THE EFFECT OF NUTRINEST APPLICATION-BASED FEEDING RULES EDUCATION ON THE NUTRITIONAL STATUS OF TODDLERS

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ABSTRACT
Toddlers are an age stage that is vulnerable to malnutrition. This is due to the lack of understanding of mothers about feeding rules which affects feeding practices. NutriNest application based feeding rules education can increase maternal knowledge in improving the nutritional status of toddlers. This study aims to analyze the effect of feeding rules education based on the NutriNest application on the Nutritional status of toddlers. The research method is a quasi-experimental pre-post test control group with repeated measures with purposive sampling technique of 40 mothers who have toddlers. Respondents are divided into two groups, namely intervention and control. Measurement of toddler nutritional status is carried out every week for 1 month, both before and after the intervention based on BB/TB then converted into a z-score values. Data analysis used the Mann-Whitney bivariate test and GLM-RM multivariate analysis. The results showed that there was an average difference between the intervention and control groups of 14.55 with a p-value of 0.000 (<0.05). The difference in nutritional status of toddlers in the intervention group was seen in the 4th measurement (1 month of intervention) with a p-value of 0.027 (<0.05). It can be concluded that there is an effect of providing feeding rules education on the nutritional status of toddlers at the Cipondoh Health Center, Tangerang City. The NutriNest application-based feeding rules education program is expected to be integrated into health services as an effort to prevent malnutrition and improve the nutritional status of toddlers.

Keywords: education; feeding rules; nutritional status; toddlers

INTRODUCTION
Toddlers are the age stage of children which is often called the golden age. This period toddlers experience a process of growth and cognitive development more rapidly than other ages (Hawu et al., 2022). Optimal toddler growth is supported by nutritional intake and can be seen in nutritional status (Mayar & Astuti, 2021). Nutritional status is one of the important health indicators because at this age it is vulnerable to nutritional problems, namely stunting, wasting, and overweight (Gusrianti et al., 2019; Govender et al., 2021).

The global prevalence of toddler nutritional status in 2022 was stunting (22.3%), wasting (6.8%), and overweight (5.6%). While in Indonesia the prevalence of stunting (21.6%), wasting (7.7%), overweight (3.5%) (UNICEF & WHO, 2023). The prevalence of nutritional status in Banten Province is stunting (20%), wasting (7.9%), underweight (17.2%), and overweight (3.9%). Meanwhile, the prevalence of nutritional status in Tangerang City is stunting reached 11.8%, wasting 4.8%, underweight 11.4%, and overweight 6.1% (SSGI, 2022).

Nutritional status problems in Indonesia are more prevalent in rural areas than urban areas. This is a result of low socioeconomic and educational levels, as well as a lack of parental knowledge about the rules of feeding practices for toddlers (Dewi et al., 2022). Tangerang

City this is due to a lack of community participation in posyandu activities and a low understanding of nutritional intake among toddler (Tangerang City Health Office, 2024).

Various efforts have been made by the Indonesian government to prevent and improve the nutritional status of toddlers through the First 1000 Days of Life (HPK) program, supplementary feeding, nutrition counseling and health education (Ministry of Health, 2017; Ministry of Health, 2023). Tangerang City, these include nutritional status screening activities, nutrition post programs and health counseling (Tangerang City Health Office, 2024). During the implementation of the program, the government still experienced obstacles and challenges including lack of coordination between the government and primary health care providers, unhealthy feeding practices, and uneven health education, especially in remote areas (Ministry of Health, 2023). Low community participation and knowledge about toddler nutrition make education necessary (Abiola, 2022).

One of the education to overcome this is feeding rules education. Feeding rules are basic guidelines for feeding practices including time, type, frequency, and portion of meals according to the nutritional needs and developmental stages of toddlers which aim to ensure toddlers get adequate nutrition for optimal growth(Sari & Kasra, 2022).The key to the success of health education lies in the media used. One of them is digital applications because currently people, especially housewives, do a lot of their daily activities via smartphones (Syihab & Kumalasari, 2020). Digital applications have advantages in accessibility, the education delivered is also more interactive and interesting so that it is easy to understand and the time efficiency of health workers or the government in providing education to the wider community(Anggraini & Trianingsih, 2023).The digital application education media used in this study is the NutriNest application related to feeding rules. The NutriNest application has several application features such as calculating the nutritional status of toddlers, how to apply feeding rules and daily menus according to nutritional needs at each stage of toddler age.

Based on the results of preliminary studies through interviews with 5 mothers, it shows that mothers feed their children without paying attention to nutritional value, do not understand how to make balanced nutritious food and irregular feeding patterns in children, while the results of interviews with Cipondoh health center staff show that efforts to prevent and manage the nutritional status of toddlers are supplementary feeding and balanced nutrition health education using printed media but currently there is no NutriNest application-based feeding rules education. The number of toddlers in June 2024 at the Cipondoh Health Center was 427 toddlers and identified 269 toddlers with normal nutrition, 83 stunting, 15 wasting, 27 underweight, and 33 overweight. Based on the above phenomenon, this study aims to determine the effect of feeding rules education based on the NutriNest application on the nutritional status of toddlers at the Cipondoh Health Center.

METHOD
The design of this study was a quasy experimental pre-post test control group with repeated measures with a total sample of 40 respondents divided into 2 groups, namely intervention and control.The sampling technique was purposive sampling. This research was conducted in the Cipondoh Health Center working area. Research instruments include questionnaires, observation sheets, digital weight scales and statur meters to measure the nutritional status of toddlers based on body weight and height (BB / TB) then converted to z-score values. The NutriNest application features guided feeding rules, a daily menu according to the nutritional needs of toddlers, and a nutritional status calculator.

Data collection began after obtaining ethical approval with number 1494/F.9-UMJ/X/2024 and research permission. Researchers selected numerators and equalized perceptions. Furthermore, researchers looked for respondents in accordance with the inclusion criteria and explained, the objectives, benefits and procedures of the study and provided informed consent sheets. Respondents were divided into 2 groups, namely intervention and control. The intervention group before being given education was asked to fill out a questionnaire and toddlers were measured for nutritional status based on BB / TB, then asked to download the NutriNest application, then the respondent was asked to read the feeding rules education. After that the researcher asked the respondent to return to fill out a questionnaire, observation sheet, and measured the nutritional status of toddlers every week for 1 month. While in the control group respondents were asked to fill out questionnaires, observation sheets and toddlers were measured nutritional status every week for 1 month without being given an intervention. Univariate analysis of frequency distribution and central tension while bivariate analysis uses the Wilcoxon test for differences in pre-post test nutritional status and Mann-Whitney to compare the nutritional status of intervention and control groups and multivariate analysis using the General Linear Model Repeated Measure (GLM-RM) to analyze repeated nutritional status measurements. The questionnaire feeding rules has been tested for validity and reliability with the lowest R value of 0.34 and the highest of 1 while the reliability test results with a Cronbach alpha value of 0.835,

RESULT

Table 1
Frequency Distribution of Characteristics of Mothers and Toddlers (n=40)

Variables	Intervention Group		Control Group	
	f	%	f	%
Mother's Education				
Low (Primary and Junior High School)	6	30%	9	45%
Higher (Senior High School and College)	14	70%	11	55%
Employment Status				
Doesn't work	6	30%	18	90%
Work	14	70%	2	10%
Parity				
≤ 2 children	16	80%	10	50%
> 2 children	4	20%	10	50%
Income				
<Minimum Wage of Tangerang City (Rp. 4,760,289.54)	9	45%	14	70%
≥ Minimum Wage of Tangerang City (Rp. 4,760,289.54)	11	55%	6	30%
Toddlers Gender				
Man	8	40%	9	45%
Woman	12	60%	11	55%

Table 2
Avarage Age of Mother and Children (n=40)

Variables	Mean	Median	Std. Deviation	Min-Max	95% CI
Mother's Age (Years)					
Intervention Group	32.05	34.50	6.97	19-41	28.78-35.32
Control Group	30.50	30,00	3.77	26-38	28.73-32.27
Child Age (Months)					
Intervention Group	25.85	18.50	16.23	7-56	18.25-33.45
Control Group	26.35	26.50	11.68	9-48	20.88-31.82

Table 3
Frequency Distribution of Mother Knowledge Pre-Post Test Feeding Rules Education Based on NutriNest Application in Intervention and Control Grups (n=40)

Knowledge	Pre-Test		Post-Test 1		Post-Test 2		Post-Test 3	
	f	%	f	%	f	%	f	%
Intervention Group								
Not enough	9	45%	7	35%	3	15%	1	5%
Enough	6	30%	8	40%	10	50%	8	40%
Good	5	25%	5	25%	7	35%	11	55%
Control Group								
Not enough	10	50%	10	50%	9	45%	9	45%
Enough	9	45%	9	45%	8	40%	7	35%
Good	1	5%	1	5%	3	15%	4	20%

Table 4
Average Nutritional Status of Toddlers Pre-Post Test Feeding Rules Education Based on NutriNest Application in Intervention and Control Grouop (n=40)

Variables	Mean	Median	Std. Deviation	Min-Max	95% CI
Intervention Group					
1st Measurement before Intervention	-1.76	-2.25	1.11	(-2.51) – (1.02)	(-2.28) – (-1.24)
2nd measurement after intervention	-1.68	-2.14	1.12	(-2.38) – (1.07)	(-2.21) – (-1.15)
3rd measurement after intervention	-1.50	-1.95	1.06	(-2.19) – (1.11)	(-2.00) – (-1.00)
4th measurement after intervention	-1.30	-1.68	1.05	(-2.08) – (1.20)	(-1.79) – (-0.80)
Control Group					
1st measurement	-2.18	-2.38	0.64	(-2.66) - (-0.17)	(-2.48) - (-1.88)
2nd measurement	-2.14	-2.34	0.62	(-2.61) - (-0.34)	(-2.43) - (-1.85)
3rd measurement 4th	-2.02	-2.23	0.66	(-2.45) - (-0.01)	(-2.33)- (-1.17)
measurement	-1.92	-2.11	0.59	(-2.34) - (-0.17)	(-2.20) - (-1.64)

Table 5
Differences in Nutritional Status of Toddlers Pre-Post Test of Feeding Rules Education Based on NutriNest Application in Intervention and Control Grups (n=40)

Variables	Mean	Std.Deviation	*P-value*
Intervention Group			
Before Intervention	-1.76	1.11	
After Intervention	-1.30	1.05	0,000
Difference	0.46	0.06	
Control Group			
Before	-2.18	0.64	
After	-1.92	0.59	0,000
Difference	0.26	0.06	

Table 6
Differences in Nutritional Status of Toddlers Post Test of Feeding Rules Education Based on NutriNest Application in the Intervention and Control Group (n=40)

Variables	Mean Rank	Sum of Ranks	*P-value*
After Education			
Intervention Group	27.78	555.50	
Control Group	13.23	264.50	0,000
Difference	14.55	291	

Table 7
Effectiveness of Education Feeding Rules Based on NutriNest Application
on Todder Nutritional Status (n=40)

Variables	Parameter	B	Std.error	t	P value	95% CI	Partial Eta Squared
Before being given education (pre-test)	intercept	-2,185	0.240	-10,706	0,000	(-2,598) - (-1 ,771)	0.751
	Intervention group	420	0.289	1,454	0.154	(-0.165)- (1.004)	0.053
Measurement 2 (post-test 1)	intercept	-2,147	0.203	-10,574	0,000	(-2,588)- (-1,736)	0.0746
	Intervention group	0.463	0.287	1,611	0.116	(-0.119)- (-1.376)	0.064
Measurement 3 (post-test2)	Intercept	-2,026	0.198	-10,212	0,000	(-2.428) - (-1.624)	0.733
	Intervention group	0.522	0.281	1,859	0.071	(0.0461)- (0.89)	0.083
Measurement 4 (post-test 3)	Intercept	-1,929	0.192	-10,034	0,000	(-2,318)- (-1,540)	0.726
	Intervention group	0.628	0.278	2,308	0.027	(0.077)- (1.178)	0.123

DISCUSSION
Characteristics of Mother
Education
This study shows that the mother's level of knowledge plays an important role in the ability to absorb information, thus allowing the mother to deepen her knowledge in various matters including feeding rules. This study is in line with research conducted by Ertina and Zain (2023) which revealed that a person's level of education is directly proportional to the ability to receive information. The higher a person's level of education, the more knowledge they have, especially about toddler nutrition. This will affect proper feeding practices so that they have a positive impact on nutritional status. According to the researcher's analysis, the difference in education levels between the intervention and control groups illustrates how educational factors interact with the effectiveness of the NutriNest application-based feeding rules education intervention. Using the application for 1 month can increase mothers' knowledge about feeding practices, which has an impact on improving the nutritional status of toddlers. Although there are mothers with low education in the intervention group, active use of the application facilitates the application of daily feeding rules which have a positive effect on toddler nutrition.

Employment Status
This study showed that the proportion of working mothers was higher in the intervention group than the control group, indicating that working mothers tend to be more proactive in seeking information and participating in educational programs. Working mothers are likely to have a higher awareness of the importance of providing proper nutrition for toddlers so that they are more motivated to participate in the intervention program. On the other hand, the proportion of non-working mothers was higher in the control group, indicating that mothers may face greater obstacles in accessing information, although they have more time with their children, they are at risk of having limited resources or financial resources that make it difficult for mothers to find information on feeding rules independently and if the mother does not work in a low socioeconomic status, there is a risk of not being able to meet the nutritional needs of children optimally.

The results of this study are not in line with previous research Malik & Indrawati (2023) which states that maternal employment status is not always related to maternal knowledge related to child nutrition. However, this study is in line with research Anugerah et al (2024) if there is a relationship between maternal employment status and maternal knowledge about the nutritional status of toddlers. This study is also supported by the results of result Oktarindasarira et al (2020) which states that working mothers have limited time to care for children so that they are more active in seeking information, especially related to nutritional intake in toddlers and can help family income so that they can provide nutritious food while mothers who do not work despite having a lot of free time to care for children if they are in a low economic status are at risk of not being able to provide nutritional intake as needed.

Parity
The study showed that the majority in the intervention and control groups had parity ≤ 2 children but the proportion of mothers who had parity ≤ 2 children was more in the intervention group than the control group. This indicates that mothers with fewer children tend to be more open to new information and more willing to change child care practices including feeding rules. The results of this study are supported by research Soleha & Zelharsandy (2023) which states that parity is related to knowledge about children's nutritional status and controlling the number of children in the family is important to prevent malnutrition. Meanwhile, the results of research conducted by Sarman & Darmin (2021) state that high parity is an indirect factor in child malnutrition, especially in poor economic conditions. Children with many siblings are at risk of growth delays due to competition for limited nutritional resources at home.

Income
The results showed that family income above the Tangerang City minimum wage was higher in the intervention group compared to the control group. This indicates that income levels affect access to technology and information, which has an impact on participation in nutrition improvement programs. Mothers with higher incomes have better smartphones and internet access, as well as higher digital literacy so that it is easier to use the NutriNest application and apply feeding rules that have an impact on children's nutritional status. The results of the study and researcher's statements are in line with the research of Sahdina et al (2023) which states that income and knowledge about children's nutritional intake have a relationship with children's nutritional status, this is because families who have higher incomes tend to provide children with more varied and nutritious food.. This study is also supported by the results of research (Haryanti & Mariana, 2023) revealed that knowledge and income levels have a significant relationship, especially in the nutritional status of toddlers, especially in terms of nutritious feeding for toddlers.

Age
The results showed that in the intervention group the average age of the mother was 32 years old while the control group was 30 years old. This shows that the age of mothers in the intervention group tends to be older than the control group. Older mothers are likely to have higher motivation to seek information and participate in educational programs. Older mothers also generally have more experience in caring for children and are more likely to be aware of the importance of proper feeding practices.This research is supported by Banowo & Hidayat (2021) states that the older a person gets, the more a person's age increases the level of maturity and intelligence of a person in thinking, this is because more mature people have quite a lot of life experience and mental maturity in caring for children, especially in providing nutritional intake. Meanwhilw the results of the study Malik & Indrawati (2023)states that the older a person gets, the better the level of maturity and strength of a person in thinking so that knowledge will increase.

Characteristics of Toddler
Gender
The results showed that the majority of children in the intervention and control groups were female, but the proportion was higher in the intervention group. This study is in line with research Samsuddin & Seni (2023) stated that there is an attachment between the gender of toddlers and nutritional status., Homeever this study is not in line with the research Kurniawati & Yulianto (2022) states that the gender of toddlers has nothing to do with nutritional status. Meanwhile, research conducted by Syahroni et al (2021) revealed that gender has a relationship with the nutritional status of toddlers. This is because nutritional needs in girls and boys are different due to the influence of metabolic factors and hormones that can affect nutritional needs in the body. According to the researcher's analysis, gender differences in the intervention and control groups provide an overview of the nutritional intake given to toddlers. This is related to biological factors in boys and girls who have slightly different nutritional needs, especially at certain stages of growth which are influenced by metabolism and hormones.

Age
The results showed that in the intervention group the average age of children was 25.8 months while in the control group the average age of children was 26.3 months. This age difference has implications, namely the NutriNest application focuses on the topic of feeding rules for toddlers, including time, type, frequency and portion of meals according to the nutritional needs of each age, so that it is more helpful for mothers with young toddlers. Mothers with younger toddlers also have more time and energy to apply new information than mothers with older toddlers who often face appetite and food selection problems. The results of this study are in line with research Utami & Azizah (2023) and Kurniawati & Yulianto (2022)that the age of toddlers has a relationship with the nutritional status of toddlers. This shows that the older the child, the more nutritional needs increase, but toddlers aged 13 months and over have begun to be able to choose food based on the color, aroma, and taste they like. If this continues to be allowed toddlers are at risk of experiencing other nutritional deficiencies so that it affects their nutritional status.

Knowledge of Mother in the Intervention and Control Groups
This study shows that the knowledge of mothers in the intervention group after being given education on feeding rules based on the NutriNest application for 1 month there was an increase from less to good while in the control group there was no increase throughout the observation period showing less knowledge. This shows that the NutriNest application plays an important role in increasing knowledge. The interactive features, easy-to-understand material, and high accessibility of this application allow mothers to learn more effectively and efficiently. In addition, support from health workers involved in the development and implementation of this application can also contribute to the success of the program. The results of this study are supported by Johari et al (2023); Sianturi et al (2023); Sari & Kasra (2022) emphasized that the media used in providing education must be appropriate and in accordance with the needs of the community, especially mothers, so that the education provided can increase mothers' knowledge about the nutritional status of toddlers. Meanwhile, research Noviyanti et al (2020) said that knowledge plays an important role in shaping attitudes and behavior. Mothers with good knowledge about toddler nutrition tend to be more precise in choosing and providing food that suits the nutritional needs of toddlers so that it can have a positive impact on the nutritional status of toddlers.

Nutritional Status of Toddlers in the Intervention and Control Groups
This study shows that there is a gradual significant improvement in nutritional status in the 1st to 4th measurements after being given education on feeding rules based on the NutriNest

application for 1 month, while in the control group the nutritional status of toddlers tends to stabilize or experience a slight increase during 4 measurements. This indicates that feeding rules education provided through the NutriNest application is likely to make mothers gain better knowledge about nutritional intake in toddlers, so that mothers can provide foods that are more nutritious and in accordance with the needs of children.This statement is in line with the result of research Sabrina et al (2023) stated that improving knowledge of feeding rules in mothers can be an effort to overcome eating problems in children. Mothers who have good knowledge related to feeding rules are likely to have good feeding practices in toddlers, so that if done consistently, it will result in good nutritional status in toddlers.

The Effect of NutriNest Application-Based Feeding Rules Education on the Nutritional Status of Toddlers
This study shows that there are significant differences in the nutritional status of toddlers in the intervention group compared to the control group. This indicates that the NutriNest application-based feeding rules education program has had a positive impact on the nutritional status of toddlers. This study is in line with the research Mey et al (2023) that providing nutrition education using bocesting android-based applications is more effective than using booklet media in improving maternal attitudes and behavior in nutritious feeding in toddlers as an effort to improve the nutritional status of toddlers. This is because the use of android-based application media is more interesting and easy to understand compared to using conventional media. This study also shows that the improvement in nutritional status in toddlers is seen in the 4th measurement, namely after providing education for 1 month with a small effect size. This shows that it takes time for mothers to apply the knowledge gained from education and changes in eating behavior in children do not occur in a short time but require a gradual adaptation process. a small effect size on the provision of NutriNest application-based feeding rules education indicates that sustainable interventions can have a greater positive impact on nutritional status in the long term. This statement is in accordance with research Anggraini & Trianingsih (2023)stated that that in the first 2 weeks of providing feeding rules education, the child is still in the process of adaptation and the child is not used to the application of feeding rules so that the child still has to be directed during mealtimes, but in week 3 the child starts to get used to his eating hours.

CONCLUSION
There is an effect of feeding rules education on the nutritional status of toddlers in the intervention group compared to the control group and there are differences in the nutritional status of toddlers in the 4th measurement after 1 month of providing NutriNest application-based feeding rules education with a small effect size.

REFERENCES
Abiola,Y.(2022). Nutrition and Cognition in School-Aged Children:A Brief Review. *International Journal of Education Benchmark*, 4(1), 122–139. https://doi.org/10.1016/j.jneb.2022.04.146

Anggraini, D., & Trianingsih, D. (2023). The Effect of Health Education on Feeding Rules and Distribution of Flashcard Affirmation on Nutritional Status of Preschool Children in TK Albirru. *Journal of Nursing and Health Science*, 2(1), 61–65. https://doi.org/10.58730/jnhs.v2i2.82

Anugerah, N. M. A. N., Pradnyawati, L. G., & Pratiwi, A. E. (2024). Hubungan Tingkat Pengetahuan Ibu Tentang Gizi Dengan Kejadian Stunting Balita 12 - 59 Bulan di Wilayah Kerja Puskesmas Tegallalang 1. *Aesculapius Medical Journal*, 4(2), 275–281. https://doi.org/10.22225/amj.4.2.2024.275%20-%20281

Banowo, A. S., & Hidayat, Y. (2021). Pengaruh Edukasi Gizi terhadap Praktik Pemberian

Makan Pada Baduta Stunting di Kabupaten Bengkulu Utara. *Jurnal Ilmiah Universitas Batanghari Jambi*, 21(2), 765. https://doi.org/10.33087/jiubj.v21i2.1539

Dewi, A. P. S., Kusumastuti, K., & Astuti, D. P. (2022). Faktor-Faktor Yang Mempengaruhi Kejadian Stunting Pada Anak Balita. *Jurnal Ilmu Keperawatan Dan Kebidanan*, 13(2), 549–555. https://doi.org/10.26751/jikk.v13i2.1340

Dinas Kesehatan Kota Tangerang. (2024). *Determinan Faktor Budaya Pada Kejadian Stunting Di Indonesia*. Dinas Kesehatan Kota Tangerang.

Ertina, D., & Zain, S. B. (2023). Pendidikan Dan Pengetahuan Ibu Tentang Gizi Berhubungan Dengan Status Gizi Balita. *Jurnal ILKES (Jurnal Ilmu Kesehatan)*, 14(1), 96–108. https://ilkeskh.org/index.php/ilkes/article/view/279/180

Govender, I., Rangiah, S., Kaswa, R., Nzaumvila, D., Makgatho, S., Africa, S., & Sisulu, W. (2021). Malnutrition in Children Under the Age of 5 years in a Primary Health Care Setting. *South African Family Practice*, 1(1), 1–6. https://doi.org/10.4102/safp.v63i1.5337

Gusrianti, Azkha, N., & Bachtiar, H. (2019). Analisis Faktor Yang Berhubungan Dengan Status Gizi Balita di Kelurahan Limau Manis Selatan Wilayah Kerja Puskesmas Pauh Kota Padang. *Jurnal Kesehatan Andalas*, 8(4), 109–114. https://doi.org/10.25077/jka.v8i4.1126

Haryanti, D., & Mariana, S. (2023). Hubungan Pengetahuan dan Tingkat Pendapatan Terhadap Status Gizi Pada Balita di Posyandu Desa Sumber Jaya. *Midwifery Health Journal*, 8(2), 1–8. https://doi.org/10.56338/mppki.v6i6.3319

Hawu, C. F., Nur, M. L., & Ndoen, E. M. (2022). Nutritional Status of Children under Five Years in the Working Area of Puskesmas Manutapen. *Journal of Health and Behavior Science*, 4(2), 234–246. https://doi.org/10.35508/jhbs.v4i2.6415

Johari, A., Agrina, & Putri, S. A. (2023). Pengaruh Edukasi Kesehatan Dengan Media Leaflet Terhadap Pengetahuan dan Sikap Ibu Tentang Gizi Balita. *Jurnal Kesehatan Jompa*, 2(1), 112–123. https://doi.org/10.57218/jkj.vol2.iss1.706

Kementrian Kesehatan RI. (2017). *1000 Hari Pertama Kehidupan*. Kementerian Kesehatan Republik Indonesia.

Kementerian Kesehatan RI. (2023). *Pemberian Makanan Tambahan Pada Balita*. Kementerian Kesehatan RI.

Kurniawati, N., & Yulianto. (2022). Pengaruh Jenis Kelamin Balita, Usia Balita, Status Keluarga, Dan Pendapatan Keluarga Terhadap Kejadian Stunted Pada Balita. *Jurnal Pengembangan Ilmu Dan Praktik Kesehatan*, I(1), 76–92. /https://doi.org/10.56586/pipk.v1i1.192

Malik, M. N., & Indrawati, I. (2023). Hubungan Tingkat Pendidikan dan Status Pekerjaan Ibu dengan Status Gizi Anak Prasekolah di Kecamatan Kalanganyar Lebak Banten The Relationship between Education Level and Mother's Occupational Status with the Nutritional Status of Preschool Children in. *Junior Medical Journal*, 1(5), 566–573. https://doi.org/10.33476/jmj.v1i5.3112

Mayar, F., & Astuti, Y. (2021). Peran Gizi Terhadap Pertumbuhan dan Perkembangan Anak Usia Dini. *Jurnal Pendidikan Tambusai*, 5(3), 9695–9704. https://doi.org/https://doi.org/10.31004/jptam.v5i3.2545

Mey, D., Mukodri, L., & Keb, M. (2023). Aplikasi Android Bocesting sebagai Media Edukasi dalam Pencegahan Stunting Pada Balita. *Journal Keperawatan Indonesia*, 1(1) 1–36. https://bookchapter.optimalbynfc.com/index.php/stunting/article/view/20

Noviyanti, L. A., Rachmawati, D. A., & Sutejo, I. R. (2020). Analisis Faktor-Faktor yang Memengaruhi Pola Pemberian Makan Balita di Puskesmas Kencong An Analysis of Feeding Pattern Factors in Infants at Kencong Public Health Center. *Journal of Agromedicine and Medical Sciences*, 6(1), 14–18. https://doi.org/10.19184/ams.v6i1.9597

Oktarindasarira, Z., Qariati, N. I., & Widyarni., A. (2020). Hubungan Pengetahuan, Pekerjaan Ibu Dan Pendapatan Keluarga Dengan Status Gizi Balita Di Wilayah Kerja Puskesmas Tapin Utara. *Journal of Chemical Information and Modeling*, *11564 LNCS*(9), 41. https://doi.org/uniska-bjm.ac.id/id/eprint/2365

Sabrina, G., Meivita, P., Purnamasari, D., & Kartikasari, A. (2023). Korelasi Tingkat Pengetahuan Feeding Rules Ibu Dengan Status Gizi Batita. *Journal of Bionursing*, 5(1), 76–82. https://doi.org/10.20884/1.bion.2023.5.1.175

Sahdina, R. S., Dina, R. A., Fajriah, E., & Zahra, A. (2023). Hubungan Pendapatan Keluarga dan Pengetahuan Gizi Ibu dengan Dampaknya terhadap Status Gizi Anak Usia Sekolah di Desa Babakan. *Jurnal Sains Dan Teknologi Kesehatan*, 4(2), 44–51. https://doi.org/10.52234/jk.v4i2.296

Samsuddin, & Seni, W. (2023). Hubungan Jenis Kelamin, Berat Badan dan Tinggi Badan Dengan Status Gizi Anak Usia 0-5 Tahun Di Puskesmas Cubo Kabupaten Pidie Jaya. *Jurnal Kanaka*, *X*(X), 1–11.

Sari, A. F., & Kasra, K. (2022). Edukasi Kesehatan Terhadap Perilaku Makan Bayi Dan Balita Pada Wilayah Kerja Puskesmas Anak Air Kota Padang. *Buletin Ilmiah Nagari Membangun*, 5(1), 47–57. https://doi.org/10.25077/bina.v5i1.366

Sarman, & Darmin. (2021). Hubungan ASI Eksklusif dan Paritas dengan Kejadian Stunting pada Anak Usia 6-12 Bulan di Kota Kotamobagu : Studi Retrospektif. *Gema Wiralodra*, 12(2), 206–216. https://doi.org/10.31943/gemawiralodra.v12i2.186

Sianturi, O. N. A., Nadhiroh, S. R., & Rachmah, Q. (2023). Association between Parents' Education Level and Income and Children's Nutritional Status : A Literature Review. *Media Gizi Kesmas*, 12(2), 1070–1075. https://doi.org/10.20473/mgk.v12i2.2023.1070-1075

Soleha, M., & Zelharsandy, V. T. (2023). Pengaruh Paritas Di Keluarga Terhadap Status Gizi Anak Balita : Literature Review. *Lentera Perawat*, *4*(1), 70–85. https://doi.org/10.52235/lp.v4i1.210

SSGI. (2022). *Buku Saku Hasil Survei Status Gizi Indonesia*. Kementerian Kesehatan Republik Indonesia.

Syahroni, M. H. A., Astuti, N., Indrawati, V., & Ismawati, R. (2021). Faktor-faktor yang mempengaruhi kebiasaan makan. *Jurnal Tata Boga*, 10(1), 12–22.

Syihab, S. F., & Kumalasari, I. (2020). Nutrition Education for Praventing Stunting in Elementary Schools: A Systematic Review. *Journal of Teaching Physical Education in Elementary School*, 4(229), 5–10. https://doi.org/10.17509/tegar.v4i1.28639

UNICEF, & WHO. (2023). Level and trend in child malnutrition. *World Health Organization*, 4. https://www.who.int/publications/i/item/9789240073791

Utami, D. C., & Azizah, A. N. (2023). Hubungan Status Gizi Dengan Perkembangan Balita Usia 1-5 Tahun di Wilayah Kerja Puskesmas Kutasari. *Journal of Health Research*, 6(1), 28–35. https://doi.org/10.36419/avicenna.v6i1.820