

Factors Affecting the Practice of Complementary Feeding Among Household With Children Under Two Years of Age: A Cross-sectional Study in Banten and West Java

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ABSTRACT

This study aims to analyze the practice of complementary feeding and the factors that influence it in two provinces in Indonesia, such as Banten Province and West Java Province. The research design was cross-sectional using secondary data from the 2017 Indonesian National Socio-Economic Survey. The sample of this study was households with children under two years of age who received complementary foods with a total sample of 154 households. The analysis in this study used univariate, bivariate and multivariate analysis. Multivariate analysis was used to see the factors that influence complementary feeding practices, using binary logistic regression. The finding of this study are the practice of giving complementary feeding in the two provinces shows different practices. In Banten Province, the proportion of offering mineral water, cereals and meat/fish/chicken is greater than that of West Java. In fact, West Java Province reported that it offered more nuts, milk/cheese, eggs, vegetables and fruits than Banten Province. Two factors that influence the practice of offering complementary foods are the community with OR = 0.14.395 (95% CI = 2.191-94.598) and the education of the head of the household with OR = 8,024 (95% CI = 1,134-56,784). The practice of offering complementary foods that are complete and varied according to the infants needs can help promote growth and development. Therefore, food sources for complementary foods must be accessible to all people.

Keywords: *Complementary feeding, children under two years, Banten, West Java*

1. INTRODUCTION

Banten Province and West Java Province are two provinces in Java Island which have high stunting rates. In Banten, children under two years of age were stunted at 19.9%, while in West Java Province it was 18.5% [1]. The high rate of stunting shows that there are still many households that have problems in providing good nutritional intake to infants, both during pregnancy and at the age of 0-23 months [2].

In fact, this phase is the best phase for child development or what is called the first thousand days of life [3]. Children who do not get good nutrition during the first thousand days of life will experience health problems, such as stunting, under-nutrition, obesity, and various other diseases [4] [5]. In the long term, those who experience acute nutritional problems will experience health problems as adults, such as degenerative diseases, which lead to decreased productivity [6].

One of the things that need to be done at the age of 0-23 months is providing exclusive breastfeeding and complementary feeding [7]. Complementary feeding is important to meet nutritional adequacy in infants [8]. Good complementary feeding in addition to meeting nutritional adequacy standards based on the age of infants, must also have a variety of types [9]. These variations can consist of mineral water, cereals, beans, milk/cheese, meat/fish/chicken, eggs, vegetables and fruits. All types of food must contain nutrients such as minerals, carbohydrates, proteins, fats and vitamins.

However, not all households are able to provide good and varied complementary feeding. This study tries to analyze the factors that influence the practice of providing complementary feeding in households with children under two years of age in two provinces, Banten and West Java. The purpose of this study was to analyze the practice of complementary feeding in children under two years of age and to analyze the factors that influence it.

2. METHODS

This study used a cross-sectional design using secondary data from the 2017 Indonesian National Socio-Economic Survey. There are two provinces that are the focus of this study, namely Banten and West Java. The sample in this study was households that had children under two years of age and received complementary feeding with a total sample of 154 households.

Univariate analysis was used in this study to analyze the practice of providing complementary feeding to households, where the practice of providing complementary feeding is measured from the type of food given to children under two years of age, which consists of mineral water, cereals, nuts, milk, cheese, meat, fish, chicken, eggs, vegetables and fruits. Next, complete and incomplete categorized are made. The complete category is children under two years of age consuming all types of complementary feeding above for one week. Meanwhile, The incomplete category is that they only get a portion of all types of complementary feeding.

Bivariate and multivariate analysis were also used in this study. Bivariate analysis is used to look at the relationship between independent and dependent variables, while multivariate analysis is used to see the factors that influence complementary feeding practices. These factors include the community, the sex of the child, the education of the head of household, the age of the head of household, the education of the mother, the age of the mother and the mother's occupation. The analytical tool used binary logistic regression with a significant level at $P < 0.05$.

3. RESULTS

Univariate analysis is used to see the socioeconomic characteristics of the respondents. The results can be seen in table 1. The proportion of respondents by province shows that in Banten as much as 31.2% and West Java as much as 68.8%. The proportion of respondents who received complete complementary feeding was 5.8%, while those who were incomplete were 94.2%.

Respondents with female gender are more than respondents with male gender. The proportion of women was 55.8% and men 44.2%. Furthermore, based on community, the proportion of respondents living in urban communities was 68.8% and rural communities were 31.2%.

Based on the education of the head of households, the proportion of the head of households with low education was 48.6%, while those with middle and high education were 51.4%. Based on the age of the head of household, the proportion of the head of household under 21 years old was 0.0%, 22-34 years old was 33.1%, 35-49 years old was 39.9% and above age 49 years old was 27.0%.

Furthermore, based on mother education, the proportion of respondents with low education was 54.2% and secondary and higher education was 45.8%. Based on the age of mother, it was found that 7.4% of respondents under 21 years old, 49.3% aged 22-34 years old, 26.4% aged 35-49 years old and 16.9% above age 49 years. Finally, based on mother occupation, the proportion of respondents with working mothers was as much as 20.4% and not working as much as 79.6%.

Table 1. Socio-economic Characteristics of the Respondents (N=154)

Characteristics	N	%
Province		
Banten	48	31.2
West Java	106	68.8
Complementary feeding		
Not complete	145	94.2
Complete	9	5.8
Sex of infant		
Female	86	55.8
Male	68	44.2
Community area type		
Urban	106	68.8
Rural	48	31.2
Education of the head of household		
< Complete primary & complete primary	70	48.6
> Complete primary	74	51.4
Age of the head of household (years)		
≤ 21	0	0.0
22-34	49	33.1
35-49	59	39.9

> 49	40	27.0
Mother's education		
< Complete primary & complete primary	78	54.2
> Complete primary	66	45.8
Mother's age (years)		
≤ 21	11	7.4
22-34	73	49.3
35-49	39	26.4
> 49	25	16.9
Work of mothers		
Not currently employed	117	79.6
Currently employed	30	20.4

The practice of providing complementary feeding in the two provinces shows different practices. In Banten Province, the proportion of mineral water, cereal and meat/fish/chicken was greater than in West Java Province. On the other hand, in West Java Province, the proportion of giving beans, milk/cheese, egg, vegetables and fruits was greater than in Banten Province.

Overall, the types of complementary feeding that were mostly given to children were mineral water (88.3% & 73.6%), cereals (79.2% & 78.3%), vegetables (60.4% & 67.0%). Meanwhile, the types of complementary feeding that are given at least to children are beans (18.8% & 22.6%), milk/cheese (20.8% & 40.6%), meat/fish/chicken (31.3% & 29.2%), egg (22.9% & 44.3%), and fruits (35.4% & 57.5%).

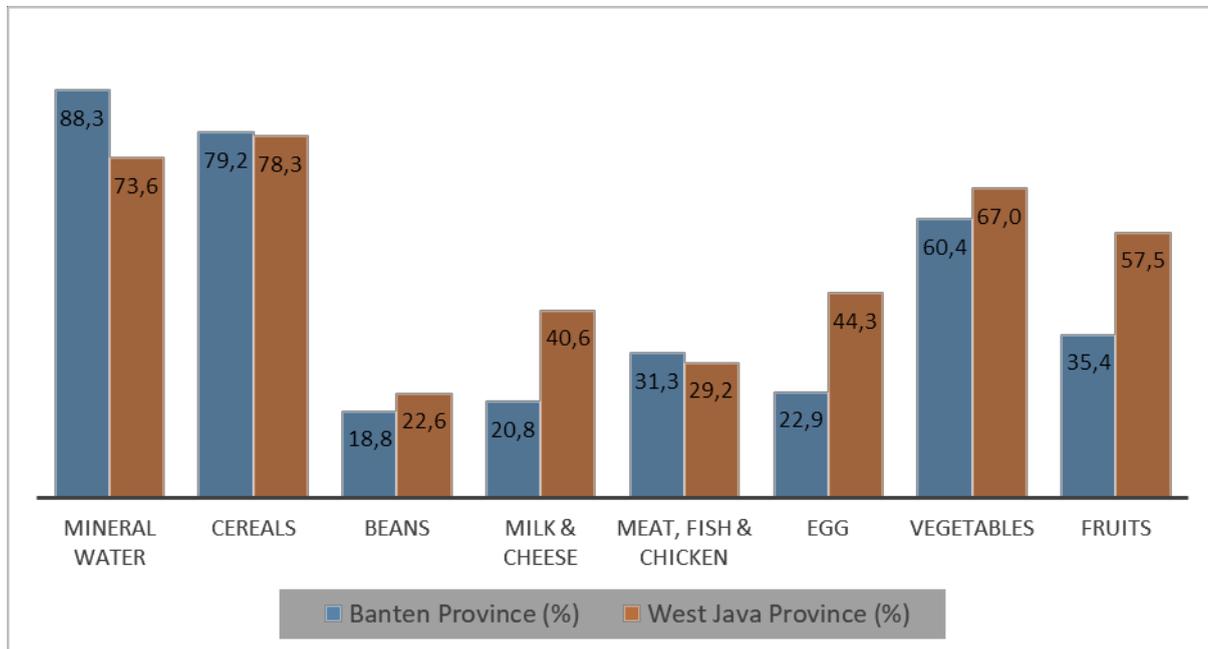


Figure 1. Varieties Foods Used for Complementary Feeding by Province (N=154)

Table 2 shows the results of the bivariate analysis, which shows the relationship between complementary feeding practices and the respondents' socio-economic factors by province. In West Java Province, there was a significant relationship between complementary feeding practices and community area type ($P = 0.023$), while in Banten Province there was no significant relationship between complementary feeding practices and socio-economic factors. When the data for the two provinces are combined, there is a significant relationship between complementary feeding practice and community ($P = 0.046$).

Table 3 is a multivariate analysis using binary logistic regression, which analyzes the factors that influence the practice of providing complementary feeding in children under two years of age. The results show that two factors that influence complementary feeding practices are the community with $OR = 0.14.395$ (95% $CI = 2.191-94.598$) and the education of the head of household with $OR = 8,024$ (95% $CI = 1,134-56,784$).

Table 2. Correlation between Complementary Feeding Practice and Socio-Economic Characteristics (N=154)

Characteristics	Banten				P	West Java				P	Total				P
	Complete		Not Complete			Complete		Not Complete			Complete		Not Complete		
	N	%	n	%		n	%	n	%		N	%	n	%	
Sex of infant															
Female	2	8.7	21	91.3	0.132	5	7.9	58	92.1	0.504	7	8.1	79	91.9	0.308
Male	0	0.0	25	100.0		2	4.7	41	95.3		2	2.9	66	97.1	
Community															
Urban	1	3.4	28	96.6	0.758	2	2.6	75	97.4	0.023^	3	2.8	103	97.2	0.046^
Rural	1	5.3	18	94.7		5	17.2	24	82.8		6	12.5	42	87.5	
Education of the head of household															
< Complete primary & complete primary	0	0.0	26	100.0	0.099	2	4.5	42	94.5	0.367	2	2.9	68	97.1	0.102
> Complete primary	2	10.0	18	90.0		5	9.3	49	90.7		7	9.5	67	90.5	
Age of the head of household (years)															
< 21 & > 49	1	6.3	15	93.8	0.626	2	8.3	22	91.7	0.757	3	7.5	37	92.5	0.958
22-49	1	3.2	30	96.8		5	6.5	72	93.5		6	5.6	102	94.4	
Mother's education															
< Complete primary & complete primary	1	3.7	26	96.3	0.798	3	5.9	48	94.1	0.614	4	5.1	74	94.9	0.545
> Complete primary	1	5.3	18	94.7		4	8.5	43	91.5		5	7.6	61	92.4	
Mother's age (years)															
< 21 & > 49	0	0.0	14	100.0	0.347	3	13.6	19	86.4	0.355	3	8.3	33	97.1	0.803
22-49	2	6.1	31	93.9		4	5.1	75	94.9		6	5.4	106	94.6	
Work of mothers															
Not currently employed	2	5.4	35	94.6	0.476	6	7.5	74	92.5	0.660	8	6.8	109	93.2	0.774
Currently employed	0	0.0	9	100.0		1	4.8	20	95.2		1	3.3	29	96.7	

[^]Significant at level $P < 0.05$

Table 3. Factors Affecting the Practice of Complementary Feeding (N=154)

Variable	B	Wald	Sig.	OR	CI 95%	
					Lower	Upper
Sex of infants	-0.284	0.94	0.759	0.753	0.122	4.634
Community area type	2.667	7.708	0.005	14.395	2.191	94.598
Education of the head of household	2.082	4.351	0.037	8.024	1.134	56.784
Age of the head of household (years)	-0.712	0.432	0.511	0.491	0.059	4.097
Mother's education	0.949	0.921	0.337	2.583	0.372	17.938
Mother's age (years)	-1.002	0.909	0.340	0.367	0.047	2.879
Work of mothers	-1.137	0.747	0.388	0.321	0.024	4.229

4. DISCUSSION

The first thousand days of life are crucial phases for child development. Children who do not get a good nutritional intake in this phase will experience nutritional problems, such as stunting, obesity and other health problems [2] [3]. Therefore, providing good nutritional intake is very important, including providing complementary feeding for children aged 6-23 years [10] [11].

The provision of good complementary feeding must pay attention to several aspects which are the age requirement for the introduction of complementary feeding; providing responsive training in giving complementary feeding and paying attention to the child's psychosocial condition; paying attention to storage hygiene and providing complementary feeding, the quantity of complementary feeding according to the infants' needs; paying attention to consistency and variation complementary feeding; considering food frequency and energy density; paying attention to the nutritional content of various types of food and ensuring nutritional needs, adding vitamins and minerals to infants and mothers, and paying special attention to sick babies [8] [9].

One thing that needs attention is various types of complementary feeding. Parents should provide complementary feeding with a variety of food, which are in accordance with the nutritional needs of the child [12]. A variety of food is useful so that nutritional adequacy can be met and the ability of babies to recognize types of food is increasing. It should be noted that during this complementary feeding, babies are in the process of learning to recognize types of food [13].

In addition, infants should also be accustomed to getting regular complementary feeding frequencies. In every complementary feeding, parents must pay attention to the texture of the food, which is adjusted to the infant's adaptation process to food. Therefore, complete complementary feeding with quality nutritional content is a necessity that must be provided to infants in improving their nutritional quality during the practice of providing complementary feeding and the infant's learning process to recognize food [14].

This study found that the practice of providing complete and varied complementary feeding in households is still low. The average nutritional content is also low, because it is only dominated by mineral water, cereals and vegetables. This becomes a concern because these two provinces also have a high prevalence rate of stunting in Indonesia. This means that without intervening in complementary feeding, this acute nutritional problem will be difficult to overcome.

The thing that needs attention is the urban community. This study found that households living in urban areas have a high risk of incomplete complementary feeding practices. This occurs because people's access to food sources in urban areas is lower than in rural areas. In the food distribution, rural areas in Banten Province and West Java Province are a source of food production. Thus, rural households in these two provinces do not have problems with the complete and varied types of complementary feeding.

In addition, parental education also affects the practice of providing complementary feeding. Low-educated fathers are at high risk of not providing complete and varied complementary feeding for infants. This is due to the lack of parental knowledge of good sources of nutrition [15] [16]. In fact, parents with low education are also at higher risk of having children with nutritional problems, such as stunting, under-nutrition and obesity.

5. CONCLUSION

The practice of providing complete complementary feeding which varies according to the needs of the baby can help improve growth and development. Therefore, food sources for complementary feeding must be accessible to all people, especially for low-socioeconomic family who live in urban area. In addition, it is necessary to increase the knowledge of parents in providing good complementary feeding, such as types and variations of food ingredients according to children's nutritional needs and good food processing methods so that their nutritional content can be maintained.

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