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Maternal Self-efficacy in the Home Food Environment: A Qualitative Study among Low-income Mothers of Nutritionally At-risk Children in an Urban Area of Jakarta, Indonesia

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ABSTRACT

Objective: To explore the factors that encompass maternal self-efficacy in providing food for the home.

Methods: In-depth interviews were conducted with 19 mothers of nutritionally at risk children in an urban area of East Jakarta, Indonesia. This study was based on Social Cognitive Theory, Family Stress Models, and Ecological Frameworks. Data collection was coded and analyzed using the Grounded Theory Method.

Results: Most mothers felt secure in providing food for their families knowing that their relatives and neighbors would support them if they lacked the money to buy food; however, most of them did not supply appropriate meals in terms of nutrient content, variety, and timing.

Conclusions and Implications: Maternal self-efficacy was mainly characterized by practical issues concerning the preparation of food at home and a lack of knowledge of health and nutrition. Family-based interventions are needed to enhance competence in providing nutritious food from available resources.

Key Words: home food environment, maternal self-efficacy, children (*J Nutr Educ Behav.* 2011;43:180-188.)

INTRODUCTION

The role of parents in the home food environment has been identified as a primary factor in creating family eating behaviors that support children's nutrition and health.¹⁻³ Mothers are of particular interest in child development, since they have been shown to spend significantly more time than fathers interacting directly with their children.⁴ Mothers play a pivotal role in the development of children's eating behavior and health, both directly, through parental role modeling,^{1,5} and indirectly, through the transmission of attitudes, beliefs, and values.⁶⁻⁸

The majority of studies examining the relationship between parental eating behaviors and those of their chil-

dren have focused on the eating patterns of the children.^{2,9-11} Fewer studies have evaluated the self-efficacy of mothers or their beliefs regarding their competence in creating a family eating environment.⁷ However, maternal self-efficacy is potentially a central cognitive element of parenting competence.

Maternal self-efficacy is defined as a mother's self-referent estimation of competence in her parental role, or as a mother's perception of her ability to positively influence the behavior and development of her children.¹² Maternal self-efficacy seems to be strongly associated with the mother's capacity to provide an adaptive, stimulating, and nurturing child-rearing environment.¹³ Mothers create environments for their children that can

foster the development of healthful eating behaviors. Characteristics of these environments include sociodemographic factors, parental activity, and parental eating style. Parents shape the development of their children's eating behavior, not only by the food they make accessible to their children, but also through their own eating styles,^{4,14} behavior at mealtimes, and child feeding practices.² Parental child feeding practices are associated with children's eating behaviors, including specific eating styles, food selection and preferences,^{6,9} and the regulation of energy intake.^{2,4}

To the authors' knowledge, no study has dealt with maternal self-efficacy in the home food environment in Indonesia. However, research is needed to investigate the role of low-income mothers in urban areas on the eating attitudes and behaviors of children. This need is particularly salient given the importance of family involvement in the prevention and treatment of nutritionally at-risk, low-income, urban children.¹⁵

Therefore, the result of the current study will fill the gap in the existing literature by investigating the issue

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of maternal self-efficacy among low-income, urban mothers, in the context of economic and nutritional transition occurring in Indonesia. Following the 1999 Indonesian economic crisis, there was hyperinflation and surging unemployment, and families in cities often cut expenditures on nutrient-rich food, which is vital to the health of their children.¹⁶

The goal of this study was to develop an understanding of how maternal cognitive, behavioral, and psychosocial factors influenced their competence in providing food in their home. To facilitate the understanding of the various influences on a mother's competence, this study was guided by Social Cognitive Theory,¹⁷ which views human behavior as an interaction of personal, behavioral, and environmental triadic processes; Family Stress Models,¹⁸ which views maternal psychological well-being as mediators of the relationship of economic pressure to parenting practices; and Ecological Frameworks,^{19,20} which views that human development consists of a series of ongoing changes in the interactions between people and the immediate social context. Qualitative data collection and analysis can be used to explore the contextual factors of the home food environment on maternal self-efficacy. Qualitative methods have been shown to be an effective means for exploring information about a mother's perception of family management.¹⁸

METHODS

Settings

Two elementary public schools in East Jakarta were selected to represent low-income, urban children in Jakarta; these schools had participated in the milk supplementation program for children aged 7-9 years. There were 5 schools that participated in the milk supplementation program; the 2 schools were selected for this study based on the area of low-income population, school attendance during the morning session, and willingness to join the study. The students from these 2 schools were nutritionally at risk, as was reflected by their nutritional status, with a mean body weight of 18.9 kg

(standard deviation [SD] = 1.7 kg) and a mean height of 116.7 cm (SD = 4.7 cm). Jakarta is the capital city of Indonesia and has a population of 8.9 million and a land area 255.42 miles², with a population density of 5,212 per mile².²¹ Jakarta is divided into 5 municipalities, and east Jakarta is one of the most populated areas, consisting of 616,640 households.

Participants

Mothers whose children were nutritionally at risk and who participated in the milk supplementation program were recruited to participate. Nineteen mothers, aged 25-45 years, were randomly selected. The selected mothers lived with their nuclear family (63%) and extended family (37%). The majority of the mothers were housewives (74%), and most of them (63%) depended on irregular income from their husbands to provide food in their homes (Table 1).

Data Collection

An in-depth interview was used to explore the perception of the mothers' competence in food preparation in their home. Interviewers observed families and interviewed the study participants in the family homes. To develop interview questions, the authors and the fieldwork team conducted an environmental assessment to identify factors influencing the behavior or environmental characteristics of the targeted community.¹⁹ The questions were then pilot-tested using 2 focus group discussions with parents with similar characteristics in this area.

A common set of topics with semi-structured questions was used as a guide for the interviewers, to ensure consistency and to allow participants to expand their thinking. The topics included food-related experiences, parenting practices, management of income, social support, and community settings. Table 2 provides examples from the question guide for interviews, based on the constructs of Social Cognitive Theory, Family Stress Models, and Ecological Frameworks. Open-ended and broad questions were followed by more specific

probing questions. The interview guide asked the participants to describe their daily responsibilities in family eating activities and the typical pattern of family meals, including the location, food and beverage choices, and the most common meals they prepared.

The participants were individually interviewed to the saturation point that both the interviewer and the mother felt that the topics had been covered, and that no more new information could be obtained. Immediately after each visit, the interviewer wrote a brief visit summary and more extensively descriptive field notes from tape recordings and written notes made during the visit. The detailed field notes included information about the interview setting, the tone and body language of the interviewee, and the trustworthiness of the interview. The interview was conducted in the Indonesian language, the official national language in Indonesia. The sample extensiveness was determined to be sufficient when subsequent interviews revealed no new information.²² This sample procedure, with a small-n comparison, is suited to investigate and understand a mother's perception of her maternal self-efficacy.²³

Participants provided written informed consent and received monetary compensation on completion of the interview. Institutional Review Board approval was obtained before conducting the study. The University Ethical Committee on Human Subjects approved this study's protocol.

Analysis

Interviews were audiotaped, transcribed verbatim, and reviewed for accuracy using the Grounded Theory approach and steps derived from the constant comparative method.^{22,24} The Grounded Theory was used in the present study to discover theoretical ideas to increase the understanding of a mother's perception of her ability to provide food in her home. The constant comparative method, the analytical technique first developed by Glaser and Strauss,²² was used to identify themes that were generated from data in the interviews. As data

Table 1. Demographic and Household Characteristics of Study Participants

Characteristics	Participants (n = 19) n
Age (years)	
25-29	2
30-35	9
36-39	4
40-45	4
Highest education level	
Elementary school	5
Junior high school	9
Senior high school	4
Diploma	1
Occupational status	
Housewife	14
House maid	2
Food seller	3
Religion	
Islam	17
Christian	2
Husband income status	
Regular income ^a	7
Irregular income ^b	12
Household food spending (US\$/day) ^c	
1-1.9	1
2-2.9	6
3-3.9	4
4-5	5
Household members (number)	
3-5	8
6-8	8
9-11	3
Children (number)	
1 or 2	9
3 or 4	8
5-7	2
Family structure	
Nuclear family ^d	12
Extended family ^e	7

^aRegular income: regular monthly income between \$150-300 US/month; ^bIrregular income: uncertain daily income between \$1-5 US/day; ^c\$1 US (United States dollar) = 9,300 IDR (Indonesian Dollar Rupiah), July-Dec 2007; ^dNuclear family: father, mother, and children who live in the same household; ^eExtended family: father, mother, children, and their relatives who live in the same household.

continued to be gathered and reviewed, new facts were constantly compared with existing data and theme to determine if the themes required revision. The constant comparative analysis was discussed among the research team and the interviewer.

There were 3 steps in the analysis. First, the interviewer coded the notes for themes that reflected the topic used to guide the interviews. Second,

the entire research team systematically examined these field note segments and developed a coding scheme that reflected the content, given the research goal. Each interview was coded using key phrases in the participant's own words, and similar key phrases were grouped into categories. In the discussion, when an unresolved question about an interview arose the participant

was contacted to clarify the issue in question. The coding ended when the saturation point was reached. Third, the research team examined all of the findings by comparing the material for a theme from one participant, against the material for all of the other participants, to increase the interpretative and theoretical validity of the analysis.

RESULTS

Eight major categories regarding mothers' self-efficacy in the home food environment emerged from the analysis: (1) food-related knowledge; (2) food availability; (3) food accessibility; (4) food variety; (5) food preparation; (6) food serving; (7) parental feeding practices; and (8) food-coping strategies (Table 3).

Food-related Knowledge

All of the mothers were familiar with the Indonesian dietary slogan that one should eat "4 healthy, 5 perfect" food items every day (ie, that one should eat staple food items, food that is high in protein, vegetables, and fruit for the "4 healthy" food items; and one should also drink milk for the "5 perfect"). However, not all of the mothers were familiar with the current dietary guidelines. The mothers reported that they knew about the dietary slogan, but that it was difficult to apply it in their daily lives. The mothers were also aware of food hygiene and of concerns about food additives and preservatives in their children's snacks. However, they felt that they were not competent enough to prepare a menu and to choose healthful snacks for their children. They were not aware that food would affect the future health of their children. Mothers reported that they would not pay particular attention to monitoring their school-age children's health status or their weight and height unless they were sick.

Food Availability

Mothers reported they felt secure in providing food for their family and that raw or uncooked food such as vegetables, fruits, and meats were

Table 2. Sample Questions From the Interview Guide

Topics/ Questions	Theoretical Construct		
	SCT	FMS	ECO
Food-related experience			
Can you describe your family food habits?	◆		
How would you describe mealtime in your home?	◆		
What do family-style meals mean to you?			
Which food items are good or not good for your family health?	◆		
Parenting practices			
How do you know when your child has had enough to eat?	◆		
Is there any successful method that you have tried to get the children to try new food? If any, could you explain it?	◆		
As a mother, what do you think is the most important action needed during the mealtime?	◆		
Management of income			
How would you describe your financial scheme?	◆	◆	
What are the factors that support your family basic needs?	◆	◆	◆
Social support			
What does it feel like when there is a lack of food you would like to eat?	◆	◆	
Who will help you in the hardship of daily life?	◆	◆	
Community setting			
How do you think your culture/religious belief influence your attitude toward food and eating?	◆		◆
What is your opinion on the impact of economic pressure to your family?	◆	◆	◆

ECO indicates Ecological Frameworks; FMS, Family Stress Models; SCT, Social Cognitive Theory.

easily found in traditional markets and were affordable. However, the study found that the vegetables and fruits in traditional markets were sold cheaply because they were of low quality, not fresh, and usually rejected from the supermarket. The mothers said that they commonly chose to buy second-quality raw food because it was cheap but still good and worthy to be eaten. All the mothers confirmed that ready-made food, like fried chicken, noodles, gado-gado (Indonesian salad), and nasi uduk (steamed rice with coconut milk), was very easy to find for sale in the neighborhood and processed food, like baso (meatballs), chicken nuggets, and sausages, were childrens' favorite foods.

Food Accessibility

All of the mothers stated that they felt that food was easy to find, with some saying: "We haven't experienced hunger; food is always there." They expressed that they could buy a variety

of vegetables and fruit. They could easily find ready-to-eat food and processed food, and there were many food vendors in their neighborhood.

Food Variety

The mothers who were interviewed in this study reported that they frequently provided staple food items, eggs, and *tempe* (soybean cake) to their families. They commonly served mixed-vegetable soup, but their children preferred to eat only the broth part of the soup. Most of the mothers rarely served vegetables, since they assumed that they are not well liked by their children.

Food Preparation

The mothers said that they were able to cater to their children's appetites. The mothers stated that they preferred to provide easy-to-cook meals. They also habitually purchased ready-to-eat food for children's meals.

The study found that there were many food vendors in their neighborhood. Some mothers said that they cooked meals at home because it was cheaper and more practical to buy a meal from the food vendors.

Food Serving

Most of the mothers believed that snacks would make their children healthy. As a result, the mothers frequently provided snacks instead of meals for their children, to satisfy their children's appetites. The mothers reported that, for practical reasons, they hand-fed their children. Hand-feeding is very common among Indonesian mothers. Most of the mothers said that they hand-fed the children until the age of 10. The mothers prepared rice and side dishes in one plate and then fed the child with a spoon or a bare hand, while the children were doing other activities, such as playing or watching TV. Sometimes, meals were shared between siblings or between mothers and children.

Table 3. Categories and Key Phrases Related to the Home Food Environment Among Low-income Mothers in an Urban Area of Jakarta

Categories ^a	Key Phrases ^b	n
Food-related knowledge	Familiar with Indonesian dietary slogan (<i>4 healthy, 5 perfect</i>) ^c	19
	Aware of food hygiene	16
	Concern about food additives and preservatives	16
	Able to identify appropriate food for meals and snacks	3
	Aware that food affects future health	2
	Able to choose variety of food	2
Food availability	Choose energy-dense food to satisfy hunger	17
	Prefer cheap food	15
Food accessibility	Easy to find, food is always reachable	19
	Can afford variety of vegetables and fruits	16
	Can afford variety of ready-to-eat food	15
Food variety	Can afford a variety of processed food	10
	Staple: rice, instant noodles, vermicelli	19
	Animal protein:	
	Eggs	19
	Fish	8
	Chicken	7
	Beef	2
	Plant protein: tempe	19
	Vegetables: mixed-vegetable soup, bean sprouts, spinach	19
	Fruit: orange, banana	10
	Milk	12
	Food preparation	Prefer easy-to-cook meals
Purchase ready-to-eat food for meals		19
Choose fried, boiled, and steamed cooking methods		19
Cook meals at home		6
Food serving	Provide frequent snacks instead of a meal	17
	Share between siblings	12
	Share between mother-child	10
	Mother hand-feeds her children	9
Parental feeding practices	Provide snack for a reward	19
	Have no fixed time for meals	17
	Put no control on children's food choice	15
Food-coping strategies	Ask for help from relatives, friends, and neighbors	19
	Practice religious rites:	
	Surrender completely to God	19
	Fast on Monday and Thursday for mental strength ^d	15
	Limit portion size	11
	Pay for food on credit	10
	Serve meal for 1 or 2 times, instead of 3 times per day	9
Borrow food or money	4	

^aCategories were derived from key phrases; ^bKey phrases were derived from interviews; ^cThe "4 healthy, 5 perfect" slogan: eat staple food items, food rich in protein, vegetables, and fruit for the "4 healthy" food items; drink milk for the "5 perfect" food items; ^dIslam teaches that fasting on Mondays and Thursdays will make people more passionate and will receive God's blessing.²⁵

Parental Feeding Practices

The mothers believed that food was a good reward for controlling their children, and they used mostly sweets or biscuits in this way. Most of the mothers had no fixed time for eating

meals. Eating outside of the home was very common among children, and most of the mothers could not control their children's food choices. The mothers habitually gave pocket money for their children to buy snacks. The children ate outside the

home by buying food from a food vendor. The mothers felt that it was not easy to encourage their children to eat fruits and vegetables. They also found it was difficult to manage the child to limit consumption of empty-calorie snacks and sweet beverages.

Food-coping Strategies

All of the mothers who were interviewed explained that they had no experience in being hungry. Even when their neighborhood was flooded, they did not face hunger. They said that during the wet season it always flooded in their area. Their social safety net, composed of their neighbors, friends, and extended family, provided them with aid if necessary. The mothers in this study felt that the economic crisis facing the country made their life more difficult, especially in terms of earning a living. Nevertheless, they believed that they should trust in God's will, which reassured them in their lives. Some of the mothers fasted regularly on Mondays and Thursdays, which is part of an Islamic religious ritual to improve mental strength.²⁵ They thanked God for what they received in their lives. If they were short of money for buying food, they simply reduced the frequency of their meals and ate twice, or even once, a day rather than 3 times a day. Some of the mothers borrowed food or money if they were in dire need.

Social and Environmental Context

The respondents of this study lived in the Kampung Melayu area, which was densely populated, in very small houses (about 215 ft²). Their living rooms also served as their bedrooms, whereas their kitchens were at the front of the house and basically provided only enough room for a single stove. Their houses had no yards, and the streets were very narrow, so that only 1 motorbike could pass at a time. The children used the street as their playground or as a meeting place. The neighborhood was next to the Ciliwung River, which flooded during the wet season. The population of Kampung Melayu was of mixed ethnicity and included Betawian (the indigenous ethnicity of Jakarta), Javanese, Sundanese, and Chinese people.²¹ The predominant religion was Islam, but there were also some Christians, Hindus, and Buddhists. Most of mothers said that they were very close emotionally to each other, and many families have

been living in the area for 4 generations. Their occupations were mostly menial workers, small traders, and low-level government employees. Based on the latest Indonesian socioeconomic survey in 2006,²¹ the consumption of Jakarta residents per capita is about 681,774 rupiahs (\$73 US). The average consumption on food expenditure per capita reaches 248,270 rupiahs (\$27 US), and the per capita expenditure on nonfood groups reaches 443,505 rupiahs (\$48 US).

DISCUSSION

This study represents an in-depth examination of the patterns of home food environments among low-income mothers in an urban area of Jakarta. The results provide insight into mothers' perspectives of the social and physical environments affecting their ability to provide food for their families. Little qualitative information is currently available concerning the home food environment patterns of low-income Indonesian families in urban areas with nutritionally at-risk children, particularly with a focus on how mothers' self-efficacy affects these patterns.

This study showed that low-income mothers from an urban area in Jakarta had a high self-efficacy to access and provide food for their families. The mothers interviewed in this study felt that it was not difficult to fulfill their family's need for food. They believed that God would help them in any situation, and that support from their extended family would help them in terms of food.

Most of the mothers in this study had a lack of knowledge regarding health and nutrition, which influenced their competence in providing balanced meals. They did not realize that the food intake of their children would greatly affect their growth and health, both in the present and in the future. The participants also did not understand that their children were actually nutritionally at risk, since they closely observed their children's health only until the age of 3. Most of the mothers reported that when their children were of school age and began at the elementary school, they practically ceased to observe their children's growth and

considered school-age children to be able to take care of themselves. This condition may be related to the government's nutrition program, which focuses more on the mother and on children under 5 years of age.^{26,27} The supervision program of children under 5 emphasizes supervision of weight gain and is conducted through monthly weight analysis at *Posyandu* (integrated health post) and direct observation of physical appearance by visits from a health provider.

The mothers in this study showed that they had a low self-efficacy in providing nutritious food. They lacked the confidence to prepare sufficient meals for their children. The mothers were also unsure of whether they had educated their children properly, and whether the food they provided was correct or incorrect. The mothers had no control in deciding which food items were right for their children. The mothers were also short of creativity in choosing menus. They chose food that only filled the stomach rather than opting for more healthful food. Nevertheless, the neighborhood provided an ample choice of accessible food items in term of price and quality. Most of the mothers had a low ability to choose appropriate meals in terms of nutrient content, variety, and timing.

In the current study, a mother's competency to provide food in her home was influenced largely by the practicality of preparing home food. Most mothers regularly preferred easy-to-prepare and ready-to-eat food. They were likely to provide cheap food items that were high in carbohydrates, low in protein, and low in fiber, although there were many affordable nutritious food items available in their neighborhood. Mothers possessed low self-efficacy to control their children's food choices. Hence, there is a real need for nutritional education to develop a mother's self-efficacy in food choices and to improve her children's growth.

There are 2 polarized opinions regarding nutritional education for low-income, urban mothers.^{28,29} One belief is that low-income groups have sufficient money to eat a palatable and healthful diet as long as they are informed. Another belief is that, in practice, it is impossible to achieve and maintain a healthful

diet when household resources are limited and stretched, regardless of people's knowledge about nutrition.

In the current study, the mothers had adequate self-efficacy regarding the availability of food. However, they had a low self-efficacy regarding the choice, management, and use of the food resources in their neighborhood. Urban mothers in Indonesia are experiencing a nutritional transition, characterized by a shift from home-based food to processed food products.^{4,30} In fact, to reduce the price, some processed food products are not made from enriched whole food. For example, the study found that *baso* (meatball), a favorite food among urban children, was made from starch flour and a little part of meat added with seasoning and artificial flavor. For practicality and economic reasons, mothers were likely to provide a low-price, processed food item. Nevertheless, the mothers were unlikely to complement the low-priced processed food item with other food items to make an overall balanced diet. This change in lifestyle may result in unbalanced food intake and will cause a double burden, since decreased nutrition will ultimately constitute a significant public health problem in this population.²⁷ Low-income, urban mothers have an added disadvantage in this nutritional transition, because of the instability of their family income and their poor knowledge of nutrition, which is related to the observed shift in diet patterns. Consequently, nutritional education is needed for low-income mothers, to improve their self-efficacy and to become competent in providing low-budget and healthful food from their environment.

Appropriate intervention strategies designed to elevate the mothers' feelings of personal efficacy are crucial. Efficacious mothers have more faith in their own abilities during difficult situations, and they are inclined to view problems as energizing challenges, rather than as reasons to give up.²⁹ Urban mothers rely on cash income to purchase food, and Indonesian crises have affected the purchasing power of low-income families.¹⁶ Educating low-income mothers would enhance their ability to choose the right food and would increase their mental strength to cope with the crisis. Direct manipulation of a mother's self-

efficacy in the context of an intervention treatment program is an important direction for future work.

A previous study¹³ has shown that attendance in a 10-week parent-training intervention program, focusing on teaching parents how to effectively interact with their children, resulted in a significant increase in parenting self-efficacy, a decrease in parenting stress, and a substantial improvement in the quality of the parent-child interaction. The intervention design might include information about child development and parenting, exposure to children other than one's own, social and economic support for parenting, and guidance in dealing with children. More specifically, parents were able to receive self-efficacy information derived from homework assignments, vicarious learning, and verbal persuasion via mutual support and reinforcement in a group setting.

Consequently, there is a need to build a self-efficacy-oriented intervention that is tailored to meet the unique needs of low-income mothers who are faced with providing cheap and healthful food for their families. Such an intervention could potentially enhance the quality of parenting behavior and optimize their children's nutrition and health.

The present study had several strengths; first, the use of the Grounded Theory, the semistructured design, and the in-depth interviews allowed findings to emerge that reflected the experience of the participants. Second, this study focused on specific tasks regarding maternal self-efficacy of home food competence in low-income mothers. No previous study in Indonesia had provided this type of qualitative information.

The present study is based on mothers whose children were nutritionally at risk and involved in a school milk supplementation program. The mothers may represent low-income mothers in the urban community. However, findings might be different for mothers with other sociodemographic characteristics, or for those who live in different area, possess different types of jobs, or have different income levels. Thus, the mothers of nutritionally at-risk children are a critical target for nutrition intervention.

IMPLICATIONS FOR RESEARCH AND PRACTICE

This study found that, among low-income urban mothers, the home food environment is influenced mainly by the practicality of preparing home food and the lack of knowledge on health and nutrition. Family-based interventions are needed to improve the mothers' competence in providing nutritious food from available resources in their neighborhoods, and to enhance the awareness of healthful lifestyles for strengthening their physical and emotional well-being.

Family-focused interventions should be relevant to their circumstances and should include several components that address environmental opportunities, resources, and constraints on family choices. This would be an opportunity to provide social support and/or education that enables the provision of healthful meals in the home.

Current work and food programs for Indonesian families, such as the Family Wellness Education Program (*Pendidikan Kesejahteraan Keluarga*) or the Family Awareness of Nutritious Food Program (*Program Keluarga Sadar Gizi*), need to be evaluated to determine how they recognize and address the current reality of low-income parents in urban settings.^{26,27} The current study leads us to recommend that parents need to know not only what to do, but also how to do it, within the constraints of their current circumstances. The modality of the education provided must also match the parents' learning ability and style.³ Intervention in family programs should take advantage of, and build on, the momentum created by family transitions and changes, such as new family members, first babies, and families with school-age children or adolescents.

This study found that the Indonesian food slogan to eat "4 healthy, 5 perfect" food items, as described earlier, is easy to understand but is not providing parents with practical advice on healthful food choices, such as proper portion sizes. However, the Indonesian dietary guideline *13 Pesan Dasar Gizi Seimbang*, or the basic

recommended dietary guideline, is not well accepted. In practice, nutritional advice typically focuses on what to eat, but seldom on how to fit those recommendations into daily life.^{31,32} It is essential for practitioners to consider family psychosocial and environmental interactions when designing dietary recommendations. There is a need to evaluate this current guideline with practical advice that is appropriate for age, socioeconomic status, environment, ethnicity, culture, and religious diversity in Indonesia. Exploring factors that influence family food preparation behavior would provide useful information for future work.

Some important aspects emerging from this study suggest that it would be useful for future research to assess family characteristics, such as time management strategies, family income, coping strategy, religious approach, and parenting style. Further research investigating these relationships among a sufficiently large number of mothers is needed for a quantitative survey.

More research is also needed to explore which factor influences maternal self-efficacy on the home food environment, and its correlation with their children's nutritional status. The belief of maternal self-efficacy may be related to a particular parental personality trait, the level of support available to the parent, how interested the parent is in child care, the quality of the marital relationship, and the degree of psychological stress that is experienced. Further research is needed to understand the differential dimension of maternal self-efficacy on the home food environment, and to expand the definition, measures, and response to non-food-related issues such as parenting practices. Furthermore, validated measurement tools that examine the influence of a mother on the dietary intake needs of children need to be developed, especially in the area of role modeling, rules, and food socialization practices. The tools need to be specific for different racial/ethnic, culture, income, sociodemographic, and social structures. Based on appropriate measurement tools, a better understanding of why some mothers maintain the expectation of proper dietary in-

take of their children and their choices, whereas others appear to neglect these issues, will help educators develop a more effective program for mothers.

Public health intervention, designed with input from the community, is also needed to ensure that a consistent and effective message can be successfully implemented by mothers in a low-income community. Public health strategies need to incorporate intersectoral collaboration and, where appropriate, the active participation and involvement of the community. For people from socioeconomically disadvantaged backgrounds, the approaches should take into account the structural, material, economic, and contextual constraints that shape and circumscribe their lives. We need to develop interventions that are specifically designed with, and for, socioeconomically disadvantaged people. Policies and intervention need to focus on the contexts in which people live and work, and how these influence such things as psychosocial functioning and health-related behavior.

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REFERENCES

1. Arcan C, Neumark-Sztainer D, Hannan P, Berg P, Story M, Larson N. Parental eating behaviors, home food environment and adolescent intakes of fruit, vegetables and dairy foods: longitudinal findings from project EAT. *Pub Health Nutr.* 2007;10:1257-1265.
2. Birch LL, Fisher JO. Mothers' child-feeding practices influence daughters' eating and weight. *Am J Clin Nutr.* 2000;71:1054-1061.
3. Sandefur GD, Meier A. The family environment: structure, material re-

- sources, and child care. In: Brown B, ed. *Key Indicators of Children and Youth Well-being*. New York: Lawrence Erlbaum Associates; 2008:237-257.
4. Garrett J, Ruel MT. The coexistence of child undernutrition and maternal overweight: prevalence, hypotheses, and programme and policy implications. *Matern Child Nutr.* 2005;1:185-196.
5. Reynolds KD, Hinton AW, Shewchuk RW, Hickey CA. Social cognitive model of fruit and vegetable consumption in elementary school children. *J Nutr Educ.* 1999;31:23-30.
6. Bante H, Elliot M, Harrod A, Haire-Joshu D. The uses of inappropriate feeding practices by rural parents and their effect on preschoolers' fruit and vegetable preference and intake. *J Nutr Educ Behav.* 2008;40:28-33.
7. Jabs J, Devine CM, Bisogni CA, Farrell TJ, Jastran M, Wethington E. Trying to find the quickest way: employed mothers' constructions of time for food. *J Nutr Educ Behav.* 2007;39:18-25.
8. Kaplan M, Kiernan NE, James LJ. Inter-generational family conversations and decision making about eating healthfully. *J Nutr Educ Behav.* 2006;38:298-306.
9. Ayala GX, Baquero B, Arrendo EA, Campbell N, Larios S, Elder JP. Association between family variables and Mexican American children's dietary behaviors. *J Nutr Educ Behav.* 2007;39:62-69.
10. Birch LL, Fisher JO, Markey CN, Grimm TK, Sawyer R, Johnson SL. Confirmatory factor analysis of the children feeding questionnaire: a measure of parental attitudes, beliefs and practices about child feeding and obesity proness. *Appetite.* 2001;36:201-210.
11. Stenhammar C, Sarkadi A, Edlund B. The role of parents' educational background in healthy lifestyle practices and attitude of their 6-year-old children. *Public Health Nutr.* 2006;10:1305-1313.
12. Coleman PK, Karraker KH. Self-efficacy and parenting quality: findings and future applications. *Dev Rev.* 1998;18:47-85.
13. Coleman PK, Karraker KH. Maternal self-efficacy beliefs, competence in parenting, and toddler's behavior and developmental status. *Infant Mental Health.* 2003;24:126-148.
14. Scaglioni S, Salvioni M, Galimberti C. Influence of parental attitudes in the development of children's eating behavior. *Brit J Nutr.* 2008;99(Suppl 1):S22-S25.
15. Megawangi R, Zeitlein MF, Colletta ND. The Javanese family. In:

- Zeitlin MF, Megawangi R, Kramer EM, Colleta ND, Babatunde ED, Garman D, eds. *Strengthening the Family: Implication for International Development*. Tokyo: The United Nations University Press; 1995:95-141.
16. Usfar AA. *Household Coping Strategies for Food Security in Indonesia and the Relation to Nutritional Status: A Comparison Before and After the 1997 Economic Crisis* [PhD thesis]. Ruprecht-Karls-University Heidelberg. Stuttgart: Verlag Grauer; 2002.
17. Bandura A. *Self-efficacy in Changing Societies*. Cambridge, UK: Cambridge University Press; 1995.
18. Mistry RS, Lowe E, Benner AD, Chien N. Expanding the family economic stress model: insights from a mixed-methods approach. *J Marriage Fam*. 2008;70:196-209.
19. Berns RM. *Child, Family, School, Community: Socialization and Support*. 4th ed. Fort Worth, TX: Harcourt Brace College Publishers; 1997.
20. Bronfenbrenner U. *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, Mass: Harvard University Press; 1979.
21. BPS-Statistics DKI Jakarta. *Jakarta in Figures 2007*. Jakarta: Statistical Bureau of DKI Jakarta; 2007.
22. Glaser BG, Strauss AL. *The Discovery of Grounded Theory*. Chicago: Aldone; 1967.
23. Sobal J. Sample extensiveness in qualitative nutrition education research. *J Nutr Educ*. 2001;33:184-192.
24. Pidgeon N, Henwood K. Grounded theory: practical implementation. In: Richardson JTE, ed. *Handbook of Qualitative Research Methods for Psychology and Social Sciences*. UK: The British Psychological Society Books; 2000:86-101.
25. Riyad-us-Saliheen. Compiled by Al-Imam Abu Zakariya Yahya bin Sharaf An-Nawawi Ad-Dimashqi. <http://www.witness-pioneer.org/vil/hadeeth/riyad/08/chap229.htm>. Accessed October 15, 2010.
26. Ministry of Health, Republic of Indonesia. *Indonesia Health Profile 2005*. Jakarta: Ministry of Health, Republic of Indonesia; 2007.
27. Ministry of Health, Republic of Indonesia. *Indonesia Basic Health Research in 2007*. Jakarta: Board of Health and Research Department; 2008.
28. Kennedy LN, Hunt C, Hodgson P. Nutrition education program based on EFNEP for low-income women in the United Kingdom: "Friend with Food." *J Nutr Educ*. 1998;30:89-99.
29. Magnuson KS, Duncan GJ. Parents in poverty. In Bornstein MH, ed. *Handbook of Parenting: Social Conditions and Applied Parenting*. Vol. 4. London: Lawrence Erlbaum Associates; 2002.
30. Popkin B. The shift in stages of nutrition transition in the developing world differs from past experiences. *Public Health Nutr*. 2004;5:205-214.
31. Ministry of Health. Republic of Indonesia, *Panduan 13 Pesan Dasar Gizi Seimbang*. Jakarta: Directorate of Community Nutrition, Ministry of Health, Republic of Indonesia; 1995.
32. Ministry of Health. Republic of Indonesia, *Pedoman Umum Gizi Seimbang (Panduan untuk petugas)*. Jakarta: Directorate of Community Nutrition, Ministry of Health, Republic of Indonesia; 2002.

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