

Knowledge and Practices of Complementary Feedings (CF) among Young Mothers at Public Health Center of Tamalanrea Jaya, Makassar City in 2019

Sri Ramadany¹, Harun Achmad², Rabina Yunus³, Mardiyah Binti Azman⁴, Yunita Feby Ramadhany⁵, Nurul Mutmainnah⁶, Nur Hildah Inayah⁶

¹Department of Public Health, Medicine Faculty of Hasanuddin University, Makassar, Indonesia

²Department of Pediatric Dentistry, Dentistry Faculty of Hasanuddin University, Makassar, Indonesia

³Department of Government Studies, Hasanuddin University, Makassar, Indonesia ⁴Student of Faculty of Medicine of Hasanuddin University, Makassar, Indonesia ⁵Dentist, Faculty of Dentistry of Hasanuddin University, Makassar, Indonesia ⁶Clinical Dental Student, Faculty of Dentistry of Hasanuddin University, Makassar, Indonesia
E-mail: harunachmader@gmail.com

Abstract

Complementary feeding (CF) is additional food given to infants typically starts at the age of 6 months to meet the nutritional requirements of infants when breast milk alone is no longer sufficient. Complementary feeding (CF) should be timely as it significantly contributes to the growth and nutritional status of a child. Appropriate complementary feeding (CF) practices depends on the knowledge and age of the mother as both will be gradually improved as mother's maturity and experience gained. Therefore, it is vital to encourage the practice of appropriate complementary feeding (CF) to ensure proper growth and development of a child. The aim of this study was to assess the knowledge and complementary feeding (CF) practices among young mothers at public health center of Tamalanrea Jaya, Makassar City in 2019. This was a quantitative descriptive study. For this study, 54 young mothers aged 18- 25 years old were selected using Snowball sampling via Slovin formula out of total population with with confidence level of 95%, the acceptable margin of 5%. This study was conducted from October 22nd - November 22nd, 2019. Data is taken by using questionnaire and then, the data were analyzed using SPSS version 22.0 and presented using descriptive and inferential statistics such as Chi-square with significance level set at 5%. Results showed that out of 54 samples, 47 (87%) of respondents had good knowledge of complementary feeding and 7 (13%) of young mothers has enough knowledge, while only 18 (33.3%) had good complementary feeding practices. There were no association found between maternal knowledge and good complementary feeding practices. There is a need to further explore the factors responsible to improving practices for complementary feeding.

Keywords: Knowledge and Practice, Complementary Feeding, Young Mothers

1. Introduction

The prevalence of malnutrition in under-fives is 25.6 percent, which means that the problem of severe undernutrition in South Sulawesi is still a public health problem with a high prevalence [1]. Malnutrition problems in infants can occur after infants over 6 months of age due to water the mother's milk (ASI) is no longer sufficient to meet the physiological needs of the baby to grow and develop (Nasar) The findings reveal that two-thirds of children who die have the wrong baby's diet, including not getting exclusive breastfeeding and getting MP-ASI too fast or late

accompanied by incomplete and unhygienic nutrient composition. According to the 2013 Basic Health Research report, the percent rate of exclusive breastfeeding for 6-month infants only reached 30.2%. This is in line with the increase in percentage of pre-actual feeding in infants 0-23 months, which is 40% in South Sulawesi [1] [2].

Cases of malnutrition can be handled when the child is aged 0-24 months because at the age of 0-24 months is a period of very rapid growth and development, so at this age more often termed the golden period as well as a critical period for toddlers. During the golden period, babies must get age-appropriate nutrition in order to realize optimal growth and development, in the Global Strategy for Infant and Young Child Feeding, the World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) recommend four important things to do are giving breast milk (ASI) 30 minutes after the baby is born, giving exclusive breastfeeding until the baby is 6 months old, giving complementary food for breast milk (MP-ASI) since the baby is 6-24 months, continuing breastfeeding until the child is 24 months old [2] [3].

Knowledge plays an important role in determining behavior because knowledge will form trust which in turn will provide perspective, provide a basis for decision making and determine behavior towards certain objects [4]. The results of study by Mawarni in 2013, the relationship between mother's knowledge about MP-ASI with nutritional status ages 6-23 show a tendency of better knowledge of baduta's mother, the better the clown's nutritional status. Another study that supports the results of this study is Muzakki's study in Pacitan, East Java, which states that the actions of mothers about nutritious food for children under five are significantly related to children's growth [5].

The prevalence of timely delivery of MP-ASI is influenced by the age factor of the respondent. According to a 2018 study by Nuringtyas (Analysis of Factors Influencing the Timeliness of Giving MP-ASI at the Age of 0-12 Months in the Work Area of Sedayu II Public Health Center in Bantul, Yogyakarta), the prevalence of timeliness of giving MP-ASI is influenced by the age factor of the respondents who are mostly are in the age range of 26-35 years [6]. Timeliness of breastfeeding supplementary feeding to respondents aged 26-35 occurs because mothers are of sufficient age and have experience in giving complementary feeding. In addition, a mature age of a mother will be able to maintain the health of her baby by giving MP-ASI precisely according to the age of the baby. In line with the opinion of Nursalam (2008), the more sufficient age, maturity level and strength of a person will be more mature in thinking and working [7].

This shows that the knowledge and age of the mother in giving the MP-ASI can refer to the act of giving the MP-ASI coinciding. Indeed, it is very important as one step to ensure rapid growth and development in the child's golden period. So, based on this background, the aim of the study was to determine the level of knowledge and behavior of MP-ASI in young mothers aged 18-25 years in the Tamalanrea Jaya Health Center in 2019.

2. Material and Method

This type of study used in this study is quantitative descriptive. This study was conducted at the Tamalanrea Jaya Health Center in Makassar, South Sulawesi. This study was conducted in October 2019 until November 2019. The population of this study was all mothers aged 18-25 years who had babies in October so that November 2019 at Tamalanrea Jaya Health Center in South Sulawesi. This study has 54 respondents.

The instrument in this study was a questionnaire. The questionnaire contains data on the level of knowledge and behavior of mothers regarding the provision of MP-ASI by giving closed ended questions in which the respondent only needs to choose or answer the existing answer choices. The questionnaire that was divided consisted of identity consisting of the name initials, age, last education, occupation, questions about knowledge about giving MPASI and questions about the behavior of giving MP-ASI. The collected data is then processed using SPSS 22 in accordance with the purpose of the study and presented in a complete table and narration. Then, the data will be analyzed using a statistical test to get inferential statistics. Subjects were grouped according to specific objectives namely the general characteristics of respondents based on age, level of education, occupation, knowledge of young mothers about giving MP-ASI, behavior of young mothers about giving MP-ASI and the relationship between knowledge and behavior about giving MP-ASI.

3. Results

Table 1. Distribution of Frequency of Respondents by Age Regarding Knowledge and Behavior of Breastfeeding Assistance (MP-ASI) by Young Mothers in Public Health Center Tamalanrea Jaya, Makassar City in 2019

No	Age	N	Percentage (%)
1	19	2	3.7
2	20	2	3.7
3	21	2	3.7
4	22	8	14.8
5	23	9	16.7
6	24	13	24.1
7	25	18	33.3
Total		54	100

Based on Table 1 shows the distribution of respondents by age where the highest frequency obtained is age 25 years totaling 18 respondents (33.3%), the second highest is age 24 years totaling 13 respondents (24.1%), age 23 years totaling 9 respondents followed by age 22 years as many as 8 respondents (14.8%). Ages 21,20 and 19 years found the same number of respondents as many as 2 respondents each.

Table 2. Distribution of Frequency of Respondents by Education Level About Knowledge and Behavior of Breastfeeding Assistance (MP-ASI) by Young Mothers at Public Health Center Tamalanrea Jaya Makassar City in 2019

No	Education	N	Percentage (%)
1	High school	29	53.7
2	Diplomat	12	22.2

3	Bachelor	13	24.1
Total		54	100

Based on Table 2. shows the highest level of education is high school totaling 29 people (53.7%), S1 totaling 13 people (24.1%) and the lowest frequency is Diploma 12 people (22.2%).

Table 3. Distribution of Frequency of Respondents by Occupation About the Level of Knowledge and Behavior of Breastfeeding Assistance (MP-ASI) by Young Mothers in Public Health Center Tamalanrea Jaya Makassar City in 2019

No	Education	N	Percentage (%)
1	Housewife	42	77.8
2	College student	2	3.7
3	Civil servants	7	13.0
4	Entrepreneur	3	5.6
Total		54	100

Based on Table 3. shows the highest frequency of IRT is 42 people (77.8%), 7 civil servants (13%), self-employed 3 people (5.6%) and the lowest frequency of students is 2 people (3.7%).

Table 4. Distribution of Knowledge of Young Mothers Aged 18-25 Years About Complementary Asiatic Foods (MP-ASI) at Tamalanrea Jaya Health Center in 2019

No	Knowledge level	N	Percentage (%)
1	Well	47	87.0
2	Enough	7	13.0
3	Less	0	0
Total		54	100

Based on Table 4. above can be seen the knowledge of young mothers aged 18-25 years about breastfeeding complementary foods (MP-ASI) in infants where the highest frequency of good knowledge as many as 47 respondents (87%), enough knowledge of 7 people (13%) and none who were knowledgeable in less than 54 samples of young mothers.

Table 5. Distribution of Frequency Behavior of Young Women Aged 18-25 Years About Providing Assisted Asian Food (MP-ASI) at Tamalanrea Jaya Health Center in 2019

No	Knowledge level	N	Percentage (%)
1	Well	18	33.3
2	Enough	34	13.0
3	Less	2	3.7
Total		54	100

Based on Table 5 above obtained complementary feeding behavior (MPASI) by young mothers in the Tamalanrea Jaya Health Center with the highest number of frequencies is enough behavior as many as 34 respondents (63%), well behaved as many as 18 respondents (33.3%) and less behavior level of as much as 2 respondents (3.7%).

Table 6. Relationship between the level of knowledge about MP-ASI giving and the behavior of MP-ASI

No	Knowledge level of MP-ASI	Behavior of giving MP-ASI						Total		P value
		Well		Enough		Less		N	%	
		N	%	n	%	n	%			
1	Well	16	34.0	30	63.8	1	2.1	47	100	0.282
		2	28.6	4	57.1	1	14.3	7	100	
		2	28.6	4	57.1	1	14.3	7	100	

Based on Table 6 of 47 young mothers with good knowledge, only 34% practiced good behavior, 30% with enough behavior and 2.1% with less behavior. While from 7 young mothers with sufficient knowledge there were 28.6% showing good behavior, 57.1% with enough behavior and 14.3% with less behavior. This shows that both mothers with good knowledge and enough presented the majority of behavior enough to give MP-ASI. This shows that there is no meaningful relationship between the knowledge of MP-ASI giving and the behavior of MP-ASI.

4. Discussion

4.1. Knowledge of Young Mothers Aged 18-25 Years About Providing Assorted Asiatic Food (MP-ASI)

The results showed that most respondents had a good level of knowledge of 47 respondents (87%), enough knowledge of 7 respondents (13%) and no respondents with knowledge of less than 54 samples. The amount of good knowledge in this case can be influenced by the level of education of the population where respondents at the Tamalanrea Jaya Health Center received a minimum of high school education while young mothers with a Bachelor's level of education gave 100% good knowledge about the provision of MP-ASI [9].

This gives an understanding of knowledge very closely related to education where it is expected that someone with a higher education will also broaden his knowledge, according to a study of 492 mothers with babies aged 6-24 months in Kosova who examined the knowledge and behavior of giving MP-ASI found that the higher level of education of a mother will give a significant impression of knowledge about MP-ASI [9] [10].

Study conducted in Campania, Italy of 450 mothers also supports that mothers who get a higher level of formal education such as a bachelor degree (college degree) compared to mothers who have never received formal education or received education with a lower level (no formal education, elementary and middle school) have a high probability of unheard of health information and add knowledge to make them better know [11] [12] [13].

In addition, other factors that can influence knowledge, one of which is information and experience in which study respondents consisted of young mothers

aged 18-25 years, so they are more easily accessed by sources of information, especially in the era of modern technology in accordance with the opinion of Mubarak (2007) that the ease of obtaining information can help speed up someone to gain knowledge. In addition, through observations conducted at the study location, which is at the integrated service post, it can be concluded that a conducive environment is equipped with scientific posters and counseling by health workers regarding exclusive breastfeeding and the provision of MP-ASI can be additional information to mothers [14] [15].

4.2. Behavior of Young Women Aged 18 - 25 Years About Providing Assisted Asian Food (MP-ASI)

Based on the results of the study illustrates that the respondents who have the highest frequency are enough behavior as many as 34 respondents (63%), behave well as many as 18 respondents (33.3%) and the level of less behavior as much as 2 respondents (3.7%). This gives an average understanding of young mothers despite being well-informed about the MP-ASI only showing adequate behavior regarding the provision of complementary feeding (MP-ASI) to infants. Sufficient behavior regarding the provision of MP-ASI indicates that young mothers are not appropriate in giving MP-ASI, perhaps due to the age factor that is still young and less experienced in line with Nursalam's opinion (2008), the more age, the level of maturity and strength of a person will be more mature in think and work. This is in line with a study of 606 mothers in Northern Ethiopia, which identified a young age factor of a mother specifically under 20 years of age having a 1.2 times lower probability of having good behavior about giving MP-ASI compared to mothers over 35 years of age [16] [17].

This result is also supported by a cohort study of 220 mothers in Porto Alegre, Brazil, which revealed factors that influence early cessation of exclusive breastfeeding, namely the age of young mothers, the influence of grandmothers, knowledge of breastfeeding techniques that are less than 6 times and the presence of nipple wounds. There are many other factors that contribute to an appropriate breastfeeding behavior. Even though a mother has good knowledge about MP-ASI, it is difficult to practice giving correct MP-ASI, based on previous study in Aceh giving results only 42.8% did give the right MP-ASI although 53.5% had high knowledge about MP-ASI [18] [19].

Studies conducted in countries with low and simple income illustrate that there is an increase in inadequate dietary behavior in infants aged 6-23 months that directly increases the risk of stunting and malnutrition. Therefore, it is necessary to take significant actions and continuous efforts to change the behavior of the community in practicing the right feeding of MP-ASI in accordance with WHO recommendations that MP-ASI should be started for infants aged 6 months for the benefit of a child's nutritional development [20] [21].

4.3. Relationship Between Knowledge and Behavior of Breastfeeding Assistance (MP-ASI) This study shows that although there are 47 respondents (87%) with good knowledge about MP-ASI only 18 (33.3%) young mothers have good MP-ASI giving behavior. This illustrates that there is no meaningful association ($p < 0.05$) between mother's knowledge and behavior regarding MP-ASI [22].

In this study, it was found that there are other factors that influence the behavior of mothers in giving MP-ASI besides knowledge factors. Based on interviews with these young mothers, it was found that each had its own reinforcing factor regarding the behavior of MP-ASI giving even though he knew enough about

MP-ASI. One of the factors given by MP-ASI early is due to work factors so that exclusive breastfeeding is stopped early and given formula milk. There are also babies under the care of grandmothers or parents who have an inaccurate mindset about giving MP-ASI, including being given mashed bananas or green bean porridge to infants who are not yet 6 months of age [23] [24].

This is in line with study in Malawi giving 84% of babies given MP-ASI early, causing an increase in cases of infection and malnutrition in infants. Study on the factors that influence the accuracy of MP-ASI delivery carried out in India to 69,464 mothers concludes that the association factors in MP-ASI administration throughout the country are varied and the strength of one factor is different from one region to another so requires optimal efforts nationally and subnationally by policy decision makers and the management of health workers in improving and enhancing the quality of breastfeeding-giving behavior in infants [25, 26, 27].

The above study also gives an indication of the maternal age factor which is quite important in the behavior of MP-ASI. The results showed that the age of the more mature mother, who was more than 25 years old, was less likely to introduce MP-ASI earlier than the mother who was less than 25 years, indirectly giving a picture of maturity and the mother's experience also influenced good interventions to provide MP-ASI [28,29].

Another factor that may be important in study results is the inaccurate sampling method. Samples taken visits cannot represent the results of the study. Factors that influence knowledge such as health education ever obtained, informal information from the mass media or other sources are also not accepted. The number of samples also does not take into account the number of confounding factors [30] [31] [32] [33] [34].

5. Conclusion

Based on the results of data analysis and research discussion in the previous chapter, the following conclusions can be drawn:

1. Knowledge of young mothers about complementary feeding (MP-ASI) at the Tamalanrea Jaya Health Center is the highest frequency of good knowledge as many as 47 respondents (87%), less than 7 people (13%) knowledge and no knowledge of less than 54 samples young mother.
2. The behavior of young mothers about complementary feeding (MP-ASI) at the Tamalanrea Jaya Health Center is the highest frequency of sufficient behavior of 34 respondents (63%), good behavior of 18 respondents (33.3%) and the level of behavior of less than 2 respondents (3.7 %) of 54 samples of young mothers.
3. There is no meaningful relationship between knowledge and complementary feeding behavior (MP-ASI).

Declaration of Interest

The author of the suggestion is that there are no conflicts of interest and this article is not funded or supported by any study.

References

- [1] Health Profile of South Sulawesi Province. 2015. South Sulawesi Province Health Profile 2015.
- [2] Basic Health Research. Basic Health Research Report, 2013.

- [3] UNICEF. ASI Is the Cheapest and Most Effective Life Rescuer in the World, 2013. http://www.unicef.org/indonesia/id/media_21270.html (accessed May 17, 2019)
- [4] Notoadmodjo, S. Health Research Methodology. Jakarta: Rineka Cipta Publisher. 2010.
- [5] Mawarni, S. Relationship of Mother's Knowledge about MP-ASI with Behavior of Giving MP-ASI and Nutrition Status in Baduta Ages 6-24 Months in Village office Kestalan District Banjarsari, Surakarta City, 2013. http://eprints.um/naskah_publikasi/sitimawarni.ac.id (accessed May 16, 2019).
- [6] Nuringtyas. Analysis of Factors that Influence Timeliness of Providing MPASI Infants 0- 12 Months at Bantul Sedayu II Health Center, Bantul, Yogyakarta. FIK UIA. Yogyakarta. 2018.
- [7] Nursalam. Concept and Application of Nursing Science Research Methodologies. Jakarta: Salemba Medika. 2008.
- [8] Ahmad A, Madanijah S, Dwiriani CM, Kolopaking R. Complementary feeding practices and nutritional status of children 6-23 months old: formative study in Aceh, Indonesia. *Nutr Res Pract.* 2018; 12 (6): 512-520. doi: 10.4162 / nrp.2018.12.6.512 (Accessed in December 2019).
- [9] Erfandi. Knowledge and Factors That Influence. 2009. <http://forbetterhealth.wordpress.com/2009/04/19/knowledge-and-factors-factors- that affect> (accessed May 17, 2019).
- [10] Berisha M, Ramadani N, Hoxha R, et al. Knowledge, Attitudes and Practices of Mothers in Kosova About Complementary Feeding for Infant and Children 6-24 Months. *Med Arch.* 2017; 71 (1): 37-41. Doi: 10.5455/medarh.2017.71.37-41 (Accessed in December 2019).
- [11] Diana Cascone, Davide Tomassoni, Francesco Napolitano and Gabriella Di Giuseppe. Evaluation of Knowledge, Attitudes, and Practices about Exclusive Breastfeeding among Women in Italy. *Int. J. Environ. Res. Public Health* 2019; 2118 (16): 5-9.
- [12] Kiki, C. Reasons for Providing Early Assist Asiatic Food (MP-ASI) with the Health Belief Model Approach in the Work Area of Public Health Center District of Pesanggrahan, South Jakarta in 2013.
- [13] Riwidikdo, et al. Statistics for Health Research with R and SPSS Program Applications. Yogyakarta: Rihama Library. 2009.
- [14] Mubarak, I.M. Health Promotion: An Introduction to the Teaching and Learning Process in Education. Yogyakarta: Graha Science. 2007.
- [15] Sulistyaningsih. Quantitative - Qualitative Midwifery Research Methodology. Yogyakarta: Graha Science. 2011.
- [16] Belete Y, Awraris W, Muleta M. Appropriate complementary feeding practice was relatively low and associated with mother's education, family income, and mother's age: a community-based cross-sectional study in Northern Ethiopia. *J Nutr Health Food Eng.* 2017; 6 (2): 29-35. DOI: 10.15406 / jnhfe.2017.06.00191 (Accessed in December 2019).
- [17] Desiyanti. 2016. Knowledge and Attitudes of Mothers About Providing Assisted Asian Food (MPASI) for Infants Age 6 -12 Months at the Poasia Health Center in Kendari, 2016. Kendari: Poltekkes Department of Midwifery, Ministry of Health.

- [18] Berisha M, Ramadani N, Hoxha R, et al. Knowledge, Attitudes and Practices of Mothers in Kosovo About Complementary Feeding for Infant and Children 6-24 Months. *Med Arch*. 2017; 71 (1): 37–41. Doi: 10.5455 / medarh.2017.71.37-41 (Accessed in December 2019).
- [19] Biks, G.A., Tariku, A., Wassie, M.M. et al. Mother's Infant and Young Child Feeding (IYCF) knowledge improved timely initiation of complementary feeding of children aged 6– 24 months in the rural population of northwest Ethiopia. *BMC Res Notes* 11, 593 (2018). DOI: <https://doi.org/10.1186/s13104-018-3703-0> (Accessed in December 2019).
- [20] Budiman and Agus Riyanto. *Capita Selekt Knowledge and Attitude Questionnaire in Health Research*. South Jakarta: Selemba Medika, 2013.
- [21] Fitriana, et al. The Impact of First Age Complementary Breastfeeding Food on the Nutritional Status of Infants Aged 8-12 Months in Seberang Ulu I Palembang District. *Sari of Paediatrics*. 2013.
- [22] Hajrah. *Description of Mother's Knowledge and Attitudes Regarding Early Breastfeeding (MP-ASI) in RB Mattiro Baji in Gowa Regency 2016*. FIK UIN. Makassar. 2016.
- [23] Iin Dwi Yuliarti. *Relationship of mother's knowledge and attitude with exclusive breastfeeding behavior*. Dissertation, Sebelas Maret University, Surakarta, Indonesia. 2008.
- [24] Sunarti. *Risk Factors for Early breastfeeding in infants 0-6 months in the area of Lendah li Health Center Kulon Progo in 2017*. Yogyakarta: Poltekkes Kemenkes Yogyakarta. 2017.
- [25] Dhami, M.V., Ogbo, F.A., Osuagwu, U.L. et al. Prevalence and factors associated with complementary feeding practices among children aged 6–23 months in India: a regional analysis. *BMC Public Health* 19, 1034 (2019).
- [26] Indonesian Pediatrician Association ... *Evidence-Based Practices for Evidence-Based Feeding in Babies and Toddlers in Indonesia to Prevent Malnutrition*. Nutrition and Metabolic Disease Coordination Unit. 2015.
- [27] Kassa, T., Meshesha, B., Hajj, Y. et al. Appropriate complementary feeding practices and associated factors among mothers of children ages 6–23 months in Southern Ethiopia, 2015. *BMC Pediatrics* 16, 131.
- [28] Saleh F, Ara F, Hoque MA, Alam MS. Complementary feeding practices among mothers in selected slums of Dhaka city: a descriptive study. *J Health Popul Nutr*. 2014; 32 (1): 89–96.
- [29] Ministry of Health Republic of Indonesia, Center for Data and Information Ministry of Health. 2014.
- [30] Siti. *Collection of Health Research Questionnaires and Instruments*. Yogyakarta: Nuha Medika. 2013.
- [31] RI. *Situation and Analysis of Exclusive Milk in South Jakarta*. Indonesian Ministry of Health. 2014.
- [32] Sukmana BI, Huldani, Achmad H, Hidayah N, Putra AP, Ramadhany S, Gadisha SB. A Review of Breastfeeding in Infants: Relation to the Occurrence of Early Childhood Caries (ECC). *Systematic Reviews in Pharmacy*. 2020; 11(5): 116-122.

- [33] Achmad, H. Biopsychosocial Identification of Early Childhood Caries (ECC) As A Predictor Of Risk, Factors Of Caries In Pre-School Children, International Dental and Medical Research, April 2018. ISSN 1309-100X. (Scopus index). Volume 11 Number (1). pp. 107-115.
- [34] Achmad H, Rasmidar Samad, Hendrastuti Handayani, Sri Ramadhany, Mardiana Adam, Mardiana And Andam Dewi Suci. 2018 . Analysis of Disease Risk Factors of Early Childhood Caries (Ecc) On Pre-School Children Psychosocial Project Review. Asian Journal. of Microbiol. Biotech. Env Sc. © Global Science Publications pp. 18-25, Vol. 20, Oct Suppl Issue. ISSN-0972-3005.