Effectiveness of complementary feeding patterns on Nutritional status in toddlers age 6-24 months : A systematic review

Laksmi Nurul Suci, Milenia Aulia Azizah*

*Milenia.aulia.azizah-2021@fk.unair.ac.id

Midwivery study program, Faculty of Medicine, University of Airlangga

Jl.Mayjen Prof Moestopo no. 47,Surabaya,East Java, 60132, Indonesia

Abstract

Feeding patterns and practices during the first year of life are very important for growth, development, and morbidity. WHO recommends infants exclusively breastfed in the first six months , then begin complementary foods that are nutritionally adequate, safe and appropriately fed from 6 to 24 months to meet the needs of a growing baby.This study is a systematic review of literature by searching five e-databases namely Scopus, Science Direct, pubmed, Portal Garuda and Google Scholar. Literature search was carried out using Boolean Operators including OR/AND with search terms. Literature search keywords used English and Indonesian.Patterns of complementary food giving and Nutritional Status in toddlers (8 articles), Knowledge of complementary foods (1 article), Behavior of giving complementary foods (1 article), Characteristics of giving complementary foods (5 articles).The results, there is an effect of the pattern of complementary feeding on the nutritional status of toddlers aged 6-24 months.

Keywords; Complementary foods; Nutritional status; toddlers

1. Introduction

Indonesia currently facing triple malnutrition in the 2018 reported that the percentage of toddlers experiencing stunting (height/age) was 30.8%. Even though the percentage of stunting has decreased (Riskesdas 2013: 37.), in 2018 there are still 2 provinces with stunting percentages above 40%, Central Sulawesi and NTT. The study results, the nutritional status of Indonesian children under five conducted in March 2019 currently stunting percentage had reached 27.67%. This percentage is still categorized as high by Unicef/WHO and the World Bank which reported an average global stunting percentage in 2018 of 21.9%9. In order to create quality human resources,(BAPPENAS, 2019). A child called stunted if their body growth compared to their age is below 2 standard deviations (-2 SD), below the WHO graph median. Based on research it was found that Stunted children have a higher risk of being suspected of delayed development compared to non-stunted children(mustakim, et al, 2022) Some experts see this condition as a 'stunting syndrome(Santosa, Novanda Arif and Abdul Ghoni, 2022).Stunting nutrition is caused by a lack of maternal nutrition, intrauterine malnutrition, lack of breastfeeding until the age of 6 months, then the introduction of

complementary foods, inadequate (quantity and quality) of complementary foods, and impaired absorption of nutrients due to infectious diseases (Soliman et al., 2021).

Feeding patterns and practices during the first year of life are very important because they affect growth, development, and morbidity. WHO recommends that infants be exclusively breastfed for the first six months of life, then begin complementary foods that are sufficiently nutritious, safe and appropriately fed from six to 24 months to meet the developing needs of a growing baby.(WHO, UNICEF, USAID, 2010). The first baby in the family is more likely to be offered complementary foods early and about 80% of mothers who introduce complementary foods to their babies early are from rural areas. The mental development of the babies was found to be good, but there is a sizeable gap between the WHO Guiding Principles for Complementary Feeding and practice among mothers of infants aged less than 2 years in Egypt.(El-Asheer et al., 2021). This is in line with research bywang et al., 2019the results obtained where 21.4% of infants had received complementary foods before the age of 4 months. At 6 months of age, 20.2% of all infants consumed sweet drinks daily and 16.5% consumed snacks daily.

According to research Masuke et al., 2021, a study on the effects of inappropriate complementary feeding practices on the nutritional status of children aged 6–24. It was found that the majority of children (91.2%) were given soft/semi-solid/solid foods before six months of age, 40.3 percent had low frequency of eating, and 74 percent had low variety of food. Early introduction of complementary foods at the age of 0-1 month was statistically significantly associated with a higher risk of wasting and body weight.

Weight and length/height need to be monitored even beyond 24 months of life to enable early recognition of growth retardation/deviations and to allow appropriate and timely interventions to address their negative neurodevelopmental and cognitive impacts(Suryawan et al., 2022).Based on the problems above, researchers are interested in conducting research on Patterns of Giving complementary food on Nutritional Status in Toddlers Age 6-24 Months

2. Methodology

This type of research uses a secondary research type in the form of a Systematic Review. Systematic Review is a study review that identifies, assesses and interprets all findings on a particular topic to answer predetermined research questions. Systematic Review contains reviews, summaries, and the author's thoughts on several sources of literature (articles, books, etc.) On the topics discussed.
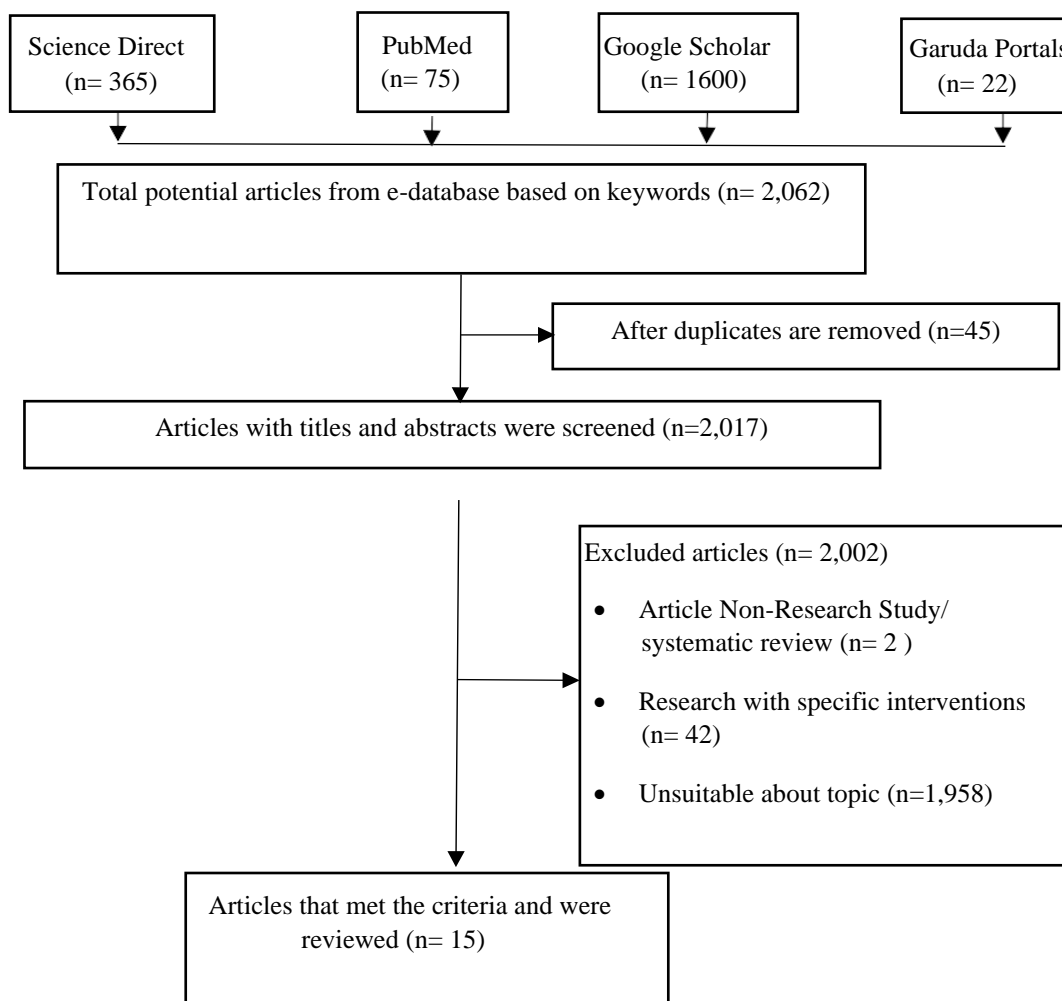
2.1. Literature Search Results

Fig 1 PRISMA flowchart

The literature search was carried out through five electronic search databases namely pubmed, Science Direct, Google Scholar, and the Garuda portal. A total of 2,062 studies were obtained from keyword searches. Researchers screened by eliminating 45 duplicate literature. Furthermore, the researchers screened based on the title and abstract, obtained 2,002 articles excluded consisting of 2 non-research study/systematic review articles, 42 articles with certain interventions and 1,958 articles that did not describe the relationship between nutritional intake, adherence to taking iron tablets. With anemia in young girls. A total of 15 articles were reviewed with full text literature that complied with the inclusion and exclusion criteria to review the research characteristics and conduct an assessment of the literature study.

2.2. Included literature characteristics

Literature characteristics were carried out by extracting data from each literature reviewed including: article titles, authors, databases, journals, years, volumes, numbers, research site settings, research methods (design, sample, variables, instruments, analysis), as well as research results. Reviewed.

Table 1 literature journal with EPHPP

NO	Article Title and Author	Database, Journal, Year, Volume, No	Research Methods (Design, sample, variables, instruments, analysis)	Research result
1	The Relationship between the Pattern of Giving COMPLEMENTARY FOOD and the Nutritional Status of Toddlers aged 6-24 months in one of the villages in the East Lampung region. Damayanti Fatonah, Siti	Google scholar, Nursing Journal, Volume XII, No. 2, October 2016	D : cross-sectional S : 64 respondents V : - Independentcomplementary Feeding Pattern - Dependent Nutritional status I : questionnaire A : Chi-Square test	The results showed that the p value = 0.000 (0.000 <0.05) and Odds Ratio (OR) = 123.5. Then it can be concluded there is Significant relationship between patterns of complementary feeding and nutritional status of children under five.
2	Correlation between Nutritional Knowledge and Feeding Patterns of Complementary Feeding to Nutritional Status at the Age of 6-59 Months in the Work Area of the Selalong Health Center, Sekadau Hilir District, Sekadau Regency. Edi Waliyo, Marlenywati Marlenywati, Nurseha Nurseha	Google scholar, Journal of Medicine and Health, Volume 13, No. 1, 2017	D : cross-sectional S : 84 respondents V : - Independentknowledge of Nutrition and Patterns of Giving complementary food - Dependent Nutritional status I : questionnaire A : Chi-Square test	The results showed that there was a significant relationship between nutritional knowledge (p value = 0.024, PR = 1.657 with 95% CI = 1.103-2.488), the amount of complementary food given (p value = 0.000; PR = 18.633 with 95% CI = 4.824- 71.975), and frequency of complementary feeding (p value = 0.000, PR = 3.467 with 95% CI = 1.919-6.262) for wasting in the Work Area of the Selalong Health Center. Variables that are not related to the age of complementary feeding (p value = 0.256) and the

No				type of complementary feeding (p value = 0.065).
3	The Relationship between Patterns of Feeding Solids and the Nutritional Status of Children Aged 6-24 Months in Pangkep Regency Theodora Apriani Iza Kopa, Maria Mirza Togubu, Diana Novrian Syahruddin, Akmal	Google scholar, Public Health Nutrition, Volume 1, Issue 2, Year 2021	D : cross-sectional S : 60 respondents V : - Independentcomplementary Feeding Pattern - Dependent Nutritional status I : questionnaire A : fisher's exact test	The results of the study showed that 25.6% were malnourished (<-2SD), timely complementary feeding was 71.7% and textured complementary feeding was 28.3%. Based on statistical tests, the texture of complementary feeding was related to the nutritional status of children (p=0.012). As for the age at which complementary foods were given, there was no relationship with nutritional status, with a p-value of 0.384
4	Patterns of complementary feeding and nutritional status of infants aged 6-12 months in the UPT Public Health Work Area, Tampaksiring 1. Aurilia Claresta, Princess Widarti, Ari Dewantari, nimade	Google scholar Journal of Nutrition Science, Volume 7, No 4, Year 2018	D : cross-sectional S : 55 respondents V : - Independentcomplementary Feeding Pattern - Dependent Baby Nutritional Status I : questionnaire A : chi square test and Logistic regression	The results showed that 58.2% of homemade (local) complementary food were bought and 41.8% were bought. The age of giving complementary food aged less than 6 months was 60.0% and 40.0% (≥ 6 months). That The frequency of giving complementary food was inappropriate, namely 56.4% and 43.6% appropriate. Nutrition data Nutritional status shows 92.7% good nutritional status and 7.3% good nutritional status.
5	Analysis of Patterns of Providing Complementary Feeding on the	Google scholar Journal of Health and Pharmaceutical	D : cross-sectional S : 30 respondents V : - Independentcomplementary Feeding	Research result Shows a p value = 0.01 < α = 0.05 Which means that there is

	Nutritional Status of Infants Aged 12-24 Months in Guntur Macan Village, Gunungsari Health Center in 2021. Mawaddah, Shohipatul Utami's daughter, Pramita Khaerani, Nursabah	Sciences, Volume 9, No 1, Year 2021	Pattern - Dependent Baby Nutritional Status I : questionnaire A : chi square test	a significant relationship between the pattern of complementary feeding and the nutritional status of infants at the age of 12-24 months.
6	Analysis of the provision of complementary food with the nutritional status of infants 6-12 months in the Kalibiru Health Center area. Nuzula, Firdawsy Sony Anggari, Roshinta	Google scholar RUSTIDA HEALTH SCIENTIFIC JOURNAL, Vol. 06 No. 02 July 2019	D : cross-sectional S : 89 respondents V : - Independentproviding complementary food - Dependent Baby Nutritional Status I : questionnaire A : chi square test	The results showed that the p value <0.05 Which means that there is a relationship between giving complementary food with Nutritional status of infants 6-12 months in the Kalibaru Health Center area
7	Correlation between the behavior of giving complementary food and the nutritional status of infants aged 6-24 months at Posyandu, Bandung Mojokerto village Kusumaningrum, Nanda Devi	Google scholar JOURNAL Stikes Hangtuah Surabaya, 2019	D : cross-sectional S : 67 respondents V : - Independentcomplementary Giving Behavior - Dependent Baby Nutritional Status I : questionnaire and observation sheet A : Spearman rho test	Research results show that there is a relationship between behavior Provision of complementary food with nutritional status with a p value = 0.015 (p≤0.005) With a coefficient of r=0.295
8	The Effect of Providing Nutrient-Dense Complementary Food for Breast Milk on the Nutritional Status of Infants in Pamulihan District, Sumedang Regency Fathonah, Annisha	Google scholar Journal of Bakti Kencana University, 2019	D : quasy experiment S : 19 respondents V : - Independentprovision of Nutrient Solid complementary food - Dependent Baby Nutritional Status I : questionnaire A : dependent t test	The results of this study found that there was a difference in the z-score of body weight (p = 0.00), body length (p = 0, while the z-score of the proportion of nutritional status (p = 0.56) had no difference before and after the intervention. Independent t-test found that there was no effect of giving mpation on the z-score of body weight (p=0.876) and the proportion of nutritional status (0.188), whereas

No	Title	Source	Method	Results
				on the z-score of body length (p=0.03) there was an effect of giving mpation. There is a difference in the z-score of body weight and length before and after being given solids, and there is an effect of giving mpations on the z-score of body length in infants in Pamulihan District, Sumedang Regency in 2019.
9	The relationship between complementary food patterns and the nutritional status of children at the Suradita Health Center, Kab. Tangerang Eka Cahyaningsih, Hanifah	Google scholar Indonesian Journal of Health Development, University, Vol 3 No1, 2021	D : cross-sectional S : 90 respondents V : - Independentcomplementary food pattern - Dependent Children's Nutritional Status I : questionnaire A : chi square test	The research results show the results of the p-value Of 0.007 which means There is a significant relationship between the pattern of giving complementary food to nutritional status and value Odds ratio (OR) of 4.960 which means the child is given Complementary food pattern Right at risk 4,960 times Normal nutritional status compared to children who were given the complementary food is not right.
10	Provision of complementary food and Nutritional Status for Toddlers in the Tuak Daun Merah Village. Umbu Zogara, Asweros	Google scholar CHMK HEALTH JOURNAL VOLUME 4 NUMBER 1, year 2020	D : cross-sectional S : 193 respondents V : - Independentproviding complementary food - Dependent Nutritional Status of Toddlers I : questionnaire A : chi square test	The research results show more More women (57.6%) than men (42.4%). Most of the respondents were in the age group of 12-24 months (63.7%). Baduta who get early solids are malnourished As many as 2 people while 6 people under the age of two suffer from malnutrition; 3 clowns

				who get Early complementary food had very short nutritional status, while 11 under-fives experienced short nutrition; and 1 person The under-fives who received early complementary feeding had a very thin nutritional status, while 5 under-fives experienced it Lean nutrition. Conclusion. Early complementary feeding can have a negative impact on growth and development Clown development.
11	Characteristics of Mothers in Providing Early Complementary Food for Breastfeeding on the Nutritional Status of Toddlers Aged 6-24 Months in the Working Area of the Umbulharjo I Health Center in Yogyakarta City in 2017 Swandari, Putri Woro Kasmini Handayani, Oktia Baitul Mukarromah, Siti.	Garuda portal Public Health Perspective Journal, Vol 2, No 3 (2017): December 2017	D : cross-sectional S : 394 respondents V : - Independentcharacteristics of Giving complementary food - Dependent Nutritional Status of Toddlers I : questionnaire A : multiple logistic regression test	The results of the study showed that there was a significant relationship between mother's education. The p-value was 0.004 <α (0.05), mother's employment status p-value of 0.000 <α (0.05), family income p-value of 0.001 <α (0.05) on nutritional status, and there is no relationship between maternal age and nutritional status with a p-value of 0.778 >α (0.05). The logistic regression results of the mother's occupation are the most dominant variable influencing the mother In giving complementary food to the nutritional status of children p-value of 0.000 <α (0.05).

				Giving early complementary food Will increase the risk of undernourished children.
12	The relationship between the age of onset of complementary feeding and the nutritional status of toddlers at the Pancur Batu Health Center, Deli Serdang Legie, Femmy Stefanie Lubis, Maharani	Garuda portal Vol 4, No 1 (2019): AMBASSADOR OF MEDICAL SCIENTIFIC PERIOD	D : cross-sectional S : 90 respondents V : - Independentage of onset of complementary feeding - Dependent Nutritional Status of Toddlers I : questionnaire A : chi square test	The results of this study showed that out of 90 children, 51.1% were girls, 53% were given complementary food at the right age, 70% were children with good nutritional status. Abnormal nutritional status was more common in children who were given early complementary food (77.8%). Conclusion. There is a relationship between the age at first giving complementary foods and the nutritional status of toddlers, p= 0.0001
13	Complementary Feeding Practices and Parental Pressure to Eat Among Spanish Infants and Toddlers Michelle Klerks Sergio Roman Maria José Bernal Juan Francisco Haro-Vicente Luis Manuel Sanchez-Siles	Pubmed, Int. J.Environ. Res. Public Health2021, 18, 1982	D : case studies S : 630 respondents V : - Independent : Complementary Feeding Practices and Parental Pressure - Dependent : Eat Among Spanish Infants and Toddlers I : questionnaire A : chi square test	Research results show children With Levels of parental pressure to eat are higher, found in baby girls, younger parents, parents with Full-time jobs, and in infants who are not being fed ready-to-eat foods.
14	Nutritional status and adequacy of feeding Practices in Infants and Toddlers 0-23.9 months living in the United Arab Emirates (UAE): findings from the feeding Infants and Toddlers Study (FITS) 2020 Ismail, Leila Cheikh et	Pubmed, Page 2 of 16 Cheikh Ismail et al. BMC Public Health (2022) 22:319	D : case studies S : 276 respondents V : - Independent : Nutritional status Dependent adequacy of feeding practicesi : questionnaire A : chi square test	The results of the study showed that overall, 4% of children were malnourished, 8% were thin, 15% were short, 18% were at risk of being overweight, and 7% Overweight and obesity. 95% of babies had breastfed and 37% were exclusively breastfed at

	al			the age of 6 months. About 98% of the total Babies have a timely introduction in giving complementary foods
15	Breastfeeding and complementary food on nutritional status of infants in Indonesia Hasri, Basan et al	Sciencedirect, Page 2 of 16 Cheikh Ismail et al. BMC Public Health (2022) 22:319	D : analytical study S : 181 respondents V : - Independent : Breastfeeding and complementary food - Dependent nutritional status of infants I : questionnaire A : chi square test	The results of the study obtained the status of thin children 13.3%, stunting 22.1%, and being 16.6%. The frequency of mothers not breastfeeding was 38.1% and those who received complementary foods earlier were 43.5%. This study also shows that there is a relationship between the stunting category and breastfeeding (p <0.05) and there is a relationship between the underweight category and breastfeeding at the cut-off value (p value = 0.08).

Table 2. The literature quality using EPHPP

No	Title	Selection Bias	Study design	Confounder	Blinding	Data collection Method	Withdrawals and dropouts	Fina
1	The Relationship between the Pattern of Giving complementary food and the Nutritional Status of Toddlers aged 6-24 months in one of the villages in the East Lampung region.	2	2	1	2	1	1	S
2	Correlation between Nutritional Knowledge and Feeding Patterns of Complementary Feeding to Nutritional Status at the Age of 6-59 Months in the Work Area of the Selalong Health Center, Sekadau Hilir District, Sekadau Regency.	2	3	1	2	1	1	M
3	The Relationship between Patterns of Feeding Solids and the Nutritional Status of Children Aged 6-24 Months in Pangkep Regency	2	2	1	2	2	1	S
4	Patterns of Giving complementary food and Nutritional Status of Infants aged 6-12 months in the UPT Public Health Work Area, Tampaksiring 1	2	2	1	2	1	1	S
5	Analysis of Patterns of Providing Complementary Feeding on the Nutritional Status of Infants Aged 12-24 Months in Guntur Macan Village, Gunungsari Health Center in 2021.	2	2	1	2	1	1	S

6	Analysis of the provision of complementary food with the nutritional status of infants 6-12 months in the Kalibiru Health Center area.	2	2	1	2	1	1	S
7	Correlation between the behavior of giving complementary food and the nutritional status of infants aged 6-24 months at Posyandu, Bandung Mojokerto village	2	3	1	2	1	1	M
8	The Effect of Providing Nutrient-Dense Complementary Food on the Nutritional Status of Infants in Pamulihan District, Sumedang Regency	2	3	1	2	1	1	M
9	The relationship between complementary food patterns and the nutritional status of children at the Suradita Health Center, Kab. Tangerang	2	2	1	2	1	1	S
10	Provision of complementary food and Nutritional Status for Toddlers in the Tuak Daun Merah Village.	2	2	1	2	1	1	S
11	Characteristics of Mothers in Providing Early Complementary Food for Breastfeeding on the Nutritional Status of Toddlers Aged 6-24 Months in the Working Area of the Umbulharjo	2	3	1	2	2	1	M

I Health Center in Yogyakarta City in 2017

12	The relationship between the age of onset of complementary feeding and the nutritional status of toddlers at the Pancur Batu Health Center, Deli Serdang	2	3	1	2	2	1	Mo
13	Complementary Feeding Practices and Parental Pressure to Eat Among Spanish Infants and Toddlers	2	3	1	2	2	1	Mo
14	Nutritional status and adequacy of feeding Practices in Infants and Toddlers 0-23.9 months living in the United Arab Emirates (UAE): findings from the feeding Infants and Toddlers Study (FITS) 2020	2	3	1	2	2	1	Mo
15	Breastfeeding and complementary food on nutritional status of infants in Indonesia	2	2	1	2	1	1	S

3. Discussion

3.1. The influence of feeding patterns in complementary feeding to toddlers 6-24 months .

Analysis of the Effect of Patterns of Giving complementary food to toddlers was obtained from ten literature reviewed by researchers. Eight literature states that intake of complementary food feeding patterns has a significant relationship to the nutritional status of toddlers, obtained a statistical value of p value = 0.000 (0.000 <0.05) and Odds Ratio (OR) = 123.5 (Damayanti, 2016; Waliyo, 2017; Aurilia , 2018; Mawaddah, 2021; Nuzula, 2019; Kusumaningrum, 2019; Eka, 2021; Swandari, 2017) and two literatures state that the pattern of giving complementary food is not significantly related to the nutritional status of toddlers, the results of the independent t-test found no the effect of giving complementary foods on the z-score of body weight (p=0.876) and the proportion of nutritional status (0.188) while the age at which complementary foods are given has no relationship with nutritional status, with a p-value of 0.384 (Theodaru, 2021; Fathonah)

According to Eka, 2021 argues that when children need more than breast milk. At the age of 6 months, physiologically the function of the child's digestive tract is ready to receive complementary food and at that age nutrition from breast milk is not able to be adequate for the nutritional and nutritional needs of children (Damayanti, 2016). Thinking that giving complementary foods that are not appropriate at the age of 6 months can have several impacts, namely reduced breastfeeding, obesity and stunted growth of children. In addition, maternal parenting patterns and children's eating patterns that are not age-appropriate can also be a cause of nutritional problems in children, this is because the quantity of nutrients cannot meet or exceed children's nutritional needs, which can cause children to experience undernutrition or excess nutrition (Damayanti, 2016).).The results of the two literatures state that there is no significant relationship between the pattern of feeding solids and the nutritional status of toddlers. Due to the low intake of Fe into the body which comes from consumption of Fe from daily food and shown the occurrence of anemia in adolescents, Fe that enters the body can be used by the body for the formation of hemoglobin.

Complementary food is food or drink that contains nutrients given to infants or children aged 6-24 months to meet their nutritional needs. In the provision of complementary feeding several health problems are often found due to the wrong way of administration. The provision of complementary food should pay attention to a number of things such as the nutritional content of the ingredients used, the administration according to nutritional needs, can be well received by the baby's digestion, preferably produced from local ingredients and is nutritionally dense. Provision of good complementary food will also have a good impact on the baby's health and vice versa if the provision is not in accordance with the baby's condition.

There are 2 toddlers who get early complementary food with poor nutritional status, while 6 toddlers suffer from malnutrition; 3 under-fives who received early complementary food had very short nutritional status while 11 under-fives experienced short nutrition; and 1 under-fives who received early complementary food had very thin nutritional status while 5 under-fives experienced underweight nutrition. Conclusion. Early complementary feeding can have a negative impact on the growth and development of toddlers. Every mother must know the importance of providing timely and nutritious complementary food so that it can prevent children from nutritional problems. (Asweros, 2020).Statistical test results with a Confident interval of 95% show the results of the p-value equal to 0.007 which means there is a significant relationship between patterns of giving complementary food on nutritional status and the odds ratio (OR) value is 4.960, which means that children who are given the correct complementary food pattern are at risk of 4.960 times the normal nutritional status compared to children who are given the wrong complementary food pattern (Eka, 2021).The results of the research on toddlers with good nutritional status based on weight/height were almost entirely

found in toddlers with the correct complementary feeding pattern (96.7%) and an Asym Sign of 0.000, meaning that there is a relationship between the complementary breastfeeding pattern and nutritional status based on weight/height. Toddlers with normal nutritional status based on height/age are mostly found in toddlers with the right complementary food pattern (75%), and Asym Sign. 0.795, meaning that there is no relationship between the complementary food pattern and nutritional status based on height/age. Based on the description, it can be concluded that the better the pattern of complementary feeding, the better the nutritional status of toddlers. So it is hoped that parents must continue to provide the right complementary food pattern for toddlers in accordance with the recommendations in the MCH handbook and information from local health workers. (Nanda, 2022).

3.2. The nutritional status effect on toddlers 6-24 months

It shows that good nutritional status is dominant in children who given complementary food on time, and the texture of the food. As for malnutrition, the dominant pattern of giving complementary food is not as recommended, namely from the age of administration the study results , it can be concluded that there is no relationship between the age of giving complementary foods for toddlers and the nutritional status of children aged 6-24 months with a value of $\rho = 0.348$. There is a relationship between the texture of complementary foods and the nutritional status of children aged 6-24 months ($\rho=0.012$). (Theodora, 2021).

Based on the study, it was found that there were 51 samples (92.7%) who had good nutritional status. There were no samples with poor nutritional status and malnutrition because at the age of 6-12 months the sample was still given breast milk which is the main food to meet the nutritional needs of the sample, where breast milk fulfills 60-70% of the nutritional needs of infants. Most (58.2%) of infants aged 6-12 months in the working area of UPT Public Health in Tampaksiring I received homemade (local) complementary food, such as rice porridge and scooped bananas. Judging from the age at which complementary food was given, most (60.0%) babies received complementary food when they were <6 months old. Meanwhile, the frequency of complementary feeding to infants was mostly inappropriate (56.4%), especially in the 9-11 month age group. Most (92.7%) babies have good nutritional status and 7, 3% had more nutritional status and found no poor nutritional status and less nutritional status. The results of the study show that there are still problems with the pattern of giving complementary food that is not suitable for the age of the baby (Putri, 2018).

Research result showed that out of 81 children aged 6-24 months, 56 (69.1%) had normal nutritional status. In line with the Asweros Umbu Zogara study, the dominant number of children had normal nutritional status was 58 (87.8%). WHO recommendations regarding good complementary food, namely, providing food that is easy and affordable but rich in energy, protein and micronutrients. The complementary feeding guide is known as the AFATVAH principle (Age, Frequency, Amount, Texture, Variety, Active/Responsive, Hygiene). Consisting of Single and Star menus. 4 star food, namely food made by including staple food categories, vegetables and fruit, nuts and animal food. WHO and the government have made many efforts to improve the nutritional status of children, but until now there are still children with nutritional problems. (Eka, 2021).(Sari, Fatmaningrum and Suryawan, 2021)

3.3. The effect of complementary food feeding patterns in nutritional status on toddlers 6-24 months

One of the causes of growth and development disorders in infants and toddlers aged 6-24 months in Indonesia is the low quality of Complementary Foods for Breastfeeding and the inappropriate parenting style provided so that some nutrients cannot meet the needs of energy and micronutrients, especially iron. Fe) and

zinc (Zn). Feeding is one of the factors that affect the nutritional status of toddlers. Inappropriate feeding can lead to malnutrition and excessive feeding can lead to obesity. At the age of 6 months, the baby is physiologically ready to receive additional food, because overall the function of the baby's digestive tract has developed. Besides that, at that age breast milk is no longer sufficient for the baby's needs for growth and development so that complementary feeding is very much needed. Nutrition is a very important requirement in the process growth, and brain development, building the immune systems the strong one. Children under 5 years of age are a vulnerable group experiencing malnutrition. .the Impact not only in the health sector (morbidity, mortality and disability) but also reduce the quality of human resources of a nation. Malnutrition is an important matter and need to be addressed immediately.(Theodora, 2021).

The nutritional status of children under 5 years old is strongly influenced by the adequate nutritional intake, infection status and parenting style. Complementary food is food or drink that contains nutrients, given to infants or children aged 6-24 months to meet nutritional needs other than breast milk. Solid food is all food, both prepared by industry and households, which is suitable as a complement to breast milk or milk as a substitute for breast milk, when breast milk is unable to meet the nutritional needs of infants. The toddler period is a very important period to pay attention to nutrition so that children can achieve optimal nutritional status both now and as adults. (Asweros, 2020).

Based on the results that has been carried out related to the relationship between the pattern of giving complementary foods for breast milk and the nutritional status of children, it can be concluded that there is a significant relationship between the pattern of giving complementary food and the nutritional status of children

4. Conclusion

A systematic review study on the pattern of complementary feeding on nutritional status in toddlers aged 6-24 months found 18 literatures that met the inclusion and exclusion criteria.

- Complementary food is very influential on the nutritional status of toddlers

- Complementary food greatly influences nutrition and other influencing factors are knowledge, education, type of work of parents, family income, and breastfeeding.

- The pattern of complementary feeding greatly influences the nutritional status of toddlers aged 6-24 months.

For further research hopefully can expand the database search so that more journal can be included, in this study only with general themes, namely complementary food, nutritional status and toddlers, would be better if explore more broadly .

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