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THE RELATIONSHIP BETWEEN EDUCATION ON COMPLEMENTARY FEEDING OF BREAST MILK MADE FROM LOCAL FOODS AND THE KNOWLEDGE AND MOTIVATION OF TODDLER MOTHERS AS A STRATEGY TO PREVENT STUNTING IN 3T AREAS

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Abstract

Introduction: Stunting is a chronic malnutrition problem caused by inadequate nutritional intake over a long period. Mothers play an important role in the family to overcome nutritional problems, especially those related to parenting and family nutrition. Objective: The purpose of this study was to determine the relationship between education on complementary foods for breast milk made from local foods and the knowledge and motivation of mothers of toddlers as a strategy in preventing stunting in the 3T area. Method: Quantitative correlational research design with a cross-sectional approach. The number of research samples was 50 mothers with a simple purposive sampling technique. Results: The results showed a p-value = 0.001 which was smaller than α (<0.05). The correlation coefficient value (r = 0.465) shows that there is a relationship between education on complementary feeding of breast milk made from local foods and the knowledge of mothers of toddlers in efforts to prevent stunting also the p-value = 0.000 which is smaller than α (<0.05) The correlation coefficient value (r = 0.554) shows that there is a relationship between education on complementary feeding of breast milk made from local foods and the motivation of mothers of toddlers in efforts to prevent stunting. Conclusion: there is a relationship between education on complementary feeding of breast milk made from local foods and the knowledge and motivation of mothers of toddlers as a strategy in preventing stunting in the 3T area

Keywords: *3T Region; MPASI; motivation; knowledge; stunting*

Introduction

Toddlers (children under two years old) are the age of children before entering toddlerhood, namely 6 to 24 months. This age stage is a golden age and has very good potential for child growth and development [1] This potential will emerge if they get good nutritional intake, and adequate access to health and education [2]. The growth and development of children under two years old is very rapid, so they need relatively better and more nutritional intake) [3]. One of the main health problems of children under two years old is malnutrition because it can inhibit the growth and development process and also contribute to the morbidity and mortality rates of children under two years old [4]. Children under two years old if their nutritional intake is lacking so that they cannot meet their calorie needs, will experience stunting [5]. Stunting is a chronic malnutrition problem caused by inadequate nutritional intake over a long period [6]. If left untreated for a long period, it will hurt their cognitive, psychomotor, motor, and educational attainment aspects, with a lower average IQ score [7]. Child growth and development is

one of the main indicators in determining the quality of human resources in the future, because in the early stages of a child's life, especially up to the age of 2 years, it can cause permanent damage to their growth and development process [1]**.** According to the World Health Organization (WHO), 144 million toddlers are experiencing Stunting, with 83.6 million occurring in Asia, and 13.9 million occurring in the Southeast Asia Region. The Ministry of Health through the Indonesian Nutritional Status Survey (SSGI) released data that 21.6% of toddlers in Indonesia experience Stunting. The prevalence in North Sulawesi is based on SSGI 2023, there are 20.5% of toddlers experiencing Stunting, with the most cases in Bolaang Mongondow Timur Regency at 30.00% while Talaud Regency has 26%. The number of toddlers at the Marangan Health Center is 80 toddlers and the number of Stunting cases in August 2024 is 5 children. Stunting is a condition of growth failure in children under five years of age due to malnutrition from pregnancy to early life, generally showing symptoms when the child reaches the age of two . [8] Stunting in toddlers impacts reduced intelligence, reduced immunity and productivity, mental and emotional health problems, and stunted growth [9].

Mothers play an important role in the family to overcome nutritional problems, especially those related to parenting and family nutrition ([10]. Mothers also play an important role in selecting food ingredients, preparing food and even the family menu. The role of mothers in caring for stunted children is very important because mothers are responsible for managing the needs and care of children [11]. In dealing with the risk of harmful effects due to stunting, the role of mothers is not only to provide optimal nutrition, but also through hygiene efforts, special attention, and emotional support that strengthens children's immune systems [12]. Mothers' knowledge plays a key role in the success of treating stunted children, where the mother's lack of understanding about complementary feeding and care can affect the child's condition [13]. Maternal factors also play a role in the level of knowledge that can influence parental behavior in providing nutritional intake and stimulation of child growth [9]. Research shows that the incidence of Stunting and the level of maternal knowledge are related, with maternal knowledge being a key factor in the success of treating Stunting children [3].

Mothers' knowledge is not enough without strong motivation from the mother [4]. Motivated mothers will strive to apply this knowledge and attitude in daily practice, even though they may face challenges such as limited resources or environmental barriers [10]. Mothers' motivation, which is driven by their love and desire to see their children grow and develop healthily, is key to preventing stunting [14] . Thus, the role of mothers in preventing stunting is not only as a provider, but also as an educator, protector, and main driver in preventing stunting. They are the spearhead in efforts to prevent stunting and improve the quality of life of children. Mothers' motivation is an important element in efforts to prevent stunting [15]. This is because motivation acts as a motivator for mothers to apply good knowledge and attitudes related to

children's health and nutrition. A motivated mother will ensure that her child gets the right nutritional intake, complete immunizations, and good growth and development according to age standards. Increasing maternal motivation in preventing stunting requires support and cooperation from various parties, including the community, government, and health sector [16].

Research Methodology

This study uses a descriptive-analytical research design with a cross-sectional design. The population in the study were mothers who had toddlers, namely 80 people. In determining the sample using the Slovin formula the results obtained a sample size of 50 respondents. Inclusion criteria are: 1) mothers who have children under two years old, 2) can read and write. Exclusion criteria are 1) mothers who have children over two years old, 2) refuse to be respondents, and 3) cannot read and write. Data collection using a local food MP-ASI questionnaire with 16 questions with question choices for favorable questions yes given a score of 1 and answers no given a score of 0, for unfavorable questions answering Yes given a score of 0 and answers No given a score of 1. The Knowledge Questionnaire consists of 23 questions and the mother's motivation questionnaire consists of 8 questions with question choices for favorable questions correct given a score of 1 and answers wrong given a score of 0, for unfavorable questions answering correctly given a score of 0 and answers wrong given a score of 1. The three questionnaires have been tested for validity and reliability on 25 respondents with a significance level of 5% and obtained the results of calculated r > r table 0.396. And the results of the reliability test for the MP-ASI education questionnaire were 0.914 (Very Reliable), the Knowledge Questionnaire 0.882 (Very Reliable) and the Motivation Questionnaire 0.954 (Very Reliable). Data analysis using the *Spearman rho test.*

Results

Table 1. Frequency Distribution of Respondent Characteristics

Variable	Frequency	Percentage (%)
Work		
IRT	26	52
Swasta	3	6
Wiraswasta	1	2
Honorer	10	20
PNS	10	20
Age		
17 – 25 Years	12	24
26 – 35 Years	24	48
36 – 45 Years	14	28
Education		
SD	3	6.
SMP	10	20
SMU	18	36
D3/D4/S1	15	30
S2/ Magister	4	8
Anak Ke		
Pertama	18	36
Kedua	24	48
Ketiga	8	16

It can be seen in table 1 that the respondents who are most based on their occupation are housewives as many as 26 mothers (52%). The age of the mothers is mostly in the range of 26-35 years as many as 24 mothers (48%). The most education of the mothers is high school as many as 18 people (36%) while the most children are the second child as many as 24 people (48%).

Table 2. Frequency of distribution of education on complementary feeding of breast milk made from local foods

Education On Complementary Feeding Of Breast Milk Made From Local Foods	Frequency	Percentage (%)
Good	2	4
Enough	33	66
Less	15	30
Total	50	100

It can be seen in Table 2 above, education on complementary feeding of breast milk made from local foods is mostly included in the sufficient category, namely 33 mothers (66%).

Table 3. Frequency distribution of maternal knowledge

Knowledge	Frequency	Percentage (%)
Good	2	4
Enough	30	60
Less	18	36
Total	50	100

It can be seen in table 3 above that the mothers with the most knowledge are in the sufficient category, as many as 30 mothers (60%).

Table 4. Frequency distribution of Mother's Motivation

Motivation	Frequency	Percentage (%)
Good	2	4
Enough	33	66
Less	15	30
Total	50	100

It can be seen in table 4 above that the mothers' most frequent motivation is the sufficient category, as many as 33 mothers (66%).

Table 5. Relationship between education on complementary feeding of breast milk made from local foods and Knowledge of Toddler Mothers as a Strategy to Prevent Stunting in 3T Areas

Education on Complementary Foods for Breast Milk Made from Local Foods	Knowledge							
	Less		Enough		Good		Total	
	n	%	n	%	n	%	n	%
Good	1	2	1	2	0	0	2	4
Enough	1	2	24	48	8	16	33	66
Less	0	0	5	10	10	20	15	30
Total	2	4	30	60	18	36	50	100
Signifikansi (p) 0,001								
Koefisien Korelasi *Spearman Rho* (r) = 0.465								

Based on table 5, it shows that respondents with education on complementary feeding of breast milk made from local foods in the category in the category of less have less knowledge, there is 1 respondent (2%), enough there is 1 person (2%) and good knowledge is none. education on complementary feeding of breast milk made from local foods in the category of enough has less knowledge, there is 1 respondent (2%), enough there are 24 people (48%) and good knowledge is 8 people (16%). education on complementary feeding of breast milk made from local foods in the category of Good has less knowledge, there is no, enough there are 5 people (10%) and good knowledge is 10 people (20%).

The results of the Spearman rho statistical test obtained the sig value (2-tailed) is 0.001 <0.05, meaning that there is a relationship between education on complementary feeding of breast milk made from local foods and mother's knowledge. Coefficient Correlation 0.465 means that the education on complementary feeding of breast milk made from local foods variable with knowledge correlates with the degree of relationship, namely the correlation is moderate and the form of the relationship is positive, meaning that the better the local food-based complementary feeding, the better the mother's knowledge or vice versa, the better the mother's knowledge, education on complementary feeding of breast milk made from local foods is also better.

Table 6. Relationship between education on complementary feeding of breast milk made from local foods and Motivation of Toddler Mothers as a Strategy to Prevent Stunting in 3T Areas

Education On Complementary Feeding Of Breast Milk Made From Local Foods	**Motivation**							
	Less		Enough		Good		Total	
	n	%	n	%	n	%	n	%
Less	1	2	1	2	0	0	2	4
Enough	1	2	27	54	5	10	33	66
Good	0	0	5	10	10	20	15	30
Total	2	4	33	66	15	30	50	100
Signifikansi (p) 0,000								
Koefisien Korelasi *Spearman Rho* (r) = 0,554								

Based on table 5, it shows that respondents with Education On Complementary Feeding Of Breast Milk Made From Local Foods in the category of less have less motivation, there is 1 respondent (2%), enough there is 1 person (2%) and good motivation is none. Education on complementary feeding of breast milk made from local foods in the category of enough has less motivation, there is 1 respondent (2%), enough there are 27 people (54%) and good motivation is 5 people (10%). Education on complementary feeding of breast milk made from local foods in the category in the

category of Good has less motivation, there is not, enough there are 5 people (10%) and good motivation is 10 people (20%).

The results of the Spearman rho statistical test obtained the sig value (2-tailed) is 0.000 <0.05, meaning that there is a relationship between Education on complementary feeding of breast milk made from local foods and the mother's motivation.

Discussion

Respondent Characteristics

Based on the characteristics of the respondents, the majority of respondents are in the age range of 25-36 years, in this age range it is the golden period in processing new information, where cognitive abilities such as memory, concentration, and thinking speed are at their optimal point, according to research conducted by [17] which concluded that cognitive function peaks at around the age of 20 years. All respondents in both the intervention and control groups were housewives. Working as a housewife tends to have limitations in accessing the latest information and new knowledge, as shown in research [18] found that housewives have a lower level of information literacy compared to women who work outside the home. The highest level of education for respondents was high school, in a study by [3] it was stated that mothers' education, which was predominantly high school, provided a better understanding of the information conveyed, because the higher the level of knowledge, the easier it is to absorb and apply the information in everyday life.

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Relationship between Education on Complementary Feeding Of Breast Milk Made From Local Foods and Knowledge and Motivation of Mothers of Toddlers as a Strategy in Preventing Stunting

Based on the results of the Spearman Rho statistical test, it was found that there is a relationship between Education on complementary feeding of breast milk made from local foods d and Knowledge and Motivation of Mothers of Toddlers as a Strategy in Preventing Stunting. This is in line with research conducted by [19] that maternal knowledge greatly influences the prevention of stunting, the better the mother's knowledge, the easier it is to accept the information conveyed. A similar study was also conducted by [20] stating that maternal knowledge plays a very important role in preventing stunting in children, besides knowledge, maternal motivation also plays an important role because it is directed by their love and desire to see their children grow and develop healthily, being the key to preventing stunting.

Stunting is a condition in toddlers who experience growth failure due to lack of nutrition so children become too short for children their age. Chronic malnutrition

or Stunting, is a serious problem in Indonesia today and requires the involvement of all levels of society to overcome it. Children who experience Stunting experience negative impacts on their cognitive, psychomotor, motor, and educational achievement aspects, with a lower average IQ score [6]. The MP-ASI (complementary food for breast milk) period is a period of habituation and formation of eating patterns in infants when they are 6 months old. Providing healthy and balanced complementary foods using various ingredients can support the growth and development of toddlers ([8]. The importance of more attention in this period is based on the fact that malnutrition during this golden period is irreversible (irreversible [21]. Nutritional problems that are currently still high in toddlers are short toddlers (stunting), underweight, and poor nutritional status [5].

Good maternal knowledge about nutrition, health, and child care plays an important role in preventing and dealing with Stunting problems and immune system disorders in children, by providing balanced nutritional intake, especially micronutrients to support immunity, maintaining environmental cleanliness to prevent exposure to disease agents, and recognizing and taking appropriate action against symptoms of infection, so as to create an optimal environment for the development of the immune system of Stunting children [22]. Therefore, increasing maternal knowledge about the importance of MP-ASI made from local foods that are easily obtained to prevent Stunting is very important [7]. This knowledge will help mothers provide proper care, prevent immune system disorders, and reduce the risk of Stunting children getting infections and diseases that can worsen their condition [20].

Mother's knowledge alone is not enough without strong motivation from the mother [8]. Motivated mothers will try to apply this knowledge and attitude in their daily practice, even though they may face challenges such as limited resources or environmental barriers [12]. Mothers' motivation based on love and the desire to see their children grow and develop healthily is the key to preventing stunting [14]. Thus, the role of mothers in preventing stunting is not only as a breadwinner, but also as an educator, protector, and the main driver in preventing stunting. They are the spearheads in efforts to prevent stunting and improve the quality of life of children. Mothers' motivation is an important element in efforts to prevent stunting [15]. This is because motivation acts as a driver for mothers to apply good knowledge and attitudes related to children's health and nutrition. Motivated mothers will ensure that their children get the right nutritional intake, complete immunizations, and good growth and development according to age standards. Increasing mothers' motivation in preventing stunting requires support and cooperation from various parties, including the community, government, and health sector [9].

Conclusion

1. Mothers' understanding of complementary foods made from local foods is mostly in the sufficient category
2. Mothers' knowledge of strategies for preventing stunting in toddlers is mostly in the sufficient category.

3. Mothers' motivation about strategies for preventing stunting in toddlers is mostly in the sufficient category
4. There is a significant relationship between complementary foods made from local foods and mothers' knowledge about strategies for preventing stunting in 3T areas
5. There is a significant relationship between complementary foods made from local foods and mothers' motivation about strategies for preventing stunting in 3T areas

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