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Correlation of Maternal Education with Parenting and Child Nutritional Status

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ABSTRACT

Education levels is the key to childcare. Good education has an impact on the quality of the parenting style and nutritional status for under five years old. The objective of this study were to analyze the correlation of maternal education by care and nutritional status of children under five in Maros District in Indonesia.

Settings and Design: The sample were under five years old and selected by simple random sampling. Sample size were 156 children. The design of this study is a cross sectional study. Data analysis by spearman correlation test at 95% confidence level

Method and Material: Child weight was measured by electronic SECA scale. Anthropometric data collected in Infants (0–11 mo of age) were weighed with their mothers and then the mother's weight was subtracted to obtain infant weights. Recumbent length of children <24 mo of age was measured with the use of a measuring board. Nutritional status was assessed based on the WHO Multicenter Growth Reference Study Standards. Three indexes were derived from anthropometric measures, including weight-for-age z score (WHA), length-for-age z score (HAZ), and weight-for-length z score (WHA). This research was registered with the ethics commission of the Makassar Health Polytechnic.

Statistical Analysis Used: The data analyze were used to SPSS 16. Correlations between parenting style and z scores anthropometric were tested by Spearmen correlation at 95% confidence intervals.

Results: Distribution of nutritional status of children in the basic education group were normal as much as 67.1% while in the normal education group were 75.7%. Based on the HAZ index that basic education is 53.2% normal status compared in the education group 61.4%. Based on the WAZ index in the basic education group it was good status at 74.7% compared in continue education group were 77.1%. The results of the Spearman correlation analysis that education levels were correlated with parenting in the basic education group ($p = 0.043$) and in the continue education group it were not significant correlated ($p = 0.417$).

If respondents were grouped according to nutritional status (HAZ) and then conducted a correlation test the parenting pattern correlated with the value of the HAZ score in the continue education group ($p = 0.026$) but did not correlate with the basic education group ($p = 0.057$).

Conclusions: In the group of basic educated mothers, it is known that there is a correlation between the nutritional status of children according to the WAZ index while in the group of advanced educated mothers there is no correlation with the child's WAZ status. In the group of continue educated mothers there was a correlation of HAZ nutritional status with parenting style.

Keywords: *Education, Parenting and Nutritional Status of Toddlers*

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Introduction

The increase in the percentage of Stunting in South Sulawesi is that it continued between 2007, 2010 and 2013 which were 29.2%, 39.8% and 40.9% respectively. This percentage is a combination of children under five

who are short and short status based on indicators of height for age (HAZ) from the WHO Anthropometric reference. Various factors that affect of stunting. The both the intake and infectious diseases are direct factors. Prevention of stunting is important by overcoming indirect factors, namely parenting. Parenting is intended to care for feeding, child care, seeking treatment and child hygiene care. [1,2,3]

Maternal education tends to have quality care for child feeding, because the reasoning is to work outside in the home. The habit of mothers working outside in the home is entrusting children to caregivers who are also from close families or helpers who are specifically employed. [4–6]

The burden of the mother working outside the home seems to be a factor that correlates with the quality of child feeding care. The length of the mother's work outside the home, especially during the critical period of growth is an aspect that deserves to be studied. Various underlying reasons include, for ethnic Bugis, whatever type of work the mother still has, she has a total role in responding to childcare.[7,8] Mother's work should not neglect the care of child feeding, but at the same time sufficient skills and knowledge are needed to carry out parenting roles appropriately and efficiently. If this role is able to be carried out then the suspicion while children will not risk being short. This is what will be tested in this study.

The purpose of this study was to analyze the correlation correlation of maternal education by care and nutritional status of children.

Subjects and Method

The cross sectional study was conducted in Maros Regency, South Sulawesi, Indonesia, with a sample of 156 people using the random sampling method. Sample size is calculated based on proportional sample formulas.

Data were collected by trained enumerators on interview techniques and anthropometric measurements in April 2018. Questionnaires in this study had gone through trials with good validity and reliability. Question list consists of three parts. Child care patterns were divided into three parts, namely feeding, care, hygiene and medical care and were assessed based on parenting scores. Nutritional status is measured based on anthropometric data of the child's height and weight. The indicators studied were, weight for age Z scores (WAZ), height for age Z scores (HAZ), weight for height Z scores (WHZ) The measurement uses 0.01 kg accuracy and 0.01 cm. Nutritional status for children for : Underweight: weight for age z scores < –2 standard deviations (SD) of the WHO Child Growth Standards median. Stunting: height for age (HAZ) < –2 SD of the WHO Child Growth Standards median. Wasting: weight for height Z scores (WHZ) < –2 SD of the WHO Child Growth Standards median. Overweight: weight for height Z scores > +2 SD of the WHO Child Growth Standards median. Processing data using SPSS version 16.0 from SPSS Inc. Descriptive data analysis with frequency, proportion, and median distribution. Test statistics with the spearman correlation test at 95% confidence. This study was approved by the Makassar Health Polytechnic Ethics Commission.

Results

The results of this study were presented in the following tables

Table 1: Distribution of toddlers 'nutritional status based on parents' education level

	Index (WAZ)									
Educational Level	**Overweight**		**Normal**		**Underweight**		**Severely underweight**		**Total**	
	n	**%**	**n**	**%**	**n**	**%**	**N**	**%**	**n**	**%**
Basic (N = 79)	2	2.5	53	67.1	18	22.8	6	7.6	79	100
Continue (N = 70)	0	0.0	53	75.7	11	15.7	6	8.6	70	100
	Index (HAZ)									
	Hight		**Normal**		**Stunting**		**Severely Stunting**		**Total**	
	n	**%**	**n**	**%**	**n**	**%**	**N**	**%**	**n**	**%**
Basic (N = 79)	2	2.5	42	53.2	28	35.4	7	8.9	79	100
Continue (N = 70)	0	0.0	43	61.4	19	27.1	8	11.4	70	100

Conted…

	Index (WHZ)									
	Obesity		normal		Wasting		Severely Wasting		Total	
	n	%	n	%	n	%	n	%	n	%
Basic (N = 79)	3	3.8	59	74.7	13	16.5	4	5.1	79	100
Continue (N = 70)	3	4.3	54	77.1	12	17.1	1	1.4	70	100

The focus of the spotlight in this table is the percentage of malnutrition and malnutrition in both education, basic education and advanced education groups. The percentage of malnutrition + malnutrition in primary education is 30.4% while in advanced education it is 24.5%.

Table 2: Distribution of toddler protein energy intake based on parental education level

	Intake Energy											
Energy	Severely deficit		Heavy Deficit		Light Deficit		Normal		Over		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Basic (N = 79)	47	59.5	7	8.9	2	2.5	13	16.5	10	12.7	79	100
Continue (N = 70)	25	35.7	4	5.7	8	11.4	15	21.4	18	25.7	70	100
	Intake Protein											
Protein	Severely		Heavy Deficit		Light Deficit		Normal		Over		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Basic (N = 79)	26	32.9	3	3.8	7	8.9	13	16.5	30	38.0	79	100
Continue (N = 70)	9	12.9	6	8.6	6	8.6	9	12.9	40	57.1	70	100

Table 2 presents data on energy and protein intake at both levels of basic education and advanced education. Energy very deficit in basic education reached 59.5% while in advanced education it reached 35.7%.

Table 3: An overview of parenting, knowledge and practice of breastfeeding, in infants under the age of parents

Parenting	Excellent		Good		Total	
	N	%	n	%	n	%
Basic (N = 79)	34	43.0	45	57.0	79	100
Continue (N = 70)	24	34.3	46	65.7	70	100
Knowledge of breastfeeding	**Excellent**		**Good**		**Total**	
	N	%	n	%	n	%
Basic (N = 79)	15	19.0	64	81.0	79	100
Continue (N = 70)	24	34.3	46	65.7	70	100
Breastfeeding Practice	**Excellent**		**Good**		**Total**	
	N	%	n	%	n	%
Basic (N = 79)	29	36.7	50	63.3	79	100
Continue (N = 70)	19.0	27.1	51	72.9	70	100

Table 3 presents data on parenting, knowledge and practice of breastfeeding for children for both the basic education and further education groups. Good parenting in basic education is 43% while in advanced education it is 34.3%.

Table 4: Relationship between parenting, knowledge and practice of breastfeeding, with index Body Weight for Age (WAZ) toddlers based on the level of education of parents

Educational Levels	Value Median		Median WAZ	p-value
Basic	Parenting	66.7	-1.7	0.043 (-0.228)
	Knowledge	54.5		0.475
	Practices	50.0		0.908
Continue	Parenting	66.7	-1.465	0.417
	Knowledge	54.5		0.414
	Practices	40.0		0.122

The results of statistical analysis of the correlation of basic education with parenting, knowledge, and practice of breastfeeding, based on the nutritional status (WAZ) in the besic education group found a negative correlation for parenting (p = 0.043) but no correlation with knowledge and practice (p> 0.05).

Table 5: Relationship between parenting, knowledge and practice of breastfeeding, by Height for Age (HAZ) index of toddlers based on the level of education of parents

Educational Levels	Value Median		Median HAZ	p-value
Basic	Parenting	66.7	-1.7	0.3
	Knowledge	54.5		0.057 (0.215)
	Practice	50.0		0.306
Continue	Parenting	66.7	-1.6	0.026 (-0.267)
	Knowledge	54.5		0.483
	Practice	40.0		0.277

The results of statistical analysis of the correlation of basic education with parenting, knowledge, and practice of breastfeeding, based on nutritional status (HAZ) were in further education found a negative correlation for parenting (p = 0.026) but there was no correlation with knowledge and practice (p> 0.05) specifically for further education groups

Table 6: Relationship between parenting, knowledge and practice of breastfeeding, with WHZ index of infants based on the level of education of parents

Educational Level	Median		Median WHZ	p-value
Basic	Parenting	66.7	-1.1	0.091
	Knowledge	54.5		0.120
	Practices	50.0		0.293
Continue	Parenting	66.7	-1.0	0.857
	Knowledge	54.5		0.657
	Practices	40.0		0.693

The results of the statistical analysis of the correlation of basic education with parenting, knowledge, and practice of breastfeeding, based on the nutritional status (WHZ) in besic education, found no positive correlation to parenting (p = 0.091, knowledge (p = 0.120) and breastfeeding practice (p = 0.293).

Discussion

Maternal education is directly related to parenting style feeding, care, treatment and personal hygiene.[1] Mothers were known as the main caregivers of children for the composition of roles in Indonesian society in general. Indonesian people, especially urban areas, have applied the concept of gender equality in households. Based on this view, this time the discussion highlighted the point of view of basic education and continue education as the main domain. The main domain to find the point of difference in effects based on nutritional status in all three indexes WAZ, HAZ and WHZ.

This study were found the percentage of malnourished children and combined malnutrition were both basic education group than in continue education group. These results provide shown that children's opportunities for malnutrition were greater in children whose parents (mothers) have basic education. The parental education is an investment in improving sustainable nutrition in rural communities based on nutritional status at WAZ.[8]

Correlation analysis between parenting and nutritional status of children according to WAZ indicators were significant (p = 0.043). This fact that for mothers who have basic education, namely education up to a maximum of 9 years, the actual body weight of a child is influenced by the mother's education. Especially for basic education in Indonesia, it is divided into

two groups, namely the age group of 6-12 years, and the age group 13-16 years, with a duration of 9 years of education. If the mother is only able to complete education in a group of 6-12 years, then she has the opportunity to work outside the house is limited. If the mother has an education group of 13-16 years, then the opportunity to work outside the home is greater, even if only as a operator worker at small industries. This social phenomenon has an impact on the pattern of mother's care for their children. The value of parenting patterns will be better at a lower level than the higher ones, which is why in this study negative correlation values were found. Whereas specifically parenting knowledge and practice remains a positive and insignificant correlation.

The phenomenon of parenting in the basic education group is different from continue education group in this study. In the continue education group has a positive correlation was found in parenting with BBU nutritional status. The higher the mother's education, the better the parenting style for her child. The upbringing pattern for the mother is further educated, even though she works outside the home but is good, because her education causes her to be able to provide better child care costs, so that the quality and quantity of nutrition is better.

The results found in the above data are consistent with the HAZ indicator. It was found that the percentage of children who were short was higher in the group of children from mothers who had basic education compared to advanced education. Various research reports report that educational factors are strong variables that influence the child's height status. Height is even a good predictor for children's social future. The reported academic potential and economic potential are positively correlated with the education status of both parents. In various countries with low literacy in nutrition science theoretically they will also have low nutritional status. The concept of education as an investment in improving nutrition is found to be positively correlated. [9] Other research have been found that have a strong influence community nutrition improvement strategies, measurable prevention focus.[10-12]

The next fact that is different based on the WHZ index, it is also found that children whose mothers were only basic education have a higher percentage of children who are thin and very thin compared to children from the advanced education group. The three differences above seem to be very strong reasons that educational factors should be analyzed further towards nutritional status.

Before discussing that, it was also found that the energy and protein intake (Table 2) in the two groups also tended to be different. This difference can be seen from the percentage of energy deficit children in the group of children from basic educated mothers compared to advanced education. This proves that there are direct factors that cause children different nutritional status in both groups, namely energy and protein intake which is also lower in basic education than education.

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Conflicts of Interest: There are no conflicts of interest

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