

PREDICTING FACTORS OF PRESCHOOLER'S PARENTAL FEEDING BEHAVIORS,
URBAN THAILAND



A Dissertation Submitted in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy in Nursing Science

Field of Study of Nursing Science

Faculty of Nursing

Chulalongkorn University

Academic Year 2018

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ปัจจัยทำนายพฤติกรรมกรให้อาหารเด็กวัยก่อนเรียนของบิดา-มารดา
ในเขตชุมชนเมือง ประเทศไทย



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาพยาบาลศาสตรดุษฎีบัณฑิต
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ปีการศึกษา 2561
ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

ชลลดา จงสมจิตต์ : ปัจจัยทำนายพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดา-มารดา ในเขตชุมชนเมือง ประเทศไทย. (

PREDICTING FACTORS OF PRESCHOOLER'S PARENTAL FEEDING BEHAVIORS, URBAN THAILAN

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การศึกษาความสัมพันธ์เชิงพรรณานี้ มีวัตถุประสงค์เพื่อศึกษาปัจจัยทำนาย อิทธิพลทางตรงและ ทางอ้อมของพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดา-มารดา ในเขตชุมชนเมือง ประเทศไทย โดยใช้ทฤษฎีการดูแลตนเองของโอเรียมเป็นกรอบแนวคิดในการศึกษา กลุ่มตัวอย่างจำนวน 443 คน มาจากการสุ่มแบบหลายขั้นตอน เป็นบิดา/มารดาของเด็กวัยก่อนเรียนจากโรงเรียน 11 แห่ง ในเขตกรุงเทพมหานคร และเขตเทศบาลนครทั่วประเทศไทย เก็บรวบรวมข้อมูลจากกลุ่มตัวอย่างโดยใช้แบบสอบถามจำนวน 6 ชุด ที่ได้รับการตรวจสอบแล้วว่า มีความตรงตามเนื้อหา ความตรงเชิงโครงสร้าง และความเที่ยง อยู่ในเกณฑ์ที่ยอมรับได้ เก็บข้อมูลในเดือนพฤศจิกายน 2561-พฤษภาคม 2562 กลุ่มตัวอย่างส่วนใหญ่เป็นมารดา (71%) ครึ่งหนึ่งของกลุ่มตัวอย่างมีอายุระหว่าง 31-40 ปี (50.3%) หนึ่งในสามของกลุ่มตัวอย่างมีอาชีพรับจ้าง (34.3%) กลุ่มตัวอย่างส่วนใหญ่มีบุตรจำนวน 2 คน (43.1%) และ 1 คน (39.7%) การศึกษาครั้งนี้ทดสอบเส้นทางการอิทธิพลความสัมพันธ์ระหว่างตัวแปรด้วยโปรแกรม AMOS 22

ผลการศึกษาพบว่า โมเดลทดสอบเส้นทางการอิทธิพลของพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนเป็นโมเดลระบุพหุติ ซึ่งถือว่ามีความสอดคล้องที่ดีกับข้อมูลเชิงประจักษ์ และสามารถอธิบายความผันแปรของพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนได้ 56 เปอร์เซ็นต์ โดยทัศนคติที่มีต่อการให้อาหารเด็กวัยก่อนเรียนมีอิทธิพลทางตรงด้านบวกต่อพฤติกรรมการให้อาหารเด็กวัยก่อนเรียน ($\beta=0.17$) และมีอิทธิพลทางอ้อมด้านบวกผ่านประโยชน์ของการให้อาหารเด็กวัยก่อนเรียน ($\beta=0.16$) ส่วนบริโภคนิสัยของบิดา-มารดามีอิทธิพลทางตรงด้านบวกต่อพฤติกรรมการให้อาหารเด็กวัยก่อนเรียน ($\beta=0.36$) และมีอิทธิพลทางอ้อมด้านบวกผ่านประโยชน์ของการให้อาหารเด็กวัยก่อนเรียน ($\beta=0.43$) นอกจากนี้ อุปสรรคในการให้อาหารเด็กวัยก่อนเรียนมีอิทธิพลทางตรงด้านลบต่อพฤติกรรมการให้อาหารเด็กวัยก่อนเรียน ($\beta=-0.20$) และมีอิทธิพลทางอ้อมด้านลบผ่านประโยชน์ของการให้อาหารเด็กวัยก่อนเรียน ($\beta=-0.16$) ส่วนประโยชน์ของการให้อาหารเด็กวัยก่อนเรียนมีอิทธิพลทางตรงด้านบวกต่อพฤติกรรมการให้อาหารเด็กวัยก่อนเรียน ($\beta=0.29$) ซึ่งตัวแปรปัจจัยทำนายทุกตัวมีอิทธิพลต่อพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนอย่างมีนัยสำคัญทางสถิติที่ระดับ .05

ผลการศึกษานี้แสดงให้เห็นว่า ปัจจัยที่มีอิทธิพลมากที่สุดต่อพฤติกรรมการให้อาหารเด็กวัยก่อนเรียน คือ บริโภคนิสัยของบิดา-มารดา ประโยชน์ของการให้อาหารเด็กวัยก่อนเรียน อุปสรรคในการให้อาหารเด็กวัยก่อนเรียน และทัศนคติที่มีต่อการให้อาหารเด็กวัยก่อนเรียน ตามลำดับ การประเมินปัจจัยทำนายดังกล่าวช่วยให้พยาบาลเด็กสามารถพัฒนาการพยาบาลในการส่งเสริมพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดา-มารดาในเขตชุมชนเมือง ประเทศไทย และส่งเสริมให้เด็กวัยก่อนเรียนมีสุขภาพที่ดีต่อไป

สาขาวิชา พยาบาลศาสตร์

ปีการศึกษา 2561

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5677402336 : MAJOR NURSING SCIENCE

KEYWORD: PRESCHOOLER'S PARENTAL FEEDING BEHAVIORS, PARENTS OF PRESCHOOLERS, URBAN THAILAND

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 PREDICTING FACTORS OF PRESCHOOLER'S PARENTAL FEEDING BEHAVIORS, URBAN THAILAND.
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This descriptive correlational study aimed to identify the predicting factors and to examine direct and indirect relationships of preschoolers' parental feeding behaviors (PFB), urban Thailand. The conceptual framework was developed guided by Orem's self-care theory. A Multi-stage sampling was used to recruit 443 parents of preschoolers from 11 schools in Bangkok and city municipalities in all regions of Thailand. Six questionnaires demonstrated acceptable content and construct validity, and reliability were used to ask all participants to complete all questionnaires. Data were collected from November 2018 to May 2019. Most of the participants were mothers (71%). Half of them were aged 31-40 years (50.3%). One third of the participants were employee (34.3%). Most of them had 2 children (43.1%) and one child (39.7%). Path analysis (AMOS 22) was used to test the relationships among variables.

For the findings, the hypothesized path model of the PFB among preschoolers' parents, urban Thailand was analyzed. A just-identified model was presented, which meant a perfect fit. The hypothesized model fit the empirical data and could explain 56% ($R^2=.56$) of the variance of the PFB. Parental feeding attitude had a positive direct relationship ($\beta=0.17$), and had a positive indirect relationship with the PFB through benefits of PFB ($\beta=0.16$). Parental eating habits had a positive direct relationship ($\beta=0.36$), and had a positive indirect relationship with the PFB through benefits of PFB ($\beta=0.43$). Barriers to PFB had a negative direct relationship ($\beta=-0.20$), and had a negative indirect relationship with the PFB through benefits of PFB ($\beta=-0.16$). Moreover, benefits of PFB has a positive direct relationship with the PFB ($\beta=0.29$). All independent variables had significant relationships with the PFB at the .05 level.

The findings indicated that the highest impact factor influencing the PFB was parental eating habits, followed by the benefits of PFB, the barriers to PFB, and parental feeding attitude respectively. Identifying these variables can help pediatric nurses to develop interventions specific to preschoolers' parents in urban, Thailand to improve their feeding behaviors as well as preschooler's health.

Field of Study: Nursing Science

Student's Signature

Academic Year: 2018

Advisor's Signature

Co-advisor's Signature

ACKNOWLEDGEMENTS

This research could not have been successfully completed without the support, confidence, and unconditional love from many people. Firstly, I would like to express my gratitude to my advisor, Associate Professor Dr. Waraporn Chaiyawat and my co-advisor, Assistant Professor Dr. Branom Rodcumdee for their valuable advice, guidance, motivation, and support in Ph.D. living, giving me the great opportunity knowing the process of scientific learning and understanding research working. I really appreciate the motivation my Ph.D. to gain the achievement and I feel very lucky to be trained underneath them.

I am greatly thankful to the experts who provide me with very helpful suggestions and comments for revising and refining my instruments. I am also deeply grateful to my dissertation committees: Associate Professor Dr. Jintana Yunibhand, Assistant Professor Dr. Sunida Preechawong, Professor Dr. Sirichai Kanchanawasee, and Assistant Professor Dr. Jariya Wittayasoporn for their helpful suggestions, encouragement, and guidance. I am indebted to all participants who participated in this study for their trust and commitment; and also thanks to my family to their unconditional love, support, and motivate throughout my study life.

I would like to express my sincere thanks to the 100th Anniversary Chulalongkorn University Fund for Doctoral Scholarship for research grants. I am indebted to my participants who participated in this study for their trust and commitment and also thank all school's directors and all kindergarten teachers for their cooperation and their assistance during data collection process. Without their kind helps, this study would have not been possible.

Chollada Jongsomjitt

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CHAPTER I

INTRODUCTION

Background and significance of the study

Feeding behaviors are important child-rearing activities of parents in taking care of their children regarding food intake. The activities parents perform feeding behaviors are called parental feeding behaviors (PFB) which are the parents' activities in seeking information, making decision, and taking action in providing healthy foods, providing pleasant eating environment, and enhancing good eating behaviors for their children (Lusmilasari, 2014). PFB is very significant for young children particularly in preschoolers because this age is a golden period for child's growth and development. Moreover, this age is also important period for continually establishing eating behaviors which can predict personal eating habits and health status of that person in adulthood (Ashcroft, Semmler, Carnell, van Jaarsveld, & Wardle, 2008).

Due to self-care limitation of preschooler, parents are dependent-care agent who performs dependent-care for the preschoolers (dependent person) to meet their therapeutic self-care demand regarding the life processes, the maintenance of the integrity of human structure and functioning, and the general well-being (Hanuchareonkul, 1997; Orem, 2001). Dependent-care is learned behavior that has a personal characteristic to achieve or to move toward achievement of result (deliberate action). Capabilities of dependent-care agent to engage in the operations essential for dependent person are called dependent-care agency, which are activities in performing seeking information (estimative operation), making judgement and decision (transitional operation), and taking selected actions (productive operation) to meet the therapeutic self-care demand of dependent person (Hanuchareonkul, 1997; Orem, 2001).

Because preschoolers have low ability to provide and select healthy food and adequate nutrition by their own, they need helps from parents who are primary caregivers to meet their needs in promoting growth, physical activity, cognition, emotional growth, immune function (Ball, Bindler, & Cowen, 2009; Singhasame, Suwanwaha, & Sarakshetrin, 2017), as well as eating behaviors of preschoolers in long

term (Ek et al., 2016; Pulley, Galloway, Webb, & Payne, 2014). However, previous evidences reported that Thai children perform poor eating behaviors, such as eating more unhealthy foods with too many calories, sugar, fat, and sodium (Kanpheungton, 2010, Mahachoklertwattana, 2006). Moreover, the rate of overweight and obesity of young Thai children especially in urban is rapidly increasing (Pediatric Society of Thailand, 2014). In 2015-2016, 8.2% of 10,942 Thai children aged less than 5 years are obese (National Statistical Office, 2017), and the most was found in urban area (Jitnarin et al., 2011; National Statistical Office, 2017).

Urbanization and expansion of city bring about new lifestyle of Thai people. Most people including parents have to work outside the household. New trend of food of urban life becomes easy and fast. Home-made meals are rarely seen and are being replaced by ready-to-cook and ready-to-eat foods bought from local markets, food stalls, supermarkets or big department stores (Kosulwat, 2002). At present, most parents especially in urban area send their preschoolers to child care center or school in daytime. Some couples have another person who helps them taking care of their children instead, such as grandparents, relatives, or baby-sitters. Even though parents sometimes are not able to take care of their children by their own, they remain primary caregivers who have responsibility in knowing what and how much their child eats every day.

Nevertheless, many studies examined in urban area presented that some Thai parents don't have enough time to prepare and provide healthy food. They always purchase convenience foods without concerning the food quality (Polsiri, 2008; Thongtaeng & Seesawang, 2012). They always provide unhealthy foods for their children, such as crispy junk foods (Ivanovitch, 2007), high-calorie nutrient-poor foods (Mo-Suwan, 2011), candy, cookies, sweetened drinks, chocolate (Yamborisut & Mo-suwan, 2014), and instant noodle (Aramrom & Jantaweemuang, 2019). In addition, parents always provide too large portion sizes (Peungposop, 2011), eat unhealthy foods in front of children, add sugar in child's foods (Aramrom & Jantaweemuang, 2019), add fish sauce in child's food (Poonperm, 2016), pressure children to eat (Kanpheungton & Schiffman, 2007), let children eat while watching TV, smart phone, or computer (Mo-Suwan, 2011).

These inappropriate PFB can cause of poor eating behaviors and health problems in children. For example, children including preschoolers always ate whenever they want, and always ate unhealthy food, such as candy, sweetened drink, and instant noodle (Wannawilai, Thongmeekhuan, & Ampansirirat, 2014). They ate too much of sausage, fried chicken and pork, but less fruits, vegetables, and key nutrients (calcium, vitamins, and fiber) (Kanpheungton, 2010). Poor eating behaviors of children will directly negative affect on their health, such as poor nutrition, growth abnormally, weight problems (underweight, overweight, and obesity) (Thongtaeng & Seesawang, 2012) and have more infections (Langendijk et al., 2003). Overweight and obesity in childhood are at high risk for preventable serious health problems, such as diabetes mellitus, hypertension, dyslipidemia, coronary heart disease (Langendijk et al., 2003; Sakunwanwong & Saengsawang, 2018).

Therefore, enhancing appropriate preschooler's PFB is a key to promote children's health, as well as prevent and reduce the seriousness of many avoidable diseases in child- and adulthood. However, existing studies focus on finding the way to increase nutritional knowledge and quality of child care of preschooler's parents, instead of studying on PFB. For example, giving information via books, pamphlets, or lecture (Boonnum, 2011; Chotibang, Fongkaew, Mo-suwan, Meininger, & Klunklin, 2009; Kongton & Banchonhattakit, 2013; Krainara, Noonil, & Aekwarangkoon, 2019; Norkaew, 2004; Rattanaagreehakul, 2008; Sap-Aim, 2008). Furthermore, many governmental projects, such as "The Sweet Enough Campaign Project", "Dek Thai Rai Poong", "Dek Thai Doo Dee Mee Planamai", aim to decrease the rate of children's poor eating behaviors, and the rate of health problems in children especially in urban area, such as overweight and obesity do not achieve at a satisfactory level (Pediatric Society of Thailand, 2014).

As details mentioned above, studying on the PFB is significant because it is the most important factor influencing preschooler's health and eating behaviors (Joyrod & Songthap, 2019; Peungposop & Junprasert, 2014). Pediatric nurses are responsible to focus on children's health and development, as well as they should help children and parents resolve these problems. To promote PFB, it is needed to examine the causes of PFB. It is possible that there are some significant factors which have not been

resolved. To solve this gap of knowledge, finding influencing factors of preschooler's PFB is very crucial because it can help pediatric nurses promote PFB appropriately. Not only reviewing existing literature, but also using grand theory of nursing can guide pediatric nurses to identify appropriate influencing factors of preschooler's PFB.

The benefit of using grand theory is to give a broad perspective for the purpose and structure of nursing practice (Walker & Avant, 2011). According to Orem (2001), dependent-care agency and dependent-care actions are as part of her conceptualizations about family. Preschooler's PFB can be identified as dependent-care of dependent care agent (parents). There are factors influencing dependent-care agency consisted of "basic conditioning factors (BCFs)" and the "power components (PCs)". The possible factors that influenced the preschooler's PFB were examined. Four variables were expected to relate with the preschoolers' PFB which included parental feeding attitude, parental eating habits, and the barriers to parental feeding behaviors are considered as sociocultural orientation, pattern of living, and resources availability and adequacy in BCFs, whereas the benefits of parental feeding behaviors is considered as the motivation in PCs. These variables were selected based on Orem's theory and a research-evidence that each variable was related to preschoolers' PFB.

As details mentioned above, the researcher, therefore, conducted the study to identify the predicting factors of preschoolers' parental feeding behaviors, urban Thailand using the theory of self-care by Orem's (2001) as guidance of the study. The result of this study can provide the foundation necessary to develop the effective interventions to improve the quality of performing the preschooler's parental feeding behaviors, urban Thailand.

Research questions

1. Do the variables including: parental feeding attitude, parental eating habits, barriers to parental feeding behaviors, and benefits of parental feeding behaviors predict preschoolers' PFB, urban Thailand?

2. What are the direct and indirect relationships of parental feeding attitude, parental eating habits, benefits of parental feeding behaviors, and barriers to parental feeding behaviors on preschoolers' PFB, urban Thailand?

Objectives of the study

1. To identify the predicting factors of preschoolers' PFB, urban Thailand.
2. To examine the direct and indirect relationships of parental feeding attitude, parental eating habits, barriers to parental feeding behaviors, and benefits of parental feeding behaviors on preschoolers' PFB, urban Thailand.

Hypotheses with rationales

According to Orem (2001), maturing persons who are responsibility to know and meet the therapeutic self-care demand (TSCD) of relevant others who are socially dependent on them are called “dependent-care agent” (Orem, 2001). Dependent-care agency (DCA) is a capability that is necessary for actions needed (dependent-care) to meet self-care requisites of preschoolers who cannot care for themselves. According to Orem (2001), there are factors affecting abilities of dependent-care agent to engage in dependent-care or affect the kind and amount of dependent-care required are named “basic conditioning factors” (BCFs) and the power components (PCs).

Self-care theory by Orem (2001) is broad in scope of human behaviors. The study of specific behavior, particularly parental feeding behaviors, needs to review the evidences in order to support the relationships among predicting factors. Three variables in BCFs (sociocultural orientation, pattern of living, and resource availability and adequacy) and one variable in PCs (motivation) are selected to examine in this study. The theoretical substruction diagram was conducted to show the linkage of constructs, sub-constructs, concepts, variables (which are in theoretical system), and empirical indicators (which is in operational system) (see Figure 1).

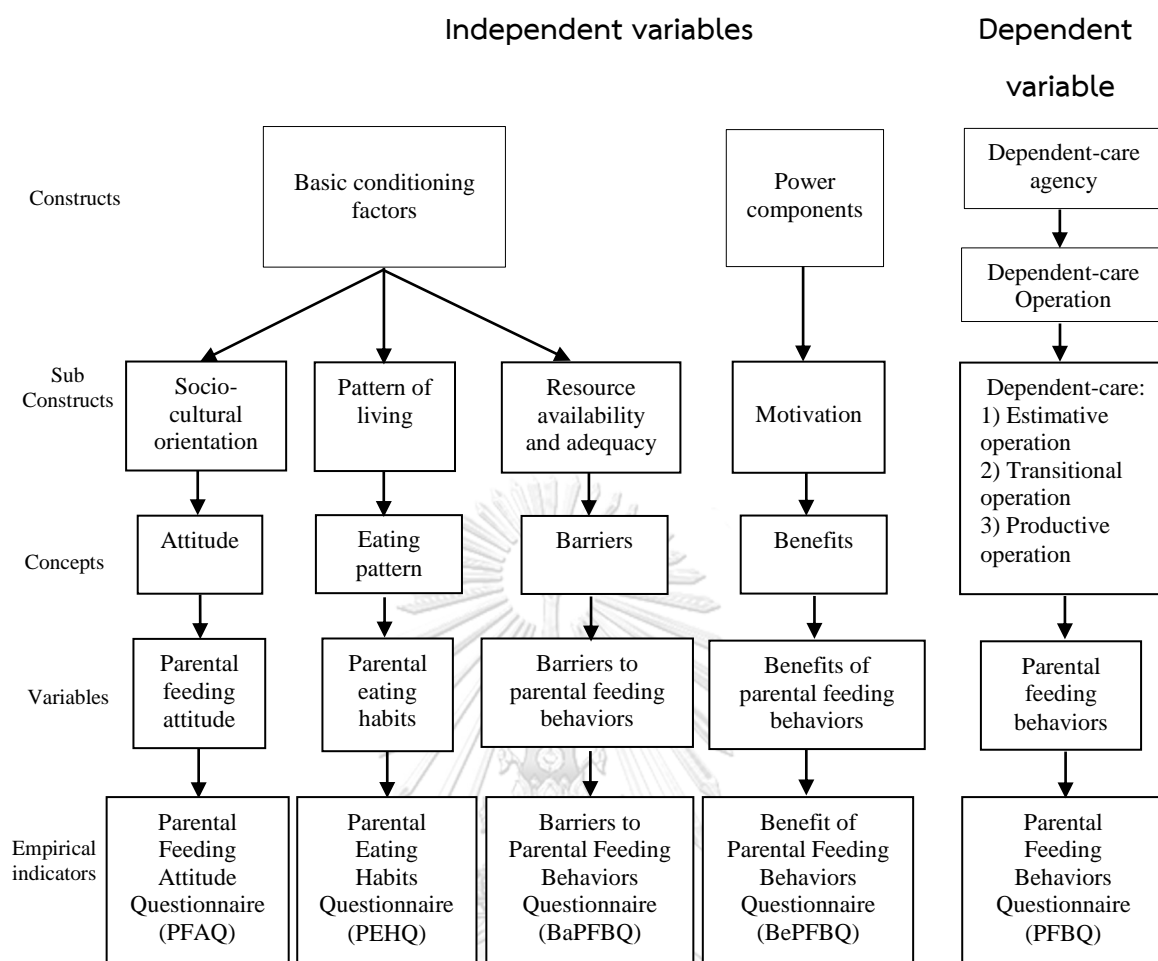


Figure 1 Theoretical substruction diagram (Orem, 2001)

Figure 1 showed the process of theoretical substruction based on theory of Orem (2001). This theoretical substruction presented how to become the 4 variables in this study. The details of theoretical substruction were explained in chapter II. Therefore, Orem's self-care theory and the review of existing literatures were examined to indicate the relationships among the variables. Four potential variables substructured to be influencing factors of parental feeding behaviors in this study were parental feeding attitude, parental eating habits, barriers to parental feeding behaviors, and benefit of parental feeding behaviors. These variables were considered as predicting factors of preschooler's parental feeding behaviors. The relationships among the testing predictors and concepts were depicted as in Figure 2.

As details mentioned, the research hypotheses and rationales were listed as follows.

Hypothesis 1: Parental feeding attitude has a positive direct relationship with the parental feeding behaviors, and it has a positive indirect relationship with the parental feeding behaviors through benefits of parental feeding behaviors.

Parental feeding attitude can predict parental feeding behaviors (Shi, Zhang, Wang, & Guyer, 2008). Attitude is one of the strongest predictors of performing actions or behaviors (Icek Ajzen & Fishbein, 2005). Parental feeding attitude is a factor substructured from sociocultural orientation in BCFs, and parental feeding behaviors is a factor substructured from dependent-care agency (see Figure 1). Theoretically, BCFs are factors influencing dependent-care agency (Orem, 2001). Attitudes and behaviors showed strong correlations and attitudes are highly predictive of behavior. Parent's attitude can show how they see the situations, what they think and feel which reflect how they behave toward those situations (Allport, 1935).

Even though there were few studies on the relationship between parental feeding attitude and parental feeding behaviors, they had been consistently found positive relationship between personal attitude and behaviors in other aspects. For example, positive attitude toward breast feeding had positive direct relationship with maternal breast feeding (Dungy, McInnes, Tappin, Wallis, & Opreescu, 2008). Appropriate attitude toward eating healthy food had positive direct relationship with healthy eating in university students (Bebetsos, Chroni, & Theodorakis, 2002). Moreover, maternal attitude toward personal carbohydrate intake had positive direct relationship with mothers' child feeding behaviors related to carbohydrate intake (Aguirre, 2010).

The BCFs can also affect the PCs (Orem, 2001). Motivations from PCs were substructured to be the benefits of parental feeding behaviors. Parents who have right attitude toward parental feeding behaviors will affect their knowing about the goal or positive outcomes of performing specific behaviors. Personal knowing about the benefits of PFB is as an intrinsic motivator of parents to perform or not to perform the parental feeding behaviors. There are also limitation of the study on the relationship between parental feeding attitude and benefits of parental feeding behaviors. However, they had been consistently found its relationship in other

aspects as well. For example, the children who have positive attitude toward eating breakfast know that the benefits of eating breakfast are “to increase energy and to have ability to pay attention in school highly” (Reddan, Wahlstrom, & Reicks, 2002).

Hypothesis 2: Parental eating habit has a positive direct relationship with the parental feeding behaviors, and it has a positive indirect relationship with the parental feeding behaviors through benefits of parental feeding behaviors.

Parental eating habits is a factor substructured from pattern of living which is a factor in the BCFs, and parental feeding behaviors is a factor substructured from dependent-care agency (see Figure 1). According to Orem (2001), BCFs contain many factors influencing dependent-care agency. Performing care behaviors to other people is predicted by personal common behaviors of the caregivers (Petrovici, Ritson, & Ness, 2004; van Strien, Frijters, Bergers, & Defares, 1986). The feeding activities parents perform to other family members, especially for young children are similar to the activities they did for themselves. Similarly, parents’ eating habits can influence their children through their own behaviors (Pai, 2013; van Strien et al., 1986).

It was supported by existing research studies. Parental eating habits is a factor affecting on their creating family eating environment which it is as the parental feeding behaviors (Birch & Fisher, 2000; Pai, 2013; Scaglioni, Salvioni, & Galimberti, 2008; Wardle, Guthrie, Sanderson, Birch, & Plomin, 2001). Mothers tend to feed their children in the same way that they eat (Wardle, Sanderson, Guthrie, Rapoport, & Plomin, 2002). It was found that mothers’ own restrained eating was associated with greater restriction of their children’s access to snack foods (Fisher & Birch, 1999a). Moreover, being a role model of preschoolers is innate in every parent. Taking role model in eating behaviors of parents is a part of parental feeding behaviors (enhancing good eating behaviors) (Lusmilasari, 2014). Several researchers have consistently found that parental eating behaviors are as a role model in eating for children (Birch & Fisher, 2000; Fisher & Birch, 1999b; Groner et al., 2009; James et al., 2008; Matheson, Robinson, Varady, & Killen, 2006; Wardle et al., 2001). Positive or negative role models of parents depend on parents’ own eating behaviors (Scaglioni et al., 2008).

In addition, the BCFs can also affect the PCs (Orem, 2001). Motivations in PCs were substructured to be the benefits of parental feeding behaviors. It meant that parental eating habits affect the benefits of parental feeding behaviors. People perform their own eating behaviors habitually in the way they like and satisfy. People who have healthy eating will have good health. They will know the benefits of healthy eating. So, they continue to perform healthy eating. Parents are as person who desired not only ourselves are healthy, they also desired that their children have to be healthy. When parents know the benefits of healthy eating of themselves, they will know the benefits of perform feeding behaviors in appropriate way for their children as well. The positive outcome perception is as an intrinsic motivator of individual which lead those person performs desired behaviors (parental feeding behaviors) for their children (Pender, Murdaugh, & Parsons, 2006). There are also limitation of the study on the relationship between parental eating habits and benefits of parental feeding behaviors. However, it is strongly supported by Orem's theory (Orem, 2001).

Hypothesis 3: Barriers to parental feeding behaviors has a negative direct relationship with the parental feeding behaviors, and it has a negative indirect relationship with the parental feeding behaviors through benefits of parental feeding behaviors.

Barrier to parental feeding behaviors is a factor substructured from resource availability and adequacy in the BCFs, and parental feeding behaviors is a factor substructured from dependent-care agency (see figure 1). Resource availability and adequacy means something necessary for supporting person in performing specific actions. Having barriers to perform specific behaviors indicates that the individuals lack of resource availability and adequacy to perform those desired behaviors. Barriers usually arouse the avoidance intention in relation to a given behavior. Barriers known by person has been found to affect action (behavior) of individuals (Papacharisis & Goudas, 2003; Pender et al., 2006). When person knows that the barriers to perform specific behaviors are high, the action was unlikely to occur. While, when person knows that the barriers to perform specific behaviors are low,

the probability of action is much greater. Therefore, the barriers to parental feeding behaviors can affect the parental feeding behaviors.

Even though there were few studies on the relationship between barrier to parental feeding behaviors and parental feeding behaviors, it was strongly supported by Orem's theory and there had been consistently found negative relationship between these variables in other aspects. For example, it was found that the barrier to maternal feeding behaviors can affect the toddlers' maternal feeding behaviors (Palupi, 2014). Moreover, family monetary is a barrier in providing healthy food of mothers of school age children because mothers do not have money enough to buy healthy food (Spruijt-Metz, Lindquist, Birch, Fisher, & Goran, 2002), lack of time is one of barriers in breastfeeding of Saudi women (Saied, Mohamed, Suliman, & Anazi, 2013).

In addition, Orem (2001) stated that the BCFs can also affect the PCs (Orem, 2001). Motivation in PCs was substructured to be the benefits of specific behaviors. Resource availability and adequacy to perform specific behaviors also affect the knowing benefits of parental feeding behaviors. Nevertheless, resources availability and adequacy in this study were examined aversely in the situation of lacking available and adequate resources in performing parental feeding behaviors. It was founded that they have negative relationship between barriers to parental feeding behaviors and benefits of parental feeding behaviors.

Even though there was limitation research on its relationship, it was supported by Orem's theory (Orem, 2001). It was explained that when person knows that barriers to perform actions are high, person will know the benefits of performing those actions are low. In contrast, when person knows that the barriers to perform actions are low, person will know the benefits of performing those actions are high. Therefore, the barriers to parental feeding behaviors directly affect the benefits of parental feeding behaviors.

Hypothesis 4: Benefits of parental feeding behaviors has a direct positive relationship with the parental feeding behaviors.

Benefit of parental feeding behaviors is a factor substructured from motivation in the PCs, and parental feeding behaviors is a factor substructured from dependent-care

agency (see Figure 1). The benefits known by person are proposed to directly motivate behaviors. The benefits are as positive reinforcement that can motivate individuals performed appropriate action (behavior) for pertaining life, health, and well-being (Orem, 2001; Pender et al., 2006). The benefits of action are defined as knowing in benefits or positive outcome shown to be an important condition for participation in a specific health behavior (Pender et al., 2006). The benefits of individual's action or behavior are strong intrinsic motivators of that behavior. Parents more likely perform an appropriate feeding behavior if they know the reasons that the benefits of performing appropriate parental feeding behaviors is considered high. If parents know positive outcomes in their children and themselves, they are satisfying performing appropriate parental feeding behaviors, they will perform appropriate parental feeding behaviors. A number of recent studies have confirmed the relationship between benefits of parental feeding behaviors known by person and parental feeding behaviors (Bland, Kegler, Escoffery, & Halinka Malcoe, 2005; Hart, Herriot, Bishop, & Truby, 2003; Palupi, 2014; Sakdapetchsiri, 2002; Sitthideth, 2013).

On the basis of Orem's self-care theory and literature review were considered to choose and guide the relationships among the variables in hypothesize path model (Figure 2). As the hypotheses stated above, the proposed relationship among the tested predictors and concepts was depicted below:

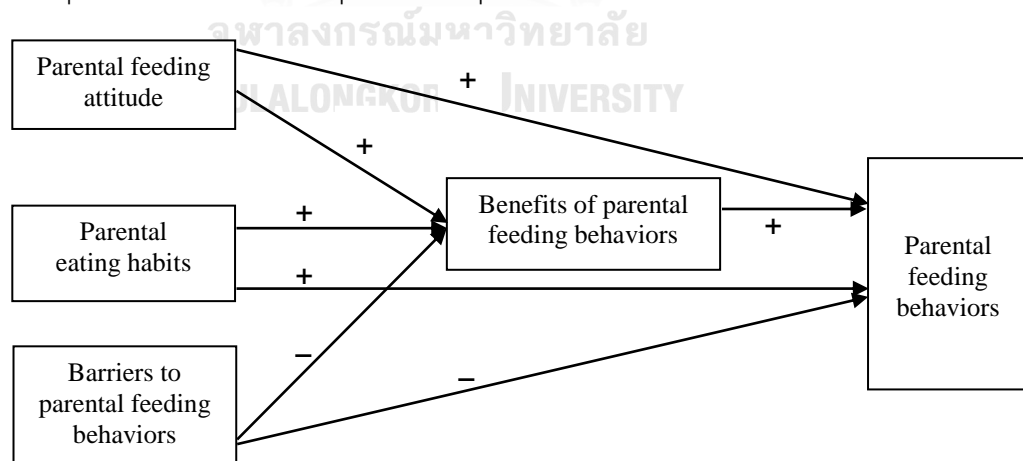


Figure 2 Hypothesized path model

Scope of the study

The target population in this study is the parents who have preschoolers (36-72 months old), live in urban, Thailand. The dependent variable in this study is the parental feeding behaviors, and the independent variables are parental feeding attitude, parental eating habits, barriers to parental feeding behaviors and benefits of parental feeding behavior.

Operational definition

Parental feeding behaviors refer to the activities of preschooler's parents in seeking information, making judgement and decision, and taking action in providing healthy foods, enhancing good eating behaviors, and providing pleasant eating environment for their preschoolers. It can be measured by "Parental Feeding Behaviors Questionnaire" (PFBQ) developed by the researcher.

Parental feeding attitude refers to a way of thinking and feeling of preschooler's parents regarding parent's feeding responsibility in seeking information, making judgement and decision, and taking action in providing healthy foods, enhancing good eating behaviors, and providing pleasant eating environment for their preschoolers. It can be measured by "Parental Feeding Attitude Questionnaire" (PFAQ) developed by the researcher.

Parental eating habits refer to the usual eating activities of preschooler's parents in appropriate food selection, food consumption, and eating manners. It can be measured by "Parental eating habits Questionnaire" (PEHQ) developed by the researcher.

Barriers to parental feeding behaviors refer to parents' perception of unavailability and inadequacy of resources necessary for performing parental feeding behaviors for their preschoolers including personal barriers (i.e. lack of knowledge, energy, time, and self-confidence) and environmental barriers (i.e. family monetary, interpersonal influence). It can be measured by "The Barriers to Parental Feeding Behaviors Questionnaire" (BaPFBQ) developed by the researcher.

Benefits of parental feeding behaviors refer to parents' perception of information on the positive consequences which happen to preschoolers from

undertaking the parental feeding behaviors. It can be measured by “The Benefits of Parental Feeding Behaviors Questionnaire” (BePFBQ) developed by the researcher.

Expected benefits

1. The study contributes to the body of knowledge from using Orem’s self-care theory of nursing. The finding will identify the predicting factors of preschooler’s parental feeding behaviors, urban Thailand. This knowledge can offer significant information for nurses to plan and develop nursing intervention to promote preschooler’s parental feeding behaviors, urban Thailand.

2. Health care providers, multidisciplinary teams, policy makers can utilize the findings to provide suitable support and guidance to promote preschoolers’ parental feeding behaviors, urban Thailand.

3. This study can be a guideline in applying the grand theory in nursing research.

CHAPTER II

LITERATURE REVIEW

The literature review consisted of six parts: 1) Family with preschoolers in urban Thailand, 2) Growth and development of preschoolers, 3) Preschooler's parental feeding behaviors 4) Parental feeding behaviors in urban Thailand, 5) Self-care theory: theory for nursing practice, and 6) Factors influencing preschooler's parental feeding behaviors and related research.

1) Family with preschoolers in urban Thailand

“Urban” is an economic and industrial area where has greater employment opportunities and better social services. The number of people attracted to migrate from rural areas to urban centers is increasing. Urbanization is a phenomenon that inevitably affects the way of life, behavior and health status of people at present, such as daily living, working under a risky environment, traveling under traffic congestion and having pollution, and consuming foods that is easy and fast etc. All of these affect the life of Thai people in urban are (Thongthammachat, 2016).

In urban context, the number of nuclear families is dramatically increasing among Thai families. In the past 10 years from 2000-2010, the number of households of Thai population has increased from about 17 to near 20 million, while the family size has decreased from 3.8 to 3.3 persons (National Statistics Office, Thailand). According to economic pressures, parents cannot stop working to take care of their children by their own. Most parents tend to send their young children including preschooler to child care center or schools where they expect to see the suitable development in their children (Rittirong & Jarutsisit, 2017). According to Office of the Education Council, Ministry of Education (2013), young children can be divided into 2 groups which are toddlers and preschoolers. For toddlers, most of them received care from family member especially parents or their relatives more than from caregivers/ teacher in child-care center or schools. While, most preschoolers received care from teachers/caregiver in schools more than from parents and family members.

Thai families change their lifestyles in caring for their children. Working parents are tired from work and journey. They have to go out to work early morning and come home late. Selecting school where is near their workplace more than near their home is more convenience for parents (Rittirong & Jarutsisit, 2017). Moreover, many families raise their children with modern technology, allowing the engine to be a caregiver to look after their children, such as television, smart phone, video, modern play equipment etc.

Urbanization and expansion of city bring about new lifestyle for Thai people. There are increasingly more supermarkets, mini supermarkets, convenience stores, department stores, and open food markets. Eating behaviors of Thai people these days mostly changed from the past. New trend in food is “easy” and “fast”, the easiest food is eating out (Assarut, 2012). Many families altered their new lifestyle to stay in city accommodations where they were close to their workplaces because the traffic conditions worsened (Jiumpanyarach, 2011). According to eating habit, Thai staples and side dishes are being replaced by diets containing higher proportions of fats and animal meat, and less vegetable and fruits. This phenomenon is common and most founded in the big cities. Concomitant with these trends is the selection of food that requires less time and skill to prepare. Home-made meals are rarely seen and are being replaced by ready-to-cook and ready-to-eat foods bought at local markets, food stalls, supermarkets or big department stores and eaten at home. A shift in the proportion of money expenditure on food prepared at home and that expended on purchased, ready-to-eat food, in both urban settings, documents another change in food consumption of the Thai population (Kosulwat, 2002).

In addition, Thai people in urban area are influenced by the development of technology and unhealthy food advertisement from the social and economic change. The literature founded that mothers in urban areas have to spend much time in their occupations, unlike mothers in rural areas (Teungfung, 2009). Studies in abroad indicated that urbanization leads to changes in eating habits of people. Urban people rush to work in the morning and consume high-fat foods and large portions of meat, causing changes in health status and increased the prevalence of chronic diseases (Ng et al., 2011; Noor, 2002). There is also a change in the proportion of

food prepared at home to that purchased like ready-to-eat food among the Thai population (Kosulwat, 2002). These lifestyles of family with preschoolers in urban area are different from parents with preschoolers in rural area. Parents in urban area spent less time to take care of their preschoolers. This problem can affect the quality in child care especially the feeding care which is the most important for preschoolers to promote their growth and development.

2) Growth and development of preschoolers

Preschooler is a child aged 36-72 months. The preschool years are a time of new initiative and independence. Language skills are well developed, and the child is able to understand and speak clearly. Most of them are in a childcare center or school for part of the day and learn great deal from this social contact. The development of preschool period is marked by physical and personality development. Preschoolers grow slowly and steadily, with most growth taking place in long bones of the arms and legs. The short, chubby toddler gradually gives way to a slender, long-legged preschooler. In addition, the physical skills continue to develop. Preschooler runs with ease, holds a bat, and throws balls of various types. Writing ability increases, and the preschooler enjoys drawing and learning to write a few letters. The preschooler becomes interested in the body and its function. The caregiver, teacher, and also pediatric nurse can teach general hygiene, such as hand washing, dental care, and other health promotion topics to both parents and child (Ball et al., 2009).

For cognitive development, the preschooler exhibits characteristics of preoperational thought. Symbols or words are used to represent objects and people, enabling the young child to think about them. This is a milestone in intellectual development; however, the preschooler still has some limitations in thought. According to Piaget, young child does not have “less thought” than adults, but the thought is qualitatively different. Understanding preschooler’s thought will help you to explain procedure, create health teaching, and communicate more effectively with the preschooler (Ball et al., 2009).

For the development of eating in preschoolers, it is very important year for the development of eating behaviors that carry into adulthood (Birch & Fisher, 2000; Trost,

Sirard, Dowda, Pfeiffer, & Pate, 2003). Preschoolers are highly dependent on their parents for the structuring of consuming. Their eating behavior is firstly determined by their family especially parents. This period is developing more autonomy through preschool and social interactions with others. The communication between children and their parents becomes more developed than in earlier ages (Salari, Wells, & Sarkadi, 2014). This is a special time in which parents develop communication about eating with the preschoolers (Ventura & Birch, 2008) and this has been recognized as the most effective period to promote self-care for successful promotion of healthy and good eating behaviors (Fisher, Mitchell, Smiciklas-Wright, & Birch, 2002).

According to the development of eating, preschoolers' gastrointestinal system continues to grow and mature in their functioning. The size of stomach continues to increase, allowing them to consume 3 regular meals a day. The ability to chew and swallow is also improving because they have a full set of primary teeth (Kyle, 2008). Preschoolers want to eat by themselves. They learn to use utensils effectively to feed by their own. They increasingly interact with others during food preparation and meal consumption. Therefore, parent should focus on the child's behavior at the table and establishment of healthy family eating patterns.

At first preschool period, they may exhibit "food fads," eating only certain foods over a several-day period. Nutritional requirements for preschoolers are fairly similar to those for toddlers (Kyle, 2008). The children still have difficulty sitting quietly through a long family meal. When young children reach 4 years of age, they seem to enter another period of finicky eating, which is generally characteristic of the more rebellious behavior of children in this age-group. Furthermore, they are gaining much more independence about food choices and eating patterns (Ball et al., 2009). They are reluctant to try new foods and flavors, so the parents should be flexible with their acceptance or denial of novel food. Every day preschoolers may not eat well but generally, over the course of several days, will eat the food they want. If they refuse healthy food choices at meal or snack time, parents should not replace high-fat, high-sugar, processed food. They are able to decide how much they will eat and end up eating just the foods they like, or which are available in their environment, refusing to eat those foods they do not like (Ramos & Stein, 2000).

The method of serving food also takes on more importance during this period. Giving them large adult-size portions can overwhelm them. They tend to like less spicy and bland food. Replacements can be provided for foods that they do not enjoy although parents need not cater to all of their desires. Normally, they always show their behaviors, such as mouthing, handling, tasting, extruding the food from the mouth, and then resampling the food. These behaviors are distasteful to some parents but are a normal part of preschoolers' development (Kyle, 2008).

At last preschool period, children are more focused on the social context of eating: table conversation and manners. The late preschool age is generally more agreeable to trying new foods, especially if they are encouraged by an adult who allows them to help with food preparation or experiment with a new taste or different dish. They are old enough to help with meal preparation and cleanup and usually enjoy doing so (Kyle, 2008). Children are ready for the "social" side of eating. Children learn how and what to eat by observing adults and by responding to what adults provide for them to eat. Preschoolers learn about textures, smells, colors, and taste. They learn physical skills of fine motor control (i.e. using finger in feeding themselves), cognitive skills, and interactional skills of social exchange among family members. Table conversation, good table manners, and a willingness to try a variety of foods are needed.

Nutritional requirements

The preschool period is not growing fast. There are increasing of weight and height about 2-2.5 kilograms and 6-8 centimeters per year respectively. Preparing small servings of food is recommended because preschoolers have no ravenous appetite. Most children are hungry after school and enjoy having snack when they arrive home. Parent should prepare a nutritious snack, such as fruits, cheese, yogurt or milk rather than cake, cookies, or soft drink. Moreover, preschoolers should be trained to have 3 meals a day and 2 snacks 1-2 hours before meals between breakfast and lunch, and in the afternoon. Preschoolers may eat less at one meal, but they may eat more at the next, and vice versa. Parents should not worry about this situation. Normally, preschoolers need five kinds of basic food like the other ages: 1) rice, rice products, other grains and starchy food groups in abundance, 2)

vegetables, 3) fruits, 4) meat, legumes, eggs and milk, 5) oil and fat from plants and animals (The Royal College of Pediatricians of Thailand & Pediatric Society of Thailand, n.d.).

A recommendation from Food and Drug Administration (Food and Drug Administration, 2016) provided information about a portion size of daily food for children aged 1-5 years old as follow:

Table 1 Portion size of foods per day for children aged 1-6 years old

Food group	Quantity	Other recommendations
Milk	2-3 cups	Fresh milk, formula milk without breast milk
Egg	½ - 1 foam	Chicken or duck
Meat	3 tablespoons	Seafood or entrails animal at least 1-2 times/week
Rice	3-5 ladles	
Cooked vegetable	3 ladle	Green leaf vegetable and other vegetables every meal
Fat or oil	3 teaspoons	Oil from vegetables rather than animals
Water	5-6 glasses	Including all liquid

3) Preschooler's parental feeding behaviors

This study focuses on the receiving healthy and adequate food intake and eating habits development which is one of the universal self-care requisites in preschooler's life which are associated with the life processes, the maintenance of the integrity of human structure and functioning, and the general well-being (Orem, 2001). Preschoolers have limitation to care for self. However they have parents who help caring for them. According to Orem (2001), the behavior to perform care for others is called "dependent-care" which consists of behaviors that associate with cognitive or psychomotor or both are intended to achieve the goal. The kinds of behavior are known as estimative operations, transitional operations and productive

operations which are the capabilities for dependent-care actions. These actions can be described as two phases below (Dennis, 1997; Orem, 2001):

1) Phase I

- Estimative operations of inquiry that seek both empirical and technical knowledge for purposes of knowing and understanding what is, what can be, and what should be brought about with respect to take care for dependent person. Estimative operations involve investigation by the individual to determine conditions that are necessary for dependent-care. The activity of this operation is seeking information to affirm appropriate thing to do to meet one's self-care requisites of preschoolers.

- Transitional operations included cognitive processes such as making judgments and decisions about what one can, should, and will do to meet preschooler's self-care requisites. The product of the estimative operation is a decision about what is to be done. Transitional operations of reflecting, judging, and deciding with respect to self-care matters are grounded in what individuals know about the self-care situation, their experiences and their knowledge about self-care requisites and measures meeting of them, as well as their values, self-concept and willingness. All processes are done by parents to do instead of preschoolers. Transitional operations are behaviors such as considering various options, making judgement and decisions what actions need to be taken.

These operations are the first phase of self-care for preschoolers. Before parents can confirm appropriate things to do (effective self-care), they must gain knowledge and effective make decision about the action they will take and those they will avoid for their preschoolers.

2) Phase II

- Productive operations in the second phase begin with the decision about the course of action to be followed in relation to the specific demand or set of demands for self-care. The choice of what will or will not be done terminates the first phase of deliberate action. Productive self-care operations are engagement in action and include performing measures to meet one's self-care requisites. The choice made sets the goal for this phase because it specifies what kind of action will

be taken. The activity of this operation is taking action which is special part to meet one's self-care requisites.

In this study, parental feeding behaviors refer to the activities of preschoolers' parents in seeking information, making judgement and decision, and taking actions in providing healthy foods, enhancing good eating behaviors, and providing pleasant eating environment for preschoolers. As details mentioned, preschoolers' parents can seek information about the way in providing healthy foods, enhancing good eating behaviors, and providing pleasant eating environment for their children from many ways such as reading book, newspaper, magazines, pamphlets, etc., searching information via internet, or asking the question from healthcare providers, teachers, friends, neighbors, or person has experiences in caring preschoolers. However, parents should acquire eligible information. Then, they should make judgement and decision to select appropriate ways in taking care of preschoolers. Lastly, they take chosen actions to their children.

Parents can seek information, and can make judgement and decision to do it by themselves, but sometimes they cannot take action to their preschoolers by their own because they have to go to work and preschoolers have to go to school. Even though parents are unable to take actions sometimes, they are still main caregivers who must pay attention to their preschoolers' eating. The ways parents provide healthy food, enhance good eating behaviors, and provide pleasant eating environment for preschoolers are identified below:

- 1) Providing healthy foods

Every parent has responsibility to provide preschooler adequate and safety dietary intake through providing all essential nutrients, fiber, and energy in amounts sufficient to maintain health. The best base for good planning is knowledge of nutrition and preschooler's nutritional stages and developmental stages. Parents should provide 3 full meals and 2 snacks daily. Portion sizes for preschoolers are about one-quarter the size of adult portions (Kyle, 2008). Snacks should be taken seriously and used as part of the day's nutrition. Each meal parents should provide healthy foods for preschoolers containing rice, meat, vegetables, fruit, and fat. Nutritional requirements of preschoolers consisted of protein about 1-1.5 g/kg/day,

caloric requirement about 85-100 kcal/kg/day. Moreover, they also need for vitamins and minerals, such as iron, calcium, and phosphorus (Williams & Wilkins, 2005).

When planning meals or snacks, parent should provide a wide variety of nutrient-dense foods, such as fruits and vegetables, instead of high energy-density/nutrient-poor “junk” foods (Scaglioni et al., 2008). Fermented milk, soy milk, sweetened drinks and beverages, fast foods, and processed foods are inappropriate foods for preschoolers. Furthermore, the food provided by the parents is very important for preschoolers. Planning the meals should also focus on food safety and sanitary practices. Food safety in child care is essential to prevent the spread of foodborne illnesses. It has emerged as an important global issue with international trade and public health implications. Food safety involves proper food purchasing, food storage, handling and cooking. Performing good behaviors of food purchasing, food storage, handling and cooking helps eliminate foods that may cause of risk for foodborne illnesses. The food safety and sanitary practices are as follow (Wardlaw & Kessel, 2002):

1.1) Purchasing food: a) choose products such as meat, fish, seafood, or poultry are frozen and perishable food last. These foods are always put in separate plastic bags so that drippings don't contaminate other foods in the shopping cart. Take the perishable foods home and promptly refrigerate or freeze, b) purchase food from the sources that are inspected for health and sanitation, c) purchase food that are good quality, fresh, and undamaged can or package, and check the “expired date”, d) keep poultry and meats away from other foods, e) do not taste or use the food that has a foul odor or spurts liquid when the can is opened, f) purchase food only amount of produce needed for a week because the longer you keep fresh foods especially fruits and vegetables, the more time for bacteria to grow, and g) avoid purchase precut produce that looks slimy, brownish, or dry, these are signs of improper holding temperatures.

1.2) Preparing food: According to The World Health Organization's Golden Rules for Safe Preparation, parents should select food processed for safety, cook food thoroughly, eat cooked foods immediately, store cooked foods thoroughly, avoid contact between raw and cooked foods, wash hands repeatedly,

keep all kitchen surfaces punctiliously clean, protect foods from insects, rodents, and other animals.

1.3) Cooking food: a) cook food thoroughly, especially beef, fish, poultry, and eggs (until the yolk and white are hard), b) cook stuffing separately from poultry (or wash poultry thoroughly, stuff immediately before cooking, and then transfer the stuffing to a clean bowl immediately after cooking), c) serve meat, poultry, and fish on a clean plate-never the same plate that was used to hold the raw product, and d) always cook meat in appropriate temperature.

1.4) Handling food: a) wash hands before and after preparing food or beverages, eating, handling food, or feeding a child, using the toilet, handling animals or cleaning up animal waste, playing in sand, on wooden play sets, and outdoors, and also cleaning or handling the garbage, b) wash all fruits, vegetables, and tops of cans prior to consume, and c) wash hands when handling bodily fluid (mucus, blood, vomit) from sneezing, wiping and blowing noses, from mouth or from sores.

1.5) Storing and reheating cooked food: a) keep hot foods hot and cold foods cold and tore peeled or cut-up produce in the refrigerator, b) keep meat, fish, and poultry wrapped in waterproof bag for refrigeration and in foil or freezer bags for freezer, c) store all foods in clean and airtight containers, d) store non-perishable items in airtight container.

1.6) Be aware the foods that are high risk for choking including hard candy, popcorn, whole grapes, raisins, dried fruit, hot dogs (whole or sliced into rounds), nuts and seeds, raw carrots (in rounds), fish with bones, and large spoonful of peanut butter.

2) Enhancing good eating behaviors

The responsibilities of parents to enhance good eating behaviors are very important. Parents can decide their feeding styles to appropriately support the preschoolers. Personal eating behaviors are constantly established in preschool period which they can predict eating habits and health status in adulthood (Ashcroft et al., 2008). It relies on parents' active participation as nutritional educators through family interactions that affect children's eating behaviors (Ramos & Stein, 2000).

To enhance good eating behaviors, parents should serve as role models of appropriate eating behaviors. They should keep regular time, do not wait until they are really hungry, and they should keep food out of sight when it is not time for eating. Seeing food can make children need to eat even they are not really hungry (Kyle, 2008). Thus, parents should control accessibility and availability of foods, determine how and when meals are served, model eating behaviors, and establish good manners and etiquette around food. Parents have a unique capability to foster or hinder the development of preschoolers' healthy eating behaviors (Scaglioni et al., 2008).

Preschoolers' eating behaviors are influenced by the people around them, especially their parents, and they are also willing to try more foods if they are exposed to other people who eat those foods (Hockenberry & Wilson, 2009; Rhee, 2008). Parents can create the home feeding environment in which children learn about foods, patterns of eating, mealtime manners, and develop food preferences (Savage, Fisher, & Birch, 2007; Scaglioni et al., 2008). Family mealtime is the social context in which preschoolers have an opportunity for eating together with their family members. Parents are role model to them, and are attentive to their eating behavior (Ramos & Stein, 2000). Moreover, parents can shape their child's food preferences by exposing them to healthy foods at home and making them more easily accessible. It might be important factors in developing food preferences during the early child's age.

Family is the first and most fundamental socio-environmental context in which eating patterns are established. Family meals are an opportunity for parents to serve as role models affecting their children's food preferences, attitudes, and eating behaviors. Parents select the foods of the family diet, serve as models of eating that children learn to emulate, encourage the development of culturally appropriate eating patterns and behaviors in children and teaching table manners (Overington & Lefebvre, 2011; Pai, 2013). Eating behaviors of children are established early in life and reinforced by family members especially parents who prepare meals. The strategies parents make use of at mealtime to teach children what and how

much to eat play an important role in the development of children's eating behavior.

Developmentally, the preschool year is considered formative years when parents are primary educators and role models in the family environment (Fisher et al., 2002). Parents have to provide food as a response to their children's temperament and eating behaviors, including the quantities previously consumed, requests and preferences, expressions of fullness and hunger, and weight (Rylatt & Cartwright, 2016). Moreover, preschoolers usually refuse novel foods; however, consistently offering a variety of foods to them helps the majority of children overcome the natural tendency to reject new foods and leads to more healthful eating habits (Birch, 1979). Parents should not pressure children to eat or restrict access to specific foods because children often lead to overeating, dislikes and paradoxical interest in forbidden items (Scaglioni et al., 2008).

3) Providing pleasant eating environment

Parents are as a facilitator who appropriately provides pleasant eating environment. Parents should provide mealtime environment and equipment or utensils that appropriate for preschoolers. Meals should be eaten in a calm and pleasant environment. Parents should create eating environments for preschoolers that may encourage their better eating which can foster the development of desirable eating behaviors and weight of preschoolers, for example the dining areas should be clean, cheerful and supportive of healthful eating habits. The foods served on the preschoolers' plate should be soft, moist, and always cut into bite-size pieces. Preschoolers most often eat with their fingers, but they sometimes do need to learn to use utensils properly. Finger foods and foods that are easy to eat should help them learn to manipulate successfully. Eating utensils (plate, utensils, pitcher, cup, etc.) should be age-appropriate and developmentally suitable. Chairs and tables should be comfortable, attractive and suitable in size and shape for children. Seat them in a high chair or at a comfortable height in a secure chair with feet supported. Parents should attend to early preschoolers' eating, should not leave them while eating (Kyle, 2008).

Mealtimes should be enjoyable rather than times for discipline or family argument (Eliassen, 2010). The social aspect of mealtime may be distraction for preschoolers. Therefore, an earlier feeding hour may be appropriate. Furthermore, preschoolers are unable to sit through a long meal and become restless and disruptive. Parents may bring them to the table after active play 15 minutes before mealtime. This allows the preschoolers have ample opportunity to get ready for eating while settling down their active minds and bodies (Hockenberry & Wilson, 2009).

Preschoolers are reluctant to try novel foods. Parents should praise them for trying a new food, and do not punish them for refusing to try something new. Keep continue the pleasant eating environment. A new food may need to be offered many times in a row before young children choose to try it. Pressure to eat if preschoolers do not feel hungry at the moment should avoid. Try to encourage and praise them to eat makes better positive mealtime environment. Parents should be sure to include foods the child is familiar with and likes to eat at the same meal that the new food is being introduced (Kyle, 2008). These actions allow the parents to establish trust in relationship to food and children. Children will act more responsibly when they can trust to their parents to provide food and atmosphere that make them successfully eating.

Moreover, minimize distractions during mealtime by turning off the television and smart phone. parents should concern about the video and television watching (Scaglioni et al., 2008). Television viewing and game playing via mobile phone will distract preschoolers' attention to eat. It is not appropriate way to provide pleasant eating environment for children. Moreover, television viewing is related to fast food consumption and foods and beverages that are advertised on television. Viewing cartoons with embedded food commercials can increase choice of the advertised item in preschoolers, and television commercials may prompt eating (Dennison, Russo, Burdick, & Jenkins, 2004; Epstein, Roemmich, Robinson, & et al., 2008; Taveras et al., 2006). Thus, parents should be aware of and pay attention to preschoolers' eating by not allowing preschoolers to watch television, mobile phone or playing game.

In conclusion, parental feeding behaviors can be summarized in three dimensions: seeking information, making judgement and decision, and taking action in providing healthy food, enhancing good eating behaviors, and providing pleasant eating environment (Figure 3)

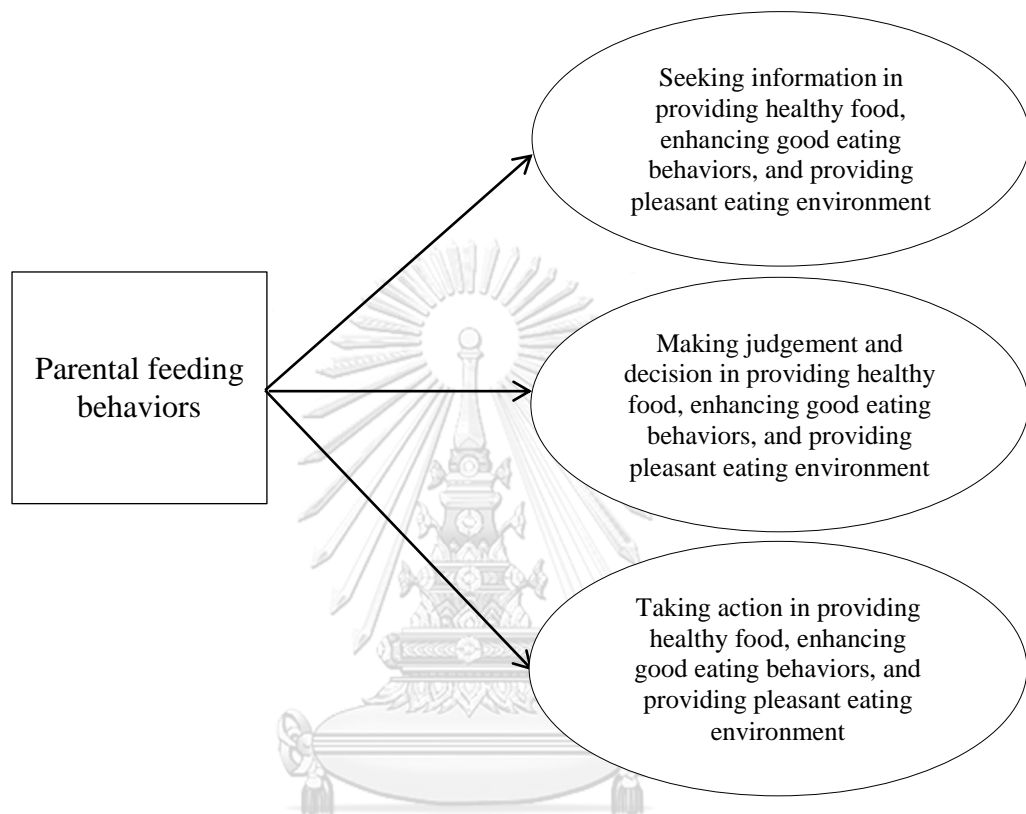


Figure 3 Structural domain of parental feeding behaviors

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Parental feeding behaviors measures

From literature review, many instruments were developed to measure children's parental feeding behaviors in different views. The details of each instrument are described below:

1) Child Feeding Questionnaire (CFQ) (Birch et al., 2001) was developed to assess parental control of child feeding, which related to childhood obesity. The CFQ consists of 31 items measuring seven factors including; 4 factors assessing parental perceptions and concerns the use of controlling feeding practices: perceived responsibility, perceived parent weight, perceived child weight, concern about child weight and; 3 factors addressing parental controlling practices: restriction, pressure to

eat, and monitoring. All items were measured on a 5-point Likert scale, with each point represented by a word anchor. The CFQ is developed for use with parents of 2- to 11-year-old children. This instrument has guided for numerous research over the last decade, and has been validated in a variety of populations across different countries including preschoolers' parents in Thailand (Corsini, Danthiir, Kettler, & Wilson, 2008; Faith et al., 2004; C. V. Farrow & Blissett, 2008; Geng et al., 2009; Gregory, Paxton, & Brozovic, 2010; Kanpheungton, 2010; Liu, 2013; Webber, Hill, Cooke, Carnell, & Wardle, 2010). The CFQ has demonstrated good validity and reliability. This instrument assesses a mixture of perceptions, concerns, attitudes, and behaviors. Moreover, this instrument assesses parental control of child feeding associating with childhood obesity; therefore, the most items in the part of parental controlling practices are specific behaviors that related to child obesity.

2) The Caregiver's Feeding Styles Questionnaire (CFSQ) (McPherson-Ventura, 2009) was used to measure feeding styles and practice among the Mexican or Mexican-American primary parents of preschoolers associated with preschoolers' risk of overweight. This instrument was modified from Hughes and colleagues (Hughes, Power, Orlet Fisher, Mueller, & Nicklas, 2005). The CFSQ was developed to measure verbal and psychical parental styles categorized into four feeding styles categories (authoritative, authoritarian, indulgent and uninvolved) based on two dimensions (demandingness and responsiveness). The questionnaire starts with "How often during the dinner meal do YOU...", and consists of 19 items with a 5-point Likert scale, ranging from 1 (Never) to 5 (Always). This instrument was used to identify behavioral influences in Mexican or Mexican-American families and the potential risks for overweight related to their feeding practices. It has demonstrated good validity and reliability.

3) Parental Feeding Style Questionnaire (PFSQ) was developed to assess four feeding styles in preschoolers' parents: emotional feeding, instrumental feeding, prompting and encouragement to eat, and control over eating (Wardle et al., 2002), to examine the relationship between parental feeding style and obesity risk in children. This instrument has been widely used in a variety of populations across different countries (Jiang et al., 2007; Ozcetin, Yilmaz, Erkorkmaz, & Haluk, 2010; Tam,

Keung, Lee, Lo, & Cheung, 2014; Yilmaz, Erkorkmaz, Ozcetin, & Karaaslan, 2013). The PFSQ consists of 27 items with a 5-point Likert scale, ranging from 1 (Never) to 5 (Always). It has demonstrated good validity and reliability.

4) The Comprehensive Feeding Practice Questionnaire (CFPQ) was developed to measure important parental feeding practices for young children aged 2-8 years in the US (D. Musher-Eizenman & Holub, 2007). There were twelve dimensions: encourage balance and variety, environment, food as reward, involvement, modeling, monitoring, pressure, restriction for health, restriction for weight control, and teaching about nutrition. The CFPQ was developed to evaluate the effectiveness of parental feeding practices associated with child health status, including overweight, underweight, or children with eating problems. All items were measured on a 5-point Likert scale, with each point represented by a word anchor. It has demonstrated good validity and reliability.

5) The Parent Feeding Behavior Questionnaire (PFBQ) was developed to assess the strategies that the parent used to encourage preschooler to eat (Elshowaya, 2015). There were three main constructs, and each construct included two or three sub-constructs: directive control (high control, high contingency), non-directive control (child centered feeding, unhealthy modeling), and food environmental control (availability of healthy food, mealtime behaviors, timing of meals). The PFBQ was developed to evaluate the relationship between parental feeding strategies relating to children's weight status and diet quality in low income families. This instrument consists of 30 items with a five-point Likert scaled response category (never = 1 to always = 5) was used for each item. All Items were selected from other instruments designed to measure feeding strategies which had shown significant associations with children's food intakes, and they had been tested for validity and reliability.

6) The check lists of parents' roles in promoting toddler nutrition was developed to assess Thai parents' role in promoting toddler nutrition in 4 domains: parents and toddler involvement during meal time, being a role model in eating, preparing food in accordance with children's needs and development, and safety during meal times (Sutthiprasert & Boonsue, 2014). There are 19 items with a 5-point

Likert scale, ranging from 1 (Never) to 5 (Always). However, the psychometric properties testing were not established.

7) The Parental Feeding Behaviors Questionnaires (PFBQ) developed by Lusmilasari (2014) was used for assessing feeding behavior of toddlers' parents in Indonesia (Lusmilasari, 2014). This instrument had been modified by palupi (2014) to assess the maternal feeding behaviors in toddlers' mothers in Indonesia (Palupi, 2014). The PFBQ by Lusmilasari (2014) contains 56 items categorized in 3 domains: providing healthy and safe food, enhancing good eating behaviors, and promoting a pleasant eating environment. Those actions were from gathering information, making decision, and taking those actions. All items were measured frequency of behaviors in a 5-point Likert scale, ranging from 1 (Never) to 5 (Always). This instrument in Indonesian version has quite good validity and reliability. However, the questionnaires in English version was not examined the psychometric properties testing.

As details mentioned, previous instruments assessing parental feeding behaviors have been developed and are in use currently, but there are some limitations in using in this study. For example, most existing instruments were developed to measure parent's taking actions, such as Child Feeding Questionnaire (CFQ) (Birch et al., 2001), Caregiver's Feeding Styles Questionnaire (CFSQ) (Hughes et al., 2005), Parental Feeding Style Questionnaire (PFSQ) (Wardle et al., 2002), Comprehensive Feeding Practice Questionnaire (CFPQ) (D. Musher-Eizenman & Holub, 2007), Parent Feeding Behavior Questionnaire (PFBQ) (Elshowaya, 2015), and the check lists of parents' roles in promoting toddler nutrition (Sutthiprasert & Boonsue, 2014). However, parental feeding behaviors should consist of other important dimensions which are seeking information, and making judgement and decision. Furthermore, some instruments was used to assess the parental feeding practices related to child overweight, such as Child Feeding Questionnaire (CFQ) (Birch et al., 2001), Caregiver's Feeding Styles Questionnaire (CFSQ) (Hughes et al., 2005), Parental Feeding Style Questionnaire (PFSQ) (Wardle et al., 2002). The feeding style questions in these questionnaires rather specific to the activities may risk for obesity in children, and cannot be used generally.

Moreover, the check lists of parents' roles in promoting toddler nutrition (Sutthiprasert & Boonsue, 2014) was not studied in parents' preschoolers, and its psychometric properties was not established. Another instrument, the PFBO (Lusmilasari, 2014) consists of 3 sub-dimensions based on Orem's theory covering all dimensions: providing healthy food, enhancing good eating behaviors, and providing pleasant eating environment which parents need to seeking information, making judgement and decision before taking those actions. However, the PFBO (Lusmilasari, 2014) was studied in parent's toddler in Indonesia, and Indonesian version only has been examined psychometric properties testing. The psychometric properties were not established in English version. Moreover, some items were not congruent in Thai context; for example, "I learn about balanced, healthy and safety food for toddlers from cadre (health volunteer at health center in sub-village)", "I give mung bean porridge or biscuit or nagasari or others at least twice a day between meals".

To summarize, this study, parental feeding behaviors refers to the activities of preschoolers' parents in seeking information, making judgement and decision, and taking action in providing healthy foods, enhancing good eating behaviors, and providing pleasant eating environment for their preschoolers. It was measured by the "Parental Feeding Behaviors Questionnaire (PFBO)" which was developed by the researcher. The details of development process and psychometric properties testing are presented in Chapter III.

4) Parental feeding behaviors in urban Thailand

According to social and economic changed, Thai parents in urban area are influenced by the development of technology and unhealthy food advertisement. They change their lifestyles from traditional preparation of family meals at home to the fast-food western culture and increased sedentary lifestyles (Kanpheungton, 2010). Thai parents always buy convenience food without concerning the food quality (Thongtaeng & Seesawang, 2012). Inappropriate consumption behaviors lead to drawback effects for health of parents and children because most fast-foods lack of five food groups. Some foods contain preservative, and some are not cooked enough (Waratornpaibul, 2014). Besides, many Thai parents in urban area do not

provide three main meals especially breakfast to their children, and they always give crispy junk foods (Ivanovitch, 2007). Moreover, it was founded that parents prepared unhealthy snacks for their child after they coming back from schools everyday (Isaraphan, 2008). They usually give high-calorie nutrient-poor foods to their child and let them consume food or snacks, which contain high sodium, in front of the TV or computer (Mo-Suwan, 2011).

Allowing young children to watch television during meals can influence on preschoolers' food preference because of exposing food advertisement from TV. The food promotion of preschoolers is dominated by TV advertising, which focuses on a limited range of food categories that are not representative of the type of diet that is recommended, and on fast food consumption (Thongbai, 2010). Moreover, a study revealed the association between the number of hours of TV watched and the number of the requests from the child to the mother for specific food items, as well as the presence of those items in the home. Greater TV use has been associated with higher intakes of energy, fat, sweet and salty snacks, and soda and lower intakes of fruit and vegetables (Keaticharoensuk, 2014). Even brief exposed to televised food commercials can influence 2-to-6-year-olds children's food preferences (Borzekowski & Robinson, 2001). These can lead preschoolers have a high risk of being unhealthy and also poor eating behaviors from inappropriate parental feeding behaviors.

In addition, many research studied in urban area showed that parents buy sweetened milk and snacks when children refused to eat or eat less at a meal time (Farungsang et al., 2001 as cited in Kanpheungton, 2010). They always spoil the child by giving favorite food, such as candy, cookies, sweetened drinks, chocolate (Yamborisut & Mo-suwan, 2014), or ice-cream and they tend to use these foods as a reward to encourage eating, or tempt their children to behave good habits (Yamborisut, 2005). Moreover, parents of young children provide too much and larger portion sizes (Peungposop, 2011), give too many sweetened beverages and not enough fruits and vegetables (Mahachoklertwattana, 2006), use foods as a bribe, a reward or punishment (Kanpheungton & Schiffman, 2007). Some parents do not believe when children say they are full. Parents always think that they knew better

than children's feel, such as full or hungry, (Prateepchaikul & Chaumphruk, 2004), so they pressure their children to eat if no hungry (Kanpheungton & Schiffman, 2007).

Furthermore, some parents do not take care of their preschoolers to eat 3 meals a day. They allowed their preschooler eat unhealthy snack instead nutritious foods (Wannawilai et al., 2014). Some parents add sugar in child's foods, let preschooler always eat instant noodles, and provide same kinds of food for their preschoolers because they prefer to eat (Aramrom & Jantaweemuang, 2019). These inappropriate PFB are cause of high risk for health problem and poor eating behaviors in preschooler.

The effects of inappropriate parental feeding behaviors on preschoolers

Several studies revealed the relationship between parental feeding behaviors and preschoolers' health status. For example, parent's pressuring and controlling preschoolers to eat healthy food if they no hungry can lead overweight and obesity in preschoolers (Carnell & Wardle, 2007; Hurley, Cross, & Hughes, 2011; Johannsen, Johannsen, & Specker, 2006) and it can explain significant amounts of variance in children's adiposity (Spruijt-Metz et al., 2002). Moreover, direct parental modeling of unhealthy eating behaviors, which is inappropriate parental feeding behaviors, is associated with development of excess body weight in children (Burk, 2009). Parents who restrict young children about feeding and use the food as reward consisting of sugary snacks can lead overweight in preschoolers when they grow up (D. R. Musher-Eizenman, de Lauzon-Guillain, Holub, Leporc, & Charles, 2009). Parents who spoil their preschoolers are likely to let them eat what they like. This will lead to overweight in preschoolers (Raipin, Pongjaturawit, & Teerarungsikul, 2012).

Furthermore, inappropriate parental feeding behaviors also directly influence on children's inappropriate eating behaviors (Carnell, Cooke, Cheng, Robbins, & Wardle, 2011). Several studies revealed the relationship between parental feeding behaviors and preschoolers' eating behaviors. For example, parent's pressuring and controlling preschoolers to eat healthy food if they no hungry can lead unhealthy eating behavior of children when they grow up because it can reduce the children's opportunity for the development of self-regulatory behavior (C. Farrow & Blissett, 2006; Gregory et al., 2010). Children's diets typically mirror the deficiencies of their

parents' diets (high in fat, sodium, and sugar and low in fiber)(Bellows, Cole, & Anderson, 2006).

When children perform inappropriate eating behaviors, it will directly influence on their own health problems in the future, such as poor nutrition, growth abnormally, weight problem including underweight, overweight, and obesity (Ali & Moawia, 2010) and have more infections (Dahl, 1987 as cited in Satter, 1995). These children are at high risk of feeding skill delay and deficits, inappropriate or maladaptive feeding behaviors and disruptive mealtime behaviors, family difficulties and unpleasant mealtime environments (Berlin et al., 2009). Furthermore, children who are overweight and obesity are at high risk for a number of chronic conditions, such as diabetes mellitus, hypertension, dyslipidemia, coronary heart disease and some cancers (Martorell et al., 2000).

Supported by existing literature, previous studies showed that poor eating behaviors of children in Thailand are increasing (Kanpheungton, 2010; Mahachoklertwattana, 2006; The Royal College of Pediatricians of Thailand & Pediatric Society of Thailand, n.d.). Thai Children consumed more unhealthy foods, such as too many calories, too much added sugar, fat, sodium but consumed less fruits and vegetables (Kanpheungton, 2010, Mahachoklertwattana, 2006). Moreover, Thai children consumed nutritious foods less than recommended amounts of key nutrients, including calcium, vitamin A, vitamin C, and fiber (Department of Health, the Thai Ministry of Public Health, 2005a). More than one-third of young Thai children consumed the commercially packaged snacks at least one meal for everyday (Prateepchaikul & Chaumphruk, 2004).

Many research studied on direct effect of inappropriate parental feeding behaviors on children's health problems indicated worldwide (de Lauzon-Guillain, Musher-Eizenman, Leporc, Holub, & Charles, 2009; Powell, Farrow, & Meyer, 2011). In Thailand, the prevalence of children's health problem was illustrated. For example, 5,400,000 of Thai children less than 5 years old, about 8.5% are overweight and obese, 24.7% are poor nutrition (Mo-Suwan, 2011). Supported by the situation of Thai children and women survey 2012, 27.2% of 8,874 Thai children aged less than 5 years are poor nutrition. 16.3% of them experienced malnutrition while 10.9% of

them experienced overweight (National Statistical Office, 2013). Preschoolers with poor nutrition have a high risk for poor cognitive and learning development. It leads to poor school performance, reduced productivity, and impaired intellectual and social development (Ali & Moawia, 2010). Moreover, Bureau of Dental Health, Department of Health reported in 2012 that 15.3% and 34% of Thai preschoolers aged 3 and 5 years were underweight, and 12.3% and 10% of Thai preschoolers aged 3 and 5 years were overweight (The Royal College of Pediatricians of Thailand & Pediatric Society of Thailand, n.d.)

In addition, the trends of overweight and obesity in Thai children at present are dramatically increasing. According to Bureau of Policy and Strategy, Ministry of Public Health (2013), the rate of overweight is also increasing about 2.9, 5.84, and 9.7% in 2009-2011 respectively. Furthermore, the rate of overweight in young Thai children are increasing, they are 12% and 17.6% in 1998 and 2011 respectively. 5.4% of them are obese and have a high risk of being obese adult (Thongtaeng & Seesawang, 2012). Moreover, a comparison of percentage of overweight in preschoolers in ASEAN countries in 2012 has been found that Thailand was ranked the second (8%) after Indonesia (12.3%) (World Health Organization, 2013). In 2015-2016, 8.2% of 10,942 Thai children aged less than 5 years are obesity (National Statistical Office, 2017), and the most was found in Bangkok and in urban area (Jitnarin et al., 2011; National Statistical Office, 2017). It was founded that childhood obesity prevalence rates are increasing, especially in urban areas of Thailand (Langendijk et al., 2003; Pediatric Society of Thailand, 2014).

Moreover, it was found that the rate of kidney disease in children is increasing (www.thaihealth.org). Even though there is not well recorded in Thailand, the report from The nephrology society of Thailand revealed that, in 2016, there are 200-300 Thai children are treated by kidney dialysis per year. Furthermore, the record from Children Nephrotic Clinic, Chulalongkorn hospital illustrated in 2016, there are 120-150 Thai children follow up at the clinic everyday, increasing from 50 patients per day. A cause of kidney disease in children is inappropriate food consumption, such as eating salty snacks, junk food, or ready to eat food (www.nephrothai.org).

Nurses' role in supporting parental feeding behaviors in Thailand

As a health provider, pediatric nurses tried to promote children's health. From literature review, many researchers in Thailand have studied on the way to promote parental child care and support children's health and eating behaviors. Most research presented intervention giving to either caregivers or direct to children, or both. There are many ways that healthcare providers gave information and nutritional knowledge to the children in schools directly. However, most of them are school age children and adolescents. Furthermore, the government has launched many projects to promote child's health, such as "The Sweet Enough Campaign Project", "Dek Thai Rai Poong", "Dek Thai Doo Dee Mee Planamai".

Moreover, healthcare providers also gave information and nutritional knowledge to parents and teachers of young children by giving information via books, pamphlets, or lecture. They conduct intervention to solve the problems; for example, the New food and nutritional management model for preschool children, using the "Thai Mother's Food Guideline" (Aramrom & Jantaweemuang, 2019), the Group process toward behavioral preventing and correcting malnutrition among the families of pre-school children (Boonnum, 2011), the Promoting vegetable and fruit consumption behavior program among pre-school children by parent (Kongton & Banchonhattakit, 2013), the Food consumption behavior program in early childhood (Suwanno & Tharamak, 2008), the Empowerment program provided for community leaders in control of malnutrition among young children (Norkaew, 2004), the Family management for overweight prevention model in urban Thai preschoolers (Rattanaagreethakul, 2008), the Nutrition education for parents of overweight preschool children using the Tuna model (Sap-Aim, 2008), the Nutrition promotion for underweight children aged 0-6 years by health personnel as perceived by guardians (Tamsad, 2009). Moreover, some nurses create the guideline or the strategies for parents to improve their preschoolers' health, such as the guideline of nutritional promotion in pre-school children (Singhasame et al., 2017), the Guidelines to developing malnutrition procedure of child development center (Nokseng & Suvarnajata, 2014).

However, many studies reported that Thai children still perform poor eating behaviors, and face the health problems with underweight, overweight and obesity (Kanpheungton, 2010; National Statistical Office, 2017; Thongtaeng & Seesawang, 2012). These problems indicate that the problems of preschooler's parental feeding behaviors have not been resolved. Preschoolers do not receive appropriate parental feeding behaviors from the parents. It is important that pediatric nurses should pay attention and realized this phenomenon.

5) Self-care theory: Theory for nursing practice

The idea of self-care is described first. It has been foundational in the development of the dependent-care, self-care deficit, and dependent-care deficit theory of nursing. Self-care is a human regulatory function that individuals must, with deliberation, perform for themselves or have performed for others (dependent-care) to supply and maintain a supply of materials and conditions to maintain life; to keep physical and psychic functioning and development within norms compatible with conditions essential for life; and for integrity of functioning and development.

The relationship between self-care (SC), self-care agency (SCA), and therapeutic self-care demands (TSCD) is described. Self-care is the practice of activities that individuals initiate and perform on their own behalf in maintaining life, health, and well-being (Orem, 2001). Self-care deficit will happen when person are unable to participate in making decisions and caring for self. They need another person who is as a caregiver to provide continuously the amount and quality of required self-care instead of them. "Self-care deficit" refers to the relationship between SCA and TSCD of individuals in which capabilities for SC are not equal to meeting some or all of the components of their TSCD.

Orem (2001) stated that maturing persons who are responsibility to know and meet the TSCD of relevant others who are socially dependent on them are called "dependent-care agent". Dependent person (ex. infants, children or persons with disabling conditions) need responsible person to perform dependent-care for them. "Dependent-care (DC)" refers to the practice of activities that responsible maturing and mature persons initiate and perform on behalf of socially dependent persons for

some time on a continuing basis to meet their TSCD in order to maintain their life and contribute to their health and well-being (Orem, 2001)

According to Orem (2001), in the context of the family setting, parent is viewed as a person having the right and responsibility to care for persons socially dependent on them as children. Parents have a major role about feeding to preschoolers, because preschoolers have some limitations in making known their need for self-regulation of feeding and for engaging mealtime interaction. DC is a helping situation that the preschoolers need assistance from parents in providing for their nutritional needs. Parents have to know what their preschoolers' need, and they can provide help preschoolers in providing proper nutrition, giving encouragement, guiding and directing their children during mealtime, and supporting personal development through interaction and teaching through role modeling (Orem, 1991, 2001).

Understanding of the elements and principles of dependent-care is useful for pediatric nurses in helping parents to develop DCA (Armer et al., 2009). Orem (2001) stated that the concept of DCA and SCA is similar viewed. SCA refers to the complex acquired ability of mature and maturing persons to know and meet their continuing requirements for deliberate, purposive action to regulate their own human functioning and development (Orem, 2001). The broad conceptual structure of SCA is formed by three-part structure; 1) the self-care operational capabilities; 2) power components enabling for self-care operations; and 3) capabilities and dispositions foundational for action. The power components (PCs) are emphasized in this study. PCs as specific enabling capabilities essential for performing SCA/DCA and self-care/dependent-care behaviors also provide direction for accessing related literature and help nurses to use the knowledge gleaned for nursing process (Kathie McLaughlin Renpenning, Taylor, & Pickens, 2016). The PCs are necessary for having the capabilities to engage in dependent-care operations in concrete situations were formulated and expressed. SCA/DCA which is the power to engage in dependent-care develops through the spontaneous process of learning. Its development is aided by intellectual curiosity, instruction, and supervision of others and by experience in performing self-care measures (Orem, 2001).

Moreover, there are factors internal or external to individuals that can affect their abilities to engage in dependent-care or affect the kind and amount of dependent-care required are named “basic conditioning factors (BCFs)”. BCFs can affect both individual’s dependent-care requisites and their development and exercise of DCA. BCFs composed of age, gender, developmental state, environmental factors, family system factors, sociocultural orientation, health state, pattern of living, healthcare system factors, and resource availability and adequacy (Orem, 2001). The conceptual structure of SCA is illustrated in Figure 4.

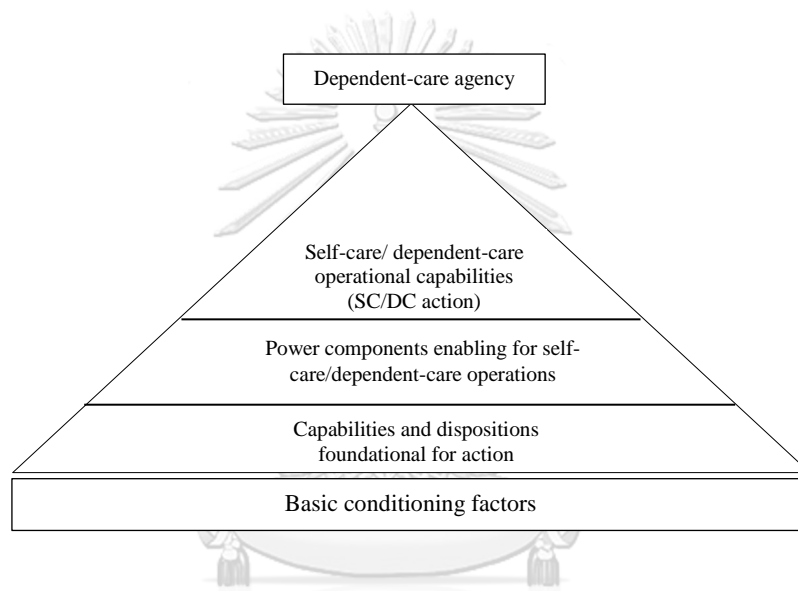


Figure 4 Conceptual structure of Dependent-care agency (Orem, 2001)

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Ten PCs are necessary for having the capabilities to engage in DCA. The Nursing Development Conference Group (NDCG) (1979) identified ten PCs or specific enabling capabilities essential for performing estimative, transitional, and productive operations of DCA. They were listed as follows; 1) ability to maintain attention and requisite vigilance; 2) ability to control use of the available physical energy; 3) ability to control the position of the body; 4) ability to reason within a self-care frame of reference; 5) motivation; 6) ability to make decisions about self-care; 7) ability to acquire, retain, and operate technical knowledge about self-care; 8) a repertoire of cognitive, perceptual, manipulative, communication, and interpersonal skills; 9)

ability to order discrete self-care actions; and 10) ability to integrate self-care operations with other aspects of personal, family, and community living.

Assessing BCFs and PCs can be a part of health history and physical assessment. This assessing revealed the person's self-care abilities. Dependent-care deficit can occur if the dependent-care ability of dependent-care agent is not adequate to meet therapeutic self-care demands of dependent person. In this study, preschoolers' parents are required to perform dependent care (parental feeding behaviors) for dependent person (the preschoolers) in order to maintain preschoolers' lives and contribute to their health and well-being (Orem, 2001). However, several literatures showed that parents in Thailand, especially in urban perform inappropriate parental feeding behaviors. These inappropriate parental feeding behaviors result children's health and their eating behaviors. The ability of parents to engage in dependent-care depends upon many factors, including some factors of BCFs and PCs, which might contribute to the variations found among parents' performing feeding behaviors for their preschoolers.

Basic conditioning factors

1) Sociocultural orientation

Sociocultural orientation is a factor that relates individuals to their families of origin or families of marriage (Orem, 2001; Wilson, Mood, Risk, & Kershaw, 2003; Wong, Ip, Choi, & Lam, 2015). Sociocultural orientation is information that relevant to insights about self-care agency (Orem, 2001). Sociocultural factors included culture, education, occupation, occupational experiences, life experiences (Orem, 2001; Wong et al., 2015), ethnicity, and beliefs (Wilson et al., 2003). Orem (2001) stated that sociocultural orientations of persons to health and health care, the care measures prescribed by their culture (Orem, 2001).

It is well accepted that parental feeding beliefs and practices are influenced by culture (Sherry, Scanlon, Barden, & Kallio, 2008; Liu, Mallan, Mhrshahi, & Daniels, 2014). Culture is a medium through which a person's beliefs, standards, and norms for something is structured, learned, shared, practiced, and judged (Slusher, Withrow-Fletcher, & Hauser-Whitaker, 2010). Parents who have beliefs regarding child feeding play a significant role in performing parental feeding behaviors

(Cardel et al., 2012). The culture and beliefs of the parents could influence the child rearing practice including feeding behaviors (Un-Em, 2007). Related to eating, cultural influences lead to differences in the thoughts of the habitual consumption of certain foods and in traditions of preparation (Steptoe, Pollard, & Wardle, 1995). This also leads to the food preparation in their family. Cultural influences have a significant effect on eating patterns of adults, what and how adults feed their children (Liu, 2013). Life experiences of person can lead their perception, beliefs, and feeling related to something or events that resulted to the individual's attitude toward behaviors (Sereerat, 1996).

Similar to parents' life experience about child feeding, parents received the child feeding information from their parents, family members, friends, and others in their society. The information is formed into their thoughts and beliefs related to child feeding which can reflect their attitude toward feeding to their children. Attitude is as antecedent to behaviors that provide the rationale for the behaviors (Birch et al., 2001; Un-Em, 2007). These parents will perform feeding behaviors based on their attitude. In this study, therefore, the sociocultural orientation factor is examined in terms of parental feeding attitude which it can be interpreted by preschoolers' parents' thought and feeling about feeding to their children. The theoretical substruction is shown in Figure 1.

2) Pattern of living

Pattern of living is a factor from basic conditioning factors which is defined as activities indicative of daily lifestyle that influence the demand for care in individuals. Orem has not explicitly defined patterns of living but characterized them as factors routinely engaged in that describe individuals in their worlds of existence (Orem, 1991). Pattern of living is the person's usual activities indicative of daily lifestyle, and it includes usual and repetitively performed daily activities that influence individual's self-care (Orem, 1995; 2001). Moreover, the foods or kind of foods that people habitually and repeatedly eat every day characterize their eating habits (Ramos & Stein, 2000). In this study, pattern of living means the parents' usual activities of daily living about eating. Eating pattern of parents can become to eating

habits individually. Therefore, parental eating habit is one influencing factor examined from patterns of living. The theoretical substruction is shown in Figure 1.

3) Resources availability and adequacy

Resources availability and adequacy is a factor in basic conditioning factors which affected primarily the selection of means to meet self-care requisites and the associated care measures (Orem, 2001). Macmillan Dictionary (2017) and American Heritage Dictionary (1982) defined “resource” as something that you can use to help you to achieve something. Resources were as key contributors to the development and exercise of and individual’s self-care/dependent-care agency (Orem, 1985). From Orem's (1985) perspective, resources are those tangible and intangible strengths that enable dependent care agent to facilitate the development and exercise of the essential dependent care for dependent care person. Resources were interpreted as the personal and interpersonal “strengths and abilities” of person to perform self-care/dependent-care (Orem, 1985).

The more there are available resources in dependent care agency, the easier it will be for dependent care agent in responding to the needs of a dependent person (Darlene, 1989). On the contrary, the lesser there are available resources in a dependent care agency, the harder it will be for dependent care agent in responding to the needs of a dependent person. Resources unavailability and inadequacy are as barriers of dependent care agent in responding to the needs to meet dependent-care requisites for dependent person. In this study, barrier to parental feeding behaviors is one influencing factor substructured from resources availability and adequacy of a dependent person. The theoretical substruction is shown in Figure 1.

Power components

1) Motivation

Orem pointed that motivation is one of power components of DCA which nurses most used to help patients motivate themselves (Hanuchareonkul, 1997). It was as an individual’s desire or need which inspires a certain behavior as originated by stimulating forces (Deci & Ryan, 1985). Motivation is as a goal orientations for dependent-care that are in accord with its characteristics and its meaning for life, health, and well-being (Orem, 2001). In the context of nursing, motivation is

addressed from human perspective of individuals who engage in action to bring about conditions in themselves, or in their dependents' life, health and well-being (K. M. Renpenning & Taylor, 2003).

In addition, the concept of motivation can be typically described through the tenets of self-determination theory (Deci & Ryan, 1985). Self-determination is a quality of human functioning that involves the experience of choice, in other word, the experience of an internal perceived locus of causality. It is integral to intrinsically motivated behavior and is also evident in some extrinsically motivated behaviors (Deci & Ryan, 1985). Motivation is as an individual's desire or need which inspires a certain behavior as originated by stimulating forces. It is a natural motivational tendency which is critical element in cognitive, social, and physical development because it is through acting on one's inherent interests that one grows in knowledge and skill (Deci & Ryan, 1985). Therefore, motivation in this study is explained as the benefits or positive consequences that happen to preschoolers from undertaking the parental feeding behaviors known by parents. It seems like the knowing in positive outcomes of parental feeding behaviors. The benefits known by person are as a goal orientation or intrinsic motivator to perform own behaviors (Deci & Ryan, 1985; Pender et al., 2006; Thanavaro, Moore, Anthony, Narsavage, & Delicath, 2006). Through intrinsic motivation, parents are able to know the reason behind why do perform those activities (parental feeding behaviors), that is for satisfaction and pleasure. Therefore, in this study, motivation is explained by the benefits of parental feeding behaviors.

6) Factors influencing the preschoolers' parental feeding behavior and related research

According to Orem's theory (2001) and previous research on the relationship between parental feeding behaviors of preschool children and its predicting factors, the factors are selected to be predicting factors of parental feeding behaviors, including sociocultural orientation, pattern of living, and resources availability and adequacy which came from basic conditioning factors, and motivation which came from power components. Based on the principles of the theory of self-care, applying

this theory in parental feeding behaviors, parental feeding behaviors are affected by parental feeding attitude, parental eating habits, barriers to parental feeding behaviors, and benefit of parental feeding behaviors. The theoretical definition, operational definition, relationship to parental feeding behaviors, and the measure for each predicting factor are presented below.

6.1) Parental feeding attitude

Attitude is important predictor that strongly influences person's behaviors (I. Ajzen, 1985; Driscoll, 2000; Orem, 2001; Patrick & Nicklas, 2005). Parents will perform the feeding behaviors to their children based on personal attitude. Parental attitudes were likely to be a significant factor in influencing expressing of parent's behaviors to child discipline (Halpenny, Nixon, & Watson, 2010; Kendler, 1996). Feeding is a part of parents' role in child rearing. It is claimed that parental feeding attitude influenced parent's feeding behaviors to their child.

In literature, the definition of parental feeding attitude is rarely seen. There is only one study presented by Kanpheungton (2010) proposing the definition of parental feeding attitude of overweight preschoolers' parents. It refers to parents' thoughts, feelings, ideas, or concerns about their children's weight and eating behaviors, which can be positive, negative, or neutral. It composed of concerning about child weight, food restriction, and pressuring to eat (Kanpheungton, 2010). Kanpheungton's study (2010) studied parents' attitude toward child's weight and some feeding practices, but it did not reflect parents' attitude toward child care about eating in general.

Moreover, several studies proposed only the dimensions of parental feeding attitude and practices without explanation meaning of the concept (Birch et al., 2001; Corsini et al., 2008; Faith et al., 2004; Geng et al., 2009; Mulder, Kain, Uauy, & Seidell, 2009). For example, Faith and colleagues proposed that parental feeding attitude has three domains: perceived child weight, child weight concern, and perceived responsibility (Faith et al., 2004), Liu identified that maternal feeding attitudes can be illustrated into 4 domains: perceived feeding responsibility, perception of own/child weight, concerns about child weight, and overall perception of feeding (Liu, 2013). Northrup proposed that maternal attitudes toward child feeding consisted of 4

dimensions of feeding practices relating to maternal monitoring, modeling, pressuring and restricting to eat (Northrup, 2014).

As details mentioned above, the parental feeding attitude contains various dimensions. First dimension was parents' perception about child's weight because those studies focused on children who are at risk for overweight and obesity (Faith et al., 2004; Kanpheungton, 2010; Liu, 2013). Second dimension was feeding practice perception which contained the feeding practices related to childhood overweight as well, such as food restriction, pressuring to eat, or monitoring (Kanpheungton, 2010; Liu, 2013; Northrup, 2014). Last dimension was perceived feeding responsibility in feeding practices for their children, such as parent's decision in child eating right kind of food, and what child's portion sizes are (Faith et al., 2004; Liu, 2013). Some dimensions (parents' perception about child's weight and feeding practice perception) were not selected to apply in this study because those dimensions were examined in parents of children who are at risk for overweight and obesity. It is inappropriate to apply for parents of children in general in this study.

To clarify the definition of parental feeding attitude, the word "attitude" is examined first. The Macmillan Dictionary (2017) defined "attitude" as someone's opinions or feelings about something. The Oxford Dictionary (2010) defined "attitude" as the way that you think and feel about somebody/something; the way that you behave towards somebody/something that shows how you think and feel. UNICEF (2014) defined "attitude" as a way of thinking or feeling about someone or something. In conclusion, attitude in this study means a ways of thinking or feeling regarding something.

In addition, the word "feeding" is defined as to give food to a person or an animal (The American Heritage Dictionary, 2019; The Macmillan Dictionary, 2017). Feeding is a part of parents' role in child rearing. To promote children's health and eating behavior, it is only not to give food to children. Parents should provide healthy food, enhance good eating behaviors, and provide pleasant eating environment for their children (Lusmilasari, 2014). In addition, appropriate care behaviors based on Orem's theory consisted of seeking information, making judgment and decision, and taking those actions for dependent person (Orem, 1991).

All actions are as feeding responsibilities that parents should know and perform to their children.

To summarize, in this study, parental feeding attitude refers to a way of thinking and feeling of preschooler's parents regarding their feeding responsibility in seeking information, making judgment and decision, and taking actions in providing healthy food, enhancing pleasant eating environment, and providing good eating behaviors for their preschoolers. As details mentioned, a way that preschoolers' parents think and feel regarding their feeding responsibility has the direction. The higher level of parents' thinking or feeling about responsibility in child feeding is, the better they perform parental feeding behaviors.

Existing research showed that parental feeding attitude was correlated with parental feeding behaviors (Birch et al., 2001; Eliassen, 2010; Geng et al., 2009; Liu, 2013; Northrup, 2014). Even though previous research on the relationship between parental feeding attitude and parental feeding behaviors of preschoolers' parents were limit, there are literatures revealed that the relationship between attitude and behaviors in other populations. There is sound empirical evidence which presented the individuals' attitudes related to their dietary intake. For example, college students in Britain who concern about natural food content, weight control, and health (positive attitude toward healthy eating) had healthier eating than other students who value convenience that eating more potato chips (Pollard, Steptoe, & Wardle, 1998).

Moreover, American college students reported that they choose food (eating behavior) base on their individual reasons (dietary attitude) (Mooney & Walbourn, 2001). People who think about their health (attitude toward healthy eating) were more likely to pick a healthy snack while people who indicate a preference for sweet food had a higher consumption of sweet and high-fat snacks (eating behaviors) (Roininen et al., 2001; Zandstra, de Graaf, & Van Staveren, 2001). All studies showed that people's response to food products were determined by their attitudes. This correlation of food-related attitudes with consumption behavior shows that attitudes are indeed related to what people eat (Costell, Tárrega, & Bayarri, 2010; Vabø &

Hansen, 2014). Therefore, it is confirmed that parental feeding attitude can affect the parental feeding behaviors

Parental feeding attitude measures

From literature review, existing instrument measuring parental feeding attitude is rarely seen. There are only two existing instruments: Child Feeding Questionnaire (CFQ) by Birch & Fisher (2001) and Child-Care Providers' Attitude Questionnaire by Freedman & Alvarez (2010). The details are explained below.

1) Child Feeding Questionnaire (CFQ), a widely used validated tool to assess parental beliefs, attitudes, and practices regarding child-feeding and the likelihood of their child becoming obese (or obesity proneness) among parents of 2- to 11-year-old children (Birch et al., 2001). The CFQ contains 31 items which measuring 7 factors: perceived responsibility, perceived parent weight, perceived child weight, concern about child weight, and 3 feeding styles including restriction, pressure to eat, and monitoring. All items were measured on a 5-point Likert scale, with each point represented by different word anchor. Focusing on parental feeding attitude, it is composed of three dimensions including concerning about child weight (3 items), perceived child weight (6 items), and perceived responsibility (3 items) (Birch et al., 2001; Faith et al., 2004).

The examples of items assessing parental feeding attitude in each domain are illustrated; 1) concerning about child weight (How concerned are you about your child eating too much when you are not around her?), with a 5-point Likert scale, ranging from 1 (unconcerned) to 5 (very concerned); 2) perceived child weight (How about your child weight now?), with a 5-point Likert scale, ranging from 1 (Markedly underweight) to 5 (Markedly overweight); and 3) perceived responsibility (how often are you responsible for deciding what your child's portion sizes are?), with a 5-point Likert scale, ranging from 1 (Never) to 5 (Always). The CFQ has demonstrated good validity and reliability. Higher scores indicated greater parental perceptions or concerns and more frequent use of a feeding strategy. However, this measure has some limitations; for example, most items in this instrument tend to be the question related to the risk for overweight and obesity in children, it is not the point in this study.

2) Comprehensive Feeding Practices Questionnaire (CFPQ) was developed by Freedman & Alvarez (2010). The questionnaire was modified from Stanford Child Feeding Questionnaire by Hammer and colleagues (Hammer, Bryson, & Agras, 1999) and the Caregiver Feeding Styles Questionnaire by Hughes and colleagues (Hughes et al., 2005) to measure feeding attitudes and practices relating to child-feeding practice of preschoolers' Multi-Ethnic child-care providers in the US. The questionnaire consisted of 16 items, with a dichotomous (Yes=1, No=0). This scale started with the sentence "To help children become happy and healthy eater..." then follow with the feeding practices. The examples of item are presented "I let the children eat wherever they want", "I insist on the children finishing their food before they leave the table", "I let the children decide how much they should eat, etc. Some items need to reverse scores. The higher scores mean child-care providers were better attitude and practices. However, this measure has some limitations; for example, all items only focused on parents' actions which is just one part of parental feeding behaviors in this study. Moreover, the questions tended to ask the child-care providers' practices more than tended to ask their attitudes.

Therefore, parental feeding attitude questionnaire in this study was developed by the researcher from review existing literatures and interview the participants. The process of instrument development was illustrated in chapter III.

6.2) Parental eating habits

Eating is important for person's life, thus regulation of eating behaviors is necessary for daily occurrence. Macmillan Dictionary (2017) defined "habit" as something that you do often or regularly. From literature review, eating habit refers to the usual eating activity in eating/not eating foods, number of meals, food type selection, food preparation, cooking, consumption, and emotional eating (Srimahan, 1998). Chantorn (2005) and Tongnun (2009) defined "eating habit" as repeatedly eating activity of person that intend to do continually (Chantorn, 2005; Tongnun, 2009). Moreover, eating habit means the behaviors of person about what they eat habitually which includes food type, food selection, and number of meals in each day (Chiangkuntod et al., 2013).

As details mentioned, eating habits and eating behaviors are quite similar meaning. The differentiation between two words was illustrated that habit must have frequency of individual behavior. Therefore, the literature review of eating habits and eating behavior were examined together. Chiangkuntod (2013) defined eating behavior as an ability of person in food consumption, food selection, and appropriate eating (Chiangkuntod et al., 2013). Moreover, many previous studies illustrated only attributes of eating habit/behavior. For example, eating habits consisted of consumption frequencies of unhealthy foods and healthy foods (Kleiser, Mensink, Neuhauser, Schenk, & Kurth, 2010), eating habit contained 9 eating behavior patterns (domains): low fat eating, healthy eating, eating out, snacking, sweet and biscuits, emotional eating, planning ahead, meal skipping, and cultural/lifestyle behavior (Dehghan, Asghari-Jafarabadi, & Salekzamani, 2015).

In addition, van Strein and colleagues (1986) presented eating behavior consisted of 3 domains: restrained eating (attempts to refrain from eating), external eating (eating in response to food-related stimuli regardless of the internal state of hunger or satiety), and emotional eating (eating in response to negative emotions) (van Strien et al., 1986). While, another study presented healthy eating behavior consisted of 5 domains: dietary fat and fiber intake, daily intake of fruit and vegetables, dietary restraint, nutrition knowledge, household affluence (F. Johnson, Wardle, & Griffith, 2002).

As details mentioned, previous studies presented attributes focusing on food consumption. However, parental eating habit in this study is not just what persons eat, but it contains how they select foods and what appropriate eating manner they are. Since parents are persons who prepare meals and provide good eating environment for their children, parental eating habit is a factor that affects the eating environment of family which is as parental feeding behaviors (Pai, 2013). Awareness of one's eating habits is necessary for parents since research has shown that role modeling of healthy eating habits of parents is essential the development of healthy eating choices in young child (Brattole, 2008).

Existing literature illustrated that the way parents take care themselves is as same as the way they take care of their children. For example, parental eating habit

about food and vegetable consumption influenced on parental feeding behavior about food and vegetable availability at home (Kratt, Reynolds, & Shewchuk, 2000). Furthermore, there was strong association between maternal eating style and maternal feeding styles (Birch & Fisher, 2000; Fisher & Birch, 1999b; Wardle et al., 2001); for example, the type of milk which mothers' drink was similar to the type of milk which mothers prepare for their school-aged children (R. K. Johnson, Panely, & Wang, 2001) and also for their preschool children (Fisher, Mitchell, Smiciklas-Wright, & Birch, 2001). Parents like to be really aware of what they're eating, and they guess the same situation what their children should eat (Peters, Parletta, Lynch, & Campbell, 2014).

Preschoolers established self-eating behaviors by learning from their parents who are a main caregiver in taking care of them. Parent is not only main caregiver but also parent is as a role model of preschoolers to learn about their eating habits. In a study examining family influences on unhealthy food consumption (fat, sodium and calorie), It was found that the diets of younger children were related to their parents' diets (Patterson, Rupp, Sallis, Atkins, & Nader, 1988). Over, there were significantly positive correlations between children's food intake and mothers' food intake (Longbottom, Wrieden, & Pine, 2002). Moreover, parents can influence the food choices of young children through the types of food prepared at home and children eating behaviors through interactions that take place during meals and parents model (Hanson, Neumark-Sztainer, Eisenberg, Story, & Wall, 2005; Lau, Quadrel, & Hartman, 1990). Children's diets typically mirror their parents' diets (Bellows & Anderson, 2006).

Moreover, parents prepared food and shaped the development of children's behaviors from their own eating styles. Through by parental feeding habits, children learn from parents' food selection and preference, and the regulation of energy intake during family meal habitually (Scaglioni et al., 2008). existing research showed the similar feeding behaviors between parents and children, such as food acceptance and food preferences; for example, children's intake of fruit and vegetables was positively related to parents' intake of fruit and vegetables (Fisher et al., 2002), dieting children were more likely to have dieting caregivers (Pike & Rodin, 1991), food

preferences of children have been found to be similar to those of their family members (Pliner & Pelchat, 1986 as cited in Eliassen, 2010), children in healthier eating family have healthier eating habits (Gillman et al., 2000).

Even though there were few studies on the relationship between parental eating habits and the benefits of parental feeding behaviors, it could be supported by previous research on the relationship between restricting children's intake in mothers and restricting their own eating (Francis, Hofer, & Birch, 2001). In this situation, mothers who restricted their own eating known the outcomes of restricting self-eating, a part of eating behaviors, such as normal weight, and they want their children have normal weigh also. Thus, they will restrict children's intake. Moreover, it was supported by the study of Gillman and colleagues which reported that children of healthier eating family have healthier eating habits (Gillman et al., 2000). It is claimed that parents in healthier family known the benefits of healthy eating habits; therefore, they encouraged family members to have healthy eating habits as they are.

For eating habits in Thai people, a recommendation by Ministry of Public Health about The guideline to promote health behaviors for Thai people called "The 10 National Health Recommendations". Focus on food consumption behaviors, Thai people should perform these recommended behaviors habitually to promote health and eating behaviors. The 10 National recommendation focusing on eating behaviors part consists of 1) purchase fresh, clean, and uncontaminated foods, 2) eat foods prepared in clean plates, 3) eat newly cooked food, 4) avoid eating harm food, such as foods with dying color, preservative, seasoning powder, borax, insecticide, formalin, half-cooked food, etc., 5) concern about food marked by the food and drug administration (FDA), 6) concern about expired date tag on instant foods, 7) have regular mealtime, 8) eat five food groups adequately, 9) drink clean and uncontaminated water at least eight glasses every day, 10) avoid excessive intake of sweet, salty, sourness, too spicy foods, and processed stuffs with a load of preservatives, 11) avoid excessive intake of unhealthy foods, 12) wash hands before and after meals, 13) use serving spoon when eating with others.

Furthermore, Food-based Dietary Guidelines for good health, they 9 recommended rules as follows: 1) Eat a variety of foods from each of the five food groups and maintain a proper weight, 2) Eat adequate amounts of rice or alternate carbohydrate sources, 3) Eat plenty of vegetables and fruits regularly, 4) Eat fish, lean meat, eggs, legumes and pulses regularly, 5) Drink in appropriate quality and quantity for one's age, 6) Eat a diet containing appropriate amounts of fat, 7) Avoid sweet and salty foods, 8) Eat clean and safe foods, and 9) Avoid or reduce the consumption of alcoholic beverages.

Parental eating habits measures

There were many existing measures to assess eating habits of person. The details were presented below:

1) "Food Frequency Questionnaire (FFQ)" was developed by Kleiser and colleagues to assess dietary habits which covered food consumption frequencies and average portion sizes of 4 unhealthy foods (salty snacks, fast food, soft drinks, and chocolate) and 3 healthy foods (fresh fruit, salad/ cooked vegetables combined, and whole meal bread) (Kleiser et al., 2010). It consisted of 45 items of foods in the last few weeks. The daily food intake was calculated by multiplication of food frequency and portion size. This instrument has good validity and reliability. However, there are some limitations; for example, all items focused on several food types only, not explaining other eating behaviors. Moreover, the food types were too specific and appropriate in those researchers' study, but inappropriate in Thai context, such as pancake, ketchup or mayonnaise, honey or jam, cake or pastry etc.

2) Eating Behavior Pattern Questionnaire (EBPQ) was developed by Dehghan and colleagues to evaluate dietary fat intake by 9 eating behavior patterns examined in Iranian female students. Those patterns include low fat eating, healthy eating, eating out, snacking, sweet and biscuits, emotional eating, planning ahead, meal skipping, and cultural/lifestyle behavior (Dehghan et al., 2015). This instrument was tested psychometric properties with content validity, reliability (internal consistency & stability), construct validity (convergent and discriminant), and feasibility (Dehghan et al., 2015). However, most items in this instrument cannot be used in this study because the contents were too specific; for example, "I count fat grams", "I try

to limit my intake of red meat”, “I eat when I'm upset”, and “My emotions affect what and how much I eat”. And some dimensions in this measurement were not included in current study.

3) The “Food Consumption Behaviors and Eating Habits Questionnaire” was developed in many studies in Thailand in various population, such as school-age students (Kaewprom, 2006; Promma & Muenpech, 2014), university students (Polsiri, 2008), working adults in Bangkok (Pensresirikul, 2012), and hospital personnel in Bangkok (Tongnun, 2009), etc. based on The 10 National Health Recommendations and Food-Based Dietary Guideline. Some studies examined in children and adolescents were inappropriate to use in this study. For the study of Pensresirikul (2012) and Tongnun (2009), they were examined in adults in Bangkok. This measure consisted of 25 items, a 4-point-Likert scale, ranging from 1 (Never) to 4 (Always), to assess 2 domains: eating habits and the frequencies of food intake. The psychometric properties are investigated by CVI and Cronbach's alpha, but not presented the number. Some items in this measurement specific to kinds of foods which are too deep and cannot reflect the parental eating habits in this study; for example, “How often do you eat canned fish?”, “How often do you eat alcohol drink?”, “How often do you clean up the vegetable with vinegar for 5 minutes?”.

4) The “Food Consumption Behaviors Questionnaire” was developed by Chiangkuntod and colleagues (Chiangkuntod et al., 2013). It was developed to measure eating behaviors of Thai people aged over 18 years in Bangkok. There were 30 items with four points Likert scale, ranging from 1 (Never) to 4 (Always). This measure was developed base on Food Dietary Guideline for Thai and The 10 National Health Recommendations. This is a self-assessment scale for assessing express or practice of purchasing food, selecting foods, and appropriate intake of Thai people in Phasicharoen district, Bangkok. This questionnaire intended to measure good food consumption behaviors and poor food consumption behaviors. The example of good food consumption behaviors is “You drink fresh water at least 6-8 glasses per day”. The example of poor food consumption behaviors is “You do not have breakfast because it is at the peak period”. Each item was measured using a three-point Likert- scale ranging from 0 (never practice) to 2 (always practice). The

total scores were calculated to be mean score ranged from 0-2. Higher scores indicate a greater tendency to exhibit the good consumption behavior. The mean score was clarified in 3 level; good consumption (1.34-2.00), moderate consumption (0.67-1.33), and poor consumption (0.00-0.66). However, there are some limitations; for example, some dimensions in this measurement were not included in current study, and the psychometric property testing was not established.

To summarize, from the literatures, parental eating habit in this study refers to the usual eating activities of preschooler's parents in appropriate food selection, food consumption, and eating manners. It is needed the researcher to develop new instrument from literature review. The process of instrument development is illustrated in chapter III.

6.3) Barriers to parental feeding behaviors

Barriers in this study are indicated that the unavailability and inadequacy of resources necessary for performing parental feeding behaviors. Existing literature showed that there were many resources availability and adequacy helping person to perform action. It depended on various situations in each study. For example, Orem illustrated that resources availability and adequacy included material resource (Orem, 1985), economic, personnel, agencies, time (Orem, 2001). Moreover, the availability of protein-containing food and its cost were resource availability to maintain food intake sufficient for persons living under specified conditions (Orem, 2001). Public transportation was resource availability that low-income mothers took her young children to get the vaccination at immunization clinic (Wilson, Baker, Nordstrom, & Legwand, 2008).

Furthermore, Darlene (1989) identified the resources available for family in 3 groups including personal resources (ex. innate intelligence, knowledge and skill, personality traits, self-esteem, and time), the system's internal resources (ex. cohesion, communication, family organization, and strong and clear family boundaries), and social support (ex. community resources: network and appraisal support, and community institutions) to support self-care/dependent agency of family members (Darlene, 1989).

Moreover, closing of the base hospital was claimed as a resource availability forcing patients to use community resource, primary care unit for pediatric patients and anticipatory guidance were available resources for parenting of pediatric families (Shum, McGonigal, & Biehler, 2005). High school students who perceive that they have resources availability and adequacy of support system, the monetary resources, and adequate living conditions also practice healthy behaviors more frequently, have higher self-care abilities in practice healthy behaviors (Callaghan, 2006).

As details mentioned, various resources availability and adequacy were illustrated. It depended on the situations and contexts of each person. The more there are available resources in dependent care agency, the easier it will be for dependent care agent in responding to the needs of a dependent person (Darlene, 1989). On the contrary, the lesser there are available resources in a dependent care agency, the harder it will be for dependent care agent in responding to the needs of a dependent person. Resources unavailability and inadequacy are as barriers of dependent care agent in responding to the needs to meet dependent-care requisites for dependent person. The level of performing activity depends on the barriers knowing to action. The barriers to action are as an influencing factor which directly negative influence on the individual's behaviors. Persons will not perform behaviors when they know that there are problems/barriers and they can't control them. In contrast, persons will perform behaviors when they feel that they can control their problems/barriers (Hanuchareonkul, 1997).

When the barriers to perform action of person are high, action is unlikely to occur. On the other hand, when the barriers to perform action of person are low, the probability of action is much greater (Pender et al., 2006). Related to parental feeding behaviors, preschoolers' parents will not perform feeding behaviors when they feel that there are problems/barriers and they can't control those barriers. In contrast, parents will perform appropriate behaviors when they feel that they can control their problems/barriers. As a result, the barriers to parental feeding behaviors known by parents influence the performing of parental feeding behaviors

The barriers to perform parental feeding behaviors were illustrated from literature review and interview preschoolers' parents by the researcher. The

following are internal barriers to perform parental feeding behaviors perceived by parents: some parents lack of nutritional knowledge (Pettersen, 2015; Sisson, Smith, & Cheney, 2017; Soliah, Walter, & Jones, 2011), so they are not confident to choose healthy foods (Phonvichai & al., 2005), and lack of cooking skills (Soliah et al., 2011). Because of hard working, some parents lack of time to perform appropriate parental feeding behaviors, such as taking care of the children (Maneeton, Wattana, Banjongpru, Leela, & Banjongpru, 1986; Nepper & Chai, 2016), preparing healthy foods and family meals (Davis, Befort, Steiger, Simpson, & Mijares, 2013; Fulkerson, Neumark-Sztainer, & Story, 2006; Hayter et al., 2015; Nepper & Chai, 2016; Noble, 2007; Sherry et al., 2004), seeking information about healthy food and no time to eat with children (Nepper & Chai, 2016).

Furthermore, some parents perceived that barriers to provide and eat healthy foods are inconvenience because it takes longer time (Fulkerson et al., 2006; Pettersen, 2015; Vereecken & Maes, 2010). Some parents perceived that the barriers to perform appropriate parental feeding behaviors is difficult, such as eating healthy food when going out (Pettersen, 2015), preparing healthy food at home (Nepper & Chai, 2016; Sherry et al., 2004), eating with family members (Pocock, Trivedi, Wills, Bunn, & Magnusson, 2010; Sherry et al., 2004), encouraging children to eat healthy food (Noble, 2007), not giving sweets to children (Nepper & Chai, 2016), and being a good role model about healthy eating for children (Davis et al., 2013). In addition, some parents were tired and frustrated to perform appropriate parental feeding behaviors; for example, preparing healthy foods for children (Hayter et al., 2015; Nepper & Chai, 2016; Pocock et al., 2010). Other internal barriers leading parents avoid performing parental feeding behaviors is some parents do not like cooking (Nepper & Chai, 2016), do not like to clean kitchen (Soliah et al., 2011), and low family income (Maneeton et al., 1986). Lower income is one of the barriers in providing healthy food, parents usually thought that unhealthy food likely more cost-effective for them (Spruijt-Metz et al., 2002).

In addition, the following are external barriers to perform parental feeding behaviors perceived by parents: healthy foods are too expensive (Davis et al., 2013; Hayter et al., 2015; Nepper & Chai, 2016; Pettersen, 2015; Vereecken & Maes, 2010),

always asking for unhealthy foods of children (Nepper & Chai, 2016), lack of support from other family members, such as letting children eat whatever they want and not being good role model in eating healthy foods (Pocock et al., 2010), eating unhealthy foods while children are with (Nepper & Chai, 2016; Pocock et al., 2010; Soliah et al., 2011), and children want to eat what their friends eat, such as snacks or other unhealthy foods (Nepper & Chai, 2016). It is difficult to refuse them when their children ask for eating unhealthy snack.

From literatures mentioned, most existing literatures were studied abroad. Previous evidences studied in Thai preschooler's parents specific to parental feeding behaviors were little seen. It was needed to examine using interview for this phenomenon. According to existing literatures presented now. In this study, therefore, the barriers to parental feeding behaviors were identified as parents' perception of unavailability and inadequacy to perform parental feeding behaviors for their preschoolers, including personal barriers (lack of knowledge, energy, time, and self-confidence) and environmental barriers (family monetary and interpersonal influence).

There are existing research presented the relationship between the barriers to parental feeding behaviors and parental feeding behaviors. Most previous studies used the term "perceived barriers". For example, the perceived barriers to maternal feeding behaviors had a negative relationship with maternal feeding behaviors (Palupi, 2014). Moreover, there are other research studied on the relationship between perceived barriers to actions and performing those actions in other groups; for example, mother perceived barriers to breast feeding (e.g., lack of family support, insufficient prenatal education, inconvenience) tended to avoid performing breast feeding activity (Gartner et al., 2005), perceived barriers to preventive behaviors of respiratory infected diseases among preschooler's caregivers in child care center (too many preschoolers, lack of time) were negatively associated with preventive behaviors of respiratory infected diseases (Jaide, Santati, & Kongsaktrakul, 2012; Laemthaisong, 2016)

Moreover, school-age children perceived barrier to have breakfast (e.g. lack of time, not being hungry in the morning) were likely to avoid having breakfast (Reddan

et al., 2002), perceived barriers to healthy eating (low income, low accessibility, expensive) were negatively associated with fruit/vegetable consumption of alternative high school students. Moreover, the university staffs who perceived low barrier to exercise (not enough time, lack of knowledge, no exercise partner, fear of injury, etc.) tended to have exercise behaviors more than the staffs who perceived high barrier to exercise (Brinthaup, Kang, & Anshel, 2010).

Barriers to perform behaviors measures

From literature review, many researchers studied about barrier perception to various behaviors, such as eating healthy food of African Americans (Pawlak & Colby, 2009), healthy eating behaviors in midlife and older women (Yates et al., 2012), preventive health behaviors amongst parents of children aged 3-5 with recurrent acute diarrhea (Chokechalearmwong, 2012), behavior in prevention of acute respiratory infection of child care workers in child care centers (Jaide et al., 2012), milk expression behaviors in premature infants' mothers (Ratanasongkram, 2008), infection prevention behaviors in mothers of 1-5 years old children with cancer undergoing chemotherapy (Jansong, 2015), acute graft-versus-host disease preventive behaviors in mothers of children underwent stem cell transplantation (Kruecharn, 2016), eating healthy foods and fruit/vegetable consumption among alternative high school students (Bruening, Kubik, Kenyon, Davey, & Story, 2010), and maternal feeding behaviors of toddlers' Indonesian mother (Palupi, 2014).

Each researcher developed instrument to measure perceived barriers to various behaviors based on specific context of each study. However, there is only one existing instrument of Palupi (2015) who studied perceived benefits of maternal feeding behaviors which is "The Perceived Barriers to Maternal Feeding Behaviors Questionnaire". This tool measures the perceived barriers to maternal feeding behaviors of toddlers' Indonesian mother. Because the original version of this questionnaire was Indonesian, the tools in English version was not been tested the validity and reliability. Moreover, this instrument was developed for toddler's mothers, and some items in this questionnaire were inappropriate with the context of preschooler's parents in Thailand. Therefore, it is needed the researcher to develop new

instrument from literature review and interview the participants. The process of instrument development is illustrated in chapter III.

6.4) Benefits of parental feeding behaviors

Persons will act or approach objects that are satisfying or are likely to be beneficial or “benefit”. The benefits of action are defined as knowing in benefits or positive outcome expectations have been shown to be an important condition for participation in a specific health behavior. Anticipated benefits of action are mental representations of the positive or reinforcing the consequences of a behavior. Individuals are more likely to perform the behaviors if they know the benefits of actions are considered high. The benefits perception is positive outcomes perspective which can be identified as personal knowing in intrinsic motivation. It seems personal knowledge can motivate individuals to perform an appropriate action (behavior) for pertaining life, health, and well-being (Orem, 2001).

Related to parental feeding behaviors, parents are more likely to perform an appropriate feeding behavior if they know the reasons that the benefits of performing suitable parental feeding behaviors is considered high (Pender, 2006). If parents perceive positive outcomes in their children and themselves, and they are satisfying to perform appropriate parental feeding behaviors, they will perform appropriate parental feeding behaviors (provide healthy foods, provide pleasant eating environment, and enhance good eating behaviors). The better knowing in benefits of feeding behaviors, the more parents tend to perform appropriate feeding behaviors for their young children (Palupi, 2014). Knowing benefits in this study are as person’s knowledge which means intrinsic benefits. In this study, the benefits of parental feeding behaviors refer to the parents’ perception of information on the positive consequences which happen to preschoolers from undertaking the parental feeding behaviors. The benefits to the preschoolers are illustrated, such as healthy, normal growth, good eating behaviors etc.

There are existing research presented the relationship between the benefits of parental feeding behaviors and parental feeding behaviors. For example, mothers who had higher good perception on risks of getting malnutrition and severity of malnutrition, and good perception about the benefits on prevention of child

malnutrition did better practice on child feeding practices (Sitthideth, 2013), mother who had higher perceived benefits of maternal feeding behaviors did better feeding behaviors (Palupi, 2014). Moreover, there are previous research studies presented the relationship between the benefits perception of many activities and parent's behaviors; for example, school-age children' parents knew the benefits of healthy behaviors to both parents and their children which included healthy hair, skin and teeth (Hart et al., 2003). There was positive relationship between the benefits perception of health promotion for young children and maternal behaviors in promoting young children's health (Sakdapetchsiri, 2002), there was positive relationship between perceived health benefits of parents and parental lead poisoning preventive behaviors in young children (Bland et al., 2005).

The literature of knowing benefits of parental feeding behaviors of parents were illustrated. The following were benefits of performing parental feeding behaviors perceived by parents. Providing healthy food for children makes they get healthy food (Maneeton et al., 1986; Nicklaus, 2009), have good eating behaviors (Maneeton et al., 1986; Nepper & Chai, 2016; Pocock et al., 2010; Satter, 1999), have a good health (Carnell et al., 2011; Chotibang et al., 2009; Nepper & Chai, 2016), have healthy bone (Carnell et al., 2011), not be malnutrition (Chotibang et al., 2009; Sitthideth, 2013), maintain healthy weight (Vereecken & Maes, 2010), make children learn how to choose healthy foods (Martinez, Rhee, Blanco, & Boutelle, 2014), and reduce the risks of several diseases (Berlin, Davies, Lobato, & Silverman, 2009; Vereecken & Maes, 2010). Moreover, parents perceived benefits of not giving children sweets are to prevent tooth decay, and to help children not fat (Carnell et al., 2011).

Benefits of performing behaviors measures

From literature review, many researchers studied about perceived benefits of various actions, such as eating healthy food of African Americans (Pawlak & Colby, 2009), healthy eating behaviors in midlife and older women (Yates et al., 2012), developmental promotion behaviors among mothers of toddlers (Manowong, 2007), promoting toddlers' health behaviors of mothers (Sakdapetchsiri, 2002), milk expression behaviors in premature infants' mothers (Ratanasongkram, 2008), infection prevention behaviors in mothers of 1-5 years old children with cancer undergoing

chemotherapy (Jansong, 2015), behavior in prevention of acute respiratory infection of child care workers in child care centers (Jaide et al., 2012), acute graft-versus-host disease preventive behaviors in mothers of children underwent stem cell transplantation (Kruecham, 2016), and maternal feeding behaviors of toddlers' Indonesian mother (Palupi, 2014).

Each researcher developed instrument to measure perceived benefits of various actions based on specific context of each study. However, there is only one existing instrument of Palupi (2015) who studied perceived benefits of maternal feeding behaviors which is “The Perceived Benefits of Maternal Feeding Behaviors Questionnaire”. This tool measures the perceived benefits of maternal feeding behaviors of toddlers' Indonesian mother. Because the original version of this questionnaire was Indonesian, the tools in English version was not been tested the validity and reliability. Moreover, this instrument was developed for toddler's mothers, and some items in this questionnaire were inappropriate with the context of preschooler's parents in Thailand. Therefore, it is needed for the researcher to develop new instrument. The process of instrument development is illustrated in chapter III.



CHAPTER III

METHODOLOGY

The methodology in this study describes the descriptive correlational study including research design, population and sample, instrumentation, protection of human subjects, data collection, and data analysis. All details are described below.

Research design

A cross-sectional, descriptive correlational research design was used to examine the direct and indirect relationship between preschoolers' parental feeding behaviors, urban Thailand and the set of predicting factors including parental feeding attitude, parental eating habits, barriers to parental feeding behaviors, and benefits of parental feeding behaviors.

Population and sample

The target population in this study was fathers or mothers of preschoolers aged 3-6 years (36-72 months old) living in urban area, Thailand. In this study, urban Thailand means cities where are greater employment opportunities and more and better social services. A city municipality is established in an area where there are at least 50,000 citizens and sufficient income to carry out the tasks of a city. The city municipality is established by the Notification of the Ministry of Interior as the municipality under the Municipal Act BE 2496 (the latest). There are currently 30 city municipalities. Moreover, a special type of administration or special administrative area is a special kind of government in Thailand. It consists of the governor general or prime minister, which currently has two administrative districts in Thailand which are Bangkok and Pattaya city. Both cities have a huge population with more than 100,000 and 5 million respectively. Therefore, Bangkok, Pattaya City and thirty city municipalities are representative of urban Thailand in the current study.

The easiest way to approach the samples in this study was finding the preschoolers. The researcher has searched information from the web page of Official

Statistics Registration Systems, Department of Provincial Administration, Ministry of Interior (http://stat.dopa.go.th/stat/statnew/upstat_age.php). It revealed that a number of preschoolers living in urban Thailand (two administrative districts and thirty city municipalities) in 2017 were 237,740 (Department of Provincial Administration: Official Statistics Registration Systems (Ministry of Interior), 2018).

Most preschoolers in Thailand are sent to school, and some preschoolers aged 3-4 years are sent to childcare center. In Thailand, there are many organizations which control each school, such as Primary Educational Service Area Office, Office of the Higher Education Commission, Office of Private Education Commission, Local Administrative Organization, and Department of Education (in Bangkok only). To approach the preschoolers' parents in urban Thailand, the researcher began with searching elementary schools where had the preschoolers aged between 3-6 years old. Fortunately, the schools belong to Primary Educational Service Area Office in Bangkok and city municipalities are the places where have preschool children aged 3-6 years old in kindergarten 1 to kindergarten 3 (K1-K3).

Sample size calculation

The sample size was calculated using the formula of Krejcie & Morgan (1970), which determined appropriate sample size for the study (Krejcie & Morgan, 1970).

$$n = \frac{x^2 N p (1-p)}{e^2 (N-1) + x^2 p (1-p)}$$

Where, n = sample size; N = population, So N = 237,740; e = allowable error in estimating prevalence = 0.05; X^2 = the table value of chi-square 1 degree of accuracy as proportion 0.05, Thus, $X^2 = 3.841$, p (estimated proportion) = 0.5

On the basis of this equation, the sample size of the study showed as follows:

$$n = \frac{(3.81)(237,740 * 0.5)(1 - 0.5)}{(0.05)^2(237,740 - 1) + (3.841 * 0.5)(1 - 0.5)}$$

$$n = \frac{226,447.35}{595.30775} = 380$$

Consequently, 15-20% of the total sample size was added to take into account drop out or missing data was recommended (Johnston, O'Malley, & Bachman, 1987). The current study should be between 437 and 456 preschoolers' parents in urban, Thailand. Thus, 450 participants (18%) were recruited in this study. The summary of sample size in this study was present in Table 2.

Table 2 Summary of sample size in the study

Process	1 st +2 nd	3 rd +4 th	5 th -15 th
	School	School	School
A. Instrument development			
1. Instrument construction			
1.1 Interview	17	-	-
1.2 Item selection			
- EFA	310	-	-
- Item review (select 10 from 310)	(10)	-	-
2. Psychometric property testing			
- CFA and Reliability	-	305	-
B. Main study			
1. Predicting factor study	-	-	450

Sampling technique

The multi-stage random sampling procedure was used for probability sample of preschoolers' parents in urban Thailand from 6 parts: the 1) northern, 2) central, 3) northeastern, 4) eastern, 5) southern, and 6) special administrative area. The process of this process was illustrated as followed:

1) Urban Thailand consists of two special administrative area (Bangkok and Pattaya city) and 30 city municipalities. Thirty city municipalities are categorized into the five groups including northern, central, northeastern, eastern, and southern, based on their locations. In northern part, there are 6 city municipalities consist of Chiang Rai, Chiang Mai, Mae Sot, Lampang, Phitsanulok, and Nakhon Sawan. In

northeastern part, there are 5 city municipalities including Sakon Nakhon, Ubon Ratchathani, Khon Kaen, Nakhon Ratchasima, and Udon Thani. In central part, there are 8 city municipalities consist of Nonthaburi, Pak Kret, Rangsit, Phra Nakorn Si Ayutthaya, Nakhon Pathom, Samut Sakhon, Om Noi, and Samut Sakhon. In eastern part, there are 3 city municipalities consist of Laem Chabang, Chao Phraya Surasak, and Rayong. In addition, there are 8 city municipalities in southern part which are Hat Yai, Songkhla, Surat Thani, Nakhon Si Thammarat, Phuket, Koh Samui, Trang, and Yala.

2) Each place was represented with code number. Simple random sampling technique by random program from the website (<https://www.random.org>) was used to get 5 city municipalities including Phitsanulok, Khon Kaen, Nakhon Pathom, Laem Chabang, and Phuket. One special administrative area was Bangkok.

3) Because all schools in Bangkok and in 5 city municipalities are under the control of many organizations. Some schools had preschool student aged 4-6 years (K1-K2), whereas some schools had preschool student aged 3-6 years (K1-K3). It was under the regulation of organizations. Therefore, purposive sampling technique was used to select the organizations where had preschoolers aged 3-6 years. They were city municipality, Primary Educational Service Area Office, and Office of Private Education Commission. Then, city municipality and Primary Educational Service Area Office were selected in this study because the number of preschool students in schools belong to these organizations was greater than the number of preschool students in schools belong to another organization.

4) They were now 6 groups (5 city municipalities and 1 Primary Educational Service Area Office). All schools in each group were represented with the code number. Then, each group was randomized using simple random sampling technique by random program from website (<https://www.random.org>) for two times. The randomization obtained 2 different code numbers from 4 city municipalities and Bangkok. Only one city municipality, Phitsanulok, where was randomized with similar code number. Finally, there were 11 schools in this study. The summary of sample size was illustrated in Table 2.

5) The number of sample size in each school was calculated using proportionate stratified random sampling (1:0.13) to select the preschoolers.

6) Simple random sampling without replacement was used to select the preschoolers from each school. The name list of all preschoolers was provided by the teachers at kindergarten.

7) Parents of those preschoolers were recruited by the researcher after selecting the preschoolers from a name list by systematic sampling technique (Figure 5).

Sample selection

The inclusion criteria in this study were: 1) being a parent (father or mother) of preschool students who study in urban Thailand, 2) being able to speak, write, and read in Thai, and 3) willing to participate in the study.



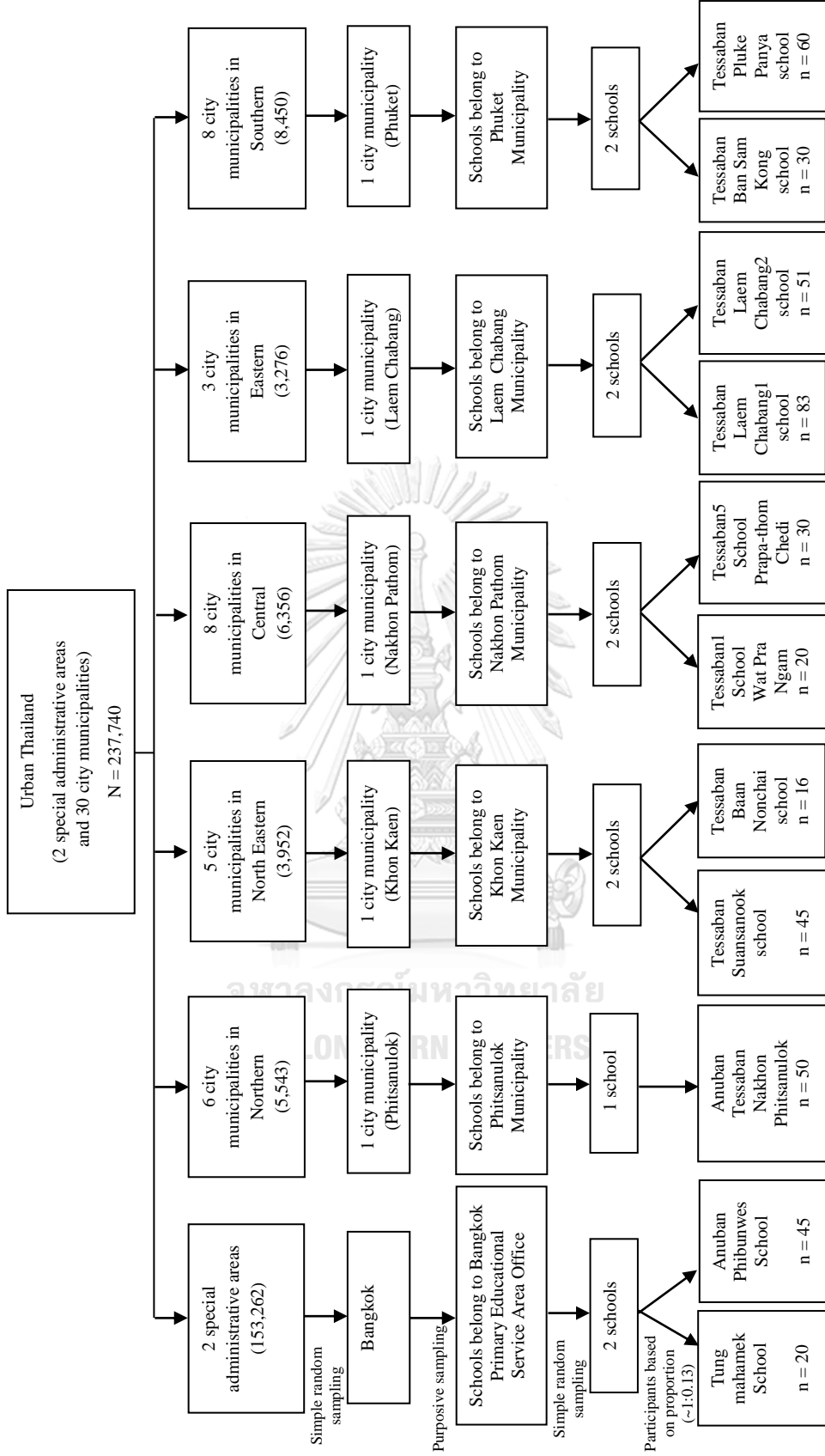


Figure 5 Sampling method of the study

Demographic characteristics of the study sample

A total of 450 preschoolers' parents participated in the study. After considering the criterion of outliers (absolute Z score > 3), 7 participants were excluded. In summary, 443 adolescent smokers were analyzed. The demographic characteristics of parents and preschoolers were explained in Table 3 and 4.

Table 3 Number and percentage of participants' demographic characteristics classified by age, level of education, career, family income, relationship to preschooler, and number of children (n = 443)

Demographic characteristics	n	%
Age (years old)		
< 20	2	0.5
20 – 30	118	26.6
31 – 40	223	50.3
> 40	100	22.6
Level of education		
Grade 6	43	9.7
Grade 12	73	16.5
Bachelor degree	161	36.4
Upper Bachelor	151	34.1
Other (diploma)	50	11.3
Career		
No working	51	11.5
Government officer	38	8.6
Business owner	94	21.2
State enterprise officer	3	0.7
Private officer	105	23.7
Employee	152	34.3
Family income (Baht)		
< 15,000	150	33.8
15,001 – 25,000	161	36.3

Demographic characteristics	n	%
25,001 – 35,000	72	16.3
35,001 – 45,000	31	7
45,001 – 55,000	14	3.2
> 55,001	15	3.4
Relation to preschooler		
Father	128	29
Mother	315	71
Number of family member		
2	22	5
3	112	25.3
4	152	34.3
5	83	18.7
> 5 (6-13 persons)	74	16.7
Number of children		
1	176	39.7
2	191	43.1
3	64	14.4
4	7	1.6
5	5	1.1
> 5	0	0

As shown in Table 3, most of them were mothers (70%). Half of them were aged 31-40 years (50.3%), then 20-30 years (26.6%), and > 40 years (22.6%). About 36.4% of them had bachelor degree, 34.1% of them had upper bachelor degree, and 16.5% of them had high school level. Moreover, 34.3% of them work as employees, 23.7% of them were private officers, and 21.2% of them were business owner. In addition, most family income in this group was ranged 15,001-25,000 baht/month (36.3%), < 15,000 baht/month (33.8%), 25,001-35,000 baht/month (16.3%). Around 34%, 25.3%, 18.7% had 4, 3, 5 members in their family respectively. Furthermore, most of them had 2 children (43.1%) and 39.7% of them had only one child.

Table 4 Number and percentage of preschoolers' demographic characteristics classified by gender, age, birth order, weight, height, and chronic health condition (n = 443)

Demographic characteristics	n	%
Gender		
Male	244	55
Female	199	45
Age (years old)		
3-4	128	28.9
4-5	171	38.6
5-6	144	32.5
Birth order		
1	244	55
2	152	34.4
3	41	9.3
4	5	1.1
5 or above	1	0.2
Weight		
Under weight	12	2.7
normal	402	90.8
Over weight	29	6.5
Height		
Low height-to-age ratio	0	0
Normal height-to-age ratio	344	77.6
High height-to-age ratio	99	22.4
Chronic health condition		
No	405	91.4
Yes (allergy and asthma)	38	8.6

As shown in Table 4, the characteristics of preschoolers were illustrated. Fifty-five percent of them were boys and 45% were girls. They were aged 3-4 years (28.9%), 4-5 years (38.6%), and 5-6 years (32.5%). Most of them were the 1st, 2nd, and 3rd birth order (55%, 34.4%, and 41% respectively). Most of them had normal weight (90.8%) and had normal height (77.6%), evaluated using growth chart for Thai children developed by department of Health (Ministry of Public Health). Moreover, most of preschoolers did not have chronic health condition (91.4%), and the rest had allergy and asthma (8.6%).

Instrumentation

Research Instruments

There were six research instruments in this study: Personal information sheet, Parental Feeding Behaviors Questionnaire (PFBQ), Parental Feeding Attitude Questionnaire (PFAQ), Parental Eating Habits Questionnaire (PEHQ), Barriers to Parental Feeding Behaviors Questionnaire (BaPFBQ), and Benefits of Parental Feeding Behaviors Questionnaire (BePFBQ). All instruments were developed by the researcher. The details in instrument development of each instrument were described.

1. Personal Information Sheet was developed by the researcher. The sheet provided questionnaires requested participants to provide personal data, including 2 parts. First part provided questions for parent: 1) age, 2) educational level, 3) career, 4) family incomes, 5) relation to preschooler, 6) number of family member, and 7) number of children. Second part provided questions for preschooler: 1) age, 2) birth order, 3) gender, 4) preschooler's weight, and 5) preschooler's height, and 6) chronic health condition. The Personal Information Sheet was checked by 5 experts to improve the appropriateness and clarity of the questions. There were not changed.

For other instruments (PFBQ, PFAQ, PEHQ, BaPFBQ, and BePFBQ), the process of instrument development was guided by DeVillis (2012) and Nunnally & Bernstein (1994). The steps to develop each instrument were quite similar. Therefore, all details were briefly described as follows.

1) Generating an item pool of each instrument was applied from a broad review of the literature (PFBQ and PEHQ), and both literature review and interview (PFAQ, BaPFBQ, and BePFBQ). Then, identifying operational definition, reviewing existing instruments, and determining the dimensions of the concept were applied.

2) Content validity was examined by 5 experts (two experts were professional nurse instructors with experience in pediatric nursing, Orem's self-care theory, and health promotion, two experts were professional nurse instructors with experience in instrument development, and one expert was instructor with experience in nutrition in young children). Those experts were asked to rate each item by rating scale (1=not relevant, 2=somewhat relevant, 3=quite relevant, and 4=highly relevant), comment on items including possible revision, on their opinions why items are not relevant to the concept assertiveness (Polit & Beck, 2008). The content validity index was calculated both item-content validity index (I-CVI) and scale-content validity index (Average) (S-CVI/Ave). The I-CVI of each item is defined as the number of experts offering a rating of "3" or "4" on each item, divided by the total number of experts and expresses the proportion of agreement by all experts on the relevancy of each item, as number between 0 and 1 (Lynn, 1986). The acceptable value of I-CVI should be greater than .80 and of S-CVI/Ave is 0.90 or higher (Polit & Beck, 2008).

3) Item selection process of each instrument was evaluated to identify appropriate items using corrected item-total correlation, inter item correlation, and the factor loading and communality score run by exploratory factor analysis (EFA). The goal for using EFA in this study was just to examine and determine items which were lower criteria score. Principal component method was developed. Factors were extracted by the maximum likelihood method and rotated by varimax rotation (DeVellis, 2012).

The corrected item-total correlation should be $>.30$ (Pedhazur & Schmelkin, 1991), and the acceptable range of inter-item correlation should be 0.2-0.8 (Nunnally & Bernstein, 1994). The items had inter-item correlation higher .80 were considered to select one. While, the items which had inter-item correlation lower .20 with other items were considered to cut off. In addition, a criterion of factor loadings

should be greater than 0.35, with the sample size between 250 and 349 (Hair, William, Barry, & Rolph, 2014), and The communality score of each item should be greater than 0.2 (Child, 2006).

4) Construct validity was used by confirmatory factor analysis (CFA). Item correlation and corrected item-total correlation were examined before CFA. The CFA is a way of testing how well measured variables represent a smaller number of constructs. This method results how well theoretical specification of the factors matches reality (the actual data). It is as a tool for confirm or reject the preconceived theory (Hair et al., 2014). According to Hair, the statistics of CFA should be reported to help understand how well a model truly fits included Chi-square (χ^2) goodness-of-fit statistic and degrees of freedom (df), one absolute fit index (i.e. the goodness-of-fit Index (GFI) or Standard Root Mean Residual (SRMR)), and one incremental fit index (i.e. the Tucker Lewis Index (TLI) or Comparative Fit Index (CFI)). One of these indices should also be a badness-of-fit indicator such as the SRMR or Root Mean Square Error of Approximation (RMSEA) (Hair et al., 2014). Therefore, the report of CFA in this study presented the χ^2 , χ^2/df ratio, CFI, RMSEA, and SRMR.

Using multiple criteria of fit was recommended to test the fit of the model to the data (Pedhazur & Schmelkin, 1991). The multiple criteria of the goodness-of-fit of the model were suggested by existing evidences: χ^2/df ratio is smaller than 2 is considered very good, CFI should be greater .90, RMSEA should be less than .05, and SRMR should be smaller than .10 (Hair et al., 2014).

5) Reliability was determined by considering internal consistency analysis using Cronbach's alpha coefficient. The generally agreed upon lower limit for Cronbach's alpha is .70 (Hair et al., 2014).

2. Parental Feeding Behaviors Questionnaire (PFBQ) was developed by the researcher based on self-care theory (Orem, 2001) and literature review. Generating an item pool was selected from existing evidences of parental feeding behaviors of young children's parents especially for preschoolers' parents. In this study, an initial pool of 67 items on a 5-point Likert scale format, including 1(Never), 2(Rarely), 3(Sometimes), 4(Often), 5(Always) was written to reflect the logical and semantic content of the concept of parental feeding behaviors. The PFBQ contains three

dimensions: seeking information, making judgement and decision, and taking actions in providing healthy food, enhancing good eating behaviors, and providing pleasant eating environment.

The PFHQ used the Likert-type scale which is easy to understand by respondents and commonly used in public health evaluation. Likert-scale most addressed agreement, evaluation, or frequency (Burns & Grove, 2009). The questionnaire started with sentence "During the past 1 month, how often do you do...? The questionnaire measured 3 dimensions: 1) seeking information, 2) making judgement and decision, 3) taking actions. Each dimension contains child care eating activities guided by Lusmilasari (2014) which included: providing healthy foods, enhancing good eating behaviors, and providing pleasant eating environment.

First dimension contains 7 items, second dimension contained 17 items, and the last dimension contains 43 items. For the first dimension, 3 of 7 items were the questions regarding the frequency of seeking information in taking care of their preschoolers from different sources. There were 3 sources: seeking information by asking healthcare provider (i.e. doctor, nurse, nutritionist, etc.), seeking information by reading books, pamphlet, news, searching internet, watching television, and seeking information by asking friends or neighbors. These three questions were not summated a total score because parents are able to acquire information from various ways. Some parents obtained information by searching website via internet. Some parents required information from asking healthcare professionals. These 3 questions just reported which ways preschoolers' parents in urban Thailand tend to acquire information, leading to the right track in preparing intervention to parents further. However, item 5,6,7 were assessed the appropriateness and clarity of the questions by 5 experts. They were modified for improving the appropriateness. Therefore, the rating scores were summated by the total scores with only 64 items. The range score was 64 to 320. Higher score meant the better of the parental feeding behavior. Conversely, lower score was the worse of the parental feeding behaviors.

2.1 Content Validity

The first draft of PFBQ contained 67 items was tested for content validity. The range of I-CVI of the PFBQ rated by 5 experts was 0.40-1.00 (0.4 (7 items), 0.6 (4 items), 0.8 (23 items), and 1.00 (33 items) and SCVI/Ave was 0.84. Eleven items rated as below 0.80 were removed because the meaning of items was redundant and was not relevant to the concept assertiveness. Then, the S-CVI/Ave for the 56 items was increased to 0.92.

2.2 Item selection

After receiving the approval of the Ethical Review Committee for Research Involving Human Research Subjects, Health Sciences Group, Chulalongkorn University, convenience sampling was used to recruit 310 participants for item selection process in this study using EFA. The outlier was evaluated using absolute of Z-score greater 3.0 (Barnett & Lewis, 1994). The result showed that no outlier in this sample group (Z-score range = -2.27 to 1.95). The study samples were 310 parents of preschoolers who enrolled at the school belong to Primary Educational Service Area Office in Bangkok. All participants were recruited from 2 schools. Most of them were mothers (70%). Half of them were aged 31-40 years (49.2%) and 20-30 years (32.8%). Forty-five percent of them had 2 children and 43.6% of them had only one child. Moreover, the preschoolers were aged 3-4 years (19.9%), 4-5 years (36.9%), and 5-6 years (43.2%). Fifty-five percent were boys, and 45% were girls (see Appendix H).

The 53 items of a second draft of the PFBQ containing 56 items were examined in this process. The corrected item-total correlation and inter-item correlation was evaluated. Twelve items were deleted (5 items had high correlation with other items ($r > .80$), and 7 items had low value of corrected item-total correlation ($< .30$) and had low correlation with other items ($r < .20$). Therefore, 41 items of the PFBQ were retained. The range of values of corrected item-total correlations was .40-.77. For testing assumption of EFA, sample size, normality and collinearity were examined. The resulted showed that EFA can be applied to the obtained dataset (appendix J).

The results of EFA showed that the 41 items of the PFBQ had factor loading ranging from .351 to .900, and the communality score ranging from .324 to

.853, which is acceptable (Hair, 2010). In brief, the PFBQ contains 41 items with 3 dimensions, and none of any item of the PFBQ was excluded.

Moreover, the participants completed the questionnaire, their behaviors, such as pausing, skipping items, or expressing confusion face, were recorded as misunderstandings, denoting items that are difficult to understand or answer. To determine the appropriateness and clarity of the wording of each item, ten parents that had those behaviors were selected through purposive sampling. They were asked regarding the problems that occur during the answering of questionnaire. Based on this interview, four items were revised for better understanding.

2.3 Construct validity

Convenience sample method was used to recruit 305 preschoolers' parents in Bangkok to complete only 41 items of the PFBQ (except item 5,6,7). The outlier was checked first. The result showed that 1 case should be removed because Z-score = -3.01. Therefore, 304 preschoolers' parents were participated to test the construct validity. Demographic characteristics of the participants from CFA part were illustrated in Appendix I. Three items were then deleted because one item had high value of inter item correlation ($r=.863$), one item had low value of inter item correlation with many items ($r<.2$) and had low value of corrected item-total correlation ($<.30$), another item had low value of inter item correlation with many items ($r<.2$). Thus, total 38 items were retained for CFA testing. A range of the value of corrected item-total correlation was .397-.714. The results showed in table 5.

The assumptions of CFA were evaluated early. The results showed that CFA can be applied to the obtained dataset (Appendix J). Then, CFA was tested. The results showed that the PFBQ had a standardized factor loading ranging from .46 to .87. For the second level of the CFA, all regression weights ranging from .56 to .94 were statistically significant .05 (Table 5). Moreover, the fit indices resulted: $\chi^2=2515.10$, $p=.000$, $df=662$, χ^2/df ratio=3.80, CFI=.758, RMSEA=.096, SRMR=.049 (Appendix K: Figure 12,13). These results were below the threshold values of a good model fit. To improve the fit statistics, the model was re-specified based on the result of modification indices. Constrained parameter with the largest modification indices will improve the model fit, as long as the parameter can be interpreted

substantively. The result of modification indices suggested that the model can be improved by setting covariance paths between few measurement errors (i.e. e2–e4, e36–e37, e5–e6, etc.). After model adjustment, the fit statistics for PFBQ model were improved with $\chi^2=994.873$, $p=.000$, $df =572$, χ^2/df ratio=1.739, CFI=.945, RMSEA=.049, SRMR=.035. This result met the requirement of a good model fit (Table 6 and Figure 6), (Appendix K: Figure 14).

Table 5 Factor loading and construct validity of the PFBQ (n = 304)

Item	Mean	Corrected Item-total correlation	Standardized factor loading		
			Seeking information	Making judgement and decision	Taking action
1	3.55	.518	.79		
2	3.16	.421	.61		
3	3.58	.482	.87		
4	3.14	.397	.56		
5	-				
6	-				
7	-				
8	4.27	.677		.72	
9	4.27	.711		.74	
10	4.49	.684		.75	
11	4.29	.699		.80	
12	4.20	.707		.79	
13	4.36	.689		.82	
14	4.24	.695		.81	
15	4.19	.698		.78	
16	4.29	.595		.61	
17	4.19	.677		.68	
18	4.01	.662		.67	
19	3.82	.497		.46	

Item	Mean	Corrected Item-total correlation	Standardized factor loading		
			Seeking information	Making judgement and decision	Taking action
20	4.10	.695			.73
21	4.00	.627			.65
22	3.96	.488			.51
23	4.29	.604			.66
24	4.23	.511			.55
25	4.37	.653			.70
26	4.36	.675			.71
27	4.11	.584			.62
28	4.09	.714			.73
29	4.26	.699			.74
30	4.17	.671			.70
31	4.06	.710			.76
32	4.35	.590			.61
33	3.93	.503			.49
34	4.34	.620			.66
35	4.08	.603			.63
36	4.44	.610			.62
37	4.21	.585			.60
38	4.30	.669			.68
39	4.38	.640			.65
40	4.42	.649			.68
41	3.99	.591			.60
Factor loading (regression weights)			.56	.91	.94
t-value (p = .001)			-	7.48	7.42
Construct validity (Square Multiple correlation) (R^2)			.88	.83	.32

Table 6 Fit indices of hypothesized and modified model of the PFBQ (n=304)

Goodness of Fit statistic	Acceptable value	Values	
		Hypothesized model	Modified model
χ^2	-	2515.10	994.873
df	-	662	572
χ^2 / df	< 2	3.80	1.739
CFI	> .90	.758	.945
RMSEA	< .05	.096	.049
SRMR	< .10	.049	.035



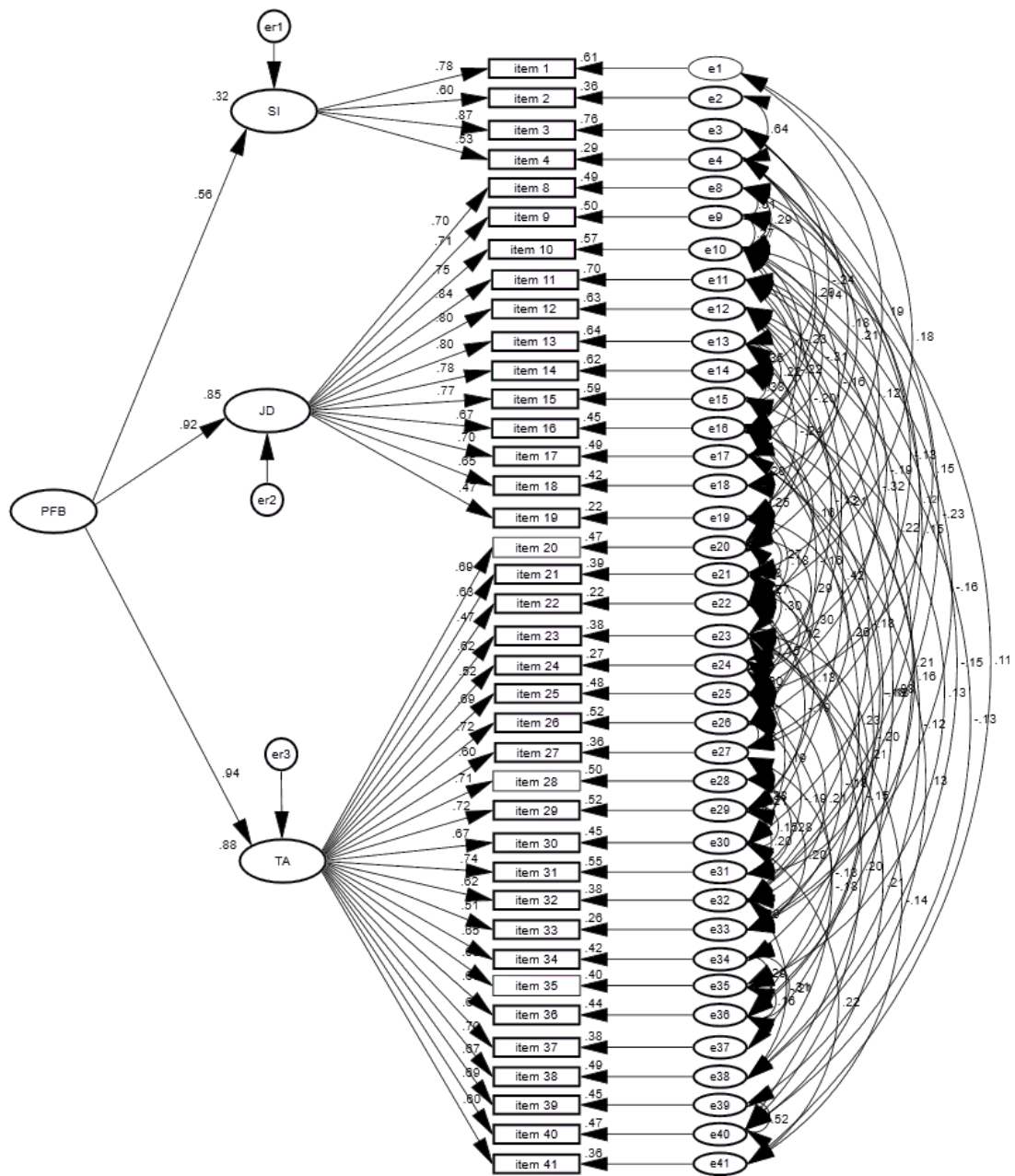


Figure 6 The standardized of modified measurement model of the PFBQ

Note. PFB = parental feeding behaviors, SI = seeking information, JD = making judgement and decision, TA = taking action

2.4 Reliability

Reliability of the PFBQ was determined by considering internal consistency analysis using Cronbach's alpha coefficient. The results showed that the 38 items of the PFBQ had Cronbach's alpha .96 that was acceptable. The summary of the measure was presented in Table 7.

Table 7 Number of items, scoring range, S-CVI/Ave, I-CVI, and reliability of the PFBQ

Instrument	Number of item	Scoring range	S-CVI /Ave	I-CVI	Reliability
PFBQ	41	1-5	.96	.80-1.0	.96

Note. item 5,6,7 were not included to calculate reliability value.

To summarize, the PFBQ consisted of 41 items in 3 dimensions: seeking information (item 1-7), making judgement and decision (item 8-19), and taking actions (item 20-41). The PFBQ used a 5-point Likert scale format, including 1(Never), 2(Rarely), 3(Sometimes), 4(Often), 5(Always). Three items (item 5,6,7) were the questions asking about the ways parents choose to require information. These three items would not be counted to calculate a total score. The range score is 38-150. Higher score means the better of the parental feeding behavior. Conversely, lower score is the worse of the parental feeding behaviors.

3. Parental Feeding Attitude Questionnaire (PFAQ) was developed by the researcher based on literature review and interview. The process of generating an item pool begins with a broad review of the literature on the parental feeding attitude of preschoolers' parents. Because the existing literatures related to parental feeding attitude were studied in abroad mostly, a qualitative study was required to illustrate the phenomena of parental feeding attitude in urban Thailand. The smallest acceptable sample in all qualitative research is fifteen (Guest, Bunce, & Johnson, 2006). After receiving the approval of the Ethical Review Committee for Research Involving Human Research Subjects, Health Sciences Group, Chulalongkorn

University, convenience sampling was used to recruit 3 preschooler's parents from 2 schools which belonged to Primary Educational Service Area Office in Bangkok (1 preschooler's mother from school 1, and 2 mothers from school 2). However, these parents did not participate in other processes in this study. Then, snowball sampling was used to recruit more samples by those existing parents will ask the next parents from among their acquaintances.

Seventeen preschoolers' parents were participated in the study. They were 15 mothers (88%) and 2 fathers (12%). Eight of participants were aged 31-40 years (47%), 6 participants were aged 41-50 years (35%), and 3 participants were aged 20-30 years (18%). Eight participants had only 1 child (47%) and 8 participants had 2 children (47%), while there was only 1 participant had 3 children (6%). For preschoolers, 5 of them were boys (30%), 12 were girls (70%). Moreover, there were 6 preschoolers aged 3-4 years (35%), 6 preschoolers were aged 4-5 years (35%), and 5 of them were aged 5-6 years (30%) (see Appendix G).

The interview was run at school or other convenience places where should be suitable, safe, and comfortable for both interviewees and the researcher, not too loud and crowded people, ex. coffee shop, restaurant, public park etc. The summary of sample size was illustrated in Table 2. According to Corbin and Strauss (2008), qualitative research begins with a broad question and often no pre-identified concepts. It should be general, flexible, and open (Corbin & Strauss, 2008). Open-ended question was provided: "Could you tell me about how to take care of your child about food? Please give me an example for 1 day". The concept were identified in and constructed from data gathering with probing questions: "Could you please tell me why you do like this for your child?" and "Do you have any information to tell me about...?" Before the interview ended, participants were asked by the last question: "Do you have any information to tell me more?" and "What things that I should know more?" From the interview, it was founded that parents talked about the activities they did for their children. Parents were asked to reflect the reasons of performing those activities for their children. Their answers could reflect the perceived responsibilities of parents in taking care of their preschoolers. For example,

The responsibility in seeking information about appropriate food for children: *“I’d ever bought a book related to child care about eating, and I read it. I have to take care for my child well using that information.”* (participant no 1,6,7)

The responsibility in making judgement and decision about promoting children’s eating behaviors: *“When my child eats, I always think about their hands are clean or not. I ask and tell my child to wash hands before eating. And I told my child reason that your hands are dirty, there are plenty of germs. If you touch food or utensil, you eat germs. That’s not good for you.”* (participant no.4,6,7,9,10,11, 13,14)

The responsibility in taking action about promoting children’s eating behaviors: *“I try to provide food appropriately for my child. I am a person who takes care of him, so this is my responsibility.”* (participant no.1,3,5,6,7,11,13,14,15,16,17)

From the review, existing literatures mentioned in chapter II showed that parental feeding attitude can be explained by parents’ perceived feeding responsibilities in child feeding (Faith et al., 2004; Liu, 2013). It consisted of providing healthy food, enhancing good eating behaviors, and providing pleasant eating environment for children which can promote children’s health and eating behavior (Lusmilasari, 2014). Furthermore, suitable care behaviors based on Orem’s theory consisted of seeking information, making judgment and decision, and taking those actions (Orem, 1991). Therefore, all actions were as feeding responsibilities that parents should perform to their children.

After the process of literature review and interview, the PFAQ was developed with the same process of conducting the PFBO. An initial pool of 12 items on a 5-point Likert scale format, including 1(strongly disagree), 2(disagree), 3(not sure), 4(agree), 5(strongly agree) was written. From the interview, there were 8 items could reflect parent’s feeding responsibility, while 6 items which reflect parent’s feeding responsibility were from literature review. Some items were redundant, thus the researcher selected one into the pool. Thus, the PFAQ contained 12 items had one dimension reflecting the concept of parental feeding attitude. The questions asked

parents about their thinking and feeling regarding feeding responsibility in seeking information, making judgement and decision, and taking action in providing healthy food, enhancing good eating behaviors, and providing pleasant eating environment for children. For example, “seeking information about healthy food for preschoolers must be a main responsibility of parents” (item 1), “It is the best that the person who responsible in thinking of providing pleasant eating environment for preschoolers are parents” (item 7), “The main person who has responsibility in eating behaviors promotion in preschoolers should be parent” (item 11). The measure’s score was computed by summing the scores obtained for each item. The possible score ranged from 12-60. Higher score means the better of feeding attitude toward perceived feeding responsibility.

3.1 Content Validity

The first draft of PFAQ contained 12 items was tested for content validity on the same process of the PFBQ. The range of I-CVI for the 12 items was 0.80-1.00 (0.8 (6 items) and 1.00 (6 items)) and SCVI/Ave was 0.90, which were acceptable. None of any items was removed.

3.2 Item selection

The items selection process of PFAQ was developed on the same process of the PFBQ, and using the same criteria of the PFBQ. The samples participating in this process were also the same group of EFA process of the PFBQ. The summary of sample size was illustrated in Table 2. Then, the outlier was evaluated using absolute of Z-score greater 3.0 (Barnett & Lewis, 1994). The result showed that there were 3 outliers in this sample group (Z-score = -5.86, -3.59, -3.30). Three samples were cut off. Thus, 307 preschoolers’ parents were recruited in the study. Most of them were mothers (70%). Most of them were aged 31-40 years (49.2%) and 20-30 years (40.4%). Forty-five percent of them had 2 children and 43.3% had only one child. Moreover, the preschoolers were aged 3-4 years (20%), 4-5 years (38%), and 5-6 years (42%). Fifty-five percent were boys, and 45% were girls (see Appendix J).

The corrected item-total correlation and inter-item correlation were examined to identify appropriate items, and for improving items quality. Two of 12

items of the PFAQ were deleted because they had high correlation with other items ($r > .80$). Therefore, the 10 items of the PFAQ presented values of corrected item-total correlations ranging from .65 to .87, which were acceptable. Then, the 10 items of the PFAQ was tested assumption of EFA using sample size, normality and collinearity. The results show that EFA can be applied to the obtained dataset (Appendix J).

The results of selecting items using EFA showed that the PFAQ containing 10 items in one domain had a factor loading ranging from .444 to .891, and the communality score ranging from .683 to .864, which were acceptable. Thus, EFA of 10 items in one dimension resulted that none of any item of the PFBQ was excluded. For appropriateness and clarity of items, the PFAQ was not modified.

3.3 Construct validity

The construct validity of the PFAQ was tested on the same processes of the PFBQ. Convenience sample method was used to recruit 305 preschoolers' parents in Bangkok to complete the PFAQ. The outlier reported 1 case should be removed (Z -score = -3.24). Therefore, 304 preschoolers' parents were examined the construct validity using CFA. Demographic characteristics of the participants from CFA part were illustrated in Appendix I. Then, item correlation and corrected item-total correlation were examined before CFA process. Four items were removed because 2 item had low value of inter item correlation with many items ($r < .2$), and the rest of 2 items had low value of corrected item-total correlation ($< .30$), and also had low value of inter item correlation with many items ($r < .2$). Thus, only 6 items were retained. A range of the value of corrected item-total correlation was .522-.703 (Table 8).

Then, testing CFA assumptions was tested by the normal distribution (skewness and kurtosis), KMO, and the significance of Bartlett's test of sphericity. The results showed that CFA can be applied to the obtained dataset (Appendix J). After that, CFA was tested. The results showed that the standardized factor loading of all items ranging from .46 to .80, were statistically significant at .05 (Table 8). Moreover, the fit indices of the PFAQ containing 6 items in one domain were presented: $\chi^2=152.226$, $p=.000$, $df=9$, χ^2/df ratio=16.914, CFI=.812, RMSEA=.229, SRMR=.045

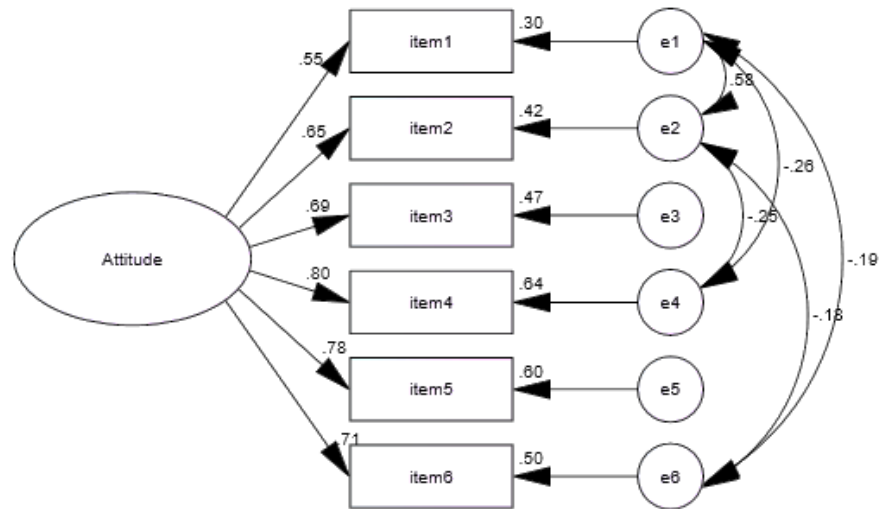
(Appendix G: figure 15,16). These results were below the threshold values of good model fit. To improve the fit statistics, the result of modification indices suggested that the model can be improved by setting covariance paths between few measurement errors (e1-e2, e1-e4, e2-e4, e1-e6, and e2-e6). After model adjustment, the fit statistics for PFBQ model were improved with $\chi^2=4.078$, $p=.396$, $df=4$, χ^2/df ratio=1.020, CFI=1.000, RMSEA=.008, SRMR=.010 (Appendix G: figure 17). This result met the requirement of a good model fit (Hair et al., 2014) (Table 9 and Figure 7).

Table 8 Factor loading and construct validity of the PFAQ (n = 304)

Item	Mean	Corrected Item-total correlation	Standardized factor loading
1	4.35	.522	.46
2	4.26	.623	.58
3	4.11	.639	.69
4	3.63	.662	.78
5	3.85	.703	.80
6	3.82	.599	.70

Table 9 Fit indices values of hypothesized and modified factor structure of the PFAQ (N=304)

Goodness of Fit statistic	Acceptable value	Values	
		Hypothesized model	Modified model
χ^2	-	152.23	4.078
df	-	9	4
χ^2 / df	< 2	16.91	1.02
CFI	> .90	.81	1.00
RMSEA	< .05	.23	.008
SRMR	< .10	.05	.01



Chi-square = 4.078, df = 4, P = .396, CMIN/DF = 1.020,
CFI = 1.000, RMSEA = .008, SRMR = .010

Figure 7 The standardized of modified measurement model of the PFAQ

3.4 Reliability

Reliability of the PFAQ was determined by considering internal consistency analysis using Cronbach's alpha coefficient. The results showed that the PFAQ had Cronbach's alpha .84 that was acceptable. The summary of the measure was presented in Table 10.

Table 10 Number of items, scoring range, S-CVI/Ave, I-CVI, and reliability of PFAQ (n = 304)

Instrument	Number of item	Scoring range	S-CVI/Ave	I-CVI	Reliability
PFAQ	6	1-5	.93	.80-1.0	.84

To summarize, the PFAQ consisted of 6 items in 1 dimension, with a 5-point Likert scale format, including 1 (strongly disagree), 2 (disagree), 3 (not sure), 4 (agree), 5 (strongly agree). The measure's score was computed by summing the scores obtained for each item. The possible score ranged from 6-30. Higher score meant the better of feeding attitude toward perceived feeding responsibility.

4. Parental Eating Habits Questionnaire (PEHQ) was developed by the researcher based on literature review. This instrument was developed on the same process of the PFHQ. Generating item pool was selected from existing evidences. In this study, an initial pool of 30 items on a 5-point Likert scale format, including 1(strongly not true), 2(not true), 3(not sure), 4(true), 5(strongly true) was written to reflect the logical and semantic content of the concept of parental eating habits. The questionnaire composed of the questions about parent's eating habits measured 3 dimensions based on existing evidence: food selection, food consumption, and eating manners. The rating scores were summated by the total scores ranging from 30 to 150. Higher score means the better of the eating habits of parents. Conversely, lower score is the worse of the parental eating habits.

4.1 Content Validity

The first draft of PEHQ including 30 items was tested for content validity on the same process of the PFHQ. Using similar criteria with the PFHQ, the range of I-CVI for the 30 items was 0.60-1.00 (0.6 = 3 items, 0.8 = 9 items and 1.00 = 18 items) and SCVI/Ave was 0.90. Three items rated as below 0.80 were removed because the meaning of items was redundant and was not relevant to the concept assertiveness. After deleting 3 items, the range of I-CVI for the 27 items was 0.80-1.00 and the SCVI/Ave value was increased to 0.93, which were acceptable values.

4.2 Item selection

The process of item selection was done as same as the process of the PFHQ. Convenience sampling was used to recruit 310 participants for EFA in the study. Testing outlier reported that no absolute of Z-score greater 3.0 (Z-score range = -2.67 to 2.32). Therefore, the participants in this process were same group of the item selection process of the PFHQ. The sample size in this study was presented in table 2. Then, corrected item-total correlation and inter-item correlation were examined in the processes of item selection and item precision. Eight items were deleted because 6 items had low correlation with other items ($r < .20$), and 2 items had low correlation with other items ($r < .20$) and had low value of corrected item-total correlation ($< .30$). Therefore, 19 items of the PEHQ were retained. The range of values of corrected item-total correlations was .45-.69, which were acceptable.

Testing EFA assumption of 19 items of the PEHQ was test. The results showed that EFA can be applied to the obtained dataset (see Appendix J).

The results of EFA showed that the PEHQ had a factor loading ranging from .36 to .84, and the communality score ranging from .683 to .836, which were acceptable. Thus, EFA of 19 items in 3 dimensions resulted that none of any item of the PFBQ was deleted. For appropriateness and clarity of items, the PFAQ was not modified.

4.3 Construct validity

Convenience sample method was used to recruit 305 preschoolers' parents in Bangkok to complete the 19 items of the PEHQ. The outlier was checked. Two samples were cut off because the values of absolute Z-score were greater 3 (-3.93 and -3.51). Therefore, 303 preschoolers' parents were participated to test the construct validity using CFA. Demographic characteristics of the participants from CFA part were illustrated in Appendix H. Item correlation and corrected item-total correlation were examined. Two items were deleted because both items had low value of inter item correlation with many items ($r < .2$). Thus, a total of 17 items was retained. A range of the value of corrected item-total correlation was .435 - .675. The results showed in Table 11.

Then, the PEHQ containing 17 items was tested the construct validity using CFA to examine whether a particular factor model provided a good fit to the data. CFA assumptions were tested using the normal distribution (skewness and kurtosis), KMO, and the significance of Bartlett's test of sphericity. CFA can be applied to the obtained dataset (Appendix J). Then, the results reported that the PEHQ had a standardized factor loading ranging from .38 to .86. For the second level of the CFA, all regression weights ranging from .58 to .98 were statistically significant .05 (see Table 11). Moreover, CFA of 17 items in 3 domains of the PEHQ were presented the fit indices: $\chi^2=421.974$, $p=.000$, $df=116$, χ^2/df ratio=3.638, CFI=.843, RMSEA=.093, SRMR=.062 (Appendix K: Figure 18,19). These results were slightly below the threshold values of good model fit. To improve the fit statistics, the model was re-specified based on the result of modification indices. The result of modification indices suggested that the model can be improved by setting covariance paths

between few measurement errors (e1-e2, e11-e12, e12-e14,...). After model adjustment, the fit statistics for PFBO model were improved with $\chi^2=160.064$, $p=.000$, $df=93$, χ^2/df ratio=1.721, CFI= .966, RMSEA=.049, SRMR=.048. This result met the requirement of a good model fit using multiple criteria (Hair et al., 2014) (Table 12 and figure 8) and (Appendix K: Figure 20).

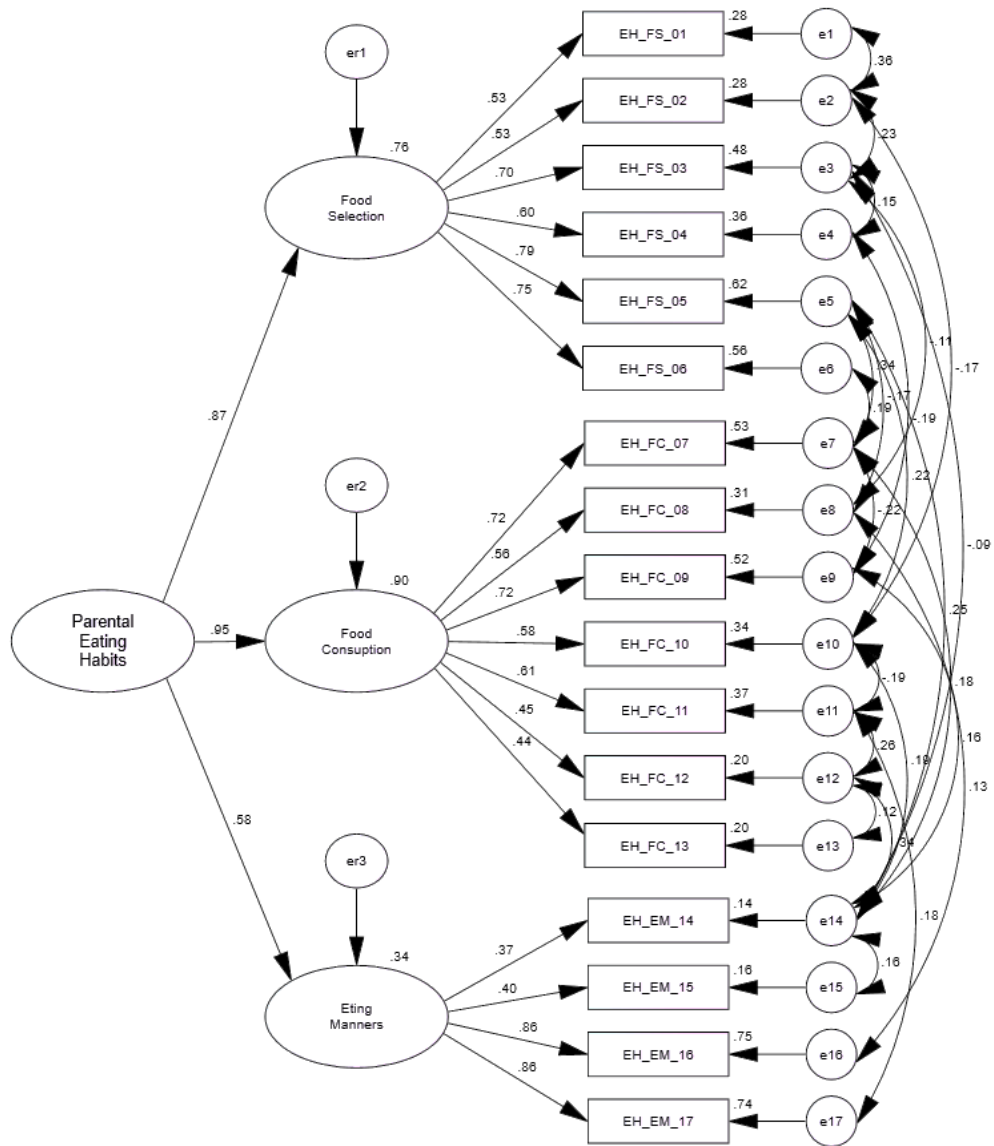
Table 11 Factor loading and construct validity of the PEHQ (n = 303)

Item	Mean	Corrected Item-total correlation	Standardized factor loading		
			Food selection	Food consumption	Eating manner
1	4.13	.508	.53		
2	4.28	.510	.56		
3	4.21	.565	.72		
4	4.41	.516	.61		
5	3.97	.672	.81		
6	3.99	.657	.76		
7	3.83	.675		.75	
8	4.05	.483		.53	
9	3.62	.611		.67	
10	3.58	.517		.59	
11	4.20	.561		.59	
12	4.04	.493		.40	
13	4.02	.436		.45	
14	3.29	.506			.38
15	3.82	.435			.41
16	4.14	.494			.85
17	4.14	.482			.86
Factor loading (regression weights)			.87	.98	.58
t-value (p = .001)			-	6.86	4.68
Construct validity (Square Multiple correlation) (R^2)			.34	.90	.40

Table 12 Fit indices of hypothesized and modified factor structure of the PEHQ (N=303)

Goodness of Fit statistic	Acceptable value	Values	
		Hypothesized model	Modified model
χ^2	-	421.974	160.064
df	-	116	93
χ^2 / df	< 2	3.638	1.721
CFI	> .90	.843	.966
RMSEA	< .05	.093	.049
SRMR	< .10	.062	.048





Chi-square = 160.064, df = 93, P = .000, CMIN/DF = 1.721,
CFI = .966, RMSEA = .049, SRMR = .048

Figure 8 The standardized of modified measurement model of the PEHQ

3.4 Reliability

Reliability of the PEHQ was determined by considering internal consistency analysis using Cronbach's alpha coefficient. The results showed that the PEHQ had Cronbach's alpha .89 that was acceptable. The summary of the measure was presented in Table 13.

Table 13 Number of items, scoring range, S-CVI/Ave, I-CVI, and reliability of PEHQ (n = 303)

Instrument	Number of item	Scoring range	S-CVI/Ave	I-CVI	Reliability
PEHQ	17	1-5	.94	.80-1.0	.89

In conclusion, the PEHQ contained 17 items in 3 dimensions: food selection (item 1-6), food consumption (item 7-13), and eating manner (item 14-17). The PEHQ used a 5-point Likert scale format, including 1(Never), 2(Rarely), 3(Sometimes), 4(Often), 5(Always). The total score ranged from 17-85. Higher score meant the better of the eating habits of parents. Conversely, lower score was the worse of eating habits of parents.

5. Barriers to Parental Feeding Behaviors Questionnaire (BaPFBQ) was developed by the researcher based on Orem's theory (2001), interview, and literature review. The development of this instrument consisted of 2 parts: a qualitative study using interview and review existing literature. For the interview, the process was run on the same process of the PFAQ. A qualitative study was required to illustrate the phenomena of the barriers to parental feeding behaviors known by preschoolers' parents in urban Thailand. The participants in this process were the same samples participated in interview process of the PFAQ. The summary of sample size was illustrated in Table 2. Moreover, this interview process was run at the same time with the interview process of the PFAQ. From interview, parents talked about the activities they did for their children. If they told that they cannot or did not do some activities in taking care of their child, or parents thought that it was very hard to do some activities, the researcher would ask the participants with the probing questions: "Could you please tell me what are obstacles opposing you to perform this action?" The answers reflecting the barriers to parental feeding behaviors were recorded and listed. The examples of obtained data from interview were summarized and presented below.

Personal barriers: *“I don’t have time to cook for my child because we have to go out in early morning, and we will go back home in the night.”* (participant no.5,6,7,10,13,14,15,16,17), *“I am not sure that I can encourage my child eats many kinds of foods. It’s very hard to do.”* (participant no.1,2,5,6,7,10,12,13,14), *“I don’t know how to make my child interested my food. I think I am not good in cooking.”* (participant no.1,5,7,10,11,12)

Environmental barriers: *“My husband likes to eat snack and drink sweetened soda at home, my child asks him to eat. I know it’s not good for my child, but I don’t know how to deal with this problem.”* (participant no.1,3,4,6,7,9,12,13,15,17)

From the literature review, existing literatures mentioned in chapter II showed that barriers to parental feeding behaviors can be explained into 2 dimensions including personal and environmental barriers based on existing literatures (Darlene, 1989; Orem, 1985). After the process of literature review and interview, the BaPFBQ was developed on the same process of the PFBQ. From the interview, there were 24 items could reflect the barrier perception of preschooler’s parents, while 18 items which reflect barrier perception of preschooler’s parents were from literature review. Some items were redundant, thus the researcher selected one into the pool. Thus, an initial pool of 34 items with a 5-point Likert scale, including 1(strongly not true), 2(not true), 3(not sure), 4(true), 5(strongly true) was written. The BaPFBQ contains 34 items in 2 dimensions reflecting the concept of barriers to parental feeding behaviors: personal barriers and environmental barriers. The questions asked about the unavailable and inadequacy resources opposing parents in performing parental feeding behaviors. The measure’s score was computed by summing the scores obtained for each item. The possible score ranged from 34-170. Higher score means the higher barriers known by preschoolers’ parents to perform parental feeding behaviors.

5.1 Content Validity

The first draft of BaPFBQ contained 34 items was tested for content validity on the same process of the PFBQ. The resulted showed that the range of

I-CVI for the 34 items was 0.60-1.00 (0.6 (1 item), 0.8 (20 items) and 1.00 (13 items)) and SCVI/Ave was 0.87. One item rated as below 0.80 were removed because the meaning of items was redundant. Then, the S-CVI/Ave for the 33 items was increased to 0.88.

5.2 Item selection

The items selection process of the BaPFBQ was developed on the same process of the PFBQ, and using the same criteria of the PFBQ. The samples participating in this process were 310. They were also in the same group of EFA process of the PFBQ. The summary of sample size was illustrated in Table 2. The outlier was evaluated using absolute of Z-score greater 3.0 (Barnett & Lewis, 1994). The result showed that one sample was removed with Z-score value 3.27. Then, 309 preschoolers' parents were recruited in this process. Most of them were mothers (70%). Half of them were aged 31-40 years (50%) and 20-30 years (40%). Forty-four percent of them had 2 children and 43% had only one child. Moreover, the preschoolers were aged 3-4 years (20%), 4-5 years (37%), and 5-6 years (43%). Fifty-five percent were boys, and 45% were girls.

The corrected item-total correlation and inter-item correlation were examined to identify appropriate items, and for improving items quality. Seven items were deleted because 6 items had high correlation with other items ($r > .80$), and 1 item had high correlation with other items ($r > .80$) and had high corrected item-total correlation ($< .30$). The retaining 26 items presented values of corrected item-total correlations ranging from .34 to .83, which were acceptable. Testing EFA assumption was then conducted: sample size, normality, and collinearity were tested. The results showed that EFA can be applied to the obtained dataset (Appendix J).

The results of EFA were illustrated. The BaPFBQ had a factor loading ranging from .36 to .84, and the communality score ranging from .54 to .85, which were acceptable. Therefore, none of any item of the BaPFBQ was excluded. For appropriateness and clarity of items, the BaPFBQ was not modified.

5.3 Construct validity

The construct validity of the BaPFBQ was tested on the same processes of the PFBQ. Convenience sample method was used to recruit 305 preschoolers'

parents in Bangkok to complete the BaPFBQ. The outlier reported no outlier (Z-score ranged from -2.64 to 2.75). A group of 305 preschoolers' parents was examined construct validity using CFA. Demographic characteristics of the participants from CFA part were illustrated in Appendix I. Item correlation and corrected item-total correlation were examined before CFA process. Three items were removed because they had low value of inter item correlation with many items ($r < .2$). Thus, 23 items were retained. A range of the value of corrected item-total correlation was .37-.76. The results were illustrated in table 14.

Then, 23 items of the BaPFBQ was tested the construct validity using CFA to examine whether a particular factor model provided a good fit to the data. Testing CFA assumptions were tested using the normal distribution (skewness and kurtosis), KMO, and the significance of Bartlett's test of sphericity. The results showed that CFA can be applied to the obtained dataset (appendix J). Then, CFA was used to evaluate the construct validity of the BaPFBQ. The results showed that the BaPFBQ had standardized factor loading ranging from .38 to .79. For the second level of the CFA, all regression weights were .95 and .98, which were statistically significant .05 (Table 14). Furthermore, CFA of the 23 items in 2 domains of the BaPFBQ were presented the fit indices: $\chi^2=1772.446$, $p=.000$, $df=229$, χ^2/df ratio=7.740, CFI=.667, RMSEA=.149, SRMR=.080 (Appendix K: Figure 21,22). These results were below the threshold values of good model fit. To improve the fit statistics, the model was re-specified based on the result of modification indices. The result of modification indices suggested that the model can be improved by setting covariance paths between few measurement errors (e1-e2, e4-e12, e6-e7,...). After model adjustment, the fit statistics for BaPFBQ model were improved with $\chi^2=309.448$, $p=.000$, $df=158$, χ^2/df ratio=1.959, CFI=.967, RMSEA=.056, SRMR=.045 (Appendix K: Figure 23). For the criteria of RMSEA, Hair (2014) recommended that sometimes pointed to a cutoff value of .05 or .08 (Hair et al., 2014). Therefore, RMSEA=.056 was acceptable. The fit statistics of the BaPFBQ were presented in Table 15 and Figure 9.

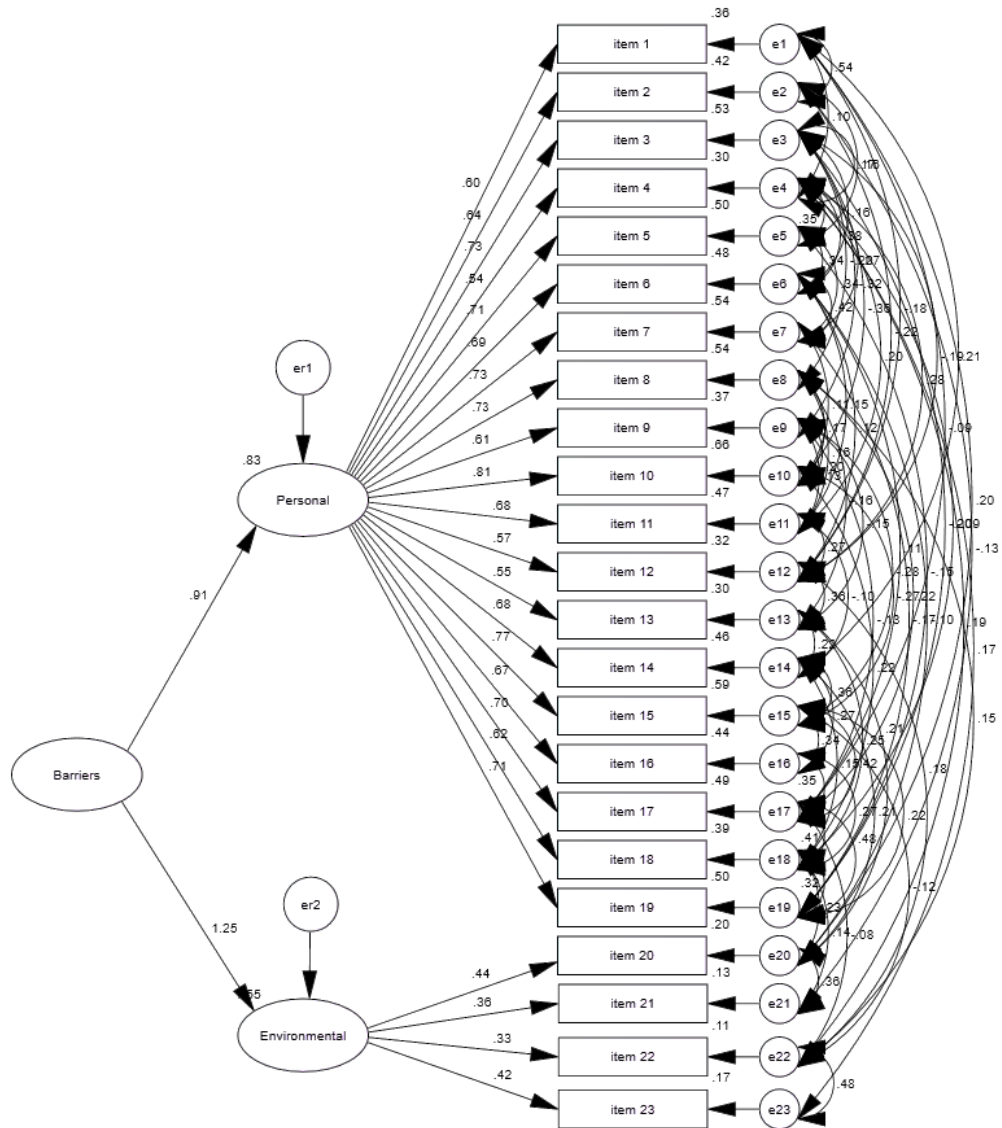
Table 14 Factor loading and construct validity of the BaPFBQ (n = 305)

Item	Mean	Corrected Item-total correlation	Standardized factor loading	
			Personal barriers	Environmental barriers
1	2.14	.557	.60	
2	2.07	.575	.63	
3	2.21	.630	.68	
4	2.76	.594	.56	
5	2.41	.688	.71	
6	2.46	.705	.72	
7	2.37	.720	.75	
8	2.57	.727	.72	
9	2.46	.553	.57	
10	2.39	.760	.79	
11	2.72	.666	.66	
12	2.83	.582	.53	
13	2.27	.546	.57	
14	2.21	.668	.70	
15	2.31	.726	.75	
16	2.21	.646	.67	
17	2.37	.707	.72	
18	2.19	.627	.66	
19	2.37	.681	.68	
20	2.00	.499		.60
21	3.09	.448		.47
22	3.17	.367		.38
23	2.89	.541		.48
Factor loading (regression weights)			.95	.98
t-value (p = .001)			-	-
Construct validity (R ²)			.96	.89

Table 15 Fit indices values of hypothesized and modified factor structure of the BaPFBQ (N=305)

Goodness of Fit statistic	Acceptable value	Values	
		Hypothesized model	Modified model
χ^2	-	1772.446	309.448
df	-	229	158
χ^2 / df	< 2	7.740	1.959
CFI	> .90	.667	.967
RMSEA	< .05 or .08	.149	.056
SRMR	< .10	.080	.045





Chi-square = 309.448, df = 158, P = .000, CMIN/DF = 1.959,
CFI = .967, RMSEA = .056, SRMR = .045

Figure 9 The standardized of modified measurement model of the BaPFBQ

5.4 Reliability

Reliability of the BaPFBQ was determined by considering internal consistency analysis using Cronbach's alpha coefficient. The results showed that the PFAQ had Cronbach's alpha .94 that was acceptable. The summary of the measure was presented in Table 16.

Table 16 Number of items, scoring range, S-CVI/Ave, I-CVI, and reliability of BaPFBQ (n = 305)

Instrument	Number of item	Scoring range	S-CVI /Ave	I-CVI	Reliability
BaPFBQ	23	1-5	.90	.80-1.0	.94

To summarize, the BaPFBQ contains 23 items in 2 dimension: personal barriers (item1 – item19), environmental barriers (item20 – item23). All items were measured on a 5-point Likert scale, including 1(strongly not true), 2(not true), 3(not sure), 4(true), 5(strongly true). The rating scores are summated by the total scores ranging from 23 to 115. Higher score indicates the higher barriers known by preschoolers' parents to perform parental feeding behaviors.

6. Benefits of Parental Feeding Behaviors Questionnaire (BePFBQ) was developed by the researcher based on literature review and interview. The process of generating an item pool begins with a broad review of the literature on the knowing in positive consequences which happen to preschoolers from undertaking the parental feeding behaviors. Because the existing literatures related to the knowing in benefits or positive consequences of performing parental feeding behaviors were studied in abroad mostly, a qualitative study is required to illustrate the phenomena of benefit perception of parental feeding behaviors of preschoolers' parents in urban Thailand. This interview was conducted using the same sample group and the same process of the PFAQ in interview process.

The development of this instrument consisted of 2 parts: a qualitative study using interview and existing literature review. For the interview, the process was run on the same process of the PFAQ. A qualitative study was required to illustrate the phenomena of the benefits of parental feeding behaviors known by preschoolers' parents in urban Thailand. The 17 participants in this process were the same samples participated in interview process of the PFAQ and BaPFBQ. The summary of sample size was illustrated in Table 2. This interview process was run at the same time with the interview process of the PFAQ. From interview, parents talked about the activities

they did for their children. The researcher would ask the participants about the reasons or the expectation of those activities using the probing questions: “Could you please tell me what is the benefits of this action?” The answers related to the benefits of parental feeding behaviors known by preschoolers’ parents were recorded and listed. The examples of obtained data from interview were summarized and presented.

For example, *“Preparing various kinds of foods for my child can prevent poor nutrition.”* (participant no.1-17), *“Preparing newly cooked food for my child can prevent disease which is cause of diarrhea.”* (participant no.4,5,7,8,9,10,13-15), *“Teaching my child to know the benefits of eating fruits and vegetables helps my child want to try them more.”* (participant no.3,4,8,9,13,14,15,16), *“Eating on time can prevent my child from gastritis.”* (participant no.4,5,10,11,14,15).

From the review of literatures, existing evidences were illustrated in chapter II. After the process of literature review and interview, the BePFBQ was developed on the same process of the PFBQ. From the interview, there were 12 items could reflect the benefits perception of preschooler’s parents, while 16 items which reflect benefit perception of preschooler’s parents were from literature review. Some items were redundant, thus the researcher selected one into the pool. An initial pool of 24 items with a 5-point Likert scale, including 1(strongly disagree), 2(disagree), 3(not sure), 4(agree), 5(strongly agree) was written. The BePFBQ contained 24 items in 1 dimension reflecting the concept of benefits of parental feeding behaviors. The questions asked about the knowing of parents in positive consequences which happen to preschoolers from undertaking the parental feeding behaviors. The measure’s score was computed by summing the scores obtained for each item. The possible score ranged from 24-120. Higher score means the higher knowing benefits of parental feeding behaviors.

6.1 Content Validity

The first draft of BePFBQ contained 24 items was tested for content validity on the same process of the PFBQ. Similar to the criteria of the PFBQ, the range of I-CVI for the 24 items was 0.40-1.00 (0.4 (2 item), 0.6 (3 item), 0.8 (7 items) and 1.00 (12 items)) and SCVI/Ave was 0.84. Five items rated as below 0.80 were removed because the meaning of items was redundant and was not relevant to the concept assertiveness. Then, the S-CVI/Ave for the 19 items was increased to 0.92.

6.2 Item selection

The items selection process of the BePFBQ was developed on the same process of the PFBQ. The samples participating in this process were also the same group of item selection process of the PFBQ (n=310). The summary of sample size was illustrated in Table 2. The outlier was evaluated using absolute of Z-score greater 3.0 (Barnett & Lewis, 1994). The result showed that no outlier in this process. Thus, 310 preschoolers' parents (same group of the PFBQ in item selection process) were recruited.

The corrected item-total correlation and inter-item correlation were examined to identify appropriate items, and for improving items quality. Six items were deleted because they had high correlation with other items ($r > .80$). The retaining 13 items presented values of corrected item-total correlations ranging from .43 to .83, which were acceptable. Testing EFA assumption of 13 items of the BePFBQ was then conducted by sample size, normality, and collinearity. The results showed that EFA can be applied to the obtained dataset (appendix J).

Then, EFA was evaluated. The results showed that the BePFBQ had a factor loading ranging from .36 to .90, and the communality score ranging from .50 to .81, which were acceptable. None of any item of the BePFBQ was excluded. Thus, The BePFBQ consisted of 13 items in 1 dimension. For appropriateness and clarity of items, the BePFBQ was not modified.

6.3 Construct validity

The construct validity of the BePFBQ was tested on the same processes of the PFBQ. Convenience sample method was used to recruit 305 preschoolers' parents in Bangkok to complete the BaPFBQ. The outlier reported there were 2 samples should be removed (Z-score = -3.44, -3.44). A group of 303 preschoolers' parents was examined construct validity using CFA. Demographic characteristics of the participants from CFA part were illustrated in Appendix I. Item correlation and corrected item-total correlation were examined before evaluating the CFA. The values of inter item correlation were ranged between .20-.80, and a range of the value of corrected item-total correlation was .46-.70, which were acceptable values. None of any item was cut off. The results were presented in table 17.

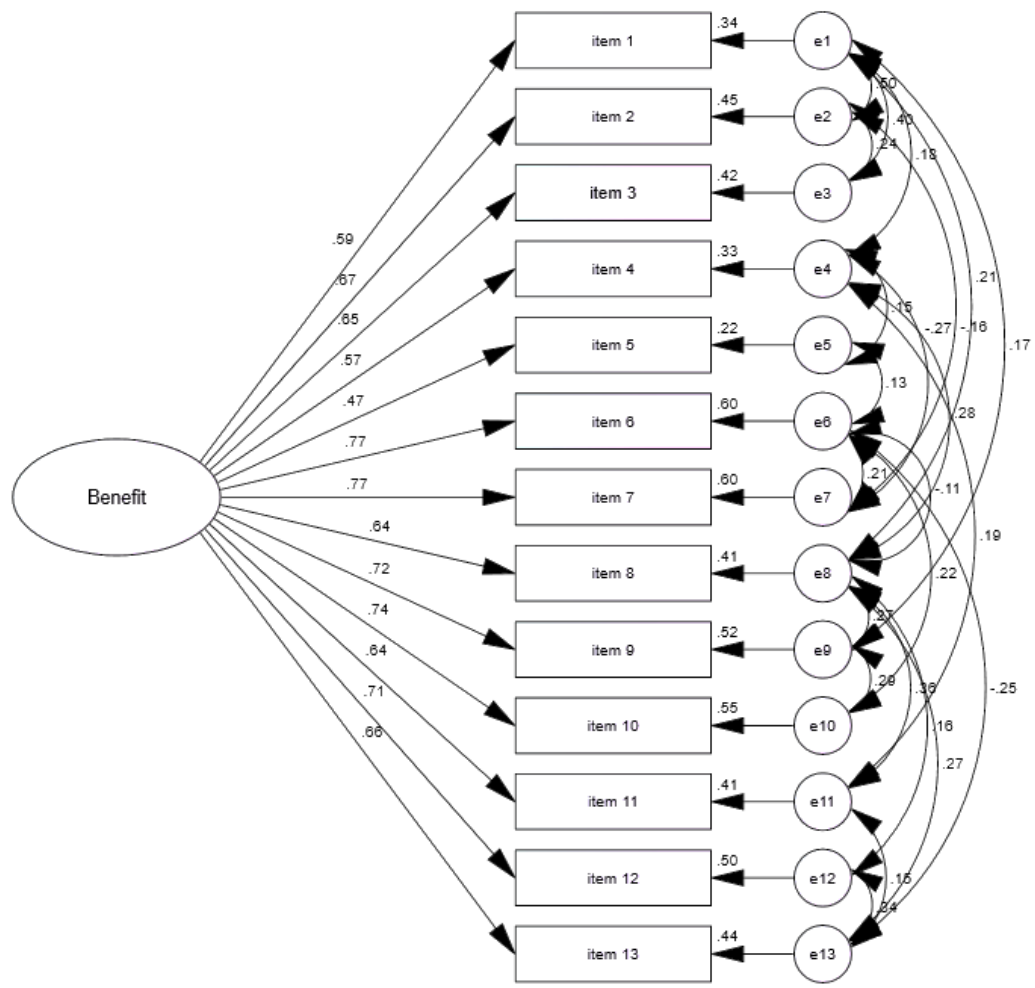
Then, 13 items of the BePFBQ was tested the construct validity using CFA to examine whether a particular factor model provided a good fit to the data. Testing CFA assumptions were evaluated using the sample size, normality (skewness and kurtosis), KMO, and the significance of Bartlett's test of sphericity. The results showed that CFA could be applied to the obtained dataset (Appendix J). Then, CFA was examined. It was founded that the BaPFBQ had standardized factor loading ranging from .50 to .74, which were statistically significant .05 (Table 17). Moreover, CFA of the 13 items in 1 domain of the BePFBQ were presented the fit indices: $\chi^2=497.634$, $p=.000$, $df=65$, χ^2/df ratio=7.656, CFI=.802, RMSEA=.148, SRMR=.025 (Appendix K: Figure 24,25). These results were below the threshold values of good model fit. To improve the fit statistics, the model was re-specified based on the result of modification indices. The result of modification indices suggested that the model can be improved by setting covariance paths between few measurement errors (e1-e2, e1-e3, e6-e7,...). After model adjustment, the fit statistics for BePFBQ model were improved with $\chi^2=71.290$, $p=.003$, $df=42$, χ^2/df ratio=1.697, CFI=.987, RMSEA=.048, SRMR=.011 (Hair et al., 2014). This result met the requirement of a model fit using multiple criteria (Table 18 and Figure 10) (Appendix K: Figure 26).

Table 17 Factor loading and construct validity of the BePFBQ (n = 303)

Item	Mean	Corrected Item-total correlation	Standardized factor loading
1	4.40	.646	.63
2	4.40	.670	.68
3	4.46	.628	.66
4	4.18	.591	.59
5	4.39	.464	.50
6	4.63	.704	.74
7	4.62	.681	.72
8	4.36	.692	.69
9	4.48	.702	.72
10	4.61	.702	.74
11	4.34	.615	.65
12	4.46	.685	.72
13	4.39	.659	.67

Table 18 Fit indices values of hypothesized and modified factor structure of the BePFBQ (N=303)

Goodness of Fit statistic	Acceptable value	Values	
		Hypothesized model	Modified model
χ^2	-	497.634	71.290
df	-	65	42
χ^2 / df	< 2	7.656	1.697
CFI	> .90	.802	.987
RMSEA	< .05	.148	.048
SRMR	< .10	.025	.011



Chi-square = 71.290 ,df = 42,P=.003, CMIN/DF =1.697,
CFI = .987, RMSEA= .048, SRMR = .011

Figure 10 The standardized of modified measurement model of the BePFBQ

6.4 Reliability

Reliability of the BePFBQ was determined by considering internal consistency analysis using Cronbach's alpha coefficient. The results showed that the BePFBQ had Cronbach's alpha .91 that was acceptable. The summary of the measure was presented in Table 19.

Table 19 Number of items, scoring range, S-CVI/Ave, I-CVI, and reliability of BePFBQ (n = 303)

Instrument	Number of item	Scoring range	S-CVI/Ave	I-CVI	Reliability
BePFBQ	13	1-5	.90	.80-1.0	.91

Psychometric testing

1) Content Validity

Five instruments (PFBQ, PFAQ, PEBQ, BaPFBQ, and BePFBQ) were tested for content validity. The content validity was tested by five experts in Pediatric nursing, have experience in instrument development, nutrition in young children, Orem's self-care theory, and health promotion. Five experts were asked to rate each items by rating scale (1 = not relevant to 4 = highly relevant), commented on items including possible revision, on their opinion why items are not relevant to the concept assertiveness (Polit & Beck, 2008). The content validity index of all instruments was calculated both item-content validity index (I-CVI) and scale-content validity index (S-CVI). It was suggested that I-CVI and S-CVI should be .80 and .90 respectively (Polit & Beck, 2008).

Table 20 Summary of number of items, scoring range, S-CVI/Ave, I-CVI, and reliability of each instrument

Instrument	Number of item	Scoring range	S-CVI/Ave	I-CVI
PFBQ	41	1-5	.96	.80-1.0
PFAQ	6	1-5	.93	.80-1.0
PEHQ	17	1-5	.94	.80-1.0
BaPFBQ	23	1-5	.90	.80-1.0
BePFBQ	13	1-5	.90	.80-1.0

2) Construct Validity

Confirmatory factor analysis (CFA) was conducted to examine whether a particular factor model provided a good fit to the data of five instruments (PFBQ, PFAQ, PEBQ, BePFBQ, and BaPFBQ). This method was used to test whether measures of factors are consistent with a nature of that construct. The acceptable estimate sample size for the factor analysis was at least 300 participants (Nunnally & Bernstein, 1994). The samples in this process are parents of preschoolers from the schools belong to Primary Educational Service Area Office in Bangkok. The summary of sample size was illustrated in Table 2. The multiple criteria of the goodness-of-fit of the model were suggested by existing evidences: χ^2/df ratio < 2, CFI > .90, RMSEA < .05 or .08, and SRMR < .10 (Hair et al., 2014). The results of construct validity testing of each instrument were summarized as follows.

Table 21 Summary of Fit indices values of modified factor structure of each instrument

Instrument		PFBQ	PFAQ	PEHQ	BaPFBQ	BePFBQ
Goodness of fit statistics	Acceptable values					
χ^2	-	994.873	4.078	160.064	309.448	71.290
df	-	572	4	93	158	42
χ^2 / df	< 2	1.739	1.02	1.721	1.959	1.697
CFI	> .90	.945	1.00	.966	.967	.987
RMSEA	<.05 or <.08	.049	.008	.049	.056	.048
SRMR	< .10	.035	.01	.048	.045	.011

Note. PFA = Parental feeding attitude, PEH = Parental eating habits, BaPFB = Barriers to parental feeding behaviors, BePFB = Benefits of parental feeding behaviors, PFB = parental feeding behaviors

3) Reliability

Five instruments (PFBQ, PFAQ, PEHQ, BaPFBQ, and BePFBQ) was tested for reliability. Each instrument was examined for internal consistency reliability using Cronbach's alpha. Cronbach's alpha tends to be high if the scale items are highly correlated (Hair et al., 2014). According to the rule of thumb in social science, Cronbach's alpha should be at least 0.70 for the scale to be thought of as reliable (Nunnally & Bernstein, 1994). The sample size in this process was the same group of CFA. The summary of sample size in the processes of instrument development and main study were presented in Table 2. The results of reliability testing of each instrument were summarized as follows.

Table 22 Summary of reliability of each instrument

Instrument	Reliability
PFBQ	.96
PFAQ	.84
PEHQ	.89
BaPFBQ	.94
BePFBQ	.91

Note. PFA = Parental feeding attitude, PEH = Parental eating habits, BaPFB = Barriers to parental feeding behaviors, BePFB = Benefits of parental feeding behaviors, PFB = parental feeding behaviors

Protection of Human Right Subject

This study was conducted in Thailand with the approval of the Ethical Review Committee for Research Involving Human Research Subjects, Health Sciences Group, Chulalongkorn University (COA No.230/2561). All participants were approached at school when they send their children in the morning or when they pick their children up in the evening. Verbal permission for collecting the data was obtained from the participants. The inform consent form explained the purposes of the study, benefits, risks, and the types of questionnaires to be completed. The participants were informed also about their rights to refuse participation. If the participants do not

want to participate in this study no matter what is interview process or answer the questionnaire, they can withdraw from the study at any time without penalty. For interviewees, the interview was run at school or other convenience places. It took about 45-60 minutes. For other processes, participants can answer the questionnaire packet at school. It will take about 30-45 minutes to complete the questionnaire packet. Some participants did not have time enough to answer the questionnaire at school. They were allowed to answer the questionnaire in other convenience places (ex. home, work place, etc.). After completing the questionnaires, participants put a book of questionnaire into an envelope and sealed, and then directly send to the researcher or teacher. In this study, the teachers in each school were not research assistant. They were just facilitators who helped the researcher in keeping questionnaires. The name of each participant was not included; rather, a code number was used instead. The results of the study were reported as a whole picture. All data was destroyed upon the completion of the study. There was no harm to the participants in this study. There was neither cost nor any payment to participate in this study. However, after completing the questionnaires, each participant received a gift in appreciation for their participation.

Data collection

The following described the data collection procedures managed from November 2018 to May 2019:

1. After the study was approved, the authorization letter for collecting the data was obtained from the directors of each school.
2. The researcher contacted the teachers of preschoolers at kindergarten class, and asked for a name list of all preschool students.
3. The researcher selected preschoolers using simple random sampling technique before contact their parents later.
4. The place for collecting data was provided by the teacher. However, the teachers did not take part in the process of data collection. They were as facilitators in providing available classroom, contacting parents, and keeping back the

questionnaires. The processes of data collection were operated by the researcher. There was no research assistant in this study.

5. The researcher contacted the selected participants at school. Some parents who did not come to school because their children went to school by school bus were contacted via telephone and Line application. They were asked to participate in the study. Prior to the collecting data, the researcher introduce herself, establish rapport, explain the purpose of the study, the contributions the participants would make, the selection criteria and emphasize the confidentiality or anonymity of the information being collected.

6. After agreement obtained, the participants were asked to sign a consent form. The participants received the questionnaires. They were allowed to complete the questionnaires at available places (ex. school, home, work place, etc.).

7. After completing the questionnaires, parents put questionnaires into an envelope and return to the researcher or teachers.

8. After getting the questionnaires, the researcher examined the questionnaires for completeness of the data. Participants were asked to complete any missing items.

9. Each participant received a gift in appreciation for their participation. It was a stationary for kids.

Data analysis

A total of 450 preschoolers' parents participated in the study. After collecting the data, the researcher prepared and completed the data using eye screening. Then, 10% of the subjects' data was checked by an outside person to prevent random and systematic errors (e.g., typing or coding the wrong value). Next, the data gathered from 450 participants were analyzed the outlier. Due to the criterion of outliers, the raw data that had the absolute of Z scores greater 3 were identified as outlier (Barnett & Lewis, 1994). As a result, 7 samples were excluded. Therefore, data of a total sample of 443 preschoolers' parents then were analyzed in the study. For the preparation of data analysis, missing data and outliers were determined to prevent compromised analytic power and non-response bias by the researcher. The

data were cleansed to prevent random and systematic errors (e.g. typing or coding the wrong value) using descriptive statistics.

All questionnaires were selected for accuracy of data. The amount of missing value was analyzed using the missing data and outlier by computer software. A univariate statistic was used to examine the amount of missing value on each study variable. In this study, no missing data presented. Many strategies were used to ensure the accurate and complete data. For instance, the researcher gave information about the health problems occurring in Thai children nowadays, and then encouraged parents with sentences “parents are very important person who know what happen they are. Please help pediatric nurses to know. And we will together promote Thai children’s health”. At school, each participant was immediately asked to complete all of the items and clarify ambiguous answers, whereas parents who did not answer questionnaire at school could ask to complete all of the items and clarify ambiguous answers via line application or telephone. Moreover, the rechecking the data after participants returned the questionnaires was used to ensure that the data were complementary and valid.

After the researcher prepared and completed the data screening, the assumptions underlying the multivariate analysis for path analysis were tested, including normality, linearity, homoscedasticity, and multicollinearity. The results showed that there was no violation of the assumptions underlying path analysis, as presented in appendix L. The Statistical Package of the Social Science (SPSS Statistics 22 for Windows) and Analysis of Moment Structure (SPSS AMOS versions 22 for Windows) were used for analyzing data in this study (License software from Chulalongkorn University). Descriptive statistics (percentages, mean, and the standard deviation) were used to describe characteristics of the sample and variables of interests. The path analysis command in AMOS 22 was used to examine the direct, indirectly mediated, and total contribution of parental feeding behaviors. An alpha level of .05 was set as the acceptable level of significance for this study.

CHAPTER IV

RESULT

The purposes of this correlational research were to identify the predicting factors of preschooler's parental feeding behaviors, and to examine the direct and indirect relationships of parental feeding attitude, parental eating habits, barriers to parental feeding behaviors, and benefits of parental feeding behaviors on parental feeding behaviors. Therefore, this chapter presented 1) the characteristics of the study variables, 2) statistical analysis to test the predictors of parental feeding behaviors. Additionally, 3) direct and indirect effects of influencing factors on parental feeding behaviors were described as follows

1) Characteristics of the study variables

The four independent variables in this study including parental feeding attitude, parental eating habit, barriers to parental feeding behaviors, and benefits of parental feeding behaviors, and the dependent variable, parental feeding behaviors, were examined. The detail regarding characteristics of each variable was presented.

Parental feeding attitude

The total score of parental feeding attitude ranged from 15 to 30 with a mean of 24.5 (SD=3.35). The total parental feeding attitude had a skewness and kurtosis value of -.21 and -.13, respectively (Table 23). Moreover, each item had mean score ranged between 3.89 and 4.30 (scoring range 1-5). The parental feeding attitude which had the highest mean score was the responsibility perception of parents as a main caregiver in seeking information about healthy food for preschool child. While the parental feeding attitude which had the least mean score was the responsibility perception of parents as a main caregiver in concerning and making judgement about pleasant eating environment.

Parental eating habits

The total actual score of parental eating habit ranged from 45 to 85 with a mean of 67.96 (SD=8.24). The total parental eating habit had a positive skewness and

had a negative kurtosis value of .13 and -.35, respectively (Table 23). Furthermore, each item had mean score ranged between 3.44 and 4.37 (scoring range 1-5). The parental eating habits which had high mean score included “checking utensils before using” (\bar{x} =4.37), followed by “selecting healthy and clean food when they have to eat fast foods” (\bar{x} =4.27), and “always considering food label before purchasing food” (\bar{x} =4.23). While the parental eating habits which low mean score included “eating on time” (\bar{x} =3.44), “regularly eating five food group per day” (\bar{x} =3.63), “always using serving spoon when eating with others” (\bar{x} =3.82).

Barriers to parental feeding behaviors

The total score of barriers to parental feeding behaviors ranged from 23 to 115 with a mean of 58.73 (SD=15.88). The total barriers to parental feeding behaviors had a positive skewness and kurtosis value of .30 and .13, respectively (see Table 23). Moreover, each item had mean score ranged between 2.32 and 3.10 (scoring range 1-5). The barriers to parental feeding behaviors which had high mean score included “family members let preschooler eat unhealthy snack, sweetened drink, and soda” (\bar{x} =3.1), followed by “family members eat unhealthy snack or soda in front of preschooler” (\bar{x} =3.0), “low ability to prohibit eating snacks of preschooler” (\bar{x} =2.93), and “lack of time to prepare food which attracted preschooler” (\bar{x} =2.81). While barriers to parental feeding behaviors which had low mean score was “my family does not have money enough to but healthy food for preschooler” (\bar{x} =2.32).

Benefits of parental feeding behaviors

The total actual score of benefits of parental feeding behaviors ranged from 42 to 65 with a mean of 57.34 (SD=5.63). The benefits of parental feeding behaviors had a negative skewness and kurtosis value of -.22 and -1.07, respectively (see Table 23). Moreover, each item had mean score ranged between 4.25 and 4.56 (scoring range 1-5). The benefits of parental feeding behaviors mean scores in this group were quite high. For example, “teaching children to wash hands before eating helps protecting from germ or bacteria” (\bar{x} =4.56), “providing newly cooked food for children can prevent diarrhea” (\bar{x} =4.53), “taking care of children to eat on mealtime can prevent gastritis” (\bar{x} =4.51).

Table 23 Possible range, actual range, mean, standard deviation (SD), skewness, and kurtosis of independent variables

Variable	Possible range	Actual range	Mean	SD	Skewness (Z value)	Kurtosis (Z value)
PFA	6-30	15-30	24.5	3.35	-.21	-.13
PEH	17-85	45-85	67.96	8.24	.13	-.35
BaPFB	23-115	23-104	58.73	15.88	.30	.13
BePFB	13-65	42-65	57.34	5.63	-.22	-1.07

Note. PFA = Parental feeding attitude, PEH = Parental eating habits, BaPFB = Barriers to parental feeding behaviors, BePFB = Benefits of parental feeding behaviors

Parental feeding behaviors

The actual total score of parental feeding behaviors ranged from 38 to 190 with a mean of 156.45 (SD=19.06). The total parental eating habit had a negative skewness and kurtosis value of -.20 and -.41, respectively (Table 24). Moreover, the number of parental feeding behaviors score was ranged in 3 levels using formula $\bar{x} \pm 1$ SD. Three levels were illustrated: low (<138), middle (138-175), and high (>175). Most parents had moderate score level of the parental feeding behaviors (64.5%). Next, 20.3% of them had high score level of parental feeding behaviors. Then, 15.2% of them had low score level (Table 25).

Moreover, each item had mean score ranged between 3.54 and 4.38 (scoring range 1-5). The parental feeding behaviors which had high mean score included “concerning clean and safe of preschooler’s foods” (\bar{x} =4.38), followed by “giving a chance for preschooler to eat by themselves” (\bar{x} = 4.33), “Praising preschoolers when they eat healthy food” (\bar{x} =4.31), “teaching preschoolers about clean and healthy food” (\bar{x} =4.30), “preparing clean and safe utensils for preschooler” (\bar{x} =4.27). Furthermore, parental feeding behaviors which had lower mean score were the component of seeking information including “I seek information about appropriate food quantity for preschooler, I seek preschooler’s care information related healthy food, I seek information about how to prepare pleasant food and eating environment for preschooler, I seek information about how to promote good eating habits of preschooler,” (\bar{x} =4.54, 4.65, 4.68, and 4.79 respectively).

Table 24 Possible range, actual range, mean, standard deviation (SD), skewness, and kurtosis of parental feeding behaviors (PFB)

Variable	Possible range	Actual range	Mean	SD	Skewness (Z value)	Kurtosis (Z value)
PFB	38-190	101-190	156.45	19.06	-.20	-.41

Table 25 Number and percentage of parental feeding behaviors

Score level	n	%
Low	67	15.2%
Moderate	286	64.5%
High	90	20.3%

In addition, the characteristics of information sources which parents seek after were illustrated (for item 5,6,7). Firstly, asking healthcare provider (i.e. doctor, nurse, nutritionist, etc.), 30.2% of parents often to ask healthcare provider, 28.9% of them sometimes to ask healthcare provider. Secondly, the frequency of seeking information by reading books, pamphlet, news, searching internet, watching TV was illustrated that parents often to do this action was 38.8% and sometimes to do this action was 28.2%. Lastly, the frequency of seeking information by asking friends or neighbors was illustrated that parents often to do this action was 39.3% and sometimes to do this action was 31.4%. The comparison of the sources which parents tend to acquire information was founded that seeking information by reading books, pamphlet, news, searching internet, and watching TV was the most popular way to do (84 parents), next sources was seeking information by asking friends or neighbors (68 parents), and the last was seeking information by asking healthcare provider (i.e. doctor, nurse, nutritionist, etc.) (64 parents). Moreover, a number of parents never and rarely chosen the ways in seeking information were compared. It was founded that 117 parents never and rarely seek information by asking healthcare provider (i.e. doctor, nurse, nutritionist, etc.), 62 parents never and rarely seek information by reading books, pamphlet, news, searching internet, and watching TV,

and 62 parents never and rarely seek information by asking friends or neighbors (see Table 26).

Table 26 Number and percentage of seeking information sources in parental feeding behaviors questionnaire (for item 5,6,7)

Item	seeking information sources	n	%
5	Asking healthcare provider (i.e. doctor, nurse, nutritionist, etc.)		
	never	29	6.5
	rarely	88	19.9
	sometimes	128	28.9
	often	134	30.2
6	Reading books, pamphlet, news, searching internet, watching TV		
	never	6	1.4
	rarely	56	12.6
	sometimes	125	28.2
	often	172	38.8
7	Asking friends or neighbors		
	never	14	3.2
	rarely	48	10.8
	sometimes	139	31.4
	often	174	39.3
	always	68	15.3

2) Statistical analysis to test the predicting factors of parental feeding behaviors

To identify the predicting factors of preschooler's parental feeding behaviors in this study, the correlation between the variables and the parental feeding behaviors was tested using bivariate correlation. Among relationships was considered by the following criteria of the correlation coefficient (r): $r < .30$ = weak or low relationship, $.30 \geq r \leq .50$ = moderate relationship, and $r > .50$ = strong or high relationship (Burns & Grove, 2009). However, according to Hair, the correlations among variables should not greater than .85, which indicated the redundant dependent measures and decreases statistical efficiency

(Hair et al., 2014). The results of bivariate correlation showed that no redundant among variables (see Table 27).

Table 27 Correlation matrix among the independent variables (n=443)

Variables	PFA	PEH	BaPFB	BePFB	PFB
PFA	1				
PEH	.36**	1			
BaPFB	-.17**	-.27**	1		
BePFB	.34**	.53**	-.30**	1	
PFB	.43**	.63**	-.42**	.60**	1

Note. ** $p < .01$, PFA = Parental feeding attitude, PEH = Parental eating habits, BaPFB = Barriers to parental feeding behaviors, BePFB = Benefits of parental feeding behaviors, PFB = parental feeding behaviors

Table 27, the variables had correlation, at the statistical significance level of .05. Three variables had a high correlation, including parental eating habits, and benefits of parental feeding behaviors had a high correlation with parental feeding behaviors ($r = .63$ and $r = .60$). Parental eating habits had a high positive correlation with benefits of parental feeding behaviors ($r = .53$). Parental eating habits, benefits of parental feeding behaviors, and parental feeding behaviors had a moderate positive correlation with parental feeding attitude ($r = .36$, $r = .34$, and $r = .43$ respectively). Moreover, benefits of parental feeding behaviors and parental feeding behaviors had a moderate negative correlation with barriers to parental feeding behaviors ($r = -.30$ and $r = -.42$). Parental feeding attitude and parental eating habits had a low barriers to and had negative correlation with barriers to parental feeding behaviors ($r = -.17$ and $r = -.27$).

Then, to identify the predicting factors of preschooler's parental feeding behaviors and to examine the relationship among variables, four statements of the hypotheses in this study were tested. The model was determined that whether the hypothesized path model (Figure 2) fit the data, the path coefficients and the variance of the model (R^2) were estimated. The effects of the independent variables

(parental feeding attitude, parental eating habits, barriers to parental feeding behaviors, and benefits of parental feeding behaviors) on the dependent variable (parental feeding behaviors) were determined in order to answer the hypotheses.

Model identification

The identification of the model is critical to test the model fit in path analysis as well as its parameters. In verifying the single possible value of the models before estimating the parameter to identify as over-identified model, just-identified model, or under-identified model, the degree of freedom (df) was considered using the formula to calculate the free degree. The df in model identification was the difference between the number of parameters we can estimate and the number of parameters we want to estimate. However, df is not related to the number of subjects in the study. The df came from the formula $NI(NI+1)/2 - (\text{number of parameter estimation})$, where NI means all observed variables used in parameter estimation (Rathachatranon, 2018; Suksawang, 2014). The hypothesized model consisted of 5 variables and 15 parameters estimation. According to the formula, the degree of freedom was calculated: $5(5+1)/2 - (15) = 0$.

The df was equal to zero. Thus, it was a just-identification model, which meant that it could be analyzed by path analysis (Pongsilp, 2015). Just-identified models have perfect fit, meaning that there are just enough degrees of freedom to estimate all free parameters (Hair et al., 2014). According to Streiner (2005), the purpose of path analysis is to find out what affects the endogenous variables, that is, how the exogenous variables work together (their co-variances) and which paths are important (determined in part by the variances of the exogenous variables). Because the model postulates that the endogenous variables are determined or influenced solely by the exogenous ones, they are not free to vary on their own but only in response to the exogenous variables (Streiner, 2005).

The hypothesized path model of the parental feeding behaviors (Figure 2) was tested. To investigate the hypothesized model controlling for the influence of other variables on parental feeding behaviors, every potential path was modeled. Because this was a just-identified (fully saturated) model, the fit indices were not available and thus were not reported. It was supported by the study of Hsu et al. (2015), their

study did not report the fit indices because of fully saturated model. Thus, all analyses were weighted. The results showed that the path model explained 56% ($R^2=.56$) of the variance of the parental feeding behaviors. A path model of the parental feeding behaviors among preschoolers' parental feeding behaviors, urban Thailand showed in Figure 11.

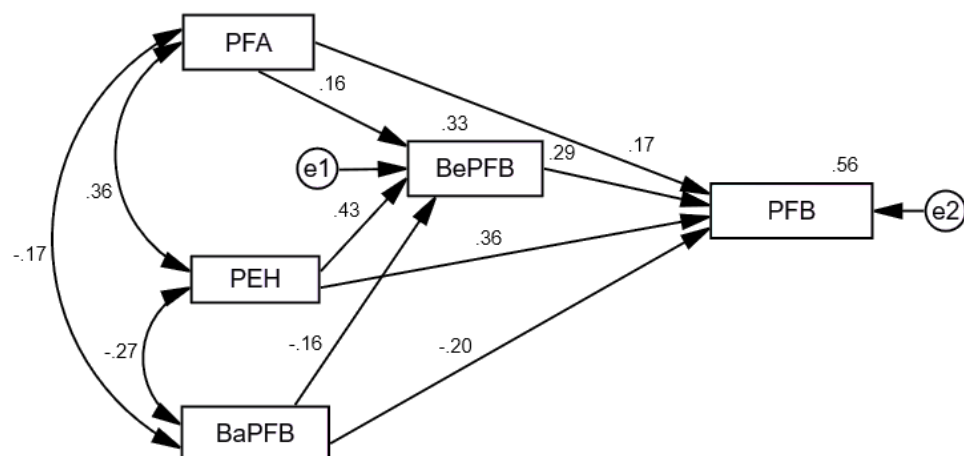


Figure 11 Path model of the parental feeding behaviors (Just-identified model)

Figure 11, the result of the path with Just-identified model of parental feeding behaviors was identified. It was found that all independence variables were significantly predicted parental feeding behaviors at the statistical significance level of .05. The path coefficients of parental eating habits had the most impact on the parental feeding behaviors ($\beta=0.36$; $p<0.001$), followed by the benefits of parental feeding behaviors ($\beta=0.29$; $p<0.001$).

From a path analysis, the values of total effect, direct effect, and indirect effect of the influencing variables on the affected variables were identified in Table 28.

Table 28 Summary of the total, direct, and indirect effects of the influencing variables on the affected variables (n=443)

Endogenous variables	R ²	Influencing variables	Total Effect	Indirect Effect	Direct Effect
PFB	.56	PFA	.22	.05	.17
		PEH	.48	.12	.36
		BaPFB	-.25	-.05	-.20
		BePFB	.29	-	.29
BePFB	.33	PFA	.16	-	.16
		PEH	.43	-	.43
		BaPFB	-.16	-	-.16

Note. PFB = Parental feeding behaviors, PFA = Parental feeding attitude, PEH = Parental eating habits, BaPFB = Barriers to parental feeding behaviors, BePFB = Benefits of parental feeding behaviors

Table 28, the study findings revealed that the path model fit the empirical data and could explain 56% ($R^2 = .56$) of the variance of the parental feeding behaviors by parental feeding attitude, parental eating habits, barriers to parental feeding behaviors, and benefits of parental feeding behaviors. Moreover, the model explained 33% ($R^2 = .33$) of the variance of the benefits of parental feeding behaviors by parental feeding attitude, parental eating habits, and barriers to parental feeding behaviors.

3) Direct and indirect relationships of predicting factors on parental feeding behaviors

The direct and indirect relationships between the independent variables and parental feeding behaviors among preschoolers' parents, urban Thailand were identified. The findings were described as follows.

1) Relationship between benefits of parental feeding behaviors and parental feeding behaviors

Benefits of parental feeding behaviors was found to be positive direct relationship with parental feeding behaviors ($\beta=0.29$; $p<0.001$).

2) Relationship between parental feeding attitude and parental feeding behaviors

Parental feeding attitude was found to be positive direct relationship with parental feeding behaviors ($\beta=0.17$; $p<0.001$), and it had positive indirect relationship with parental feeding behaviors through benefits of parental feeding behaviors ($\beta=0.16$; $p<0.001$)

3) Relationship between parental eating habits and parental feeding behaviors

Parental eating habits was found to be positive direct relationship with parental feeding behaviors ($\beta=0.36$; $p<0.001$). Moreover, it had positive indirect relationship with parental feeding behaviors through benefits of parental feeding behaviors ($\beta=0.43$; $p<0.001$)

4) Relationship between barriers to parental feeding behaviors and parental feeding behaviors

Barriers to parental feeding behaviors was found to be negative direct relationship with parental feeding behaviors ($\beta= -0.20$; $p<0.001$), and it had negative indirect relationship with parental feeding behaviors through benefits of parental feeding behaviors ($\beta= -0.16$; $p<0.001$)

In conclusion, this chapter identified the predicting factors of preschooler's parental feeding behaviors, and examined the direct and indirect relationships among variables. Moreover, the descriptive statistical characteristics of variables had been explained. It was founded the preliminary analysis demonstrated that the assumptions for path analysis were not violated, and the results were acceptable. Following this, the hypothesized path model of the parental feeding behaviors among preschoolers' parents, urban Thailand was analyzed. This study showed a just-identified (fully saturated) model which meant a perfect fit. The fit indices were not available and thus were not reported. All analyses were weighted, and the results showed that the path model explained 56% ($R^2=.56$) of the variance of the parental feeding behaviors.

CHAPTER V

DISCUSSION

This chapter discussed the results of the study and provided the conclusion, discussion, implications for nursing knowledge and nursing practice, and recommendations for future research.

Conclusion

The correlational research design was used for answering the research questions. The purpose of this study was to identify the predicting factors of parental feeding behaviors, and to examine the direct and indirect relationships of the predicting factors of the parental feeding behaviors of preschooler's parents in urban Thailand. The self-care theory by Orem (2001) was used as the conceptual framework for this study. Multi-stage random sampling was used to recruit 443 participants in the study. They were parents (mother or father) of preschoolers aged 3-6 years old in kindergarten 1 to kindergarten 3 (K1-K3) at schools belonged to the Primary Educational Service Area Office in Bangkok and city municipalities from all regions of Thailand. Data were gathered from November 2018 to May 2019.

The participants in this study were 315 mothers (71%) and 128 fathers (29%). Half of the participants were aged 31-40 year (50.3%), followed by 20-30 years (26.6%), > 40 years (22.6%), and < 20 years (0.5%). The majority of them had Bachelor degree (36.4%), followed by upper Bachelor degree (34.1%). Moreover, the greater number of participants was employee (34.3%), private officer (23.7%), and business owner (21.2%). Most of them had family income 15,001-25,000 baht/month (36.3%), followed by <15,000 baht/month (33.8%). Around 34%, 25.3%, 18.7% had 4,3,5 members in their family respectively. Furthermore, most of them had 2 children (43.1%) and 39.7% of them had only one child (see Table 3).

In addition, the characteristics of preschoolers were illustrated. Fifty-five percent of them were boys and 45% were girls. They were aged 3-4 years (28.9%), 4-5 years (38.6%), and 5-6 years (32.5%). Most of them were the 1st, 2nd, and 3rd birth order (55%, 34.4%, and 41% respectively). According to Thai growth chart by

Department of Health, Ministry of Public Health, most of preschoolers had normal weight (90.8%) and had normal height (77.6%). Moreover, most of them did not have chronic health condition (91.4%), and the rest had allergy and asthma (8.6%) (see Table 4).

The research instruments used in this study were developed by the researcher. All instruments had acceptable content, construct validity and reliability. Data collection took place at the 11 schools in urban area from all 5 regions of Thailand and Bangkok. This study was approved by the Ethical Review Committee for Research Involving Human Research Subjects, Health Sciences Group, Chulalongkorn University.

Statistical analysis of the data was performed using the Statistical Package of the Social Science (SPSS version 22) and Analysis of Moment Structure (SPSS AMOS versions 22) to examine descriptive statistics and bivariate correlation, and to test hypothesized model using path analysis. The results of the path analysis revealed that all independent variables had significantly predicted parental feeding behaviors at the statistical significance level of .05. The path model of all variables accounted for 56% of the variance of the parental feeding behaviors by parental feeding attitude, parental eating habits, barriers to parental feeding behaviors, and benefits of parental feeding behaviors. This study showed a perfect fit model (just-identified model). The fit indices were not available and thus were not reported. All analyses were weighted. The path coefficients of parental eating habits had the most impact on the parental feeding behaviors ($\beta=0.36$; $p<0.001$), followed by the benefits of parental feeding behaviors ($\beta=0.29$; $p<0.001$). Moreover, the results showed that barriers to parental feeding behaviors had an impact on parental feeding behaviors ($\beta= -0.20$; $p<0.001$), and parental feeding attitude had an impact on parental feeding behaviors ($\beta=.17$; $p<0.001$).

Discussion

According to the objectives of this study, the discussion part was described as follows:

- 1. To identify the predicting factors of preschoolers' parental feeding behaviors, urban Thailand**

Influencing factors of parental feeding behaviors were analyzed using path analysis. The results showed that all factors significantly predict parental feeding behaviors at the statistically significant level of .05 which included parental feeding attitude, parental eating habits, barriers to parental feeding behaviors, and benefits of parental feeding behaviors.

The variables which significantly predicted parental feeding behaviors were congruent with the findings of existing studies, which were found that parental feeding attitude (Birch et al., 2001; Eliassen, 2010; Geng et al., 2009; Liu, 2013; Northrup, 2014), parental eating habits (Birch & Fisher, 2000; Fisher & Birch, 1999b; Fisher et al., 2001; Francis et al., 2001; R. K. Johnson et al., 2001; Kratt et al., 2000; Wardle et al., 2001), barriers to parental feeding behaviors (Ivanovitch, 2007; Palupi, 2014; Spruijt-Metz et al., 2002), and benefits of parental feeding behaviors (Bland et al., 2005; Hart et al., 2003; Palupi, 2014; Sakdapetchsiri, 2002; Sitthideth, 2013) could significantly predict parental feeding behaviors, with path model explained 56% ($R^2=.56$).

These influencing factors were selected using Orem's self-care theory and literature review for guidance in this study. Some variables were rarely seen in the same context of this study, such as parental feeding attitude and parental eating habits. However, all influencing factors had significant relationship with parental feeding behaviors and they could significantly predict parental feeding behaviors, with path model explained 56% ($R^2=.56$). Interestingly, parental eating habits had the most impact on the parental feeding behaviors, which it was less focused in other studies. This is the benefits of using grand theory to guide in the nursing research because grand theory can guide a broad perspective for the purpose and structure of nursing practice (Walker & Avant, 2011). Compare to previous study using middle-range theory as guidance, it was founded that perceived benefits of maternal feeding behaviors, perceived barriers to maternal feeding behaviors, and perceived maternal feeding behaviors self-efficacy could explain only 38.5% of variance in maternal feeding behaviors of toddlers' Indonesian mothers. Moreover, there was selected predictor, social support, could not predict maternal feeding behaviors of toddlers' Indonesian mothers (Palupi, 2014).

2. To examine the direct and indirect relationships of predicting factors on parental feeding behaviors

2.1 Parental feeding attitude had a positive direct relationship with the parental feeding behaviors, and it had a positive indirect relationship with the parental feeding behaviors through benefits of parental feeding behaviors.

These findings were congruent with the hypothesis 1. The result of path model presented that parental feeding attitude had a positive direct relationship with the parental feeding behaviors ($\beta=0.17$; $p<0.001$). Orem's (2001) self-care theory stated that BCFs were factors influencing dependent-care agency. In this study, parental feeding attitude was a concept substructured from sociocultural orientation in the BCFs, and parental feeding behaviors was a concept substructured from dependent-care agency (see figure 1). The literatures supported that attitudes and behaviors had strong correlations, and attitude was predictive of behavior. Existing research reported that parental attitudes were likely to be a significant factor in influencing expressing of parent's behaviors to child discipline (Halpenny et al., 2010; Kendler, 1996). Parental feeding attitude was correlated with parental feeding behaviors (Birch et al., 2001; Geng et al., 2009; Liu, 2013). Moreover, the maternal restrictive attitude was likely to be a significant influencing factor in maternal food selection for their young children (Northrup, 2014). Furthermore, previous studies in familiar populations could support this hypothesis. For example, attitude toward breast feeding of mothers had a positive direct relationship with maternal breast feeding (Dungy et al., 2008). Maternal attitude toward personal carbohydrate intake had a positive direct relationship with mothers' child feeding behaviors related to carbohydrate intake (Aguirre, 2010).

Parent's attitude can show how they see and what they think and feel about the situations, which reflect how they behave toward those situations (Allport, 1935). Compare to the current study, parental feeding attitude can show how preschoolers' parents think and feel about their feeding responsibilities to the preschoolers. The results showed the parental feeding attitude had a positive direct relationship with parental feeding behaviors, which indicated that the more

preschoolers' parent perceived feeding responsibility for their preschoolers, the more parents had a high level of parental feeding behaviors.

In addition, parental feeding attitude had a positive indirect relationship with the parental feeding behaviors through benefits of parental feeding behaviors ($\beta=0.16$; $p < 0.001$). Orem's (2001) self-care theory stated that the BCFs can also affect the PCs. Motivation from PCs in this study was substructured to be the benefits of parental feeding behaviors (see Figure 1). There was limit of the study on the relationship between parental feeding attitude and benefits of parental feeding behaviors. However, there was consistently found its relationships in other aspects. For example, the children who had positive attitude toward eating breakfast considered that the benefits of eating breakfast were "to increase energy and to have ability to pay attention in school highly" were likely to have breakfast more than a group of children who were not concerned (Reddan et al., 2002). Therefore, it can be explained the relationship parental feeding attitude and benefits of parental feeding behaviors in this study. When parents had a high level of thinking and feeling about feeding responsibilities (parental feeding attitude) for their preschoolers, the knowing of parents about the positive outcomes of parental feeding behaviors was greater. Parents who recognized their feeding responsibilities for preschoolers will have more attention to know what benefits that occur in their preschoolers. Therefore, the level of knowing benefits of parental feeding behaviors was higher. On the contrary, parents who less recognized their feeding responsibilities for preschoolers will have lower attention to know what outcomes that occur in their preschoolers. Therefore, the level of knowing benefits of parental feeding behaviors was lower.

According to Chin (1998), standardized paths should be at least 0.20 (Chin, 1998). But, the direct and indirect path coefficients of parental feeding attitude had low relationships to parental feeding behaviors ($\beta=0.17$; $p<0.001$), and benefits of parental feeding behaviors ($\beta=0.16$; $p<0.001$). The researcher tried to exclude this variable from the model, but the goodness of fit index was rejected. It indicated that parental feeding attitude of preschoolers' parents was the important predictor for benefits of parental feeding behaviors and parental feeding behaviors. It was

important for healthcare providers to help preschoolers' parents improve parental feeding behaviors.

2.2 Parental eating habit had a positive direct relationship with the parental feeding behaviors, and it had a positive indirect relationship with the parental feeding behaviors through benefits of parental feeding behaviors.

These findings were congruent with the hypothesis 2. According to the result of path model, parental eating habits had a positive direct relationship with the parental feeding behaviors ($\beta=0.36$; $p<0.001$). Orem's (2001) self-care theory stated that BCFs are factors influencing dependent-care agency. In this study, parental eating habits was a concept substructured from pattern of living in the BCFs, and parental feeding behaviors was a concept substructured from dependent-care agency (see figure 1). This finding was consistent with findings of existing studies, which illustrated that parental eating habit had a positive relationship with parental feeding behaviors. For example, parental eating habit about food and vegetable intake had a relationship with parental feeding behavior about food and vegetable availability for children at home (Kratt et al., 2000). Moreover, it was founded that maternal eating style had strong relationship with maternal feeding styles (Birch & Fisher, 2000; Fisher & Birch, 1999b; Wardle et al., 2001). Furthermore, the milk type mothers' drink had strong relationship with milk type that mothers prepared for their children (Fisher et al., 2001; R. K. Johnson et al., 2001). Mothers who restrict their own eating had relationship with the mother's behaviors in food restriction for children (Francis et al., 2001). The result in this study showed that parental eating habit was the highest impact factor influencing the parental feeding behaviors. Therefore, it was very significant for healthcare providers to help preschoolers' parents improve parental feeding behaviors by promoting good eating habits for people, especially for young children's parents.

Furthermore, parental eating habits had a positive indirect relationship with the parental feeding behaviors through benefits of parental feeding behaviors ($\beta=0.43$; $p<0.001$). Orem's (2001) self-care theory stated that The BCFs also affected the PCs. Motivation from PCs in this study was substructured to be the benefits of parental feeding behaviors. The study on the relationship between parental eating

habits and benefits of parental feeding behaviors was limited. However, this finding was consistent with findings of previous studies conducted in familiar phenomena (Francis et al., 2001; Gillman et al., 2000). For example, eating habits of parents had a relationship with the parental feeding behaviors regarding encouraging their family members to have healthy eating habits as they had. The study of Gillman and colleagues reported that healthier parents knew the benefits of healthy eating habits; therefore, they may promote health of family members by performing appropriate care (Gillman et al., 2000). Moreover, mothers who restrict their own eating had a relationship with the children's intake restriction by mothers (Francis et al., 2001). Mothers who restricted their own eating knew the benefit outcomes of restricting self-eating, such as preventing obesity, therefore, they want their children to have normal weight also. Thus, they would restrict children's intake.

As existing evidences above, it could be explained the finding in this study that parents who have good eating habits may know the positive outcomes of having healthy eating. Naturally, parents hope their child get everything well. Therefore, when parents knew that what behaviors will be good for their preschoolers, they will do the same thing for their children.

2.3 Barriers to parental feeding behaviors had a negative direct relationship with the parental feeding behaviors, and it had a negative indirect relationship with the parental feeding behaviors through benefits of parental feeding behaviors. These findings were congruent with the hypothesis 3. According to the result of path model, barriers to parental feeding behaviors had a negative direct relationship with the parental feeding behaviors ($\beta = -0.20$; $p < 0.001$). Orem's (2001) self-care theory stated that BCFs were factors influencing dependent-care agency. In this study, barriers to parental feeding behaviors was a concept substructured from resources availability and adequacy in the BCFs, and parental feeding behaviors was a concept substructured from dependent-care agency (see figure 1). The barriers in this study meant resources unavailability and inadequacy, leading to the negative relationship with parental feeding behaviors. Although the studies on the relationship between barrier to parental feeding behaviors and parental feeding behaviors were limited, there were some studies consistently found a negative relationship between

barriers to specific behaviors and performing specific behaviors in familiar populations. For example, the barrier to maternal feeding behaviors had negative relationship with toddlers' maternal feeding behaviors (Palupi, 2014). Moreover, family monetary which was a barrier in providing healthy food of mothers had negative relationship with providing healthy food for their school age children because those mothers did not have money enough to buy healthy food (Spruijt-Metz et al., 2002). Another study, it was found that the barriers of time to give breastfeeding of Saudi women had negative relationship with breastfeeding (Saied et al., 2013).

Furthermore, barriers to parental feeding behaviors had a negative indirect relationship with the parental feeding behaviors through perceived benefits of parental feeding behaviors ($\beta = -0.16$; $p < 0.001$). Orem's (2001) self-care theory stated that The BCFs can also affect the PCs. Motivation from PCs in this study was substructured to be the benefits of parental feeding behaviors. The research on its relationship was limit. However, this finding in this study was consistent with the finding of previous studied in other population in nursing field (Lovell, El Ansari, & Parker, 2010), which indicated that the barrier of exercise milieu was negatively associated with benefit of exercise, and it was indirect avenues to influence perceived barriers through planned management of females' perceived benefits to physical activity in female university students. Moreover, this relationship was founded in different fields i.e. technology management (Lai, 2017), education (Cigdem & Ozturk, 2016) and environmental management (Álvarez García & Rama, 2016). Compare to this study, it could be explained its relationship. According to Pender (2006), when the barriers perception to perform specific actions is high, the benefits perception of performing those actions is low. On the contrary, when the barriers perception to perform actions were low, the benefits perception of performing those actions were high (Pender et al., 2006).

According to Chin (1998), the indirect path coefficients of barriers to parental feeding behaviors had low relationships to parental feeding behaviors ($\beta = -0.16$; $p < 0.001$) (Chin, 1998). However, the researcher tried to exclude this variable from the model, the goodness of fit index was rejected. It indicated that barriers to parental

feeding behaviors of preschoolers' parents were important predictor of benefits of parental feeding behaviors and parental feeding behaviors. From the BaPFBQ, the barriers to parental feeding behaviors of preschoolers' parents in urban Thailand in this study showed that the item which parents most selected high score was item 9 (I can't provide food without seasoning powder for my preschooler), item 11 (I can't prohibit my child to watch TV or play mobile phone while my preschooler is eating), item 15 (I don't have time to provide healthy and nutritious food for my preschooler everyday), item 17 (I don't have time to provide food attracted my preschooler to eat everyday), item 18 (I don't have enough time to look after my preschooler eat by him/herself), item 19 (I don't have enough time to ask my preschooler help me preparing food), item 21 (My family member(s) like to eat sweetened snack/drink, soda in front of my preschooler), and item 23 (my family member(s) spoils my child and doesn't train about good eating manners to my preschooler). These findings could explain preschooler's parents in urban area don't have time to take care their preschooler. It may be because they are busy from work, or they may take longer time in transportation. It was supported by a study of Teungfung (2009) reported that parents in urban area spent less time and significantly on child rearing because traffic transportation (Teungfung, 2009).

2.4 Benefit of parental feeding behaviors has a direct positive relationship with the parental feeding behaviors. This result was congruent with the hypothesis 4. According to the result of path model, benefits of parental feeding behaviors has a positive direct relationship with the parental feeding behaviors ($\beta=.29$; $p<0.001$). According to Orem's (2001), self-care theory was explained that BCFs are factors influencing dependent-care agency. In this study, benefits of parental feeding behaviors was a concept substructured from motivation in the PCs, and parental feeding behaviors was a concept substructured from dependent-care agency (see figure 1). In this study, the benefits of parental feeding behaviors was defined as knowing in benefits or positive outcome expectations have been shown to be an important condition for participation in a specific health behavior. Individuals are more likely to perform the behaviors if they know the benefits of actions are considered high. Parents are more likely to perform an appropriate

feeding behavior if they know the benefit outcomes of performing suitable parental feeding behaviors (Pender, 2006).

A number of recent studies have confirmed the relationship between the benefits of parental feeding behaviors and parental feeding behaviors. For example, knowing the benefits of child malnutrition prevention of mothers had positive relationship with child feeding practices (Sitthideth, 2013). The benefits perception of maternal feeding behaviors had positive relationship with maternal feeding behaviors for toddlers (Palupi, 2014). Moreover, there were existing research studies examined the relationship between the benefits of specific behaviors and performing those behaviors in other aspects. For example, the benefits of performing healthy feeding practices (ex. healthy hair, skin and teeth) perceived by school-age children' parents had positive relationship with healthy behaviors to the children (Hart et al., 2003). Moreover, there was positive relationship between the benefits perception of health promotion for young children and maternal behaviors in promoting young children's health (Sakdapetchsiri, 2002), there was positive relationship between perceived health benefits of parents and parental lead poisoning preventive behaviors in young children (Bland et al., 2005).

As details mentioned above, most of the studies were examined in various groups, such as school-age children' parents, young children's parents, mothers of children aged 6 - 59 months, mothers of toddlers. Even though some studies examined in mothers only, the current study had confirmed that the benefits of parental feeding behaviors had significantly positive direct effect with parental feeding behaviors.

Implications for nursing knowledge and nursing practice

1. Pediatric nurses can use the knowledge of influencing factors of preschoolers' parental feeding behaviors in developing interventions specific to preschoolers' parents in urban, Thailand to improve their feeding behaviors as well as preschooler's health.

2. Among 4 influencing factors, parental eating habit was found to have the greatest impact on the parental feeding behaviors. Therefore, pediatric nurses should work together with other health care professionals, such as adult nurses to encourage appropriate eating habits in parents

3. Nurses can use this study as a guideline for applying a nursing grand theory in their practice.

Recommendations for future research

Based on the findings of the present study, the following recommendations for future research can be made as follows.

1. All predictors in this study, parental eating habits, benefits of parental feeding behaviors, barriers to parental feeding behaviors, and parental feeding attitude could predict the parental feeding behaviors among preschooler's parents, urban Thailand. A nursing intervention aiming to improve preschoolers' parental feeding behaviors should be developed based on the above influencing factors and tested.

2. In this study, the 4 predictors substructured from the Orem's theory could explain 56% ($R^2=.56$) of the variance of the feeding behaviors of preschoolers' parents in urban, Thailand. Future researchers can study the remaining influencing factors of this behavior using the same nursing grand theory as the research framework.

3. Because path model in this study was a just-identified model, future research may analyze using latent model because identifying measurement error makes the causal equation model between latent variables more clear, compared with path analysis with latent variables.

4. All instruments were developed by the researcher. These instruments need further investigation and their norms should be established.

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APPENDICES

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY



Appendix A

Approval of dissertation proposal

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY



ประกาศ

คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
เรื่อง การอนุมัติหัวข้อวิทยานิพนธ์ ครั้งที่ 9/2558 ประจำปีการศึกษา 2558

นิสิตผู้ทำวิจัยและอาจารย์ที่ปรึกษาวิทยานิพนธ์

รหัสนิสิต	5677402336
ชื่อ-นามสกุล	นางสาวชลลดา จงสมจิตต์
สาขาวิชา	พยาบาลศาสตร์ (นานาชาติ)
ประธานกรรมการ	รองศาสตราจารย์ ดร. จินตนา ยูนิพันธุ์
อาจารย์ที่ปรึกษาหลัก	รองศาสตราจารย์ ดร. วราภรณ์ ชัยวัฒน์
อาจารย์ที่ปรึกษาร่วม	ผู้ช่วยศาสตราจารย์ ดร. ประนอม รอดคำดี
กรรมการ	ผู้ช่วยศาสตราจารย์ ดร. สุนิศา ปรีชาวงศ์
กรรมการ	รองศาสตราจารย์ ดร. สิริพันธุ์ สุวรรณมรรคา
กรรมการภายนอก	รองศาสตราจารย์ ดร. ทศนีย์ ประสบกิตติคุณ
ชื่อหัวข้อวิทยานิพนธ์	ปัจจัยทำนายพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดา-มารดาในเขต ชุมชนเมือง ประเทศไทย PREDICTING FACTORS OF PRESCHOOLER'S PARENTAL FEEDING BEHAVIORS, URBAN THAILAND
ครั้งที่อนุมัติ	9/2558
ระดับ	ปริญญาเอก

จากมติคณะกรรมการบริหารคณะพยาบาลศาสตร์ ครั้งที่ 10/2559 วันที่ 26 กรกฎาคม 2559

ประกาศ ณ วันที่ 29 กรกฎาคม พ.ศ. 2559

สุวิทย์ วัฒนกิจ

(รองศาสตราจารย์ ดร. สุวิทย์ วัฒนกิจ)

คณบดีคณะพยาบาลศาสตร์



Appendix B

Approval of ethical review committee

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

AF 02-12



The Research Ethics Review Committee for Research Involving Human Research
Participants, Health Sciences Group, Chulalongkorn University
Jamjuree 1 Building, 2nd Floor, Phyathai Rd., Patumwan district, Bangkok 10330, Thailand,
Tel/Fax: 0-2218-3202 E-mail: cccu@chula.ac.th

COA No. 230/2018

Certificate of Approval

Study Title No. 183.1/61 : PREDICTING FACTORS OF PRESCHOOLER'S PARENTAL FEEDING BEHAVIORS, URBAN THAILAND

Principal Investigator : MISS CHOLLADA JONGSOMJITT

Place of Proposed Study/Institution : Faculty of Nursing,
Chulalongkorn University

The Research Ethics Review Committee for Research Involving Human Research Participants, Health Sciences Group, Chulalongkorn University, Thailand, has approved constituted in accordance with the International Conference on Harmonization – Good Clinical Practice (ICH-GCP).

Signature: Prida Tasanapradit Signature: Nuntaree Chaichanawongsaroj
(Associate Professor Prida Tasanapradit, M.D.) (Assistant Professor Nuntaree Chaichanawongsaroj, Ph.D.)
Chairman Secretary

Date of Approval : 28 September 2018 **Approval Expire date** : 27 September 2019

The approval documents including

- 1) Research proposal
- 2) Patient/Participant Information Sheet and Informed Consent Form
- 3) Researcher
- 4) Questionnaire



Protocol No. 183.1/61
Date of Approval 28 SEP 2018
Approval Expire Date 27 SEP 2019

The approved investigator must comply with the following conditions:

1. The research/project activities must end on the approval expired date of the Research Ethics Review Committee for Research Involving Human Research Participants, Health Sciences Group, Chulalongkorn University (RECCU). In case the research/project is unable to complete within that date, the project extension can be applied one month prior to the RECCU approval expired date.
2. Strictly conduct the research/project activities as written in the proposal.
3. Using only the documents that bearing the RECCU's seal of approval with the subjects/volunteers (including subject information sheet, consent form, invitation letter for project/research participation (if available)).
4. Report to the RECCU for any serious adverse events within 5 working days
5. Report to the RECCU for any change of the research/project activities prior to conduct the activities.
6. Final report (AF 03-12) and abstract is required for a one year (or less) research/project and report within 30 days after the completion of the research/project. For thesis, abstract is required and report within 30 days after the completion of the research/project.
7. Annual progress report is needed for a two-year (or more) research/project and submit the progress report before the expire date of certificate. After the completion of the research/project processes as No. 6.



Appendix C
List of the experts

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

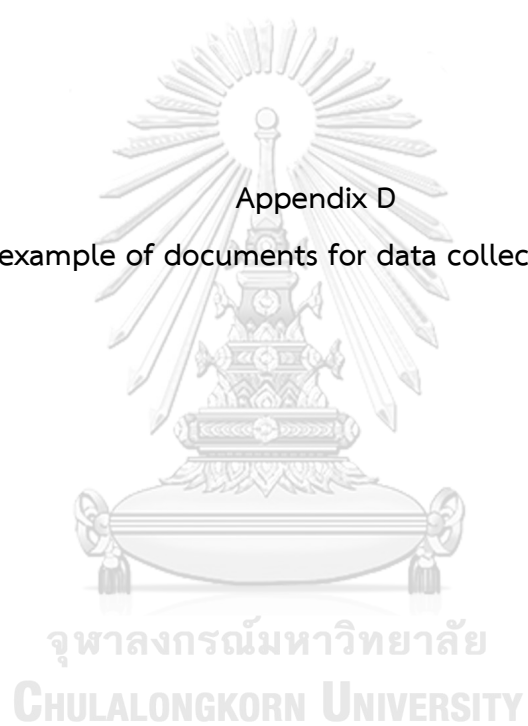
List of the experts

1. Assistant Professor Dr. Pulsuk Siripul
Faculty of Nursing, Khon Kaen University
2. Associate Professor Dr. Saovakon Virasiri
Faculty of Nursing, Khon Kaen University
3. Associate Professor Dr. Tassanee Prasopkittikun
Faculty of Nursing, Mahidol University
4. Assistant Professor Dr. Sudaporn Payakkaraung
Faculty of Nursing, Mahidol University
5. Assistant Professor Dr. Narisara Peungposop
Behavioral Science Research Institute, Srinakharinwirot University



Appendix D

The example of documents for data collection request



ที่ ศส 0512.11/1982



คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
อาคารบรมราชชนนีศรีศศทระ ชั้น 11
ถนนพระราม 1 แขวงวังใหม่ เขตปทุมวัน
กรุงเทพฯ 10330

5 พฤศจิกายน 2561

เรื่อง ขอความอนุเคราะห์ให้นิสิคดำเนินการเก็บรวบรวมข้อมูลการวิจัย

เรียน ผู้อำนวยการโรงเรียนพิบูลอุปถัมภ์

สิ่งที่ส่งมาด้วย 1. โครงร่างชุดปฏิบัติการ 1 ชุด
2. เครื่องมือที่ใช้ในการวิจัย 1 ชุด

เนื่องด้วย นางสาวชลลดา จงสมจิตต์ นิสิตชั้นปริญญาตรี คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย กำลังดำเนินการพัฒนาชุดปฏิบัติการ เรื่อง "ปัจจัยทำนายพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดา-มารดาในเขตชุมชนเมือง ประเทศไทย" โดยมี รองศาสตราจารย์ ดร. วราภรณ์ ชัยวัฒน์ เป็นอาจารย์ที่ปรึกษาชุดปฏิบัติการ และผู้ช่วยศาสตราจารย์ ดร. ประพนธ์ รอดคำดี เป็นอาจารย์ที่ปรึกษาชุดปฏิบัติการร่วม ในการนี้ขอความอนุเคราะห์ให้นิสิคดำเนินการเก็บรวบรวมข้อมูลการวิจัย ในบิดา/มารดาของเด็กวัยก่อนเรียนอายุ 3-6 ปี โดยใช้ แบบสัมภาษณ์เกี่ยวกับ การให้อาหารเด็กวัยก่อนเรียนของบิดา-มารดา ประโยชน์ของการแสดงพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนตามการรับรู้ของบิดา-มารดา และอุปสรรคของการแสดงพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนตาม การรับรู้ของบิดา-มารดา จำนวน 15 คน และใช้แบบสอบถามข้อมูลส่วนบุคคล แบบสอบถามพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดา-มารดา แบบสอบถามทัศนคติในการให้อาหารเด็กวัยก่อนเรียนของ บิดา-มารดา แบบสอบถามพฤติกรรมการรับประทานอาหารของบิดา-มารดาแบบสอบถามประโยชน์ของ การแสดงพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนตามการรับรู้ของบิดา-มารดา และแบบสอบถามอุปสรรค ในการแสดงพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนตามการรับรู้ของบิดา-มารดา จำนวน 125 คน ทั้งนี้ นิสิคจะประสานงานเรื่อง วัน และเวลาในการเก็บรวบรวมข้อมูลการวิจัยอีกครั้งหนึ่ง

จึงเรียนมาเพื่อโปรดพิจารณาอนุเคราะห์ให้ นางสาวชลลดา จงสมจิตต์ ดำเนินการเก็บรวบรวม ข้อมูลการวิจัยดังกล่าว คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย หวังเป็นอย่างยิ่งว่าจะได้รับความ อนุเคราะห์จากท่าน และขอขอบพระคุณอย่างสูงมา ณ โอกาสนี้

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร. วราภรณ์ ชัยวัฒน์)

คณบดีคณะพยาบาลศาสตร์

สำเนาเรียน

ผู้อำนวยการ

อาจารย์ที่ปรึกษา

อาจารย์ที่ปรึกษา

นิสิค

ครูประจำชั้นอนุบาล 1-3

โทร. 0-2218-1131 โทรสาร. 0-2218-1130

รองศาสตราจารย์ ดร. วราภรณ์ ชัยวัฒน์ โทร. 0-2218-1133

ผู้ช่วยศาสตราจารย์ ดร. ประพนธ์ รอดคำดี โทร. 08-9812-2387

นางสาวชลลดา จงสมจิตต์ โทร. 083-0525836

ที่ ศบ 0512.11/0/๙๖



คณะกรรมการอำนวยการ
 อธิการบดีมหาวิทยาลัยราชภัฏวชิรเวศน์
 ถนนพหลโยธิน เขตปทุมวัน
 กรุงเทพฯ 10330

๕ กุมภาพันธ์ 2562

เรื่อง ขออนุญาตกระทรวงศึกษาธิการดำเนินการเก็บรวบรวมข้อมูลการวิจัย

เรียน นายกรัฐมนตรีเทศบาลนครแหลมฉบัง

สิ่งที่ส่งมาด้วย 1. โครงร่างชุดปฏิบัติการวิจัย 1 ชุด
 2. เครื่องมือที่ใช้ในการวิจัย 1 ชุด

เนื่องด้วย นางสาวชอลดา จงสมจิตต์ นิสิตชั้นปริญญาตรีบัณฑิต คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย กำลังดำเนินการพัฒนาชุดปฏิบัติการวิจัย เรื่อง "ปัจจัยทำนายพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดา - มารดาในเขตชุมชนเมือง ประเทศไทย" โดยมี รองศาสตราจารย์ ดร. วราภรณ์ ชัยวัฒน์ เป็นอาจารย์ที่ปรึกษาชุดปฏิบัติการวิจัย และผู้ช่วยศาสตราจารย์ ดร. ประพนธ์ รอดคำดี เป็นอาจารย์ที่ปรึกษาชุดปฏิบัติการวิจัยร่วม ในการนี้ใคร่ขออนุญาตกระทรวงศึกษาธิการดำเนินการเก็บรวบรวมข้อมูลการวิจัย ในบิดา/มารดาของเด็กวัยก่อนเรียนอายุ 3-6 ปี โรงเรียนเทศบาลแหลมฉบัง 1 จำนวน 81 คน และโรงเรียนเทศบาลแหลมฉบัง 2 จำนวน 51 คน โดยใช้แบบสอบถามข้อมูลส่วนบุคคล แบบสอบถามพฤติกรรมการให้อาหารเด็กวัยก่อนเรียน แบบสอบถามทัศนคติในการให้อาหารเด็กวัยก่อนเรียน แบบสอบถามบริโภคนิสัยของบิดา-มารดา แบบสอบถามประโยชน์ของการแสดงพฤติกรรมการให้อาหารเด็กวัยก่อนเรียน และแบบสอบถามอุปสรรคในการแสดงพฤติกรรมการให้อาหารเด็กวัยก่อนเรียน ทั้งนี้มีสิทธิจะประสานงานเรื่อง วัน และเวลาในการเก็บรวบรวมข้อมูลการวิจัยอีกครั้งหนึ่ง

จึงเรียนมาเพื่อโปรดพิจารณาอนุญาตกระทรวงศึกษาธิการดำเนินการเก็บรวบรวมข้อมูลการวิจัยดังกล่าว คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย หวังเป็นอย่างยิ่งว่าจะได้รับความอนุเคราะห์จากท่าน และขอขอบพระคุณอย่างสูงมา ณ โอกาสนี้

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร. วราภรณ์ ชัยวัฒน์)

คณบดีคณะพยาบาลศาสตร์

ผู้รับผิดชอบ

ฝ่ายวิชาการ

อาจารย์ที่ปรึกษา

อาจารย์ที่ปรึกษาร่วม

นิสิต

ผู้อำนวยการโรงเรียนเทศบาลแหลมฉบัง 1 และผู้อำนวยการโรงเรียนเทศบาลแหลมฉบัง 2

โทร. 0-2218-1131 โทรสาร. 0-2218-1130

รองศาสตราจารย์ ดร. วราภรณ์ ชัยวัฒน์ โทร. 0-2218-1133

ผู้ช่วยศาสตราจารย์ ดร. ประพนธ์ รอดคำดี โทร. 08-9812-2387

นางสาวชอลดา จงสมจิตต์ โทร. 083-0525836



Appendix E
Information sheet for participants

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

**เอกสารชี้แจงข้อมูลสำหรับผู้เข้าร่วมการวิจัย
(ขั้นตอนการสัมภาษณ์)**

ชื่อโครงการ ปัจจัยทำนายพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดา ในเขตชุมชนเมือง ประเทศไทย

ชื่อผู้วิจัย นางสาวชลลดา จงสมจิตต์

ตำแหน่ง นิสิตคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

สถานที่ติดต่อผู้วิจัย คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย อาคารบรมราชชนนีศรีศศพรราช ชั้น 11 ถนนพระราม 1 แขวงวังใหม่ เขตปทุมวัน กรุงเทพมหานคร 10330

หรือ คอนโดระเบียงจามจูรี เลขที่ 268 ห้อง 1401 แขวงวังใหม่ เขตปทุมวัน กรุงเทพมหานคร 10330

โทรศัพท์มือถือ 083-0525836

E-mail: mod_tanoy23@hotmail.com

ข้าพเจ้า นางสาวชลลดา จงสมจิตต์ นิสิตปริญญาเอก คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย กำลังทำวิจัยเรื่อง ปัจจัยทำนายพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดา ในเขตชุมชนเมือง ประเทศไทย เนื่องจากพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดา ส่งผลโดยตรงต่อสุขภาพและพฤติกรรมการรับประทานอาหารของเด็กทั้งในอนาคตและปัจจุบัน สำหรับในประเทศไทยที่การดำรงชีวิตของคนไทยกำลังเปลี่ยนแปลงไปสู่ความเป็นสังคมเมือง ความรู้เรื่องพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดาในเขตชุมชนเมืองยังมีไม่มากนัก และยังไม่ทราบว่ามีการวิจัยอะไรบ้างที่ส่งผลต่อพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดา ด้วยเหตุนี้ผู้วิจัยจึงทำวิจัยเรื่องนี้ขึ้น

ก่อนที่ผู้เข้าร่วมวิจัยจะตัดสินใจเข้าร่วมในการวิจัยนี้ มีความจำเป็นที่จะต้องทราบว่า งานวิจัยนี้ ทำเพราะเหตุใด และเกี่ยวข้องกับอะไร ดังนั้น ผู้วิจัยจึงจัดทำเอกสารฉบับนี้ขึ้นเพื่อชี้แจงข้อมูลของผู้วิจัย และการดำเนินการวิจัย ซึ่งผู้เข้าร่วมวิจัยสามารถนำข้อมูลในเอกสารฉบับนี้ไปใช้ประกอบการตัดสินใจว่าจะเข้าร่วมหรือไม่เข้าร่วมในการวิจัยครั้งนี้ กรุณาอ่านข้อมูลต่อไปนี้โดยละเอียด และผู้เข้าร่วมวิจัยสามารถสอบถามข้อมูลเพิ่มเติมจากผู้วิจัยได้ตลอดเวลาหากท่านมีข้อสงสัยหรือได้รับข้อมูลไม่ชัดเจน โดยรายละเอียดเกี่ยวกับการวิจัย มีดังนี้

1. การวิจัยนี้ เพื่อพัฒนาเครื่องมือวิจัยจากการสัมภาษณ์ผู้เข้าร่วมวิจัย
2. ประโยชน์ของการพัฒนาเครื่องมือวิจัยจากการสัมภาษณ์ จะช่วยให้ผู้วิจัยได้รับข้อมูลที่เป็นปัจจุบัน และตรงกับความเป็นจริงเกี่ยวกับทัศนคติในการให้อาหารเด็กวัยก่อนเรียน ประโยชน์และอุปสรรคของการแสดงพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดาในเขตชุมชนเมือง ประเทศไทย ซึ่งสามารถนำข้อมูลเหล่านี้ไปพัฒนาแบบสอบถามที่มีคุณภาพได้

3. ผู้เข้าร่วมการวิจัยในครั้งนี้ คือ บิดาหรือมารดาของเด็กวัยก่อนเรียน อายุ 3-6 ปี ในโรงเรียนที่อยู่ในเขตชุมชนเมือง ประเทศไทย สามารถพูด อ่าน เขียน ภาษาไทยได้ และยินดีเข้าร่วมการวิจัย หากผู้เข้าร่วมการวิจัยถอนตัวระหว่างสัมภาษณ์ จะถือว่าผู้นั้นไม่ได้เป็นผู้เข้าร่วมในการวิจัย

4. ผู้เข้าร่วมการวิจัยในครั้งนี้ ใช้วิธีการเลือกกลุ่มตัวอย่างแบบสะดวกจากโรงเรียนในสังกัดสำนักงานเขตพื้นที่การศึกษา ประถมศึกษา กรุงเทพมหานคร โรงเรียนละ 1-2 คน และใช้วิธีการเลือกกลุ่มตัวอย่างแบบลูกโซ่ คือ การขอให้ผู้เข้าร่วมวิจัยช่วยแนะนำบุคคลที่มีคุณสมบัติเดียวกันต่อไปเรื่อยๆ จนครบจำนวน 15 คน

5. หลังจากได้รับอนุมัติจากคณะกรรมการพิจารณาจริยธรรมการวิจัยในคนแล้ว ผู้วิจัยเข้าพบผู้อำนวยการโรงเรียนเพื่อยื่นหนังสือขอเข้าเก็บรวบรวมข้อมูล และเข้าพบคุณครูประจำชั้นอนุบาลเพื่อสอบถามรายชื่อเด็ก ผู้วิจัยติดต่อบิดา-มารดาของเด็กผ่านคุณครูประจำชั้น หลังจากนั้นจึงนัดหมายวัน-เวลา โดยให้คุณครูประจำชั้นช่วยจัดหาสถานที่ที่เหมาะสมและเป็นส่วนตัวในโรงเรียนเพื่อสอบถามความสมัครใจและความยินยอมในการเข้าร่วมวิจัยด้วยวาจาก่อน หลังได้รับการยินยอมจากผู้เข้าร่วมการวิจัยแล้ว ผู้วิจัยจึงเริ่มกระบวนการพัฒนาเครื่องมือวิจัยจากการสัมภาษณ์

6. สำหรับผู้เข้าร่วมวิจัยที่มาจากคำแนะนำจากผู้เข้าร่วมวิจัยคนก่อนหน้า ผู้วิจัยจะติดต่อผ่านผู้เข้าร่วมวิจัยที่เป็นผู้แนะนำให้ก่อน โดยจะสอบถามความสมัครใจและความยินยอมด้วยวาจาก่อน หลังจากนั้นจึงนัดหมายวัน-เวลา และสถานที่ที่สะดวกและเหมาะสมในการให้สัมภาษณ์

7. ผู้เข้าร่วมวิจัยจะได้รับค่าตอบแทนจากผู้วิจัยเกี่ยวกับวัตถุประสงค์ และขั้นตอนการเก็บข้อมูลจากการสัมภาษณ์ โดยผู้เข้าร่วมวิจัยจะได้รับทราบว่าเนื้อหาในการสัมภาษณ์ครั้งนี้เป็นการสอบถามเกี่ยวกับความคิดเห็นของผู้เข้าร่วมวิจัยที่เกี่ยวข้องกับการดูแลเรื่องการรับประทานอาหารของลูก ประโยชน์และอุปสรรคของการแสดงพฤติกรรมกรให้อาหารเด็กวัยก่อนเรียนตามการรับรู้ของผู้เข้าร่วมวิจัย

8. การสัมภาษณ์ใช้ระยะเวลาประมาณ 45-60 นาที จึงอาจมีความไม่สะดวกเกิดขึ้นจากการเข้าร่วมวิจัย เนื่องจากผู้เข้าร่วมวิจัยต้องสละเวลาส่วนตัว/เวลาทำงาน เพื่อให้ข้อมูลในการวิจัย

9. ผู้เข้าร่วมวิจัยจะได้รับแบบสอบถามข้อมูลส่วนบุคคล จำนวน 12 ข้อ หลังจากนั้นจึงเริ่มการสัมภาษณ์ บทสนทนาทั้งหมดจะถูกบันทึกไว้จากเครื่องอัดเสียงตั้งแต่เริ่มต้นจนจบการสัมภาษณ์ การให้สัมภาษณ์เป็นเพียงการแสดงความคิดเห็นเท่านั้น จึงไม่มีความเสี่ยง และไม่มีผลข้างเคียงใดๆ ที่จะกระทบต่อร่างกายและจิตใจของผู้เข้าร่วมวิจัย และไม่มีผลกระทบใดๆ ต่อบุตร

10. การเข้าร่วมในการวิจัยครั้งนี้เป็นโดย**สมัครใจ** ผู้เข้าร่วมการวิจัยมีสิทธิที่จะ**ปฏิเสธ**การให้สัมภาษณ์ หรือ**ถอนตัว**ออกจากการศึกษาครั้งนี้ได้ตลอดเวลาที่ต้องการ ทั้งนี้การปฏิเสธจะไม่ก่อให้เกิดอันตราย หรือผลกระทบใดๆ ต่อผู้เข้าร่วมวิจัยและบุตร

11. หากผู้เข้าร่วมวิจัยมีข้อสงสัย สามารถสอบถามเพิ่มเติมจากผู้วิจัยได้โดยตรง หรือติดต่อผู้วิจัยได้ตลอดเวลาที่ **นางสาวชลดา จงสมจิตต์** โทรศัพท์ 083-0525836 หรือติดต่อตามที่อยู่ด้านบน และหากผู้วิจัยมีข้อมูลเพิ่มเติมที่เป็นประโยชน์หรือโทษเกี่ยวกับการวิจัย ผู้วิจัยจะแจ้งให้ผู้เข้าร่วมวิจัยทราบอย่างรวดเร็ว เพื่อให้ผู้เข้าร่วมวิจัยทบทวนว่ายังสมัครใจจะอยู่ในการศึกษาต่อไปหรือไม่

12. ข้อมูลที่ได้รับจากการสัมภาษณ์ผู้เข้าร่วมวิจัยจะถูกนำไปรวมกับข้อมูลของผู้เข้าร่วมวิจัยคนอื่นๆ ที่เข้าร่วมในการศึกษาครั้งนี้ โดยข้อมูลจะถูกเก็บเป็นความลับ เนื่องจากจะใช้รหัสแทนที่ชื่อนามสกุล ของผู้เข้าร่วมวิจัยในแบบบันทึกข้อมูล หากผู้วิจัยตีพิมพ์ผลการศึกษา การรายงานผลการวิจัยจะเป็นการนำเสนอข้อมูลในภาพรวม และผู้วิจัยจะทำการทำลายแบบบันทึกการสนทนาเหล่านั้นด้วยตนเองภายหลังเสร็จสิ้นการวิจัย

13. การวิจัยครั้งนี้มีการมอบของที่ระลึกแก่ผู้มีส่วนร่วมในการวิจัยเมื่อสิ้นสุดการให้สัมภาษณ์ หรือเมื่อผู้มีส่วนร่วมในการวิจัยถอนตัวระหว่างการศึกษ ของที่ระลึก คือ อุปกรณ์เครื่องเขียนสำหรับเด็ก เช่น ดินสอ ยางลบ ดินสอสี เป็นต้น มูลค่าประมาณ 20-30 บาท

14. หากท่านไม่ได้รับการปฏิบัติตามข้อมูลดังกล่าว สามารถร้องเรียนได้ที่ คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย 254 อาคารจามจุรี 1 ชั้น 2 ถนนพญาไท เขตปทุมวัน กรุงเทพมหานคร 10330 โทรศัพท์/โทรสาร 0-2218-3202, E-mail: eccu@chula.ac.th

**เอกสารชี้แจงข้อมูลสำหรับผู้เข้าร่วมการวิจัย
(ขั้นตอนการตอบแบบสอบถาม)**

ชื่อโครงการ ปัจจัยทำนายพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดา ในเขตชุมชนเมือง ประเทศไทย

ชื่อผู้วิจัย นางสาวชลลดา จงสมจิตต์

ตำแหน่ง นิสิตคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

สถานที่ติดต่อผู้วิจัย คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย อาคารบรมราชชนนีศรีศศพรฯ ชั้น 11 ถนนพระราม1 แขวงวังใหม่ เขตปทุมวัน กรุงเทพมหานคร 10330

หรือ คอนโดระเบียงจามจูรี เลขที่ 268 ห้อง 1401 แขวงวังใหม่ เขตปทุมวัน กรุงเทพมหานคร 10330

โทรศัพท์มือถือ 083-0525836

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ข้าพเจ้า นางสาว ชลลดา จงสมจิตต์ นิสิตปริญญาเอก คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย กำลังทำวิจัยเรื่อง ปัจจัยทำนายพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดา ในเขตชุมชนเมือง ประเทศไทย เนื่องจากพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดา ส่งผลโดยตรงต่อสุขภาพและพฤติกรรมการรับประทานอาหารของเด็กทั้งในอนาคตและปัจจุบัน สำหรับในประเทศไทยที่การดำรงชีวิตของคนไทยกำลังเปลี่ยนแปลงไปสู่ความเป็นสังคมเมือง ความรู้เรื่องพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดาในเขตชุมชนเมืองยังมีไม่มากนัก และยังไม่ทราบว่ามียุทธศาสตร์อะไรบ้างที่ส่งผลต่อพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดา ด้วยเหตุนี้ผู้วิจัยจึงทำวิจัยเรื่องนี้ขึ้น

ก่อนที่ผู้เข้าร่วมวิจัยจะตัดสินใจเข้าร่วมในการวิจัยนี้ มีความจำเป็นที่จะต้องทราบว่า งานวิจัยนี้ ทำเพราะเหตุใด และเกี่ยวข้องกับอะไร ดังนั้น ผู้วิจัยจึงจัดทำเอกสารฉบับนี้ขึ้นเพื่อชี้แจงข้อมูลของผู้วิจัยและการดำเนินการวิจัย ซึ่งผู้เข้าร่วมวิจัยสามารถนำข้อมูลในเอกสารฉบับนี้ไปใช้ประกอบการตัดสินใจว่าจะเข้าร่วมหรือไม่เข้าร่วมในการวิจัยครั้งนี้ กรุณาอ่านข้อมูลต่อไปนี้โดยละเอียด และผู้เข้าร่วมวิจัยสามารถสอบถามข้อมูลเพิ่มเติมจากผู้วิจัยได้ตลอดเวลาหากท่านมีข้อสงสัยหรือได้รับข้อมูลไม่ชัดเจน โดยรายละเอียดเกี่ยวกับการวิจัย มีดังนี้

1. การวิจัยนี้ เพื่อตรวจสอบปัจจัยทำนายพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดา ในเขตชุมชนเมือง ประเทศไทย

2. ประโยชน์ของการวิจัยนี้ จะช่วยให้พยาบาลวิชาชีพ ตลอดจนวิชาชีพทางสุขภาพสามารถเข้าใจถึงพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดา และปัจจัยทำนายที่มีผลต่อพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดามารดา ในเขตชุมชนเมือง ประเทศไทย ซึ่งผลการศึกษาจะสามารถนำไปพัฒนากระบวนการส่งเสริมพฤติกรรมของบิดามารดาในการให้อาหารเด็กวัยก่อนเรียนได้อย่างแท้จริง ส่งผลต่อสุขภาพ และพฤติกรรมการรับประทานอาหารของเด็กวัยก่อนเรียน

เรียนที่จะเจริญเติบโตและเป็นกำลังสำคัญของประเทศชาติในอนาคต และส่งผลให้การพยาบาลมีคุณภาพมากยิ่งขึ้น

3. ผู้เข้าร่วมการวิจัยในครั้งนี้ คือ บิดาหรือมารดาของเด็กวัยก่อนเรียน อายุ 3-6 ปี ในโรงเรียนที่อยู่ในเขตชุมชนเมือง ประเทศไทย สามารถพูด อ่าน เขียน ภาษาไทยได้ และยินดีเข้าร่วมการวิจัย หากผู้เข้าร่วมการวิจัยถอนตัวระหว่างตอบแบบสอบถาม จะถือว่าผู้นั้นไม่ได้เป็นผู้เข้าร่วมในการวิจัย

4. ผู้เข้าร่วมการวิจัยในครั้งนี้ มาจากการสุ่มกลุ่มตัวอย่างแบบหลายขั้นตอน จำนวน 450 คน จากโรงเรียนที่อยู่ในเขตชุมชนเมือง ประเทศไทย ประกอบด้วย 1) โรงเรียนสังกัดสำนักงานเขตพื้นที่การศึกษา ประถมศึกษา กรุงเทพมหานคร จำนวน 2 โรงเรียน 2) โรงเรียนสังกัดเทศบาลนครพิษณุโลกจำนวน 1 โรงเรียน 3) โรงเรียนสังกัดเทศบาลนครขอนแก่น จำนวน 2 โรงเรียน 4) โรงเรียนสังกัดเทศบาลนครนครปฐม จำนวน 2 โรงเรียน 5) โรงเรียนสังกัดเทศบาลนครแหลมฉบัง จำนวน 2 โรงเรียน และ 6) โรงเรียนสังกัดเทศบาลนครภูเก็ต จำนวน 2 โรงเรียน รวมทั้งสิ้น 11 โรงเรียน

5. หลังจากได้รับอนุมัติจากคณะกรรมการพิจารณาจริยธรรมการวิจัยในคนแล้ว ผู้วิจัยเข้าพบผู้อำนวยการโรงเรียนเพื่อยื่นหนังสือขอเข้าเก็บรวบรวมข้อมูล และเข้าพบคุณครูประจำชั้นอนุบาลเพื่อสอบถามรายชื่อเด็ก ผู้วิจัยติดต่อบิดา-มารดาของเด็กผ่านคุณครูประจำชั้น หลังจากนั้นจึงนัดหมายวัน-เวลา โดยให้คุณครูประจำชั้นช่วยจัดหาสถานที่ที่เหมาะสมและเป็นส่วนตัวในโรงเรียนเพื่อสอบถามความสมัครใจและความยินยอมในการเข้าร่วมวิจัยด้วยวาจาก่อน หลังได้รับการยินยอมจากผู้เข้าร่วมการวิจัยแล้ว ผู้วิจัยจึงเริ่มกระบวนการศึกษาปัจจัยทำนาย

6. ผู้เข้าร่วมวิจัยจะได้รับการชี้แจงจากผู้วิจัยเกี่ยวกับวัตถุประสงค์ และขั้นตอนการเก็บข้อมูล หลังจากนั้นผู้เข้าร่วมวิจัยจะได้รับแบบสอบถามจำนวน 6 ชุด ประกอบด้วย 1) แบบสอบถามข้อมูลส่วนบุคคล จำนวน 13 ข้อ 2) แบบสอบถามพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดา-มารดา จำนวน 41 ข้อ 3) แบบสอบถามทัศนคติในการให้อาหารเด็กวัยก่อนเรียนของบิดา-มารดา จำนวน 6 ข้อ 4) แบบสอบถามบริโภคนิสัยของบิดา-มารดา จำนวน 17 ข้อ 5) แบบสอบถามประโยชน์ของการแสดงพฤติกรรมการให้อาหารเด็กวัยก่อนเรียน จำนวน 13 ข้อ และ 6) แบบสอบถามอุปสรรคของการแสดงพฤติกรรมการให้อาหารเด็กวัยก่อนเรียน จำนวน 23 ข้อ รวมทั้งสิ้น 113 ข้อ เมื่อผู้เข้าร่วมวิจัยตอบแบบสอบถามเสร็จ ให้นำแบบสอบถามใส่ซองที่เตรียมไว้ ปิดผนึกให้เรียบร้อย และส่งคืนให้ผู้วิจัย

7. การตอบแบบสอบถามใช้ระยะเวลาประมาณ 45-60 นาที จึงอาจมีความไม่สะดวกเกิดขึ้นจากการเข้าร่วมวิจัย เนื่องจากผู้เข้าร่วมวิจัยต้องสละเวลาส่วนตัว/เวลาทำงาน เพื่อตอบแบบสอบถาม

8. การศึกษาครั้งนี้เป็นการตอบแบบสอบถาม จึงไม่มีความเสี่ยง และไม่มีผลข้างเคียงใดๆ ที่จะกระทบต่อร่างกายและจิตใจของผู้เข้าร่วมวิจัย และไม่มีผลกระทบใดๆ ต่อบุตร การเข้าร่วมในการวิจัยครั้งนี้เป็นโดย**สมัครใจ** ผู้เข้าร่วมการวิจัยมีสิทธิที่จะ**ปฏิเสธ**การตอบแบบสอบถาม หรือ**ถอนตัว** ออกจากการศึกษาคั้งนี้ได้ตลอดเวลาที่ต้องการ ทั้งนี้การปฏิเสธจะไม่ก่อให้เกิดอันตราย หรือผลกระทบใดๆ ต่อผู้เข้าร่วมวิจัยและบุตร

9. หากผู้เข้าร่วมวิจัยมีข้อสงสัย สามารถสอบถามเพิ่มเติมจากผู้วิจัยได้โดยตรง หรือติดต่อผู้วิจัยได้ตลอดเวลาที่ **นางสาวชลลดา จงสมจิตต์** โทรศัพท์ 083-0525836 หรือติดต่อตามที่อยู่ด้านบน และหากผู้วิจัยมีข้อมูลเพิ่มเติมที่เป็นประโยชน์หรือโทษเกี่ยวกับการวิจัย ผู้วิจัยจะแจ้งให้ผู้เข้าร่วมวิจัยทราบอย่างรวดเร็ว เพื่อให้ผู้เข้าร่วมวิจัยทบทวนว่ายังสมัครใจจะอยู่ในโครงการวิจัยต่อไปหรือไม่

10. ข้อมูลที่ได้รับจากการตอบแบบสอบถามของผู้เข้าร่วมวิจัยจะถูกนำไปรวมกับข้อมูลของผู้เข้าร่วมวิจัยคนอื่นๆ ที่เข้าร่วมในการศึกษาคั้งนี้ โดยข้อมูลจะถูกเก็บเป็นความลับ เนื่องจากจะใช้รหัสแทนที่ ชื่อ-นามสกุล ของผู้เข้าร่วมวิจัยในแบบบันทึกข้อมูล หากผู้วิจัยตีพิมพ์ผลการศึกษารายงานผลการวิจัยจะเป็นการนำเสนอข้อมูลในภาพรวม และผู้วิจัยจะทำการทำลายแบบสอบถามเหล่านั้นด้วยตนเองภายหลังเสร็จสิ้นการวิจัย

11. การวิจัยครั้งนี้มีการมอบของที่ระลึกแก่ผู้มีส่วนร่วมในการวิจัยเมื่อสิ้นสุดการตอบแบบสอบถาม หรือเมื่อผู้มีส่วนร่วมในการวิจัยถอนตัวระหว่างการศึกษา ของที่ระลึก คือ อุปกรณ์เครื่องเขียนสำหรับเด็ก เช่น ดินสอ ยางลบ ดินสอสี เป็นต้น มูลค่าประมาณ 20-30 บาท

12. หากท่านไม่ได้รับการปฏิบัติตามข้อมูลดังกล่าว สามารถร้องเรียนได้ที่ คณะกรรมการพิจารณา จริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย 254 อาคารจามจุรี 1 ชั้น 2 ถนนพญาไท เขตปทุมวัน กรุงเทพมหานคร 10330 โทรศัพท์/โทรสาร 0-2218-3202, E-mail: eccu@chula.ac.th



Appendix F

Research instruments (example)

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

รหัสผู้ให้ข้อมูล.....
วันที่ตอบแบบสอบถาม.....



การตอบแบบสอบถามในครั้งนี้...
จะช่วยให้พยาบาลและผู้ที่มีหน้าที่ดูแลสุขภาพเด็ก
เข้าใจมุมมองและความคิดเห็นของคุณพ่อคุณแม่ในการดูแลลูกมากยิ่งขึ้น
ซึ่งเป็นแนวทางสำคัญในการช่วยส่งเสริมสุขภาพของเด็กไทยได้

WUOLALONGKORN UNIVERSITY

ตัวอย่างแบบสอบถามทัศนคติในการให้อาหารเด็กวัยก่อนเรียนของบิดา-มารดา

คุณคิดอย่างไรกับข้อความต่อไปนี้ กรุณาทำเครื่องหมาย ✓ ในช่องที่ตรงกับความเห็นของคุณ

ข้อความ	เห็นด้วย อย่างมาก	เห็น ด้วย	ไม่ แน่ใจ	ไม่เห็น ด้วย	ไม่เห็นด้วย อย่างมาก
1 ในการหาข้อมูลเกี่ยวกับอาหารที่มีประโยชน์กับ เด็กอนุบาลควรเป็นหน้าที่ของพ่อแม่เป็นหลัก	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 คนที่ต้องเป็นหลักในการหาข้อมูลเกี่ยวกับการ ส่งเสริมพฤติกรรมทางการเงินของเด็กวัยอนุบาลคือ พ่อแม่	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ตัวอย่างแบบสอบถามบริโภคนิสัยของบิดา-มารดา

ข้อความต่อไปนี้จะถามเกี่ยวกับบริโภคนิสัยของคุณ กรุณาทำเครื่องหมาย ✓ ในช่องที่ตรงกับ
ความเป็นจริง

ข้อความ	จริง ที่สุด	จริง	ไม่ แน่ใจ	ไม่ จริง	ไม่จริง ที่สุด
1 ฉันมักจะสังเกตเครื่องหมาย <u>อยุ</u> ก่อนซื้อผลิตภัณฑ์ อาหารต่างๆ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 ฉันมักจะดูฉลากอาหารก่อนตัดสินใจซื้ออาหาร	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ตัวอย่างแบบสอบถามประโยชน์ของการแสดงพฤติกรรมการให้อาหารเด็กวัยก่อนเรียน

ข้อความต่อไปนี้จะถามความเห็นของคุณเกี่ยวกับประโยชน์ที่ได้รับจากการดูแลลูกเรื่องการรับประทานอาหาร กรุณาทำเครื่องหมาย ✓ ในช่องที่ตรงกับความเห็นของคุณ

ข้อความ	เห็นด้วย อย่างมาก	เห็น ด้วย	ไม่ เห็นใจ	ไม่เห็น ด้วย	ไม่เห็นด้วย อย่างมาก
1 การดูแลให้ลูกกินผัก/ผลไม้ทุกวันทำให้ท้องไม่ผูก	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 การดูแลลูกต่อนกินอาหาร ทำให้ลูกได้รับ สารอาหารครบถ้วน	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ตัวอย่างแบบสอบถามพฤติกรรมการให้อาหารเด็กวัยก่อนเรียนของบิดา-มารดา

ข้อความต่อไปนี้จะถามคุณเกี่ยวกับการดูแลลูกในเรื่องการรับประทานอาหาร กรุณาทำเครื่องหมาย ✓ ในช่องที่ตรงกับสิ่งที่คุณทำให้ลูกในช่วงเวลา 1 เดือนที่ผ่านมา

ข้อความ	บ่อย ที่สุด	บ่อย	ปาน กลาง	บาง ครั้ง	ไม่เคย ทำเลย
1 ฉันหาข้อมูลในการดูแลลูกเรื่องอาหารที่มีประโยชน์	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 ฉันหาข้อมูลเรื่องปริมาณอาหารที่เหมาะสมกับลูก	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ตัวอย่างแบบสอบถามอุปสรรคของการแสดงพฤติกรรมการให้อาหารเด็กวัยก่อนเรียน

ข้อความต่อไปนี้จะถามคุณเกี่ยวกับอุปสรรคในการดูแลลูกเรื่องการรับประทานอาหาร กรุณาทำเครื่องหมาย ✓ ในช่องที่ตรงกับความเป็นจริงของคุณ

ข้อความ	จริง ที่สุด	จริง	ไม่ แน่ใจ	ไม่ จริง	ไม่จริง ที่สุด
1 ฉันไม่รู้เรื่องของปริมาณอาหารที่เหมาะสมกับลูก	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 ฉันไม่รู้เกี่ยวกับโภชนาการที่สำคัญสำหรับเด็ก	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



ตัวอย่างแบบสอบถามข้อมูลส่วนบุคคล

สุดท้ายนี้...เป็นคำถามเกี่ยวกับข้อมูลส่วนตัวของคุณและบุตรวัยอนุบาล โปรดเติมคำตอบลงในช่องว่าง และทำเครื่องหมาย ✓ ในช่องที่ตรงกับคุณ

ข้อมูลของคุณ

- 1) คุณอายุ _____ ปี
- 2) ระดับการศึกษาสูงสุดของคุณ

<input type="checkbox"/> ป.6	<input type="checkbox"/> ม.3	<input type="checkbox"/> ม.6
<input type="checkbox"/> ปริญญาตรี	<input type="checkbox"/> สูงกว่าปริญญาตรี	<input type="checkbox"/> อื่นๆ ระบุ _____
- 3) คุณประกอบอาชีพ _____
- 4)
- 5)
- 6)

Appendix G

Demographic characteristics of the participants from interview process

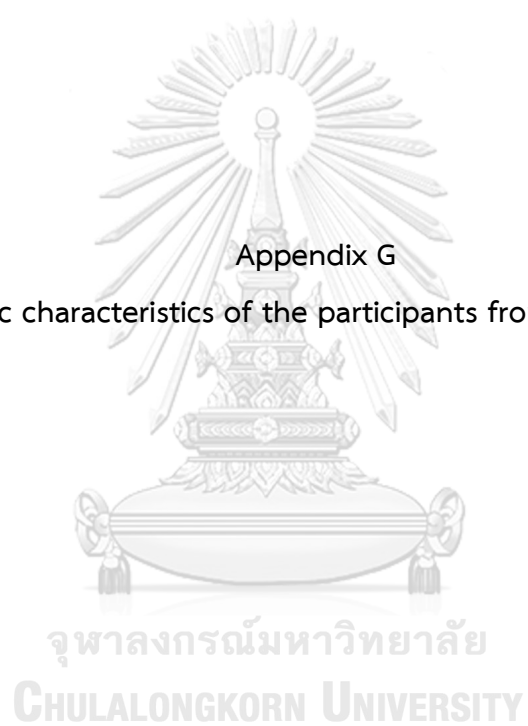


Table 29 Number and percentage of participants' demographic characteristics classified by age, level of education, career, family income, relationship to preschooler, and number of children (n = 17) (interview process)

Demographic characteristics	n	%
Age (years old)		
20 – 30	3	18
31 – 40	8	47
> 40	6	35
Level of education		
Grade 12	1	6
Bachelor degree	11	64
Upper Bachelor	2	12
Other (diploma)	3	18
Career		
No working	1	6
Government officer	2	12
Business owner	6	35
Private officer	1	6
Employee	7	41
Family income (Baht)		
15,001 – 25,000	2	12
25,001 – 35,000	8	47
35,001 – 45,000	5	29
45,001 – 55,000	2	12
Relation to preschooler		
Father	2	12
Mother	15	88
Number of family member		
3	6	35
4	8	47
5	2	12
> 5 (6-13 persons)	1	6
Number of children		
1	8	47
2	8	47
3	1	6

Table 30 Number and percentage of preschoolers' demographic characteristics classified by gender, age, birth order, weight, height, and chronic health condition (n = 17) (interview process)

Demographic characteristics	n	%
Gender		
Male	5	30
Female	12	70
Age (years old)		
3-4	6	35
4-5	6	35
5-6	5	30
Birth order		
1	10	59
2	6	35
3	1	6
Weight		
Under weight	1	6
normal	15	88
Over weight	1	6
Height		
Low height-to-age ratio	1	6
Normal height-to-age ratio	12	70
High height-to-age ratio	4	24
Chronic health condition		
No	17	100

Appendix H

Demographic characteristics of the participants from item selection process

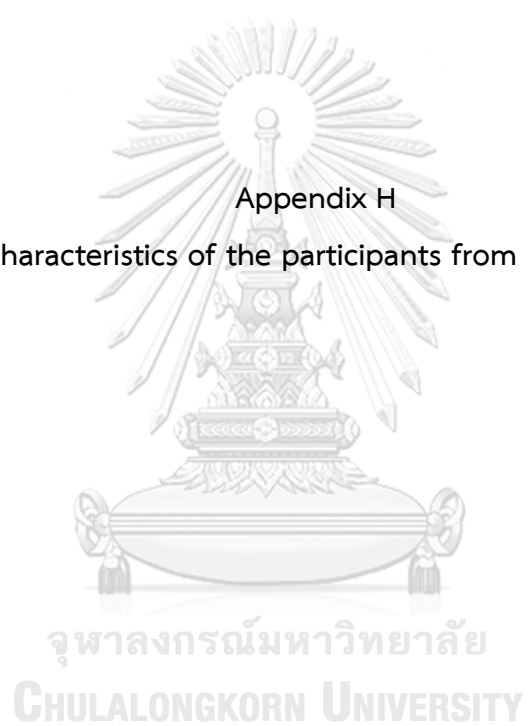


Table 31 Number and percentage of participants' demographic characteristics classified by age, level of education, career, family income, relationship to preschooler, and number of children (n = 310) (item selection process)

Demographic characteristics	n	%
Age (years old)		
< 20	2	6
20 – 30	102	32.8
31 – 40	152	49.2
> 40	54	12
Level of education		
Grade 6	3	1
Grade 12	66	22
Bachelor degree	210	68
Upper Bachelor	10	32
Other (diploma)	21	7
Career		
No working	15	4.8
Government officer	6	2
Business owner	38	12.2
State enterprise officer	20	6.5
Private officer	79	25.5
Employee	152	49
Family income (Baht)		
< 15,000	22	7
15,001 – 25,000	98	32
25,001 – 35,000	113	36
35,001 – 45,000	61	20
45,001 – 55,000	12	4
> 55,001	4	1
Relation to preschooler		
Father	93	30
Mother	217	70
Number of family member		
3	123	40
4	177	57
5	7	2
> 5 (6-13 persons)	3	1
Number of children		
1	135	43.6
2	139	45
3	36	11.4

Table 32 Number and percentage of preschoolers' demographic characteristics classified by gender, age, birth order, weight, height, and chronic health condition (n = 310) (item selection process)

Demographic characteristics	n	%
Gender		
Male	170	55
Female	140	45
Age (years old)		
3-4	62	19.9
4-5	114	36.9
5-6	134	43.2
Birth order		
1	217	70
2	53	17
3	40	13
Weight		
Under weight	11	3.5
normal	277	89.5
Over weight	22	7
Height		
Low height-to-age ratio	4	1
Normal height-to-age ratio	262	85
High height-to-age ratio	44	14
Chronic health condition		
No	290	94
Yes (allergy and asthma)	20	6

Appendix I

Demographic characteristics of the participants from CFA process

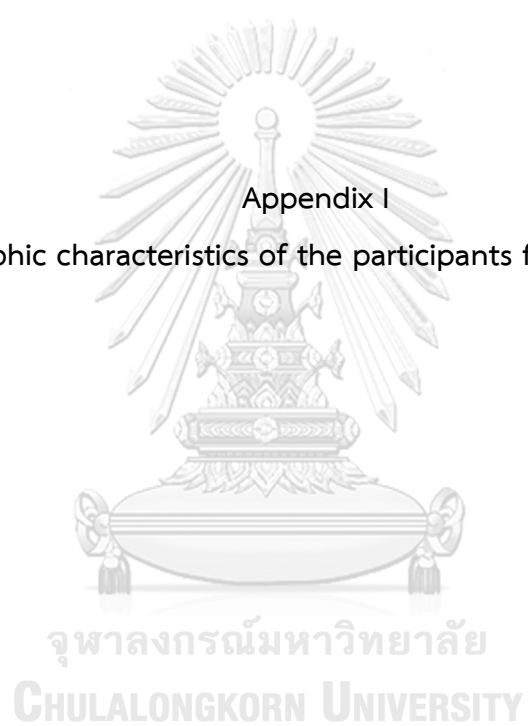
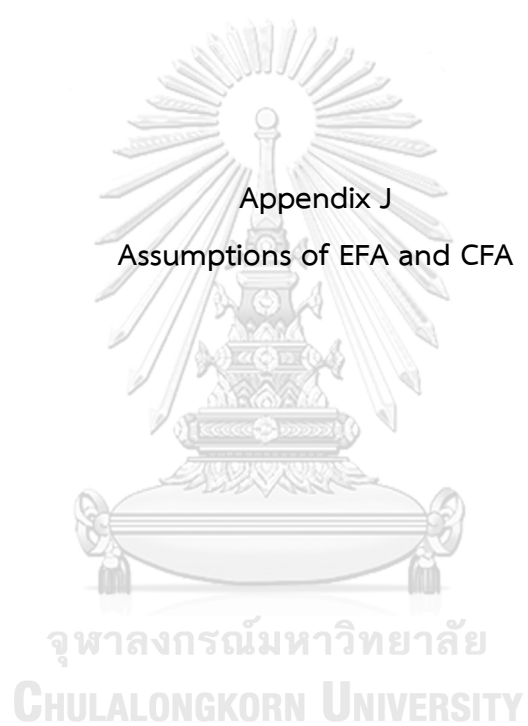


Table 33 Number and percentage of participants' demographic characteristics classified by age, level of education, career, family income, relationship to preschooler, and number of children (n = 305) (CFA process)

Demographic characteristics	n	%
Age (years old)		
< 20	12	4
20 – 30	160	53
31 – 40	92	30
> 40	41	13
Level of education		
Grade 6	16	5.2
Grade 12	64	21
Bachelor degree	143	47
Upper Bachelor	5	1.8
Other (diploma)	77	25
Career		
No working	22	7.2
Government officer	22	7.2
Business owner	62	20.3
State enterprise officer	17	5.6
Private officer	75	24.6
Employee	107	35.1
Family income (Baht)		
< 15,000	50	16.4
15,001 – 25,000	144	47.2
25,001 – 35,000	65	21.3
35,001 – 45,000	27	8.9
45,001 – 55,000	10	3.2
> 55,001	9	3
Relation to preschooler		
Father	116	38
Mother	189	62
Number of family member		
2	7	2.3
3	105	34.4
4	142	46.6
5	50	16.4
> 5 (6-13 persons)	1	0.3
Number of children		
1	116	38
2	171	56.1
3	12	3.9
4	6	2

Table 34 Number and percentage of preschoolers' demographic characteristics classified by gender, age, birth order, weight, height, and chronic health condition (n = 305) (CFA process)

Demographic characteristics	n	%
Gender		
Male	147	49
Female	158	51
Age (years old)		
3-4	128	42
4-5	111	36.4
5-6	66	21.6
Birth order		
1	137	45
2	152	49.8
3	13	4.3
4	3	0.9
5 or above		
Weight		
Under weight	12	4
normal	242	79.3
Over weight	51	16.7
Height		
Low height-to-age ratio	0	0
Normal height-to-age ratio	206	68.5
High height-to-age ratio	99	32.5
Chronic health condition		
No	300	98.4
Yes (allergy and asthma)	5	1.6



Appendix J
Assumptions of EFA and CFA

Assumptions testing for EFA and CFA

The assumptions of testing EFA and CFA were similar. However, the purpose of using EFA in this study was to select appropriate items of each instrument. Before the analysis using EFA and CFA, sample size, normality, and collinearity were tested in order to ensure that there was no violation of the underlying assumption.

1) Sample size

The acceptable estimate sample sizes for the factor analysis should be at least 300 (Nunnally & Bernstein, 1994). The sample sizes of EFA process was presented in Table 25, and the sample sizes of CFA process was presented in Table 26

2) Normality testing

The assessment of normality in this step used the values of skewness and kurtosis. For sample sizes greater than 300, the absolute values of skewness and kurtosis without considering z-values larger than 2 and 7 respectively may be used as reference values for determining substantial non-normality (Kim, 2013). The skewness and kurtosis values of each instrument in EFA process were presented in Table 25, and the skewness and kurtosis values of each instrument in CFA process were presented in Table 26.

3) Collinearity testing

The collinearity was tested using the Kaiser-Meyer-Olkin (KMO), with acceptable values greater 0.5, and a statistically significant Bartlett's test of sphericity (sig. < .05) indicates that sufficient correlations exist among the variables to proceed (Hair et al., 2014; Zygmunt & R. Smith, 2014). The results of the KMO and a significant Bartlett's test of sphericity of each instrument in EFA process were presented in Table 25, and the KMO and a significant Bartlett's test of sphericity of each instrument in CFA process were presented in Table 26.

Table 35 Sample size, skewness, kurtosis, KMO, and Bartlett's test of sphericity of instruments (EFA process)

Instrument	Sample size*	Skewness range	Kurtosis range	KMO	Bartlett's test of sphericity
PFBQ	310	-1.45 to 0.05	-.843 to 2.342	0.943	p=.000
PFAQ	307	-1.40 to -0.74	-.101 to 2.919	0.915	p=.000
PEHQ	310	-1.12 to -0.17	-.877 to 2.441	0.863	p=.000
BaPFBQ	309	-0.38 to 1.30	-1.08 to 1.74	0.94	p=.000
BePFBQ	310	-0.56 to 1.34	-.73 to 1.82	0.93	p=.000

*Note.** Sample sizes after assessing outliers

Table 36 Sample size, skewness, kurtosis, KMO, and Bartlett's test of sphericity of instruments (CFA process)

Instrument	Sample size*	Skewness range	Kurtosis range	KMO	Bartlett's test of sphericity
PFBQ	304	-1.21 to -0.09	-.77 to 1.45	0.94	p=.000
PFAQ	304	-0.83 to -0.42	-.55 to 1.16	0.81	p=.000
PEHQ	303	-1.07 to 0.15	-.78 to 2.45	0.88	p=.000
BaPFBQ	305	-0.10 to 0.88	-.91 to 1.30	0.91	p=.000
BePFBQ	303	-1.60 to -0.11	-1.79 to 4.98	0.90	p=.000

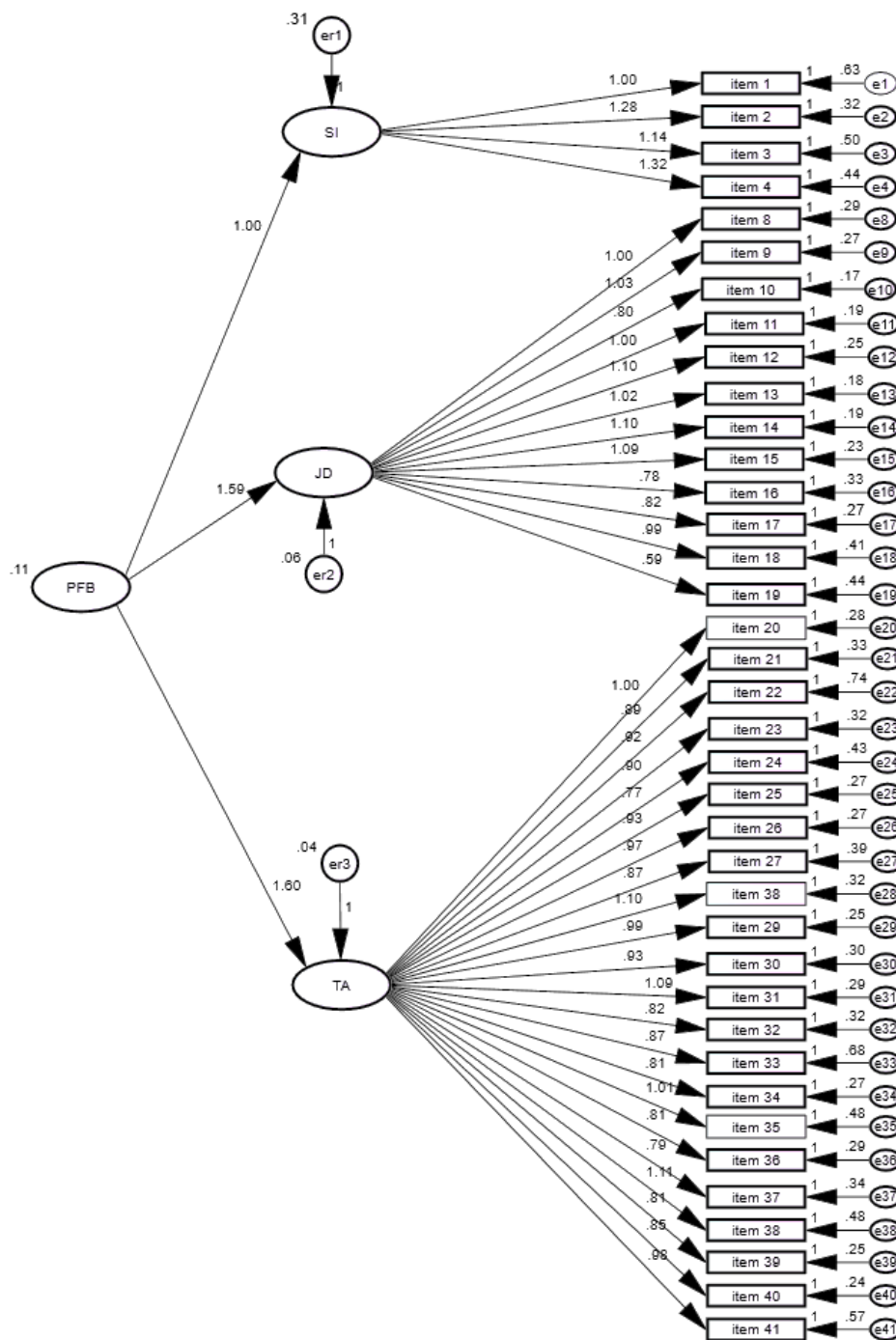
*Note.** Sample sizes after assessing outliers



Appendix K

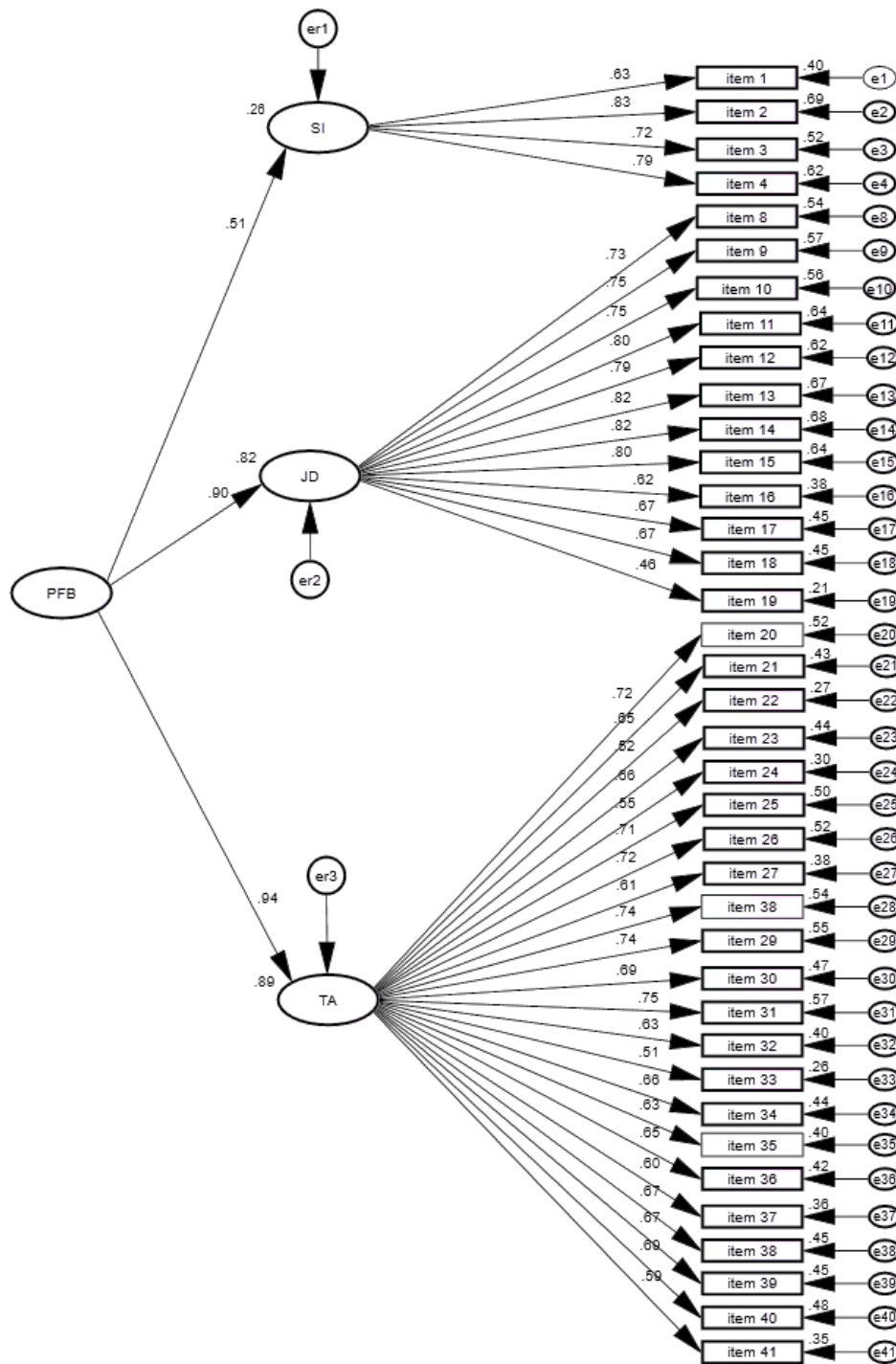
The hypothesized measurement models of each instrument

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CHULALONGKORN UNIVERSITY



Chi-square = 2515.104, df = 662, P = .000, CMIN/DF = 3.799, CFI = .758, RMSEA = .096, SRMR = .049

Figure 12 The unstandardized of hypothesized measurement model of the PFBQ
 Note. PFB = parental feeding behaviors, SI = seeking information, JD = making judgement and decision, TA = taking action



Chi-square = 2515.104, df = 662, P = .000, CMIN/DF = 3.799,
CFI = .758, RMSEA = .096, SRMR = .049

Figure 13 The standardized of hypothesized measurement model of the PFBQ
 Note. PFB = parental feeding behaviors, SI = seeking information, JD = making judgement and decision, TA = taking action

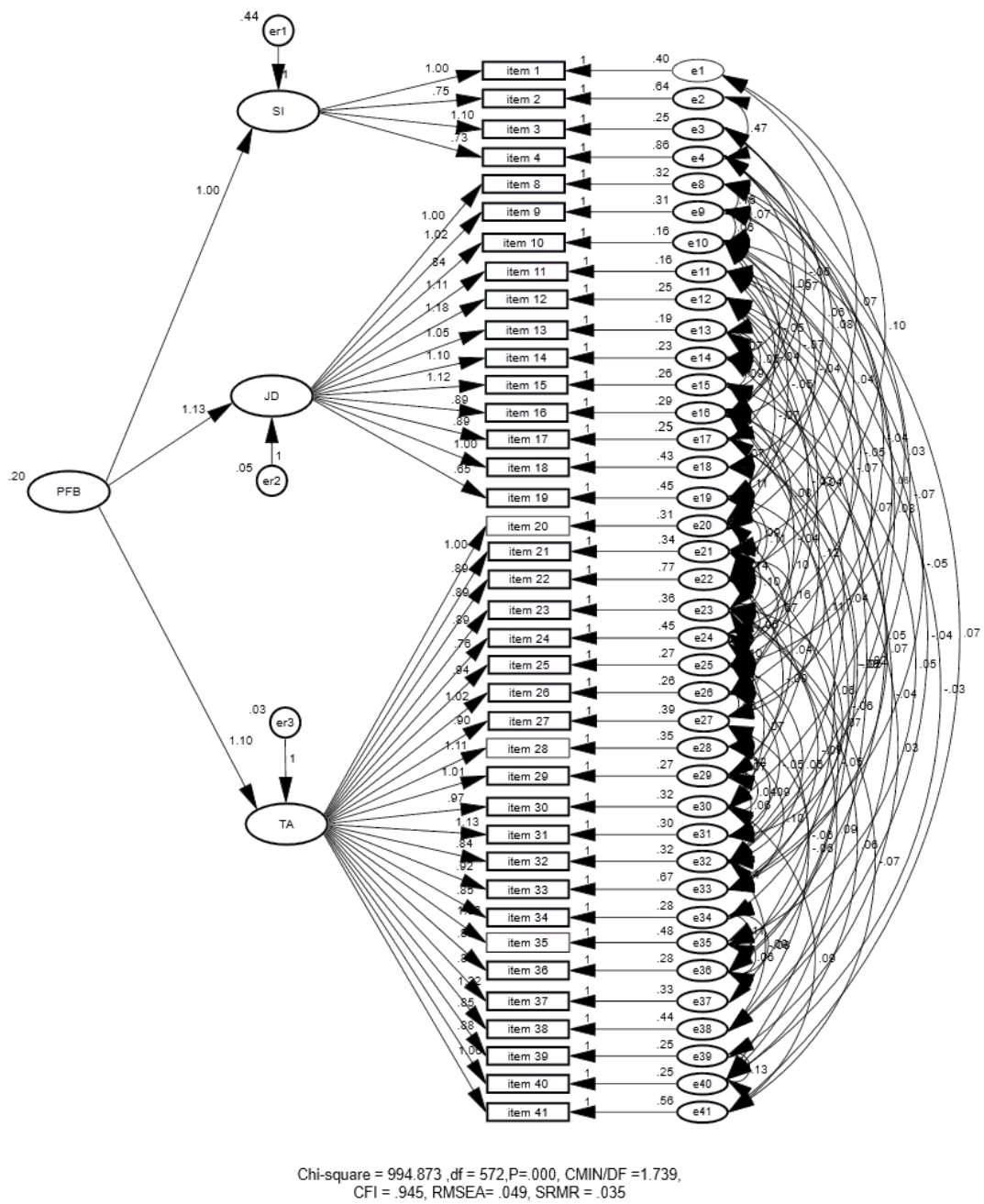
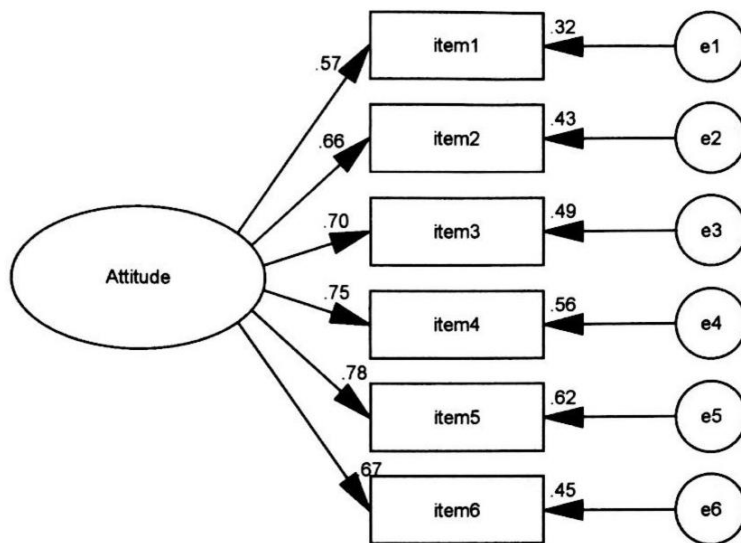
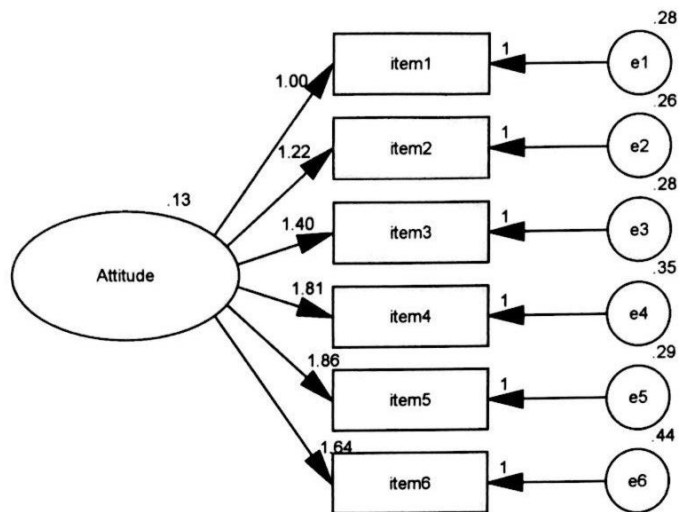


Figure 14 The unstandardized of modified measurement model of the PFBQ
 Note1. PFB = parental feeding behaviors, SI = seeking information, JD = making judgement and decision, TA = taking action



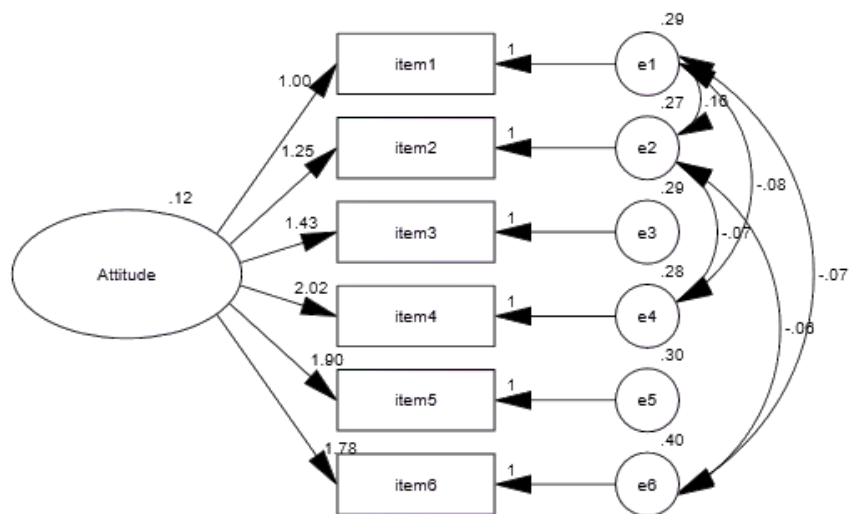
Chi-square = 152.226 ,df = 9,P=.000, CMIN/DF =16.914,
CFI = .812, RMSEA= .229, SRMR = .045

Figure 15 The unstandardized of hypothesized measurement model of the PFAQ



Chi-square = 152.226 ,df = 9,P=.000, CMIN/DF =16.914,
CFI = .812, RMSEA= .229, SRMR = .045

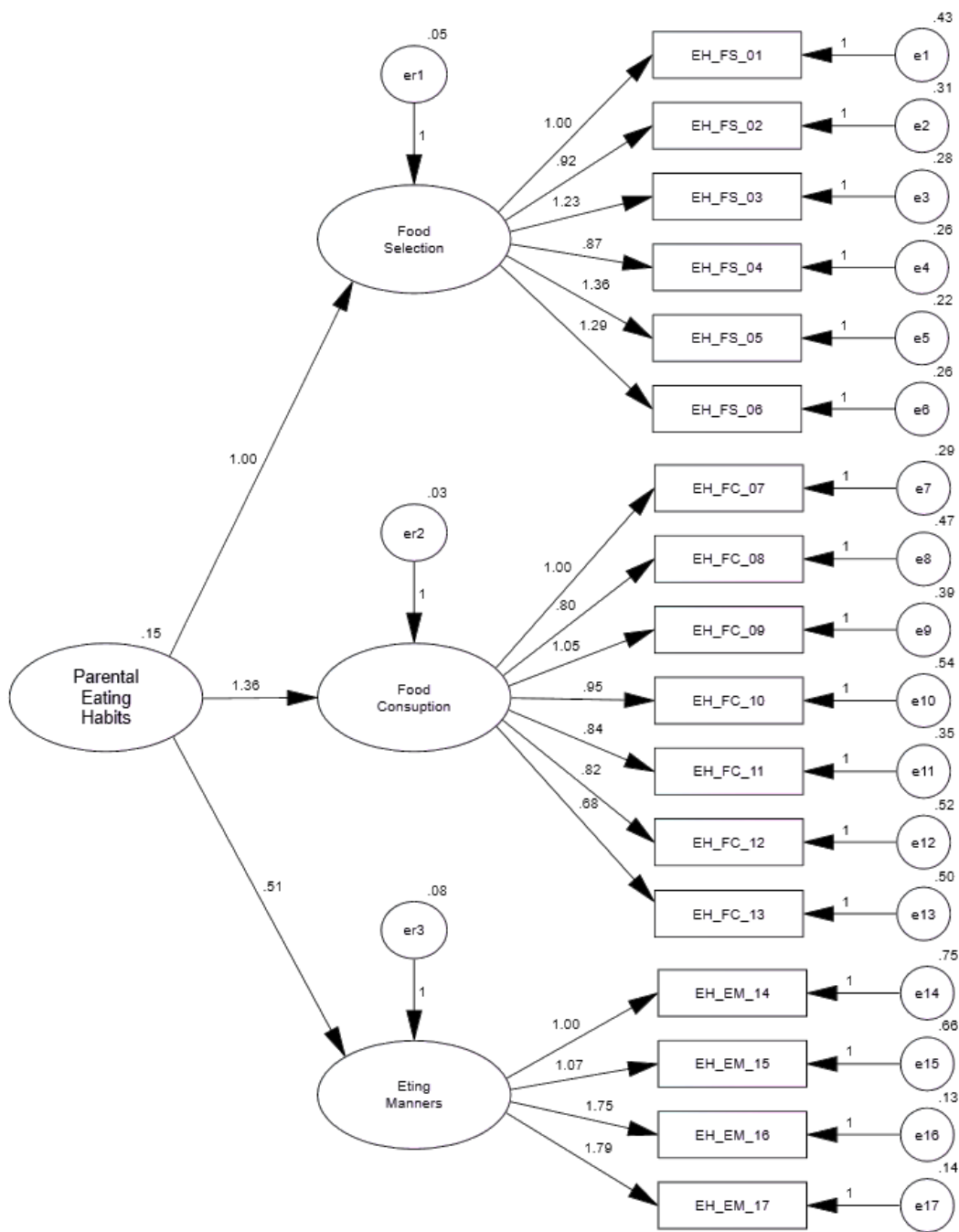
Figure 16 The standardized of hypothesized measurement model of the PFAQ



Chi-square = 4.078 ,df = 4,P=.396, CMIN/DF =1.020,
CFI = 1.000, RMSEA= .008, SRMR = .010

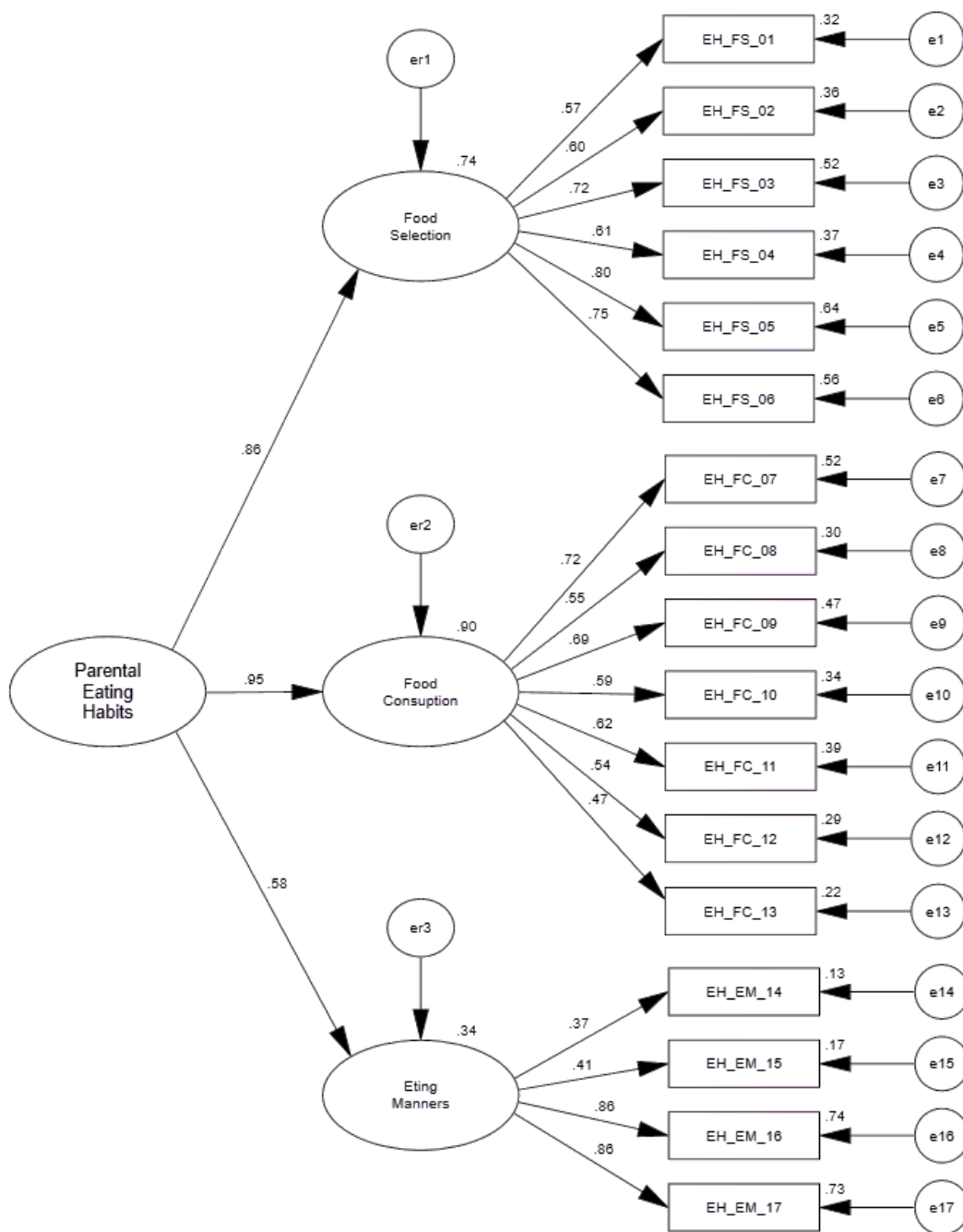
Figure 17 The unstandardized of modified measurement model of the PFAQ





Chi-square = 421.974, df = 116, P = .000, CMIN/DF = 3.638, CFI = .843, RMSEA = .093, SRMR = .062

Figure 18 The unstandardized of hypothesized measurement model of the PEHQ



Chi-square = 421.974 ,df = 116,P=.000, CMIN/DF =3.638,
CFI = .843, RMSEA= .093, SRMR = .062

Figure 19 The standardized of hypothesized measurement model of the PEHQ

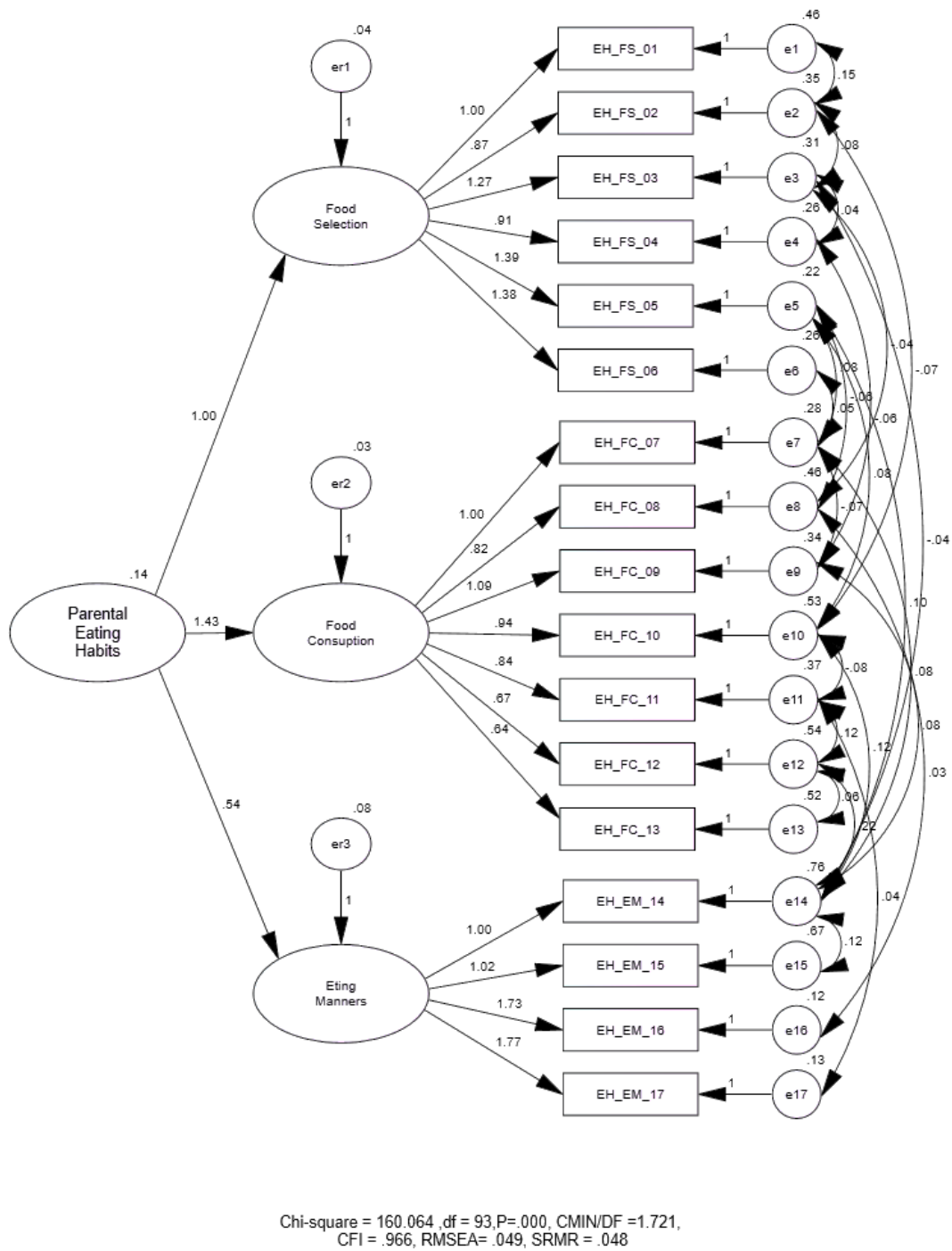
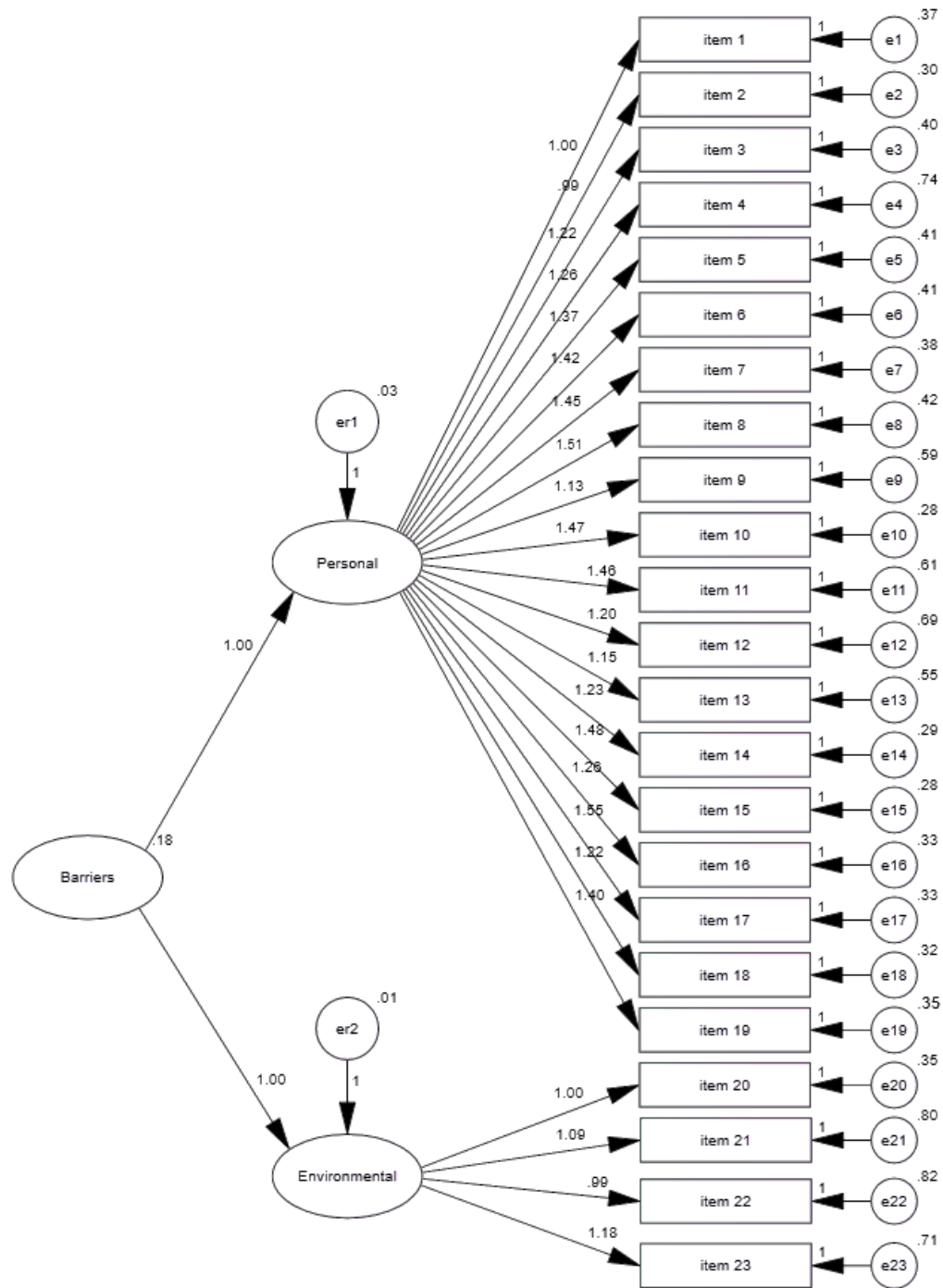
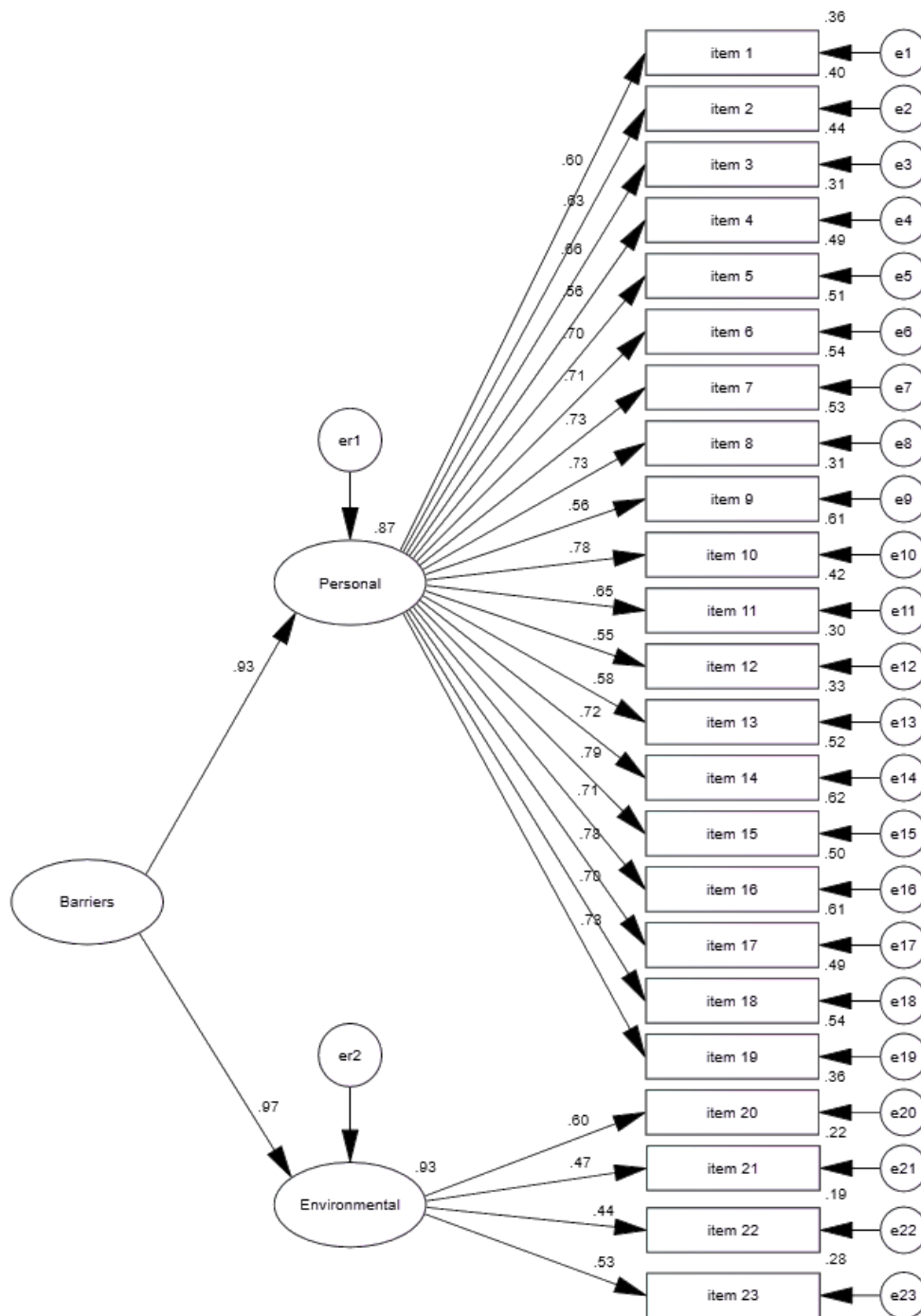


Figure 20 The unstandardized of modified measurement model of the PEHQ



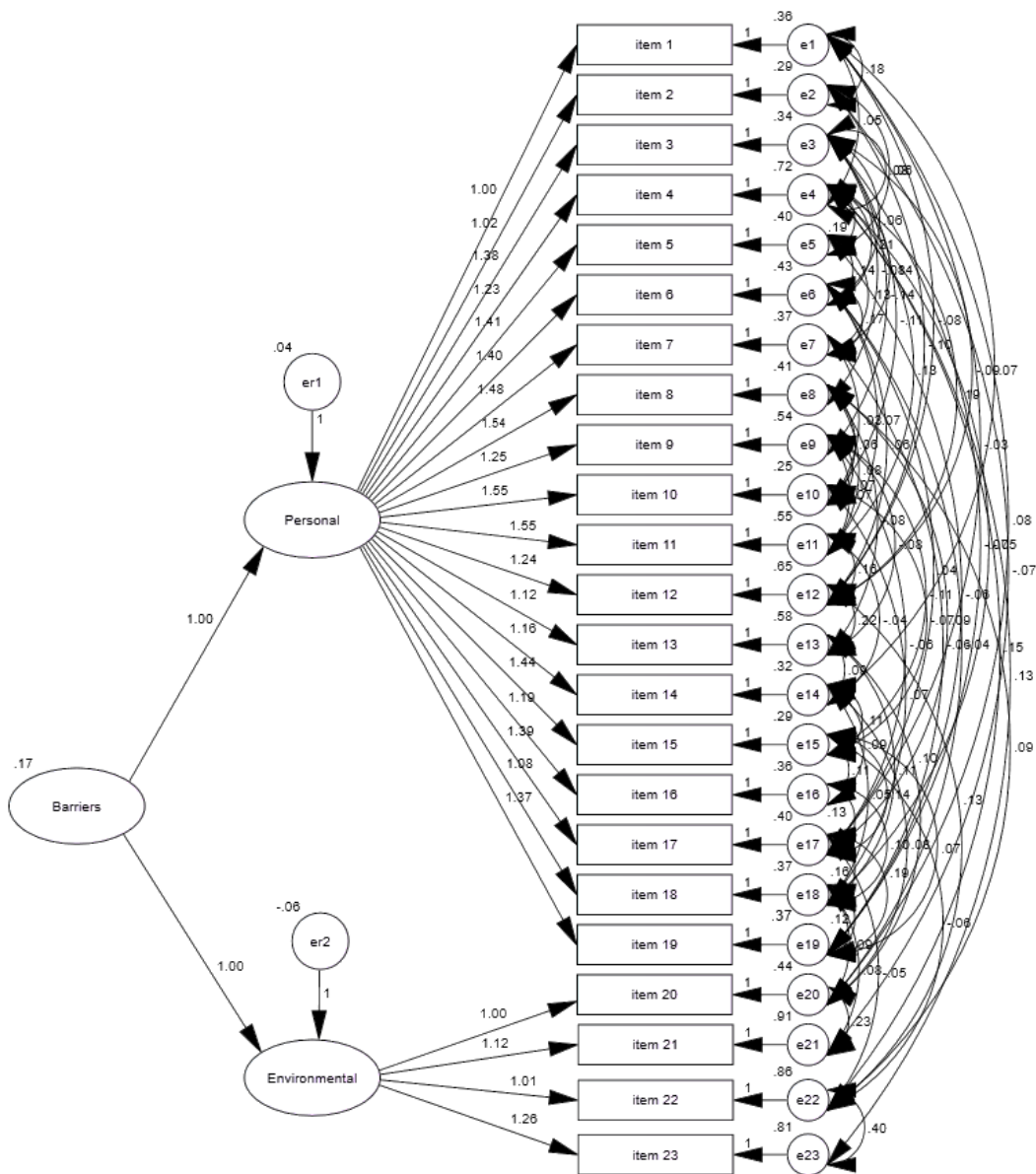
Chi-square = 1772.446 ,df = 229,P=.000, CMIN/DF =7.740,
CFI = .667, RMSEA= .149, SRMR = .080

Figure 21 The unstandardized of hypothesized measurement model of the BaPFBQ



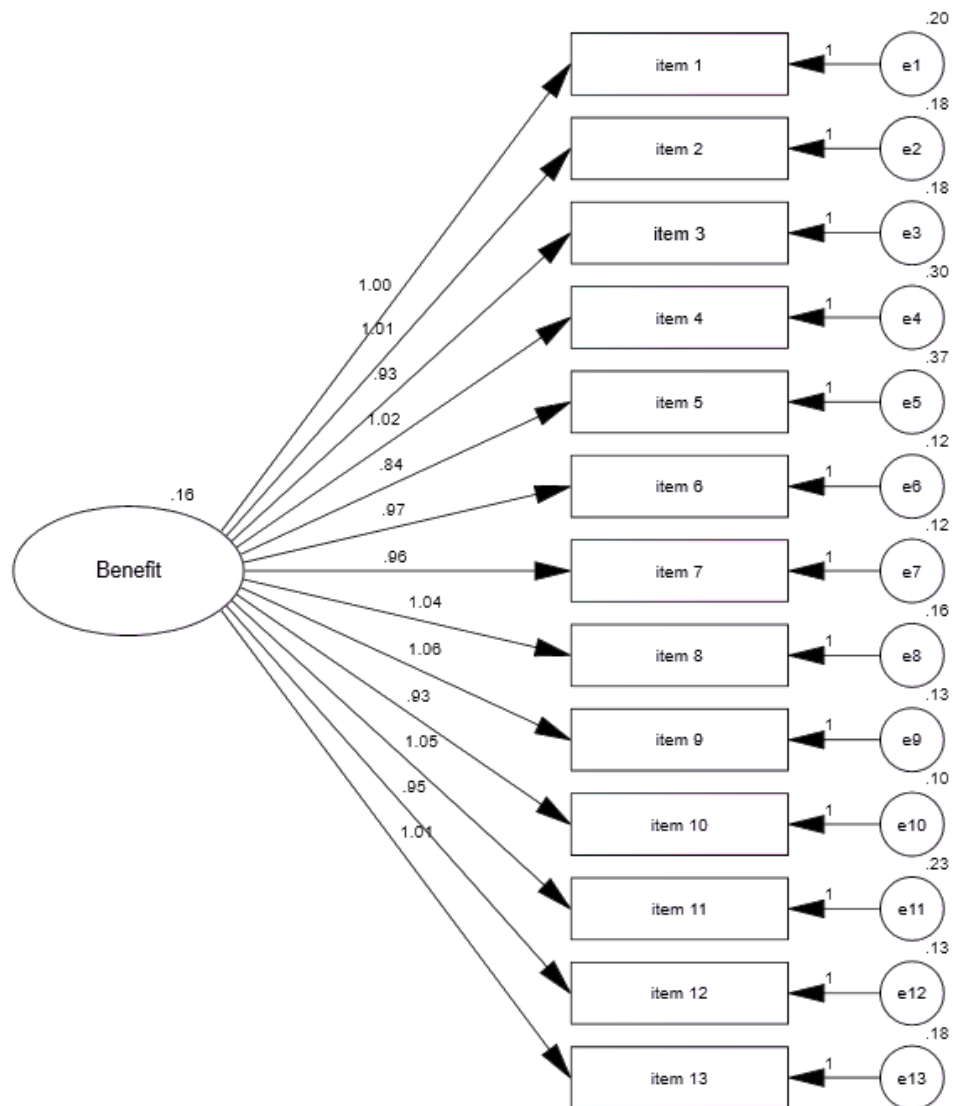
Chi-square = 1772.446 ,df = 229,P= .000, CMIN/DF =7.740,
CFI = .667, RMSEA= .149, SRMR = .080

Figure 22 The standardized of hypothesized measurement model of the BaPFBQ



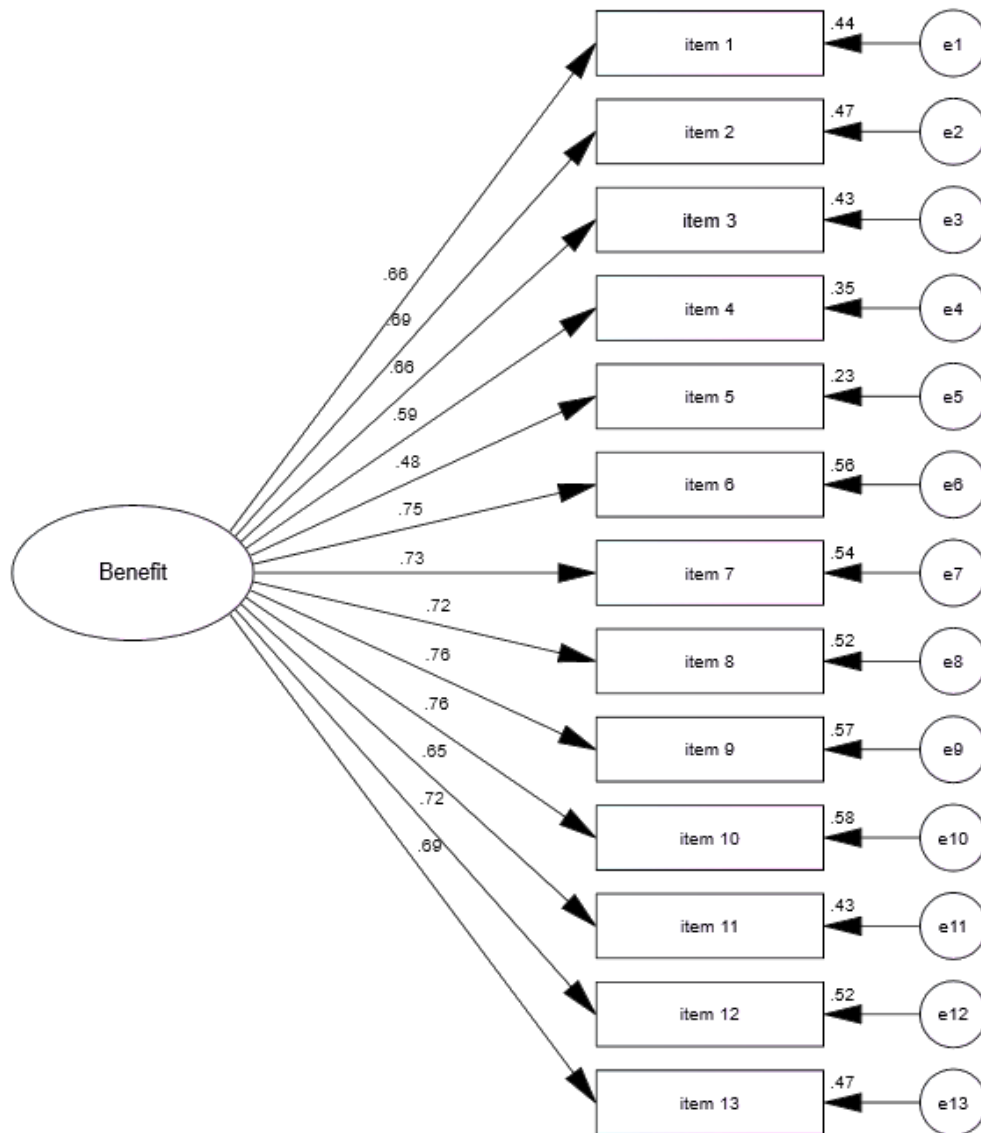
Chi-square = 309.448 ,df = 158,P=.000, CMIN/DF =1.959,
CFI = .967, RMSEA= .056, SRMR = .045

Figure 23 The unstandardized of modified measurement model of the BaPFBQ



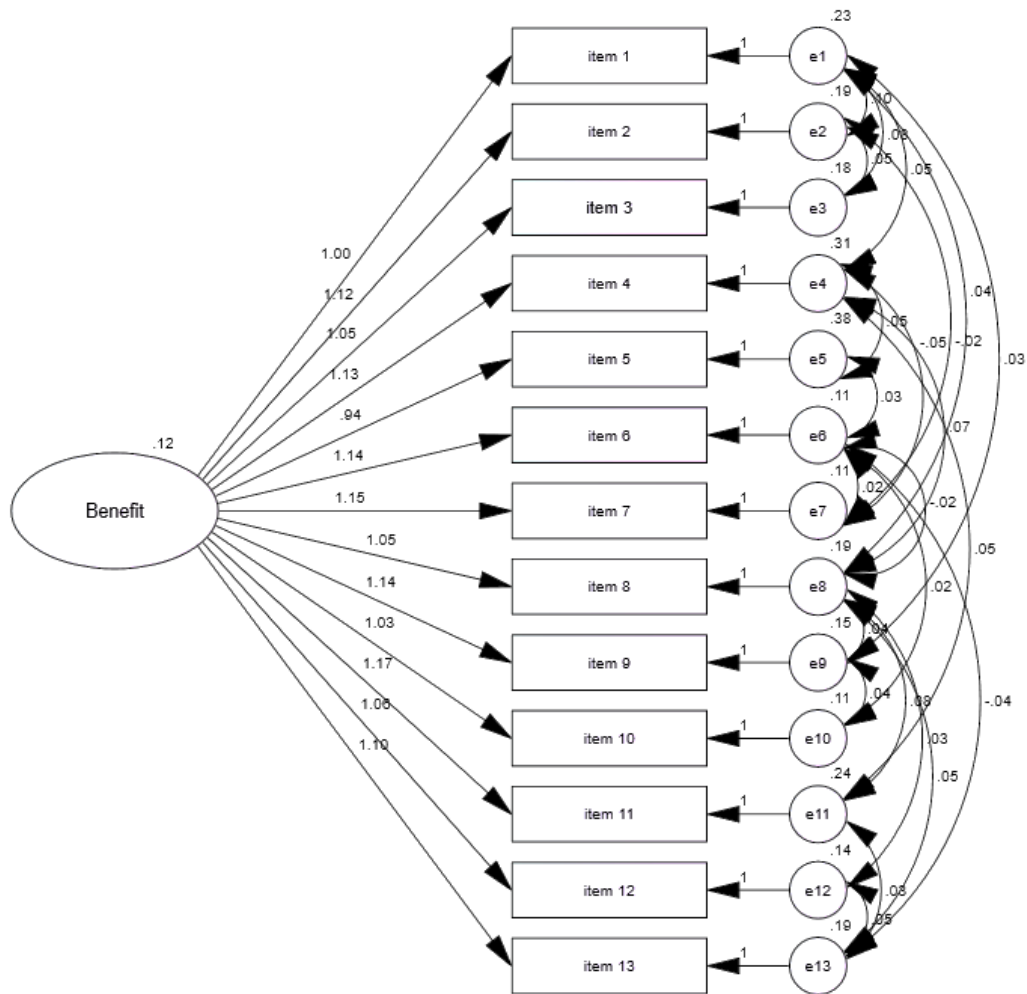
Chi-square = 497.634 ,df = 65,P=.000, CMIN/DF =7.656,
CFI = .802, RMSEA= .148, SRMR = .025

Figure 24 The unstandardized of hypothesized measurement model of the BePFBQ



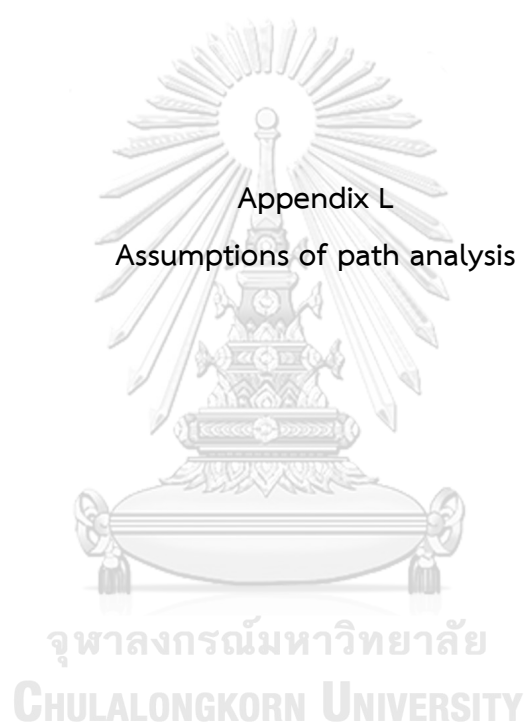
Chi-square = 497.634 ,df = 65,P=.000, CMIN/DF =7.656,
CFI = .802, RMSEA= .148, SRMR = .025

Figure 25 The standardized of hypothesized measurement model of the
BePFBQ



Chi-square = 71.290 ,df = 42,P=.003, CMIN/DF =1.697,
CFI = .987, RMSEA= .048, SRMR = .011

Figure 26 The unstandardized of modified measurement model of the BePFBQ



Appendix L
Assumptions of path analysis

Assumptions testing

Before the analysis using the path analysis was conducted, normality, linearity, homoscedasticity, and multicollinearity were tested in order to ensure that there was no violation of the underlying assumption. The results of normality, linearity, homoscedasticity, and multicollinearity testing were presented below.

1) Normality testing

The assessment of normality of the metric variables involves both empirical measures of a distributions shape characteristics (skewness and kurtosis) and the normal probability plots. The empirical measures provide a guide as to the variables with significant deviations from normality, and normal probability plots provide a visual portrayal of the shape of the distribution (Hair et al., 2014). For sample sizes greater than 300, the absolute values of skewness and kurtosis without considering z-values larger than 2 and 7 respectively may be used as reference values for determining substantial non-normality (Kim, 2013). In this study, the skewness of the variables ranged from -0.30 to .13, and the kurtosis of variables ranged from -1.01 to .13, which reflects a normal distribution. In Addition, the Kolmogorov-Smirnov test and Q-Q plot indicated that the five variables were normally distributed (Figure 16).

2) Linearity Testing

Path analysis requires linear correlations between variables. Because correlations represent only the linear association between variables, nonlinear effect will not be represented in the correlation value. The most common way to assess linearity is to examine scatterplots of the variables and to identify any nonlinear patterns in the data (Hair et al., 2014). In this study, the scatter plot between the independent and dependent variables showed such a linear relationship (Figure 16).

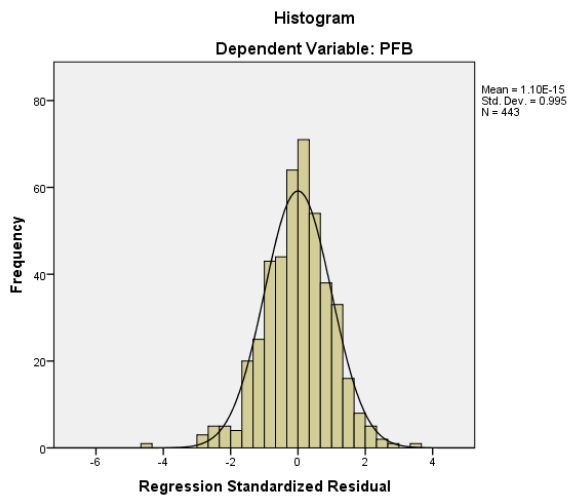
3) Homoscedasticity testing

Homoscedasticity refers to the assumption that dependent variable(s) exhibit equal levels of variance across the range of predictor variable(s) (Hair et al., 2014). This assumption can be tested by a visual examination of the plot of the regression of the standardized predicted dependent variable versus the regression standardized residual. Homoscedasticity is indicated when the residual plots are randomly scattered around zero (in the horizontal line). As shown in Figure 27, the residual

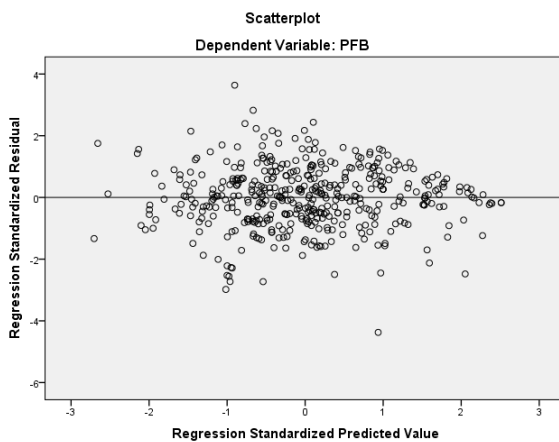
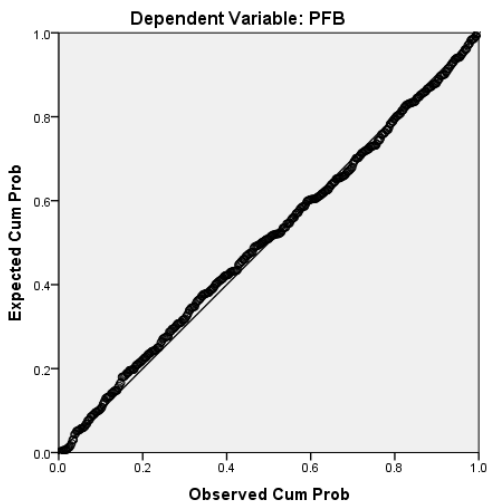
pattern did not deviate from a horizontal band, which indicated a homoscedasticity and linear relationship. This assumption was therefore reasonably accepted.

4) Multicollinearity testing

Multicollinearity is the extent to which a variable can be explained by the other variables in the analysis. This assumption was examined by using two common criteria: 1) Pearson's correlation coefficients and 2) tolerance values and variance inflation factor (VIF). Large VIF values indicate a high degree of collinearity or multicollinearity among the independent variables. The values of tolerance is greater .10, and of VIF less than 10.0 indicate that there is no multicollinearity (Hair et al., 2014). Moreover, the correlation coefficients of any variables should not have high multicollinearity (>.85), which indicates redundant dependent measures and decreases statistical efficiency (Hair et al., 2014). In the current study, the correlation coefficients among the five major variables ranged from -.17 to .63 ($p=.000$) (Table 20). Thus, among variables was not multicollinearity. In addition, the current study presented the tolerance values ranged from 0.67 to 0.89 and the VIF ranged from 1.13 to 1.49. Thus, these results confirmed no violation for multicollinearity.



Normal P-P Plot of Regression Standardized Residual



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