24 months, pattern of child feeding and criteria for diagnosis of feeding difficulties. Univariate analysis was used to analyze non-organic risk factors for feeding difficulties related to nutritional factors (exclusive breastfeeding, time of initial complementary feeding, history of complementary foods 6-24 months) and psychosocial factors (child feeding patterns) as well as analyze the incidence of feeding difficulties in children aged 24- 36 months. Bivariate analysis was used to identify the association of non-organic risk factors with the incidence of feeding diffivulty in children aged 24-36 months. The statistical method used is the Fisher's Exact Test.

Results and Discussion

Result

1. Characteristics of respondents

Table 1: Characteristics of Respondents

Variable	Frequency	Percentage (%)
Gender of Child		
Man	21	53.8%
Woman	18	46.2%
Mother's Education		
ES	5	12.8%
JHS	8	20.5%
SHS	18	46.2%
College	8	20.5%
Mother's job		
Doesn't work	26	66.7%
Laborer	2	5.1%
Self-employed	6	15.4%
Government employees	5	12.8%
Exclusive breastfeeding		
Yes	30	76.9%
No	9	23.1%

Initial Time of Giving Complementary Food		
≥6 months	36	92.3%
< 6 months	3	7.7%
History of Giving Complementary Food		
According to the guidelines		
Not according to guidelines	17	43.6%
	22	56.4%
Psychosocial Factors		
Basic feeding rules are good	6	15.4%
Basic feeding rules are moderate	18	46.2%
Low basic feeding rules	15	38.5%
Feeding Difficulty		
Not Experiencing	7	17.9%
Experience	32	82.1%
Classification of Feeding Difficulty		
Not Experiencing		
Infantile Anorexia	7	17.9%
Sensory Food Aversion	0	0%
Post Traumatic Feeding Disorder	4	10.3%
Parental Misspercеption	0	0%
Inappropriate Feeding Practice	0	0%
	28	71.8%
Total	39	100%

Referring to table 1, it can be seen that the number of male respondents is 21 children (53.8%) and female respondents are 18 children (46.2%). Respondents' ages ranged from 25 months to 36 months. The majority of children consume exclusive breastfeeding as many as 30 children (76.9%) and children who do not consume exclusive breastfeeding as many as 9 children (23.1%). Most of the mothers gave complementary food for the first time at the age of ≥6 months, a total of 36 people (92.3%) and mothers who gave complementary food at the age of <6 months, there were 3 people (7.7%). Of the 39 respondents, there were 17 respondents who gave complementary food according to the guidelines (43.6%) and mothers who gave complementary food not according to the guidelines were 22 people (56.4%). Most of the mothers applied moderate basic feeding rules, namely 18 people (46 ,2%). While mothers who apply good basic feeding rules are 6 people (15,4%).

Most of the children had feeding difficulty as many as 32 children (82.1%) and children who did not have feeding difficulty as many as 7 children (17.9%). The most classification of feeding difficulty was Inappropriate Feeding Practice with 28 people (71.8%) followed by Sensory Food Aversion with 4 people (10.3%). There were no other classifications of feeding difficulties.

2. The relationship between nutritional factors (exclusive breastfeeding) with the incidence of eating difficulties.

Table 2 : Relationship between nutritional factors (exclusive breastfeeding) and feeding difficulties

Nutritional Factors (Exclusive breastfeeding)	Feeding Difficulties				Total		p value	PR	95% CI
	No		Yes						
	N	%	N	%	N	%			
Yes	5	16.7%	25	83.3%	30	100%	0.653	0.750	0.174-
No	2	22.2%	7	77.8%	9	100%			3,232
Total	7	17.9%	32	82.1%	39	100%			

Referring to the results of cross-tabulations between feeding difficulties and nutritional factors related to exclusive breastfeeding, out of 39 children, 5 children (16.7%) consumed exclusive breastfeeding without having feeding difficulty and there were 25 children (83.3%). %) consume exclusive breastfeeding with feeding difficulty. There were 2 children (22.2%) out of 39 respondents who did not consume exclusive breastfeeding with no feeding difficulty and there were 7 children (77.8%) who did not consume exclusive breastfeeding with feeding difficulty.

Based on test results fisher's exactthe resulting p value = 0.653 (p> 0.05) which means there is no correlation between nutritional factors related to exclusive breastfeeding and the incidence of feeding difficulties.

3. The relationship between nutritional factors(initial time of complementary food) with the incidence of feeding difficulties

Table 3 : Correlation between initial timing of complementary feeding and feeding difficulties

Nutritional Factors (Initial Time Providing Complementary Food)	Feeding Difficulties				Total		p value	PR	95% CI
	No		Yes						
	N	%	N	%	N	%			
≥ 6 months	6	16.7%	30	83.3%	36	100%	0.457	0.500	0.086-
< 6 months	1	33.3%	2	66.7%	3	100%			2,904
Total	7	17.9%	32	82.1%	39	100%			

Based on the results of the cross-tabulation between feeding difficulties and nutritional factors related to the initial timing of complementary food, it was obtained from 39 respondents, 6 respondents (16.7%) gave complementary food for the first time when the child was ≥6 months old and had no feeding difficulty . While 30 respondents (83.3%) gave complementary food for the first time when the child was ≥6 months old and had feeding difficulty. There were 1 respondent (33.3%) giving complementary food for the first time when the child was <6 months old with feeding difficulty and 2 respondents (66.7%) giving complementary food for the first time when the child was <6 months old and having feeding difficulty.

Based on test results fisher's exact the resulting p value = 0.457 (p> 0.05) which means that there was no correlation between nutritional factors related to the initial time of giving complementary foods and the incidence of feeding difficulties.

4. The relationship between nutritional factors (history of complementary foods) with the incidence of feeding difficulties

Table 4 : Relationship between nutritional factors (history of giving complementary food) and feeding difficulty

Nutritional Factors (History of giving complementary food)	Feeding Difficulties				Total		p value	PR	95% CI
	No		Yes						
	N	%	N	%	N	%			
According to the guidelines	6	35.3%	11	64.7%	17	100%	0.030	7,765	1,030-
Not according to guidelines	1	4.5%	21	95.5%	22	100%			58,543
Total	7	17.9%	32	82.1%	39	100%			

Based on the results of the cross tabulation between feeding difficulties and nutritional factors related to the history of giving complementary foods, out of 39 respondents, 6 respondents (35.5%) gave complementary foods according to the guidelines without experiencing feeding difficulty, while 11 respondents (64.7%) provide solids according to guidelines with feeding difficulty. There was 1 respondent (4.5%) did not provide giving complementary food according to the guidelines without having feeding difficulty and 21 respondents (95.5%) did not provide giving complementary food according to the guidelines having feeding difficulty.

Based on test results fisher's exact the resulting p value = 0.030 (p <0.05) was found, which means that there was a correlation between nutritional factors related to the history of complementary foods and feeding difficulties. The PR value was 7.765 (95% CI = 1.030-58.543), which means that children who having a history of complementary foods not aligned with the guidelines has a risk of 7.765 times having feeding difficulty than a child with a history of complementary foods according to the guidelines.

5. The relationship between psychosocial factors and the incidence of feeding difficulties

Table 5 : Relationship of psychosocial factors with eating difficulties

Psychosocial Factors	Feeding Difficulties				Total		p value	PR	95% CI
	No		Yes						
	N	%	N	%	N	%			
Basic feeding rulesGood	5	83.3%	1	16.70%	6	100%	0.000	13,750	3,424-55,210
Basic feeding rules low-	2	6.1%	31	93.9%	33	100%			

medium						
Total	7	17.90%	32	82.1%	39	100%

Based on the results of the cross tabulation between feeding difficulties and psychosocial factors, from 39 respondents, 5 respondents (83.3%) applied good basic feeding rules without having feeding difficulty and 1 respondent (16.7%) applied good basic feeding rules with having feeding difficulty. There were 2 respondents (6.1%) applying low-medium basic feeding rules with no feeding difficulties and 31 respondents (93.3%) applying low-moderate basic feeding rules with feeding difficulties.

Based on test resultsfisher's exact the resulting p value = 0.000 ($p < 0.05$) which means that there is a correlation between psychosocial factors and the incidence of feeding difficulties. The PR value was 13.750 (95% CI = 3.424-55.210) which means that children who have low-moderate basic feeding rules are at risk of 13.750 times having feeding difficulty compared to children who have good basic feeding rules.

Discussion

Referring to the results of the study it was found that if the age of the child is in the minimum age range, namely 25 months and a maximum of 36 months. With the highest number of respondents at the age of 29 months. This age is still in the range of the age range that most often experiences feeding difficulties. This result is in line with previous research which reported that the most common feeding difficulties were in the range of 1 to 5 years.(Kesuma, Novayelinda and Sabrian, 2015)

The majority of research respondents had children with male gender namely 21 children and 18 female children. Research indicates that boys more often experience feeding difficulty, as many as 19 children. This finding is in line with research by Powell, Farrow and Mayer in 2011, which stated that if boys tend to have feeding difficulty, it is possible that boys have more tantrums than girls.(Kesuma, Novayelinda and Sabrian, 2015)

Children's nutrition must be considered from an early age, such as exclusive breastfeeding when the child is born. Exclusive breastfeeding is breast milk that is given until the child is 6 months old without additional food or drink. In this study, it was found that the majority of mothers had given exclusive breastfeeding to their children, namely 30 people, while 9 mothers had not given exclusive breastfeeding. Giving exclusive breastfeeding will have a better sensory impact on the formation of good eating behavior.(Schwartz et al., 2013)

Referring to the study, it was found that there was no significant relationship between exclusive breastfeeding and children's feeding difficulties. This condition is caused by the majority of feeding difficulties related to exclusive breastfeeding related to the classification of feeding difficulties Sensory Food Aversion which describes picky eating in children. Meanwhile, in this study, the most common classification of feeding difficulties was Inappropriate Feeding Practice, which describes children's eating behavior. This research is also inconsistent with research entitled the relationship between exclusive breastfeeding, diet, and food variety with picky eaters in children aged 1-3 years because exclusive breastfeeding affects the level of picky eating in children. (Noviana, 2019) One

theory states that prolonged breastfeeding can cause delays in basic movements and eating reflexes so that eating skills are hampered and cause eating difficulties.(Ariyanti et al., 2021)

Giving complementary food is recommended after the baby is exclusively breastfed during the first 6 months of life. (Zogara, Loaloka and Pantaleon, 2021) This condition is in line with research findings which stated that the majority of mothers had implemented complementary feeding when their children were ≥6 months old, namely 36 people. From the age of 6 months, breast milk is no longer able to meet the intake of energy, iron, protein, vitamin A, vitamin D, zinc, therefore complementary foods are needed to meet the needs of macro and micro nutrients.(IDAI, 2015) Factors related to when complementary foods were given include insight, health, advertisements for complementary foods, mother's occupation, social culture and health workers.(Haryanto, 2017) Giving complementary foods before the baby is 6 months old has negative impacts, both long and short term. Negative impacts that can occur include the baby losing nutrition from breast milk, reducing the baby's ability to suckle, triggering diarrhea and anemia. Meanwhile, the long-term impact can cause obesity, hypertension, atherosclerosis, and allergies.(Lizawati, Afrinis and Erlinawati, 2021)

Referring to the findings, no significant relationship was found between the time at which complementary foods were started and the incidence of difficulty with them. One theory states that complementary feeding must prioritize the Adequacy of Nutritional Rate which is based on age group and food texture that is appropriate for toddler age development.(Mufida, L., Widyaningsih, TD and Maligan, 2013) Therefore, the initial time of complementary feeding does not have a specific age benchmark and cannot describe the relationship with the incidence of feeding difficulties. Giving complementary foods can be started if the child can sit with his neck straight, has shown interest in food, and feels anxious even though the mother has given breast milk regularly.(IDAI, 2018)

The critical period in making children recognize solid food gradually is at the age of 6-9 months as stimulation of oral-motor skills. Therefore, it is important to focus more on the stages of texture and amount of food for children according to their age. In this study, the majority of mothers did not give complementary foods according to the guidelines, namely 22 people.

Referring to the findings, it was found that there was a significant relationship between the history of giving complementary foods and the phenomenon of difficulty eating. This condition is in line with the theory which states that giving complementary foods properly helps babies in the learning to eat stage and opportunities to get used to good eating habits.(Mufida, L., Widyaningsih, TD and Maligan, 2013)

Reffering to Indonesian Pediatric Association 2014, Diagnostic and Management Approach to feeding problems in toddlers in Indonesia, provides recommendations to parents or caregivers in applying proper feeding practices and from a child's introduction to complementary foods.(Munjidah and Rahayu, 2020) In this study, some parents had not implemented good basic feeding rules, namely as many as 33 people out of 39 respondents.

Based on the research, it was found that there was a significant relationship between psychosocial factors related to child feeding patterns and the incidence of eating difficulties. This is in line with previous research which showed that there was a significant relationship between the application of feeding rules and the difficulty of eating for the pickey eater and small eater group.(Munjidah and

Rahayu, 2020) The feeding difficulties experienced support the relationship between the two variables, where most of the classifications of children's feeding difficulties are inappropriate feeding practices. In this classification, wrong feeding practices are still often carried out by parents such as unscheduled meals, feeding while watching TV, and feeding while playing. These three factors are related to the incorrect application of the basic feeding rules.

Conclusion

Giving complementary foods that are not suitable can cause difficulty eating in children.

Provision of appropriate MPASI can help children learn to eat and instill good eating habits in children.

Eating behavior that is not in accordance with the basic feeding rules can cause eating difficulties in children.

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Declaration of Interest Statement

There is no conflict of interest.

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