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ANALYSIS OF THE RELATIONSHIP BETWEEN COMPLIANCE WITH VITAMIN A PROVISION AND F100 MILK ON IMPROVING THE GROWTH OF MALNUTRITIONAL CHILDREN IN THE WORKING AREA OF THE MEKAR BARU PUBLIC HEALTH CENTER, TANGERANG REGENCY

Jaka Supriyanta[1]*, Endang Sunariyanti[2], Alif Nuriyanto[3]
Universitas Muhammadiyah A.R Fachruddin, indonesia
E-mail: jakasupriyanta@unimar.ac.id

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Abstract
Malnutrition in toddlers remains a serious health issue in Indonesia. As an effort to address this, the provision of vitamin A and F100 milk is the primary nutritional intervention. This study aims to analyze the relationship between parental compliance in providing these two intakes and the improvement of children's nutritional status in the working area of the Mekar Baru Health Center, Tangerang Regency. The research method employs a quantitative approach with a cross-sectional design. The sample consists of 48 parents with toddlers aged 6 to 59 months who are malnourished. Data collection was carried out using a questionnaire with a Likert scale, while data analysis utilized percentage intervals to test the established variables and hypotheses. The research results show high achievement in three measurement aspects, namely: the adherence level for the provision of vitamin A and F100 milk is 76.83%, the effect of adherence on nutritional improvement is 88.12%, and the relationship between adherence and the improvement of malnutrition is 90%. Based on these findings, it can be concluded that parental adherence in the provision of vitamin A and F100 milk has a significant impact on the improvement of the nutritional status of toddlers in the study area.

Keywords: Malnutrition, Vitamin A, F100 Milk, Compliance, Child Growth.

INTRODUCTION

Indonesia still faces serious challenges in the field of nutrition. According to the Surveillance Technical Guidelines, vitamin A coverage must reach the national target of 87% by 2021. This achievement is crucial to ensure that vitamin A intake in toddlers is met, so they avoid the negative impacts of vitamin A deficiency and can undergo optimal development stages. Meeting the developmental needs of toddlers is the foundation for their health, which in turn contributes directly to the achievement of the Sustainable Development Goals (SDGs) — a global agenda with 17 goals and 169 development targets. One of the priorities of the SDGs in Indonesia is human development in the health sector, particularly through improving nutrition to reduce infant mortality (Bapennas, 2020).

In addition to vitamin A interventions to strengthen the immune systems of children with malnutrition, adequate additional nutritional support is also needed, such as providing F100 formula. This special formula is designed to increase the weight of toddlers with malnutrition. F100 is administered during the transition and recovery period to evaluate and catch up on stunted growth, particularly in efforts to achieve an ideal weight according to height and age. Referring to the standards set by the World Health Organization (WHO) in 2022, the normal weight range for boys aged 1–5 years is 9.4–18.4 kg, while for girls it is 9.2–17.9 kg. Deviations from this range can be an early indicator of nutritional disorders that require immediate intervention.

Based on the standards set by the Ministry of Health (2007) and Arnelia (2010), the effectiveness of malnutrition interventions is measured by the rate of weight gain (BW). Interventions are declared failures if BW gain is below 50 grams per kilogram of body weight per week, while interventions are declared successful if BW gain reaches more than 50 grams/kgBW/week. One form of intervention commonly given is F100 formula milk during the stabilization phase for malnourished toddlers undergoing inpatient care. This phase aims to prevent hypoglycemia and dehydration by gradually providing low-calorie and protein fluid intake, such as formula milk 75 and 100, to meet basic nutritional needs. However, recent findings by Sufiati et al. (2024) revealed that although the

administration of F100 showed an increase in body weight, there was no statistically significant difference between body weight before and after the intervention in malnourished toddlers.

Based on research by Coccossis et al. (2008), patients with kidney failure often experience a decreased quality of life, accompanied by mental health disorders and a high prevalence of depression. One informant confirmed that the hemodialysis process often triggers feelings of depression, stress, and anxiety. Environmental factors in the hemodialysis unit—such as witnessing other patients' conditions worsen or even die during the procedure—were also reported to significantly impact patients' psychological well-being. Thus, it can be concluded that end-stage renal disease (ESRD) has serious multidimensional impacts, encompassing social, financial, and psychological aspects for sufferers.

Researchers want to conduct research on the relationship between parental or caregiver compliance in providing vitamin A and F100 milk and improving the growth and development of malnourished children, based on the above problems.

METHOD

Tool

The research instrument serves as a means of measurement used to evaluate objects or variables that are the focus of the study. In this study, the tool used is a questionnaire that will be distributed to parents of children who have been given vitamin A and F100 milk in the work area of the Mekar Baru Community Health Center, namely a questionnaire regarding compliance such as compliance or non-compliance regarding the provision of vitamin A and F100 milk in improving the growth of malnourished children in the work area of the Mekar Baru Community Health Center, Tangerang Regency.

Material

The materials used in this study were questionnaire data related to the provision of vitamin A and F100 milk from the Mekar Baru Community Health Center, Tangerang Regency.

1. Validity Test

Validity testing is a method for measuring the accuracy of a research instrument in measuring what it is supposed to measure (Ghozali, 2009). In this study, validation was conducted using a 1–5 Likert scale that includes the options: strongly disagree, disagree, neutral (uncertain/uncertain), agree, and strongly agree. In addition, the Likert scale can also be modified with a range of 1–4 (eliminating the neutral option) or 1–6 (by adding the options "tend to disagree" and "tend to agree") to avoid neutral or uncertain responses. (Arnold et al., 1967; Holbrook & Bourke, 2005).

2. Reliability Test

Reliability testing is a method for assessing the consistency of a questionnaire as a measuring tool for variable indicators. A questionnaire is considered reliable if respondents' answers demonstrate consistency and stability over time. Reliability testing in this study was conducted using the SPSS application using the Cronbach's Alpha (α) coefficient test. A variable is considered reliable if its α value is at least 0.60 (Ghozali, 2006).

3. Editing Stage

Examination or review of collected data is carried out to ensure its suitability and relevance before being processed in further analysis stages.

4. Coding Stage

Classification of respondents' answers is carried out based on their type to facilitate the assignment of scores and symbols, so that the data processing process can take place more efficiently.

5. Data Entry Stage

The data from the respondents' answers were then entered into the computer using the Microsoft Excel program for further processing purposes.

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6. Tabulation Stage

Tables are created to organize data and facilitate analysis in accordance with research objectives. In this study, the type of table used is a frequency table.

RESULTS AND DISCUSSION

Table 1. Description Education Mother

Category Education	Number of respondents	Percentage%
Elementary School	14	29%
JUNIOR HIGH SCHOOL	12	25%
SENIOR HIGH SCHOOL	14	29%
No School	8	17%
Total	**48**	**100%**

Based on Table 1 above, it can be seen that the majority of respondents have an elementary and high school educational background, with 14 people (29%) each.

Table 2. Mother's Job Description

Category Work	Number of respondents	Percentage%
Hero business	12	25%
Employee private	5	10%
Mother House ladder	31	65%
Total	**48**	**100%**

Based on Table 2 above, it can be concluded that the majority of respondents are housewives (IRT) with a total of 31 people (65%).

Table 3. Description of Child Gender

Gender	Number of respondents	Percentage%
Man	19	40%
Woman	29	60%
Total	**48**	**100%**

Based on Table 3 above, it can be seen that the majority of respondents have female children, with a total of 29 people (60%).

Table 4. Description of Toddler Age

Age toddler	Number of respondents	Percentage %
2 years	19	40%
3 years	17	34%
4 years	6	13%
5 years	6	13%
Total	**48**	**100%**

Based on Table 4 above, it can be concluded that most respondents have children aged 2 years, with a total of 19 people (40%).

Table 5. Description of Parents' Age

Age person old	Number of respondents	Percentage %
19-25 Year	8	17%
26-30 Year	21	44%
31-35 Year	16	33%
36-40 Year	3	6%

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Total	**48**	**100%**

Based on Table 5 above, it can be concluded that most of the respondents are in the 26-30 year age range, with a total of 21 people (44%).

Table 6. Compliance Score for Providing Vitamin A and F100 Milk.

Score compliance	Amount	Percentage	Compliance level
5- 9	0	0%	Very low
10- 13	0	0%	Low
14- 17	4	8%	Currently
18-21	38	79%	Tall
22- 25	6	13%	Very tall
$\bar{x}$19.67	48	100%	(Tall)

Based on Table 6 above, it can be concluded that most respondents have a compliance level in the score range of 18-21, with a total of 38 people (79%).

Table 7. Improvement Score for Malnutrition

Score compliance	Amount	Percentage	Level of improvement
5- 9	0	0%	Very low
10- 13	0	0%	Low
14- 17	0	0%	Currently
18-21	19	40%	Tall
22- 25	29	60%	Very tall
$\bar{x}$21.92	48	100%	(Very tall)

Based on Table 7 above, it can be concluded that most respondents showed a level of improvement in malnutrition in the score range of 22-25, with a total of 29 people (60%).

Table 8. Respondent Characteristics at Compliance Level.

Respondent characteristics	B	p-Value	R^2
Constant	5,545	,000	
Age child	,032	,635	
Type sex child	- ,247	,141	,227
Age person old	- ,063	,468	
Education	- ,038	,596	
Work	- ,192	,028	

Based on the results of the linear regression test in Table 8, it is concluded that parental occupation is the only characteristic variable that has a statistically significant effect on the level of compliance. The overall regression model is significant with a constant value of 5.545 (p-value of 0.000). Other variables such as child's age (B=0.032; p=0.635), child's gender (B=-0.247; p=0.141), parent's age (B=-0.063; p=0.468), and parent's education (B=-0.038; p=0.596) were proven to be statistically insignificant. The negative regression coefficient on parental occupation (B=-0.192; p=0.028) indicates that certain types of work are correlated with decreased levels of compliance, possibly due to limited time or access. The R^2 value of 0.227 indicates that this model is able to explain 22.7% of the variation in compliance levels, while the remaining 77.3% is influenced by other factors outside the model. This finding is

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consistent with research by Cindy et al. (2024) which revealed that parents' sociodemographic background, particularly occupation and education, is associated with the level of compliance in administering medication.

Table 9. Compliance with the provision of vitamin A and F100 milk to improve malnutrition.

Respondent characteristics	B	p-Value	R^2
Constant	1,517	,006	
Level compliance	,621	,000	,393

Based on the results of the linear regression analysis in Table 9, it can be concluded that compliance in providing vitamin A and F100 milk has a significant relationship with the improvement of malnutrition status in children. The constant value of 1.517 (p-value 0.006) indicates that without the intervention, there is still an improvement in basic nutrition of 1.517 which may be caused by other factors outside the model. The regression coefficient (B) for the level of compliance is 0.621 with a p-value of 0.000, which proves that this variable has a statistically significant and strong effect on nutritional improvement. The R^2 value of 0.393 indicates that 39.3% of the variation in malnutrition improvement can be explained by the level of compliance, while the remaining 60.7% is influenced by other factors.

CONCLUSION

Research shows that based on the results of the analysis of data on the costs of chronic kidney failure in BPJS inpatients at Balaraja Regional Hospital in 2023, several key findings can be concluded as follows:

1. Based on the compliance score assessment above using a Likert scale percentage interval assessment with the smallest score range being very low and the largest score being very high, from the results obtained with 48 respondents getting a score of 18-21 with a percentage of 79% with a high level of compliance, then in the score section 22-25 getting a percentage value of 13% with a very high level of compliance, and in the score section 14-17 only getting a percentage value of 8% with a moderate level of compliance. Of all the total scores according to the sample used 48 respondents with an average compliance score of 19.67 then the percentage This finding is in line with the research of Dalfian et al. (2024) regarding the relationship between compliance with taking antihypertensive medication and a low-salt diet with blood pressure. The study showed that of the 44 respondents who were compliant with taking medication, 23 people (52.3%) achieved normal blood pressure, while of the 76 respondents who were not compliant, 59 people (77.6%) experienced hypertension. The statistical test results obtained a p-value of 0.002, which confirmed a significant relationship between medication adherence and blood pressure. Further analysis produced an OR value of 3.8 (95% CI 1.7-8.4), indicating that respondents who were not compliant with taking medication had a 3.8 times higher risk of developing hypertension compared to those who were compliant (Ningsih & Asyari, 2024). The overall score was 100%, so the overall compliance rate was (High).
2. In the nutritional growth of children after being given Vitamin A and F100 Milk to children suffering from malnutrition above, it can be seen in the first question that the answers from 48 respondents were 29 (60%) of them answered S (agree) and 19 (40%) respondents answered SS (strongly agree), the answer to the second question from 48 respondents was 28 (58%) respondents answered S (agree), and 20 respondents (42%) answered SS (strongly agree), the third question was the most from 48 respondents 25 (52%) answered S (agree) besides that 22 respondents (46%) answered SS (strongly agree) and 1 respondent (2%) answered KS (less agree), the fourth question from 48 respondents was the most from 25 (52%) answered S (agree) and 23 respondents (48%) answered SS (strongly agree), then the answer to the fifth question from 48 respondents was 27 (56%) of them answered SS (strongly agree) and 21 respondents (44%) answered S (agree).
3. In the changes between children who consume vitamin A and F100 milk and those who do not consume it in children with malnutrition, the results of the study showed that of the various characteristics of respondents, only parental occupation had a significant effect on the level of compliance with the provision of vitamin A and F100 milk. This compliance was proven to have a strong and significant relationship with the improvement of children's malnutrition, where the higher the compliance, the greater the improvement in nutritional status. The regression model explained 39.3% of the variation in nutritional improvement, confirming that compliance is a key factor in the success of nutritional interventions.

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