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**Infant and Young Child Feeding (IYCF) Behaviour in Mothers of Toddler Ages 12-59 Months Using Health Promotion Model**

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**ABSTRACT**

Background: The problems of malnutrition, stunting and overweight in Indonesia are nutritional problems that are still being addressed today, and one of the main obstacles is inadequate knowledge and inappropriate Infant and Young Child Feeding (IYCF) practices. Based on the Health Promotion Model theory, a person's behavior is influenced by previous behavioral factors, personal factors, and specific behavioral factors that will influence a person's commitment to taking preventive action. Objective: The aim of this research is to analyze IYCF behavior in mothers of toddlers aged 12-59 months using the Health Promotion Model theoretical approach. Methods: This research used correlational design with a cross sectional approach. The sample was 100 mothers of toddlers aged 12-59 months who were taken using simple random sampling techniques. Data were collected using a questionnaire to assess previous behavioral factors, personal factors (age, education, parity and socio-economic status), perceived benefits of action, perceived barriers to action, attitudes related to activities, interpersonal factors (family support), and IYCF behavior. Then the data was analyzed using the logistic regression. Results: The results showed that there is a significant relationship between IYCF behavior the perceived benefits of action with p value of 0.036 (<0.05), perceived barriers to action with p value of 0.000 (<0.05), attitudes related to activities with p value of 0.034 (<0.05), and interpersonal factors with p value of 0.000 (0.05). However, IYCF behavior is not related to factors such as age (p=0.523), education (p=0.429), income (p=0.214), number of children (p=0.270) and previous behavior (p=0.181). Conclusion: Thus, the study showed that the most influential factors on infant and child feeding behavior based on the Health Promotion Model are perceived barriers to action and interpersonal factors (family support).

**Keywords:** IYCF, Toddler Mothers, Health Promotion Model

**INTRODUCTION**

The toddler period is a period where the child's brain develops rapidly. It is known that the period from conception to birth to two years is a 'critical window' in increasing optimal growth and development (WHO, 2014). Exclusive breastfeeding for infants aged 0-5 months was only 37.3%, and the coverage of children who continued to breastfeed until the age of 2 years decreased slightly from 55 percent in 2012 to 54 percent in 2017 (Ministry of Health, 2017). In East Java Province, the coverage of newborns who

received IMD increased in 2021 to 73.6% compared to 2020 (71.8%), while the coverage of infants who received Exclusive Breastfeeding decreased in 2021 to 71.7% compared to 2020 (79.0%). In Sidoarjo Regency, the coverage of exclusive breastfeeding has increased from 64.04% in 2020 to 70.80% in 2021, while the coverage of newborns receiving Early Breastfeeding Initiation (IMD) has increased from 73.81% in 2020 to 76.35% in 2021.

These infant and child feeding practices affect the child's nutritional

status. Data in April 2023 showed that there were 153 toddlers identified as stunted (short stature) at the Krian Health Center, Sidoarjo Regency, which is likely related to inappropriate infant and child feeding behavior. The problems of malnutrition, stunting, and overnutrition in Indonesia are nutritional problems that are still being addressed today. Nutritional deficiencies during this period are generally irreversible and will have an impact on short-term and long-term quality of life (Yusuf & Ilmiyani, 2023).

According to a study by UNICEF Indonesia, there are various obstacles that cause nutritional problems in Indonesia. One of the main obstacles is inadequate knowledge and inappropriate practices of Infant and Young Child Feeding (IYCF), which in the first two years of a child's life is highly dependent on the behavior of parents or caregivers in fulfilling their nutrition (IDAI, 2015).

The Health Promotion Model theory describes the relationship between humans and their physical and interpersonal environment in various dimensions. This theoretical approach focuses on the individual's ability to maintain health conditions with the belief that it is better to take preventive measures (Pender, 2015). In this case, appropriate infant and young child feeding behavior is one of the priority preventive measures to achieve good nutritional quality so that it can prevent nutritional problems in infants and children, especially stunting problems which are still the government's target of 14% in 2024.

Research by Ariwati and Khalda (2023) analyzed the factors that influence stunting prevention behavior using the Health Promotion Model. The factors studied included previous behavioral factors, perceptions of the benefits of action, self-efficacy and personal psychology. Another study by Hupunau, et al. (2019) analyzed maternal behavior in meeting the nutritional needs of toddlers using the Health Promotion Model theory

approach including factors of perceived vulnerability, perceived seriousness, perceived benefits, perceived barriers, cues to action, and self-efficacy factors. Thus, there has been no research that analyzes the behavior of Feeding Infants and Children in Mothers of Toddlers using the Health Promotion Model approach.

In general, this study aims to analyze IYCF behavior in mothers of toddlers aged 12-59 months using the Health Promotion Model theory approach, while specifically it aims to analyze previous behavioral factors, perceived benefits of action, perceived barriers to action, attitudes related to activities, interpersonal factors (family support) towards IYCF behavior.

In line with one of the stunting reduction programs in Indonesia through the IYCF program which has been running since 2013, the analysis of this IYCF behavior can provide a picture of IYCF behavior to be the basis or recommendation for developing a program to improve IYCF practices in the community in overcoming nutritional problems in infants and children.

## RESEARCH METHOD

This research design uses observational research with a cross-sectional approach, namely a research design in which measurements and observations are carried out simultaneously at one time. The research location is in the Krian Health Center work area, Sidoarjo Regency. The research period starting from the preparation of the proposal, licensing, data collection to the final report is January-October 2024.

The population in this study were all mothers who had children aged 6-59 months in the Krian Health Center work area, Sidoarjo Regency, totaling 3,759 people. The sample in this study was 100 people. The sample used was a portion that met the inclusion and exclusion criteria. The inclusion criteria in this study were (1) mothers who were caring for their children, and (2) mothers who could communicate

clearly. The exclusion criteria consisted of (1) mothers withdrawing from the study, (2) mothers not being at the research location when data collection was carried out, and (3) mothers being sick so that they could not continue to be subjects. The sampling technique used was simple random sampling, which is a sampling determination technique using a random technique.

Independent variables in the study include previous behavioral factors, personal factors (age, education, parity and socioeconomic status), perceived benefits of action, perceived barriers to action, attitudes related to activities, interpersonal factors (family support), while the dependent variable is IYCF behavior.

The instrument used a questionnaire to measure variables of previous behavioral factors, personal factors, perceived benefits of action, perceived barriers to action, attitudes related to activities, interpersonal factors (family support), and IYCF behavior.

Data processing was carried out with the following processes: editing, coding, and data entry.

Descriptive analysis aims to describe the characteristics of each research variable. The data includes: the distribution of independent variables (previous behavioral factors, personal factors, perceived benefits of action, perceived barriers to action, attitudes related to activities, interpersonal factors), and the dependent variable, namely IYCF behavior. Bivariate analysis was conducted to find the relationship between independent variables (previous behavioral factors, personal factors, perceived benefits of action, perceived barriers to action, attitudes related to activities, interpersonal factors), and IYCF behavior using computer assistance. The data analysis technique used is logistic regression with p value <0.05.

This study applies the basic principles of research ethics, namely: respect for person (Respecting human dignity), beneficence (Beneficial) and Non-maleficence (Not detrimental, Justice).

## RESULT AND DISCUSSION

**Table 1.** Frequency Distribution of Characteristics of Toddler Mothers in the Krian Health Center Work Area in 2024

Characteristics	Classification	Frequency	Percentage
Age	<20 years	1	1
	20 – 35 years	76	76
	>35 years	23	23
Education	Base	6	6
	Middle	79	79
	High	15	15
Occupation	Unemployed	72	72
	Employed	28	28
Family Income	< Minimum Wage	70	70
	≥ Minimum Wage	30	30
Number of Children	<2	27	27
	≥2	73	73

Based on table 1, it shows that most respondents are in the age range of 20-35 years, as many as 76 respondents (76%), most respondents have a secondary education (junior high school and high school) as many as 79 respondents (79%),

most respondents are unemployed as many as 72 respondents (72%), most respondents' family income is below the UMK as many as 70%, and most respondents have children ≥2 as many as 73 (73%).

**Table 2.** Frequency Distribution of IYCF Behavior and Influencing Factors Based on the Health Promotion Model in Toddler Mothers in the Krian Health Center Work Area in 2024

Variable	Classification	Frequency	Percentage
IYCF Behavior	Less	34	34
	Good	66	66
Previous Behavior	Less	34	34
	Good	66	66
Perception of Benefits of Action	Less	36	36
	Good	64	64
Perceived Barriers to Action	Low	84	84
	High	16	16
Attitudes	Less	47	47
	Good	53	53

Interpersonal Factors	Less	44	44
	Good	56	56

Based on table 2 shows that most respondents have good IYCF behavior as many as 66 respondents (66%). The factors that influence IYCF behavior based on the Health Promotion Model show that previous good respondent behavior as many as 66 respondents (66%), perception of the benefits of good actions as many as 64 respondents (64%), perception of low barriers to action as many as 84 respondents (84%), respondents have good attitudes as many as 53 respondents (53%), and respondents have good interpersonal factors (family support) as many as 56 respondents (56%).

**Table 3.** Chi Square Test Analysis Results Relationship of Factors Influencing IYCF Behavior Based on the Health Promotion Model in Toddler Mothers in the Krian Health Center Work Area in 2024

		IYCF Behavior				Total		p value
		Less		Good		f	%	
		f	%	f	%			
<b>Age</b>	<20 years	0	0	1	100	1	100	0,523
	20 – 35 years	26	34,2	50	65,8	76	100	
	>35 years	8	34,8	15	65,2	23	100	
<b>Education</b>	Base	1	16,7	5	83,3	6	100	0,429
	Middle	28	35,4	51	64,6	79	100	
	High	5	33,3	10	66,7	15	100	
<b>Family Income</b>	< Minimum Wage	27	38,6	43	61,4	70	100	0,214
	≥ Minimum Wage	7	23,3	23	76,7	30	100	
<b>Number of Children</b>	<2	12	44,4	15	55,6	27	100	0,270
	≥2	22	30,1	51	69,9	73	100	
<b>Previous Behavior</b>	Less	15	44,1	19	55,9	34	100	0,181
	Good	19	28,8	47	71,2	66	100	
<b>Perception of Benefits of Action</b>	Less	17	47,2	19	52,8	36	100	0,036
	Good	17	26,6	47	73,4	64	100	
<b>Perceived Barriers to</b>	Low	22	26,2	62	73,8	84	100	0,000
	High	12	75	4	25	16	100	

Action								
Attitudes	Less	21	44,7	26	55,3	47	100	0,034
	Good	13	24,5	40	75,5	53	100	
Interpersonal Factors	Less	28	63,6	16	36,4	44	100	0,000
	Good	6	10,7	50	89,3	56	100	

Based on table 3 the results of the chi square test analysis show that there are four variables related to Infant and Young Child Feeding (IYCF) behavior including perceptions of perceived benefits of action with a p value of 0.036 (<0.05), perceptions of perceived barriers to action with a p value of 0.000 (<0.05), attitudes that influence activities with a p value of 0.034 (<0.05) and interpersonal factors (family support) with a p value of 0.000 (<0.05), while there are five variables that are not related to Infant and Young Child Feeding (IYCF) behavior including age factors with a p value of 0.523 (>0.05), education with a p value of 0.429 (>0.05), income with a p value of 0.214 (>0.05), number of children with a p value of 0.27 (>0.05), and previous behavioral factors with a p value of 0.181 (>0.05). Thus, there are six variables including income factors, previous behavior, perceptions of the benefits of action, perceptions of barriers to action, influencing attitudes and interpersonal factors (family support) which can be continued in logistic regression analysis because they have met the requirements of p value <0.25.

**Table 4.** Results of Logistic Regression Test Analysis The Influence of Factors Affecting IYCF Behavior Based on the Health Promotion Model on Toddler Mothers in the Krian Health Center Work Area in 2024

Variable	p value	O	95% CI
Perceived Barriers to Action	0,006	8,0	1,828 – 35,610
Interpersonal Factors	0,000	0,0	0,023 – 0,251

Based on table 4, the results of the logistic regression test analysis show that

the perception of perceived barriers to action has an effect on IYCF behavior of 8.068, and the second factor, namely interpersonal factors (family support), has an effect on IYCF behavior of 0.076.

The results of the study showed that respondents with high perception of barriers were 16%, where 25% of respondents had good IYCF behavior while 75% of respondents had poor IYCF behavior. It can be seen that respondents with high perception of barriers were more likely to have poor IYCF behavior. Respondents with low perception of barriers were 84%, where 73.8% had good IYCF behavior while 26.2% had poor IYCF behavior, it can be seen that respondents with low perception of barriers tend to have good behavior than respondents with poor behavior. The results of the analysis showed that perception of barriers to action had a significant relationship with IYCF behavior ( $p = 0.006$ ), meaning that the more respondents felt barriers/obstacles in IYCF behavior, the higher the bad behavior. Conversely, if the perceived barriers are low, the higher the mother's good behavior. The results showed that mothers who have high perceptions of barriers to action tend to have poor IYCF behavior by 8.068 times compared to mothers who have low perceptions of barriers to action. Perception of barriers is also influenced by other perceptions. The higher the perception of benefits, the lower the perceived barriers will be because they feel that there are more benefits than disadvantages. This result is in line with research by Hapunau, et al. (2019) showing that perceptions of barriers are related to IYCF behavior of mothers of toddlers ( $p = 0.033$ ) (Hupunau et al, 2019).

Perceived barriers are everything that inhibits individuals from making certain behavioral changes. Everything that

inhibits this can be seen in terms of high costs, benefits, unsatisfactory and unpleasant health services and support from family and others. The barriers felt by parents in providing healthy food are the high cost of food, distance to the place of purchase and limited fresh food products (Glanz et al, 2015). In this study, mothers of toddlers with less family support were 44%, of which 63.6% had poor IYCF behavior. The results of the study showed that mothers who had high family support would tend to have good IYCF behavior 0.07 greater than mothers with low family support. Parenting patterns in feeding children according to several studies have the potential to cause stunting and there is evidence of a relationship between the two, where feeding for children aged 6-24 months must be considered both in terms of quality and quantity because during this period the stages and types of food are also instilled (Hartaty et al, 2022).

According to Latifah U, et al (2020), the behavior of feeding infants and children is influenced by several factors, both from individual parents/caregivers, and from the external environment (Latifah et al, 2022). Research by Febriani and Noer (2016) shows that one of the factors is support from family members (Febriani et al, 2016). Likewise, research by Hartati, et al (2020) shows that support is an important factor that influences the fulfillment of toddler nutrition (Hartaty et al, 2022). This shows that family support plays an important role in the process of feeding children which will affect the fulfillment of children's nutrition. This social support can be obtained from parents, siblings, adults and peers. Social support consists of verbal and non-verbal information or advice, real or visible assistance, or behavior given by people who are familiar with the subject in their social environment and things that can provide emotional benefits or influence their receptive behavior (Swarjana, 2022). There are four types of social support, namely information support including providing advice, guidance, suggestions, or

feedback, emotional support including expressions of empathy, concern and attention to the person concerned, instrumental support in the form of lightening tasks and helping with work and appreciation support, namely support that occurs through positive expressions of respect (appreciation) (Swarjana, 2022). Another study by Ernawati, et al. (2016) explained that high family support plays a role in shaping good toddler nutrition behavior so that social support is needed for parents in caring for their children (Ernawati et al, 2016). According to Al Yazeedi, et al. (2021), there is a strong relationship between family support and nutritional fulfillment. The mother's ability to fulfill her toddler's nutrition is supported by the presence of the family (Al Yazeedi et al, 2021). The family provides emotional support, information, and support during decision-making in determining good nutrition for toddlers. The family plays a very important role in the mother's decision-making in choosing nutritious food for her child. The presence of the family will help the mother in making decisions when she has problems related to fulfilling her toddler's nutrition (Hartaty et al, 2022).

## CONCLUSION

Thus, the research results show that the most influential factors on infant and child feeding behavior based on the Health Promotion Model approach are perceived barriers to action and interpersonal factors (family support).

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