DOI: http://dx.doi.org/10.33846/hn31002
http://heanoti.com/index.php/hn

RESEARCH ARTICLE
URL of this article: http://heanoti.com/index.php/hn/article/view/hn31002

The Relationship Between Mother Visit to Maternal and Child Health Centre (MCHC) and Timely of Giving Complementary Foods in Timur Tengah Selatan Regency, Nusa Tenggara Timur Province

Wenny I. Ischak[1(CA)]
[1(CA)]Department of Nursing, Health Polytechnic of Gorontalo, Indonesia; wennyischak@ymail.com
(Corresponding Author)

ABSTRACT

The introduction of feasible complementary foods at 6 months together with continued breastfeeding up to two years of age or beyond. is very important to infant. This study aimed to assess factors associated with the accuracy of the age of supplementary feeding to infant. This study used a cross-sectional design of community-based and carried out in nine districts in the Timur Tengah Selatan Regency,Nusa Tenggara Timur province. It was conducted of the month, October to December 2013 in 9 sub-districts selected. The research subjects were children aged 6-23 months (n = 3578). Data were collected by trained local personnel using a standardized questionnaire. This study showed that there is 77.4% of the respondents have given complementary feeding at suggested time (6 mounths). Type supplementary food given was 56.5% in the form of instant porridge. Giving of complementary foods at 6 months as recommended midwife was 34.6% whereas the reason that it was time to give complementary food before the age of 6 months was only 7.9%. it was found statistically significant where the correlation between giving complementary foods and regularly bring the child to the IHC was 93.7% (*P* = 0:02), while its relationship with the child's diet counseling ever got was 78.5% (*P* = 0.00).

Keywords: complementary foods; integrated health care; children 6-24 mounths of age

INTRODUCTION

Background

Infants and young children were vulnerable to malnutrition from the age of six months onwards, When breast milk is no longer enough to meet the nutritional needs of the infant, complementary foods should be added to the diet of the child. Breastfeeding should be continued up to two years or more and appropriate complementary food such as nutritious, safe, and the right type to be introduced at the age of six months to meet the needs of children's growth.

At the age of 6 months, babies of normal weight had reached 2-3 times the baby's weight at birth. The rapid growth needs to be accompanied by the supply of calories and adequate nutrition. Therefore, in addition to breastmilk, infants at the age of 6 months should be given additional food that adapted to baby's stomach's ability to digest food.

Complementary feeding with breastfeeding up to 2 years old baby is very important for infants[(1)]. In children aged 6-24 months, especially infants, weight curve is very important to know. Weight children aged 6-24 months down easily both in physical and psychosocial aspects in the event of a nutrition crisis. To improve the nutritional and health status of the child through appropriate feeding practices[(2)]. Through complementary feeding and other food additives are also adequate zinc and iron, as well as energy-dense, micronutrient can be provided for children's growth and their brain development.

Complementary feeding, if not done properly, can be followed by diarrhea and growth retardation leading to kwashiorkor, marasmus and immunodeficiency characterized by recurrent and persistent infections that could be fatal[3]. Inadequate intake of food/nutrition is a major factor for malnutrition. Malnutrition causes babies were underweight[4].

Proper breastfeeding and complementary feeding practices can prevent infant mortality by 19%[5]. In Indonesia, a child is very risky died when he was suffering from severe malnutrition. Each year 150,000 children die before reaching the age of 5 years, especially among the poor[6].

Appropriate complementary feeding depends on accurate information and proficient support from the family, the community and the health system. Adequate knowledge of the practices and eating the right foods is often the major determinant of malnutrition than the lack of food. Mothers' knowledge of these factors will greatly help in planning to improve feeding practices. In addition, maternal education were influence on feeding the family. Mother's education is the dominant factor in the provision of food, low education is associated with a never breastfed and did not follow the correct feeding guidelines for children.

Investigated the factors associated with the provision of complementary feeding in Indonesia and showed that infants from poor families were significantly less likely to introduce complementary foods. In addition, when children over 2 years of age are not met well food intake until reaching the age of 5 years, the fulfillment of which are less nutrients can affect growth and development[2].

Objective

This study was conducted to determine the practice of supplementary feeding in children the age of six months to two years. The results of this study will assist in educating mothers on complementary feeding.

METHODS

The type of this research is descriptive analytic and used a community-based cross sectional design and carried out in nine districts around Timur Tengah Selatan Regency, Nusa Tenggara Timur province. This research was conducted for three months from October 2013 to December 2013. The population in this study were all parents (mothers) or caregivers of children aged 6-23 months who were in the Timur Tengah Selatan Regency. The sampling technique used was purposive sampling, with a total sample of 3600 respondents. The independent variables are social demography, mother's knowledge, and mother's perspective, while the dependent variable is complementary feeding.

Inclusion criteria for this study were the parents (mother) or caregivers of children aged six months to twenty-three months who live or lived in the region. 3600 children were observed as a target respondents in this study. For children who are known have a problematic disorder of malnutrition (kwashiorkor/marasmus) and severe certain diseases were not used as a respondent.

Data collectors were trained before the gathering of data. Age group subjects were selected based on the recommendations of WHO on complementary feeding is initiated from children aged 6 months. Subjects met door-to-door according to their willingness during the study period. Data were collected using a structured questionnaire was given to the mother.

The questionnaire includes information on the demographic profile, breastfeeding and complementary feeding. Socioeconomic status was calculated based on expenses for food and non-food for a month and categorized based on the minimum regional payment where research was conducted. Education of respondents are categorized by the policy/government rules of compulsory nine years.

Data processing was performed using SPSS software version 17.0 to describe the frequency distribution of the data and identify the correlation between socio-demographic variables factor with the initial of complementary feeding and a positive attitude toward complementary foods used Chi-square statistical test with a p-value <0.05 level of significance.

RESULTS

Based on the overall target of respondents (3600), a total of 3578 agreed to participate in the study, or 99%. Some of the reasons given by the mother or caregiver to not participate in this study was the lack of time and object to participate in this study. From 3578, the majority of children in 1638 (45.7%) included in the age group from 6 to 11 months, 1913 (53.5%) were male. Most mothers / caregivers that 2815 (78.7%) were housewives, and of education 0-9 years in 2560 (70.8%) As shown in the table 1 below.

Table 1. Social demographic characteristic of respondents

Social Demography	n	(%)
Age of Children:		
• 6 – 11 Months	1638	45.7
• 12 – 17 Months	1228	34.4
• 18– 23 Months	712	19.9
Child gender:		
• Male	1913	53.5
• Female	1665	46.5
Age of Mother		
• 16 – 20 years old	243	6.9
• 21 – 35 years old	2582	72.1
• ≥ 36 years old	753	21.0
Mother's Education :		
• 0 – 9 years	2560	70.8
• ≥ 10 years	1018	28.2
Father's Education		
• 0 – 9 years	2461	68.8
• ≥ 10 years	1117	31.2
Mother's Occupation		
• Housewife	2815	78.7
• Farmer	376	10.5
• Others	387	10.8
Economic Status		
• Low	3001	83.9
• Average	389	10.8
• High	188	5.3
Number of Children		
• 1 – 2 kids	2023	56.5
• 3 – 5 kids	1331	37.2
• ≥ 6 kids	224	6.3
Family members		
• 1 – 4 person	1505	42.6
• 5 – 10 person	2011	56.2
• ≥ 11 person	42	1.2
Routinely brought children to Mathernal and Child health centre		
• No	224	6.3
• Yes	3354	93.7
Ever get counseling about the Feeding Infants and Children		
• No	769	21.5
• Yes	2809	78.5

Mother's knowledge about the purpose of the first 1,000 days of life most of 3439 (96.1%) did not know, knowledge of signs and symptoms of malnourished children only 1448 (40.5%) who knows. As shown in the Table 2.

Table 2. Mother's knowledge about breastfeeding dan complementary feeding

Statement	n	(%)
Did you know about the first 1,000 days of life?		
• No	3439	96.1
• Yes	139	3.9
Is allowed provide food and beverages whether children can use bottles and nipples?		
• No	2508	70.1
• Yes	1070	29.9
Did you know the signs and symptoms of child malnutrition ?		
• No	2130	59.5
• Yes	1448	40.5
Did you know that a child's needs over 2 years compared with children aged 6-24 months should be fewer in number.		
• No	2425	67.8
• Yes	1153	32.2
Did you know that eating need for children over 2 years compared with children aged 6-24 months should be more varied diet.		
• No	1734	49.5
• Yes	1769	50.5

Majority of respondents (79.9%) agree on the perspective of the mother does not need to provide other foods before the age of 6 months as well as who agreed by giving complementary foods are varied not only rice porridge but also added vegetables, fish and eggs reaching 84.3%.

Most respondents (70.1%) are still in the status of breastfeeding. For who exclusive breastfeeding or not providing food and drink before the age of 6 months were 71.4% and respondents who give colostrum or yellowish breastmilk were 92.9%.By the overall population, 77.4% of mothers had started providing complementary foods at the recomended time (children aged 6 months) and only 22.6% had given complementary foods before it.

Table 3. Perpectives on complementary feeding

Perspectives	Statement				
	Very Disagree	Disagree	Not Sure	Agree	Very Agree
Before the 6-month-old child does not need to get food other than breast milk	11 (0.3)	165 (4.6)	117 (3.2)	2890 (79.9)	395 (10.9)
Children aged 4 months are frequent crying, should be given food like bananas and porridge	128 (3.5)	1929 (53.4)	243 (6.7)	1247 (34.5)	31 (9)
Complementary feeding can be given before the age of 6 months if the child does not want to be breastfed	96 (2.7)	1485 (41.1)	366 (10.1)	1583 (43.8)	43 (1.2)
Complementary feeding should be given varies added vegetables, fish, eggs, not only rice porridge	14 (0.4)	132 (3.7)	177 (4.9)	3017 (84.3)	238 (6.7)

The reason to provide additional food becaused of recommended by midwives were 34.6% and 14.4% of respondents had other reasons such as social habits, recommended by relatives, neighbors and do not know. Type of complementary foods given most of instant porridge were 56.5% and 15:25% such as, milk porridge, biscuits, eggs and fruit. Breastfeeding yellowish (colostrum) were 92.9% and 70.1% children were still in breastfed.

Table 4. Breastfeeding practices and provision complementary food

Question	n	%
Still in Breastfeeding		
• No	1073	29.9
• Yes	2505	70.1
Getting food and drink other than breast milk before the age of six months	2555	71.4
• No	1023	28.6
• Yes		
Feeding yellowis breastmilk or collostrum		
• No	253	7.1
• Yes	3325	92.9
Provision food and drink other than breast milk at the day after birth		
• No	3261	91.1
• Yes	317	8.9
Feeding complementary food to child at		
• aged < 6 mounths	808	22.6
• aged ≥ 6 mounths	2770	77.4
The reason to feed complementary food at the age:		
• Recommended by midwives	1240	34.6
• Own mother wishes	757	21.1
• Child were hungry	570	15.9
• It's time to give complementary foods	283	7.9
• Family habit	216	6.0
• Habit	512	14.4
Types of food that given at first time		
• Instant porridge	2025	56.5
• Filtered porridge	625	17.4
• Banana	186	5.1
• Rice-porridge	147	4.1
• Mil-porridge	49	1.3
• Others	546	15.25
Provision food but breastmilk in the last 24 hours		
• No	134	3.7
• Yes	3444	96.3
Mother wash her hands with clean water, soap and water before giving food to children		
• No	921	25.7
• Sometimes	2006	56.1
• Always	651	18.2

Based on the results of bivariate analysis using chi square test showed that the practice of providing supplementary food at the recommended time (aged 6 months) was significantly associated with regular mother brought the child to the neighborhood health center (P = 0.002) had received counseling about supplementary feeding (P = 0.000) and the number of family members (p = 0.005). In contrast to the mother's age, education, occupation, number of children, child gender and socio-economic showed no correlation. As shown to the table.

Table 5. Factors associated with the provision of complementary feeding at the first time.

Factors	Provision of complementary feeding at the first time		P-value
	< 6 months	≥ 6 months	
Mothers age			
• 16 – 20 years old	70 (28.8)	173 (71.2)	0.056
• 21 – 35 years old	571(22.1)	2011(77.9)	
• ≥ 36 years old	167(22.2)	586 (77.8)	
Mother's education			
• 0 – 9 years	577(22.5)	1983(77.5)	0.922
• ≥ 10 years	231(22.7)	787 (77.3)	
Father's education			
• 0 – 9 years	562(22.8)	1899(77.2)	0.590
• ≥ 10 years	246(20.0)	871 (78.0)	
Mother's occupation			
• Farmer	81 (21.5)	295 (78.5)	0.164
• Housewife	625(22.2)	2190(77.8)	
• Others	102(26.4)	285 (73.6)	
Child gender			
• Male	429(22.4)	1484(77.6)	0.810
• Female	379(22.8)	1286(77.2)	
Number of Children			
• 1 – 2 kids	469(23.2)	1554(76.8)	
• 3 – 5 kids	293(22.0)	1038(78.0)	0.549
• ≥ 6 kids	46 (20.5)	178 (178)	
Family members			
• 1 – 4 person	311(27.0)	1194(79.3)	
• 5 – 10 person	471(23.4)	1540(76.6)	0.005
• ≥ 11 person	15 (35.7)	27 (64.3)	
Routinely brought children to Mathernal and Child health centre	68 (308)	155 (69.2)	0.002
• No	739(22.0)	2615(78.0)	
• Yes			
Ever get counseling about the Feeding Infants and Children			
• No	676 (24.1)	2133 (75.9)	0.000
• Yes	141 (18.3)	628 (81.7)	
Economic Status			
• Low	666(22.2)	2335(77.8)	0.453
• Average	94 (24.2)	295 (75.8)	
• High	48 (25.5)	140 (74.5)	

DISCUSSION

In this study, the majority of mothers (96.1%) did not know about the purpose of the first 1,000 days of life, and only 40.5% of respondents had no knowledge of the signs and symptoms of of childhood malnutrition. These results are supported by educational level of the mothers (70.8%) were educated only 0-9 years. Increasing knowledge could be influencing the consciousness of the mother in caring their children's health[5].

This study also showed that 79.9% of respondents agreed to not have to give other foods before the age of 6 months. Likewise, 84.3% of respondents agreed about mothers manner in giving complementary foods as varied as added vegetables, fish, eggs, and not just rice porridge. This result is supported by the knowledge of mothers about more varied food for children were 50.5% and the type of complementary foods was instant porridge at first given (56.5%). These results are in line with the results Aggarwal et al., (2008) that the knowledge and manner to varied complementary foods significantly associated with mothers education (P <0.05)[7].

Education and extension aimed to improve the mother's knowledge. so hopefully the mother could understand the importance of food and nutrition, it will form the attitude and behavior change towards a better diet. The importance of attitudes and behaviors of mothers in complementary feeding for moderately malnourished children[8]. positive attitude of parents towards infant feeding is an important component in the nutritional health of children[9].

Another aspect related to the mother's attitude regarding the provision of a varied diet in children is due to the economic status of the family. In this study, 83.9% of respondents are low economic status. Children who live in poor households are significantly less likely to meet the diversity of food[10]. Multivariate analysis in Tanzania that the main risk factors for complementary feeding practices that are not appropriate for children aged 6-11 months are poor economic status and low educational level[11].

In this study, there were 77.4% of respondents giving complementary foods to children at the recommended age, the age of 6 months. These results are supported by a study of 200 women in southern India, where 77.5% of parents of children aged under two years had given appropriate complementary foods at recommended time[5] and of the results of research Victor et al., (2012) which used multistage cluster sample of 10,000 households found the pervalensi introduction of complementary feeding 92% at age 6-8 months[11].

Similar results also found from Chapagain (2013) used cross-sectional approach at 1100 mothers of children aged 6-24 months obtained more than half of the respondents (56.81%) provide complementary foods according to the recommended time[12]. Lower results found in nutritional intervention study by Sethi et al., (2003) of the 35 parents in Delhi found only 16.5% of parents giving complementary foods at the recommended time[13]. This is likely due to differences in the number of samples used by each researcher. However, in contrast to the study by Adokiye, (2010) cross-sectional study with a mult-stage sampling of the 384 respondents indicated no association between early introduction of complementary foods for children before the age of 6 months with nutritional status[14].

The high rate of initiation of complementary feeding at the recommended time (6 months) in this study relates to the frequency of visits parents to neighborhood health center is 93.7% and through statistical tests are statistically significant association (P = 0.002). The support was given the study of community-based health centers where activities related to the health of children is mostly done in the neighborhood health center. Various efforts have been taken by the government to deal with issues related to the provision of complementary feeding, one of the efforts made at this time is through cadres in maternal and child health centre activities[15].

This study showed that 78.5% of respondents had never received counseling about feeding for infants and children. Through statistical tests about complementary feeding at first time related to the ever received counseling on infant feeding and child found a significant correlation (P = 0.00). This result is supported by the mother's education level which 70.8% have 0-9 years or a maximum of only completed primary education. Victor et al., (2012) stated that the factors causing inappropriate the provision of complementary foods are low levels of maternal education and limited access to mass media[11]. For variable on the number of family members associated with the provision of complementary foods at first time appear to be associated (p = 0.005). There are 79.3% of families who membered 1-4 person providing complementary foods at the suggested time that the age of 6 months onward. In contrast to variable of maternal age, mother's education and father, mother and father work, gender, number of children and socio-economic of family had no relationship to complementary feeding at first time.

Despite statistically seems no relationship, mother’s occupation in particular tend to have a a relationship to the provision of timely complementary feeding. As a housewife make them to provide complementary foods at the recommended time (77.8%). The research was supported by (Chapagain, 2013) that the mother's occupation as housewife is closely linked to the proper feeding practices[12].

CONCLUSION

Community in South Central Timor, East Nusa Tenggara Province largely been doing complementary feeding first time suggested at the time (age 6 months) and the type of complementary foods given are mostly instant porridge. Factors significantly associated with the provision of complementary foods are routinely brought the child to the neighborhood health center and never got counseling for child feeding and number of household members. therefore, it is crucial to increase the educational activities for improving complementary feeding practices.

REFERENCES

1. World Health Organization. Strengthening action to improve feeding of infants and young children 6–23 months of age in nutrition and child health programmes. Report of proceedings; 2008. p. 6-9.
2. Wang, R. J., Trehan, I., Lagrone, L. N., Weisz, A. J., Thakwalakwa, C. M., Maleta, K. M. & Manary, M. J. Investigation of food acceptability and feeding practices for lipid nutrient supplements and blended flours used to treat moderate malnutrition. Journal of nutrition education and behavior. 2013:258-263.
3. World Health Organization. Global strategy for infant and young child feeding. Geneva: WHO; 2003. WHOWHA55/2002/REC/1Annex 2; 2006.
4. Kapur, D., Sharma, S. & Agarwal, K. N. Dietary intake and growth pattern of children 9-36 months of age in an urban slum in Delhi. Indian Pediatr. 2005:351-356.
5. Rao S, Swathi P, Unnikrishnan B, Hegde A. Study of complementary feeding practices among mothers of children aged six months to two years-A study from coastal south India. The Australasian medical journal. 2011.
6. Unicef. UNICEF For Children. Unicef Indonesia Laporan tahun 2012. Indonesia: Unicef; 2012.
7. Aggarwal A, Verma S, Faridi M. Complementary feeding—Reasons for inappropriateness in timing, quantity and consistency. The Indian Journal of Pediatrics; 2008. p. 49-53.
8. Flax VL, Phuka J, Cheung YB, Ashorn U, Maleta K, Ashorn P. Feeding patterns and behaviors during home supplementation of underweight Malawian children with lipid-based nutrient supplements or corn-soy blend. Appetite; 2010. p. 504-511.
9. Wojcicki JM, Gugig R, Tran C, Kathiravan S, Holbrook K, Heyman MB. Early exclusive breastfeeding and maternal attitudes towards infant feeding in a population of new mothers in San Francisco, California. Breastfeeding medicine. 2010:9-1.
10. Joshi N, Agho KE, Dibley MJ, Senarath U, Tiwari K. Determinants of inappropriate complementary feeding practices in young children in Nepal: secondary data analysis of Demographic and Health Survey 2006. Maternal & child nutrition. 2012:45-59.
11. Victor R, Baines SK, Agho KE, Dibley MJ. Factors associated with inappropriate complementary feeding practices among children aged 6–23 months in Tanzania. Maternal & child nutrition. 2012.
12. Chapagain RH. Factors affecting complementary feeding practices of Nepali mothers for 6 months to 24 months children. J Nepal Health Res Counc. 2013.
13. Sethi MV, Kashyap S, Seth V. Effect of nutrition education of mothers on infant feeding practices. The Indian journal of pediatrics. 2003:463-466.
14. Adokiya MN. Complementary feeding practices and nutrition status of young children 06-23 months of age in the Kassena-Nankana District, Upper East Region, Ghana. Kwame Nkrumah University of Science And Technology. 2010.
15. Ellis CMK, Khomsan A, Sukandar D, Atmawikarta A. Nutritional Education Intervention for children under five years' mother and cadre of Integrated Service Center Post (Posyandu) in increasing skill and behaviour knowledge (PSK) and nutritional status of children under five years old (Balita); 2010.