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Young father-child relationship pattern and nutrition status among under-five children in Jember Regency, Indonesia

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ABSTRACT The younger age of fathers will affect the pattern of relationship between fathers and their children, particularly in terms of nutrition provision of children under five years. The objective of this study was to identify and measure the correlation between the pattern of relationship between fathers and their children and nutritional status in Jember Regency of Indonesia. A cross-sectional study was conducted from September to December 2019. The participants were 39 young fathers aged 17-19 years who have an infant aged 0-5 years. They were recruited using total sampling technique. Respondents' characteristics and child-parent relationships were measured using a questionnaire. The Chi-square test was used to analyze the data. Among the 39 young fathers, the young father and children relationship was high (56.4%). Meanwhile, the nutritional status of children was good (48.7%). Furthermore, there was a significant correlation between the pattern of father-child relationship and nutritional status among the children ($\chi 2$= 11.83; $p<0.001$). The higher the pattern of father-child relationship, the better was the nutrition of the children (OR= 12.0; 95% CI= 2.5-57.4). The father-child relationship pattern is related to children's nutritional status. Therefore, the father-child relationship should be well-maintained to fulfill the nutrition needs of under-five children.

1. Introduction

The prevalence of nutrition problems among under-five children in Indonesia is still very high. The Basic Health Research conducted by the Ministry of Health in 2018 showed that 17.7% of under-five children still had problems of nutritional status, including 3.9% with malnutrition and 13.8% with less nutrition.[1] This condition shows that Indonesia has not been able to reach the target of Sustainable Development Goals (SDGs) for ending all forms of malnutrition in 2030.[2] Meanwhile, regarding data from August 2019, the district health center of Jember recorded 699 toddlers who suffered from stunting (including: 476 short stunting and 223 very short stunting).

As a result, the prevalence of stunting among under-five children is 66.59%. The prevalence of stunting in Jember Regency is 39.2% which is higher than that in Sumenep (32.5%) and Bangkalan (32.1%). These nutrition problems among children are caused by many factors including a high percentage of carbohydrate intake, cost of food expenditure, and the lack of involvement of fathers in parenting.[3,4] Meanwhile, the age of the children, occupation of head of household, family size, father's education, diarrhea, acute respiratory infections, late breastfeeding initiation, first lactation, and lack of vaccination influence the nutrition of children.[5,6]

Previous research indicated that the average age of family heads (fathers) was 16-18 years (1.04%), 19-24 years (6.04%), and 25-30 years (15.74%).7 Based on the 2019 Indonesian Law of Marriage, marriages can be conducted for men and women aged 19 years and permission from both parents is required.[8] The rate of early marriage in Indonesia is very high because of several factors, including parental,

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economic, educational, and customary factors.[9] Meanwhile, children who are born from mothers with early marriage are facing the risk of disrupted growth and development, loss of interest in learning, and personality problems.[10] This condition also affects the effort of the family to fulfil the nutrition of children.

Too early married age effects the abilities of the family heads or fathers to solve the family problems thoroughly. Therefore, the older age of fathers is usually when they think more maturely (more than 20 years) for developing the family well.[11] Previous research showed that fathers who worked too hard to fulfil their family economic needs have direct impacts on children's eating patterns. Meanwhile, fathers who have longer working hours can increase the incidence of the children consuming unhealthy foods.[12] Therefore, families must be actively involved in caring for their children, because the nutrition status of under-five children is related to the environment of giving care for the children.[13]

Furthermore, to improve the nutrition and health of children, young fathers are needed to support their families. Young fathers have an important role in providing instrumental and emotional support to mothers and children while fulfilling the nutritional needs in their family.[14] The young fathers have an important role in decision-making, protection from family risks, and providing motivation to their wife.[13] Younger aged fathers tend to have more time outside of the home for fulfilling their family needs. This condition results in a reduced relationship between fathers and their children. On the contrary, the mother's main responsibilities are to care and stimulate the growth and development of children in the Indonesian context.[15]

However, young fathers were still limited in providing stimulation for their children who needed support from the whole family. Therefore, the aim of the study was to identify and measure the correlation between the pattern of relationship between fathers and their children's nutritional status among under-five children in Jember Regency, Indonesia.

2. Methods

A cross-sectional study was conducted during September to December 2019 involving young fathers and their children in Jember Regency, East Java, Indonesia. The participants were recruited using total sampling technique. The participants were 39 fathers who volunteered to participate in the study. The inclusion criteria for this study were young fathers aged 17-19 years having infants aged 0-5 years, children cared for their families and they were willing to participate in this study. The exclusion criteria were fathers who resigned, fathers having communication disorder, fathers living outside the city, and children with a congenital defect.

A self-administered questionnaire was used to identify sociodemographic characteristics of the fathers and their children. The Child-Parent Relationship Scale-Short Form (CPRS-SF) was employed to measure the relationship between fathers and their children.[16] This questionnaire contains 30 statements about the relationship between fathers and their children on a 5-point Likert scale (strongly agree, agree, sometimes agree, disagree, and strongly disagree). Statements listed in the questionnaire include 15 items of negative statements and 15 items of positive statements. Every positive statement was scored with 4 while negative statements had a value of 0, which means if the respondent strongly agrees with a positive statement then it is worth 4 and 0 if strongly disagree. Then, vice versa for a negative statement, if the respondent strongly agrees then it is worth 0 and if strongly disagrees, it is scored with 4 so that the total score obtained ranges from 0-120.

Meanwhile, a microtoise was used to determine children' weight, then converted to z-score with the WHO-2018 AnthroPlus software tool.[17] The CPRS-SF questionnaire comprises 10 statements with 5-point Likert scale: (1 = definitely does not apply, 2 = not really, 3 = neutral, not sure, 4 = applies somewhat, and 5 = definitively applies) related to conflict, positive aspects of the relationship, and dependence.16 The total score of CPRS-SF was 15-75 categorized into five groups: (1-24 values of very low relationship, 25-48 low relationship, 49-72 moderate relationship, 73-96 high relationship, and 97-120 very high relationship).

This questionnaire had been tested for validity and reliability in the Indonesian version with a value

Table 1. Distribution of age of participants (n=39).

Characteristics of father	Md	(Min-Max)
Age (year)	19	(17 - 19)

Table 2. Distribution of sociodemographic of participants (n=39).

Characteristics of father	n (%)
Employment history	
Seller	1 (2.6)
Labor	17 (43.6)
Farmer	19 (48.7)
Entrepreneur	2 (5.1)
Education history	
Not attending school	2 (5.1)
Elementary school	21 (53.8%)
Junior high school	14 (35.9)
Senior high school	2 (5.1)

Table 3. Characteristics of gender and nutritional status of children (n=39).

Toddler characteristics	n (%)
Gender	
Boys	25 (64.1)
Girls	14 (35.9)
Nutritional status	
Poor Nutrition	12 (30.8)
Malnutrition	6 (15.4)
Good Nutrition	19 (48.7)
More Nutrition	2 (5.1)

Table 4. Characteristics of gender and nutritional status of children (n=39).

Toddler characteristics	Mean	SD	Min-Max
Age (month)	27	-	22-33
Weight (Kg)	11.13	3.15	6.0-20.9
Z-Score	-1.35	-	-

of α = 0.84-0.89 and reliability with a value of R = 0.968.[18] However, in this study, the CPRS-SF was categorized into two categories, namely the low and high relationships. Regarding the Chi-square test, there were some rows having values under 5 (90%). Therefore, the CPRS-SF originally consists of 5 categories, namely very low, low, moderate, high and very high. Then, since the result from the table does not match the chi-square test rules so there must be merging between cells that have an expected value of less than 5. Accordingly, these were grouped into two categories involving the combination of poor nutrition and malnutrition into poor nutrition, and the combination of good and more nutrition into poor nutrition, with the relationship scores as low and medium to low relationship.

For collection of the data, firstly, we asked the Public Health Centers about the schedule of Integrated Healthcare Center (IHC). Then, we collected data in the IHC. We also asked the local midwives for the participant's address who have met the inclusion criterion. If a respondent did not attend the IHC activities, we visited their home. For obtaining the informed consent, we met with participants and explained the objectives of the research, then gave the participants an informed consent sheet. The respondents completed the questionnaire accompanied by the researchers as facilitators through a Google sheet link formed. The duration of filling out this questionnaire was 30 minutes. This study was approved by the Ethical Committee from Faculty of Dentistry, University of Jember with ethical clearance No. 728/UN25.8/KEPK/DL/2019.

Data analysis was performed using SPSS Statistics 25 software (IBM Corp., Armonk, NY, USA). The categorical data were presented in numbers and percentages. The numerical data were presented in mean, standard deviation (SD), or median, and percentiles of 25% and 75%. A chi-square test was used to analyze the relationship between young fathers' age and their children's nutritional status with significance $p < 0.05$ and 95% confidence interval (CI).

3. Results

Table 1 shows the median age of the participants was 19 years and the minimum value was 17 years and the maximum value was 19 years.

Based on Table 2, most of the fathers' job were farmers (48.7%) and their last educational background was elementary school (53.8%). Based on Table 3, the median of age of the children was 27

Table 5. The correlation father-child relationship and nutritional status of children (n=39).

Father-child relationship	n (%)	Children nutritional status		χ2 (p-value)	OR	95% CI Min - Max
		Poor n (%)	Good n (%)			
	Low	12 (80.0)	2 (20.0)	11.830	12	2.5 – 57.4
	High	6 (25.0)	18 (75.0)	(< 0.001)		

months with the majority of participants being boys (64.1%) and the nutritional status among children was normal (48.7%).

Based on Table 4. the mean of weight of children was 11.13 kg with SD of 3.15, with a minimum body weight of 6.0 kg and a maximum body weight of 20.9 kg. Then, the z-score of children in Panti District based on the WHO AnthroPlus z-score measurement was -1.35.

Table 5 shows that there was a correlation between the child-parent relationship of young fathers and the nutritional status of their children (X2 = 11.830; p-value = < 0.001). The high father-child relationship has 12 times higher chance of good nutrition of their children (OR = 12.0; 95% CI = 2.5 – 57.4). Based on the results of the Chi-square test, it shows in the table that there were 18 cells that have an expected value of less than 5 (90%). Again, as explained above in the Methods section, since the result from the table does not match the chi-square test rules so there must be merging between the cells that have an expected value of less than 5. Accordingly, these were grouped into two categories involving the combination of poor nutrition and malnutrition into poor nutrition, and the combination of good and more nutrition into poor nutrition.

4. Discussion

The target of Sustainable Development Goals (SDGs) is to end malnutrition in 2030.[19] Nutrition status issues in Indonesia are still influenced by many factors, including the family. The ideal age for marriage by reproductive health is 21 years old for women and 25 years old for men.[11] The study involved 39 young fathers aged 17-19 years who have toddlers. The relationship between a father and their children can be high when young fathers are able to do their responsibility as the head of the household; one of which may be to provide for their children's nutritional needs.

The low relation of a father with his children may be because he is not yet able to think like an adult and not able to handle problems in the household such as the economy, spouse, or having children.[12] Young fathers play a role in the decision-making, and can help in raising their children as an effort to improve the family's nutritional status.[21]

A study demonstrated that some young fathers who do not have parenting experience will try to participate in increasing the involvement in childcare.[21] Besides, the responsibility of the young father is more oriented to protection, where the father may spend much time outside the house looking for work and fulfilling their financial obligations as a form of protection.[22] Accordingly, the relationship between some fathers and toddlers may be relatively low. Therefore, there needs to be encouragement from the closest people and health workers so that young fathers can carry out their family functions and are expected to be able to manage time to interact longer with the family, especially for the healthy development of their children.

In this study, the nutritional status of most children was normal (48.7%). However, we found 30.8% of the children experienced malnutrition and 15.4% experienced less nutrition. These findings are higher than those compared the national data. A previous study showed that low income families have 2.3 times more chance to have toddlers with poor nutrition compared to high income families.[22,24] The previous studies show that income affects the family's ability in fulfilling their nutritional needs, where if the family income is large, the family can have enough nutrition.[25]

Our finding indicated that the majority of children were boys. Regarding the finding, the father said that he had a very close and affectionate

relationship with his son where other studies found that fathers had a better relationship with boys than daughters. A study found that young fathers are more comfortable caring for boys than daughters, because they have more experience being male.[26] Other studies state that mothers have high levels of stress when caring for teenagers and fathers will experience stress when caring for their babies.[27]

Based on the results of this study, there is a correlation between the child-parent pattern of relationship and nutritional status in Jember Regency of Indonesia. The results of this study are in line with previous studies that found the paternal involvement will affect the nutritional status of a toddler.[4] Fathers' involvement is not just about interacting with children, but they also must pay attention to the children's development, and be able to provide emotional closeness and comfort.[28] The relationship between father and child supports the improvement of nutritional status so that it can reduce the incidence of malnutrition.

This study has some limitations, namely the use of cross-sectional design that was adapted to the current conditions, which cannot be used to see a cause and effect experience. In addition, the number of participants used in this study was small and was conducted in only one place for a short period of time. Also, the characteristics of the participants used were broad such as sociodemographic data in general, so that if they are not carefully examined it can cause bias towards the results of the study. This study also only focused on the child and parent relationship, particularly for young fathers that may have some correlation with their children's nutritional status. Therefore, the future research needs to conduct a more in-depth study to analyze the other factors that influence the children's nutritional status among young fathers with a multicenter study and identify and measure many factors.

5. Conclusions

There is a correlation between the child-parent relationship of young fathers and the nutritional status of their children. The high relationship between fathers and their children is more likely to improve their children's nutritional status. Therefore, to improve the nutritional status among the children, fathers should be more involved in child-parent relationship. Furthermore, qualitative studies are needed regarding the results of the father-child under five relationship with the nutritional status of their toddlers.

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Conflict of Interest

There is no conflict of interest in this study.

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