BREAKFAST CONSUMPTION BEHAVIORS OF ELEMENTARY SCHOOL CHILDREN IN BANGKOK METROPOLITAN REGION

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Abstract. Family factors influence children's eating behavior. However, there is little research on family correlates of children's breakfast behavior. This study investigated the breakfast consumption behaviors of school-aged children by surveying their parents. One thousand twelve parents of Grade 1-6 students in Bangkok Metropolitan region completed the questionnaire comprising the following topics: general information about parents, general information about school children, parents' knowledge of breakfast consumption, and breakfast consumption behavior in school children. The results indicated that parents did play a role in breakfast preparation. The earlier parents woke up, the higher the chance of children to have breakfast. Most parents (83%) had good knowledge about breakfast goodness. Just over three-quarters (79%) of students had a breakfast daily; with only 1% that never had breakfast daily. Frequency of breakfast consumption tended to decreases, as children growing up. The key barrier of breakfast consumption were lack of time, woke up late, and had no breakfast prepared at home. Without breakfast, the parents reported that their children expressed hunger, moodiness, and the inability to concentrate in class.

Keywords: breakfast, children, parent's knowledge, Bangkok

INTRODUCTION

Children, especially those in elementary schools, need a sufficient amount of energy to support their activities during the day. Their nutrition and lifestyle highly affect their well-being, growth, and development. Breakfast consumption, an important component of nutrition, is a part of a healthy diet and lifestyle that can affect children's health positively (Rampersaud *et al*, 2005). Children who consume breakfast show enhanced appetite regulation and control of short-term food intake, and significant differences in the metabolic and endocrine responses compared to those without breakfast consumption (Astbury *et al*, 2011). Besides providing energy, many studies also show that breakfast consumption helps in improving cognitive learning and other health

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benefits (Reddan *et al*, 2002; Rampersaud *et al*, 2005; Adolphus *et al*, 2013). Breakfast helps increase self-reported alertness in both male and female students. It also improves visual spatial memory and positive moods in male students (Widenhorn-Müller *et al*, 2008). Consuming breakfast also improves glucose control, which helps reduce factors contributing to obesity and diabetes. Although breakfast is well-known for its benefits, many people still skip it due to lack of hunger on waking, not enough time in the morning, and lack of convenience (Reddan *et al*, 2002; Basch, 2011; Leidy, 2013).

There are many effects of skipping breakfast, both in the short and long terms. In the short-term, omission of breakfast may disrupt the distribution of energy intake during the day and result in fewer and larger meals being consumed (Astbury *et al*, 2011). In the long-term, for children who skip breakfast, not consuming fruits and vegetable but consuming bread and soft drinks are associated with obesity (Kyriazis *et al*, 2012; Watanabe, 2014).

Patterns of breakfast consumption during childhood can form lifelong dietary habits. Children who are likely to skip breakfast are growing up to be breakfast skippers. Parental influence plays a big role in dietary habits of children, because they act as role models for their children, and they are the ones who manage and prepare food for children from an early age. Children were very likely to consume breakfast daily if their parents have high parental modeling (Johnson *et al*, 2011; Te Velde *et al*, 2014). Studies have also shown that a family environment with eating and living in two-parent families is correlated with high breakfast consumption compared to a single parent family and socioeconomic deprivation is inversely associated with breakfast consumption (Pearson *et al*, 2009; Vereecken *et al*, 2009; Levin *et al*, 2012).

Parents also have a great impact on the prevalence of obesity in adolescents, not only genetically. Higher education level of parents suggested a decrease in female American adolescents' risk of obesity by increasing self-esteem of children because parents care about them (Crossman *et al*, 2006). In addition to the preparation of breakfast for children, parents' knowledge and understanding of importance of breakfast consumption are crucial to promote good dietary habits in children.

Thailand is a developing country with a lower income comparing to the United States and other developed countries. It has been undergoing social and economic transitions during the past four decades. The evidence is shown by increases in life expectancy at birth, declines in total fertility, and the change in economic structure from agricultural to industrial as evidenced by the increase of gross domestic product share (Kosulwat, 2002). Bangkok metropolitan areas are urbanized rapidly. Studies in Malaysia and the United Arab Emirates indicated that urbanization leads to shifts in the dietary habits of people. People rush to work in the morning and consume high-fat foods and large portions of meat, causing changes in health and increased prevalence of chronic diseases (Noor, 2002; Ng *et al*, 2011). There is also a shift in the proportion of food prepared at home to that purchased like ready-to-eat food among the Thai population (Kosulwat, 2002). Currently, over 20% of the Thai adult population is classified as overweight and obese, using the World Health Organization (WHO) definition (Jitnarin *et al*, 2011). The prevalence of overweight and obesity in the Thai population has also been increasing, with the

ongoing transition of overweight and obesity to people with lower socioeconomic status (Aekplakorn *et al*, 2007).

Research has demonstrated that family and other socioeconomic factors influence children's eating behaviors. In Thailand however, there is little research on family correlates of children's breakfast behaviors. This study explored the family and social factors that influence breakfast consumption of children. Previous studies on students in Grades 3-4 and 5-6 suggested that one of the common reasons that students did not have regular breakfast or omit breakfast was that there was no breakfast prepared at home.

This study attempted to explore the perception of how important the breakfast is and the knowledge about nutrition of the parents. Breakfast consumption behaviors of school children (Grades 1 to 6) in Bangkok metropolitan areas was evaluated by collecting data from parents of those children. The questionnaires are used to survey breakfast consumption behaviors in children, types of breakfast consumed, factors relevant to breakfast consumption behaviors in children, and parents' understanding about nutrition and importance of breakfast consumption.

MATERIALS AND METHODS

Sampling plan

Schools subjected to survey were chosen by using stratified multistage sampling. The first step divided Bangkok into three parts, comprising inner city, urban fringe, and suburbs. The metropolitan region was divided into two parts: inside the municipal area and outside the municipal area. Each of the five groups must have at least 123 students, giving 738 students.

The second step was to use probability proportional to size to obtain samples: 600 samples in Bangkok and 500 samples in the metropolitan region (315 samples in Pathum Thani, Nonthaburi, and Nakhon Pathom; and 185 samples in Samut Prakan and Samut Sakhon). The number of schools involved in the survey was 19 schools.

Materials

Questionnaires used in this study for breakfast consumption behaviors of school children in Bangkok metropolitan areas (Grades 1-6) were developed in accordance with the purposes of study and were verified by three experts in nutrition field. The questionnaire was first pretested with 33 respondents and was validated with a Cronbach's alpha coefficients (>0.7). Questionnaires were comprised of five parts: general information about parents, general information about school children, parents' knowledge about breakfast consumption, behavior of breakfast consumption of school children, and patterns of breakfast.

Data analysis

Data were analyzed with PASW Statistics® (version 18; IBM, Armonk, NY). Socio-demographic information is presented as descriptive statistics. The INMU-ThaiGrowth, the program used for determination of Thai population's nutritional status (age: ≤19 years) based on age, weight, and height is used for assessment of children's nutritional status (Institute of Nutrition, 2002). Proportion of children by breakfast consumption frequency were compared using chi-square test and the significance level was set at $p<0.05$.

Ethical considerations

Mahidol University Review Board for Human Research Protection (Ref Nº 2012/116.1312; 2013 Jan 24) approved the project protocol and questionnaires. Written informed consent was obtained

from the parents or caretakers of all participants.

RESULTS

Schools involved in the survey

Eleven schools (564 students) in Bangkok, 8 schools (456 students) in metropolitan areas: 5 schools (312 students) in Nonthaburi, Pathum Thani, and Nakhon Pathom; and 3 schools (144 students) in Samut Sakhon and Samut Prakan, respectivelywere involved in the study.

The number of questionnaires returned and analyzed were 564 questionnaires in Bangkok, and 448 questionnaires in the metropolitan areas.

General information about respondents

There were 1,012 respondents. Most of them were women (73.4%), and about one-fourth were men. Eighty-nine percent of respondents were fathers or mothers with an average age of 39.8 years old. More than half of respondents (57.3%) had an educational level of primary or secondary school, and only 24.5% graduated with a bachelor degree or higher. Forty-one point seven percent of the respondents were employees and business owners with an average monthly income of THB 10,000-20,000. Eighty-two percent of respondents were responsible for children's breakfast preparation (Table 1). During weekdays, about 69% of respondents awoke before 6:00 AM.

General information about children

There were 564 children involved in the survey in Bangkok, with an equal ratio of boys and girls. For the metropolitan areas, there were 221 boys and 227 girls. The nutritional status of Bangkok and metropolitan areas' children was not very different: 64.3% had proper weight, 12.9% were underweight, and 22.7% were overweight to obese (Table 1). Children in Bangkok and the metropolitan areas received similar amounts of pocket money each day, an average of THB 37.4/day. Lunch and transportation expenses were higher in Bangkok, while breakfast expenses and saving amounts were similar. Most children awoke between 6:00 to 6:30 AM on weekdays and departed their home from 7:00 to 7:30 AM.

Breakfast consumption behavior in children

Seventy-nine percent of children consumed breakfast every day, while about 20% did so irregularly and only 1% never consumed breakfast. The proportion of breakfast consumption in children Grades 1-3 (82.9%) was significantly higher than children Grades 4-6 (75.8 %) was (p=0.013). As children grow up, the frequency of breakfast consumption decreases. However, there was no difference between children in private school and public school in the frequency of breakfast consumption (p=0.121). Children's breakfast consumption behaviors correlated with children's and parent's wake-up time. The proportion of breakfast consumption in children who woke up before 6:00 AM (81.2%) was significantly higher than children who woke up at 6:00 to 6.30 AM (79.2 %) (p=0.007). The later children woke up, the less frequently they consumed breakfast. Children whose parents woke up before 6:00 AM (80.9%) tended to eat breakfast significantly more often (p=0.015) than children whose parents woke up after 6:00 AM (50-78%) (Table 2).

Table 3 shows the reasons that children do not consume breakfast. The three main reasons are not feeling hungry (51.2%), not having time or getting up late (19.6%), and no breakfast prepared at home (18.7%). These reasons may be

Table 1
Descriptive characteristics of children and family.

Characteristic	Number (%)
Gender of children	
Boy	503 (49.7)
Girl	509 (50.3)
Nutritional status of children	
Underweight	58 (5.7)
Slightly underweight	73 (7.2)
Normal	651 (64.3)
Slightly overweight	79 (7.8)
Overweight	70 (6.9)
Obese	81 (8.0)
Area	
Bangkok	564 (55.7)
Metropolitan	448 (44.3)
Gender of respondents	
Male	269 (26.6)
Female	743 (73.4)
Relationship of respondents and students	
Parent	901 (89.0)
Grandparent	58 (5.7)
Relative	48 (4.7)
Other	5 (0.5)
Respondent education level	
Primary	291 (28.8)
Secondary	288 (28.5)
Diploma	185 (18.3)
Bachelor	225 (22.2)
Master or higher	23 (2.3)
Family income (THB/month)	
<10,000	228 (22.5)
10,001-20,000	422 (41.7)
20,001-30,000	183 (18.1)
30,001-40,000	84 (8.3)
40,001-50,000	42 (4.2)
> 50,000	53 (5.2)
Prepare breakfast for children	
Yes	830 (82.0)
No	182 (18.0)

[a]Weight for height Z-score: <-2 SD, underweight; -1.5 to -2 SD, slightly underweight; -1.5 to +1.5 SD, normal; > +1.5 to +2 SD, slightly overweight; > +2 to +3 SD, overweight; >+3 SD, obese.

Table 2
The proportion of breakfast consumption frequency in children.

	Always *n* (%)	Sometimes *n* (%)	Never *n* (%)	*p*-value
Level of education				
Grade 1 to 3	418 (82.9)	80 (15.9)	6 (1.2)	0.013
Grade 4 to 6	385 (75.8)	118 (23.2)	5 (1.0)	
Type of school				
Public	569 (77.9)	151 (20.7)	10 (1.4)	0.121
Private	234 (83.0)	47 (16.7)	1 (0.3)	
Children's wake up time				
Before 6:00 AM	277 (81.2)	64 (18.8)	0 (0.0)	0.007
6:00 to 6:30 AM	412 (79.2)	101 (19.5)	7 (1.3)	
6:30 to 7:00 AM	110 (76.9)	30 (21.0)	3 (2.1)	
After 7:00 AM	4 (50.0)	3 (37.5)	1 (12.5)	
Parent's wake up time				
Before 6:00 AM	565 (80.9)	126 (18.1)	7 (1.0)	0.015
6:00 to 6:30 AM	181 (78.0)	50 (21.6)	1 (0.4)	
6:30 to 7:00 AM	52 (72.2)	17 (23.6)	3 (4.2)	
After 7:00 AM	5 (50.0)	5 (50.0)	0 (0.0)	
Total	803 (79.3)	198 (19.6)	11 (1.1)	

p-value by Pearson's chi-square test.

due to parents' were being rushed in the morning.

The parents reported the feeling of the children when they skipped breakfast on the day they went to school as: hungry, having a stomachache, moody, and unable to concentrate in class (data not shown).

Parents' understanding of breakfast consumption

More than 80% of respondents answered correctly questions regarding breakfast consumption. The highest proportion of parents who had high score on understanding the importance of breakfast consumption was found in parents with Bachelor degree or higher (94%) compared to parents with secondary (90.5%) and primary (83.5%) education levels (p=0.002), respectively. However, breakfast consumption did not differ among children whose parents had different education levels (p=0.365) (Table 4).

DISCUSSION

Previous studies on the breakfast consumption of school children in Thailand during the years 2008 to 2011 have shown that children who never consumed breakfast or consumed breakfast sometimes accounted for 35%-60% (Nuanmusik *et al*, 2008; Sirichakwal *et al*, 2009; Satheannoppakao and Akeplakorn, 2011). The older the child, the lower the frequency of breakfast consumed, albeit at a lower rate than previously reported (Chittchang *et al*, 2005). The findings in this study where about 80% of students have regular breakfast consumption suggest that Thai

Table 3
Reason for skipping breakfast in children (*N*=209).

Reason	Grade 1 to 3 *n* (%)	Grade 4 to 6 *n* (%)	Total *n* (%)
Not hungry	42 (49.4)	65 (52.4)	107 (51.2)
No time or wake up late	19 (22.4)	22 (17.7)	41 (19.6)
No breakfast prepared at home	15 (17.6)	24 (19.4)	39 (18.7)
Not accustomed to breakfast	6 (7.1)	10 (8.1)	16 (7.7)
Others	3 (3.5)	3 (2.4)	6 (2.9)

Table 4
Parents' understanding of breakfast consumption and breakfast consumption frequency in children.

	Parents' education level			
	Bachelor or higher (*n*=248)	Secondary and diploma (*n*=473)	Primary (*n*=291)	*p*-value
Score[a]				
High	233 (94.0)	428 (90.5)	243 (83.5)	0.002
Moderate	14 (5.6)	42 (8.9)	47 (16.2)	
Low	1 (0.4)	3 (0.6)	1 (0.3)	
Breakfast consumption				
Always	204 (82.3)	379 (80.1)	220 (75.6)	0.365
Sometimes	41 (16.5)	89 (18.8)	68 (23.4)	
Never	3 (1.2)	5 (1.1)	3 (1.0)	

[a]Score of parents' understanding of breakfast consumption (total 10 points): <5, low; 5-7, moderate; >8, high.
p-value by Pearson's chi-square test.

children have developed proper breakfast consumption behaviors.

The percentage of parents that prepare breakfast for children was about the same as the number of children who have breakfast every day. Therefore, the main factor that relates to breakfast consumption behaviors in children was breakfast prepared at home, which correlates with the results found in a 2009 study where no breakfast preparation was the main reason for children not having breakfast. (Sirichakwal *et al*, 2009). In this study, the wake-up time of children also affects the percentage of children who have breakfast. The earlier children wake up, the more likely they will eat breakfast. About 52% of children wake up during 6:00 AM to 6:30 AM, and 69% of parents wake up before 6:00 AM. This report showed that children usually wake up after parents by approximately 30 minutes; therefore, the earlier parents wake up, the higher the chance of children having breakfast.

Studies reported that the main reason for American and Swedish children

skipping breakfast was the desire to diet due to self-reported weight perceptions (Sjoberg *et al*, 2003; Rampersaud *et al*, 2005; Zullig *et al*, 2006). Nevertheless, this study indicated that, unlike children in other countries, Thai children do not consume breakfast because they are not hungry and not because they want to diet. This result coincides with the results found in Thailand and Australia where children do not consume breakfast because they do not feel hungry (Shaw, 1998; Redden *et al*, 2002; Nuanmusik *et al,* 2008; Sirichakwal *et al*, 2009). Aside from not feeling hungry, other reasons for Thai children not consuming breakfast include waking up late and lack of time for eating, which is similar to the results found in Australian and English adolescents (Mullan *et al*, 2014).

About 57% of respondents had education levels of only primary or secondary school, and about 42% of respondents were employees with a family monthly income that ranged THB 10,000-20,000. This finding was similar to previous studies that showed that parents with higher education levels have children who regularly consume breakfast (Patrick and Nicklas 2005; Crossman *et al*, 2006). This study shows that Thai parents with higher educational level, such as Bachelor degree have the highest scores on understanding the importance of breakfast compared to other groups. However, parents' knowledge of breakfast eating was found to have no significant difference on breakfast consumption behavior in children.

In conclusion, wake-up time of parents plays a major role in the breakfast consumption of children. The earlier parents get up, the higher the chances of children to have breakfast. Most parents have good knowledge about breakfast. Most students have breakfast daily, with only 1% who have never had breakfast. Parents also play a role in children's eating behaviors through their attitude and eating patterns. The reasons for children not to consume breakfast are the lack of time and having no breakfast prepared at home. Without breakfast, children expressed hunger, moodiness, and the inability to concentrate in class.

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REFERENCES

Adolphus K, Lawton CL, Dye L. The effects of breakfast on behavior and academic performance in children and adolescents. *Front Hum Neurosci* 2013; 7: 425.

Aekplakorn W, Hogan MC, Chongsuvivatwong V, *et al*. Trends in obesity and associations with education and urban or rural residence in Thailand. *Obesity* 2007; 15:

3113-21.

Astbury NM, Taylor MA, Macdonald IA. Breakfast consumption affects appetite, energy intake, and the metabolic and endocrine responses to foods consumed later in the day in male habitual breakfast eaters. *J Nutr* 2011; 141: 1381-9.

Basch CE. Breakfast and the achievement gap among urban minority youth. *J Sch Health* 2011; 81: 635-40.

Chittchang U, Sirichakwal PP, Sranacharoenpong K, Prasertsom P, Chanbang P. Snack behaviors of children age 3-15 years. Report submitted to the Thai Health Promotion Foundation, 2005.

Crossman A, Anne Sullivan D, Benin M. The family environment and American adolescents' risk of obesity as young adults. *Soc Sci Med* 2006; 63: 2255-67.

Institute of Nutrition, University Mahidol. INMU Thai Growth program [CD-ROM] (using weight for height references from national survey). Nonthaburi: Department of Health, Ministry of Public Health, 2002.

Jitnarin N, Kosulwat V, Rojroongwasinkul N, Boonpraderm A, Haddock CK, Poston WSC. Prevalence of overweight and obesity in Thai population: results of the National Thai Food Consumption Survey. *Eat Weight Disord* 2011; 16: e242-9.

Johnson L, Van Jaarsveld CH, Wardle J. Individual and family environment correlates differ for consumption of core and non-core foods in children. *Br J Nutr* 2011; 105: 950-9.

Kosulwat V. The nutrition and health transition in Thailand. *Public Health Nutr* 2002; 5: 183-9.

Kyriazis I, Rekleiti M, Saridi M, *et al*. Prevalence of obesity in children aged 6-12 years in Greece: nutritional behaviour and physical activity. *Arch Med Sci* 2012; 8: 859-64.

Leidy HJ. The benefits of breakfast consumption to combat obesity and diabetes in young people. *Am J Lifestyle Med* 2013; 7: 99-103.

Levin K, Kirby J, Currie C. Family structure and breakfast consumption of 11-15 year old boys and girls in Scotland, 1994-2010: a repeated cross-sectional study. *BMC Public Health* 2012 Mar 22; 12: 228.

Mullan B, Wong C, Kothe E, O'Moore K, Pickles K, Sainsbury K. An examination of the demographic predictors of adolescent breakfast consumption, content, and context. *BMC Public Health* 2014; 14: 264.

Ng SW, Zaghloul S, Ali H , *et al*. Nutrition transition in the United Arab Emirates. *Eur J Clin Nutr* 2011; 65: 1328-37.

Noor MI. The nutrition and health transition in Malaysia. *Public Health Nutr* 2002; 5: 191-5.

Nuanmusig C, Sirichakwal PP, Yamborisut U, Banjong O, Kamchansupphasin A. Breakfast behaviors and dietary pattern of school children: case study of grade 5 and 6 of school children in Bangkok area. Report submitted to Nestle' (Thai) Ltd. Bangkok: Institute of Nutrition, Mahidol University, 2008.

Patrick H, Nicklas TA. A review of family and social determinants of children's eating patterns and diet quality. *J Am Coll Nutr* 2005; 24: 83-92.

Pearson N, Biddle SJH, Gorely T. Family correlates of breakfast consumption among children and adolescents. A systematic review. *Appetite* 2009; 52: 1-7.

Rampersaud GC, Pereira MA, Girard BL, Adams J, Metzl JD. Breakfast habits, nutritional status, body weight, and academic performance in children and adolescents. *J Am Diet Assoc* 2005; 105: 743-60.

Reddan J, Wahlstrom K, Reicks M. Children's perceived benefits and barriers in relation to eating breakfast in schools with or without universal school breakfast. *J Nutr Educ Behav* 2002; 34: 47-52.

Satheannoppakao W, Aekplakorn W. The report of Thailand population health examination survey IV (Child Health). Nonthaburi: The Graphico System, 2011 [in Thai].

Shaw ME. Adolescent breakfast skipping: an Australian study. *Adolescence* 1998; 33: 851-62.

Sirichakwal PP, Kamchansupphasin A, Teeratontikanon K, Pornaimmongkol O. Breakfast behaviors of Grades 3-4 school children in Bangkok. Report submitted to Aziam Burson-Marsteller (ABM) Bangkok, Thailand. Bangkok: Institute of Nutridion, Mahidol University, 2009 [in Thai].

Sjoberg A, Hallberg L, Hoglund D, Hulthen L. Meal pattern, food choice nutrient intake and lifestyle factors in the Goteborg Adolescence Study. *Eur J ClinNutr* 2003; 57: 1569-78.

Te Velde S, ChinAPaw M, De Bourdeaudhuij I, *et al*. Parents and friends both matter: simultaneous and interactive influences of parents and friends on European schoolchildren's energy balance-related behaviours – the ENERGY cross-sectional study. *Int J Behav Nutr Phys Activ* 2014; 11: 82.

Vereecken C, Dupuy M, Rasmussen M, *et al*. Breakfast consumption and its sociodemographic and lifestyle correlates in schoolchildren in 41 countries participating in the HBSC study. *Int J Public Health* 2009; 54 (suppl): 180-90.

Watanabe Y, Saito I, Henmi I, *et al*. Skipping breakfast is correlated with obesity. *J Rural Med* 2014; 9: 51-8.

Widenhorn-Müller K, Hille K, Klenk J, Weiland U. Influence of having breakfast on cognitive performance and mood in 13-to-20-year-old high school students: results of a crossover trial. *Pediatrics* 2008; 122: 279-84.

Zullig K, Ubbes VA, Pyle J, Valois R. Self-reported weight perceptions. Dieting behavior, and breakfast eating among high school adolescents. *J Sch Health* 2006; 76: 87-92.