

# Mothers' Behaviour Regarding School-Aged Children's Nutrition: in Indonesia

Eka Mishbahatul Marah Has<sup>1</sup>, Della Febien Prahasiwi<sup>2</sup>, Sylvia Dwi Wahyuni<sup>3</sup>, Nursalam<sup>4</sup>, Ferry Efendi<sup>4</sup>,

<sup>1</sup>Doctoral Degree Student, <sup>2</sup>Bachelor Degree Student, <sup>3</sup>Lecturer, <sup>4</sup>Professor, Faculty of Nursing, Universitas Airlangga, Mulyorejo Street (Kampus C), Surabaya City, East Java, Indonesia

## INTRODUCTION

Malnutrition in school-aged children in the coastal area of Indonesia, increased every year. This can be caused by improper nutrition intake. Such as in Bulak Banteng Village, East Java, presumably, it was mothers' behaviour in providing children's nutritional needs that caused the malnutrition. This research aimed to evaluate factors which influenced mothers' behaviour in the coastal area of Indonesia in the fulfilment of school-aged children's nutrition based on health promotion model. **Method:** This was an observational analysis study with a cross-sectional approach. Samples were 100 mothers of school-age children who lived at Bulak Banteng Village, East Java, Indonesia. Samples were taken by using a stratified random sampling technique. Independent variables were mother's prior related behaviour, self-motivation, perceived benefits, perceived barriers, perceived self-efficacy, activity-related affect, and commitment in fulfilling nutrition. The dependent variable was the mother's behaviour in fulfilling nutrition. The data were collected by using questionnaire, then analysed by using linear regression. **Result and Analysis:** Linear regression analysis indicated that motivation ( $p=0.020$ ), perceived barriers ( $p=0.000$ ), self-efficacy ( $p=0.003$ ), and activity-related affect ( $p=0.000$ ) were influenced mother's behaviour in fulfilling school-aged children nutrition by  $p<0.05$ . **Discussion:** Mother's motivation, self-efficacy, and activity-related affect have a role in mother's behaviour in fulfilling school-aged children nutrition. Nurses should create health promotion which can increase mother's motivation, efficacy, and affect in fulfilling school-aged children nutrition.

**Keywords:** health promotion model, mothers' behaviour, nutrition, school-aged children

## INTRODUCTION

Indonesia is facing a double burden of malnutrition on school-age children with the prevalence of underweight and obesity increasing. Malnutrition has negative effects on health and quality of life<sup>(1)</sup>. Data from Basic Health Research (Riskesdas) in 2007 shows that malnutrition exists in children less than 6-14 years old: 13.3% male and 10.9% female<sup>(2)</sup>. This increased in 2013 for both men and women by 11.2%.

Health Survey Result of Basic Elementary Students in Surabaya city by 2015 showed that from 52,865 elementary school children, there were 2,057 children with malnutrition. The prevalence of hunger malnutrition in the work area of Puskesmas Bulak Banteng is the second highest in Surabaya City, that is equal to 33.26%<sup>(3)</sup>.

Bulak Banteng Village was located on the coastal area of Surabaya, near Madura Strait. People in this village were living in a slum area with a poor economic condition and a low level of education<sup>(4)</sup>. The previous study using an interview on ten mothers who live at Bulak Banteng Village find that eight mothers said their only take 1-2 meals per day (missed breakfast), mother cooks as their children request, although it is less nutritious. The kind of food which is often consumed was rice with fried egg only. There

---

### Corresponding author:

**Eka Mishbahatul Marah Has**

Doctoral Degree Student

Faculty of Nursing, Universitas Airlangga

Mulyorejo Street (Kampus C), Surabaya City, East

Java, Indonesia, Email: eka.m.has@fkip.unair.ac.id

were 7 out of 10 mothers said that their child didn't like vegetables and fruits<sup>(5)</sup>.

Malnutrition directly caused by inadequate dietary intake and disease, indirectly caused by parenting style, food availability, social-economy, culture, and politic<sup>(6)</sup>. Malnutrition reflects imbalanced nutrition between intake and needs<sup>(7)</sup>. If it's not treated immediately, it can cause physical growth and intellectual development failure, reduce productivity, reduce endurance, increase child morbidity, and death.

Many factors can influence mothers' behaviours in meeting the nutritional requirement of their children. Factors that affect the mother in the fulfilment of nutrition can be associated with a behavioural model, one of it was the Health Promotion Model. The Health Promotion Model (HPM) is a theory that explores factors related to health promotion behaviours aimed at improving health and quality of life<sup>(8)</sup>. In HPM, health behaviour can appear if there is a commitment to do, not because of the perception of threat. Commitment can be influenced by behaviour specific cognition and affect (perceived benefit, perceived barrier, perceived self-efficacy, and activity-related affect). Behaviour specific cognition and affect can be influenced by prior related behaviour and personal factors (such as motivation)<sup>(9)</sup>.

Although previous research has identified factors contributing to mothers' behaviours in feeding their children, little is known about these factors within the context of HPM. It is important for nurses to know the factors that influence mother's behaviour in nutrition fulfilment of school-aged children so that nurses can plan appropriate health promotion strategies for mothers. Therefore, the authors are interested in examining the

factors that influence mother's behaviour in nutrition fulfilment of school-age children with HPM approach.

## METHOD

This was an observational analytic study with a cross sectional approach. The population were mothers with school-age children, who take care their children without household assistance, who lived at Bulak Banteng Village, East Java, Indonesia. One hundred respondents were involved by using stratified random sampling technique.

Independent variables in this research were mother's prior related behaviour, self-motivation, perceived benefits, perceived barriers, perceived self-efficacy, activity-related affect, and commitment in fulfilling nutrition, which is collected by using questionnaire. The dependent variable was the mother's behaviour in fulfilling nutrition, which is collected by using food frequency questionnaire. The data were then analysed by using linear regression. Statistical testing was performed at the 0.05 significance level.

## RESULTS

Most of the respondents were middle adult mothers, with age range 35-45 years old (87%). Mostly were only elementary school graduates (49%). More than a half was a housewife (55%), with a monthly salary less than local minimum wages (64%). Most of the children who participate in this research were 2<sup>nd</sup> years elementary school's students, mostly nine years old (29%). More than a half were female (55%). Most of them were malnourished (73%).

**Table 1 The relationship between independent and dependent variables (n = 100)**

Variables	Mother's behaviour in fulfilling nutrition				Total	
	Good		Poor			
	n	%	n	%	n	%
Prior related behaviour						
Good	35	35	23	23	58	58
Poor	25	25	17	17	42	42
Self-motivation						
Strong	36	36	29	29	29	29
Weak	24	24	11	11	11	11
Perceived benefit						

**Cont.... Table 1 The relationship between independent and dependent variables (n = 100)**

Positive	22	22	22	22	44	44
Negative	38	38	18	18	56	56
Perceived barrier						
Barrier	27	27	30	30	57	57
None	33	33	10	10	43	43
Perceived self-efficacy						
Strong	29	29	24	24	53	53
Weak	31	31	16	16	47	47
Activity related effect						
Positive	21	21	10	10	31	31
Negative	39	39	30	30	69	69
Commitment						
Strong	25	25	20	20	45	45
Weak	35	35	20	20	55	55

Table 1 had shown that respondents mostly have good prior behaviour and good behaviour in fulfilling children’s nutrition (35%). Mostly have strong self-motivation and good behavior (36%). Mostly have negatively perceived benefit, but have good behaviour (38%). Mostly perceived no barrier and had good behaviour (33%). Mostly have a weak perceived self-efficacy, but still, have good behaviour (31%). Mostly have negative affect regarding nutritional fulfilment, but have good behaviour (39%). And, mostly have weak commitment, but have good behavior (35%).

**Table 2 The Summary of linear regression analysis**

Coefficients							
Model B		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Note
		Std. Error	Beta				
	(Constant)	4.708	15.980		.295	.769	
	Prior related behaviour	.113	.138	.071	.822	.414	Non significance
	Motivation	.494	.151	.342	3.275	.002	Significance
	Perceived benefit	.302	.171	.155	1.770	.081	Non significance
	Perceived barrier	-1.128	.176	-.775	-6.424	.000	Significance
	Perceived self-efficacy	.318	.104	.266	3.051	.003	Significance
	Activity-related affect	.663	.093	.667	7.134	.000	Significance
	Commitment	.032	.089	.033	.362	.718	Non-significance

Table 2 showed that self-motivation, perceived barrier, perceived self-efficacy, and activity-related affect significantly influence mother’s behaviour in nutritional fulfilment of school-aged children. Positive T-value indicates direct influences, whereas negative means indirect.

## DISCUSSION

The results showed that most of the respondents had a good prior related behaviour and behaviour in fulfilling the school-aged children nutrition. Prior related behaviour can define as one's habit<sup>(10)</sup>. According to HPM, prior related behaviour had influenced health promotion behaviour. The benefit which derived from past behaviour mentioned as the expected outcomes. When an individual satisfies with the result of certain behaviour, this behaviour will be repeated in the future<sup>(8)</sup>.

Mother's behaviour in fulfilling school-aged children nutrition was evaluated from the mother's ability to serve nutritious and diverse foods. Most of the school-aged children were eat as mentioned on recommended dietary allowances and food diversity. Their diet was likely fewer vegetables and fruits (only 1-3x/week), but more on rice, fish, eggs, and unhealthy snacks. This is possible because school-aged children already have an appetite and they're more likely to consume snacks<sup>(11)</sup>. It can also because Bulak Banteng Village was located on the coastal area of Surabaya city<sup>(4)</sup>, so fish were easily available at low prices.

Linear regression analysis had shown that prior related behaviour didn't significantly influence mother's behaviour in fulfilling nutrition for school-aged children. Prior related behaviour stay on the memory of each person, which consider to be accepted or rejected as a present behaviour<sup>(12)</sup>. So, the prior related behaviour may be indirectly contributing to mother's nutritional behaviour. The others factors also needed to shape one's positive behaviour.

Most of the respondents have a strong self-motivation and a good behaviour to the fulfilment of school-aged children nutrition. Pender's on HPM said that personal factors (biological, psychological, socio-cultural) were one's general characteristics that influence their health behaviour<sup>(8)</sup>. In this research, the psychological factor which is self-motivation were evaluated regarding its influence on mother's behaviour in the fulfilment of nutrition. Most were motivated to provide nutritious and diverse foods to their children because they believe that this was their responsibility. They want to keep the quality of food prepared. And they didn't feel tired to do that.

Linear regression analysis had shown self-motivation has a significant influence on mother's

behaviour in the fulfilment of nutrition. As their self-motivation is stronger, their behaviour will be better. It is similar to the previous research which stated that self-motivation is an essential factor for the successfulness of positive behaviour<sup>(13)</sup>. It can be concluded that self-motivation can foster the self-willingness to encounter all barrier to bring up the positive behavior.

Both of respondents with positive and negative perceived benefit of nutrition have good behaviour in the fulfilment of school-aged children nutrition. Perceived benefit define as one's understanding of the advantages or benefits that were positively related to health behaviour<sup>(8)</sup>. Based on questionnaire analysis, it is found that most of the respondents agree, nutritious and diverse food will make their child healthy and immune to the disease, provide energy, and make their body weight stay normal. Most of the respondents with a negatively perceived benefit of nutrition stated that nutritious and diverse food can lead to obesity and unhealthy snacks don't influence children's weight. The result of linear regression analysis also shows that perceived benefit didn't influence the mother's behaviour in the fulfilment of school-aged children. One's will perform a healthy behaviour when they recognise that the benefit of new behaviour is higher than the consequence of continuing their old behaviour.

Most respondents perceived no barrier and had good behaviour in fulfilling their school-aged children nutrition. Perceived barrier is a perception of obstacles to perform current healthy behaviour<sup>(12)</sup>. By analysing the respondent's answer, it can be concluded that the most impinging barrier was children's appetite. Mostly agree with the negative statement such as children were prefer to eat out, mothers cannot refuse children's want to consume snacks, and children prefer snacks rather than vegetables and fruits. Previous research also found that the barrier to fulfilling nutrition was taste, challenges in getting ingredients, cooking, plating, and less knowledgeable about nutritious and diverse food with low prices<sup>(14)</sup>. Perceived barrier significantly influence the mother's behaviour in the fulfilment of school-aged children nutrition, based on linear regression analysis. As the mother perceived many barriers, they tend to delay the healthy behaviour.

Perceived self-efficacy is a personal ability to manage and perform certain health behaviours<sup>(8)</sup>. It is encouraging people to change their behaviour. Most of the respondents in this research have a strongly perceived self-efficacy and good behaviour in the fulfilment of nutrition for school-aged children. Bandura said that self-efficacy is not related to one's skill but refers to self-evaluation about their ability to perform something by considering their skills<sup>(15)</sup>. In this research, mothers try to emphasise and improve their self-efficacy, so they can compete against all barrier to fulfilling their school-aged children nutrition. Linear regression analysis had shown that perceived self-efficacy has a significant impact on mother's behaviour in the fulfilment of school-aged children nutrition. As perceived self-efficacy goes stronger, behaviour in nutritional fulfilment also increasing.

Most of the respondents have a negative activity-related affect, but still, have good behaviour in the fulfilment of school-aged nutrition. Pender stated that activity-related affects have an impact on one's health-promoting behaviour. Activity-related affect refers to positive or negative feelings on current activity. This feeling will drive an individual to change or maintain their past behaviour<sup>(12)</sup>. Most of the respondents have a positive activity-related affect by providing fish or meat with rice and vegetables, buying high-quality ingredients, and preparing lunch box to bring to school. But, some of them have a negative activity-related affect which is shown by letting their children consume snack, serving instant or fast foods, and have no limitation on children's intake. Based on linear regression analysis, can be concluded that activity-related affect has a significant influence on mother's behaviour in the fulfilment of school-aged children nutrition. It's similar to the previous research's result which is found that positive feelings can lead to the repetition of behaviour, whereas negative feeling can decrease the possibility to repeat behaviour in the future.

The result had shown that most of the respondents have a weak commitment, but still have good behaviour in the fulfilment of school-aged children nutrition. Pender through HPM said that commitment could be defined as one's desire to engage in particular health behaviour, including strategies identification to perform a positive behavior<sup>(8)</sup>. Linear regression analysis had found that commitment has no significant impact on mother's behaviour in the fulfilment of school-aged children

nutrition. It is similar to the previous research result which is found that commitment does not necessarily end in expected health behaviour if other behaviours were more interesting to do. Another factor such as self-regulation is required for a strong commitment to ending in positive behaviour<sup>(14)</sup>.

## CONCLUSIONS

Mother's self-motivation, perceived self-efficacy, and activity-related affect have a significant role in mother's behaviour in fulfilling school-aged children nutrition. Therefore, efforts can be made to reduce the incidence of malnutrition in school-age children by improving mother's self-motivation, perceived self-efficacy, and affect. So that, school-age children can be met his nutritional needs well.

Nurses should create health promotion which can increase mother's self-motivation, perceived self-efficacy, and affect in fulfilling school-aged children nutrition. For example, how to make nutritious food which is cheap, how to make a healthy snack to reduce street food snacking on children, and the danger of an unhealthy snack. Further research should examine the other factors on the health promotion model, such as interpersonal and situational factor to complete this research finding.

**Ethical Clearance:** This research has passed the ethical test conducted at the Ethics Committee of the Faculty of Nursing, Universitas Airlangga number 412-KEPK.

**Source of Funding:** This study is a self-funded research project.

**Conflict of Interest:** We declare no potential conflicts of interest with respect to research and/or publication of this article.

## REFERENCES

1. Wirjatmadi B, Andriani M. Peranan Gizi Dalam Siklus Kehidupan. Prenadamedia Group, Jakarta. 2012;
2. Badan Penelitian dan Pengembangan Kesehatan. Laporan nasional Riskesdas 2008. Jakarta: Departemen Kesehatan Republik Indonesia; 2008.
3. Dinas Kesehatan Kota Surabaya. Rekapitulasi hasil penjarangan peserta didik di kota Surabaya

- tahun 2015. Surabaya; 2015.
4. Ainnur A. Membangun kampung hijau bersinar: upaya pendampingan dalam membangun kesadaran masyarakat kampung kumuh di Bulak Banteng Lor I Kelurahan Bulak Banteng Kecamatan Kenjeran Surabaya. Surabaya: UIN Sunan Ampel Surabaya; 2016.
  5. Prahasiwi DF. Studi pendahuluan: perilaku ibu dalam pemenuhan gizi anak usia sekolah. Surabaya; 2017.
  6. Armstrong MEG, Lambert MI, Lambert EV. Secular trends in the prevalence of stunting, overweight and obesity among South African children (1994–2004). *Eur J Clin Nutr.* 2011;65(7):835.
  7. Ariani M, Rachman HPS. Keberhasilan Diversifikasi Pangan Tanggung Jawab Bersama. *Badak Pos, Banten hal.* 2008;2.
  8. Pender NJ. Health Promotion Model Manual [Internet]. Michigan, USA; 2011. Available from: <http://deepblue.lib.umich.edu/bitstream/handle/2027.42/85350/?sequence=1>
  9. Pender NJ, Murdaugh CL, Parsons MA, Ann M. Health promotion in nursing practice. 2006;
  10. Khoshnood Z, Rayyani M, Tirgari B. Theory analysis for Pender's health promotion model (HPM) by Barnum's criteria: A critical perspective. *International Journal of Adolescent Medicine and Health.* 2018;1–9.
  11. Piernas C, Popkin BM. Trends in snacking among US children. *Health Aff.* 2010;29(3):398–404.
  12. Alligood MR. Nursing Theorists and Their Work-E-Book [Internet]. 9th editio. Missouri, USA: Elsevier Health Sciences; 2018. Available from: <https://books.google.com.au/books?hl=en&lr=&id=17stDwAAQBAJ&oi=fnd&pg=PP1&dq=pender+health+promotion+model&ots=yVsGURJpfa&sig=I7c6j3fXpXPYqZ4HM19GU9nJGaI#v=onepage&q=pender+health+promotion+model&f=false>
  13. Story PA, Hart JW, Stasson MF, Mahoney JM. Using a two-factor theory of achievement motivation to examine performance-based outcomes and self-regulatory processes. *Pers Individ Dif.* 2009;46(4):391–5.
  14. Has ES and A. Model pengembangan pemenuhan kebutuhan gizi anak prasekolah berbasis. *J Ners* [Internet]. 2012;7(2):121–30. Available from: <https://e-journal.unair.ac.id/JNERS/article/view/4010/2731>
  15. Bandura A. Self-Efficacy. *Encycl Hum Behav* [Internet]. 1994;4(1994):71–81.