The Model of Parenting and Surrounding Environment to Improve Children's Nutrition and Early Psychosocial Development

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Abstract

This research aims to analyze the relationship between nutritional status and psychosocial development of toddlers with a sample of 45 toddlers in Kotamobagu Barat sub-district. Noticeably, there is a relationship between environmental parenting and child development, sub-HOME which influences mental development (MDI) is emotional acceptance of children with a coefficient (R) of 0.44 and play equipment with a coefficient value of 0.49 percent, parenting environment of 0.25 percent. Game equipment and children's mental development have a closer relationship than emotional acceptance of children with mental development and environmental organization with development. Hence, there is a close relationship between nutritional status (BB/U) and development (MDI, PDI and behavior). The relationship between mental development (MDI) and nutritional status based on (BB/U) is closer. There is a relationship between nutritional status, parenting style and child development (MDI, PDI and behavior). (MDI) with sub-HOME children's play equipment (PAP), environmental organizations and emotional acceptance of children. Meanwhile, parental involvement, parenting variation opportunities and children's behavior did not show any relationship between child psychomotor (PDI) and nutritional status (BB/U), and sub HOME, PAP, PEA, shows a close relationship. Meanwhile, in the sub-HOME parental involvement (KOT), opportunities for variations in parenting, acceptance of children's behavior, and environmental organizations do not show a close relationship. That said, research with interventions on nutritional status, health and psychosocial development in early childhood, in this case the family plays a very important role, especially parents, in parenting patterns in determining the growth and development of children in the future.

Keywords *Parenting, nutrition, surrounding environment, Psychosocial Development.*

Introduction

During childhood under five years (toddlers, ages 12-59 months), at this time, the rate of growth begins to decline and there is progress in motor development (gross and fine movements) and excretory functions. An important period in the development of children is in toddlerhood. The basic growth that takes place during infancy will influence and determine further developments. After birth, especially in the first 3 years of life, the growth and development of brain cells is still ongoing; and the growth of nerve fibers and their branches occurs, so that a complex network of nerves and brain is formed. The number and arrangement of connections between these nerve cells will greatly affect all brain performance, from the ability to learn to walk, recognize letters, to socialize. In toddlerhood, the development of speech and language skills, creativity, social awareness, emotional and intelligence goes very fast and is the basis for further development, moral development and

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the foundations of the child's personality are also formed at this time, so that even the slightest deviation is not detected, let alone not handled properly, will reduce the quality of human resources in the future. Considering that the number of children under five in Indonesia is very large, namely around 10 percent of the entire population, as a candidate for the next generation of the nation, the quality of growth and development of children under five in Indonesia needs serious attention, namely getting good nutrition. Doing adequate stimulation means stimulating the toddler's brain so that the development of abilities in toddlers takes place optimally according to the child's developmental age (Depkes RI, 2005).

Moreover, development, in this case, is a long-term life process of growth and change that leads to maturity of a child, which will be experienced quickly in childhood and adulthood. A child's genetic growth and life experiences will determine this development. The existing genes will set a limit for the child's growth in terms of height and intelligence and an appropriate environment will help the child to realize this potential. According to Meyrs, child development is a process of change. Children learn at a more complex level in moving, thinking, feeling and relating to others.

Measuring the level of child development is more focused on measuring the stages of mental and psychomotor development. Using the Bayley scale. The Bayley scale is designed to measure general development, which focuses on mental development, namely the mental development index (MDI) and psychomotor development, namely the psychomotor development index (PDI) in addition to recording children's behavior in general (Phan et al,.2021).

Riyadi defines nutritional status as the state of health of a person or group of people resulting from the consumption, absorption and utilization of food nutrients which are determined based on certain measures. safe for consumption. If there are health problems, then the utilization of nutrients will be disrupted. Children with good and healthy nutritional status are more likely to have better motor skills and have higher life expectancy and productive time.

Nutritional status when toddlers can contribute to the nutritional status of children and even adulthood. Given the importance of toddler nutritional status, parents, in this case mothers, have an important role to be able to control so that their children's nutritional status can reach optimal. In addition to influencing the growth of children, good nutritional conditions also affect children's development. food that does not contain enough nutrients needed, and this situation lasts a long time, will cause changes in metabolism in the brain which can result in the inability of the brain to function normally (Dobbing, 1968).

General purpose; analyze the effect of a complete intervention (nutrition and health counseling, stimulation of psychosocial development of children under five. In addition, specific purpose is including; analyze the relationship between nutritional status and development, children (MDI, PD and Behavior), Analyze the Relationship between HOME and development children (MDI, PDI, Behavior, and Analyzing the relationship between nutritional status and HOME with child development (MDI, PDI, Behavior).

Research Method

This study uses a quasi-experimental design. Nonrandomized control group research form pre- test post-test design. Is with two treatment groups and one control group. Random sampling, under five in a state of good nutrition or less (not including malnutrition and excess nutrition). As a study group:

1. Group (I) toddlers as the control group

2. Group (II) children under five are given incomplete treatment (nutrition and health counseling)

3. Group (III) children under five are given complete treatment (nutrition counseling, health and psychosocial stimulation)

The research was conducted in West Kotamobagu; location selection was purposive. Preparation for research and data collection for children under five (3-5 years) starting in May 2012. Initial data collection in July 2012 and final data collection in September 2012. The sample size was set at n = 45 families with children under five.

Implementation of nutrition counseling is carried out by trained personnel, namely nutritionists. Nutrition counseling for parents of children is carried out at the research location with a schedule of two meetings every 2 weeks. Nutrition counseling is given to parents of children in groups II and III.

Result and Discussion

The proportion of children belonging to the category of good nutrition (BB/U) in the pre-test of the three groups was relatively the same, namely above 80 percent. Children who are in the category of malnutrition still exist, namely 6.7 percent to 20 percent.

According to TB/U there are children who are short in the three groups which are quite high, namely 26.7 percent to 30.0 percent. Meanwhile, according to weight/height there are children who are in the lower thin category, namely 3.3 percent to 5.9 percent.

Table 2. The diversity of nutritional status (BB/A, TB/A, BB/TB) pre-test.

Z_ score and proportion of nutritional status	Group In=15	Group IIn =15	Group IIIn =15
Z_skor:Z_BB/UZ_TB/UZ_ BB/Tb	$-1,38 \pm 0,92$- $1,49 \pm 1,71$- $0,65 \pm$	$-1,37 \pm 1,12$- $1,32 \pm 1,52$- $0,88 \pm 1,12$	$-0,93 \pm 0,99$ $_{tn}$- $1,45 \pm 1,53$ $_{tn}$-$0,49 \pm$ $1,10_{tn}$
Nutritional Status (BB/U): Good Nutrition (%)Malnutrition (%)	83,316,7	93,36,7	80,020,0
Nutritional Status (TB/U): Normal (%)Short/stunted (%)	73,526,7	71,428,6	70,030,0
Nutritional Status (BB/TB): Normal (%)Thin/Wasted(%)	100-	94,15,6	96,73,3

Description: tn = the difference between the three groups is not significant (p>0.05)

HOME is considered the most popular approach to measuring the home-care environment, which is designed to consist of 45 items that describe the quality of the child's environment (Caldwell and Bradley, 1979).

HOME classification (pre-test - post-test)

HOME	Pre-testPost-test	Category	Treatment		
			Kel. I	Kel.II	Kel.III
PEA	Pre-testPost-test	GoodLessGoodLess	40,060,046,753,3	63,336,746,753,3	96,73,396,73,3
PPA	Pre-testPost-test	GoodLessGoodLess	93,96,786,613,3	93,36,790,010,0	66,733,393,36,7
OL	Pre-testPost-test	GoodLessGoodLess	53,346,753,346,7	6040,080,020,0	90,010,073,326,7
PAP	Pre-testPost-test	GoodLessGoodLess	46,753,333,366,7	56,743,333,366,7	63,336,790,010,0
KOT	Pre-testPost-test	GoodLessGoodLess	60.040,096,713,3	66,743,380,020,0	70,030,093,36,7
KP	Pre-testPost-test	GoodLessGoodLess	50,050,080,020,0	56,743,370,030,0	60,040,080,020,0

Information:

I = control group

II = Group (incomplete intervention)

III = Group (Complete intervention)

The environment around caring for children at home in group I which is in the good category for emotional acceptance of children increases to 46.7 percent, parental involvement increases to 96.7 percent and the opportunity for variations in parenting is in the good category to 80 percent, the physical environment organization remains with a value of 53.3 percent, acceptance of children's behavior in the good category decreased to 86.6 percent and game equipment in the good category decreased to 33.3 percent. The child care environment for group II after the intervention (post-test) for emotional acceptance of children decreased to 46.7 percent, parental involvement increased to 80 percent and the opportunity for variations in good category parenting increased to 70 percent, physical environment organization increased to 80 percent, acceptance of children's behavior in the good category decreased to 90 percent and the good category of game equipment decreased to 33.3 percent. Group III care environment after intervention for acceptance of children's emotions by 96.7 percent, parental involvement increased to 93.3 percent and good category parenting opportunities increased to 80.0 percent, physical environment organization decreased to 73.3 percent, acceptance the behavior of children in the good category increased to 93.34 percent and the good category of game equipment increased to 90.0 percent.

The coefficient of determination of the relationship between nutritional status and child development

Development	Nutritional Status					
	BB/U		TB/U		BB/TB	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
MDI	0,06	0,50*	0,9	0,36*	0,08	0,10
PDI	0,07	0,30*	0,05	0,19	0,13	0,24*
Behaviour	0,13	0,31*	0,13	0,29*	0,03	0,13

Note: the * sign = has a significant relationship at the level of $p < 0.05$.

Based on the value of the coefficient of determination (R) it can be seen that between nutritional status (BB/TB) and psychomotor development has a coefficient value of 0.24. The low R value indicates that the relationship between weight/height nutritional status and psychomotor development is not very close.

Table 8. The coefficient of determination between Total HOME and Progress Child

HOME	Intervention	Children's Growth		
		MDI	PDI	Perilaku
Total	Pre-testPost-test	0,090,52*	0,110,39*	0,170,23
PEA	Pre-testPost-test	0,140,44*	0,050,30*	0,090,19
PPA	Pre-testPost-test	0,040,09	0,030,03	0,060,04
OL	Pre-testPost-test	0,130,25*	0,060,30*	0,190,15
PAP	Pre-testPost-test	0,100,49*	0,060,45*	0,190,08
KOT	Pre-testPost-test	0,130,17	0,180,27*	0,200,10
KVP	Pre-testPost-test	0,160,08	0,130,16	0,080,06

Note: the * sign = has a significant relationship at the level of $p < 0.05$

In general, it can be seen in table 8. The relationship between children's psychomotor development (PDI) and sub_HOME, only acceptance of children's emotions, environmental organizations, play equipment and parental involvement had a significant relationship ($p < 0.05$). This means that acceptance of children's emotions, game equipment passes selection in the modeling process, so the regression that is considered good is the relationship between psychomotor development (PDI) and nutritional status (BB/U and sub-HOME is Y=-1.28 + 1.46X1 + 0 .89 X2 + 1.22 X3 where Y = psychomotor development (PDI), X1 = nutritional status (BB/U), X2 = sub-HOME play equipment (PAP) and X3 = Sub-HOME emotional acceptance of children (PEP). Meanwhile, the general statistical results are in table 8. It can be seen that the relationship between the development of children's behavior with HOME (total) which shows a significant relationship ($p < 0.05$) and with sub-HOME does not show a significant difference ($p < 0.05$), for that the regression model that is considered good is:

Y= -0.40 + 1.00 x1 + 0.88 x2 where, Y= development of behavior, x1= nutritional status (weight/age) and x3= HOME(total).

The role of the family, especially parents in child rearing patterns, greatly determines the growth and development of children for the future. What is essential from this research is that parenting and parental involvement are very important in the growth and development of children in toddlerhood. At the age of 0-6 years, toddlers really need nutritional intake and exclusive breastfeeding which will help children achieve optimal development in their growth and development.

In addition to the nutritional intake given to children, other factors that play a role in child development are no less important, namely the child's psychosocial development, this also cannot be ignored in their growth and development. Psychosocial development of children is influenced by the role and environment in which children live. This cannot be separated from the role of parents in parenting patterns.

Research shows that the parenting environment which is categorized in group III after intervention for acceptance of children's emotions is 96.7 percent, parental involvement increases to 93.3 percent and the opportunity for variations in parenting in the good category increases to 80.0 percent, the organization of the physical environment decreases to a value

73.3 percent, acceptance of children's behavior into a good category increased to 93.34 percent and good category game equipment increased to 90.0 percent. Thus it is clear that parental/family assistance is very helpful in the psychosocial development of children.The results of research on child nutrition have been widely studied regarding nutritional status, but the advantage of this research lies in the psychosocial development of children who intervene or make a very strong contribution to the results of this research. The factor of psychosocial development for early childhood is one of the important aspects where from an early age a social soul begins to form in helping the development of the child's character. So children who are raised in a healthy environment, full of love and attention from their environment, make children grow and develop optimally.

Conclusion

The nutritional status of children based on anthropometric indices includes weight/age index (weight for age), height/age (height for age) and weight/height index (weight for height). After the intervention, the nutritional status of children based on the z-scores of weight/age, z-scores of height/age and weight/height in group III was better than that of group II and group I. Child development, which was determined based on the mental development index (MDI), psychomotor development (PDI) and behavior after the intervention, the mental development index for group I decreased by 1.9 points, group II increased by 0.3 points and group III increased by 6.9 points. The psychomotor development index for group I decreased by 0.3 points, group II increased by 0.8 points and group III increased by 2.2 points. The behavior development of group I children decreased by 4.9 points, group II increased by 0.73 points and group III increased by 9.8 points. The relationship between child development (MDI, PDI, behavior) and nutritional status (BB/U) shows a relationship between (MDI, PDI, behavior) and nutritional status based on BB/U. the relationship between mental development (MDI) and nutritional status based on weight/age is tighter.

The relationship between child development (MDI, PDI, behavior) and parenting style (HOME) shows a real relationship between HOME (total) and mental development (MDI), psychomotor development (PDI) and children's behavior. The relationship between HOME (total) and mental development (MDI) is the closest. There is a close relationship between children's mental development with nutritional status and sub-HOME play equipment, environmental organization and emotional acceptance of children. Meanwhile, parental involvement, opportunities for variations in parenting and acceptance of children's behavior do not show any relationship.Psychomotor development of children with nutritional status and sub-HOME game equipment and emotional acceptance of children which shows a close relationship, whereas in the sub-HOME parental involvement, opportunities for parenting variations, acceptance of children's behavior and environmental organizations did not show any relationship between the development of behavior with HOME only HOME (total) which shows a relationship while the development of behavior with sub-HOME does not show a relationship.

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