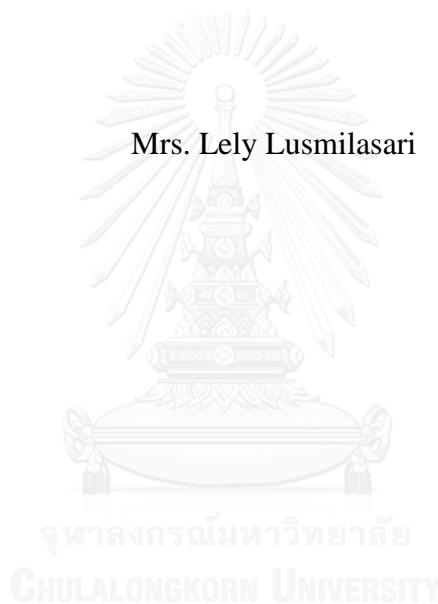


THE DEVELOPMENT OF THE PARENTAL FEEDING BEHAVIORS  
QUESTIONNAIRE (PFBQ) FOR INDONESIAN PARENTS  
WITH TODDLERS

Mrs. Lely Lusmilasari



บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)  
เป็นแฟ้มข้อมูลของนิสิตเจ้าของวิทยานิพนธ์ ที่ส่งผ่านทางบัณฑิตวิทยาลัย

The abstract and full text of theses from the academic year 2011 in Chulalongkorn University Intellectual Repository (CUIR)  
are the thesis authors' files submitted through the University Graduate School.

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

Faculty of Nursing

Chulalongkorn University

Academic Year 2014

Copyright of Chulalongkorn University

การพัฒนาแบบสอบถามพฤติกรรมการให้อาหารเด็กวัยเตาะแตะของบิดามารดาอินโดนีเซีย



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาพยาบาลศาสตรดุษฎีบัณฑิต

สาขาวิชาพยาบาลศาสตร์

คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

ปีการศึกษา 2557

ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

Thesis Title	THE DEVELOPMENT OF THE PARENTAL FEEDING BEHAVIORS QUESTIONNAIRE (PFBQ) FOR INDONESIAN PARENTS WITH TODDLERS
By	Mrs. Lely Lusmilasari
Field of Study	Nursing Science
Thesis Advisor	Associate Professor Waraporn Chaiyawat, D.N.S., A.P.N.
Thesis Co-Advisor	Assistant Professor Branom Rodcumdee, Ph.D., R.N.

---

Accepted by the Faculty of Nursing, Chulalongkorn University in Partial Fulfillment of the Requirements for the Doctoral Degree

..... Dean of the Faculty of Nursing  
(Associate Professor Sureeporn Thanasilp, Ph.D.)

#### THESIS COMMITTEE

..... Chairman  
(Associate Professor Police Captain Yupin Aunguroch, Ph.D., R.N.)

..... Thesis Advisor  
(Associate Professor Waraporn Chaiyawat, D.N.S., A.P.N.)

..... Thesis Co-Advisor  
(Assistant Professor Branom Rodcumdee, Ph.D., R.N.)

..... Examiner  
(Associate Professor Jintana Yunibhand, Ph.D., A.P.N.)

..... External Examiner  
(Associate Professor Tassanee Prasopkittikun, Ph.D., A.P.N.)

..... External Examiner  
(Assistant Professor Pisamai Orathai, Ph.D., R.N.)

เลลี ลัทธิมลาสารี : การพัฒนาแบบสอบถามพฤติกรรมการให้อาหารเด็กวัยเตาะแตะของบิดามารดาอินโดนีเซีย (THE DEVELOPMENT OF THE PARENTAL FEEDING BEHAVIORS QUESTIONNAIRE (PFBQ) FOR INDONESIAN PARENTS WITH TODDLERS) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: รศ. ดร.วราภรณ์ ชัยวัฒน์, อ.ที่ปรึกษาวิทยานิพนธ์ร่วม: ผศ. ดร.ประนอม รอดคำดี, 213 หน้า.

พฤติกรรมการให้อาหารของบิดามารดาเป็นปัจจัยหนึ่งที่มีบทบาทสำคัญในการตอบสนองความต้องการด้านโภชนาการของเด็กวัยเตาะแตะ ดังนั้นการประเมินพฤติกรรมการให้อาหารอย่างถูกต้องแม่นยำจึงเป็นสิ่งจำเป็น ในปัจจุบันยังขาดเครื่องมือที่มีทั้งความตรงและความเชื่อมั่น ในการประเมินพฤติกรรมให้อาหารของบิดามารดา เพื่อคงไว้ซึ่งการได้รับอาหารอย่างเพียงพอสำหรับเด็กวัยเตาะแตะในประเทศ อินโดนีเซีย

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อพัฒนาแบบสอบถาม พฤติกรรมการให้อาหารของบิดามารดา และเพื่อทดสอบคุณสมบัติการวัดทางจิตวิทยาของแบบสอบถาม ทั้งด้านความตรงและความเที่ยง รูปแบบการวิจัย เป็นการวิจัยเพื่อพัฒนาเครื่องมือ โดยแบบสอบถามนี้พัฒนาขึ้นโดยใช้ภาษาอินโดนีเซีย ข้อคำถามจำนวนทั้งสิ้น 70 ข้อ ได้รับการพัฒนาขึ้นจากการทบทวนวรรณกรรม ตรวจสอบความตรงของเนื้อหาในแต่ละข้อคำถาม โดยผู้เชี่ยวชาญจำนวน 6 คน ร่างแบบสอบถามฉบับแรก จำนวน 80 ข้อ ได้นำไปทดลองใช้กับบิดามารดาของเด็กวัยเตาะแตะ จำนวน 30 คน และนำแบบสอบถามไปทดสอบคุณภาพ โดยนำไปประเมินพฤติกรรมการให้อาหารของบิดามารดา จำนวน 548 คน ที่สุ่มมาจากท้องที่ตั้งแถบชนบทและในเมืองของจังหวัดชอกยาคาดา ประเทศอินโดนีเซีย วิเคราะห์ข้อมูลโดยใช้โปรแกรมคอมพิวเตอร์สำเร็จรูป

ผลการทดสอบความตรงและความเชื่อมั่นของแบบสอบถามโดยใช้วิธีการวิเคราะห์ตัวประกอบ (Confirmatory factor analysis) และวิธีการเปรียบเทียบระหว่างบิดามารดาที่ดูแลเด็กวัยเตาะแตะกับบิดามารดาที่ดูแลเด็กวัยเตาะแตะและได้ไม่ดี พบว่า ข้อคำถามจำนวน 56 ข้อ มีความแตกต่างระหว่างกลุ่มอย่างมีนัยสำคัญ ( $p < .01$ ) และข้อคำถาม จำนวน 54 ข้อ มีค่าน้ำหนักปัจจัยอยู่ระหว่าง .344-.692 และมี 2 ข้อคำถามที่มีค่าน้ำหนักปัจจัยต่ำกว่า .3 แบบสอบถามที่มีพัฒนาขึ้นในตอนสุดท้าย มีความตรงและเชื่อมั่นในระดับที่เหมาะสมต่อการใช้กับบิดามารดาชาวอินโดนีเซีย ( $\chi^2 = 2381.31$ ;  $p = 0.000$ ;  $df = 1355$ ;  $\chi^2/df$  ratio = 1.76; CFI = .91; TLI = .90; RMSEA = .03; SRMR = .04) และมีความแตกต่างอย่างมีนัยสำคัญของคะแนนพฤติกรรมของบิดามารดาที่ดูแลเด็ก ได้ดีกับบิดามารดาที่ดูแลเด็กได้ไม่ดี ( $P = .047$ ) ค่าความเที่ยงของแบบสอบถามอยู่ในระดับที่ยอมรับได้ (Pearson's correlation = .644) และค่าความเที่ยงของแบบสอบถามทั้งฉบับ คือ .88 โดยมีค่าความเที่ยงอยู่ระหว่าง .92-.96

การพัฒนาแบบสอบถาม พฤติกรรมการให้อาหารเด็กวัยเตาะแตะของบิดามารดาอินโดนีเซียทุกขั้นตอน แสดงให้เห็นว่าเครื่องมือนี้จึงสามารถใช้ได้ทั้งพยาบาลและบุคลากรสุขภาพที่ปฏิบัติงานด้านการพัฒนาสุขภาพเด็กวัยเตาะแตะร่วมกับบิดามารดาเด็กอย่างไรก็ตามควรมีการศึกษาทดลองก่อนนำเครื่องมือนี้ไปใช้สอบถามพฤติกรรมการให้อาหาร เด็กวัยเตาะแตะในพื้นที่อื่น

สาขาวิชา พยาบาลศาสตร์

ปีการศึกษา 2557

ลายมือชื่อนิสิต .....

ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

ลายมือชื่อ อ.ที่ปรึกษาร่วม .....

# # 5277978136 : MAJOR NURSING SCIENCE

KEYWORDS: PARENTAL FEEDING BEHAVIOR / QUESTIONNAIRE / PSYCHOMETRIC PROPERTIES / PARENTS WITH TODDLERS

LELY LUSMILASARI: THE DEVELOPMENT OF THE PARENTAL FEEDING BEHAVIORS QUESTIONNAIRE (PFBQ) FOR INDONESIAN PARENTS WITH TODDLERS. ADVISOR: ASSOC. PROF. WARAPORN CHAIYAWAT, D.N.S., A.P.N., CO-ADVISOR: ASST. PROF. BRANOM RODCUMDEE, Ph.D., R.N., 213 pp.

Feeding behaviors of parents is one significant factor that plays an important role in meeting the toddlers' nutritional needs that impact to toddlers' health as ultimate goals. A valid and reliable instrument is essential, however, there is a lack valid and reliable instrument measuring the feeding behaviors of parents to maintain adequate food intake for their toddlers in Indonesia.

The objectives of the study were to develop an instrument the Parental Feeding Behaviors Questionnaire (PFBQ) and to test a psychometric properties of this instrument including validity and reliability. Using instrument development design, an initial 70-items instrument was developed after a comprehensive literature review which was submitted to be reviewed and criticized by six experts to ensure that items represented critical attributes and to evaluate the content validity of each item. The pre-testing of internal consistency of the first draft 80-items instrument was conducted by a convenience sampling of 30 parents who had toddlers both in urban and rural area in Yogyakarta, Indonesian. The main study was conducted to test a psychometric properties of the PFBQ by 696 parents with toddlers. In order to validate the PFBQ, construct validity using confirmatory factor analysis and the contrasted group technique were conducted. And the reliability of this instrument was examined construct reliability and test-retest reliability. The result of the main study showed that t-test of all 56 indicators greater than 1.96 and statistically significant ( $p < .01$ ) which 54 items had loading factor ranged .334-.692, with two items had loading factor  $< .3$ , and AVE ranged .72-.83. The final model of the PFBQ was a suitable model for the Indonesian parents with the value of ( $\chi^2 = 2381.31$ ;  $p = 0.000$ ;  $df = 1355$ ;  $\chi^2/df$  ratio = 1.76; CFI = .91; TLI = .90; RMSEA = .03; SRMR = .04). The contrasted group technique showed that significantly different on the parental feeding behaviors between parents of well-nourished and malnourished toddlers ( $p = .047$ ). The test retest reliability of the PFBQ was acceptable (Pearson's correlation = .644) and construct reliability for the total item was .88 with ranged .92-.96.

In the initial examination, the PFBQ showed as a valid and reliable instrument to measure feeding behaviors of parents with toddlers. This instrument can be used not only by nurses but also by other health professionals who work with toddlers and their parents in order to achieve toddlers' health. However, more studies are required before it is established as an acceptable tool for measuring feeding behaviors of parents with toddlers in other areas.

Field of Study: Nursing Science  
Academic Year: 2014

Student's Signature .....

Advisor's Signature .....

Co-Advisor's Signature .....

## ACKNOWLEDGEMENTS

I would like to express my deepest appreciation to my beloved advisor, Assoc. Prof. Waraporn Chaiyawat, DNS.,APN who always provided me with wonderful intellectual guidance and support throughout this study. Through her kindness, patience, contribution and feedback in all phases of my dissertation study, I have had wonderful experiences and final outcomes. I learn a lot from her not only about substantive and methodology but also the ways she taught and gave suggestions which always inspired me to improve myself. My great appreciation also goes to Asst. Prof. Branom Rodcumdee, PhD., RN who has given me her patience, continued support, and valuable advice until the completion of this study. Her kindness and friendliness also made me enjoy the doctoral student life.

I would like to express my gratefulness to the Faculty of Nursing, Universitas Gadjah Mada, for allowing me to take this program. I also thank the Ministry of Education of the Republic of Indonesia and Chulalongkorn University to support scholarship for pursuing the doctoral degree in nursing at the Faculty of Nursing, Chulalongkorn University. Additionally, I would like to thank the parents who participated in this study for their willingness to give their time to complete the questionnaire.

I am very pleased to express my special thanks to my lovely friends. My completion of this dissertation could not have been accomplished without the support and assistance. I am truly impressed with their kindness and friendship.

Lastly, no words can adequately express my appreciation for the faith, love, support, and encouragement that I have received from my beloved husband (Berli Paripurna Kamiel), my children (Darin Zahra Salsabila and Ghaisan Rifki Kamiel) as well as my big family. Thanks for being such a marvelous family.

## CONTENTS

	Page
THAI ABSTRACT .....	iv
ENGLISH ABSTRACT.....	v
ACKNOWLEDGEMENTS .....	vi
CONTENTS.....	vii
LIST OF TABLES .....	ix
LIST OF FIGURES .....	x
CHAPTER I INTRODUCTION.....	1
Background and Significance of the Study .....	1
Objectives of the Study.....	5
Scope of the Study .....	5
Operational Definitions .....	5
Expected Benefits of the Study.....	6
CHAPTER II LITERATURE REVIEW .....	8
Toddlers' Nutrition .....	8
The Feeding Behaviors of Parents with Toddlers.....	18
The Existing of Instrument: Feeding Behaviors of Parents.....	46
Scale Development .....	57
Conceptual Framework.....	73
CHAPTER III METHODOLOGY .....	77
Research design .....	77
Protection Human Subjects.....	106
Research Assistants' Training .....	107
Management of Missing Data.....	109
Data Analysis.....	109
CHAPTER IV RESULT .....	111
CHAPTER V CONCLUSION AND DISCUSSION .....	130
Discussion of the results .....	132
Limitations of the study .....	139

	Page
Implications .....	140
Recommendation for Further Research .....	141
REFERENCES .....	142
APPENDIX.....	167
APPENDIX A THE EXAMPLE OF THE INITIAL POOL ITEM RESULT OF PFBQ .....	168
APPENDIX B THE LIST OF EXPERTS FOR EXPERT REVIEW .....	170
APPENDIX C THE ACTIVITY DURING EXPERT REVIEW .....	172
APPENDIX D COVER LETTER FOR EXPERT REVIEWER AND CONTENT VALIDITY RATING FORM OF THE PFBQ .....	174
APPENDIX E THE RESULT OF PRE-TEST STUDY: CORRELATION MATRIX .....	179
APPENDIX F THE EXAMPLE OF THE DEMOGRAPHIC DATA AND THE PARENTAL FEEDING BEHAVIORS QUESTIONNAIRE (INDONESIAN VERSION) .....	194
APPENDIX G INFORMED CONSENT LETTER .....	198
APPENDIX H INFORM CONSENT FORM AND INFORMATION SHEET (INDONESIAN VERSION) .....	201
APPENDIX I DESCRIPTIVE STATISTIC OF ITEMS FOR TESTING ASSUMPTION CFA.....	205
APPENDIX J COLLINEARITY TESTING OF PFBQ .....	208
APPENDIX K LETTER OF ETHICAL CLEARANCE.....	211
VITA.....	213



## LIST OF TABLES

Table 1 Common patterns of toddlers growth and development (Robertson, 2002)...	10
Table 2 Energy and protein dietary reference intake for toddlers .....	15
Table 3 Recommended daily dietary allowances for minerals .....	17
Table 4 Recommended daily dietary allowances for vitamins .....	17
Table 5 Guidelines for forming good eating behaviors for toddlers.....	30
Table 6 Food as Nutrition, Not Control .....	34
Table 7 Health infrastructure related to PHC in Indonesia.....	44
Table 8 The characteristic of instrument .....	49
Table 9 Scale Development process .....	59
Table 10 The example of operation identified in PFBQ.....	80
Table 11 Content Validity Index of The Parental Feeding Behaviors Questionnaire (PFBQ) (n=6).....	82
Table 12 Content Validity Index of The Parental Feeding Behaviors Questionnaire (PFBQ) Based on Each Dimension (n=6) .....	83
Table 13 Percentage of The Clarity Agreement for Items of The Parental Feeding Behaviors Questionnaire (PFBQ) (n=6) .....	84
Table 14 Percentage of The Clarity Agreement for Items of The Parental Feeding Behaviors Questionnaire (PFBQ) based on each Dimension (n=6) .....	84
Table 15 Demographic characteristic of the participants in the pre-test study.....	87
Table 16 Description of The Corrected Item-Total Correlation and Cronbach Alpha if Item Deleted (N=56 Items).....	92
Table 17 Demographic characteristic of the participants in the main study (n=548)	100
Table 18 Demographic characteristic of the participants in contrasted group technique (N=148) .....	103
Table 19 Fit indices of hypothesized and modified factor structure of the PFBQ (N=548).....	115
Table 20 Factor loading of the PFBQ (N=548) .....	121
Table 21 Factor loading, construct reliability and Average variance Extracted in each dimension (N=548).....	126
Table 22 Mean and Standard deviation for testing difference of PFBQ scores between parents with well-nourished and mal-nourished toddlers (N=148).....	127
Table 23 The Example of Final Items of The Parental Feeding behaviors Questionnaire .....	129

## LIST OF FIGURES

Figure 1 The Picture of the 13 Basic Messages to Balance Diet .....	13
Figure 2 Self-care operations resulting in a system of self-care/Dependent- care action.....	37
Figure 3 Conceptual Framework of the Study .....	75
Figure 4 Analyzed Framework of The Study .....	76
Figure 5 The flow chart of the PFBQ development.....	78
Figure 6 Multistage cluster sampling.....	99
Figure 7 The Unstandardized of hypothesized measurement model of the PFBQ....	116
Figure 8 The standardized of hypothesized measurement model of the PFBQ.....	117
Figure 9 The Unstandardized of modified measurement model of the PFBQ .....	118
Figure 10 The Standardized of modified measurement model of the PFBQ.....	119

# CHAPTER I

## INTRODUCTION

### **Background and Significance of the Study**

Parents feeding behaviors is one aspect of child care that is closely associated with the maintenance of toddlers' nutritional needs since they have some limitations in expressing and meeting their needs (Orem, 2001). In the term of the maintenance adequate food intake, the role of parents are not only to control the food, toddlers' feeders, gatekeepers and role models for food consumption of their children, but also it plays an important role in creating children's eating experiences and how it would link to children's eating behavior and nutritional status, either directly or indirectly (Hodges, et al., 200; Savage, et.al., 2008; Jansen, et al., 2012; Rodgers, et al., 20013; Loth, et al., 2013; Hockenberry & Wilson, 2011; and Moore *et al.*, 2005).

In this study, parental feeding behaviors describe as dependent-care action is the practices of activities that parents initiate and perform on behalf of their children for some time on a continuing basis to meet their children needs in order to maintain their lives and contribute to their health and well-being (Orem, 2001). Therefore, it is defined as the ways Indonesian parents provide healthy food and pleasant eating environment to their toddlers, as well as enhance the toddlers' good eating behavior. They need to acquire and gather information and make judgment and decision before taking those actions.

Recently, some efforts to promote feeding behaviors of parents have been done in improving nutrition knowledge and awareness of healthy feeding guidelines and thereby can reduce the prevalence of malnutrition and morbidity, but several

studies indicated that parents did not fully provide appropriate feeding behaviors for their children. Several evidence in Indonesia and other countries showed that parents making unhealthy foods choices are easily accessible of their children (Tucker, et. al., 2006), less promoting well-balanced food intake and encouraging acceptance of novel food items (Ventura, et al., 2010; Armar-Klemesu, et al., 2000), choosing food that only filled the stomach rather than opting for more healthful food (Kolopaking, 2011), and parents preferred to provide easy-to-cook meals and purchased ready-to-eat food for children's meals although most of parents considered the habits of buying ready-to-eat food uneconomical and sometimes non-hygienically prepared. (Kolopaking, et al., 2011; Usfar, et al., 2010). Regarding mealtimes interaction, parents use food to regulate the child's emotional states or rewards (Musher-Eizenman & Holub, 2007; Jain, et al., 2004), excessive parental control and pressure to eat both verbal and physical (Savage, et al., 2008; Ventura, et al., 2010; Haiycraft & Blisset, 2012). The most common strategy to encourage children to eat is bribing or often caters to their children's demands, spoon-feed them, or play games to increase intake (Evans, et al., 2011).

Inappropriate feeding behavior of parents affected the nutritional status of children including toddlers both under nutrition and overweight (Hughes *et al.*, 2006; Jansen *et al.*, 2012; Rodgers et al., 2013; Loth & Maclehose, 2013). In Indonesia, the latest data about nutritional status of toddlers showed that more than 19.6% was underweight, 37.2% was stunted, and more than 12% was wasted, and the percentage of children with obesity increased into 11.9% in 2013 (The Ministry of Health, Republic of Indonesia, 2013). This means that Indonesia is facing a double burden of nutritional problems.

In contrast, positive parental modeling and involvement significantly influence healthy eating behaviors and child's dietary pattern for their children growth, development and survival of their children (Robertson; 2002; Widajanti & Kartasurya, 2004; Saha *et al.*, 2008; Farrow & Blissett, 2008; Ventura *et al.*, 2010; Loth & Maclehose, 2013; Tschann *et al.*, 2013) and the prevention of inadequate nutrition or obesity in their children (Ventura *et al.*, 2010).

Pediatric nurses plays a vital role in nutrition care at overall healthcare system because nutrition as a part of patient outcome (Henning, 2009). In order to promote good feeding behaviors for parents with toddlers, the role of nurses is as educators and role models for their families, communities and patients (Lowen, 2009 as cited in Lazarou & Kouta, 2010). In this situation, nurses can guide and support the parents of toddlers in the form of education regarding the activities of parents to provide balanced, healthy and safe food; to enhance toddlers' eating behaviors; and to provide eating environment that is pleasant for their toddlers, with this result that parents can implement appropriate behaviors as responsible person for their toddlers.

In order to this, the first step is to make an accurate assessment of the parental feeding behaviors so that nurses can determine current feeding behaviors of parents with toddlers and give anticipatory guidance, design intervention that prevents the lifelong problems associated with undernutrition and overweight in toddlers and evaluate the effectiveness of nutrition intervention program.

Recently, there are limited valid and reliable instruments to measure feeding behavior of parents both in community or hospital in Indonesia. Several instruments to measure feeding behaviors of parents have been developed; full range of potentially important feeding practices. For example, the widely-used Child Feeding

Questionnaire/CFQ (Birch, et.al., 2001), the Comprehensive however, a review literature revealed that the existing measures cannot capture the Feeding Practices Questionnaire/CFPQ (Musher-Eizenman and Holub, 2007), the Toddler Snack Food Feeding Questionnaire/ TSFFQ (Corsini, et.al., 2010), the Nursing Child Assessment Feeding Scale /NCAFS (Hodges, et.al., 2007), the Caregiver's Feeding Styles Questionnaire/CFSQ (Hughes, et.al., 2006), the Parental Feeding Style Questionnaire/PFSQ (Wardle, et.al., 2002) and the Parental Feeding Practices/PFP Questionnaire (Tschann et.al., 2013) focused only on the dimensions related to food consumption and parental feeding style or in parental use of control and child-centred feeding practices during mealtimes. Although the Parents Nutrition Dependent-Care Questionnaire (PNDCQ) seems to have a broader scope of parental feeding behaviors, it was developed for measuring nutrition behaviors that Parents performed for their adolescent children (Moore, 2005). Nutritional needs of toddlers and adolescents are different, thus, feeding behaviors that parents perform on the behalf of adolescent child are different from those performing for their toddlers. The PNDCQ is, therefore, cannot be applied to parents of toddlers.

Having toddlers' health as an ultimate goal, a valid and reliable parental feeding behaviors measure that is Indonesian cultural appropriate and specific to parents with toddlers is essential. Not only nurses but also other health professionals who work with toddlers and their parents can use this newly developed tool to achieve their goal.

### **Objectives of the Study**

The study objectives are as following:

1. To develop an instrument, the Parental Feeding Behaviors Questionnaire (PFBQ), for measuring feeding behaviors of Indonesian parents for their toddlers.
2. To test psychometric properties of the instrument including validity and reliability of the Parental Feeding Behaviors Questionnaire (PFBQ) for Indonesian parents with toddlers.

### **Scope of the Study**

The Parental Feeding Behaviors Questionnaire (PFBQ) was develop for measuring feeding behaviors of Indonesian parents for their toddlers. The target population is Indonesian parents with toddlers. The sample consisted of Indonesian parents with toddlers living in 3 districts in Yogyakarta Special Province, Yogyakarta city, Sleman, Bantul, Kulonprogo and Gunung Kidul district.

### **Operational Definitions**

Parental feeding behaviors are the ways Indonesian parents provide healthy food and pleasant eating environment to their toddlers, as well as enhance the toddlers' good eating behavior. They need to acquire and gather information and make judgment and decision before taking those actions.

1. Providing a healthy food is defined as the way Indonesian parents acquire and gather information on safe, nutritious, age appropriate food for toddlers; make judgment and decision on toddlers' diet; and provide balanced and safe food for their toddlers.

2. Enhancing the toddlers' good eating behavior is defined as the way Indonesian parents acquire and gather information on parents responsibilities and characteristic of toddlers eating behavior such as safety responsiveness, speed eating and food fussiness; make judgment and decision to select the parental feeding style that appropriate for toddlers; and practice those ways to enhance appropriate general interest in eating,

3. Providing pleasant eating environment is defined as the way Indonesian parents acquire and gather information on meal times environment and equipment's/utensils that appropriate for toddlers; make judgment and decision to keep regular time and pleasant environment during mealtimes; and provide equipment's/utensils and rewards during mealtimes.

### **Expected Benefits of the Study**

The outcome of this study, the Parental Feeding Behaviors Questionnaire (PFBQ) will provide new knowledge that can be used as alternative way to capture parental feeding behaviors and more comprehensive for measuring the feeding behavior of Indonesian parents to maintain adequate food intake for their toddlers. The PFBQ also can be used to develop further knowledge in nursing science both in clinical practices and research. In research, the scale can be used as an instrument for measuring the effectiveness of an intervention based program for improving and promoting feeding behavior of parents with toddlers. In clinical practices, the scale can be used as a tool to assess the parents feeding behavior to maintain adequate intake of food, as well as identify parents' behaviors to engage in continuous and effective care for their toddlers. Nurses and also other health professional can also



use this information to help and give anticipatory guidance and generate intervention that prevents of the lifelong problem associated with both undernutrition and overnutrition in toddlers, and solve the problems.



## **CHAPTER II**

### **LITERATURE REVIEW**

This chapter reviewed the literature central to the concept of this study. First, the literature related to the concepts of toddlers' nutrition, the parental feeding behaviors, followed by a review of the existing parental behaviors instrument related to feeding behaviors of parents for their children, and scale development.

#### **Toddlers' Nutrition**

Toddler is a child between the age of one and three years. Nutrition is a significant factor in the growth, development and overall functioning of a child. Adequate nutrition provides the energy and nutrients essential to sustain life and promote physical, social, emotional, and cognitive development (Worthington & Williams, 2000). The characteristics of the toddlers' eating behavior toddlers' diet are described below:

##### **1. Toddlers' Eating Behavior**

The transition from infant to toddler is most apparent in a child's eating behavior. This is the first period a child will begin to show his independence and need for autonomy. The challenge for this period is to maintain adequate nutrition while helping the child establish good food habits with her independence intact. They come to the table hungry and willing to approach the food there, and they are able to eat with concentration and focus until they are full (Satter, 1986).

The quality of feeding behavior during the transition from relative dependence in infancy to emerging autonomy in toddler has been proposed to contribute to the

child's ability to self-regulate feeding that will support optimal growth and development (Hodge, et al., 2007). During this period they learn what, when and how much to eat based on the culture, beliefs, attitudes, behaviors and practices around food and eating family. Toddlers learn how and what to eat by observing adults around them and by responding to what adults provide for them to eat. Among other things, children learn about textures, smells, and colors, as well as taste. They learn physical skills of fine motor control, cognitive skills of relationship between action and consequence and interactional skills of social exchange among family members. Learning eating habits can be positive growth experience for both toddlers and parents.

Therefore, the role of parents is very important in the child's experience of eating because of this experience will be related to the child's eating behavior, as well as on children's food intake and their weight status (Savage et al., 2008). The effects of feeding strategies showed evidence of a relationship between feeding behaviors, food intake and weight of the child (Clark, et.al., 2007; Faith, et.al., 2004). A common pattern of toddler's growth and development that affect eating actions is as follow (Robertson, 2002). (Table 1).

Table 1 Common patterns of toddlers growth and development (Robertson, 2002)

Common patterns of toddler's growth and development that affect eating actions

- 
- Child wants and needs to be independent; child wants to control his own eating
  - Child learns to say “no” even the favorite foods
  - Appetite is sporadic as growth slow
  - Child learns by doing-wants to feed self
  - Child has food likes and dislikes. Child may develop food jags for favorite foods
  - Child is gaining more control over large motor skills, and can lift food to mouth.  
Because large muscle control is still developing, the child will sometimes drop or spill food
  - Child is gaining more control over fine motor skills, and is able to use spoon
  - Child is learning to manipulate objects, and likes to touch and play with food
  - Child may be teething and have difficult chewing, and will spit out or remove food from mouth
  - Child wants to master the job of eating and be successful, even if it means hiding food under plate or in a pocket to show he is done
  - Child is learning to be a social creature, and may entertain others with food antics.
- 
-

## 2. Toddlers' Diet

Diet is the foods and beverages a person eats and drinks (Whitney, et.al., 2002). Because of children are growing and developing bones, teeth, and muscles, and blood, they need more nutritious food in proportion to their size than do adults (Mahan & Escott-Stump, 2008). To mature optimally, toddlers need the structure of regularly scheduled meals and snacks, with restriction of food handouts between these scheduled times (Weaver, 2003). In this context, toddlers' diet must be sufficient to (a) maintain body functions; (b) engage in play and other activities; (c) recover from trauma or illness; and (d) grow and develop.

Dietary patterns of children are influenced by the foods that are made available to them by their parents (Haire-Joshu, et.al., 2003; Faith, et.al., 2004; and Hodges, 2003). And also the parental feeding practices, such as parental restriction have been associated with unhealthful child dietary behaviors and increased intake of calories (Faith, et.al., 2004; Satter, 1996; and Johnson, 2000).

Toddlers are taking a widening range of foods and beginning to share those eaten by the rest of the family. Nutritionally, toddler foods bridge the gap between the energy-dense diet of the infant, which provides about 50% of energy from fat, and that of the adult, in which about 35% of energy should be derived from fat. Toddlers have smaller gastric capacities than adults, however, and a balance must be made between the gradual reduction of energy-dense, fat-containing foods and the introduction of lower-fat foods (Weaver, 2003).

In the context of toddlers' diet, breakfast may well be the most critical meal of the day. Studies reflect that eating breakfast affects cognition, strength, attitude, and endurance. Breakfast should consist of milk, bread/cereal/rice, and fruit. Breakfasts

can be built around traditional breakfast foods such as cereal, toast, fruit, milk, and so forth.

Snacks are essential part of a child's nutritional day. Snack should provide adequate nutrition, and should be served at a sufficient time between meals for the children to be hungry but not too hungry.

Whether it is served as a meal or a snack, food should be satisfying and meet the children's nutritional needs. The ideal meal or snack would include a protein food, a carbohydrate food, and some fat.

Milk is a food and should have its proper place. Toddlers should not drink so much milk that they lose their appetite for other foods. Toddlers who use milk as the main source of energy and nutrients may have a condition called anemia, which is an iron deficiency due to lack of proper food and too much milk. Toddlers should drink no more than 24 ounces of milk a day.

The Indonesian Dietary Guidelines for the general population were publicized by the Ministry of Health (MoH) in 1995, and consisted of the following messages: (1) eat a wide variety of foods; (2) consume foods to provide sufficient energy; (3) obtain about half of total energy from complex carbohydrate-rich food; (4) obtain not more than a quarter of energy from fats or oils; (5) use only iodized salt; (6) consume iron-rich food; (7) breastfeed your baby exclusively for 4 months; (8) eat breakfast; (9) drink adequate quantities of fluid that are free from contaminants; (10) do physical activity regularly; (11) avoid drinking alcoholic beverages; (12) consume food which is prepared hygienically; and (13) read the labels of packaged foods. Dietary guidelines are intended to provide general nutrition guidance consistent with an optimal intake of vitamins and minerals and the prevention of disease. The 13

Basic Messages to Balance Diet (locally known as 13 Pesan Dasar Gizi Seimbang or Pedoman Umum Gizi Seimbang, abbreviated as PUGS), were tested in 14 provinces and is supplemented with an explanation booklet presented in lay language with color sketches. The example of logo of The 13 Basic Messages to Balance Diet is described in figure 1.

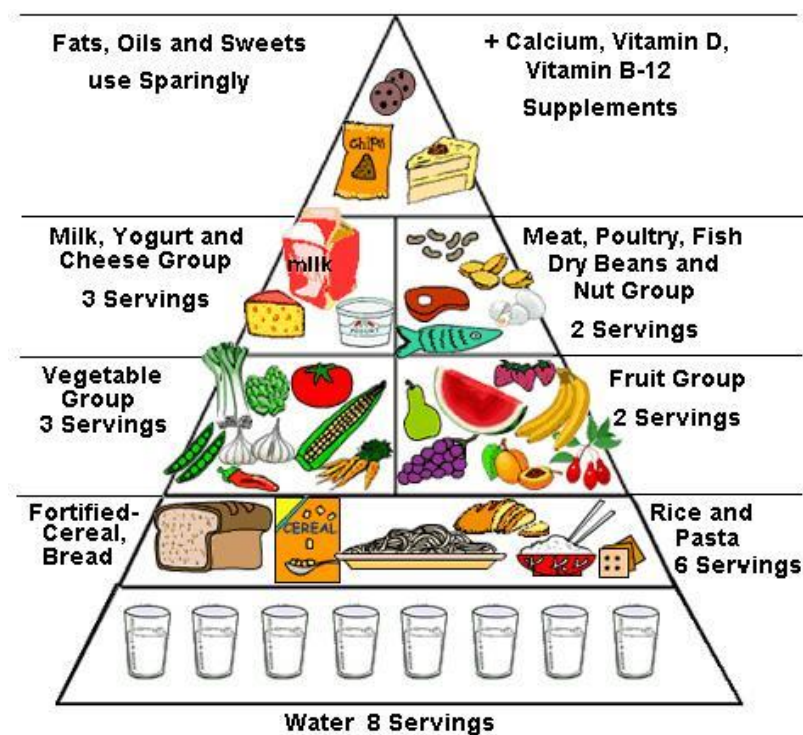


Figure 1 The Picture of the 13 Basic Messages to Balance Diet

The picture above describe a group of food that it important for people including toddlers such as grain, vegetables, fruits, milk or dairy, meats, and fats and sweets. The variety of food is important because the basic nutrients found in food perform all the function needed to help the body grow, repair, regulate, maintain itself.

There are six sources of nutrients: carbohydrates, fats, protein, vitamins, minerals, and water. Each source of nutrients can be categorized as the energy nutrients and the supporting nutrients. Energy nutrients are fats, carbohydrates, and protein; supporting nutrients are vitamins, minerals and water.

**2.1. Energy.** Energy is needed to maintain life, support growth, regulate body processes, and perform voluntary activities (Robertson, 2002). The energy needs of healthy children are determined on the basis of basal metabolism, rate of growth, and energy expenditure. The growth rate of toddlers is slower than infants, resulting in decreased energy needs per unit of body weight. But because of increased size and activity, these children require an increased number of total calories. Addition of muscle mass also demands a continued high protein intake. Dietary energy must be sufficient to ensure growth and spare protein from being used energy but not excess weight gain. Suggested intake proportions of energy are 45% to 65% as carbohydrates, 30% to 40% as fat, and 5% to 20% as protein for 1 to 3 years old, with carbohydrates the same for 4 to 18 year olds, 25% to 35% as fat, and 10% to 30% as protein (IOM, 2002). The equation estimate average energy requirements based on life-stage grouping for healthy individuals of normal weight who is toddlers 13 through 35 months are group together (table 2).

Studies indicate that the actual energy intakes of children agree with the recommended intakes. However, wide-ranging intake of energy will be noted among individual children. The most appropriate evaluation of adequacy of a child's energy intake is based on observation of rate of growth as depicted on growth charts and on measurement of body fat.



**2.2. Protein.** Protein intake can range from 5% to 30% of the DRI based on age (Mahan & Escott-Stump, 2008) (table 2). Children who are most at risk for inadequate protein intake are those on strict vegan diets, with multiple food allergies, or who have limited food selections because of fad diets, behavior problems, or inadequate access of food.

Table 2 Energy and protein dietary reference intake for toddlers

Age (Years)	Energy (kcal)	Protein (gram)
1-3	1000	25

Adapted from Widyakarya Nasional Pangan dan Gizi, 2004

The protein needs of children include those for maintenance of tissue, for changes in body composition, and for synthesis of new tissue. During growth, the protein content of the body increases from 14.6% at one year of age to 18% to 19%, which are adult values, by four years of age. As the rate of growth decreases, maintenance requirements gradually represent an increasing proportion of the total protein requirement. Protein provides 13% to 15% of the energy intake in the average child's diet. An evaluation of a child's protein intake must be based on 1) the adequacy of growth rate, 2) the quality of protein in the foods eaten, 3) combinations of foods that provide complementary amino acids when consumed together, and 4) the adequacy of the intake of vitamins, minerals and energy.

**2.3. Minerals and vitamin.** Children are most likely to consume inadequate amounts of calcium, iron, zinc, folate, vitamin B6, vitamin E, magnesium and vitamin A (Roberts & Heyman, 2000; Sutor & Gleason, 2002; Moshfegh, et al., 2005). Minerals and vitamins are necessary for normal growth and development. Inadequate intakes are reflected in slow growth rates, inadequate mineralization of bones, insufficient iron stores, and anemia.

**2.4. Calcium.** Calcium is needed for adequate mineralization and maintenance of growing bone in children. The DRI for calcium for children 1 to 3 years old is 500 mg/day (table 4). It is suggested that low calcium intake limits linear growth and bone mineralization. There is also the likelihood that efficiency of absorption and conservation of calcium may, in fact, increase with low calcium intake and high biologic requirement. Milk and other dairy products are the primary sources of bioavailable calcium. Thus, children who consume limited amounts of these products risk a deficient calcium intake.

**2.5. Zinc.** Zinc is essential for growth; a deficiency result in growth failure, poor appetite, decreased tasted acuity, and poor wound healing. Because the best sources of zinc are meats and seafood, some children may regularly have a low intake. Marginal zinc deficiency has been reported in preschools and school-age children from middle- and low-income families (Roberts and Heyman, 2000). Zinc intakes of children one to three years of age have been estimated to average 5 mg/day. Meat are a good source of available zinc; cereal grains contain a less available form.

**2.6. Iron.** Iron deficiency is the most common nutritional deficiency. In the recent survey, it was demonstrated that iron deficiency and iron deficiency anemia are still significant public health problem.

**2.7. Vitamins.** The function of vitamins in metabolic processes means that their requirements are determined by intakes of energy, protein, and saturated fats. Exact needs are difficult to define. The RDAs are shown (table 3 and 4) :

Table 3 Recommended daily dietary allowances for minerals

Age (Years)	Phosphorus (mg)	Iodine (µg)	Iron (mg)	Magnesium (mg)	Zinc (mg)	Selenium (µg)	Calcium (gram)
1-3	400	120	8	60	8.3	17	500

Adapted from Widyakarya Nasional Pangan dan Gizi, 2004

Table 4 Recommended daily dietary allowances for vitamins

Age (Years)	Vitamins					
	A (RE)	D (µg)	E (mg)	K (µg)	B12 (µg)	C (mg)
1-3	400	5	6	15	.9	40

Adapted from Widyakarya Nasional Pangan dan Gizi, 2004

**2.8. Water.** Water is necessary to sustain life (Robertson, 2002). It comprises about 70 percent of the human body and must be replenished daily. Water is needed for the metabolic activities within cells, for transportation of nutrients and waste products, and for regulation of body temperature. How much water a body needs on a daily basis depends on body metabolism, age, and outside temperature. Water is present in the most foods found in the nature. It is in fruits and vegetables in large amounts. Fruit juice can be major source of water for older infants and young children, although children should be encouraged to drink water. Children who are

encouraged to drink water at an early age are more likely to turn to water to quench their thirst instead of sugary drinks

**2.9. Vitamin supplementation.** Evaluate a child's intake over the course of a weeks. If Children persist with extremely limited food choices or picky eating behavior, they might benefit from a children's multivitamin plus mineral supplement.

Vitamin supplementation of children's diets should be recommended only after careful evaluation of the child's food and intake. Diets of children who restrict their intake of milk because of documented or suspected allergies, lactose intolerance, or psychosocial reasons should be monitored for adequate intakes of calcium, riboflavin, and vitamin D. Diets of infants and children receiving goat's milk should be carefully monitored for food sources of folate. Diets of children who consume limited amounts of fruits and vegetables should be checked for sources of vitamin A and C.

## **The Feeding Behaviors of Parents with Toddlers**

### **1. Definition and scope of parental feeding behaviors**

Parents is a person who brings up and cares for another (Merriam-Webster, 2005), which includes others individuals who function is a primary parenting role such as grandparents, stepparents, foster parents, and guardians (Riesch, et al., 2006). According to the Chambers dictionary defines parent as 'one who begets or brings forth a father or a mother' (Kirkpatrick, 1989). In this study, the definition of parents with toddlers is parents (father or mother) who have a child between the age of one and three years and has been the one who feed the child most of the time. Horodynski

(2004) state that feeding is learned behaviors that can lead to promote of health (health promotion activities). Dictionary definitions of behavior is the way in which someone behaves; process of thoughts, the action what inner body is acting will be reacting in front of us (Merriam-Webster online, 2013).

There is lack of clarity regarding definitions and measurement of parental feeding behaviors (DiSantis, et. al., 2011). With reference to several commonly used measures of feeding, there are several definition about feeding behavior of parents which depend on the theoretical perspectives is used. The term 'parental feeding style', 'parental feeding practices', and 'parental feeding behaviors' are used interchangeably. The following parental feeding behaviors definitions are proposed in an attempt to clarify the variety of terms being used throughout the literature.

In the context of child care, feeding is one of various dimensional of child caregiving (Engle et al., 1997) that is now increasingly recognized as a key determinant of child nutrition along with food security and availability of health services. Care is the provision in household and the community of time, attention, and support to meet the physical, mental, and social needs of the growing child and other household members (ICN, 1992). Care is manifest in several types of activities practiced by caregivers for example feeding of young children, psychosocial stimulation of children and support their development, and food preparation and food storage practices (Engle, 1997).

Engle (1997) used The UNICEF model of care as a framework for assessing the capacity and ability of the caregiver to provide care. Based on this model, the feeding behaviors of parents is behavioral responses or sequences associated with the act of eating feeding behaviors that could have associations with child nutrient intake

including (1) adaptation of feeding to the child's characteristics which is caregivers including parents need to be sure that children are capable of the self-feeding expected of them; (2) the caregiver's ability to feed responsively which is feeding can be an active process, including encouragement to eat, offering additional foods, cajole, offer more helping, talk to children while eating, model eating behavior, and monitor how much the child eats; and (3) the feeding situation, which is caregiver control of the Feeding Situation including the organization and regularity of the feeding situation, whether the child is supervised and protected while eating, frequency of feeding, with whom the child eats, and distraction during eating events.

Hughes and colleagues (2005) in parental feeding style questionnaire, they conceptualized parenting in the feeding context, which focused on both demandingness and responsiveness of feeding style to describe a feeding typology similar to general parenting. Demandingness refers to how much the parent encourages eating and responsiveness refers to how the parents encourage eating, that is, in a responsive or nonresponsive way. These dimensions are also derived through child-centered that is defined as directives that promote internalization of parental values (e.g., reasoning, complimenting, and helping the child to eat) and parent-centered feeding that is defined as directives that promote externalization or control of children's eating through external means (demands, threats, and reward contingencies).

Hennessy et al. (2010) describe the behavior of the parents in the child's feeding includes three aspects of parenting, parenting eating and feeding practices. Parenting attitudes and beliefs described in the parents in raising their children, two-way interaction that describe the general atmosphere of emotion in the interaction of

parents. Parenting eating is an application of the concept of parenting feeding into the context which describes the overall interaction between parents and children during the meal situation. Feeding practices based on the dimensions of parental behavior in responding and controlling eating behaviors of children and strategies that parents use to socialize with children.

There have been several studies that have explored the feeding practices of parents and the potential relationships with child outcomes such as children eating behaviors, dietary intake and body mass index. Results to date show consistency for some practices but inconsistency for others. Feeding practices are the situation-specific behaviours or strategies that parents use to manage how much, when and what children eat (Ventura & Birch, 2008). The following are the kinds of parental feeding practice during parents fed their children (Birch, 2001; Musher-Eizenman & Holub, 2007) :

- (1) restriction as the extent to which parents control about kind or amount of the child's food intake;
- (2) pressure to eat assesses how much a parent places importance on their child eating enough and may encourage them to eat more;
- (3) monitoring refers to how much a parent keeps track of the unhealthy food that their child eats or as overseeing their child's eating;
- (4) food as rewards which this practice looks at whether parents offer or withhold treat food in response to good or bad behaviour;
- (5) *child's control* as allowing the child to have control over his or her food intake;
- (6) parents control this construct assess how much the parent controls the child's eating and might be considered the opposite to *child control*;
- (7) *emotion regulation* looks at whether parents use food to regulate their child's emotions, such as boredom, fussiness or upset;
- (8) *Modelling* measures how much parents demonstrate healthy eating to their children or parents intentional acting as a role

model; (9) *Verbal praise and encouragement* for eating fruits and vegetables has been associated with a higher consumption of fruits and vegetables and lower consumption of soft drinks; (10) *reinforcement* for eating healthy food was positively related to better dietary intake; (11) *covert control* feeding practices are those that the parent does without the child noticing, like avoiding eating out at particular places or only buying certain foods; (12) *Overt control* feeding practices are those that the child is aware of, like structuring eating and encouragement or pressuring the child to eat more; (13) involvement as parents encourage child's involvement in meal planning and preparation; (14) teaching about nutrition in comprehensive feeding behavior as parents use explicit didactic techniques to encourage the consumption of healthy foods; (15) emotion regulation as parents use food to regulate the child's emotional states; (16) encourage balance and variety as parents promote well-balanced food intake, including the consumption of varied foods and healthy food choices; and (17) environment as parents make healthy foods available in the home.

Jansen, et.al., (2012) state that the feeding behavior of parents are specific behaviors which including attitudes and strategies regarding the control of children eating that include monitoring, restriction and pressure while eating. Feeding behaviors are also include actions to monitor food intake of children, using food to regulate children's emotions, control feeding children, teaching about nutrition, maintaining a balance and variety of foods, limiting nutrient intake for reasons of weight and became a model for healthy eating habits for children kids (de Lauzon-Guillain, et.al., 2009).)

According to the feeding dynamic approach, feeding behavior is a reciprocal process that depends on the capabilities of both parents and children (Satter, 1990).



Optimal feeding interactions depend on emotionally healthy, sensitive, and responsive parents and on children who are able to achieve a minimal level of communication and stability (Satter, 1990). The parents of children are responsible for the structure feeding, or the “what, where, and when” of feeding. More specifically, parent’s mealtime responsibilities are choosing and preparing food, maintaining the structure of meals and snacks on a consistent schedule, providing a controlled pleasant environment for meals free from distraction, and setting the expectation that children will behave appropriately.

During feeding, the role of parents is not only to control the food, but also develop and maintain healthy eating habits, either directly or indirectly (Hodges, et al., 2007). It is the parents responsibility to choose appropriate foods and offer them to the toddler (Ponza, et.al, 2004 cited in Horodynski, 2005). Parents and children contribute to their interactions with each other and mutually affect their behavior, but parents are responsible for direct interaction (Sander, 1976, cited in Spegman, 2005).

In the contexts of Indonesian situation, a lack of information is currently available concerning the characteristic of Indonesian parents’ behavior. Current work and food programs for Indonesian families, such as the Family Wellness Education Program (Pendidikan Kesejahteraan Keluarga) or the Family Awareness of Nutritious Food Program (Program Keluarga Sadar Gizi), need to be evaluated to determine how they recognize and address the current reality of parental feeding behaviors in urban and rural settings (Ministry of Health, Republic of Indonesia, 2007), because parents in Indonesia are experiencing a nutritional transition, characterized by a shift from home-based food to processed food products (Garret & Ruel, 2005; Usfar, 2002). Based on the Kolopaking (2011) there are several characteristics of the Indonesian

parents' feeding behaviors that related to (1) food-related knowledge especially about the Indonesian dietary slogan that one should eat "4 healthy, 5 perfect" food items every day (ie, that one should eat staple food items, food that is high in protein, vegetables, and fruit for the "4 healthy" food items; and one should also drink milk for the "5 perfect"); (2) food availability; (3) food accessibility; (4) food variety; (5) food preparation; (6) food serving; (7) parental feeding practices; and (8) food coping strategies.

According to Orem's theory, there are three general sets of actions for meeting the maintenance of sufficient intake of food (Orem, 200) as follow; (1) taking in that quantity required for normal functioning with adjustment for internal and external factors that can affect the requirement or, under conditions of scarcity, adjusting consumption to bring the most advantageous return to integrated functioning; (b) preserving the integrity of associated anatomic structures and physiologic processes; and (3) enjoying the pleasurable experiences of eating without abuse.

Then, from the general sets of actions for meeting the maintenance of adequate intake of food (Orem, 2001), dimensions of parenting feeding behavior questionnaire are constructed to form the equivalent of first order latent variables which are then combined to form categorical from Orem's theory and these feeding practice items, higher order latent variables that describe and allow each parents to be assigned a unique parenting feeding behaviors.

Based on the explanation above, the scope of parents feeding behaviors in this study are composed of all activities done by parents in providing balanced, healthy and safe food; enhancing toddlers eating behaviors; and providing eating environment that is pleasant for their toddlers.

**1.1 Providing Healthy Food.** According to Coleman, et.al., (2005), parental feeding are directly related to the development of self regulation of food intake and healthful eating behaviors in children which include: (a) choosing and providing nutritious food choices; (b) parental feeding practices; (c) being role models in eating and having healthy foods available; and (d) understanding children's development and eating behaviors. And also family environment associated with feeding is a very important factor affecting the development of children's diet and eating habits that affect food intake. Family environment associated with eating include: 1) knowledge and attitudes related to nutrition, diet and weight-related concern; 2) parental feeding practices conducted include teaching parents and child related food expectations, restrictions, giving pressure to eat and monitoring; 3) the behavior and role modeling undertaken which includes the involvement of parents in preparing meals, to be an example for healthy eating behaviors (Hendrie, et.al., 2013).

Based on the explanation above, every parents or caregiver should practice good behavior during fed their toddlers. Parents have responsibility to give toddlers adequacy dietary intake through providing all the essential nutrients, fiber, and energy in amounts sufficient to maintain health. The best base for good planning is knowledge of nutrition and children's nutritional stages and developmental stages. Guideline for meeting nutritional needs should be followed and a variety of foods, including fresh vegetables and fruit, should be provided. Parents/caregiver can look at each area of menu planning and relate it to the entire day's menu choices. The parents/caregiver should recognize that there will be a variation in food consumption.

There are several considerations for making sure that the menu is planned properly such as menu fits budget; food is seasonally available; there is adequate time and available to prepare foods selected; meals pattern meets the food guide pyramid guidelines; a few new foods are tried every menu planning period; few foods are offered that have high fat, high sodium, or high sugar content; a source of vitamin C is served daily; A source of vitamin A is served 3 to 4 times per week; whole grain breads and grains are offered; raw vegetables and fruits are served often.

When planning meals or snacks, the parents/caregiver must treat empty nutrient, high-calorie foods that have too much sugar or fat with respect. Snacks should be taken seriously and used as part of the day's nutrition.

Food is product derived from plants or animals that can be taken in to the body to yield energy and nutrients for the maintenance of life and the growth and repair of tissue (Whitney, et.al., 2002). Regardless of whether the food is prepared by the parents or someone else, planning the meals should focus on healthy food choices and preparation forms. Food safety and sanitary practices should be used. Today food safety warnings appear anywhere. Attention has turned to more contemporary food safety concerns, such as microbial and chemical contamination.

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. In response to the increasing number of foodborne illnesses, Governments all over the world are intensifying their efforts to improve food safety (Sudershan, et.al., 2008). Nonetheless, microbes and chemicals in food still can pose a health risk (Brown & Allen, 1996; Fawzi, et.al., 1997; Raloff, 1996; Sazawal, et.al., 1995).

The role of food handlers, usually mothers, in ensuring food safety and hygiene for infants and children is well accepted. Preventing foodborne illness should be a primary task of the caregiver who is planning and preparing meals for toddlers. Home food prepare need to take many precautions to minimize pathogenic contamination of home-prepared foods because they are the final line of defense against foodborne illnesses (Medeiros et al., 2004). The parents or caregiver can use safe, sanitary food handling practices to better manage food preparation activities to evade bacteria and food spoilage.

Food safety involve proper food purchasing, food storage, handling and cooking. Protecting the child care environment by using safe food practices and strategies will prevent risk. Using good food purchasing behaviors helps eliminate foods that may pose risk. The child caregiver can avoid contamination of foods by understanding how to store foods, etc. General rules for preventing sickness caused by ingestion of food containing toxic substances produced by organism (foodborne illnesses) are as follow (Wardlaw, G.M., 1999) :

**1.1.1. Purchasing Food.** (a) When shopping, select frozen foods and perishable food last, such as meat, poultry, or fish. Always have these products put in separate plastic bags so that drippings don't contaminate other foods in the shopping cart. Get the perishable foods home and promptly refrigerate or freeze; (b) Buy from sources that are inspected for health and sanitation; (c) Buy only good quality, fresh, and undamaged foods; (d) Buy only good quality, fresh, and undamaged foods; (e) Buy only good quality, fresh, and undamaged foods; (f) Buy only good quality, fresh, and undamaged foods; (g) Buy perishable food before "sell by" date; (h) Perishable foods are refrigerated; (i) Keep poultry and meats away from

other foods; (j) Do not buy damaged canned and packaged goods; (k) Don't taste or use food that has a foul odor or spurts liquid when the can is opened; the deadly clostridium botulinum toxin may be present; (l) Purchase only the amount of produce needed for a week's time. The longer you keep fruits and vegetables, the more time available for bacteria to grow, and (m) When purchasing pre-cut produce, avoid those that look slimy, brownish, or dry, these are signs of improper holding temperatures.

**1.1.2. Preparing Food.** The World Health Organization's Golden Rules for Safe Preparation : choose 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 meticulously clean; protect foods from insects, rodents, and other animals; and use pure water.

**1.1.3. 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.

**1.1.4. Handling Food.** (a) Always wash hands; (b) Wash all fruits, vegetables, and tops of cans prior to use; and (c) Never prepare food when you are ill.

**1.1.5. Storing and Reheating Cooked Food.** (a) Keep hot foods hot and cold foods cold and store peeled or cut-up produce, such as melon balls, in the refrigerator; (b) Meat, fish, and poultry wrapped in waterproof bag for

refrigeration and in foil or freezer bags for freezer; (c) All food stored in clean, airtight containers; and (d) Non-perishable items stored in airtight container.

In summary, ensuring cleanliness, keeping hot foods hot and cold foods cold, and cooking foods thoroughly offer additional protection from sickness caused by ingestion of food containing toxic substances produced by organism. Then, treat all raw animal products, cooked food, and raw fruits and vegetables as potential sources of food containing toxic substances produced by organism.

**1.2 Enhancing Toddlers Eating Behaviors.** Parents/caregiver are responsible person to the development of healthy eating behaviors of their children. Creating a framework for forming good food habits is one of the most important things the parents/caregiver can do for a child to ensure good health and well-being. To help the child establish good eating behaviors, the parents/caregiver must understand how growth pattern and developmental changes affect a toddler's action.

Some guidelines for the caregiver to maximize the eating and nutritional needs of the toddlers are list in table 5 below (Worthington & Williams, 2000).

The parents/caregiver should use whatever methods are available to encourage the toddlers in care to eat good food and be well-nourished. In this context, the best role models for good eating habits are the adults and older children who care for children such as parents or caregiver. Older children who have been allowed to choose what they want to eat are less likely to criticize a food, discouraging other children from eating it, too.

Another concern in toddlers' life, the introduction of a new foods can create tension between parents and children, with children refusing to try or rejecting new tastes or textures. Parents should be informed that this is a normal reaction for many children. Strategies that can be used to increase the chances of children accepting a new food include the following: (a) offer the food when children are hungry; (b) allow children to taste a little of the food rather than eating a full portion; (c) expose children to the food by preparing and serving the food without expecting them to eat it; (d) provide an example of parents eating and enjoying the food; (e) prepare the food the way children prefer: few spices, lukewarm, recognizable; (d) associate food with pleasant experiences; and (e) never force food on children.

Table 5 Guidelines for forming good eating behaviors for toddlers

---

Guidelines for forming good eating behaviors for toddlers

---

- Make easy to eat
  - Cut finger food in bite-size pieces
  - Make sure some of the foods served are soft and moist
  - Serve food at room temperature. Toddlers shy away from foods that are too cold or too hot
  - Toddlers are sensitive to texture and may not eat foods that are lumpy or stringy. Try these foods and if they will not eat them, try again later
  - Toddlers like colourful foods and often prefer vegetables that are raw or undercooked because they are brighter in color and crisp
  - A typical toddler may like his food in different or specific shapes. Carrots may need to be cut in coins before cooking so the toddler will eat them
  - Toddlers like fun foods such as faces on pancakes or sandwiches or other foods cut into unusual shapes
  - Positive conversational interaction with the child
-



Based on the explanation above, in general, parents should be encouraged to provide the following: (a) positive examples of healthy intake; parents are the child's role model; (b) an adequate supply of a wide variety of age-appropriate nutritious foods; (b) limits, but not prohibitions, on consumption of non-nutritious sugars and "tip" foods; (c) food prepared in a form that stimulates children's appetites; (d) regular, structured mealtimes; this may only be one meal a day; (e) pleasant, relaxed environment for mealtime; (f) clear, developmentally appropriate expectations for children's behavior at mealtimes; (g) developmentally appropriate access to and instruction in the use utensils; (h) appropriate supervision during mealtimes; (i) healthy, age-appropriate snacks; (j) developmentally appropriate opportunities to participate in preparing and serving meals; and (k) an adequate exercise, sleep and rest to stimulate appetite.

**1.3 Providing a Pleasant Eating Environment.** Feeding activities should be pleasurable experience, although parents with toddlers and preschoolers may sometimes wonder. During mealtimes, there are some attention such as dining areas should be clean, cheerful and supportive of healthful eating habits. Appropriate equipment and utensils foster independence by allowing children to serve themselves. Furniture and eating utensils should be age-appropriate and developmentally suitable. Chairs and tables should be comfortable, attractive and suitable in size and shape for children. Plates, utensils, pitchers and cups should be child-size and easy to hold. Foods that are high risk for choking should not be served to children under the age of 4, 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 spoonfuls of peanut butter.

Another strategy to make mealtimes significant for the child is understanding the temperament of the child, his capabilities, and his tempo will help the parents/caregiver prepare for mealtime. The parents/caregiver should give the child time, attention, and awareness when meals are served. Sitting and talking with children while they are eating make the time special. They should reinforce desirable behavior by paying attention, recognizing, and acknowledging good behavior.

And also setting limits makes eating more important and worthwhile. When feeding a child a snack or meals, the parents/caregiver must make sure that is the only activity going on. The caregiver should also limit eating to one or two appropriate place. That may be in the kitchen or patio in home situation, not in front of television. The caregiver should spend some time getting the child ready to eat. The transition time from another activity should be quite and calming to prepare children for eating time.

A child should come to the table at mealtime ready to eat. If the child is disinterested or not hungry, the caregiver should not force the issue, but should have the child stay at the table a few minutes before excusing him. This removes the temptation for the child to entertain or act out. If the child complains about being hungry a few minutes later, the parents/caregiver can remind him that snack time is just a few hours away. The child made the choice not to participate and may be next time will make a different choice. This reinforces the fact that the child made the decision and the caregiver supported it. The parents/caregiver should not change the eating pattern for meals and snacks to accommodate him.

The parents/caregiver should keep food out of sight when eating is not the activity. Seeing food can make children think they need to eat when they are not really hungry. Age appropriate foods and utensils should be chosen. Finger foods and foods that are easy to eat should help toddlers to learn to manipulate successfully. Foods such as popcorn, grapes, carrots, and celery that may the child to choke should be avoided. The parents/caregiver must use utensils that the toddlers can grasp easily, and small plates and cups that look as though they are full when the serving of food is placed on them.

The parents/caregiver should try to be as reliable and regular as possible in feeding the children, and not wait until they are really hungry and have behavior difficulties because of it. They should not feed children if toddlers do not feel hungry at the moment. These actions allow the parents/caregiver to establish trust in relationship to food and children. Children will act more responsibly when they can trust to their parents/caregiver to provide food and atmosphere that make them successfully eaters. Table below list some key points about using food as nutrition and not as a battle ground is as follow (table 6) (Worthington & Williams, 2000)

Table 6 Food as Nutrition, Not Control

## Food as nutrition, Not Control

- 
- The modelling of your actions and attitudes towards food will affect how the children feel about food
  - Stay calm; do not react to negative behavior
  - Realize pressure does not work-forcing or withholding are ineffective
  - Do not use food as a punishment or as a reward
  - Outside influences, including cultural influences, can affect your good intentions about children and their food behavior
  - Respect cultural eating differences. Expose children to foods from many culture
  - Children learn from feeding, their first attempt at independence, what to expect from the world
  - If they are successful, the world is beautiful place. If they fall, they may withdraw or act out
- 

Parents and caregivers have the power to establish positive, supportive environments that allow children to develop good feeding behaviors and attitudes towards food. Role modelling and providing recipes as well as activities for the families to do together may encourage this behavior. Modeling healthy eating to children of all ages can help children develop healthy eating habits themselves. The type and kinds of food that are provided for children help to determine how the child will eat and grow. Parents and caregivers model food selection and acceptability to the children in their lives. If these selections are healthy choices, a child will have a

positive perspective about good foods. If the selections are poor choices, this sends a negative message about good nutrition.

In this study, the parental feeding behaviors for Indonesian parents with toddlers was constructed from literature on toddlers nutrition, Parental feeding behaviors, and Orem's Dependent-Care theory. Therefore, the parents feeding behaviors describe as dependent-care action is the practices of activities that parents initiate and perform on behalf of their children for some time on a continuing basis to meet their children needs in order to maintain their lives and contribute to their health and well-being. Orem (2001) stated that the behavior to perform care for self or others is consists of behaviors that associate with cognitive or psychomotor or both are intended to achieve the goal. The kind of behavior are known as estimative operations, transitional operations and productive operations (Orem, 2001) as follows:

1) Estimative self-care operations are 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 taking care of self. So, estimative operations that include investigating conditions and factors in self and environment that are significant for one's self-care, in addition *estimative self-care operations* include cognitive processes such as the thinking, assessing, and deliberating that take place as an agent appraises his or her choices about actions to take.

2) The 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.

Transitional operations that include cognitive processes such as making judgments and decisions about what one can, should, and will do to meet one's self-care requisites.

3) Productive operation for and performance of self-care measures, monitoring performance as well as their effect and results, and making judgments and decisions about subsequent actions. Productive self-care operations are engagement in action and include performing measures to meet one's self-care requisites (Gast et al., 1989).

Denis (1997) cited in Moore et al., (2005) stated that the estimative and transitional operations are cognitive activities; and productive operation are psychomotor activities. Estimative operation are those investigative and reflective action in which the individuals explores, examines, analyses, and contemplates the nature of the situation; while, transitional operations are those judging and decision-making actions in which the course of action is decided. And the latter operations, productive operations include all the psychomotor activities related to carrying out of the action(s), as well as those activities that help to ascertain whether actions result in the desired, expected outcome (Dennis, 1997). As a result of the estimative, transitional, and productive self-care operations, a dependent-care actions (or a system of self-care) is achieved (Figure 2)

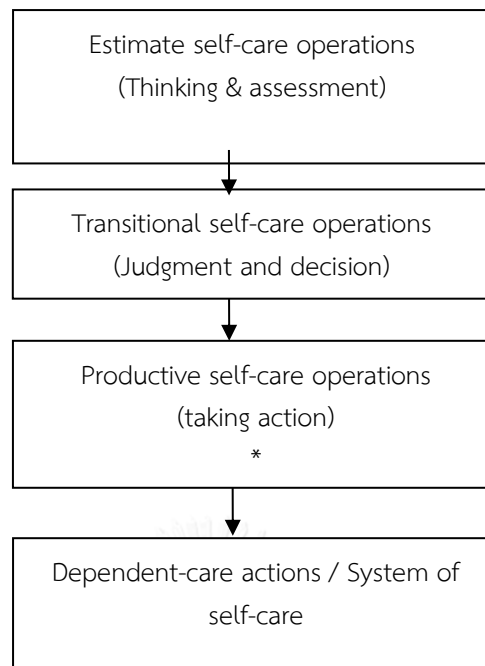


Figure 2 Self-care operations resulting in a system of self-care/Dependent- care action

Therefore, the parental feeding behaviors in this study as dependent care action is defined as kind of activities including estimative operations (acquiring and gathering information activities), transitional operations (making judgment and decision activities), and productive operations (taking action activities) regarding the activities of parents to provide balanced, healthy and safe food; to enhance toddlers eating behaviors; and to provide eating environment that is pleasant for their toddlers

## 2. Factors that Related to Parental Feeding Behaviors

From the literature review, there are some factors that related to feeding behavior of parents are both direct or indirect such as knowledge and belief about healthfulness of foods are related to parents perception of healthy & unhealthy food (Contento, 1993; Guldan, 2000). Knowledge of parents, especially mothers influence

the behavior of children eating, especially in fruit and vegetable consumption (Vereecken, et.al., 2004). Parental knowledge also affects the feeding practices are clean and safe. If the knowledge of good eating recognize the concept of personal hygiene would be better so that will affect the practice of feeding of the child (Sudershan, et.al., 2008). And also maternal education was significantly associated with better child-feeding (Amar-Klemesu, 2002). The pathway through which maternal education affect caregiving practices are the ability to process information (more knowledgeable that she is better able to use health care facilities, keep her environment cleaner; thereby benefit her children; the ability to acquire skills; and the ability to model behavior.

Parents perception about children growth and eating are also related to set limit on their children choices & access of food (Berlin, 2009); parents perceived responsibility (child's eating) (Spuitj-Metz, 2002); parent's own restrained eating (Wardle, 2002); parents perception of healthy and unhealthy food are related to food choices, selection and consumption (Contento, 1993; Guldan, 2000).

Psychosocial conditions of parents, especially the mother affects the child feeding practices. Conditions of anxiety, depression and stress experienced by parents can affect the feeding practices for their children. Parent satisfaction was significantly contribute in predicting parental feeding behavior. Satisfaction and parental anxiety contributed to the restriction of eating behavior from the parents (Mitchell, et.al., 2009).

Another factors affect the feeding behavior directly such as economic resources, social support affect the way to present food for their children, respond when their children refuse to eat and fall to growth (Berlin, 2009); another results



showed that the prevalence of unhealthy eating behaviors found in children from families with low incomes and neighborhoods densely populated, such as families living on low incomes have limited access to buy healthy foods affordable compared to family high income. Environment and family income significantly affect feeding practices in children (Evans et al., 2011); and familial experience, poor access of food (Lindsay, 2009).

Social and cultural conditions also affect the feeding practices in children (Musher-Eizenman, et.al.,2009). Feeding behavior of parents can be influenced by the characteristics of the children included the age, gender, weight status (Savage, Fisher, & Birch, 2008), and child attraction or characteristic (Corsini, 2010).

Based on the explanation above, feeding behavior of parents have a broad range of behavior and also consequences such as in child's growth (Saha, 2008; Farrow & Blisset, 2008; Nti & Lartey, 2008), child's development (Saha, 2008; Satter, 1999; Birch, & Fisher, 1998; S.L. Johnson & Birch, 1994; Rhee et al., 2006; Ha, 2002), and survival of children especially in developing country (Saha, 2008).

### 3. Nurses' role regarding promoting parental feeding behaviors

Nursing is a human service concerned with the need for continuous self-care action or dependent-care action in order to sustain life and health or to recover from disease or injury. Nursing has both health and illness dimensions. Nurses help to achieve self-care agency/dependent-care agency and maintain an optimal state of health (Wilkinson, 2007). In the context of family setting, the nurse is concerned with maintaining the functional integrity of the unit both parents and children. According to Orem's theory, a condition when children require assistance or help from parents

falls within the domain of nursing when parents has limitations in ability to provide care for their children.

In order to promote good feeding behavior for parents with toddlers, the nursing intervention is important as activities to enhance health promoting that can reduce the risk of being malnutrition (International Council of Nurse/ICN, 2009 cited in Lazauro & Kuota, 2010) which the role of nurses is as educators and role models for their families, communities and patients (Lowen, 2009).

In this context, the nursing intervention strategies support estimative operations by providing education for parents who desire to provide for their toddler's nutritional needs, that is, seek knowledge about care. Transitional operations are conceptualized to take place after the parent has gained the necessary knowledge about toddler nutrition and then makes the decision to implement or not implement the strategy. Productive operations are the outcome, that is, the parent putting the knowledge into practice. Then, nurses can ask the parent during home visits how the knowledge is being applied in order to maintain adequate intake for their toddlers.

In another context, the ICN highlight the strategic role that nurses and national nursing organizations can play in promoting a positive lifestyle, including weight maintenance and nutrition education (Sheehan and Yin, 2006). Nurses can promote healthy lifestyle pattern that reduce the risk of malnutrition children such as feeding behaviors of parents with toddlers.

Promoting parental feeding behavior is a part of nutrition care. According to Dudek (2014) nurses play a vital role in nutrition care, because they are intimately involved in all aspects of nutritional care. The nurses' role in nutrition care is to assess and educate, and also to develop a nutritional plan and tell the patients what to do. In

the context to promote good parental feeding behavior, the first steps to do this, nurses have to make an accurate assessment about parental feeding behavior, because through an accurate assessment nurses can provide nutritional information including good feeding behavior for parents with toddlers. In addition, during nutrition care, according Wong (2009) the Nurses is a source of information regarding nutrition and health, and also nurses works with a network of specialist (e.g. registered dietitians) to manage children's nutrition and their family. Nurses should make credible recommendations about children's healthy dietary intake, including establishing positive attitudes toward parental feeding practices.

Beyond the role of care provider for children and their family, evidence-based practice demands that nursing substantiate its knowledge and suppositions with research. Then nurses can become both expert in nutrition care and researchers (Henning, 2009).

In Indonesia, health care providers, particularly nurses, play an important in enhancing parents feeding behaviors are urge, because Indonesia has double burden in nutritional problem. in 2010, there were 17.9% malnutrition under five, consist of 13.0% underweight and 4.9% severe malnutrition, and 5.8% over weight. Comparing to 2007 and 2010, malnutrition in increased from 17.9% (in 2010) and 18.4% (in 2007) to 19.6% (in 2013) (The Ministry of Health, 2013). MDGs target on malnutrition prevalence in 2015 is 15.5%. By area, the prevalence of underweight and severe malnutrition on under five in rural was higher (each 5.9% and 14.8%) than in urban (each 3.9% and 11.3%). On the contrary, prevalence of overweight in urban was higher than in rural. The same table also shows the higher education level was the lower prevalence of severe malnutrition, and the higher household expenses per capita

was the lower prevalence of underweight. On the other side, prevalence of normal nutrition increased in line with the increasing household expenses per capita.

Other indicator of nutritional status is height for age (height/age). It indicates chronic nutrition problem as the result of long-term condition, such as poverty, unhealthy life behavior and inappropriate parenting/feeding pattern since newborn that causes short child. Both indicators of weight for height (weight/height) and Body Mass Index (BMI) indicate acute nutrition problem as the result of short-term cause, for example, certain diseases and less nutrition intake which lead into thin children.

In 2010, there was 35.6% under five with lower height, consist of 18.5% very short and 17.1% short. Comparing to 2007, percentage of short and very short under five in 2010 slightly decreased from 36.8% to 35.6%, but percentage of short and very short under five in 2013 slightly decreased from 36.8% to 37.2% (The Ministry of Health, 2013). The lowest prevalence of short under five occurred in DI Yogyakarta (22.5%), DKI Jakarta (26.6%) and Riau Islands (26.9%), while the highest prevalence occurred in East Nusa Tenggara (58.4%), West Papua (49.2%) and West Nusa Tenggara (48.3%).

RPJMN 2010–2014 (National Mid-term Development Planning) sets 4 targets of health development. One target that must be attained is decreasing prevalence of short under five into 32%. By area, prevalence of short and very short under five in rural (each 19.1% and 20.9%) was higher than in urban (each 15.3% and 16.1%).

Other anthropometric indicator to asses under five nutritional status is weight for height (weight/height). In 2010, there were 13.3% wasting under five, consisted of 7.3% wasting and 6.0% severe wasting. Comparing to 2007, percentage of wasting under five slightly decreased from 13.6% to 13.3% in 2010 and also slightly

decreased to 12.2% in 2013. WHO Standard prevalence of wasting under five in a population is  $\leq 5\%$ . It means wasting problem in Indonesia has not met WHO standard. By province, since 33 provinces in Indonesia have prevalence of wasting  $> 5\%$ , all provinces has not met WHO target.

Health promotion to improve feeding behavior of parents can be conducted in primary health care. The implementation of primary health care (PHC) in Indonesia mainly through health center and below (including sub-health center, mobile health center) and many types of community based health activities (CBHA) such as village maternity home (VMH) and village health post at village level; integrated service post (ISP or posyandu) at sub-village level (table below).

Health center (HC) is the primary level of health service institution, which is led by a doctor and assisted by either medical or non-medical workers. In every sub-district at least there is one HC, but some have two or even three HCs depend on the area or the population within the region. HC has responsibility to the health of the community in its area, HC is the first to respond to a disease outbreak, supported and supervised by the District Health Office. Each HC has 3-5 sub-HC and a mobile HC (ambulance or motor boat). Some HC has inpatient care department, mostly for birth delivery and diarrhea observation. Health infrastructure related to PHC in Indonesia is described in table 7

Table 7 Health infrastructure related to PHC in Indonesia

Level	Institution
Central	Ministry of Health
Province	Provincial Health Office
District/municipality	District Health Office
Sub-district	Health Center <ul style="list-style-type: none"> <li>• Without in patient care</li> <li>• Within patient care</li> </ul>
	Sub-Health Center
	Mobile Health Center <ul style="list-style-type: none"> <li>• Ambulance</li> <li>• Motor boat</li> </ul>
Village	Village Health Post
	Village Maternity home
Sub-village	Integrated service post (posyandu)

Based on the explanation above, one of the pillar in the implementation of PHC is community based health activities (CBHA), a form of community institution or movement which come from, manage by and also for the community themselves. Usually the community chooses health volunteers and the HC provides training for the health volunteers. CBHA for different community groups are different i.e., for under-five, for elderly people, for students in Islamic school (madrasah).

One of the community based health activities are posyandu (integrated service post/ISP) which is managed by health volunteers and spread out in all villages. Usually, one posyandu serves 100 under-five years old children. Integrated service post is the most popular form of community-based health activities in Indonesia. Posyandu is run by health volunteers, open once a month, give health package service including mother & child health (MCH), family planning (FP), nutrition, immunization and diarrhea disease control. Posyandu is the integration of weighing post, health post, family planning post, established in 1984. The number of posyandu increased gradually, from 25.000 posyandu at 1985 and now 269.202 posyandu.

The posyandus' performances varies, from unstable posyandu to self-reliant posyandu (regular activities and high coverage of all programmes). The posyandu is categorized into four level of development by using indicators as follows (The Ministry of Health, 2007):

- 1) Pratama or first level posyandu. In the unstable posyandu, the activities depend on the presence of health personnel.
- 2) Madya or second level posyandu. It has regular activities, but the program coverage is still less than < 50%.
- 3) Purnama or third level posyandu. The activities has run regularly, the programme coverage is high (> 50%), but not yet supported by community health fund.
- 4) Mandiri or self-reliant posyandu. It has a regular activity, high programme coverage and supported by community health fund.

All activities of posyandu are strongly supported by the Family Empowerment for Welfare (FEW), the most popular women organization in Indonesia, which is organized at all levels from central to village level 10. Using those indicators, all posyandu know their strata it is hoped that they want to increase the strata. MOH give special award to district which has a good performance of posyandu, ie., those achieving service coverage > 60% and performing at 3rd and 4th level.

In improving parental feeding behaviors, nurses can cooperate with health care professional in public health center and also cadre in integrated post, in community level. The role of nurses are involving assessing accurately the nutritional status of children, giving anticipatory guidance, determining parent's and children's knowledge related to the nutrition, identifying ways in which food is managed and used, and develop intervention for ensuring that children are adequately nourished.

### **The Existing of Instrument: Feeding Behaviors of Parents**

There has been little empirical development of the feeding behavior questionnaire for parents who have toddlers. Two most common measurement approaches for examining parental feeding behavior are behavioral observations of parent-child interactions during mealtime (Drucker, et.al., 1999; Iannotti, et.al., 1994; Klesges et al., 1983; Koivisto, et.al., 1994; McKenzie et al., 1991; Orrell-Valente, et.al., 2007) and parents' self report. Behavioral observations are necessarily difficult and time consuming to collect, thus limiting their wide-spread utility. Consequently, parents' self-reports are critical to our understanding of feeding behavior.

A review literature reveals that the previous measurement for feeding behavior of parents with toddlers was focused on parents activities during mealtimes or



feeding style. For example, The Child Feeding Questionnaire (CFQ) is used to assess parental feeding practices that focus on parental use of control in feeding, including pressure to eat and restriction of food and attitudes (Birch, et al., 2001). The Caregiver's Feeding Styles Questionnaire (CFSQ) (Hughes, et.al., 2006) and the Parental Feeding Style Questionnaire (PFSQ) (Wardle, et.al., 2002) focus on parental control over feeding as well as child-centered feeding practices, but do not assess a wide range of either type of feeding practice. The Comprehensive Feeding Practice Questionnaire (CFPQ) is used to measure the feeding practices of parents, providing the most complete assessment of both parental control and child-centered feeding practices (Musher-Eizenman, 2007). The Parental Feeding Practices (PFP) Questionnaire reflects both parent's use of control over child eating and child-centered feeding practices (Tschann, et.al., 2013). The Toddler Snack Food Feeding Questionnaire (TSFFQ) is used to measure parents feeding behaviors including attitudes (Corsini, et al., 2010), and The Nursing Child Assessment Feeding Scale (NCAFS) is used to assess the feeding interaction between caregiver and child (Hodges, et al., 2007).

Personal behavior is all activities that can be observed both direct or indirectly (Notoatmodjo, 2003). Based on stimulus response, personal behaviors is divided into *convert behavior* and *overt behavior*. All of overt behaviors (psychomotor/ real action) will be initiated by intellectual process (cognitive) for instance thinking, assessing, decision making, or planning the action. However, previous instruments did not address the intellectual process (cognitive aspect). Most of those instrument focused on evaluating parental psychomotor activities due to strategies during meal times. For instance, parents' activities in controlling children intake (Jansen et al.,

2012). Pursuing this further, cognitive aspect in parental feeding behavior, particularly gathering the information and obtaining knowledge, making decision, and planning the action have not been included as attributes in the construct of parental feeding behaviors.

Only one instrument, The Parents Nutrition Dependent-Care Questionnaire (PNDCQ) (Moore, et.al., 2005), was created to measure parents nutrition behavior for their adolescents including cognitive and psychomotor activities such as encouraging children to make decisions, finding resources of information about nutrition, and choosing healthy food. Because of this instruments was develop to measure nutrition behavior of parents with adolescent or older children in Nicaragua, probably it will not appropriate to measure another population, for instance Indonesian Parents with toddlers.

All in all, even thought previous instruments have good validity and reliability, cognitive aspects has not been considered in the construct definition of feeding behavior yet. Therefore, this new instrument will be developed in order to cover all important aspects of parental feeding behavior. The comparison of all the instrument will explain in table below (table 8).

Table 8. The characteristic of instrument

Name of instrument & author	Construct definition	Items & scales	Population	Reliability	Validity	Feasibility/ Applicability	Strength & weakness
Child feeding questionnaire (CFQ) (Birch et al., 2001)	The Child Feeding Questionnaire is used to assess aspects of child-feeding perceptions, attitudes, and practices and their relationships to children's developing food acceptance patterns, the controls of food intake, and obesity The CFQ is a self-report measure that comprises : - three factors measuring parental control practices and attitudes regarding child feeding: restriction, monitoring, and pressure to eat - four factors measuring parental beliefs related to child's obesity proneness: perceived responsibility for feeding, concern about child weight, perceived child weight and perceived parent weight	The CFQ contains 31 items All items were measured using a 5-point Likert type questionnaire, with each point on the questionnaire represented by a word anchor (Birch et al., 2001).	Parents of children ranging in age from about 2 to 11 years of age	The internal consistency (Cronbach's alpha) of items on each factor were within acceptable levels (ranged from .71 to .92)	- All items were meaningful indicators of the factors, as indicated by item loadings ranged from .37 to .95, with 21 of 24 direct factor-item correlations greater than .50. Goodness of fit indices for the child feeding questionnaire 7-factor model : RMSEA= .04; CFI= .95; NNFI= .94 (with modification indices)	Self-report measurement The questionnaire take approximately 20 minute to complete and can be understood by people with minimal reading ability	<b>Strength:</b> - This instrument is used widely in several country such as USA, Australia, Japan and others, and the result of the study Birch's original seven factor model had a good psychometric properties. <b>Weakness:</b> - The CFQ measure both feeding practices and attitude, but the aspect of feeding behavior is not comprehensive because only measure about parental feeding control - Target population is too wide from the preschool period through middle childhood.

Table 8 (continued)

Name of instrument & author	Construct definition	Items & scales	Population	Reliability	Validity	Feasibility/ Applicability	Strength & weakness
The Caregiver's Feeding Styles Questionnaire (CFSQ) (Hughes, et.al., 2005)	CFSQ was developed to measure feeding behaviors of parents that focus on parental control over feeding as well as child-centered feeding practices	The CFFQ contains 19 items All items were measured using a 5-point Likert type questionnaire, with each point on the questionnaire that response scores were derived for demandingness/control and responsiveness/warmth that parallel with the parenting style taxonomy	African-American and Hispanic low-income parents of pre-schoolers	Test-retest reliability (.82-.86) and internal consistency (.71-.86).	Item loadings ranged from .49 to .75 with a mean of .61.	Self-report measurement	Strength: This instrument assesses the dimensions of demandingness and responsiveness which can be combined to describe authoritative, authoritarian, indulgent, and uninvolved feeding styles Weakness: This instrument does not assess a wide range of either type of feeding behavior of parents such as parents' activities during preparing meals, how to serve food that is balanced, healthy and safe.

Table 8 (continued)

Name of instrument & author	Construct definition	Items & scales	Population	Reliability	Validity	Feasibility/ Applicability	Strength and weakness
The Parental Feeding Practice Questionnaire (PFP) Questionnaire (Tschann, et.al., 2013)	The Parental Feeding Practice Questionnaire was developed to measure parental feeding practices that assess a broad range of feeding practices encompassing both parental use to control child and child centered feeding practices.  This instrument consists of four dimensions: - Positive involvement in child eating - Pressure to eat - Use of food to control behavior - Restriction of amount of food	The PFPQ contains 63 items  All items were measured using a 5-point Likert type questionnaire, with each point on the questionnaire represented by a word anchor	Parents of Mexican American Children ages 8-10	Internal reliability Coefficients (Cronbach alpha) - First order factor: ranged from .55-.90, with an average value of .73 - Second order factor: ranged from .70-.91, with an average value of .81	- all items loaded on the expected factors .30 or higher with ranged from .31 to .81 - The first-order configural and full invariance models provided good approximate fit: RMSEAs <.025, CFIs > .96 - The first-order configural and full invariance models provided good approximate fit: RMSEAs <.03, CFIs > .95	Self report measurement	Strength: This instrument indicate good initial validity and reliability for the PFP.  Weakness: This instrument only measure the activities or strategies that parents use to manage how much, when and what children eat during mealtimes

Table 8 (continued)

Name of instrument & author	Construct definition	Items & scales	Population	Reliability	Validity	Feasibility/ Applicability	Strength and Weakness
The Parent Nutrition Dependent-Care Questionnaire (PNDCQ)	PNDCQ was developed to measure parents' nutrition dependent-care behavior for their children both cognitive and psychomotor activities base items on Orem's (2001, pp. 273-277) estimative, transitional, and production self care operations	It is a 37-item instrument that measures frequency of behavior in a 5-choice Likert-type scale format with the same choices ranging from never to always	Parents with adolescent in the united states and Nicaragua.	The coefficients are above the threshold for all versions, except the English version of the parents' posttest at .67. If one specific item in that version were dropped, the coefficient alpha would be .72.	Content validity was established using Orem's (2001) operation, U.S. Department of Agriculture guidelines (2005), and content expert evaluation	Self-report measurement	Strength: This instrument measured parental feeding behavior comprehensively which composed of the activities of parents regarding "acquiring knowledge", "making decision", "planning action" and taking action to encourage their adolescent to eat. Weakness: - No result about factor analysis - the majority of items measure operations in the "take action" category, rather than being evenly distributed among various operation. More items should be added to the instruments reflecting the operations "acquiring knowledge", "making decision" and "planning action".
Moore, et.al., (2005)		And, there are five choices about the food frequency such as 'not to all', 'one to two times a week', 'one a day', 'twice a day', and 'three or more times a day'.		The results indicated that there was a correspondence between the questionnaire items and the intended content domain. Researchers conducted item analysis on the items, examined the item-total correlations, found them to be acceptable.			

Table 8 (continued)

Name of instrument & author	Construct definition	Items & scales	Population	Reliability	Validity	Feasibility/ Applicability	Strength and Weakness
The Comprehensive feeding practice questionnaire (CFPQ)	The CFPQ is a tools for measuring the feeding practices of parents of young children. The CFPQ is developed using previous measures (child feeding questionnaire & preschool feeding questionnaire) as an initial framework	It is consist of 49 items. All item are scored on 5-points likert-type scale. Two response format are used depending the item addressed frequently or degree. The response format are: (Never, rarely, sometimes, mostly, always) or (disagree, slight disagree, neutral, slightly agree, agree)	Parents of children between the ages of 18 months and 8 years old	Coefficient alpha from the third study (of the subscales was moderate to high) : - Monitoring : .81 - Emotion regulation : .74 - Food as reward : .69 - Child control : .69 - Modeling : .80 - Restriction for weight : .70 - Restriction for health : .81 - Teaching nutrition : .68 - Encourage balance : .58 - Pressure to eat : .79 - Healthy environment : .75 - Involvement : .77 The index of reliability is average range: 1.69 -4.86	<i>Initial validation</i> The first study validated a 9-factor feeding practice scale for mothers and fathers : - all items loaded on the expected factors .30 or higher - a model in which factor loadings: RMSEA = .039, CFI = .98] is compared to a model in which the estimates were allowed to vary freely: RMSEA = .040, CFI = .98]. The third study validated an expanded 12-factor feeding practices: - the fit of the final model was good: RMSEA = .057, CFI = .98] - The Flesch-Kincaid reading level of the final scale was 6.4, suggesting a suitable level of reading for parents with a wide range of educational attainment	Self-report questionnaire	Strength: Through the three studies, the author attempt to capture a broad range of behaviors that parents might be engage in when feeding their children that might be related to healthier or unhealthier feeding in their children  Weakness: Less is currently know about the reliability of the measure. The index of reliability is lower (average range : 1.69 -4.86)
Musher-Eizenman, D., & Holub, S. (2007)	The factor of feeding behaviors are : -Child control -Emotion regulation -Encourage balance & variety -Environment -Parental use of food as a rewards -Involvement -Modeling -monitoring -Pressure to eat -Restriction for health control -Teaching about food and nutrition						

Table 8 (continued)

Name of instrument & author	Construct definition	Items & scales	Population	Reliability	Validity	Feasibility/ Applicability	Strength and Weakness
Toddler Snack Food Feeding Questionna (TSFFQ)	TSFFQ is designed to measure parental feeding practices. This instruments develop from framework analysis and inspection of parents –derived dialogue in the interview and three of Corsini, N., Wilson, C., Kettler, L., Danthiir, V (2010)	It is consist of 51 items All item are scored on 5-points likert-type scale Six different response -not at all true of me (1) to always true of me (5) -not at all true of my toddler (1) to always true of my toddler (5) -Never (1) to always (5) -Unaware of all (1) to aware of all (5) -None of these (1) to all of these (5) -Never (1) to at least one a day (5)	Parents of toddler (18-24 months) stating current practices and parents of preschools recalling past practices Exclusion criteria : - the child having congenital or metabolic abnormalities that would have affected their growth, serious food allergies, gestational less than 37 weeks, and birth weight less than 2500 gram	The internal consistency is .89; .85 -Rules : .89; .85 Child attraction : .85; .81; -Self efficacy : .75; .76 -Flexibility : .87; .85 -Allow access :.88; .84 The intraclass correlation are significant for all factors, indicating excellent agreement the scores obtained on the two testing occasion : - Rules : .83; Self efficacy : .80; Flexibility : .79; Allow access :.90; Child attraction : .67 (marginally acceptable)	<b>Factor structure</b> : EFA Oblique There are five factors with eigenvalues greater than 1 : rules, child attraction, self-efficacy, flexibility and allow access <b>The result of assessment of convergent and discriminant validity</b> : The TSFFQ factor scores significant associations with CFQ monitoring & CFQ restriction. Rules, child's attraction, self-efficacy, and allow access are consistently associated with either monitoring or restriction in parents of toddler (average range $r=-.21$ -.40; $p<.01$ ) <b>The result of assessment of concurrent validity is</b> : Allow access and flexibility are positively correlated with frequency of consumption in five or four categories of snack food (average range $r=.17$ -.52; $p<.05$ , $p<.01$ )	The TSFFQ is a self-report questionnaire	Strength: The TSFFQ control measures may potentially beneficial for identifying positive aspect of control - Overall the test-retest reliability coefficients are moderate to high suggesting that the TSFFQ scores are relatively stable at least over and short term Weakness: There are limit to the generalizability of the result study, because sample is well educated and toddler are cared for in day care facilities



Table 8 (continued)

Name of instrument & author	Construct definition	Items & scales	Population	Reliability	Validity	Feasibility/ Applicability	Strength and Weakness
Toddler Feeding Questionnaire (TFQ) Chaidez and Kaiser (2011)	TFQ is designed to measure parental feeding practices of Latino mothers. This instrument was set up similar to Hughes and colleagues' Caregiver's Feeding Style Questionnaire which were expected to reflect: <ul style="list-style-type: none"> <li>- Indulgent and authoritative feeding practices</li> <li>- Home environmental influences</li> <li>- and Parental goals.</li> </ul>	It consists of 34 items which were measured using a 5-point Likert type questionnaire, with each point on the questionnaire that response scores were "1" = never to "5" = always	Latino mothers who had a toddler child between the age of 12 and 24 months	<i>Test-retest reliability</i> <ul style="list-style-type: none"> <li>- All but three items (TFQ 21, 31, and 33) reached significance (<math>P &lt; 0.05</math>) and met the criterion for reliability</li> <li>- The three subscales with correlation values of 0.91, 0.70, and 0.82 for indulgent, authoritative and environmental influences subscales respectively.</li> </ul> <i>Internal reliability</i> <p>The Cronbach's alpha for the indulgent, authoritative and environmental influences subscales were 0.73, 0.68, and 0.63 respectively</p>	The results of the factor analysis suggested that three gave the best fit for the hypothesized constructs with factor loading were ranged .40-.67.	The TFQ is a self-report questionnaire	Strength: This instrument tried to measure several aspect of parental feeding based on the child and parents characteristic <ul style="list-style-type: none"> <li>- TFQ was developed specifically for caregivers of Latino toddlers, it may not be suitable for other ethnic groups and older children.</li> <li>- The sample size was relatively small (N=94)</li> </ul>

Name of instrument & author	Construct definition	Items & scales	Population	Reliability	Validity	Feasibility/ Applicability	Strength and Weakness
The Nursing Child Assessment Feeding Scale (NCAFS) (Hodges, E.A., Houck, G.M., & Kinderman, T., (2007)	NCAFS is used to assess the feeding interaction between caregiver and child NCAFS is consist of six subscales as follow : - <b>The four caregiver subscales</b> : 1. Sensitivity to cues 2. Response to the child's distress 3. Social-emotional growth fostering 4. Cognitive growth fostering - <b>The two child subscales</b> : 5. Clarity of cues 6. Responsiveness to the caregiver	NCAFS is consist of 76 binary items that are scored as presence or absence of behavior	Mother with children (12-36 months)	<b>Interrater agreement</b> are high as assessed by : - percentage agreement (average range : 90.86-94.57) - Cohen's kappa , mean overall NCAFS kappa : k (12 months) = .69; k (24 months) = .75; k (36 months) = .86 - correlation at 12, 24, and 36 months (r=.64, p<.01; r=.61, p<.01; r=.75, p<.001, respectively) - t test, there were no significant differences between rater's total scores at 12, 24, and 36 months (t(17)=1.20; .28;.62, respectively) - <b>Internal consistency</b> of NCAFS: - at the level caregiver scales (average range : .43-.57) - at the level child scales (average range : .37-.41) - at the level total scales (average range : .47-.60) <b>Stability</b> of the NCAFS : - Caregiver scores are significantly correlated at each age (r=.15, p=.05; r=.25, p<.01; r=.31, p<.01, respectively) - Child scores are significantly correlated only between 12 & 36 months (r=.24, p<.01) - Caregiver-child total scores are significantly correlated only between 12 & 36 months (r=.32, p<.01)	<b>Convergent validity</b> : Significant differences were found between the Toddlers Snack Scale (TSS) mutuality classification on the NCAFS subscales at 12, 24, and 36 months	The methods of NCAFS measurement is as follow : - self-report using questionnaire - observational using videotape through one way mirror in laboratory setting	<b>Strength</b> : - Interrater reliability are generally quite good  <b>Weakness</b> : - The NCAFS' internal consistency was low - The NCAFS does not appear to capture control-autonomy balance in feeding interactions as well as the TSS. Control-autonomy balance is thought to be important as dyads transition from the relative dependence of infancy to the independence of toddler in relation to feeding.

## **Scale Development**

Measurement is a fundamental activity of science. Measurement is defined as the process of assigning numbers to objects to represent the kind and/or amount of attributes or characteristics possessed by those objects (Waltz, et.al, 2010).

### **1. Measurement frameworks**

The two major frameworks for measurement are the norm-referenced and the criterion-referenced approaches (Waltz, et.al, 2010). A norm-referenced approach is employed when the interest is in evaluating the performance of a subject relative to the performance of other subjects in some well defined comparison or norm group. Criterion-referenced measures are employed when the interest is in determining a subject's performance relative to a predetermined set of target behaviors.

### **2. Scale/Instrument development procedures**

The term "scale" is commonly used to refer to a measurement instrument developed for the purpose of measuring a theoretical phenomenon that cannot be readily observed or assessed directly (DeVellis, 2003). The scale development process is of critical importance and specific steps should be carried out in order to construct a reliable and valid measure and to have any confidence in drawing conclusions about the construct(s) being measured. The specific steps in scale development vary in name and number, but the overall categorical functions remain constant (e.g. DeVellis, 2003; Benson & Clark, 1982; Mishel, 1989; and Crocker & Algina, 1986).

There are several kinds of scale/instrument development process. According to Crocker and Algina (1986) the scale construction process are scale design and scale development. Scale design is consist of 1) identify the primary purpose(s) for which the test scores will be use; 2) identify behaviors that represent the construct or define the domain; 3) prepare a set of test specifications, delineating the proportion of items that should focus on each type of behavior identified in step; 4) construct an initial pool items; and 5) have items reviewed (and revise as necessary). Scale development is consist of 1) hold preliminary items tryouts (and revise as necessary); 2) field-test the items on large sample representative of the examination of population for whom the test is intended; 3) determine statistical properties of item scores and, when appropriate, eliminate items that do not meet pre-established criteria; 4) design and conduct reliability and validity studies for the final form of the test; 5) develop guidelines for administration, scoring, and interpretation of the test scores (e.g. prepare norm tables, suggest recommended cutting scores of standard performance, etc.).

Whereas, instrument development proposed by DeVellis (2003) consist of 1) determine clearly want you want to measure, 2) generate an item pool, 3) determine the format for measurement, 4) have the initial pool reviewed by expert, 5) consider inclusion of validation items, 6) administer items to a development sample, 7) evaluate the items, and 8) optimize scale length. This study was instrument development study that used modification of the guideline of DeVellis (2003), Mishel (1998) and Benson and Clark (1982) as the process for developing the Parental Feeding Behavior Questionnaire (PFBQ). Drawing upon the conceptual framework of DeVellis, (2003), Benson & Clark, (1982), Mishel, (1989), and Crocker & Algina,

(1986) scale development can be broken down into three phases: planning, construction, and validation phases. In summary, the differences between steps is as follow: (Table 9)

Table 9 Scale Development process

Planning Phase	Construction Phase	Validation Phase
The critical steps of the planning phase include clearly identifying the construct to be measured, the determination of the target group for which the measurement was intended. and establishing operational definitions of the construct (DeVellis, 2003; Benson & Clark, 1982)	The critical steps of the construction phase are selecting a response format, generating an item pool, obtaining content validation, and pre-testing (DeVellis, 2003; Gable & Wolf, 1993; Benson & Clark, 1982)	The critical steps of the validation phases are testing of pshycometric properties in main study and selecting items for the final instrument (DeVellis, 2003; Gable & Wolf, 1993; Benson & Clark, 1982)

In order to establish reliability and validity, then selecting items for the final instruments, there are several kinds of analysis as follows:

**2.1 Evaluate the Items.** Item evaluation is accepted as an important step in scale development. The performance of individual item is evaluated, then the appropriate items can be identified to constitute the scale. For initial examination of

items' performance, certain qualities in an item are sought through a form of item analysis which is actually a procedure to estimate the reliability and determine the validity of a scale. The ultimate quality which researchers seek in an item is a high correlation with true score of the concept. The correlation between any two items should equal be square of the correlation between either of the items and a true score. This squared value reflects the reliability of each item reliabilities. So the higher the correlation among items, the higher the individual item reliabilities. And more the reliable the individual items are, the more reliable will be the scales that they comprise.

**2.2 Item scale correlation.** To gain a set of highly inter-correlated items, each individual item should correlate substantially with the collection of other items. There are two ways to examine this property for each item or to compute its item-scale correlation: the first is the corrected item-scale correlation which means to examine correlation between the item being evaluated with the all scale items, excluding itself; and the second is the uncorrected item-scale correlation which examine correlation between the item in question with the entire set of candidate items, including itself. In general it is probably advisably to examine using the corrected item-scale correlation, because uncorrected item-scale correlation, inclusion of item being evaluation can inflate the correlation coefficient. An item with high value for this correlation is more desirable than an item with low value.

Negative correlation among items can also emerge, because although item statements are created in order to equally reflect the concept, however they can be either positive or negative. So, reverse scoring of those items with negative correlations with others should be considered. The easy method for reverse scoring is

to do so electronically once the data have been entered into a computer. However, some negative correlations among items may not be correctable by reverse scoring which would mean that some items are not consistently related to other items. Therefore, any item that is positively correlated with some and negatively correlated with others in a homogeneous set should be eliminated.

**2.3 Item Means and Variances.** A desirable item should have a mean which is close to the center the range of possible scores. If a mean were near one of the extremes of the range, then the item might fail to detect certain value of the concept. Moreover, if the mean varies over a narrow range, the item will correlate poorly with other items. With its mean to near to an extreme of the response range, the item has low variance. Relatively high variance is another valuable attribute for a scale item. Therefore, inspecting means and variances is a useful double-check, after a tentative selection of items has been made on the basis of correlations. It means that the scale may not discriminate at all among individuals with different level of concept.

**2.4 Coefficient Alpha.** Alpha as the scale's reliability coefficient is one of the most important indicators of a scale quality. Alpha is an indication of the proportion of variance in the scale scores that attributable to the true score. It can be affected by other item qualities including a noncentral mean, poor variability, negative correlations among items, low item-scale correlation, and weak inter-item correlation. During development, items are selected, either directly or indirectly, on the basis of their contribution to alpha. So, alpha is an indicator of the success in selecting items to constitute the scale. However, alpha may not be stable if the sample and the number of items included in the scale are small, especially initial alpha

estimate. Alpha, then, is influenced by two characteristics: the extent of covariance among the items; and the items in the scale.

**2.5 Optimize Scale Length.** To arrive at optimal scale length involve several concerns, which need the attention of the researcher. Basically, shorter scale are good because they place less of a burden on respondents. On the other hand longer scales are good because they tend to more reliable. Therefore, the researchers should give some thought to the optimal exchange between brevity and reliability. If the researchers have reliability to spare, it may be appropriate to obtain a shorter scale with slightly less reliability.

Dropping bad items as another issue which the researcher should be consider, because it can be actually increase or slightly lower alpha. However, the effect of dropping certain items on alpha depends on how poor items are and on the number of the items in the scale. Dropping an item which has a slightly low correlation with the other items will raise alpha, so the item which contributes least to the overall internal consistency should be consider to dropping. However, another concern is that for scale with a small number of items, dropping an item can make a great change in alpha.

Scale length affects the precision of alpha; alpha as an estimation of reliability increases when more item are included. At this point it is important to build a margin of safety for alpha when trying to optimize scale length. Moreover, it should be considered that alpha may be decreased somewhat if the scale is administered to another sample different from the one used during scale development.



### 3. Psychometric property testing

The classical test theory developed by Mitchell (1986) will be conducted for testing this study. The heart of classical test theory is how random measurement error affects the internal consistency of linear combinations (Nunnally & Bernstein, 1994). The basic tenet of classical measurement theory evolved from the assumption that random error is an element that must be considered in all measurement. Instruments that are not perfectly accurate yield measurements containing some error. The underlying principle of this theory is that every observed score is composed of a true score and an error score. The true score is the true or precise amount of the attribute possessed by the object or event being measured. The error score reflects the influence that random error has on the observed score. It should be noted that in reality one does not know the true score and the error score values. Only the observed score is known. Classical measurement theory assumes that the observed score that is obtained when a measurement is taken is a combination of the true score and the error of measurement. True score is what we get if the instrument are good.

There are two broad types of psychometric properties that a test must have in order to be considered a good measure of a particular construct. The first type is called "reliability." This is the test's ability to measure the construct of interest consistently. The second broad property that a good test has is called "validity." Validity refers to how well the test accurately measures the construct of interest. Therefore, the psychometric property testing concerns with reliability and validity of a measure as follows:

**3.1. Reliability.** The reliability of a measure denotes the consistency of measures obtained in the use of a particular instrument and indicates the extent of

random error in the measurement method (Burn & Grove, 2009). Reliability, one of two primary criteria for assessing a quantitative instruments, is the degree of consistency or accuracy with which an instrument measure an attributes. The higher the reliability of an instrument, the lower the amount of error in obtained score. An instrument's reliability is the consistency with which it measures the target attribute. The less variation an instrument produces in repeated measurements, the higher its reliability. Thus, reliability can be equated with a measure's stability, consistency, or dependability. The reliability of an instrument can be assessed in various ways, and the appropriate method depends on the nature of the instrument and on the aspect of reliability of greatest concern. Three key aspects are internal consistency, stability, and equivalence.

3.1.1. Internal Consistency. Internal consistency reliability, as the name implies, is concerned with the homogeneity of the items within a scale (DeVellis, 2003). According to Waltz, et.al., (2010) Internal consistency reliability is most frequently employed for cognitive measures where the concern is with the consistency of performance of one group of individuals across the items on a single measure. The most widely used method for evaluating internal consistency is coefficient alpha (or Cronbach's alpha). Coefficients alpha can be interpreted like other reliability coefficients described here; the normal range values is between .00 and +1.00, and higher values reflect a higher internal consistency. Alpha represents the extent to which performance on any one item on an instrument is a good indicator of performance on any other item in the same instrument. In summary, coefficient alpha is usually used as an index of internal consistency to estimate the extent to

which different subparts of instrument (i.e., items) are reliably measuring the critical attribute.

3.1.2. Stability. Stability is concerned with the consistency of repeated measures of the same attribute with use the same scale or instrument over time (Burn & Grove, 2009). The stability aspect of reliability, which concerns the extent to which an instrument yields the same results on repeated administrations (Polit & Beck, 2008) or the extent to which similar results are obtained on two separate occasion, is evaluated by test-retest reliability procedures. Test-retest reliability is the correlation between scores from the same subject tested at two different times (Jacobson, 1997). The value of the reliability coefficient theoretically can range between -1.00 and + 1.00, like other correlation coefficients. In practice, reliability coefficients normally range between .00 and 1.00. The higher the coefficient, for the more stable the measure. A concern with test-retest reliability procedures is the ambiguous of the result. In other words, a change or the absence of a change in the concept can occur due to something other than the reliability or unreliability of the scale. With this concern, a low test-retest correlation may not indicate that reliability is low; it is possible that the concept itself has changed.

3.1.3. Equivalence, in the context of reliability assessment, primary concerns the degree to which two or more independent observers or coders agree about the scoring of instrument. In the other word, equivalence is focused on the comparison of two versions of the same paper and pencil instrument or two observers measuring the same event (Burn & Grove, 2001). If there is a high level of agreement, then the assumption is that measurement errors have been minimized. When the reliability assessment focus on equivalence between observers in rating or

coding behaviors, estimates of interrater (or interobserver) reliability are obtained. When a consensus measure capturing interrater agreement within a small number of categories is desired, the kappa statistic is often used; for consistency of ratings, the interclass correlation coefficient is often appropriate.

3.1.4. Construct reliability, a measure of reliability and internal consistency which the accepted value for construct reliability should be at least .70 (Hair, et.al., 2010). Reliability between .6 and .7 may be acceptable provided that other indicators of a model's construct validity are good. A high construct reliability indicates that internal consistency exists. This means the measures all are consistently representing something. Construct reliability is computed from the sum of factor loadings ( $\lambda_i$ ), squared for each construct and the sum of the error variance terms for a construct ( $\delta_i$ ).

The formula for construct reliability is:

$$CR = \frac{(\sum_{i=1}^n \lambda_i)^2}{(\sum_{i=1}^n \lambda_i)^2 + (\sum_{i=1}^n \delta_i)}$$

**3.2. Validity.** The second important criterion for evaluating a quantitative instrument is its validity. Validity is degree to which an instrument measures what it is to be measuring. There are three types of validity: 1) Content validity indicates that a scale represent the universe of content related to specific concept; 2) Criterion-related validity confirms that a scale establishes a relationship with a particular variable; 3) construct validity determines that a scale measures specifics variables such as psychological variables (Nunnaly, 1978 cited in Mishel, 1998).

**3.2.1. Face Validity.** Face validity refers to whether the instrument appears, on the face of it, to be measuring the appropriate construct. Face validity refers to “the extent to which an instrument ‘look like’ it measures what it is intended to measure (Nunnally, 1978:11). It is defined as validity conferred by the lay persons’ acceptance that a procedure, statement or instrument appears to be sound or relevant (Lyn, 1999) to measure the construct. Although face validity should not be considered strong evidence for an instrument’s validity, it is helpful for a measure to have face validity if other types of validity have also been demonstrated.

**3.2.2. Content Validity.** Content validity concerns the degree to which an instrument has an appropriate sample of items for the construct being measured and adequately covers the construct domain. Content validity is the degree to which the items, questions or elements of an instrument are representative of the universe of content or the domain of content (Nunnally & Berstein, 1994). Therefore, the purpose of content validation study is to assess whether the items adequately represent a performance domain or construct of specific interest (Croker & Algina, 1986). According to Polit & Beck (2008) Content validity is relevant for both affective measures and cognitive measures. Lynn (1986) described content validation as a rigorous assessment consisting of two-stage process, development and judgment-quantification. And early developmental stage composed of three steps: domain identification, item generation and instrument formation. During judgment-quantification steps, determining the number of experts and application of the index of content validity (CVI). One widely used procedure is to have at least three content experts rating the relevance of each item to the objectives on a 4-point scale (from 1=not relevance to 4=very relevance) (Davis, 1992). Therefore, the panel experts will

ask to rate each item of the Indonesian version of the PFBQ based on relevance, clarity and simplicity as 1 (*not relevant*), 2 (*somewhat relevant*), 3 (*relevant*), or 4 (*very relevant*).

**3.2.3. Criterion-Related Validity.** In order to have criterion-related validity, an item or scale is required to have only an empirical association with some criterion or “gold standard” (DeVellis, 2003). Establishing criterion-related validity involves determining the relationship between an instrument and an external criterion. The instrument is said to be valid if its scores correlate highly with scores on the criterion. One requirement of this approach is the availability of a reliable and valid criterion with which measures on the instrument can be compared. So, criterion-related validity is most appropriate when there is a concrete, reliable criterion. Criterion-related validity (which includes both predictive validity and concurrent validity) focuses on the correlation between the instrument and an outside criterion.

There are two design for the criterion-related validity; predictive validity and concurrent validity. Predictive validity refers to the adequacy of data from an early instrument that can be used to estimate criterion scores to be obtained in the future. Predictive validity is used to measure future performance; therefore, the criterion instrument must be administered some time after the predictor instrument (Talbot, 1995).

Concurrent validity refers to an instrument that distinguishes individual who differ in their present status on a goal standard test (Polit & Beck, 2008). Such validity requires that the criterion variable should be a higher-order conceptualization of the predictor variable, not simple another variable (Knapp,

1985). Concurrent validity is usually preferable for achievement tests and diagnostic clinical test.

3.2.4. Construct Validity. Construct validity, an instrument's adequacy the measuring the focal construct, is primary a hypothesis-testing endeavor. Construct validity (Cronbach & Meehl, 1955) is directly concerned with the theoretical relationship of the variable (e.g. score on some scale) to other variables (DeVellis, 2003). Testing construct validity can be categorized into two groups; internal association and external association (Mishel, 1998). Exploring the internal association is to examine patterns of interrelationships between indicators designed to measure the concept. Testing the external association is to examine interrelationships between the indicators and other variables (Mishel, 1998).

Determining construct validity through internal association. Examining the internal association between the indicators designed to measure the concept is a testing for construct validity through internal association. This process occurs during scale development, and is concerned with defining the concept and embedding it in theory. The adequacy of the identification of observable variables related to the concept for empirical investigations is an important aspect of ensuring the validity of the measure. In this case observed variables refers to variables or items generated as indicators of the concept's dimensions and attributes. Factor analysis is used to present the relationship between the dimensions or the internal structure of the set of items.

**3.2.4.1. Factor analysis**, the statistically factor analysis can provide support for instrument validity. Many theories used have identifiable subconstructs. The instrument used to measure the theory is to reflect these

subcontracts. When the theory is truly reflected, then the items related should be clustered when subjected to factor analysis. This analysis provide evidence for the extent to which different parts of the concept correlate with one another. Although factor analysis helps to confirm that the consistency of the dimensions of the concept as a theoretically proposed, this internal association is not sufficient as a method of determining the validity. An artifact may be caused by the structure of the measurement methods, for instance two variables may account for some covariation due to measurement similarity rather than construct similarity.

Testing for relationship among concepts is a method for determining construct validity through external association. Construct validity is assessed within a given theoretical context, so there is a the relationship between the scale under development and the scale of another external concept to which it is supposedly theoretically related. Determining construct validity via external association can be performed by three different methods: the discriminance approach, the causal inference approach from experimental or non experimental data, and the convergent/discriminant methods.

In the present study, the measurement models were specified based on the literature and the empirical results of the pretest study. After all measurement models had been validated, a structural model was specified grounded on the theoretical and empirical evidence documented in the literature.

In order to test the fit of the model to the data, Pedhazur & Schemelkin (19991) suggest using multiple criteria of fit. A number of goodness-of-fit indices (GFI) had been proposed to assess how adequate a model fits the empirical data. Goodness of fit tests determine if the model being tested should be



accepted or rejected. Jaccard & Wan (1996) recommend use of at least three fit tests, so as to reflect diverse criteria. Similar with Kline (1998) recommends at least four tests, such as chi-square; Goodness of Fit Index (GFI), normed fit index (NFI), or Comparative Fit Index (CFI); non-normed fit index (NNFI); and Standardized root mean square residual (SRMR). Another list of which-to-publish lists chi-square, Adjusted Goodness of Fit (AGFI), *Tucker-Lewis index* (TLI), and Root Mean Square Error of Approximation (RMSEA). The following goodness-of-fit indices were used to assess the model and the data: Chi-square ( $\chi^2$ ),  $\chi^2/df$  ratio, Standardized root mean square residual (SRMR), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), *Tucker-Lewis index* (TLI), and Adjusted Goodness of Fit (AGFI).

Chi-square ( $\chi^2$ ) is fundamental all measure of differences between the observed and estimated covariance matrices. Ideally a non-significant Chi-square is desired. However, it is very difficult to achieve a non-significant Chi-square value when sample size larger than  $> 250$  (Tabachnick & Fidell, 2007). Because of the large sample examined in the present study, the  $\chi^2/df$  ratio less than three which suggest a good fit model was applied (Hair, et.al., 2010 cited in kheawwan, 2013). The GFI is an absolute fit indices which is a direct measure of how the model fit the data and less sensitive to sample size. It was suggested that the value of  $GFI \geq .90$  indicate a good fit model (Hair, et.al., 2010). According to Wijanto (2008) suggested that the value of  $GFI \geq .90$  indicate a good fit model, and  $.80 \leq GFI \leq .90$  indicate marginal fit model.

RMSEA is one type of absolute fit index which represent how well the model fit to the population, not just a sample used for estimation. RMSEA less than or equal to .05. There is adequate fit if RMSEA is less than or equal to .08. More recently, Hu and Bentler (1999) have suggested  $RMSEA \leq .06$  as the cutoff for a good model fit. The CFI value varies from 0 to 1 which CFI close to 1 indicates a very good fit (Hair, et.al., 2010). By convention, CFI should be equal to or greater than .90 to accept the model, indicating that 90% of the covariation in the data can be reproduced by the given model. AGFI value  $> .80$  indicate a good fit model (Cole, 1987). In addition to the interpretation of the goodness-of-fit indices, modification were used to enhance the fit of the model to the data by dropping observed variables or changing the number of latent variables in measurement models, and deleting or adding paths in a structural model.

**3.2.4.2.** The discriminance approach/the contrasted-groups technique, which contrast scores of groups hypothesized to differ on the attribute; another is factor analysis, a statistical procedures for identifying unitary cluster of items measures. Contrasted or known group validity to identify groups of subjects is depended on the theory behind the construct; the researcher may identify groups of subjects. An instrument is administered into two groups of subjects that should be high and low. The score of each group could be statistically analyzed such as a t-test or analysis of variance (Talbot, 1995). If the instrument was a valid measure of the concept of interest, the differing significantly of the group scores indicates that the instrument appeared to have some validity with the samples as a measure of that concept (Jacobson, 1997; Talbott, 1995).

**3.2.4.3. Convergent/Discriminant method** (The multitrait-multimethod matrix technique), which is based on the concepts of convergence and discriminability. Convergence refers to evidence that different methods of measuring the same attribute yields similar results. Discriminability refers to the ability to differentiate the construct being measured from other, similar concepts. According to DeVellis (2003) the procedure involves measuring more than one construct by means of more than one method so that one obtains a “fully crossed” method-by-measure matrix.

Both reliability and validity measures are aiming at minimizing the portion of the error of score, and they are to maximize the portion of true score. Reliability and validity are not independent qualities of an instrument. A measuring device that is unreliable cannot possible be valid. An instrument cannot validly measure an attribute if it is inconsistent and inaccurate.

### **Conceptual Framework**

This study used a theoretical framework comprised of elements of the Orem’s Dependent-care deficit nursing theory, parental feeding behaviors and toddlers’ nutrition. Based on these elements, in this study, the feeding behaviors of parents for their toddlers is consists of activities of parents to maintain adequate intake of food for their toddlers involving to providing balanced, healthy and safety food; enhancing toddlers’ good eating and providing a pleasant eating environment.

Orem (2001) described behaviors as activities, composed of either psychomotor or cognitive activities or both, aimed at accomplishing an objective as operation. There are three phases of activities: (a) estimative operations are defined as

activities that involve gathering information, acquiring knowledge, and identifying alternatives (b) transitional operations are activities such as considering various options, making decisions, and planning what action needs to be taken, and (c) productive operations involve taking action, identifying resources, and evaluating the results of the action to meet the need for self-care or dependent-care.

Based on the explanation above, the feeding behaviors of parents regarding to maintain adequate intake for their toddlers are involved more than just attitudes and strategies that parents use to manage how much, when and what children eat such as restriction of less healthful food (how much a parent limits and regulates the child's access to less healthy foods), pressure to eat healthy food (how much a parent places importance on their child eating enough and may encourage them to eat more), monitoring of the child's food intake (how much a parent keeps track of the unhealthy food that their child eats), or the use of rewards for food consumption (whether parents offer or withhold treat food in response to good or bad behaviour). Other activities of parents such as acquiring and gathering information then making judgment and decision regarding to providing healthy food; enhancing toddlers' good eating behavior; and providing a pleasant eating environment can be among the important cognitive antecedent activities for the maintenance adequate food intake for their toddlers. The conceptual framework in this study demonstrated in Figure 3.

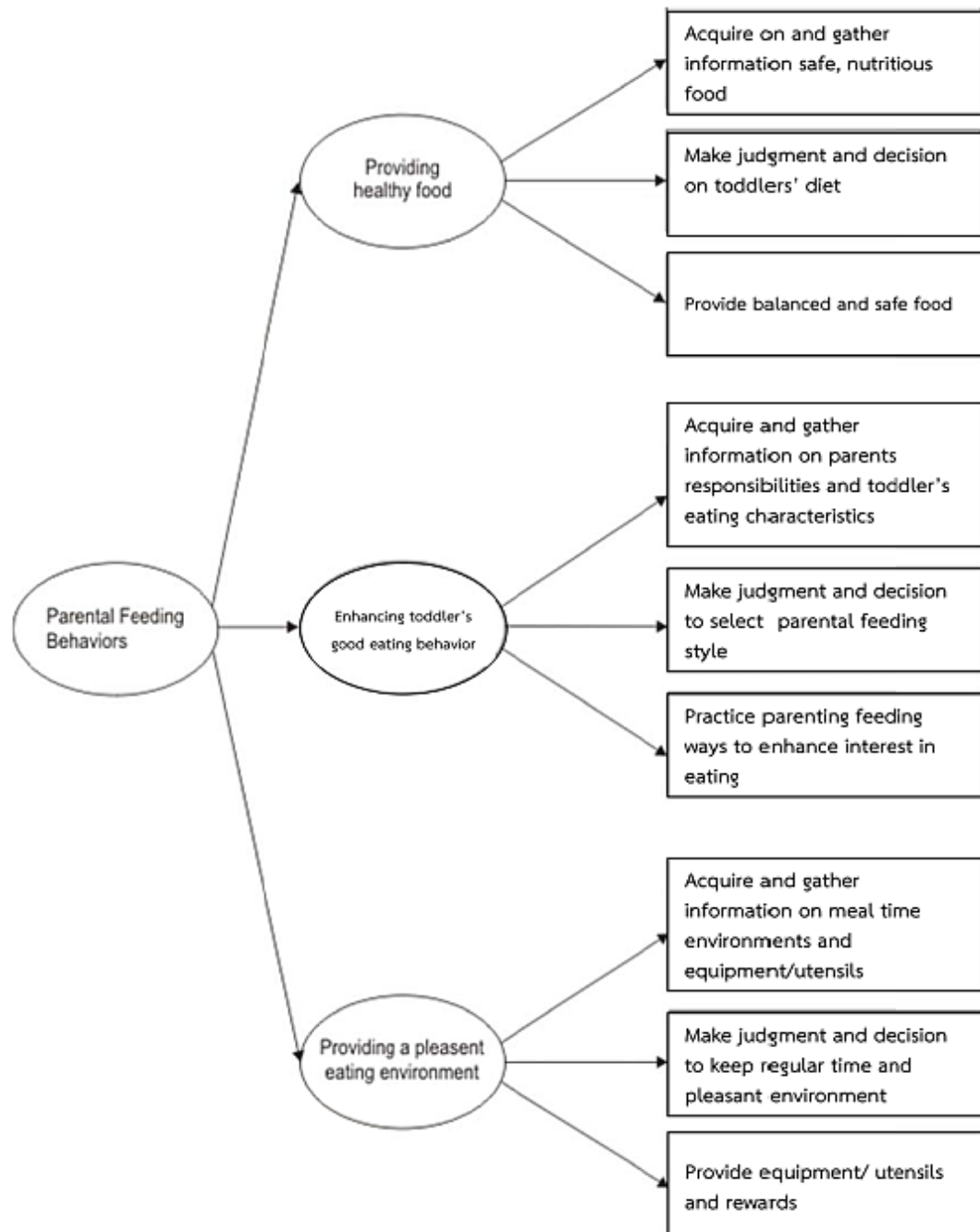


Figure 3 Conceptual Framework of the Study

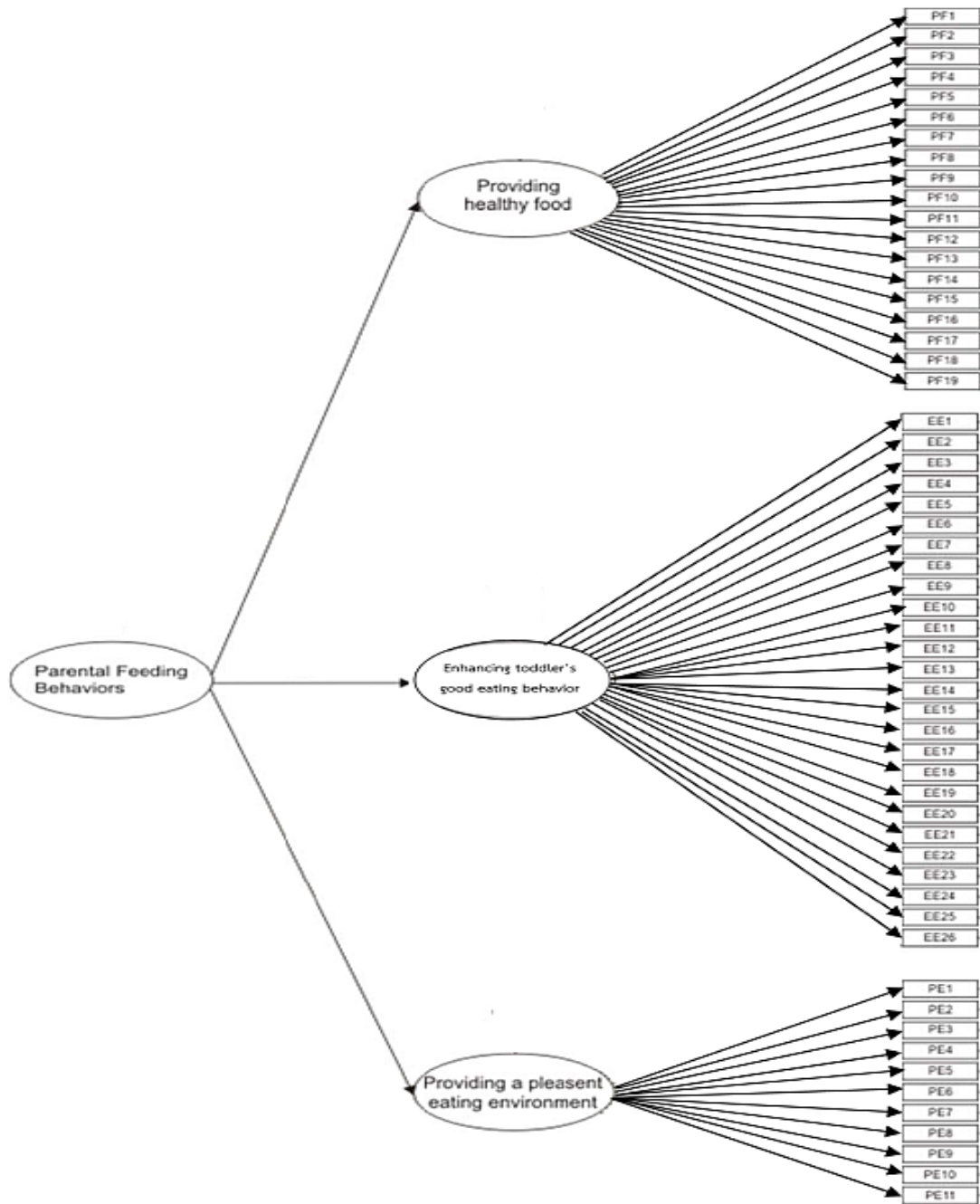


Figure 4 Analyzed Framework of The Study

**(Providing healthy food:** PF1-5 (acquire and gather information), PF6-11 (make judgment and decision on), PF12-19 (provide food); **Enhancing the toddlers' good eating behavior:** EE1-5 (acquire and gather information), EE6-13 (make judgment and decision), EE14-26 (practice parenting feeding ways); **Providing pleasant eating environment:** PE1-3 (acquire and gather information), PE4-7 (make judgment and decision), PE8-11 (provide equipment and rewards)

## **CHAPTER III**

### **METHODOLOGY**

This chapter describes the research design and methods that was used to conduct the present study. The research design, research setting, population, sampling technique and sample selection, instrumentation, protection of human subject, data collection, and data analysis was included.

#### **Research design**

This study was an instrument development study. The process of instrument development as suggested by DeVellis (2003), Mishel (1998) and Benson and Clark (1982) can be categorized into 3 phases, planning, construction, and validation. The planning phase consisted of construct, target population, and operational definition identification, was already described in chapter 1 and 2. Therefore, this chapter covered the last 2 phases, the construction and validation of the Parental Feeding Behaviors Questionnaire.

The summary of the procedures of developing the PFBQ is on the figure 4.

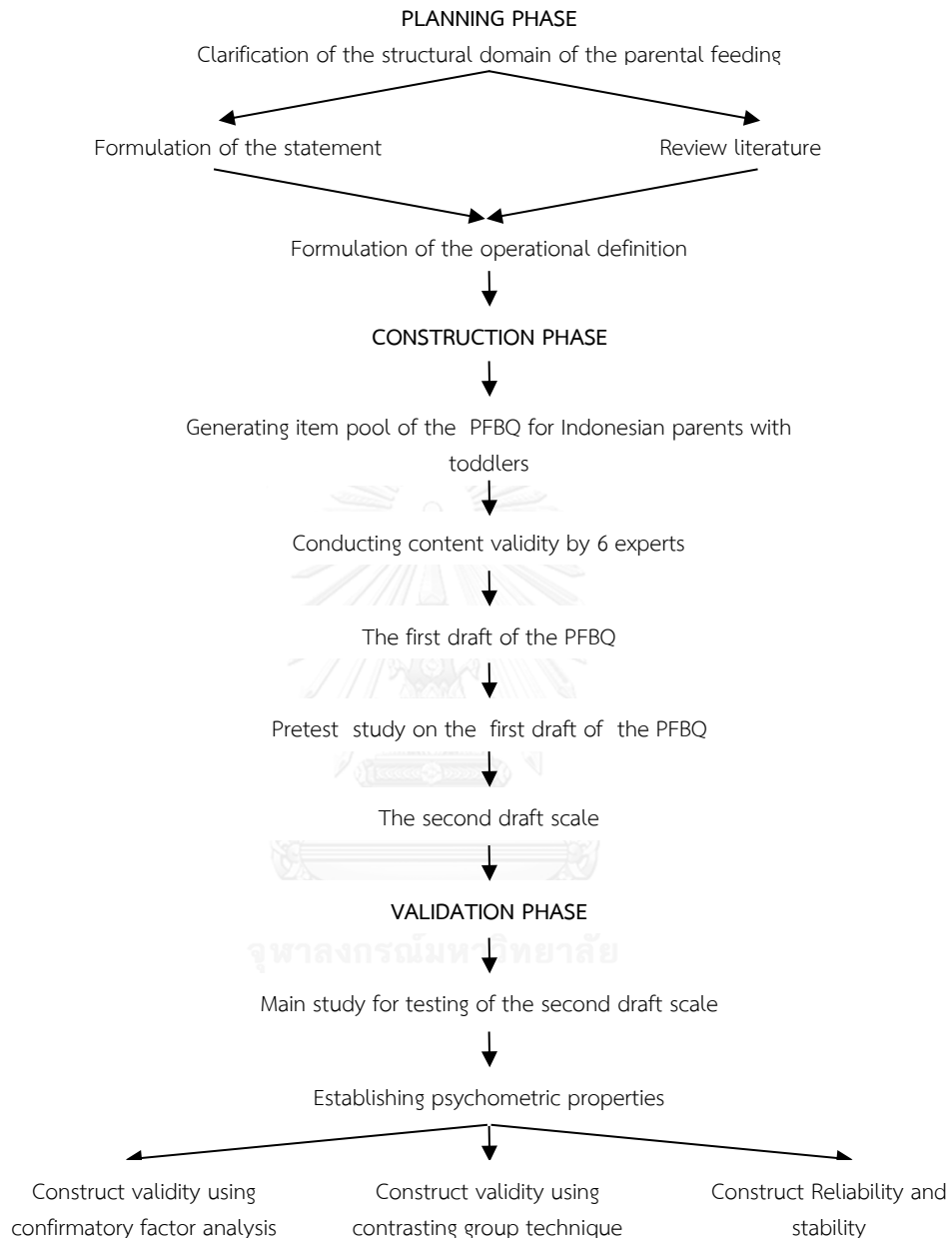


Figure 5 The flow chart of the PFBQ development



## **1. The Construction Phases of the Development PFBQ**

The critical steps of the construction phase are generating an item pool, obtaining content validation, and pre-testing study for the first draft of PFBQ.

**1.1 Generating Item Pool.** An item pool of the PFBQ scale was generated from reviewing literature after identifying operational definition of the concept of parental feeding behavior. Based on the Orem's theory, parental feeding behaviors and toddlers nutrition concept and the existing instruments of parental feeding behaviors. The operational definition of the feeding behavior of parents with toddlers focused on the activities of parents to maintain adequate food intake for their toddlers, includes 1) providing healthy food; 2) enhancing toddlers' good eating; and 3) providing a pleasant eating environment which include estimative operations (acquiring and gathering information activities), transitional operations (making judgment and decision activities), and productive operations (taking action activities).

The intended use of the PFBQ scale was to measure the parental feeding behaviors for practice and research purposes. This scale was design as a self-report instrument, which consist of three dimensions that is arrange in positive wording. This scale used the Likert-type scale which is this scale is commonly used in public health evaluation, especially in measuring opinion, belief, attitudes or behaviors items. Response choices in a Likert-scale most commonly address agreement, evaluation, or frequency (Burn and Grove, 2001). In this study, the feeding behaviors of parents was assessed with a 5 Likert-type scale format: 1(never), 2 (rarely), 3 (sometimes), 4 (most of the time), and 5 (always). The rating scores are summated by total scale. These scales are easy to work with and are easily understood by respondents. With this type of scale, an item is presented as declarative sentence,

followed by response option that indicate varying the degree of frequency from never to always. The higher of score is, the better frequency of the parental feeding behaviors or indicating better feeding behaviors of parents. In order to cover all aspect of the operational definitions of the three kinds of activities, all items were constructed from extensive reviewing literature after identifying operational of the concept of parental feeding behaviors. All items were expected to be representative items of the PFBQ for Indonesian parents with toddlers in general. The result of total item pool in this study was 70 items which reflected all aspect of the three activities of the feeding behaviors of Indonesian parents with toddlers namely providing healthy food (28 items); enhancing toddlers' good eating (25 items); and providing a pleasant eating environment (17 items) (Appendix A). All items were expected to be representative items of the PFBQ for Indonesian parents with toddlers in general. The example of the items are presented in table 10.

Table 10 The example of operation identified in PFBQ

Dimension	No	Examples of Item
Providing healthy food	1	learn about toddlers' food
	2	will serve food that suitable with toddlers' need
	3	give foods for my child
Enhancing toddlers good eating	1	ask how to enhance good eating behavior of toddlers
	2	motivate my child
Provide a pleasant environment	1	learn how to provide a pleasant eating
	2	will keep calm and relax although my child does not eat
	3	provide appropriate equipment/utensils for my child

**1.2.Content Validity by Experts Review.** After generating pool items, the initial item pool that consist of 70 items was submitted to review and critique by a panel experts to ensure that items represented critical attributes of the parental feeding behaviors of parents with toddlers and to establish the scale's content validity. The aim of content validity test is to eliminate totally irrelevant items from the instrument, and to re-phrase or supply new wording for items related to the measured construct where necessary. The outcome of the review finally validates the definition of the concepts. The total experts in this study are six experts which include four experts in nursing field and two dietitian who are expert in community and clinical nutrition (Appendix B,C). Each of the six experts individually evaluated the PFBQ (Appendix B). They asked to evaluate content validity of the PFBQ through the Content Validity Form by providing one to four point scale in each item that would reflect to relevance to the operational definition and content domain: 1= not relevance, 2=somewhat relevance, 3=quite relevance, 4=very relevance. Each of the six experts individually evaluated the PFBQ.

In the content validity test, it is important to distinguish between content validity at the item level and at the scale level (Polit & Beck, 2006). As noted by Lynn (1986), the researchers compute two types of CVIs. The first type involves the content validity of individual items and the second involves the content validity of the overall scale. A content validity index (CVI) was calculated, with criteria items CVI should be higher than .80 and the value of SCVI/ Ave should be .90 or higher (Lynn, 1986; Polit & Beck., 2004; Hair, et al., 2010).

Additionally, structural elements of the content review assessed ambiguous wording in question by asking experts to evaluate the clarity of the item style. They were asked to evaluate the clarity of item style of the PFBQ through the form by providing a one to four point scale in each item that would reflect the clarity of the item style using the four-point rating scale: 1=not clear, 2=somewhat clear, 3=quite clear, 4=very clear. At the end of the content review, all experts were asked about the total of instrument to identify items that need to be added to the content domain or deleted because they do not represent the content domain (Appendix D). When experts do not agree, or when the panel identifies a missing domain area, the instrument was revised and reassessed (Lynn, 1986).

The results of the study showed that the Content Validity Index of the Parental Feeding Behaviors Questionnaire (PFBQ) were described in table 11. For the result of the Content Validity Index of the Parental Feeding Behaviors Questionnaire (PFBQ) in each dimension was described in table 12.

Table 11 Content Validity Index of The Parental Feeding Behaviors Questionnaire (PFBQ) (n=6)

NO	QUESTIONNAIRE	I-CVI	S-CVI/Ave
1.	The Parental Feeding Behaviors Questionnaire (PFBQ)	.83-1.00	.97,67

Table 12 Content Validity Index of The Parental Feeding Behaviors Questionnaire (PFBQ) Based on Each Dimension (n=6)

NO	DIMENSION	I-CVI	S-CVI/Ave
1.	Providing healthy food	.83-1.00	.96
2.	Enhancing toddlers' good eating behavior	.83-1.00	.99
3.	Providing a pleasant eating environment	.83-1.00	.98

The total of experts in this study is six experts, therefore, for a scale to be judged as having excellent content validity, it would be composed of items with I-CVIs that meet Lynn's (1986) criteria is a minimum I-CVI of .78 for 6 to 10 experts and it would have an SCVI/ Ave of .90 or higher (Lynn, 1986). Based on the result above, the data showed that is both content validity in the item individual and the overall scale met Lynn's criteria, so it can be incorporated into the instrument. Additionally, the elements of the content review which was the result of the agreement for item clarity. In this study, the item clarity was considered if it achieved 80% agreement among experts. There result of the clarity agreement was 99.98% among the experts thought that the items in the instrument was clear. The summary of the agreement as followed (table 13,14). In this analysis, the researchers also used the suggestion from experts; there are several items (16 items) that need minor revision to make a clear for the target population.

Table 13 Percentage of The Clarity Agreement for Items of The Parental Feeding Behaviors Questionnaire (PFBQ) (n=6)

NO	QUESTIONNAIRE	PERCENTAGE	MEAN
		CLARITY AGREEMENT	PERCENTAGE CLARITY AGREEMENT
1.	The Parental Feeding Behaviors Questionnaire (PFBQ)	83% - 100%	98.67%

Table 14 Percentage of The Clarity Agreement for Items of The Parental Feeding Behaviors Questionnaire (PFBQ) based on each Dimension (n=6)

NO	DIMENSION	PERCENTAGE	MEAN PERCENTAGE
		CLARITY AGREEMENT	CLARITY AGREEMENT
1.	Providing healthy food	83% - 100%	99%
2.	Enhancing toddlers' good eating behavior	83% - 100%	98%
3.	Providing a pleasant eating environment	83% - 100%	99%

According to the evaluation of the total items in the instrument, the result showed that 100% expert agree that all dimensions of the content domain are included in the instrument. The six experts proposed various comments and suggestion. There are several suggestion from expert that need to add more that related to emotional of parents during feeding based on Indonesian culture and the methods of parents to enhanced good eating behaviors for their child. For example, first expert was registered dietitian who has been study about parental feeding behaviors especially about parental style in the context of Indonesian culture proposed that all item covering the feeding behaviors of parent, but it should add item

that related to the parenting style of Indonesian parents during they fed their toddlers because its related to how parents to provide food for their toddlers. For instance, parents get angry when their child do not finish the whole of meal or they do not care whether their child finish the whole of their foods or not. For the other experts, they commented that to reconsider who is the target population, correct semantically on some items including ambiguous term, avoid misunderstandings with the two term in the question, and also add several item that related to safe food for example about the activities that related identify the expired date before buy foods, food modify, and obtain information from electronic media. Based on the result, it concluded that there are no items deleted because all the items represent the domain of the parental feeding behaviors and ten item added which comprising three items in the first dimension (provide food) '*will identify the expired date of foods*', '*give balanced food*' and '*don't care about toddlers consumed*'; five items in the second dimension (enhance good eating) '*keep update how to enhance eating behaviors*', '*will teach toddlers*', '*modify the food shape*', '*give the foods although refused*', and '*motivate toddlers to finish the whole meal*'; and two items in the third dimension (provide pleasant eating environment) which is '*provide appropriate equipment/utensils*' and '*get angry during mealtimes*'. In summary, of the original 70 items, 16 items revised and 10 items added. After validating the content, 80 items were put in the first draft of the PFBQ. Therefore, after validating the content, 80 items were put in the first draft of the PFBQ which used in the pre-test with a convenience sample of 30 Indonesian parents with toddlers which they were representative of the population of interest.

**1.3. Pretest study.** Pre-testing of the first draft of the PFBQ (80 items) was conducted to determine the initial internal consistency reliability of the

subscales and the total instrument before the finalization of the questionnaire for main study. This study was started after receiving the permit letter from the Ethics Committee at the Faculty of Medicine, Universitas Gadjah Mada in September 2013.

1.3.1. Sample. Mothers or fathers of toddlers, having a child aged between 12 to 36 months and having stayed with him/he for at least the past six months, being able to read and write Indonesian Language, having a clear home address were recruited as participants. Any parents whose toddlers had the following problems: congenital or metabolic abnormalities affecting growth, serious food allergies, and eating disorder were excluded.

1.3.2. Sample Size Estimation. A convenience sampling was employed in this study consisted of 30 parents having toddlers from both urban and rural areas in Yogyakarta with the same characteristic. According to Crocker and Algina (1986), it might be necessary to use as few as 15 to 30 subjects for the pretest item analysis. According to Johanson and Brooks (2010), around 30 representative participants from the population of interest is a reasonable minimum recommendation for a pretest study where the purpose is preliminary survey or scale development. On the pre-test study ( $n=30$ ), all subjects were mothers of toddlers, and they had an average age of 28.33 years ( $SD=\pm 6.11$ ). Most of the respondents were middle-educated (76.67%) and household mother (90%). More than half of the respondents (60%) never got health education about toddlers' nutrition. A half of respondents lived with other family member in the household (56.67%). Also nearly a half of respondents had at least one child (56.67%). The average age of the toddlers were 25.90 month ( $SD=\pm 6.62$ ) and more than half (56.67%) were female (table 15).



Table 15 Demographic characteristic of the participants in the pre-test study

Demographic characteristic	Mean±SD	Number (n=30)	Percentage (%)
<b>CHILDREN:</b>			
Age (month)	25.90±6.62		
Age:			
< 12 months		6	20
12 – <24 months		21	70
24 – 36 months		3	10
Gender:			
Male		13	43.33
Female		17	56.67
<b>PARENTS:</b>			
Age	28.33±6.11		
Parents' Age (year):			
< 18		6	1.10
18 – 40		509	92.88
>40		33	6.02
Total number of children			
1		17	56.67
2		10	33.33
3		3	10
Family member live in the household			
Yes		15	50
No		15	50
Socio economic status			
Low		18	60
Middle		9	30
High		3	10
Education			
Low		2	6.67
Middle		23	76.67
High		5	16.66
Occupation			
Unemployed		27	90
Employed		3	10
Health education about toddlers' nutrition			
Yes		12	40
No		18	60

1.3.3. Purposes of pre-test study. Pre-testing of the scale was conducted before a main study for structured investigation, because this step helps to address early problems in administering the scale to a development sample and any other possible problems in scale development. The purposes of the pretest study were (1) to determine initial reliability, and (2) to modify the first draft of the PFBQ. Therefore, to meet purposes of the pretest study, the first draft of the PFBQ which composed of 80 items examined by using item analysis to evaluate the performance of the individual items, then the appropriate items can be identified to constitute the scale. This study seek an item that have high correlation with true score of the concept, because the higher correlation among items, the higher the individual item reliabilities. And more the reliable the individual items are, the more reliable will be the scales that they comprise. Therefore, Cronbach's alpha for the total score, the inter-item correlation, the corrected item-total correlation and alpha if an item deleted was deleted were calculated in this study.

Beside item analysis, comment and suggestions from 30 Indonesian parents of toddlers about the clarity of each item wording was also collected to identify the item that difficult to understand or answer. In this pre-test study, both statistical and qualitative data were used as criteria for selecting, revising and improving items appropriately to construct the second draft scale.

1.3.4. Data Collection. Data was collected by researcher or research assistants. It was conducted in the integrated service post (locally name: Posyandu) or home visits. Parents with toddlers would be asked to answer the questions that related to feeding behaviors of parents to maintain adequate food intake

for their toddlers. During answering the questionnaire, the respondent could refuse to answer the questionnaire whenever they want. Filling out the questionnaire took approximately 15-30 minutes. After finishing each data collection, the researcher and research assistants examined the questionnaires for data completeness.

1.3.5. Data Analysis. The procedure to select “best” items based on the result of inter-item correlation: Inter-item correlations and item-total correlation (should be in moderate range), therefore the correlations should be  $>0.3$  but not too large ( $<0.8-0.9$ ). If the item with corrected item-total correlation less than 0.30 will be deleted, and the paired items with inter-total correlation greater than 0.70 are considered keeping the best one of each paired item. And also Chronbach’s alpha coefficient of the first draft scale should be at least 0.70 for new develop instrument (Nunnaly and Bernstein, 1978). Then, the result of various analysis was used as the criteria for eliminating poorly performing items.

1.3.6. Result. The results of item analysis were presented as follow:

1.3.6.1. Inter-item correlation. Based on the result of SPSS output, it was shown that most of the items had acceptable inter-item correlation value ( $> 0.3$ ) (Appendix E). The item 9 ‘*will make “home-prepared foods“ as often as possible to prevent foodborne illness*’ and item 11 ‘*will identify the sources of harmful substances in food that consumed by my child*’ have score  $>.80$ , but the researcher did not deleted both two items because there are not have similar meaning. In item ‘9’ focus on the prevent foodborne illness related to behaviors of parents to make decision to provide healthy and safe food for their toddlers. It is important behaviors, recently although parents aware of food hygiene and safe but many parents

purchased ready-to-eat food for children's meals, because there are many food vendors in their neighbourhood and more practical to buy a meal from the food vendors. Meanwhile, although item '11' also focus on foodborne illness but this item to evaluate how parents will make decision to concern about the sources of harmful substances in food for example food additives, preservatives and the quality of food, because In Indonesia, parents prefer to buy that was cheap without aware that food would affect the future health of their children. The largest correlation coefficient found between item '*will prepare equipment/utensils (66)*' and item '*provide appropriate equipment/utensils (72)*' (inter-item correlation= 0.833). Both two items focus on eating environment during feeding that should be pleasant and supportive of healthful eating habits. Both two items described that appropriate equipment and utensils foster independence by allowing children to serve themselves in different operation which is transitional and productive operation, respectively. Probably, it made parents got confused because both items had too similar meaning. Since both two items too similar, item 72 was deleted. And to evaluate parents behaviors that represent parents activities to provide pleasant eating environment, there is still have one item number 53 to cover all aspect in operational definition.

1.3.6.2. Item-total correlation. Based on the result of SPSS output (First output analysis), Item-total correlations for the parents feeding behaviors scales ranged from .30 to .62. In the feeding behaviors scale, 71% of the items correlated with the total scores at a level of above .30. There were 23 item-to-total correlations which were below 0.30 and five of them were negatively correlation. Therefore, all items (23 items) were deleted because of low correlations (<.30). And in the second analysis, only item '16' had low correlation. Then, it was deleted.

Therefore, this left us with 56 items to be tested in the main study (table 16). From the result of the observation during parents answer the question, the subjects had no difficulty in understanding the items with positive questions (they didn't feel difficult to answers the question and have a good motivate to answer the question), in contrast, several parents feel confuse to answer negative questions which need more time to read the question. The ranged of time consuming to answer the question round 15-40 minutes. For assessing internal consistency, Cronbach's alpha coefficient was used. Cronbach's alpha coefficient for the 56 items PFBQ was .94; .90 for the providing balanced, healthy, and safe food dimensions; .86 for the helping good eating behavior dimensions; and .86 for the providing pleasant eating environment dimensions. The Cronbach's alpha coefficient ranged from .86 to .94, indicating an achieved minimum reliability of .70 for the new instrument. Based on this result, the revised 56 items instruments were used in the main study.

Table 16 Description of The Corrected Item-Total Correlation and Cronbach Alpha if Item Deleted (N=56 Items)

No	Item total statistic	Scale Mean if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
PF1	213.0748	657.631	.438	.944
PF2	213.3832	652.793	.433	.944
PF3	213.0785	655.319	.473	.943
PF4	212.8759	655.805	.512	.943
PF5	212.9453	653.379	.555	.943
PF6	212.4872	652.016	.538	.943
PF7	212.1807	663.560	.337	.944
PF8	212.4927	657.552	.359	.944
PF9	212.4124	653.150	.520	.943
PF10	212.5237	653.680	.512	.943
PF11	211.8613	667.948	.329	.944
PF12	211.8704	665.718	.373	.944
PF13	211.8595	666.691	.361	.944
PF14	212.2938	652.778	.567	.943
PF15	211.8686	672.579	.305	.945
PF16	212.8504	657.685	.415	.944
PF17	212.8887	654.757	.501	.943

Table 16 (Continued)

No	Item total statistic	Scale Mean if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
PF18	212.1150	665.992	.335	.944
PF19	212.2774	656.417	.497	.943
EE1	213.1697	646.763	.595	.943
EE2	213.1807	646.689	.611	.943
EE3	213.1734	644.805	.625	.942
EE4	212.8869	650.872	.559	.943
EE5	212.7372	652.987	.526	.943
EE6	213.2646	647.785	.578	.943
EE7	212.3084	652.773	.557	.943
EE8	212.2281	654.919	.520	.943
EE9	212.3084	656.678	.432	.944
EE10	212.5036	654.810	.418	.944
EE11	212.4799	651.135	.567	.943
EE12	212.2153	661.149	.380	.944
EE13	213.6843	643.258	.568	.943
EE14	212.8248	647.721	.609	.943
EE15	212.3960	652.879	.569	.943
EE16	212.4653	655.098	.474	.943
EE17	212.1369	661.219	.415	.944

Table 16 (Continued)

No	Item total statistic	Scale Mean if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
EE18	212.9343	653.063	.476	.943
EE19	213.4142	649.994	.460	.944
EE20	212.7536	654.405	.421	.944
EE21	212.5420	658.980	.388	.944
EE22	212.9106	652.795	.464	.943
EE23	212.4799	665.574	.307	.945
EE24	212.5493	656.376	.448	.944
EE25	212.2099	660.861	.394	.944
EE26	214.0146	656.190	.336	.944
PE1	213.4325	647.325	.565	.943
PE2	213.2628	648.381	.576	.943
PE3	213.3266	644.038	.590	.943
PE4	212.4215	652.423	.565	.943
PE5	212.3960	653.103	.469	.943
PE6	212.8796	652.962	.402	.944
PE7	212.4234	652.435	.559	.943
PE8	213.0766	644.257	.518	.943
PE9	213.5985	642.475	.504	.943
PE10	212.0511	661.102	.399	.944
PE11	212.1296	658.994	.431	.944



After completing the construction phases, the second draft scale were composed of 56 items still covered the construct of parental feeding behavior and reflected all aspect of behavior of parental feeding provided in operational definitions. All things are considered, all items are consistently representing the construct of parental feeding behaviors. The next phase which was validation phases was needed to test construct validity and reliability with a large sample in order to have a valid and reliable instrument.

## **2. The Validation Phases of the PFBQ**

At this step, the researchers perform a structured investigation or main study with the scale which has already been through the pre-testing. This phase consist of several steps such as establishing validity with factor analysis, to test construct validity of the PFBQ on a large group of sample; the contrasted-group approach which was used to test the second type of construct validity by comparing parents with well-nourished toddlers and malnourished toddlers; and an investigation of reliability of the instrument through construct reliability and test-retest reliability. Finally, the expected outcome of this phase is to establish valid and reliable instrument for measuring parental feeding behaviors to maintain adequate intake of food for their toddlers.

**2.1 Research Setting and Design.** The instrument development study was conducted in urban and rural area in Yogyakarta Special Province, Indonesia. Yogyakarta Special Province was selected because it is an area of various families who migrated from the other provinces of Indonesia for studying or earning jobs. Gunung Kidul and Kulonprogo Districts, Bantul Districts, and Yogyakarta and Sleman Districts represent the area of low, middle, and high socioeconomic status of

parents with toddlers respectively. Therefore, the families in this area are potential in representing the target population of Indonesian parents with toddlers.

**2.2 Population and Sample.** Target population in this study was parents with toddlers in Indonesia who live in Yogyakarta Special Province. There were five districts in Yogyakarta Special Province selected as the setting for this study including: 1) Yogyakarta City, 2) Bantul District, 3) Kulonprogo District, 4) Sleman District, and 5) Gunung Kidul District.

**2.2.1 The Inclusion Criteria.** The samples were selected based on the inclusion criteria as follows: 1) being a mother or father, 2) having a child aged between 12 to 36 months and having stayed with him/he for at least the past six months, 3) being able to read and write Indonesian Language, 4) having a clear home address.

**2.2.2 The Exclusion Criteria.** The exclusion criteria included parents having toddlers with the following problems: congenital or metabolic abnormalities affecting growth, serious food allergies, and eating disorder.

**2.3 Sample Size for Main Study.** The main study was to test construct validity of the PFBQ which consist of factor analysis using confirmatory factor analysis and the constricted-groups approach; and also to test its reliability which consisted of internal consistency reliability and test-retest reliability. Different psychometric tests requires different samples, therefore sample size calculation for each test was described separately.

**2.3.1 Samples for Testing Construct Validity with Confirmatory Factor Analysis and Construct Realibility.**

Sample size for confirmatory factor analysis was calculated based on the rule of at least 500 subjects or more (Waltz, Strickland, & Lenz, 2010; Nunnally & Bernstein, 1994; DeVellis, 2003), because the adjusted goodness of fit behave relatively consistently across maximum likelihood and general Least Squares at sample sizes of 500 or more (Hu & Bentler, 1995 as cited in Chaiyawat, 2000). In this study, the total sample for testing confirmatory factor analysis were 548 subjects with completed questionnaire that can be used for analysis (table 18).

**Sampling Procedures.** The samples of this study were parents with toddlers living in the urban and rural area in the Yogyakarta Special Province that would be obtained through a multistage cluster sampling procedure, which can be used when the population was heterogeneous. Yogyakarta Special Province is composed of five districts that are represent urban and rural areas including Kulonprogo, Bantul, Gunung Kidul, Sleman, and Yogyakarta. Each district is composed of several sub-district as follows: (1) 11 sub-district in Gunungkidul (2) 17 sub-district Bantul District; (3) 18 sub-district in Kulonprogo; (4) 17 sub-district in Sleman; and (5) 13 sub-district in Yogyakarta.

Before the researcher selected the sub district in the first stage, the researcher identified the number of village in every sub district. The number of village in every sub districts were 3 to 7 (in Yogyakarta city, Sleman districts, Kulonprogo and Bantul districts), and 6 to 13 in Gunungkidul districts. Then, the researcher decided to select 4 to 5 subdistricts for Yogyakarta city, Sleman, Kulonprogo and Bantul districts; and 3 to 4 subdistricts for Gunungkidul.

The multistage cluster sampling procedure in this study was conducted as follows: in the first stage, the researcher selected 20 sub-districts from five districts in Yogyakarta which are representative of urban and rural areas. In this stage, sub districts were randomly selected using lottery methods. Each number were placed in a bottle and mixed thoroughly. The blind-folded researcher then pick numbered tags from the bowl. All the sub districts bearing the numbers picked by the researcher are the place for the study. In the second stage, villages were also selected from the subdistrict using lottery methods. Then, the researcher selected 18 integrated service post (*Posyandu*) with the number of toddlers more than 15 toddlers and at green level (*Posyandu Purnama*) which conducted the activities more than 8 times per year and one of each main program is related to children nutrition. The participants were recruited from integrated service post (locally name ‘Posyandu’) that met inclusion and exclusion criteria using convenience sampling technique. Finally, the total samples in main study were 548 parents with toddlers.

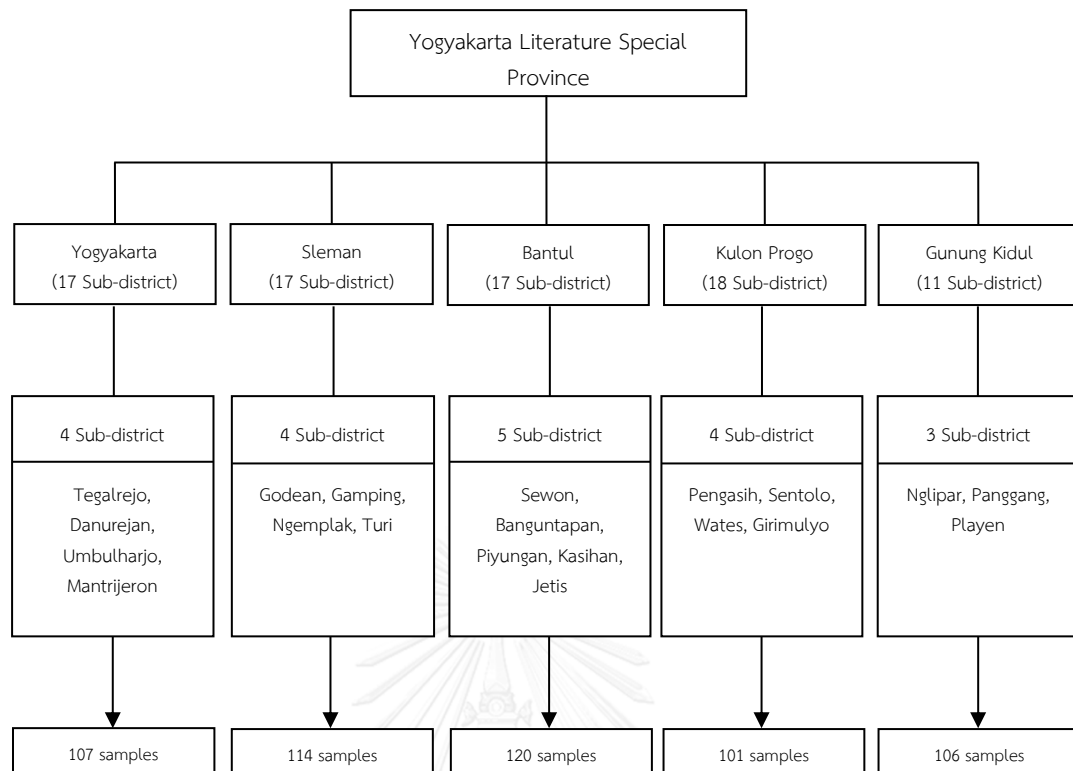


Figure 6 Multistage cluster sampling

On the main study ( $n=548$ ), all subjects were mothers of toddlers, and they had an average age of  $30 \pm 4.8$  years ( $SD = \pm 6.11$ ). Most of the respondents were middle-educated and below (72.62%) and household mother (71.35%). More than half of the respondents (51.46%) never got health education about toddlers' nutrition. A half of respondents lived with other family member in the household (55.83%). Also nearly a half of respondents had at least one child (46.53%). The average age of the toddlers were 24.71 month ( $SD = \pm 7.87$ ) and more than half (50.55%) were male (table 17).

Table 17 Demographic characteristic of the participants in the main study (n=548)

Demographic	Mean±SD	Number	Percentage
Characteristic		(n=548)	(%)
<b>CHILDREN:</b>			
Age (month)	24.71±7.87		
Age			
< 12 months		246	44.89
12 – <24 months		222	40.51
24 – 36 months		80	14.60
Children' Gender			
Male		277	50.55
Female		271	49.45
<b>PARENTS:</b>			
Age	30.48±6.11		
Age (year)			
< 18		6	1.10
18 – 40		509	92.88
>40		33	6.02
Total number of children			
1		255	46.53
2		198	36.13
3		68	12.40
4		14	2.56
More than 4		13	2.38

Table 17 (continued)

Demographic characteristic	Mean±SD	Number (n=548)	Percentage (%)
Family member live in the household			
Yes		306	55.83
No		242	44.17
Income			
Low		212	38.68
Middle		327	59.67
High		9	1.65
Education			
Low		31	5.66
Middle		398	72.62
High		119	21.72
Occupation			
Unemployed		391	71.35
Employed		157	28.65
Health education about toddlers' nutrition			
Yes		282	51.46
No		266	48.54

### 2.3.2 Samples for Testing Construct Validity with

**Constrasted Group approach.** A convenience sampling method was used to select the parents that met criteria in integrated post services (locally names: Posyandu). The inclusion criteria included: being a mother or father who have a child aged between 12 to 36 months and having stayed with him/he for at least the past six months with well-nourished or malnourished; being able to read and write Indonesian Language, and having a clear home address. The exclusion criteria included parents having toddlers with the following problems: congenital or metabolic abnormalities affecting growth, serious food allergies, and eating disorder. The number of sample size for testing construct validity with contrasted groups technique was estimated based on the differences between two means at significance criteria at .05 ( $\alpha = .05$ ), power analysis= 0.7, and the small effect size ( $d = .4$ ). According to Polit and Beck (2004), if there is no prior relevant research, the researcher can estimate whether the expected effect is small, medium or large which most of nursing studies cannot expect effect sizes in excess of .50; those in the range of .20 to .40 are most common. Therefore, this study used small effect size in .4. The necessary sample size for those criteria would be 68 subjects for each group (Polit & Beck, 2004). To anticipate incomplete questionnaire, it was 74 parents of well-nourished toddlers and 74 parents of malnourished toddlers were invited to participate in the follow up study, and there were 148 parents with toddlers voluntary participating in this study. In table 18 showed that the socio-demographic characteristic did not differ between parents with well-nourished and malnourished toddlers.



Table 18 Demographic characteristic of the participants in contrasted group technique (N=148)

Demographic characteristic	Parents with well-nourished toddlers (n=74)	Parents with mal-nourished toddlers (n=74)	p
<b>CHILDREN:</b>			
Age (Mean±SD)	25.00±7.73	25.97±8.40	0.372
Age			
< 12 months	31	26	0.571
12 – <24 months	33	34	
24 – 36 months	10	14	
Gender			
Male	41	41	0.56
Female	33	33	
<b>PARENTS</b>			
Age (Mean±SD)	30.78±6.19	30.74±6.50	0.511
Age (year)			
18 – 40	68	70	0.373
>40	6	4	

Table 18 (Continued)

Demographic characteristic	Parents with well-nourished toddlers (n=74)	Parents with mal-nourished toddlers (n=74)	p
<b>Total number of children</b>			
1	41	35	0.466
2	23	24	
3	9	14	
4	0	1	
More than 4	1	0	
<b>Family member live in the household</b>			
Yes	42	43	.5
No	32	31	
<b>Income</b>			
Low	9	35	0.10
Middle	45	36	
High	0	3	

Table 18 (Continued)

Demographic characteristic	Parents with well-nourished toddlers (n=74)	Parents with mal-nourished toddlers (n=74)	P
<b>Education</b>			
Low	7	12	0.45
Middle	52	48	
High	15	14	
<b>Occupation</b>			
Unemployed	51	60	0.001
Employed	23	14	
<b>Health education about toddlers' nutrition</b>			
Yes	34	33	0.5
No	40	41	

### 2.3.3 Samples for Test-Retest Reliability Testing.

The test retest step was performed for determining the stability of the PFBQ. There were 174 parents with toddlers voluntary participating in this test which was 79 (53.3%) from urban area and 95 (64.1%) from rural area. All subjects were mothers of toddlers, and they had an average age of 30.3 years ( $SD=\pm 6.3$ ). Most of the respondents were level of education lower than diploma degree (79.20%) and household mother (74.70%). More than half of the respondents (53.40%) never got health education about toddlers' nutrition. A half of respondents lived with other

family member in the household (55.70%). The average of age of the toddlers were 23.55 month ( $SD=\pm 7.5$ ) and more than half (54.6%) female.

**2.4 Research Instruments.** Research instruments that were used in the main study composed of 1) the Demographic data sheet, and 2) the second draft of PFBQ as follows:

**2.4.1 Demographic data sheet.** Demographic data sheet (Appendix G) was used to collect basic information of samples; such as gender and age of parents and their toddlers, number of children, family type, marital status, education, occupation, family outcome, ethnic, religion, and experience about nutrition education (Appendix F).

**2.4.2 Main study questionnaire.** It the second draft of the PFBQ scale that was composed of 56 items was tested to construct validity and the internal consistency reliability.

### **Protection Human Subjects**

This study was approved by Medical and Health Research Ethics Committee (MHREC), of the Faculty of Medicine Gadjah Mada University. (Approval Letter No. Ref: KE/FK/808/EC, dated 9 September 2013) (Appendix K). This procedure was performed before collecting data in order to explain that there is not risk to be participants or samples in this study. Informed consent was obtained from the parents with their toddlers before data collection (Appendix G, H). The participants was informed by researcher about the purpose and the activity of the study, they could express doubt about some questions or refuse to answer any of the questions. During the data collection, the participants would able to withdraw from the study at any time

if they feel not comfortable and their decision would not affect the services they would receive from healthcare providers at the primary health care or integrates services post (locally names POSYANDU). The participants were assured that their names and addresses would be kept strictly confidential and would not be reported with the study findings. Instead, a code number was used to ensure confidentiality. Also, the participants were assured that the study data collected from them stored in a secure place and were not be accessible to any other person without their permission. Finally, the researcher explained that there were no harm to the participants in this study and it take approximate 15 to 30 minutes to complete all the questionnaires, with the researcher being readily available by mobile phone for all participants to reach if they need to ask any questions about the study.

### **Research Assistants' Training**

Before the data collection for pre-test and main study was conducted, three nurses in the area of community nursing was trained as research assistants. They were trained to be able to understand the questionnaire by reading the questionnaires and the process of the study in the small group discussion

**Data collection.** Data collection in the main study was generally similar to those in pretest study, but research setting and questionnaire were quite different. The detail information about data collection in main study was as follows:

Research settings for this main study were all districts which are Kulonprogo, Gunung Kidul, Bantul, Sleman and Yogyakarta. Data were collected between September 2013 to April 2014. Because of volcano eruptions in Yogyakarta the duration for data collecting took more than six months. In this study, the

questionnaires were composed of demographic data sheet and the PFBQ scale that consist of 56 items. Two weeks before data collection were scheduled, the researcher asked cadres (health volunteer who is as responsible in integrated post office) about parents who were eligible as a participants in this study. The data collection was collected in integrates service office or in a location convenient for the participants such as at home. Parents with toddlers would be asked to answer the questions related to feeding behavior of parents to maintain adequate food intake for their toddlers. If the parents has more than one toddlers, parents answer only one toddler who was younger. Filling out the questionnaire will be take approximately 10-30 minutes. After finishing each data collection, the researcher and research assistants examined the questionnaires for data completeness. From the total participants, slight different procedures would be used for the the participants who are agree to participate in the test-retest of the study. In this case, the researcher invited these participants to participate in the test-retest study. Two weeks after the initial data collection, the researcher and research assistant visited the participants' house for collecting the retest data.

For the contrasted-group study, the researcher asked cadres about parents with toddlers who had eligible criteria for the known-group test. 74 Participants would be selected as a comparison group. Data collection in the known-group procedure was generally similar to initial assessment in main study.

### **Management of Missing Data.**

Missing data in this study were managed as following: after checking data for each record, questionnaire which had missing values more than 10% of all items, were excluded from data analysis. In pretest study, it was found that 3 of 33 records (9%) were not completed. Parents could not stay at the site longer because their toddlers cried. For factor analysis testing, 21 records were not completed because of several reasons such as parents could not stay at the site longer because their toddlers cried and 3 parents had children than more than 36 months. Finally, 24 questionnaires were discarded.

### **Data Analysis**

Data analysis included the application of descriptive and inferential statistics. Data was be analyzed using the SPSS statistical package, and AMOS 22 was used for testing validity using confirmatory factor analysis. The analyses was performed as follows:

1. Descriptive statistics including frequencies, means, and standard deviation was used to describe the demographic data.
2. Confirmatory factor analysis (CFA) was utilized to demonstrate construct validity of the PFBQ for Indonesian parents with toddlers. Testing model fit involved evaluating the models by interpreting the model fit with reference to a number of fit indices. In order to test the fit of the model to the data, Pedhazur & Schemelkin (19991) suggested using multiple criteria of fit. This study used the threshold of fit indices by Hair et al. (2010). In this study, the following goodness-of-fit indices were used to assess the model and the data: Chi-square ( $\chi^2$ ),  $\chi^2/df$  ratio,

Tusker-Lewis Index (TLI), Comparative Fit Index (CFI), Standardized Root Mean Square Residual (SRMR), and Root Mean-Square Error of Approximation (RMSEA). For models with  $\geq 30$  observed variable and cases ( $N$ ) more than 250, the suggested threshold values are:  $\chi^2 < .05$ ;  $\chi^2/\text{df}$  ratio  $< .03$ ; SRMR  $< .08$ ; RMSEA  $< .07$ ; CFI/TLI  $< .90$  (Hair et al., 2010). Factor loading should be  $>.3$  for sample size  $\geq 350$  to confirm that the indicators are strongly related to their associated construct (Hair *et al.*, 2010).

3. Construct validity by constricted-group approach was used to differentiate on the critical attribute because some known characteristic with contrast score of groups hypothesized to differ on the attribute. In this study, T-test, analysis was used to determine construct validity by constricted-group approach.

4. Reliability refers to the consistency of a measure, whether over time, between different people, or among the items that constitute the measure. In this study, researcher examined two types of reliability: construct reliability and test-retest reliability. For test-retest reliability, the two sets of scores between time 1 and time 2 was correlated using Pearson's ( $r$ ). Construct reliability (CR) was calculated manually that was computed from the sum of factor loadings ( $\lambda_i$ ), squared for each construct and the sum of the error variance terms for a construct ( $\delta_i$ ). Construct reliability, a measure of reliability and internal consistency which the accepted value for construct reliability should be at least .70 (Hair, et.al., 2010). Reliability between .6 and .7 may be acceptable provided that other indicators of a model's construct validity are good.

In summary, this chapter provided details of the research methodology for constructing the PFBQ scale and testing its validity and reliability. The result of all of the steps in the main study would be reported in chapter 4.



## **CHAPTER IV**

### **RESULT**

The result were reported by following the purposes of this study including development of the PFBQ for measuring the concept of feeding behavior of parents with toddlers and examination of psychometric properties of this instrument including the measures of reliability and validity. The result of this study were reported into two major: result of scale construction and result of analysis related to reliability and validity of the PFBQ.

#### **Result of Scale construction**

The first research purpose in this study was 'to develop an instrument that is the Parental Feeding Behaviors Questionnaire (PFBQ) for measuring feeding behaviors of Indonesian parents for their toddler'. According to this purpose, the construction phase of the PFBQ were conducted. The process in this phase was consist of several steps in order to obtain a good item pool reflecting the measurement of feeding behaviors of parents with toddlers such as generating items pool, testing content validity by expert reviews, and evaluating initial item through pre-test study.

This is comprising 3 dimensions: providing healthy food; enhancing toddlers good eating behaviors; providing eating environment that pleasant. Because of the parents feeding behaviors as Dependent-care action, all these three dimensions consist of acquiring and gathering information (estimative operations), making judgment and decision (transitional operations), and taking action (productive operations). The score Content Validity Index of the PFBQ was I-CVI (.83-1.00) and S-CVI (.98).

Most of the items had acceptable inter-item correlation value ( $> 0.3$ ) which ranged from moderate to high correlation. There were 56 items that correlated with the total scores which ranged 0.30 to 0.62. The value of Cronbach's alpha was 0.94.

The result of construction phases in the development of PFBQ, there is 56 items for the PFBQ composed of three dimensions providing food that are balanced, healthy and safe (26 items); enhancing toddlers eating behaviors (26 items); and providing pleasant eating environment (17 items). The questionnaire measures frequency of behaviors in a 5-choice likert-type scale format from never to always. The scale format choices is (1=never), (2=rarely), (3=sometimes), (4=most of the time), and 5 (always). The scores are summated by total score. The higher the score on a total score is, the better the rating of the parental feeding behaviors or indicating better feeding behaviors of parents.

### **Psychometric Properties Testing of the PFBQ**

The results of this psychometric properties testing were reported into two major: analysis result related to reliability and validity of the PFBQ.

#### **Validity of The PFBQ**

##### **1. Construct validity**

Three types of analysis were utilized to established construct validity of The Parental Feeding Behaviors Questionnaire (PFBQ). The results of those analyses are presented in the following order: 1) testing assumption for confirmatory factor analysis, 3) result of confirmatory analysis, and 3) results of known group technique.

**1.1 Testing assumption for CFA.** Testing assumptions for factor analysis, normality, linier relationship, collinearity, Barlett test of spherity, Kaiser-

Meyer-Olkin test, and Measure of sampling adequacy were examined. The results demonstrated that it was fairly appropriate to conduct factor analysis for testing construct validity of the PFBQ. In normality testing, the data showed 45 indicators (80%) were approximately normal distribution because values of skewness fell inside the ranged of -1 to +1. (Appendix I).

Identifying linear relationship between variables in this study, items with high skewness were examined by scatter plot. By this method, it was found that there was no evidence of true colinearity. Colinearity was tested on the correlation matrix 56x56 indicators. The result showed that magnitude of correlation ranged from .02-.56 (Appendix J). Only one item showed that the magnitude of correlation matrix was 0.765. It was found that 91% of total correlation were statistically significant ( $p < .05$ ). This result consistent with the value of tolerance and variance of inflation factor (VIF) of which all of tolerance value were not close to 0 (.35-.77), VIF value were less than 10 (1.16-2.98) (Appendix G).

**1.2 Confirmatory factor analysis.** This study used the threshold of fit indices by Hair et al. (2010). Hair et al. (2010) proposed a more refined threshold for assessing a structural model. The threshold criteria included the number of observations and the number of observed variable in deciding the cut off values of the model fit. When the PFBQ model was fitted to the data, the following fit indices resulted:  $\chi^2 = 5481.68$ ;  $p = .000$ ;  $df = 1481$ ;  $\chi^2/df$  ratio = 3.70; SRMR = .06; RMSEA = .07; CFI = .66; TLI = .65 (figure 5a,5b). This result was below the requirement of a good model fit by Hair and colleagues (2010). For models with  $\geq 30$  observed variable and cases ( $N$ ) more than 250, the suggested threshold values are:  $\chi^2 < .05$ ;  $\chi^2/df$  ratio  $< .03$ ; SRMR  $< .08$ ; RMSEA  $< .07$ ; CFI/TLI  $< .90$ .

To improve the fit statistics, the model was re-specified based on the result of modification indices. Freeing a fixed or 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.  $e_{56} - e_{55}$ ,  $e_1 - e_2$ ,  $e_{11} - e_{12}$ ). After the re-specification, the fit statistics for PFBQ model were improved with  $\chi^2 = 2383.31$ ;  $p = .000$ ;  $df = 1355$ ;  $\chi^2/df$  ratio = 1.76; SRMR = .04; RMSEA = .03; CFI = .91; TLI = .90. This result met the requirement of a good model fit by Hair and colleagues (2010) (table 19). That is, the items are assumed to be caused by the latent variables and may also be called effect indicators. Figure 6a,b depicts the modified PFBQ model.

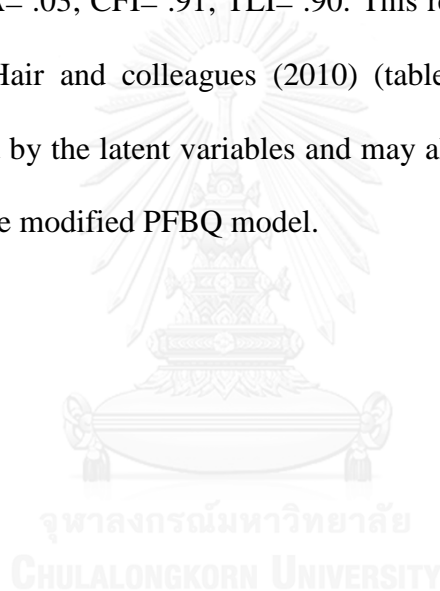


Table 19 Fit indices of hypothesized and modified factor structure of the PFBQ (N=548)

Goodness of Fit Statistic	Values	
	Hypothesized model	Modified Model
$\chi^2$	5481.68 (p=.01)	2383.31 (p=.01)
DF	1481	1355
$\chi^2/df$	3.70	1.76
CFI	.66	.91
TLI	.65	.90
RMSEA	.07	.03
SRMR	.06	.04



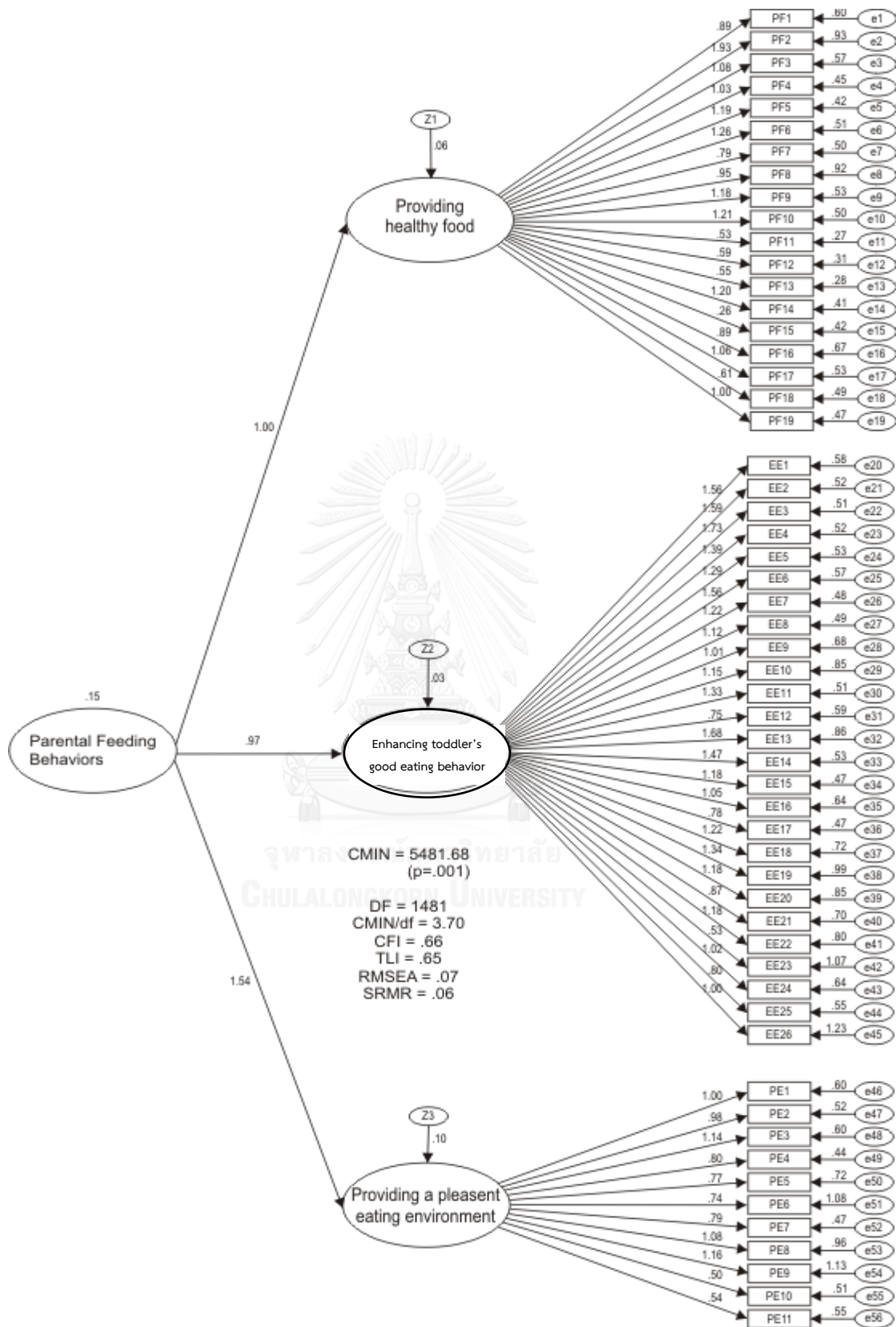


Figure 7 The Unstandardized of hypothesized measurement model of the PFBQ

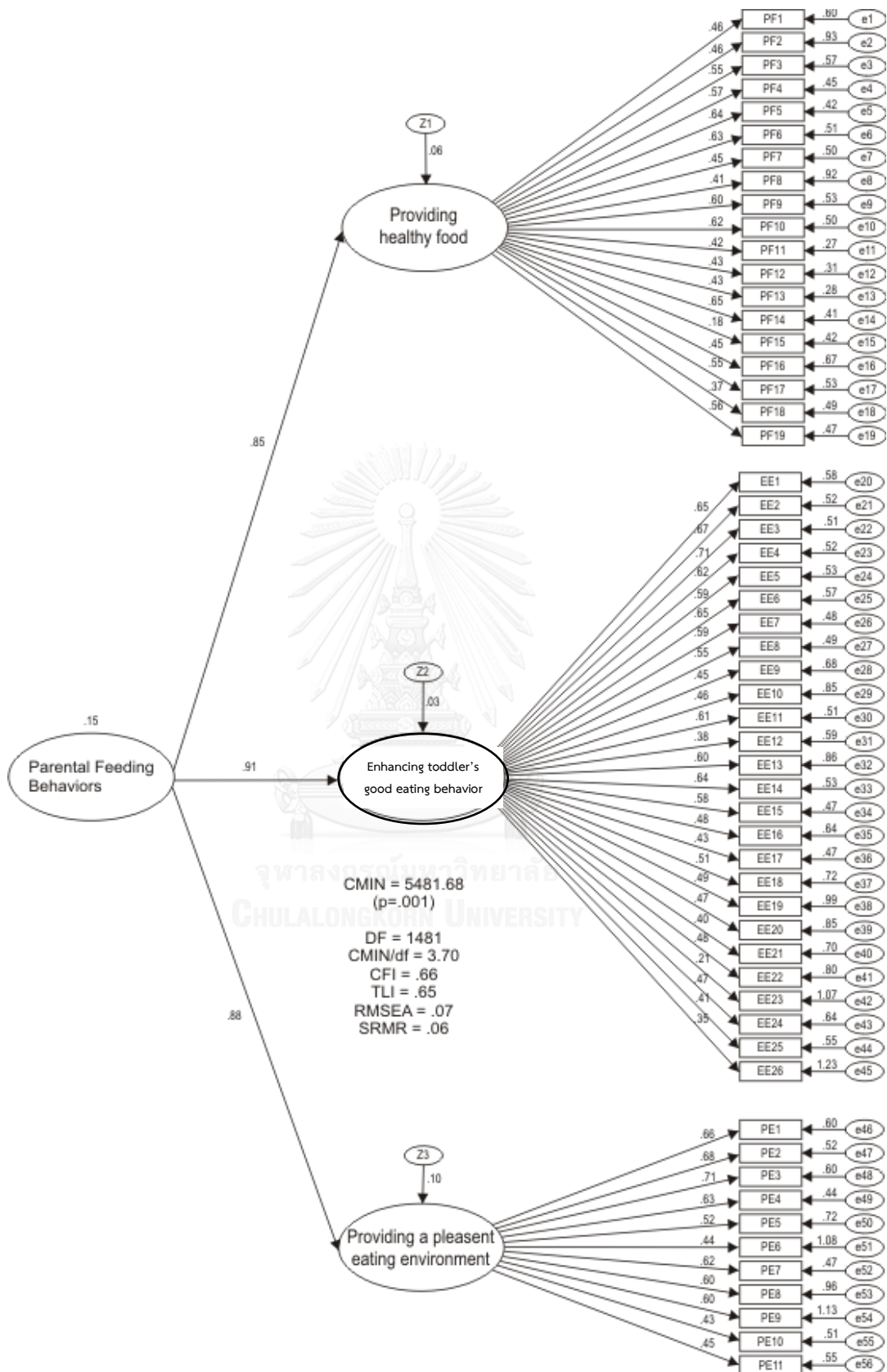


Figure 8 The standardized of hypothesized measurement model of the PFBQ

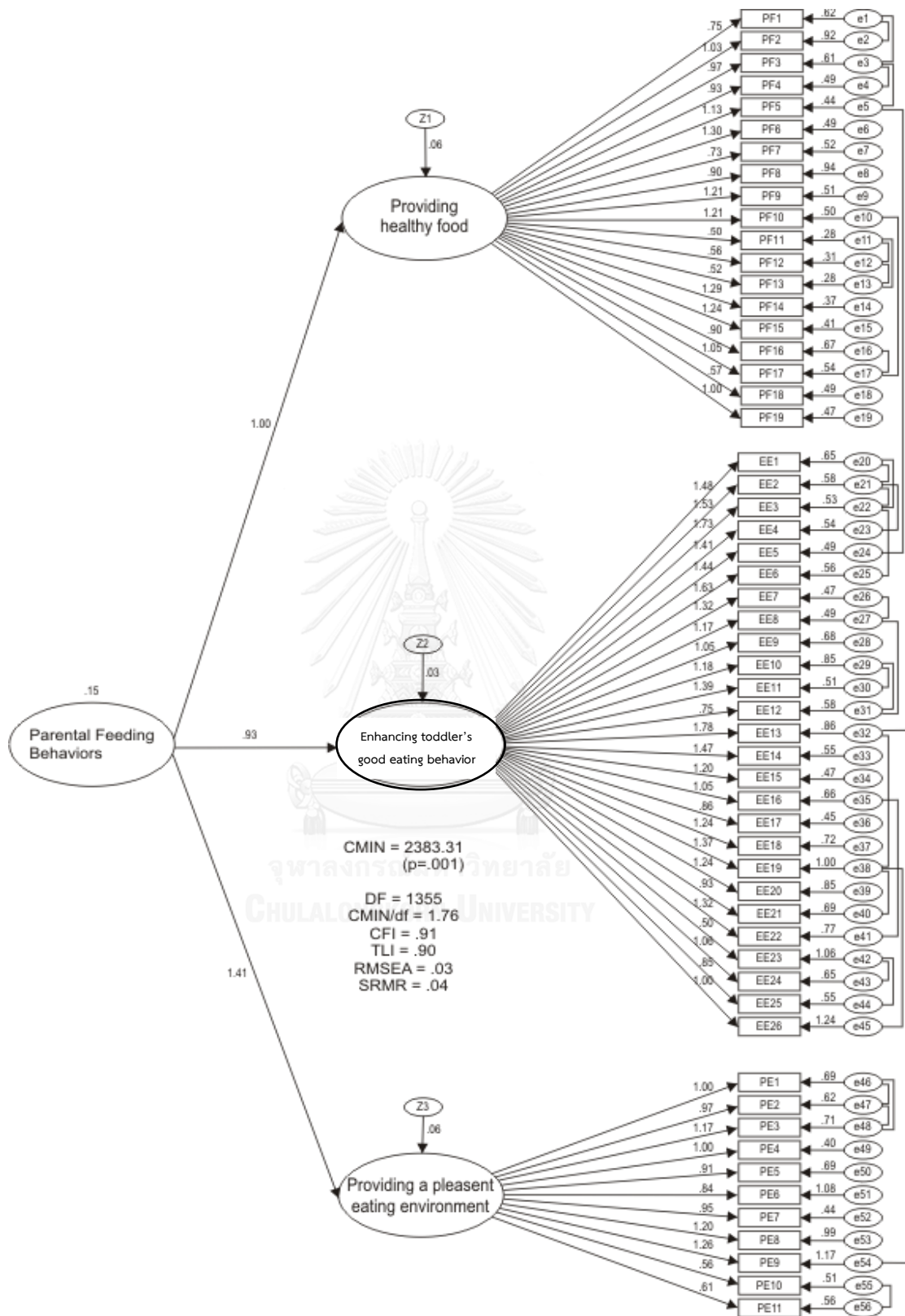


Figure 9 The Unstandardized of modified measurement model of the PFBQ



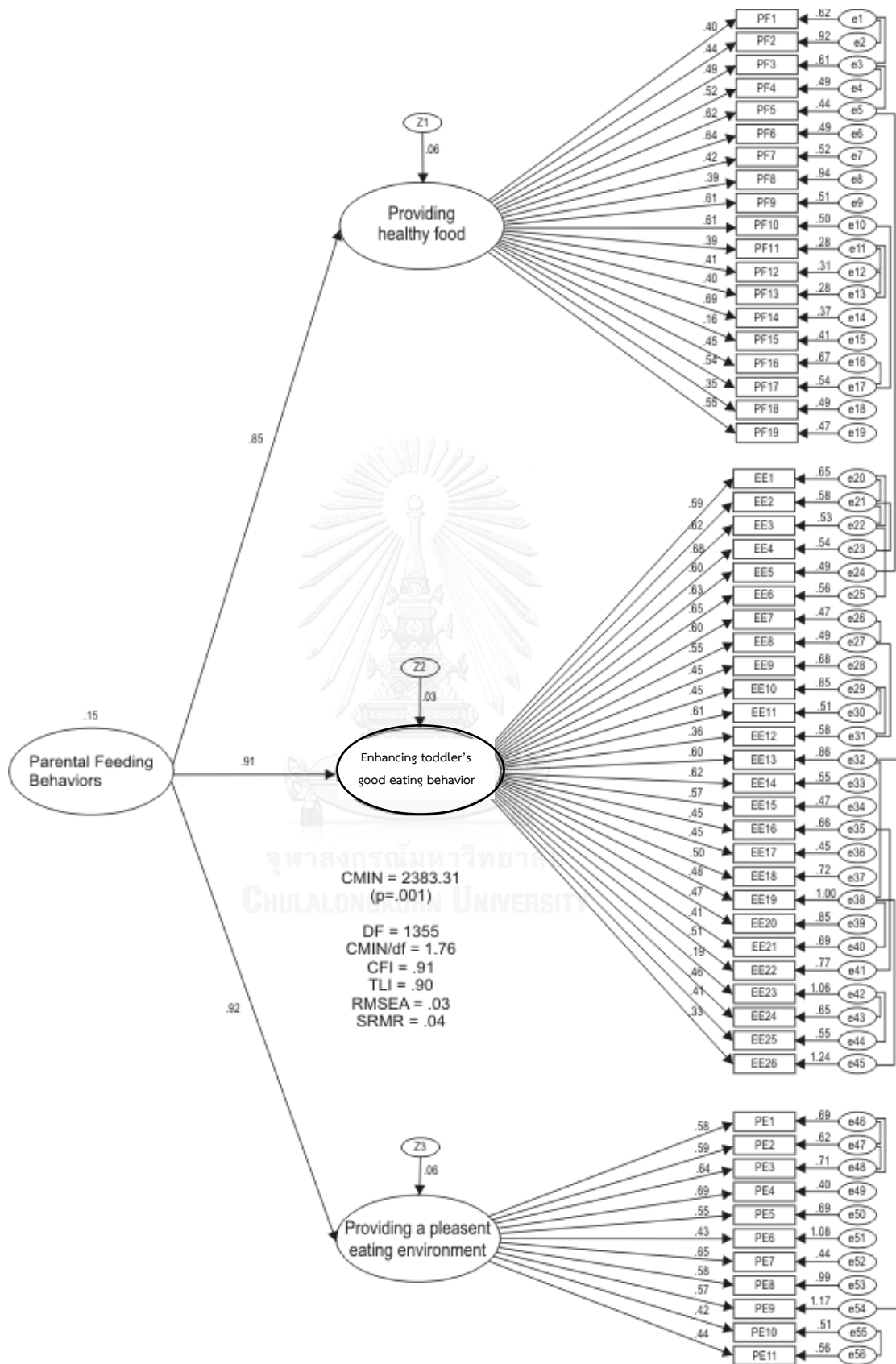


Figure 10 The Standardized of modified measurement model of the PFBQ

The assessment of the internal structure of a model begins with inspecting standardized factor loadings and corresponding significance values (Bagozzi & Yi, 1998). All loadings are significant as required for convergent validity. Factor loading should be  $>.3$  for sample size  $\geq 350$  to confirm that the indicators are strongly related to their associated construct (Hair *et al.*, 2010). The result of the table 18 show that regression coefficients of all 56 indicators were statistically significant (t-values at  $p < .001$  alpha levels) which 54 (96.42%) the loadings of the items indicated the acceptable construct validity of the model that was ranged from .334-.692 (table 20). It was notified that two indicators which were the items of the “*I give my child pure water every day (PF15)*” did not load strongly on the provide food that are balanced, healthy and safety factor, with the item loadings of .164. And also the items of the “*I always finish the whole meals when I eat together with my child (EE23)*” did not load strongly on the help the toddlers to enhance good eating behaviors factor, with the item loadings of .19. These findings also showed that these items had lower inter-item correlation (ranged from .041-.468).

In this respect, the factor loadings alongside the average variance were extracted for proper examination. In this study, the average variance extracted (AVE) for indicator providing healthy food; enhancing toddlers’ good eating r; and providing a pleasant environment are within the range of .731; .820; and .839 respectively (table 21) indicated adequate convergent validity. If the AVE is larger than 50% the variance captured by the underlying latents’ variable is greater than the variance due to measurement error (Hair *et al.*, 2010).

Table 20 Factor loading of the PFBQ (N=548)

Indi- cator	←---- Dimension	Unstandar- dized factor loading (b)	Standar- dized factor loading (B)	S.E.	t	P	R <sup>2</sup>
PF1	←---- Provide food	.753	.398	.095	7.896	.001	.159
PF2	←---- Provide food	1.032	.439		8.652	.001	.193
PF3	←---- Provide food	.969	.49		9.346	.001	.24
PF4	←---- Provide food	.929	.518	.119	9.718	.001	.268
PF5	←---- Provide food	1.132	.615	.104	10.917	.001	.378
PF6	←---- Provide food	1.296	.643	.115	11.316	.001	.414
PF7	←---- Provide food	.727	.418	.088	8.27	.001	.175
PF8	←---- Provide food	.897	.387	.115	7.764	.001	.15
PF9	←---- Provide food	1.21	.61	.11	10.959	.001	.372
PF10	←---- Provide food	1.206	.611	.11	10.986	.001	.373
PF11	←---- Provide food	.495	.394	.063	7.851	.001	.156
PF12	←---- Provide food	.56	.414	.068	8.194	.001	.171
PF13	←---- Provide food	.519	.404	.064	8.051	.001	.163
PF14	←---- Provide food	1.289	.692	.109	11.822	.001	.479
PF15	←---- Provide food	.235	.164	.066	3.54	.001	.027
PF16	←---- Provide food	.898	.446	.103	8.681	.001	.198
PF17	←---- Provide food	1.048	.543	.104	10.058	.001	.295
PF18	←---- Provide food	.573	.347	.074	7.729	.001	.121
PF19	←---- Provide food	1	.552	-	-	.001	.305

Table 20 (Continued)

Indicator	←---	Dimension	Unstandar- dized factor loading (b)	Standar- dized factor loading (B)	S.E.	t	P	R <sup>2</sup>
EE1	←---	Enhance eating	1.48	.586	.208	7.124	.001	.344
EE2	←---	Enhance eating	1.529	.62	.211	7.24	.001	.384
EE3	←---	Enhance eating	1.732	.684	.234	7.412	.001	.469
EE4	←---	Enhance eating	1.406	.603	.196	7. 173	.001	.364
EE5	←---	Enhance eating	1.436	.63	.198	7.246	.001	.397
EE6	←---	Enhance eating	1.628	.651	.222	7.335	.001	.424
EE7	←---	Enhance eating	1.32	.604	. .183	7.204	.001	.365
EE8	←---	Enhance eating	1.171	.551	.167	6.994	.001	.304
EE9	←---	Enhance eating	1.052	.45	.161	6.521	.001	.202
EE10	←---	Enhance eating	1.184	.452	.182	6.501	.001	.204

Table 20 (Continued)

Indicator	←---	Dimension	Unstandardized factor loading (b)	Standardized factor loading (B)	S.E.	t	P	R <sup>2</sup>
EE11	←---	Enhance eating	1.39	.61	.193	7.213	.001	.372
EE12	←---	Enhance eating	.75	.363	.128	5.87	.001	.132
EE13	←---	Enhance eating	1.775	.604	.228	7.781	.001	.364
EE14	←---	Enhance eating	1.468	.616	.203	7.222	.001	.38
EE15	←---	Enhance eating	1.203	.47	.17	7.069	.001	.325
EE16	←---	Enhance eating	1.046	.454	.16	6.516	.001	.207
EE17	←---	Enhance eating	.856	.452	.131	6.516	.001	.204
EE18	←---	Enhance eating	1.243	.5	.184	6.767	.001	.25
EE19	←---	Enhance eating	1.367	.475	.191	7.176	.001	.225
EE20	←---	Enhance eating	1.235	.467	.187	6.592	.001	.218

Table 20 (Continued)

Indicator	←---	Dimension	Unstandardized factor loading (b)	Standardized factor loading (B)	S.E.	t	P	R <sup>2</sup>
EE21	←---	Enhance eating	.933	.405	.151	6.186	.001	.164
EE22	←---	Enhance eating	1.319	.511	.194	6.794	.001	.261
EE23	←---	Enhance eating	.504	.19	.133	3.804	.001	.036
EE24	←---	Enhance eating	1.059	.462	.161	6.577	.001	.213
EE25	←---	Enhance eating	.845	.411	.135	6.245	.001	.169
EE26	←---	Enhance eating	1	.334	-	-	.001	.112
PE1	←---	Provide environment	1	.582	-	-	.001	.339
PE2	←---	Provide environment	.966	.588	.067	14.32	.001	.345
PE3	←---	Provide environment	1.17	.636	.087	13.48	.001	.405
PE4	←---	Provide environment	1	.685	.082	12.18	.001	.469

Table 20 (Continued)

Indicator	←---	Dimension	Unstandardized factor loading (b)	Standardized factor loading (B)	S.E.	t	P	R <sup>2</sup>
PE5	←---	Provide environment	.914	.547	.088	10.406	.001	.299
PE6	←---	Provide environment	.84	.432	.098	8.586	.001	.187
PE7	←---	Provide environment	.95	.649	.081	11.795	.001	.421
PE8	←---	Provide environment	1.202	.583	.112	10.765	.001	.34
PE9	←---	Provide environment	1.259	.569	.117	10.756	.001	.324
PE10	←---	Provide environment	.561	.423	.066	8.489	.001	.179
PE11	←---	Provide environment	.606	.435	.07	8.681	.001	.189

t-value is significant at the 0.01 level

Table 21 Factor loading, construct reliability and Average variance Extracted in each dimension (N=548)

Dimension	Construct	Unstandardized factor loading (b)	Standardized factor loading (B)	S.E	t	P	R <sup>2</sup>	AVE	CR
Provide food	Parental feeding	1	.851	-	-	.001	.725	.731	.92
Enhance eating	Parental feeding	.931	.911	.14	6.647	.001	.82	.820	.96
Provide environment	Parental feeding	1.406	.915	.14	9.585	.001	.837	.839	.93

t-value is significant at the 0.01 level

**1.3 Contrasted-groups approach.** In order to validate the instrument, this study also considered construct validation using the contrasted-group analysis. In the present study, mean scores of the PFBQ of 74 parents with well-nourished-toddlers and 74 parents with malnourished-toddlers were compared by t-test. Before conducting t-test, normal distribution was separately tested on each group by using One-sample Kolmogorov-Smirnov test. For parents with well-nourished toddlers, Kolmogorov-Smirnov Z was .624 with p=.831, and those of parents with malnourished toddlers, Kolmogorov-Smirnov Z was .972 with p=.302. It indicated that the scores on each group were such as normal distribution. Therefore, conducting independent sample t-test was appropriate for testing the differences of these predicted contracting groups.



Based on the table 22, parents with well-nourished toddlers resorted a mean score of parental feeding behavior of 217.31 (SD=25.68); whereas parents with malnourished toddlers' mean score was 208.54 (SD=27.64). It was found that the mean score of parents with well-nourished toddlers was greater than those of parents with malnourished toddlers' and statistically significant ( $p=0.047$ ).

Table 22 Mean and Standard deviation for testing difference of PFBQ scores between parents with well-nourished and mal-nourished toddlers (N=148)

Parents group	Mean	SD	t	df	CI	Sig.
					95%	(2-tailed)
Parents with Well-nourished toddlers (N=74)	217.31	25.68	1.99	146.00	0.10-17.44	0.047**
Parents with Mal-nourished toddlers (N=74)	208.54	27.64				

\*\*t-value is significant at the 0.01 level (2-tailed)

Looking at the results for the factor loadings and the test of the statistical significance (t-values at  $p<0.001$  alpha levels), and also contrasted-group analysis provide the empirical evidence that all variable in the model are valid measure of their respective construct.

## Reliability

Reliability of the PFBQ was examined using construct reliability and test-retest reliability.

**1. Construct reliability.** In this study, the construct reliability was also employed. Construct reliability, a measure of reliability and internal consistency which the accepted value for construct reliability should be at least .70 (Hair, et.al., 2010). The rule of thumb for a construct reliability (CR) estimate is that .7 or higher suggests good reliability. A high construct reliability indicates that internal consistency exists. This means all the measures are consistently representing something. With the value of the construct reliability, the PFBQ scale revealed a reliable scale as follows construct reliability for the total item was .88; .92 for providing food and parental feeding behaviors, .96 for enhancing toddlers' good eating behavior and parental feeding behaviors, .93 for providing a pleasant eating environment and parental feeding behaviors (table 19). Based on this result, each factor had the construct reliability estimate more than .7 that indicated good reliability or internal consistency existed.

**2. Stability:** Test-retest reliability is the correlation between scores from the same subject tested at two different times (Jacobson, 1997). The value of the reliability coefficient theoretically can range between -1.00 and + 1.00, like other correlation coefficients. In practice, reliability coefficients normally range between .00 and 1.00. The higher the coefficient, the more stable the measure.

The Pearson's correlation coefficients of the PFBQ, between time 1 and time 2 were .644 ( $P < .01$ ), so these had relatively good test-retest reliability. These finding

indicated substantial stability of the instrument which the instrument had ability to evaluate the parental feeding behavior into the same result in within two weeks.

The results showed many empirical evidences to support that the PFBQ which composed of 56 items could be a valid and reliable instrument. The PFBQ measurement model was confirmed having 3 dimensions which were 1) providing healthy food (19 items); 2) enhancing toddlers' good eating (26 items); and 3) providing a pleasant eating environment (11 items). The example of items in each dimensions was described in table 23.

Table 23 The Example of Final Items of The Parental Feeding behaviors Questionnaire

Factor	Item Number	Statement
Providing healthy food	1	learn about toddlers food from several resources
	2	will serve food that suitable with toddlers' need
	3	give fruits and vegetables
Enhance toddlers' good eating behavior	4	read books about toddlers eating behaviors
	5	will try to introduce toddlers a variety of foods
	6	modify the food
Provide a pleasant eating environment	7	learn to identify the appropriate equipment/utensils
	8	will keep pleasant dining area for toddlers
	9	provide equipment/utensils in various color and shape

## **CHAPTER V**

### **CONCLUSION AND DISCUSSION**

This chapter consists of conclusion and discussion is divided into three parts. Firstly, conclusion on the study was drawn based on the findings. Secondly, research findings discussion was based on the objectives on the study. Thirdly, implications of the study results regarding nursing practice and research were presented with recommendation for nursing practices and research are presented at the end of this chapter.

#### **Conclusion**

Constructing the PFBQ started by clarifying the concepts of feeding behaviors of parents with toddlers based on the structural domain of the Orem's dependent-care deficit nursing theory, parental feeding behavior and toddlers' nutrition. The initial pool of 70 items constructed in Indonesian language, which reflected feeding behaviors of Indonesian parents with toddlers, were generated based on the operational definitions that previously identified.

The result of the initial item pool that consist of 70 items was submitted to a panel experts for conducting content validity and also for identifying if there was ambiguous wording in question. After validating the content, 80 items were put in the first draft of the PFBQ. An initial item analysis in pretest study (n=30) was conducted on examining the first draft of instruments. Based on the result of the item review and analysis the revised 56 items instrument used in the main study to test psychometric properties.

There were several kinds of testing psychometric properties which consist of factor analysis was used to test construct validity and reliability of the PFBQ on a large group of sample (n=548) and the contrasted-group approach, which was used to test the second type of construct validity with comparing between parents with healthy toddlers and malnourished toddlers (=148). The last kind of psychometric testing was an investigation of reliability of the instrument through test-retest reliability (n=174).

Based on the result of psychometric testing, the PFBQ consist of 56 items composed of dimension 1 (provide a balanced, healthy and safe food=19 items), dimension 2 (enhance toddlers' eating behavior= 26 items), and dimension 3 (provide a pleasant eating environment= 11 items). It could be stated that the PFBQ is a newly valid and reliable instrument for measuring feeding behaviors of parents with toddlers.

The PFBQ was a self-report that this questionnaire measures frequency of parental feeding behaviors in a 5-choice likert-type scale format from never to always. The scale format choices is (1=never), (2 =rarely), (3 =sometimes), (4 =most of the time), and 5 (always). The rating scores are summated by total scales and can range from 5 to 280. The higher the score on a total scale is, the better the rating of the parental feeding behaviors or indicating better feeding behaviors of parents.

## **Discussion of the results**

This study was undertaken the necessary steps to develop and test psychometric properties of the PFBQ. Research issues for discussion composed of the topic of 1) The result of Parental Feeding Behaviors Questionnaire construction, and 2) Psychometric properties of the PFBQ.

### **1. The Construction of The Parental Feeding Behaviors Questionnaire (PFBQ)**

In initial examination, the PFBQ was constructed to measure the feeding behaviors of Indonesian parents to maintain adequate food intake for their toddlers. This instrument provides all dimensions of the parental feeding behaviors as a new perspectives to measure feeding behaviors of parents with toddlers. From reviewing literature, there is lack of clarity regarding definitions and measurement of the parental feeding behaviors based on nursing perspective and others health profession (DiSantis, et al., 2011). The most of existing definitions of the parental feeding behaviors closely related to parenting, parenting eating, and feeding practice (DiSantis, ey al., 2011; Hennessy, et al., 2010). Comparing the constructs of the PFBQ scale with the parental feeding instrument was used to measure parental feeding concept in various population. It was found that almost existing instrument emphasized on parental feeding activities or psychomotor activities that focus on the activities or strategies that parents use to manage how much, when and what children eat such as on parental use of control in feeding (Birch. et al., 2001; Musher-Eizenman & Holub., 2007; Hodges, et al., 2007; Ha, et al., 2005). For example most instrument focus on how parents to encourage child's involvement in mealtime, to monitor child's intake, and to demonstrate healthy eating for the child.

There were lack of construct involved cognitive activities that reflected acquiring and gathering information (estimative operation) and making judgment and decision (transitional operation). Although Birch, et.al, (2001) and Jansen, et.al., (2012) state that the feeding behaviors of parents is attitudes and strategies regarding the control of children eating, it means that the parental feeding behaviors is consist of cognitive action (attitude) and psychomotor action (strategy) but they only focus on the attitude and strategy regarding parents control in children eating or general atmosphere of emotion in the interaction between parents and children during the meal situation. Therefore, it did not capture other parental feeding behaviors such as for finding resources and gathering information about toddlers nutrition, make judgment and decision to provide appropriate food, giving balanced food, and modifying food which is important activities during maintaining adequate intake of food for their toddlers.

The PFBQ is a comprehensive parental feeding behaviors instrument used to measure overall aspect of the parental feeding concept through three kinds of behaviors that related to provide healthy food; to enhance toddlers' good eating behaviors; and to provide pleasant eating environment. For example, acquiring and gathering information activities involve acquiring and gathering information about healthy food for toddlers; the characteristic of toddlers eating behavior; and eating environment that are pleasant for toddlers. The PFBQ was examined, the content validity index (CVI) was determined as evidence for content validity. The result of CVI indicated that the PFBQ is acceptable for content validity, it was accepted to represent the concept of parents feeding behaviors of toddlers. In other word, content validity is supportive to confirm the adequacy of the content representativeness of the

scale for measuring what the researcher intended to study. Based on the result of initial internal consistency reliability in the pre-test study, it showed that 56 items in the PFBQ had a good reliability or internal consistency exist. All things are considered which are consistently representing the construct of parental feeding behaviors. The pre-test study can conduct to; 1) determine the amount of items that took to complete the scale, 2) establish the scale if its instructions were unclear, and 3) identify clarity and appropriateness of scale use if participants found anything objectionable or inappropriate about the scale (Pett, et al., 2003). In addition, when considering the item statements, the PFBQ scale was practical measure which reflect specific questions on actual behaviors emerging within the activities of Indonesian parents to maintain adequate food intake for their toddlers that easily recall and answer.

## **2. Psychometric properties of the Parental Feeding behaviors Questionnaire**

**2.1 Validity.** With respect to a valid and reliable scale, the PFBQ was developed with validity assessment using construct validity and contrasted groups technique.

**2.1.1 Construct validity.** The transition from a conceptual framework of parental feeding behaviors concept to operational definitions indicates validity of the PFBQ scale. Construct validity indicates the extent to which a scale measures a concepts that it purport to measure by focusing on the theoretical relationship of a variable to other variable (DeVellis, 1991; Mishel, 1998) which can supported by validity testing (Mishel, 1998). After reviewing literature, based on the structural domain of theory Dependent-care deficit, the components of Parental



feeding behaviors and toddlers' nutrition were identified as the ways Indonesian parents provide healthy food and pleasant eating environment to their toddlers, as well as enhance the toddlers' good eating behavior composed of acquiring and gathering information (estimative operation), making judgment and decision (transitional operation) and taking action (productive operation).

1) Factor Analysis is as one method to address the construct validity. According to Dixon (1994) factor analysis is the most important statistical tool for validating the structure. The common approach of factor analysis is confirmatory factor analysis (CFA). This approach allows the researcher to use theoretical knowledge in testing construct validity of the instrument. The intent of CFA is to hypothesize or define the factors directly and then determine how well the defined measurement model fits the observed data. CFA, then, is theory-driven rather than data-driven (Waltz, et.al., 2010).

In this study, CFA using AMOS program was conducted to examine construct validity of the PFBQ scale which composed of three dimensions. The result showed that the proposed model was accepted as a good fit model. Regarding factor loadings, regression coefficients of all 56 indicators were statistically significant ( $p < .01$ ) which (96.42%) the loadings of the items indicated the acceptable construct validity of the model that was ranged from .334-.692. It was notified that two indicators namely "*give toddlers pure water (PF15)*" did not load strongly on 'the provide food that are balanced, healthy and safe' factor. Providing the toddlers pure water every day is very common activities for parents. This item probably made parents confused whether pure water were healthy or unhealthy foods. In this point, it is easier for parents to determine healthy and unhealthy food such as

the intake of sweets, salty snacks, soft drink, the intake of fruit, vegetables, and whole grain product during providing well-balanced food intake. Therefore, it may not be meaningful to ask the parents about the activities of parents in giving pure water for their toddlers.

The item “*finish the whole meals during mealtimes*” also did not load strongly on the ‘help the toddlers to enhance good eating behaviors factor’. This item might be not the best strategy to enhance a good eating behavior for their toddlers in Indonesian culture. Some parents probably used other modeling methods such as parents eat healthy foods in front of the toddlers. Other methods that commonly can be performed by parents to help the toddlers enhancing toddlers eating behavior is by involving toddlers in preparing and serving the foods. In which parents let toddlers to expose with the food and motivate the toddlers to try a new food or finish the whole meals when she/he eat. Some parents might used others modeling methods such as parents eat healthy foods in front of the toddlers (Musher-Eizenman & Holub, 2007).

This study expanded the concept of “parental feeding behaviors” by dividing the behaviors as the way of parents to maintain adequate food intake for their toddlers into 3 dimensions: “provide healthy food”; “enhance toddlers’ good eating behaviors”; and “provide a pleasant eating environment”. The 3-dimensions model of the PFBQ was also tested by confirmatory factor analysis. The results from this study, three factor model generated a suitable fit for the Indonesian parents with the value of ( $\chi^2 = 2383.31$ ;  $p = 0.0001$ ;  $df = 1355$ ;  $\chi^2/df$  ratio = 1.76; CFI = .91; TLI = .90; RMSEA = .03, RMR = .04) for the final model.

2) Contrasted-groups approach. The PFBQ scale was expected to be a research instrument tool to evaluate parental feeding behaviors in both community and clinical setting. Therefore contrasted-groups approach was conducted to test its construct validity. In contrasted-groups approach, conducting independent-sample t test to determine the differences in parental feeding behaviors of parents with well-nourished toddlers and malnourished toddlers was an appropriate method. In this approach, the mean PFBQ scores on parents with well-nourished toddlers group were significantly different from the PFBQ scores on parents with malnourished toddlers group ( $p=.047$ ).

Considering testing results, the evidence of construct validity on the PFBQ scale was supported to be valid scale by which the mean scores on the PFBQ scale of two contrasting groups; parents with well-nourished and malnourished toddlers were significantly different. The result was congruence with theoretical basis in that the mean score on PFBQ of the parents with well-nourished group was greater than those of parents with malnourished group ( $217.31 \pm 25.68$ ;  $208.54 \pm 27.64$ , respectively). Then, parents with appropriate feeding behavior for their toddlers should get better toddlers health as well, because of the parental feeding behavior have significantly influence in healthy eating behaviors and child's dietary pattern (Baughcum, et.al., 2000; Jain, et al., 2001; St Jeor, et.al, 2002; Drohan, 2002; Fisher, et al., 1995), growth, development and survival of their children (Saha, 2008; Farrow & Blisset, 2008; Nti & Lartey, 2008; Ventura & Birch, 2008; Rhee et al., 2006; Ha, 2002) and the prevention of inadequate nutrition or obesity in their children (Robertson, 2002).

In summary, the results of both confirmatory factor analysis and contrasted-group analysis provide the empirical evidence to support the proposed construct of the parental feeding behavior in that this concept composes of 3 dimensions with 56 items. In addition, the factor structure of the PFBQ scale is confirmed to be a valid measurement.

**2.2 Reliability.** Regarding reliability, the construct reliability and test-retest reliability were employed.

2.2.1 Construct reliability. With the value of the construct reliability, the PFBQ scale revealed a reliable scale as follows construct reliability for the total item was .88; .92 for providing food and parental feeding behaviors, .96 for enhancing toddlers' good eating behavior and parental feeding behaviors, .93 for providing a pleasant eating environment and parental feeding behaviors. Therefore, regarding reliability, each factor had a good reliability or internal consistency exist. All things are considered, as the way of parents during providing healthy food; enhancing toddlers' good eating behavior; and providing pleasant environment were consistently representing the construct of parental feeding behaviors. This result supported the previous instrument that the item "encourage child's involvement in meal planning and preparation", "actively demonstrate healthy eating for the child", "promote well-balanced food intake, including the consumption of varied foods and healthy food choices" and "make healthy foods available in the home" were consistently representing the construct of parental feeding behavior in order to provide healthy food and enhance toddlers' good eating behaviors (Musher-Eizenman & Holub, 2007; Tschann, et.al., 2013).

2.2.2 The test-retest finding also revealed three factors were stable measure over a 2-week period with the value of the Pearson's coefficients of the PFBQ, between time 1 and time 2 were .644, so this instrument had relatively good test-retest reliability. These findings indicated substantial stability of the instrument which the instrument had ability to evaluate the parental feeding behavior into the same result in within two weeks.

### **Limitations of the study**

This study was the initial examination of the validity and reliability of the PFBQ. Although the initial examination of the PFBQ yielded a positive result, there were some limitations which need to be considered as follows:

1. Although the subjects was used in the current research from urban and rural area, but almost all of the subjects from the Java Population that they may not be representative of the populations in Indonesia. Readers should concerns that the current findings and conclusions as initial examination for measuring validity and reliability of the PFBQ in Java Island population.

2. The range of time to answer the questions was around 15-40 minutes, which was too time-consuming to complete those questionnaires. It made parents felt bored and forced them to find special place to be able to concentrate during filling out the questionnaire. Additionally, mothers also needed another person to take care of their children during the questionairre

## **Implications**

This study is the first instrument about parental feeding behavior in Indonesia, and the result confirms that three-factor structure of the PFBQ among the Indonesian parents with toddlers was good. Most importantly, results of this study revealed support for the validity of the measure, with high correlation between parents' activities in providing a balanced, healthy, and safe food; enhancing toddlers' eating behaviors; and providing a pleasant eating environment. And also the PFBQ revealed acceptable reliability. Three dimensions were stable measure over a 2-week period. This provide evidence that as the initial examination, the PFBQ is an appropriate instrument to measure feeding behaviors of parents with toddlers. Then, based on the results of this study, the usefulness of the PFBQ scale was addressed as implications for nursing research and practice.

### **1. Implication for nursing practices**

Using this instrument, nurses and also other health professionals who work with toddlers and their parents can have more comprehensive understanding in parental feeding behaviors. Through the three dimension of parental feeding behaviors, it can capture all of aspect of parental feeding behavior that also concern both behaviors of parents that related to cognitive and psychomotor activities. Based on this evaluation, health professionals including nurses will able to evaluate the parental feeding behaviors in both cognitive and psychomotor activities as well as provide information to the parents about how to do appropriate feeding behaviors for their toddlers, and then design health educational programs and nutrition intervention based on the findings that to support healthy eating during toddlers and eating environment that are pleasant for toddlers.

## 2. Implication for research purposes

The initial findings support that the PFBQ were developed and tested to measure feeding behaviors of Indonesian parents with toddlers. Therefore, the scale can provide valid result for conducting the research that related to measuring parental feeding behaviors in both clinical and community setting.

### **Recommendation for Further Research**

The present study has yielded some preliminary findings, but there were several limitations which need to be considered. Then, future studies are need to:

1. Test this questionnaire that include diversity of the subjects from others province in Indonesia which is represent Java, Sumatra, Kalimantan, Sulawesi, Maluku and Papua, both rural and urban populations.

2. Modify this instrument to make it more concise, because of the range of time to answer this questions was around 15-40 minutes, which was too time-consuming to complete those questionnaires.

## REFERENCES

- Anderson, C.B., Hughes, S.O., Fisher, J.O., & Niklas, T.A. (2005). Cross-cultural equivalence of feeding belief and practices: the psychometric properties of the child feeding questionnaire among Blacks and Hispanics. *Preventive Medicine*, 41, 521-531.
- Arcan C, Neumark-Sztainer D, Hannan P, Berg P, Story M, & Larson N., (2007). Parental eating behaviors, home food environment and adolescent intakes of fruit, vegetables and dairy foods: longitudinal findings from project EAT. *Public Health Nutrition*, 10,1257-1265.
- Arndt, M.J., & Horodynski, M.A.O. (2004). Theory of dependent-care in research with parents of toddlers : The NEAT Project. *Nursing Science Quarterly*, 17(4), 345-350.
- Asrar, M., (2009). *The relationship between rearing pattern, eating pattern, nutrient intake and nutritional status of children under five of ages of Nuaulu community at Subdistrict of Amahan, District of Center Maluku in Maluku province.* (Unpublished master's thesis). School of Dietitian, Faculty of Medicine, Universitas Gadjah Mada, Yogyakarta.
- Atmarita, (2005). Nutrition Problems in Indonesia. Paper presented at *An Integrated International Seminar and Workshop on Lifestyle – Related Diseases*, Gajah Mada University
- Babington, L.M. (2006). Understanding belief, knowledge, and practices of mothers in the Dominican Republic related to feeding infants and young children. *Hispanic Health Care International*, 4(3), 153-158.



- Babington, L. (2007). Comparing child-feeding practices of Dominican Mothers. *Journal of Pediatric Nursing*, 22(5), 388-396.
- Babington, L., & Patel, B. (2008). Understanding child feeding practices of Vietnamese mothers. *The American Journal of Maternal Child Nursing*, 33 (6), 376-381.
- Badan Penelitian dan Pengembangan Kesehatan, Departemen Kesehatan Republik Indonesia, (2010). *Laporan Hasil Riset Kesehatan Dasar (RISKESDAS) Indonesia tahun 2010*. Jakarta: Departemen Kesehatan Republik Indonesia.
- Badan Perencanaan Pembangunan Nasional (Bappenas), Kementerian Negara Perencanaan Pembangunan Nasional, (2009). *Laporan Singkat Pencapaian Millenium Development Goals Indonesia*. Jakarta: Kementerian Negara Perencanaan Pembangunan Nasional.
- Bagozzi, R.P., & Yi, Y. (1988). On the evaluation of Structural Equation Models. *Journal of the Academy of Marketing Science*, 16(1), 074-094.
- Ball, J.W., Bindler, R.C., & Cowen, K.J. (2010). *Child Health Nursing. Partnering With Children & Families, (Second Edition)*. New Jersey : Pearson Education, Inc.
- Bante, H., Elliott, M., Harrod, A., Haire-Joshu, D., (2008). The Use of Inappropriate Feeding Practices by Rural Parents and Their Effect on Preschoolers' Fruit and Vegetable Preferences and Intake. *Journal of Nutrition and Education Behavior*, 40, 28-33.
- Behavior [Def. 2]. (n.d.). *Merriam-Webster Online*. In Merriam-Webster. Retrieved February 2, 2013, from <http://www.merriam-webster.com/dictionary/citation>.

- Benson, J. & Clark, F. (1982). A Guide for Instrument Development and Validation. *The American Journal of Occupational Therapy*, 36(12), 789-800.
- Berlin, K.S., Davies, W.H., Lobato, D.J., & Silverman, a.h. (2009). A Biopsychosocial model of normative and problematic pediatric feeding. *Children's Health Care*, 38, 263-282.
- Birch, L.L., Fisher, J.O., Grimm-Thomas, K., Markey, C.N., Sawyer, R., & Johnson, S.L., (2001). Confirmatory factor analysis of the child feeding questionnaire : a measure of parental, attitude, beliefs and practices about child feeding and obesity proneness. *Appetite*, 36, 201-210.
- Blissett, J., Meyer, C., & Haycraft, E., (2006). Maternal and paternal controlling feeding practices with male and female children. *Appetite*, 47, 212 – 219.
- Boles, R.E., Nelson, T.D., Chamberlin, L.A., Valenzuela, J.M., Sherman, S.N., Johnson, S.L., & Powers, S.W. (2010). Confirmatory factor analysis of the child feeding questionnaire among low-income African American families of preschool children. *Appetite*, 54, 402-405.
- Bramhagen, A.C., Axelsson, I., & Hallstrom, I. (2006). Mothers' experiences of feeding situation-an interview study. *Children and Families*, 29-34.
- Briefffel, R.R., Reidy, K., Karwe, V., & Devaney, B. (2004). Feeding infants and toddlers study: improvements needed in meeting infant feeding recommendation. (Supplemental material). *Journal of The American Dietetic Association*, 104, S31-S37.
- Brown, J. (2007). *Nutrition Through the Life Cycle* (third edit., p. 576). Belmont: Cengage Learning.

- Burns, C. E., Dunn, A. M., Brady, M. A., Starr, N. B., & Blosser, C. G. (2012). *Pediatric Primary Care* (fifth edit., p. 1288). Philadelphia: Elsevier Health Sciences.
- Burn, N., & Grove, S.K. (2009). *The practice of nursing research. Appraisal, synthesis, and generation of evidence*. Texas : Saunders Elsevier
- Callaghan, D.M., (2003). Health-promoting self-care behaviors, self-care efficacy, and self-care agency. *Nursing Science Quarterly*, 16 (3), 247-254.
- Chaidez, V., & Kaiser, L.L., (2011). Validation of instrument to assess toddler feeding practices of Latino Mothers. *Appetite*, 57, 229-236.
- Chaidez, V., Townsend, M., & Kaiser, L.L., (2011). Toddler-feeding practices among Mexican American mothers. A qualitative study. *Appetite*, 56, 629–632.
- Chaiyawat, W., (2000). *Psychometric properties of the Thai versions of the State-Trait Anxiety Inventory for Children-Revised (STAIC-R) and the Child Medical Fear Scale-Revised (CMFS-R) in Thai school-age children*. Doctoral Dissertation for the Degree of Philosophy in Nursing. State University of New York at Buffalo.
- Chaiyawat, W., Brown, J., 2000. Psychometric properties of the Thai versions of State-Trait anxiety inventory for children and child medical fear scale. *Research in Nursing and Health*, 23, 406-414.
- Clark, H.R., Goyder, E., Bissel, P., Blanks, L., & Peters, J. (2007). How do parents' child-feeding behaviour influence child weight ? implication for childhood obesity policy. *Journal of Public Health*, 29(2), 132-141.
- Clark, L.A., & Watson, D., (1995). Constructing validity : basic issues in objective scale development. *Psychological Assessment*, 7(3), 309-319.

- Cole, D.A., (1987). Methodological contributions to Clinical research. *Journal of Consulting and Clinical Psychology*, 55(4),584-594.
- Coleman, G., Horodyski, M.A., Contreas, D., & Hoerr, S.M., (2005). Nutrition Education Aimed at Toddlers (NEAT) curriculum. *Journal of Nutrition Education and Behavior*, 37, 88-97.
- Cormack, D.F.S., 1996. *The research process in nursing, (Third edition)*. London : Blackwell Science
- Corsini, N., Danthiir, V., Kettler, L., & Wilson, C. (2008). Factor structure and psychometric properties of the child feeding questionnaire in Australian preschool children. *Appetite*, 51, 474-481.
- Corsini, N., Wilson, C., Kettler, L., & Danthiir, V. (2010). Development and preliminary validation of the toddler snack food feeding questionnaire. *Appetite*, 54, 570-578.
- Cox, K.R., & Taylor, S.G. (2005). Orem's self-care deficit nursing theory : pediatric asthma as exemplar. *Nurs Sci Q*, 18(3), 249-257.
- Crocker & Algina, 1986. *Introduction to classical and modern test theory*. Philadelphia : Harcourt Brace Jovanovic College Publisher.
- Comrey, A.L., (1973). *A first course in factor analysis*. New York: Academic Press.
- Davis, L.L., (1992). Instrument review: Getting the most from your panel of experts. *Applied Nursing Research*, 5, 194-97.
- Dawis, R.V., (1987). Scale Constructions. *Journal of Counseling Psychology*, 34(4),481-489.

- Dearden, K.A., Hilton, S., Bentley, M.E., Caulfield, L.E., Wilde, C., Ha, P.B., and Marsh, D. (2009). Caregiver verbal encouragement increases food acceptance among Vietnamese toddlers. *The Journal of Nutrition*, 139, 1387-1392
- Dennis, C. M. (1997). *Self-care deficit theory of nursing*. St.Louis: Mosby.
- Denyes, M.J., Orem, D.E., & Bekel, G. (2001). Self-care : A foundation of science. *Nursing Science Quarterly*, 14(1), 48-54.
- de Lauzon-Guillain, Musher-Eizenman, D., Leporc, E., Holub, S., & Charles, M.A., (2009). Parental feeding practices in the United States and in France: relationships with child's characteristics and parent's eating behavior. *Journal of the American Dietetic Association*, 109(6), 1064-1069
- DeVellis, (2003). *Scale Development. Theory and Applications (second edition)*. USA : Sage Publication, Inc.
- Dewey, K.G., and Afarwuah, S.A. (2008). Systematic review of the efficacy and Effectiveness of Complementary feeding intervention in developing Country. *Maternal and Child Nutrition*, 4, 24-85.
- DiSantis, K. I., Hodges, E. A., Johnson, S. L., & Fisher, J. O. (2011). The role of responsive feeding in overweight during infancy and toddlerhood: A systematic review. *International Journal of Obesity*, 35, 480-492. DOI: 10.1038/ijo.2011.3
- Dixon, J.K., (2001). Factor Analysis. In. B.H. Munro (ed.). *Statistical methods for health care research*. (4<sup>th</sup> ed., pp. 303-329). Philadelphia:Lippincott.
- Dudek, S.G., (2014). *Nutrition Essentials for Nursing Practices (7<sup>th</sup> edition)*. China: Lippincott Williams and Wilkins.

- Engle, P.L., Menon, P., & Haddad, L. (1999). Care and nutrition : concept and measurement. *World Development*, 27(8), 1309-1337.
- Evans, A., Seth, J. G., Smith, S., Harris, K. K., Loyo, J., Spaulding, C., ... Gottlieb, N. (2011). Parental feeding practices and concerns related to child underweight, picky eating, and using food to calm differ according to ethnicity/race, acculturation, and income. *Maternal and Child Health Journal*, 15(7), 899–909. doi:10.1007/s10995-009-0526-6
- Farrow, C.V., & Blissett, J. (2008). Controlling feeding practices: cause or consequence of early child weight ?. *Pediatrics*, 121(1), 164-169.
- Fahmida U, & Rospita L., (2010). Report Compilation of Studies Related to Food Consumption, Physical Exercise, Healthy Lifestyle, and Nutritional Status Conducted in Indonesia between 2000-2010: Age group Children under the age of five. Jakarta: SEAMEO-TROPMED Regional Center for Food and Nutrition (RECFON) University of Indonesia.
- Faith, M.S., Storey, M., Kral, T.V.E., & Pietrobelli. The feeding demands questionnaire : assessment of parental demand cognitions concerning parent-child feeding relations. *Journal of the American Dietetic Association*, 108, 624-630.
- Faith, M.S., Heshka, S., Keller, K.L., Sherry, B., Matz, P.E., Pietrobelli, A., & Allison, DB. (2003). Maternal-child feeding pattern and child body weight. *Archieve Pediatr Adolescent Medicine*, 157, 926-932.
- Fawcett, J., & Carity, J. (2009). *Evaluation of samples in evaluating Research for evidence based nursing*. Philadelphia : FA. Davis.

- Feinberg, E., Kavanagh, P.L., Young & Prudent, N. (2010). Food insecurity and compensatory feeding practices among urban black families. *Pediatrics*, 122, e854-e860.
- Flax, V.L., Ashorn, U., Phuka, J., Maleta, K., Manary, M.J., and Ashorn, P., (2008). Feeding patterns of underweight children in rural Malawi given supplementary fortified spread at home. *Maternal and Child Nutrition*, 4: 65-73.
- Froman, R.D., (2001). Elements to Consider in Planning the Use of Factor Analysis. *Journal of Nursing Research Issue* 5(2), p1-p22.
- Forthun, L. (2012). Family Nutrition : Parenting and Family Life 1. *The Institute of Food and Agricultural Sciences (IFAS)*. Retrieved January 03, 2014, from <http://edis.ifas.ufl.edu>
- Garg, A., & Chadha, R. (2009). Index for measuring the quality of complementary feeding practices in Rural India. *Journal of Health Population Nutrition*, 27(6), 763-771.
- Garrett, J., & Ruel, M.T., (2005). The coexistence of child undernutrition and maternal overweight: prevalence, hypotheses, and programme and policy implications. *Maternal and Child Nutrition*, 1:185-196.
- Geden, E.A., Isaramalai, S-A., & Taylor, S.G., (2001). Self-care deficit nursing theory and nurse practitioners' practice in primary care setting. *Nursing Science Quarterly*, 14:29-33.
- Geisinger, K., (1994). Cross-Cultural Normative Assessment: Translation and Adaptation Issues influencing the Normative Interpretation of Assessment Instruments. *Psychological Assessment*, 6(4), 304-312.

- Geng, G., Zhixia, Z., Suzuki, K., Tanaka, T., Ando, D., Sato, M., Yamagata, Z. (2009). Confirmatory factor analysis of the child feeding questionnaire (CFQ) in Japanese elementary school children. *Appetite*, 52, 8-14.
- Grant, J.S., & Davis, L.L., (1997). Focus on Quantitative methods, Selection and use of content Experts for instrument developmet. *Research in Nursing & Health*, 20, 269-274.
- Green, S.M., & Watson, R., (2005). Nutritional Screening and assessment tools for use by nurses : literature review. *Journal of Advanced Nursing*, 50(1),69-83.
- Gregory, J.E., Paxton, S.J., Brozofic, J.E., & Gregory, J.E., (2010). Pressure to eat and restriction are associate d with child eating behaviours and maternal concern about child weight, but not child body mass index , in 2- to 4-year-old children. *Appetite*, 54, 550–55
- Gregory, J. E., Paxton, S. J., & Brozovic, A. M. (2011). Maternal feeding practices predict fruit and vegetable consumption in young children. Results of a 12-month longitudinal study. *Appetite*, 57(1), 167–72.  
doi:10.1016/j.appet.2011.04.012
- Gussy, MG., Waters, EB., Riggs, EM., & Kilpatricks, NM., (2008). Parental knowledge, belief and behaviors for oral health of toddlers residing in Rural Victoria. *Australian Dental Journal*, 53 : 52-60.
- Ha, P.B., Bentley, M.E., Pachon, H., Sripaipan, T., Caulfield, L.E., Marsh, D.R., & Scroeder, D.G. (2002). Caregiver styles of feeding and child acceptance of food in rural Viet Nam. (Supplemental material). *Food and Nutrition Buletin*, 23(4), 92-98.



- Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E., (2010). *Multivariate data analysis: a global perspective* (7<sup>th</sup> ed). Boston: Pearson.
- Haas D., (1990). *The relationship between coping dispositions and power components of dependent-care agency in parents of children with special health care needs.* Doctoral Dissertation for the Degree of Philosophy in Nursing. The Graduate School of Wayne State University.
- Haycraft, E., & Blissett, J., (2008). Controlling feeding practices and psychopathology in a non-clinical sample of mothers and fathers. *Eating Behaviors*, 9, 484 –492.
- Haycraft, E., & Blissett, J. (2012). Predictors of paternal and maternal controlling feeding practices with 2- to 5-year-old children. *Journal of Nutrition Education and Behavior*, 44(5), 390–7. doi:10.1016/j.jneb.2010.03.001
- Haynes, S.N., Richard, D.C., & Kubany, E.S., (1995). Content Validity in Psychological Assessment: a functional approach to concept and methods. *Psychological Assessment*, 7(3),238-247.
- Hendrie, G., Sohonpal, G., Lange, K., & Golley, R. (2013). Change in the family food environment is associated with positive dietary change in children. *International Journal of Behavioral Nutrition and Physical Activity*, 10(1), 1. doi:10.1186/1479-5868-10-4
- Hennessy, E., Hughes, Goldberg, J.P., & Hyatt, R.R., (2010). Parent behavior and child weight status among a diverse group of underserved rural families. *Appetite*, 54, 369–377.
- Henning, M., (2009). Nursing's Role in Nutrition. *Computer, Informatics, Nursing*, 27(5): 301-306

- Hertzog, M.A., (2008). Considerations in determining sample size for pilot studies. *Research in Nursing & Health*, 2008, 31, 180–191.
- Hockenberry, M. J., & Wilson, D. (2011). *Wong's Nursing Care of Infants and Children, 9e*. St. Louis: Mosby.
- Hodges, E.A., Houck, G.M., & Kindermann, T. (2007). Reliability of the nursing child assesment feeding scale during toddlerhood. *Issues in Comprehensive Pediatric Nursing*, 30 : 109-130.
- Hodges, E.A., Houck, G.M., & Kindermann, T. (2007). Validity of the nursing child assessment feeding scale during toddlerhood. *Western Journal of Nursing Research*, 31: 662-678.
- Hoerr, S.L., Hughes, S.O., Fisher, J.O., Nicklas, T.A., Liu, Y., & Shewchukd, R.M. (2009). Association among parental feeding styles and children's food intake in families with limited incomes. *International Journal of Behavior Nutrition and Physical Activity*, 6(55). doi : 10.1186/1479-5868-6-55.
- Horodysnki, M.A., Contreas, D., & Hoerr, S.M. (2005). Nutrition Education Aimed at Toddler (NEAT) curriculum. *Family Community Health*, 27(2), 103-113.
- Horodysnki, M.A.O., Hoerr, S.M., & Coleman, G. (2004). Nutrition Education Aimed at Toddlers. A pilot program for rural low-incomes families. *Nursing Education Behavior*, 37, 96-97.
- Hubbs-Tait, L., Kennedy, T.S., Page, M.C., Topham, G.L., and Harrist, A.W., (2008). Parental Feeding Practices Predict Authoritative, Authoritarian, and Permissive Parenting Styles. *Journal of The American Dietetic Association*, 108:1154-1161.

- Hughes, S.O, Anderson, C.B., Power, T.G., Micheli, N., Jaramilo, S., & Niklas, T.A. (2006). Measuring feeding in low-income African-American and Hispanic parents. *Appetite*, 46, 215-223.
- Hughes, S.O., Patrick, H., Power, T.G., Fisher, J.O., Anderson, C.B., & Niklas, T.A. (2007). The impact of child care providers' feeding on children food consumption. *Journal of Development & Behavioral Pediatrics*, 28(2), 00-00.
- Ismail, T.A.T., & Sulaiman, Z. (2010). Reliability and validity of a Malay-version questionnaire assessing knowledge of breastfeeding. *Malaysian Journal of Medical Science*, 17(3), 32-39.
- Jacobson, S.F., (1997). *Evaluating Instruments for use in clinical research*. Massachusetts: Jones and Barlett Publishers.
- Jaccard & Wan, C.K., (1996). *LISREL Approaches to Interaction Effects in Multiple Regression*. Thousand Oaks, CA: Sage Publication, Inc.
- Jain, A., Sherman, S.N., Chamberlin, I.A., & Whitaker, R.C. (2004). Mothers misunderstand question on a feeding questionnaire. *Appetite*, 42, 249-254.
- Janicke, D.M., Wistedt, K.M., & Dumont-Driscoll, M.C., (2010). Factors associated with parental use of restrictive feeding practices to control their children's food intake. *Appetite*, 55, 332-337.
- Jansen, P. W., Roza, S. J., Jaddoe, V. W., Mackenbach, J. D., Raat, H., Hofman, A., Tiemeier, H. (2012). Children's eating behavior, feeding practices of parents and weight problems in early childhood: results from the population-based Generation R Study. *The International Journal of Behavioral Nutrition and Physical Activity*, 9(1), 130. doi:10.1186/1479-5868-9-130

- Jansen, Elena, Daniels, Lynne, & Nicholson, Jan (2012) The dynamics of parenting and early feeding - constructs and controversies : a viewpoint. *Early Child Development and Care*, 182(8), pp. 967-981.
- Johanson, G.A., and Brooks, G.P., (2010). Initial Scale Development: Sample Size for Pilot Studies. *Educational and Psychological Measurement*, 70(3) 394–400.
- Joreskog, K., & Sorbom, D., (1993). *LISREL: Structural equation modelling with the SIMPLIS command language*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Kalliath, T.J., Bludorn, A.C, & Gillespie, D.F. (1999). A Confirmatory factor analysis of the competing values instrument. *Educational and Psychological Measurement*, 59(1),143-154.
- Kanjanawetang, J., (2006). *Development of the Thai Family Health Routines Scale*. Doctoral Dissertation for the Degree of Doctor of Philosophy in Nursing Science. Chulalongkorn University at Bangkok, Thailand.
- Kaur, H., Li, C., Nazir, N., Choi, W.S., Resnicow, Birch, L.L., & Ahluwalia, J.S. (2006). Confirmatory factor analysis of the child-feeding questionnaire among parents of adolescent. *Appetite*, 47, 36-45.
- Kementerian Kesehatan Indonesia Direktorat Jenderal Bina Kesehatan Masyarakat. (2003). *Pedoman umum gizi seimbang (panduan untuk petugas)*. Jakarta: Departemen Kesehatan Republik Indonesia.
- Kementerian Kesehatan Republik Indonesia. (2012). *Buku Saku Asuhan Gizi di Puskesmas Pedoman Pelayanan Gizi bagi Petugas Kesehatan*. Jakarta: Kementrian Kesehatan RI.

- Kheawwan, P., (2012). The development of the readiness to change cardiac health behavior scale. Doctoral Dissertation for the Degree of Doctor of Philosophy in Nursing Science. Chulalongkorn University at Bangkok, Thailand.
- Kline, P. (1986). *A handbook of test construction: Introduction to psychometric design*. New York: Methune & Company.
- Knapp, T.R., (1991). Focus on Psychometrics coefficient alpha : conceptualization and anomalies. *Research in Nursing & Health*, 14,457-460.
- Kolopaking, R., Bardosono, S., & Fahmida U., (2011). Maternal Self-efficacy in the Home Food Environment : A Qualitative Study among Low-income Mothers of Nutritionally At-risk Children in an Urban Area of Jakarta, Indonesia. *Journal of Nutrition Education and Behavior*, 43(3).
- Kumar, D., Goel, N.K., Mittal, P.C., & Misra, P. (2006). Influence of infant-feeding practices on nutritional status of under-five children. *Indian Journal of Pediatrics*, 73 (5), 417- 421.
- Lauzon-Guillain, D.B., Musher-Eizenman, D., Leporc, E., Holub., & Charles, M.A. (2009). Parental feeding practices in the United States and in France : relationship with child's characteristic and Parent's eating behavior. *Journal of the American Dietetic Association*, 109, 1064-1069.
- Lazarou, C., & Kouta, C., (2010). The role of nurses in the prevention and management of obesity. *British Journal of Nursing*, 19(10): 641-647.
- Lindsay, A.C., Machado, M.T., Sussner, K.M., Hardwick, C.K., Kerr, L.R., & Peterson, K.E. (2009). Brazilian mothers' beliefs, attitudes and practices related to child weight status and early feeding within the context of nutrition transition. *Journal of Biosocial Science*. 41 (1), 21-37.

- Liu, H., Mroz, T., & Adair, L., (2009). Parental compensatory behavior and early child health Outcome in Cebu, Philippines. *Journal of Development Economic*, 90, 209-230.
- Loth, A. K. A., & Maclehorse, R. F. (2013). Food-Related Parenting Practices and Adolescent Weight Status : A Population-Based Study. *Pediatrics*, 131(5), 1443–1450. doi:10.1542/peds.2012-3073
- Lutter, C. K., Daelmans, B. M. E. G., de Onis, M., Kothari, M. T., Ruel, M. T., Arimond, M., ... Borghi, E. (2011). Undernutrition, poor feeding practices, and low coverage of key nutrition interventions. *Pediatrics*, 128(6), e1418–27. doi:10.1542/peds.2011-1392
- Lutter, C.K., & Rivera, J.A. (2003). Nutritional status of infants and young children and characteristic their diets. (Supplemental material). *The Journal of Nutrition*, 2941S-2949S. :
- Lyne, P.A., & Prowse, M.A. (1999). Methodological issues in the development and use of instruments to assess patient nutritional status or the level of risk of nutritional compromise. *Journal of Advanced Nursing*, 30(4), 835-842.
- Lynn, M., (1986). Determination and Quantification of content validity. *Nursing Research*, 35,382-385.
- Mahan, L.K., & Escott-Stump, S., 2008. *Krause's food & Nutrition Therapy*. Canada : Saunders Elsevier.
- Man, C. S., Dwyer, J. J. M., Heeney, E. S., Goy, R., & Simpson, J. R. (2010). The Effect of Parental Feeding Behaviours: And Participation of Children in Organized Sports/Activities On Child Body Mass Index. *Canadian Journal of Dietetic Practice and Research*, 71(4), 178–178. doi:10.3148/71.4.2010.178

- Maseta, E., Kogi-Makau, W., & Omwega, A.M., (2008). Childcare practices and nutritional status of children aged 6–36 months among short- and long-term beneficiaries of the child survival protection and development programmes (the case of Morogoro, Tanzania). *South African Journal of Clinical Nutrition*, 21(1), 16-20.
- Matthews, L.E., Gorin, S.S., & Arnold, J., (2006). *Eating well in Health Promotion in Practice*. USA : John Wiley & Sons.
- Medeiros, L. C., Hillers, V. N., Chen, G., Bergmann, V., Kendall, P., & Schroeder, M. (2004). Design and development of food safety knowledge and attitude scales for consumer food safety education. *Journal of the American Dietetic Association*, 104, 1671–1677.
- Michell, J., (1986). Measurement scale and statistic: a clash of paradigms. *Psychological Buletin*, 100(3), 398-407.
- Ministry of Health. Republic of Indonesia, (2002). *Pedoman Umum Gizi Seimbang (Panduan untuk petugas)*. Jakarta: Directorate of Community Nutrition, Ministry of Health, Republic of Indonesia;
- Mishel, M.H., (1998). *Methodological studies: Instrument development*. In P.J. Brink & M.J. Wood (eds.). *Advanced design in nursing research*. (2<sup>nd</sup> ed.). Thousand Oaks, CA: SAGE.
- Moore, J.B., & Pichler, V.H. (2000). Measurement of Orem's Basic Conditioning Factors : A Review of Published Research. *Nurs Sci Q*, 13(2), 137-142.
- Moore, J. B., & Beckwitt, A.E., (2006). Self-care operations and nursing interventions for children with cancer and their parents. *Nursing Science Quarterly*, 19, 147-156.

- Moore, J.B., Pawloski, L., Baghi, H., Whitt, K., Rodriguez, C., Lumbi, L., & Bashatah, A., (2005). Development and examination of psychometric properties of Self-Care instruments to measure nutrition practices for English and Spanish-speaking adolescents. *Self-care and Dependent Care Nursing*, 13(1):9-1.
- Moore, A.C., Akhter, S., & Aboud, F.E., (2006). Responsive complementary feeding in rural Bangladesh. *Social Science & Medicine*, 62,1917 – 1930.
- Murashima, M., Hoerr, S. L., Hughes, S. O., Kattelman, K. K., & Phillips, B. W. (2012). Maternal parenting behaviors during childhood relate to weight status and fruit and vegetable intake of college students. *Journal of Nutrition Education and Behavior*, 44(6), 556–63. doi:10.1016/j.jneb.2011.05.008
- Musher\_Eizenman, D.R., & Holub, S.C., (2007). Comprehensive feeding practices questionnaire : validation of a new measure of parental feeding practices. *Journal of Pediatric Psychology*, 32(8), 960-972.
- Musher-Eizenman, D.R., de Lauzon-Guillain, B., & Holub, S.C., (2009). Child and parent characteristics related to parental feeding practices. A cross-cultural examination in the US and France. *Appetite*, 52,89–95
- Mwangome, M., Prentice, A., Plugge, E., & Nweneka, C. (2010). Determinants of appropriate child health and nutrition practice among women in rural Gambia. *Journal of Health Population Nutrition*, 28(2), 167-172.
- Nadia, C., Wilson, C., Kettler, L., & Danthiir, V. (2007). Development and preliminary validation of the toddler snack food feeding questionnaire. *Appetite*, 54, 570-578.
- Ng, W.C., Zalilah, M.S., Khor, G.L., Wan, N.W.N., Haslinah, A., Shashikala, S., Mirmalini, K., Hejar, A.R. (2005). A Qualitative study on perception and



- knowledge of Orang Asli mothers on child health and nutrition. *Malaysian Journal of Nutrition*, 11(2), 75-88.
- Notoatmodjo, S. (2003). *Pendidikan Dan Perilaku Kese*. Jakarta: Rineka Cipta.
- Noughani, F., & Bagheri, M. (2010). Effect of socio-cultural factors on feeding pattern of the children. *European Journal of Social Science*, 16(4), 546-555.
- Nunnally, J., & Bernstein, I. (1994). *Psychometric Theory* (third edition). New York: McGraw Hill.
- Olayiwola, I.O., & Bandipo, M.S. (2006). Nutrition and childcare practices - the situation in Nigeria. *West African Journal of Nursing*, 17 (1), 21-27.
- Orem D.E., (1985). *Nursing Concepts of Practice* (third edition). New York: McGraw-Hill Book Company.
- Orem D.E., (1991). *Nursing Concepts of Practice* (fourth edition). St. Louis: Mosby-Year Book, Inc, 1991.
- Orem, D.E., Taylor, S.G., & Renpenning, K.L. (2001). *Nursing concepts of practices (sixth edition)*. St. Louis : Mosby a Harcourt Health Science Company.
- Osborne, Jason W. & Anna B. Costello (2004). Sample size and subject to item ratio in principal components analysis. *Practical Assessment, Research & Evaluation*, 9(11).
- Parmenter, K., & Wardle, J., (1999). Development of general nutrition knowledge questionnaire for adults. *European Journal of Clinical Nutrition*, 53, 298-308.
- Patrick, H., Niklas, T.A., Hughes, S.O., & Morales, M. (2005). The benefits of authoritative feeding style : caregiver feeding styles and children's food consumption patterns. *Appetite*, 44, 243-249.

- Pedhazur, E. J., & Schmelkin, L. P. (1991). *Measurement, design, and analysis*. Hillsdale, NJ: Lawrence Erlbaum
- Pierre-Louis, J.N., Sanjur, D., Nesheim, M.C., Bowman, D.D., & Mohammed, H.O. (2007). Maternal income-generating activities, child care, and child nutrition in Mali. *Food and Nutrition Bulletin*, 28(1), 67-75.
- Polat, S., & Erci, B. (2010). Psychometric properties of the child feeding scale in Turkish mothers. *Asian Nursing Research*, 4(3), 111-121.
- Polit, D.F., Beck, C.T., & Owen, S.V., (2007). Focus on research methods. Is the CVI an acceptable indicator of content validity ? Appraisal and recommendation. *Research in Nursing & Health*, 30, 459-467.
- Polit, D.F., & Beck, C.T., (2004). *Nursing Research : Principles and methods (Seventh edition)*. Philadelphia : Lippincott, Williams & Wilkins.
- Polit, D.F., & Beck, C.T., (2008). *Nursing Research : Generating and Assessing Evidence for Nursing Practice (Eighth edition)*. Philadelphia : Lippincott, Williams & Wilkins.
- Popkin, B., (2004). The shift in stages of nutrition transition in the developing world differs from past experiences. *Public Health Nutrition*, 5:205-214.
- Ramji, S., (2009). Impact of infant & young child feeding & caring practices on nutritional status and health. *Indian Journal of Medical Research*, 130, 624-626.
- Rattray, J., & Jones, M.C., (2007). Essential elements of questionnaire design and development. *Journal of Clinical Nursing*, 16, 234-243.
- Riset Kesehatan Dasar (Riskesdas) 2013. Pedoman Pewawancara Petugas Pengumpul Data. Jakarta: Badan Litbangkes, Depkes RI, 2013

- Robertson, C., (2002). *Safety, Nutrition, and Health in Child Care*. USA : Thomson Learning, Inc.
- Roden, J., (2003). Capturing Parents' Understanding About The Health Behaviors They Practice With Their Preschool-Aged Children. *Issues in Comprehensive Pediatric Nursing*, 26, 23–44.
- Rodgers, R. F., Paxton, S. J., Massey, R., Campbell, K. J., Wertheim, E. H., Skouteris, H., & Gibbons, K. (2013). Maternal feeding practices predict weight gain and obesogenic eating behaviors in young children : a prospective study. *International Journal of Behavioral Nutrition and Physical Activity*, 10(1), 1. doi:10.1186/1479-5868-10-24
- Rosas, S.R., & Camphausen, L.C., (2007). The use of concept mapping for scale development and validation in evaluation. *Evaluation and program planning*, 30, 125-135.
- Rubio, B., Rigal, N., Boireau-Ducept, Mallet, P., & Meyer, P. (2007). Measuring willingness to try foods : a self-report questionnaire for French-speaking children. *Appetite*, 50, 408-414
- Saha, K.K., Frongillo, E.A., Alam, D.S., Arifeen, S.E., Persson, L.A., & Rasmussen K.M.(2008). Appropriate infant feeding practices result in better growth of infants and young children in rural Bangladesh. *American Journal of Clinical Nutrition*, 87 (6), 1852-1859.
- Sanders, C.G., Aycock, N., Samuel-Hodge, C.D., (2004). Extending the reach of public health nutrition: training community practitioners in multilevel approaches. *Journal of Womens Health*, 13:589-59

- Satter, E. (1995). Feeding dynamics : helping children to eat well. *Journal of Pediatric Health Care*, 9, 178-184.
- Savage, J.S., Fisher, J.O., & Birch, L.L., (2007). Parental influence on eating behavior:conception to adolescence. *Journal of Law, Medicine & Ethics*, 23-34.
- Schrefer, S. (2000). *Pediatric Primary care :A Handbook for Nurse Practitioners*. USA : Saunders Elsevier.
- Schipper, E.J., Riksen-Walraven, M., & Geurts, S.A.E. (2007). Multiple determinants of caregiver behavior in child care centers. *Early Childhood Research Quarterly*, 22, 312–326.
- Setyowireni, D.K.(1998). *Survey of feeding pattern and nutritional status in under 24 months children in Belu District, Nusa Tenggara Timur*. Faculty of Medicine, Universitas Gadjah Mada, Yogyakarta Special Province.
- Sharma, M., & Kanani, S. (2006). Grandmother's influence on child care. *Indian Journal of Pediatrics*, 73 (4), 295-298.
- Spegman, A.M., & Houck, G.M. (2005). Assessing The Feeding/Eating Interaction as a Context For The Development of Social Competence in Toddler. *Issues in Comprehensive Pedaitric Nursing*, 28, 213-236.
- Sulistyawati, H., (2007). *Correlation between mother's knowledge and the pattern of giving of complementary feeding with nutritional status of children under five years (4-24 months) in Sendangharjo village Blora, Indonesia* (Unpublished master's thesis). Sport of Education Faculty, State University of Semarang, Central Java.
- Stevens, J., (1996). *Applied multivariate statistic for the social sciences*, (3<sup>rd</sup> ed).Mahwah, NJ: Lawrence Erlbaum Associates.

- Suderson, R.V., Subba Rao., Pratima, Vardhana, V., & Polasa, K., (2008). Food safety related perceptions and practices of mothers – A case study in Hyderabad, India. *Food Control*, 19, 506–513.
- Swanson, V., Power, K. G., Crombie, I. K., Irvine, L., Kiezebrink, K., Wrieden, W., & Slane, P. W. (2011). Maternal feeding behaviour and young children’s dietary quality: a cross-sectional study of socially disadvantaged mothers of two-year old children using the Theory of Planned Behaviour. *The International Journal of Behavioral Nutrition and Physical Activity*, 8(1), 65. doi:10.1186/1479-5868-8-65
- Switzer, G.E., Wisniewski, S.R., Belle, S.H., Dew, M.A., & Schultz, R., (1999). Selecting, developing, and evaluating research instrument. *Social Psychiatry and Psychiatric Epidemiology*, 34, 399-409.
- Sylva, K., Stein, A., Leach, P., Barnes, J., Malmberg, L-E., & FCCC-team. (2007). Family and child factors related to the use of non-maternal infant care: An English study. *Early Childhood Research Quarterly*, 22, 18–136.
- Synnott, K., Boguel, J., Edwards, C.A., Scott, J.A., Higgins, S., Norin, E., Frias, D., Ammarri, S., & Adam, R., (2007). Parental perceptions of feeding practices in five European countries: an exploratory study. *European Journal of Clinical Nutrition*, 61, 946–956
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using Multivariate Statistics* (4th ed.). New York: Harper Collins.
- Talbot, L.A., (1995). *Principles and practice of nursing research*. St. Louis, Baltimore: Mosby.

- Taylor, S.G., Renpenning, K.E., Geden, E.A., Neuman, B.M., & Hart, M.A. (2001). A Theory of Dependent-Care : A corollary theory to Orem's theory of self-care. *Nursing Science Quarterly*, 14(1), 39-47.
- Taylor, S.G., (2001). Orem's general theory of nursing and families. *Nursing Science Quarterly*, 14(1), 7-9
- Thompson, A.L., Mendez, M.A., Borja, J.B., Adair, L.S., Zimmer, C.R., & Bentley, M.E. (2009). Development and validation of the infant feeding style questionnaire. *Appetite*, 53, 210-221.
- Tschann, J. M., Gregorich, S. E., Penilla, C., Pasch, L. a, de Groat, C. L., Flores, E., ... Butte, N. F. (2013). Parental feeding practices in Mexican American families: initial test of an expanded measure. *The International Journal of Behavioral Nutrition and Physical Activity*, 10(1), 6. doi:10.1186/1479-5868-10-6
- Tucker, P., Irwin, J.D., Meizi, H.E., Bouck, M.S., & Pollet, G. (2006). Preschoolers' dietary behavior : parents' perspective. *Canadian Journal of Dietetic Practice and Research*, 67(2), 67-71.
- Tomey, A.M., & Alligood, M.R. (2002). *Nursing Theories and Their Work (Fifth Edition)*. St. Louis : Mosby, Inc.
- Unlu, G., Aras, S., Eminagaoglu, N., Buyukgebiz, B., & Bekem, O., (2007). Developmental Characteristics of Children Aged 1–6 Years With Food Refusal. *Public Health Nursing*, 25(1), 2 –9.
- Utomo, B., Fitria, F., Sulaeha, E., Dachija, D., & Supen, K. (2000). Feeding pattern, nutrient intake and nutritional status among children 0-23 months of age in Indramayu, West Java, 1997. *Malaysian Journal of Nutrition*, 6(2), 147-170.

- Usfar, A.A., Iswarawanti, D.N., Davelyna, D., & Dillon, D. (2010). Food and personal hygiene perception and practices among caregivers whose children have diarrhea : a qualitative study of urban mothers in Tangerang, Indonesia. *Journal of Nutrition Education and Behavior*, 42(1), 33-40.
- Usfar, A.A., & Fahmida, U., (2011). Do Indonesians follow its Dietary Guidelines? evidence related to food consumption, healthy lifestyle, and nutritional status within the period 2000-2010. *Asian Pacific Journal of Clinical Nutrition*, 20 (3), 484-494.
- Ventura, A.K., Gromis, J.C., & Lohse, B., (2010). Feeding practices and style used by a diverse sample of low-income parents of preschools-age children. *Journal of Nutrition Education and Behavior*, 42(4), 242-249.
- Vereecken, C. a, Keukelier, E., & Maes, L. (2004). Influence of mother's educational level on food parenting practices and food habits of young children. *Appetite*, 43(1), 93–103. doi:10.1016/j.appet.2004.04.002
- Wachs, T.D. (2007). Multiple influences on children's nutritional deficiencies : a system perspectives. *Physiology & Behavior*, 94, 48-60.
- Waltz, C.F., Strickland, O.L., & Lenz, E.R., (2010). Measurement in nursing and health research (fourth edition). New York: Springer Publishing Company.
- Wardle, J., Guthrie, C.A., Sandersom, S., & Rapoprt, L., (2001). Development of the Children's Eating Behavior Questionnaire. *Journal of Child Psychology Psychiatry*, 42(7), 963-970.
- Wardlaw, G.M., (1999). *Perspectives in nutrition*. USA : WcGraw-Hills Companies.

- Webber, L., Cooke, L., Hill, C., & Wardle, J. (2010). Child adiposity and maternal feeding practices : a longitudinal analysis 1 – 3. *The American Journal of Clinical Nutrition*, 92, 1423–1428. doi:10.3945/ajcn.2010.30112.1
- World Health Organization. (2009). *Infant and young child feeding*. Geneva: WHO Press.
- Widajanti, L., Kartasurya, M.I., 2004. Food Consumption And Nutritional Status of Underfive Children on Fishermen's Family During Monetary Crisis Period June 1998-August 1999 Semarang Municipality. *Journal of Coastal Development*, 7(2):101-107.
- Wijanto, S. H., (2008). *Structural Equation Modeling Dengan Lisrel 8.8*. Yogyakarta: Graha Ilmu.
- Williams, K.E., Hendy, H., & Knecht, S. (2008). Parents feeding practices and child variables associated with childhood feeding problem. *Journal of Developmental Physical Disabilities*, 20, 231-242.
- Wong, D. L. (2009). *Buku Ajar Keperawatan Pediatrik Vol 2 Wong*. Jakarta: EGC.
- Worthington-Roberts, B.S., Williams, S.R., (2000). *Nutrition Throughout the life cycle*. Singapore : McGraw-Hills Companies.
- Wynd, C.A., Schmidh B., & Schaefer, M.A., (2003). Two quantitative approaches for estimating content validity. *Western Journal of Nursing Research*, 25, 508-517.
- Wyne, A.H., Spencer, A.J., & Szuster, F.S., (1997). Infant and child feeding practices: A preliminary investigation. *Australian Dental Journal*, 42(1),54-58.





**APPENDIX**

จุฬาลงกรณ์มหาวิทยาลัย  
CHULALONGKORN UNIVERSITY



**APPENDIX A**

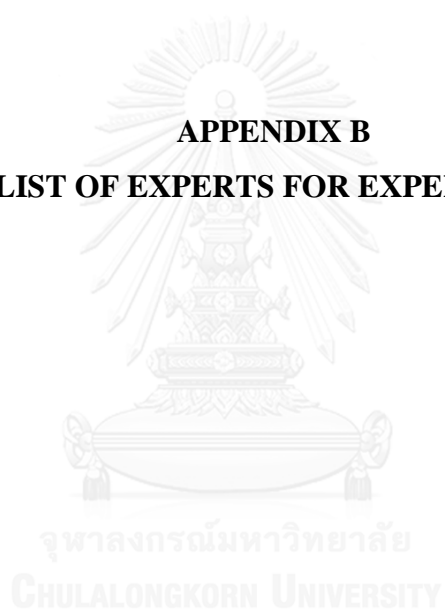
**THE EXAMPLE OF THE INITIAL POOL ITEM RESULT OF PFBQ**

จุฬาลงกรณ์มหาวิทยาลัย  
CHULALONGKORN UNIVERSITY

**Appendix A: The example result of initial Items (70 items)**

Dimension	No	Item
Provide healthy food	1	learn about balanced, healthy and safety food for toddlers
	2	obtain information about the source of foodborne illness
	3	cook food thoroughly
Enhance toddlers' good eating behavior	4	read books about eating behavior of toddlers
	5	will keep a regular mealtimes
	6	feed toddlers if they eat more than one hour in each meal
Provide a pleasant eating environment	7	learn to know about the characteristic of eating environment
	8	will prepare that only the activity going on during mealtimes
	9	use food as a reward to encourage toddlers finish the whole meal

**APPENDIX B**  
**THE LIST OF EXPERTS FOR EXPERT REVIEW**



## Appendix B: The list of experts for expert review

1. *Name* : *Prof. Dra. Elly Nurahmah, SKp., MAppSc., DNSc., R.N.*  
*Office Address* : Faculty of Nursing University of Indonesia  
*Department* : Adult Nursing  
*Focus of interest* : 1. Medical Surgical Nursing  
2. Nursing Management  
3. Nursing Research  
4. Nursing Science
  
2. *Name* : *Yeni Rustina, SKp.,MApp.Sc.,PhD*  
*Office Address* : Faculty of Nursing University of Indonesia  
*Department* : *Maternal and Child Health*  
*Focus of interest* : 1. Maternal and Child health
  
3. *Name* : *DR. Fitri Haryanti, SKp., M.Kes*  
*Office Address* : School of Nursing, Faculty of Medicine, Gadjah Mada University  
*Department* : *Pediatric Nursing*  
*Focus of interest* : 1. Pediatric Nursing  
2. Nursing Management  
3. Nursing Research  
4. Nursing Science
  
4. *Name* : *Dra. Junaiti Sahar, S.Kp., M.App.Sc., Ph.D*  
*Office Address* : Faculty of Nursing University of Indonesia  
*Department* : *Community Nursing*  
*Focus of interest* : 1. Community Nursing  
2. Nursing Management  
3. Nursing Science
  
5. *Name* : *DR. Susetyowati, M.Kes*  
*Office Address* : *Faculty of Medicine, UGM,*  
*Department* : *Nutrition and Health Department*  
*Focus of Interest* : *Nutrition in Hospital*
  
6. *Name* : *DR. Toto Sudargo, SKM., M.Kes*  
*Office Address* : *Faculty of Medicine, UGM,*  
*Department* : *Nutrition and Health Department*  
*Focus of interest* : 1. *Nutrition in Community*  
2. *Health promotion and behavior*

**APPENDIX C**  
**THE ACTIVITY DURING EXPERT REVIEW**



จุฬาลงกรณ์มหาวิทยาลัย  
CHULALONGKORN UNIVERSITY

**Appendix C: The activity during expert review**



**Discussion with Prof. Elly Nurachmah**



**Discussion with Mrs. Yeni Rustina, Ph.D**



**Discussion with DR. Fitri Haryanti**



**Discussion with Mrs. Junaiti, Ph.D**



**Discussion with DR. Susetyowati**



**Discussion with DR. Toto Sudargo**

**APPENDIX D**  
**COVER LETTER FOR EXPERT REVIEWER**  
**AND CONTENT VALIDITY RATING FORM OF THE PFBQ**



จุฬาลงกรณ์มหาวิทยาลัย  
CHULALONGKORN UNIVERSITY



### **COVER LETTER FOR EXPERT REVIEW**

I am developing an instrument for measuring feeding behaviors of parents to maintain adequate food intake for their toddlers. As we know that promoting better feeding behavior of parents for their toddlers is one of the most challenging tasks in the overall effort to improve nutrition which can promote toddlers' life, health and well-being. Therefore, the need for reliable and valid measures for parents feeding behavior have a greater significance for pediatric clinicians, theorist, and researchers.

You are asked to serve as a content expert because of you are knowledgeable in the concept of parents feeding behavior for their toddlers or your own research in the phenomena of parents' feeding behavior for their children. Your participation in the instrument review process is valuable as preliminary step to future studies that investigate to reduce burden in parents behavior and toddlers' nutrition.

The Parental Feeding Behaviors Questionnaire (PFBQ) consist of items related to the maintenance of adequate intake of food for their toddlers involving to providing healthy food, and enhance toddlers' good eating behavior; and providing a pleasant eating environment which include acquiring and gathering information, making judgment and decision, an taking action about toddlers diets, eating environment and how to enhance toddlers eating behavior. Parents feeding behavior will be assessed with a 5-choice Likert-type scale format with the same choices ranging from never to always, for each item.

For the instrument review, you will be asked to evaluate representativeness, clarity, and comprehensiveness of the scale.

For the representativeness, you will be asked to judged how representative items which are attempting to represent of the content domain of parents feeding behavior. In judging representatives of the content items, please evaluate whether the items are appropriate for parents with toddlers and reflect construct domain of parental feeding behavior to maintain adequate intake of food for their toddlers . Following the instruction, you will be asked to indicate the dimension that the item measures and also you will be asked to rate on 4-point scale for the item representativeness (1 = the item is not relevant of parental feeding behavior, 2 = the item needs major revisions to be relevant of parental feeding behavior, 3 = the item

needs minor revisions to be relevant of parental feeding behavior, 4 = the item is relevant of parental feeding behavior)

Following your evaluation of the item in which you evaluate representativeness, you will be asked to indicate the dimension that the item measures. Also, you are asked to rate the clarity of each item on the questionnaire. For the clarity and conciseness, please evaluate if there are ambiguous or problematic wording in question or whether each item is well-written, distinct and an appropriate reading level for Indonesian Parents with toddlers. You will be asked to rate the clarity of each item on 4-point scale ((1 = the item is not clear, 2 = the item needs major revisions, 3 = the item needs minor revisions , 4 = the item is clear). Then, please give suggestion for making the items clear.

For the comprehensiveness, please response to question at the end of the form to evaluate whether all dimensions with each items cover the important area of the parental feeding behavior are included in this instrument. Please give suggestion if there are some items should be added to fulfill the construct of parental feeding behavior to maintain adequate intake of food for their toddler or deletion of items

Providing revision related to representativeness, comprehensiveness the dimension of each item, and clarity will be useful in refining the instrument. The sample review questionnaire to measure feeding behavior of parents is as follows:

**CONTENT VALIDITY RATING FORM**  
**“THE PARENTAL FEEDING BEHAVIOR QUESTIONNAIRE**  
**QUESTIONNAIRE”**

**CONTENT VALIDITY RATING FORM**  
**“THE PARENTAL FEEDING BEHAVIORS QUESTIONNAIRE**  
**QUESTIONNAIRE”**

**OPERATIONAL DEFINITION**

Parental feeding behaviors are the ways Indonesian parents provide healthy food and pleasant eating environment to their toddlers, as well as enhance the toddlers' good eating behavior. They need to acquire and gather information and make judgement and decision before taking those actions. The way of parents was described as follow:

1. Providing a healthy food is defined as the way Indonesian parents acquire and gather information on safe, nutritious, age appropriate food for toddlers; make judgment and decision on toddlers' diet; and provide balanced and safe food for their toddlers.
2. Enhancing the toddlers' good eating behavior is defined as the way Indonesian parents acquire and gather information on parents responsibilities and characteristic of toddlers eating behavior such as safety responsiveness, speed eating and food fussiness; make judgment and decision to select the parental feeding style that appropriate for toddlers; and practice those ways to enhance appropriate general interest in eating,
3. Providing pleasant eating environment is defined as the way Indonesian parents acquire and gather information on meal times environment and equipments/utensils that appropriate for toddlers; make judgment and decision to keep regular time and pleasant environment during mealtimes; and provide equipments/utensils and rewards during mealtimes.

NO	ITEM	REPRESENTATIVENESS (Please circle one)				CLARITY (Please circle one)				SUGGESTION FOR REVISION
		1=not representativeness	2=needs major revision	3=needs minor revision	4=representativeness	1=not clear	2=needs major revision	3=needs minor revision	4=clear	
1	learn about balanced, healthy and safety food for toddlers	1	2	3	4	1	2	3	4	
2	ask health provider in primary health center or hospital									
3	will try to introduce toddlers a variety of foods									
4	Motivate my child to try a new foods and if they will not eat them									
5	keep regularly eating with my child at least one a day									

### COMPREHENSIVENESS OF THE INSTRUMENT

- Does the complete set of instruments is sufficient to cover the important area of the domain of parental feeding behavior to maintain adequate intake of food for their toddlers?

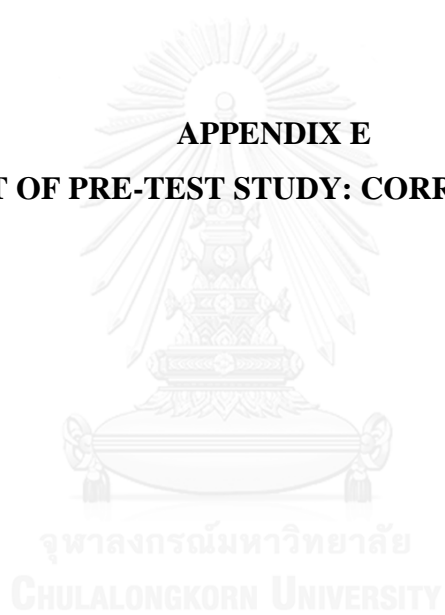
\_\_\_ Yes

\_\_\_ No ----- Items that should be delete

.....

Items that should be added .....

**APPENDIX E**  
**THE RESULT OF PRE-TEST STUDY: CORRELATION MATRIX**



Appendix E: Inter-item Correlation Matrix

	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8
PF1	1.000	.532	.482	.420	.421	.236	.100	.121
PF2	.532	1.000	.342	.311	.353	.295	.110	.168
PF3	.482	.342	1.000	.496	.535	.277	.167	.217
PF4	.420	.311	.496	1.000	.566	.342	.207	.216
PF5	.421	.353	.535	.566	1.000	.414	.261	.266
PF6	.236	.295	.277	.342	.414	1.000	.413	.213
PF7	.100	.110	.167	.207	.261	.413	1.000	.282
PF8	.121	.168	.217	.216	.266	.213	.282	1.000
PF9	.201	.206	.238	.271	.310	.431	.403	.344
PF10	.225	.254	.225	.327	.367	.386	.337	.221
PF11	.023	.027	.087	.153	.180	.266	.340	.213
PF12	.114	.136	.160	.172	.184	.266	.233	.241
PF13	.109	.092	.162	.162	.191	.215	.299	.196
PF14	.201	.239	.330	.325	.318	.468	.298	.219
PF15	-.003	.005	.020	.014	.036	.102	.142	.081
PF16	.202	.259	.220	.166	.291	.239	.100	.201
PF17	.165	.264	.237	.217	.318	.387	.200	.195
PF18	.111	.040	.171	.147	.234	.209	.238	.199
PF19	.203	.194	.275	.264	.303	.328	.231	.237
EE1	.337	.343	.376	.399	.410	.283	.149	.227
EE2	.361	.384	.364	.371	.428	.281	.123	.201
EE3	.363	.303	.449	.394	.459	.291	.104	.247
EE4	.274	.306	.314	.338	.324	.293	.095	.174
EE5	.153	.157	.255	.254	.343	.300	.245	.229
EE6	.283	.267	.365	.351	.365	.276	.134	.185
EE7	.243	.169	.243	.253	.290	.378	.389	.258
EE8	.197	.183	.183	.165	.213	.366	.239	.272
EE9	.204	.143	.194	.164	.221	.270	.159	.148
EE10	.175	.135	.156	.219	.185	.211	.209	.198
EE11	.205	.179	.246	.331	.312	.325	.284	.158
EE12	.131	.023	.114	.193	.179	.282	.258	.244

	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8
EE13	.298	.330	.236	.288	.290	.266	.082	.164
EE14	.242	.234	.263	.277	.342	.329	.200	.223
EE15	.166	.155	.246	.281	.333	.435	.302	.206
EE16	.144	.164	.178	.198	.214	.233	.105	.234
EE17	.090	.084	.201	.155	.158	.258	.146	.157
EE18	.183	.189	.124	.152	.151	.277	.027	.095
EE19	.243	.311	.179	.226	.186	.185	.081	.038
EE20	.099	.155	.153	.213	.160	.171	.122	.098
EE21	.084	.115	.090	.134	.114	.172	.100	.154
EE22	.152	.151	.136	.176	.157	.186	.038	.165
EE23	.153	.036	.106	.093	.048	.092	.079	.049
EE24	.194	.162	.182	.195	.231	.220	.092	.188
EE25	.099	.059	.132	.155	.172	.225	.175	.175
EE26	.171	.176	.096	.152	.170	.095	.019	.021
PE1	.367	.288	.368	.416	.425	.225	.089	.166
PE2	.368	.362	.378	.351	.401	.295	.147	.136
PE3	.370	.412	.377	.345	.416	.293	.119	.196
PE4	.144	.197	.309	.281	.343	.245	.209	.208
PE5	.127	.200	.160	.172	.206	.272	.107	.276
PE6	.177	.185	.193	.241	.269	.199	.151	.145
PE7	.199	.205	.270	.231	.254	.319	.195	.203
PE8	.205	.274	.183	.263	.252	.217	.104	.119
PE9	.263	.348	.169	.245	.211	.249	.134	.109
PE10	.204	.196	.190	.262	.205	.245	.082	.140
PE11	.211	.174	.175	.253	.215	.285	.108	.182

	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
PF1	.201	.225	.023	.114	.109	.201	-.003	.202
PF2	.206	.254	.027	.136	.092	.239	.005	.259
PF3	.238	.225	.087	.160	.162	.330	.020	.220
PF4	.271	.327	.153	.172	.162	.325	.014	.166
PF5	.310	.367	.180	.184	.191	.318	.036	.291
PF6	.431	.386	.266	.266	.215	.468	.102	.239
PF7	.403	.337	.340	.233	.299	.298	.142	.100
PF8	.344	.221	.213	.241	.196	.219	.081	.201
PF9	1.000	.432	.335	.274	.275	.442	.113	.223
PF10	.432	1.000	.323	.273	.273	.427	.072	.239
PF11	.335	.323	1.000	.537	.435	.289	.295	.153
PF12	.274	.273	.537	1.000	.395	.317	.190	.194
PF13	.275	.273	.435	.395	1.000	.350	.251	.146
PF14	.442	.427	.289	.317	.350	1.000	.144	.323
PF15	.113	.072	.295	.190	.251	.144	1.000	.133
PF16	.223	.239	.153	.194	.146	.323	.133	1.000
PF17	.339	.497	.157	.174	.215	.348	.101	.376
PF18	.231	.225	.289	.155	.247	.252	.237	.182
PF19	.280	.357	.288	.247	.261	.429	.178	.303
EE1	.317	.327	.143	.197	.138	.340	.001	.356
EE2	.254	.304	.098	.151	.151	.298	-.004	.224
EE3	.288	.295	.092	.149	.135	.326	-.009	.305
EE4	.193	.241	.082	.147	.165	.249	-.023	.196
EE5	.350	.224	.160	.142	.229	.339	.045	.225
EE6	.242	.279	.108	.143	.129	.290	-.020	.261
EE7	.409	.311	.274	.220	.256	.336	.133	.182
EE8	.323	.270	.197	.230	.183	.356	.103	.187
EE9	.134	.112	.183	.244	.214	.245	.157	.232
EE10	.261	.295	.149	.147	.097	.210	.109	.131
EE11	.294	.311	.186	.200	.171	.351	.071	.206
EE12	.247	.222	.208	.209	.295	.232	.160	.106
EE13	.253	.322	.070	.162	.151	.285	.055	.238
EE14	.327	.265	.176	.180	.162	.345	.042	.252
EE15	.365	.336	.304	.221	.262	.419	.131	.185
EE16	.195	.245	.214	.300	.191	.274	.118	.148
EE17	.187	.167	.174	.158	.185	.352	.232	.187
EE18	.220	.150	.153	.166	.122	.256	.082	.268
EE19	.266	.207	.058	.066	.097	.260	.043	.226
EE20	.155	.170	.069	.131	.079	.191	.055	.162
EE21	.229	.155	.108	.197	.136	.197	.040	.194
EE22	.127	.215	.136	.176	.158	.211	.077	.156
EE23	.103	.044	.077	.086	.098	.046	.163	-.020



	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
EE24	.172	.159	.076	.145	.149	.167	.024	.127
EE25	.248	.079	.133	.155	.125	.223	.077	.176
EE26	.132	.161	.050	.028	.050	.105	.009	.174
PE1	.252	.232	.117	.201	.156	.306	-.007	.261
PE2	.277	.233	.075	.170	.158	.295	.009	.255
PE3	.215	.275	.055	.116	.189	.275	.010	.245
PE4	.344	.331	.309	.292	.330	.347	.123	.261
PE5	.311	.277	.182	.224	.168	.301	.083	.164
PE6	.256	.219	.151	.192	.202	.238	.057	.224
PE7	.420	.328	.243	.190	.194	.380	.070	.210
PE8	.201	.298	.106	.191	.141	.309	-.028	.243
PE9	.247	.308	.116	.152	.179	.235	.027	.228
PE10	.161	.160	.118	.174	.132	.267	.099	.142
PE11	.195	.183	.161	.207	.178	.268	.113	.102



	PF17	PF18	PF19	EE1	EE2	EE3	EE4	EE5
PF1	.165	.111	.203	.337	.361	.363	.274	.153
PF2	.264	.040	.194	.343	.384	.303	.306	.157
PF3	.237	.171	.275	.376	.364	.449	.314	.255
PF4	.217	.147	.264	.399	.371	.394	.338	.254
PF5	.318	.234	.303	.410	.428	.459	.324	.343
PF6	.387	.209	.328	.283	.281	.291	.293	.300
PF7	.200	.238	.231	.149	.123	.104	.095	.245
PF8	.195	.199	.237	.227	.201	.247	.174	.229
PF9	.339	.231	.280	.317	.254	.288	.193	.350
PF10	.497	.225	.357	.327	.304	.295	.241	.224
PF11	.157	.289	.288	.143	.098	.092	.082	.160
PF12	.174	.155	.247	.197	.151	.149	.147	.142
PF13	.215	.247	.261	.138	.151	.135	.165	.229
PF14	.348	.252	.429	.340	.298	.326	.249	.339
PF15	.101	.237	.178	.001	-.004	-.009	-.023	.045
PF16	.376	.182	.303	.356	.224	.305	.196	.225
PF17	1.000	.193	.346	.335	.325	.331	.257	.242
PF18	.193	1.000	.357	.152	.154	.156	.117	.167
PF19	.346	.357	1.000	.349	.320	.313	.287	.215
EE1	.335	.152	.349	1.000	.677	.641	.469	.396
EE2	.325	.154	.320	.677	1.000	.667	.556	.419
EE3	.331	.156	.313	.641	.667	1.000	.535	.448
EE4	.257	.117	.287	.469	.556	.535	1.000	.437
EE5	.242	.167	.215	.396	.419	.448	.437	1.000
EE6	.301	.063	.271	.514	.543	.602	.478	.437
EE7	.234	.263	.322	.303	.328	.398	.317	.431
EE8	.212	.249	.308	.271	.300	.366	.345	.345
EE9	.166	.219	.312	.219	.265	.283	.276	.305
EE10	.232	.123	.171	.229	.258	.306	.236	.275
EE11	.237	.137	.252	.302	.289	.368	.307	.398
EE12	.154	.223	.257	.113	.102	.130	.203	.263
EE13	.376	.036	.228	.421	.405	.465	.375	.279
EE14	.332	.140	.293	.359	.352	.372	.386	.351
EE15	.283	.214	.340	.293	.301	.317	.293	.369
EE16	.232	.164	.249	.189	.254	.222	.255	.251
EE17	.183	.229	.290	.197	.183	.239	.181	.261
EE18	.282	.068	.212	.271	.297	.311	.292	.290
EE19	.265	.020	.158	.326	.350	.341	.283	.295
EE20	.152	.097	.209	.253	.251	.282	.274	.290
EE21	.137	.066	.173	.226	.206	.163	.197	.197
EE22	.235	.122	.233	.262	.282	.328	.201	.180
EE23	.031	.133	.126	.041	.059	.050	.074	.052

	PF17	PF18	PF19	EE1	EE2	EE3	EE4	EE5
EE24	.171	.137	.187	.226	.248	.265	.257	.214
EE25	.131	.137	.208	.148	.156	.177	.219	.254
EE26	.221	.053	.070	.215	.258	.282	.229	.156
PE1	.284	.096	.228	.442	.462	.459	.360	.252
PE2	.286	.086	.181	.445	.464	.440	.387	.250
PE3	.339	.106	.240	.433	.423	.437	.395	.226
PE4	.279	.226	.285	.327	.340	.283	.344	.292
PE5	.201	.141	.258	.221	.258	.199	.247	.237
PE6	.260	.107	.195	.212	.171	.212	.213	.180
PE7	.264	.186	.247	.266	.241	.242	.242	.298
PE8	.330	.072	.218	.278	.310	.282	.300	.212
PE9	.339	.006	.203	.287	.347	.260	.308	.199
PE10	.110	.129	.217	.171	.245	.187	.263	.191
PE11	.103	.149	.242	.184	.289	.214	.270	.266



	EE7	EE8	EE9	EE10	EE11	EE12	EE13	EE14
PF1	.243	.197	.204	.175	.205	.131	.298	.242
PF2	.169	.183	.143	.135	.179	.023	.330	.234
PF3	.243	.183	.194	.156	.246	.114	.236	.263
PF4	.253	.165	.164	.219	.331	.193	.288	.277
PF5	.290	.213	.221	.185	.312	.179	.290	.342
PF6	.378	.366	.270	.211	.325	.282	.266	.329
PF7	.389	.239	.159	.209	.284	.258	.082	.200
PF8	.258	.272	.148	.198	.158	.244	.164	.223
PF9	.409	.323	.134	.261	.294	.247	.253	.327
PF10	.311	.270	.112	.295	.311	.222	.322	.265
PF11	.274	.197	.183	.149	.186	.208	.070	.176
PF12	.220	.230	.244	.147	.200	.209	.162	.180
PF13	.256	.183	.214	.097	.171	.295	.151	.162
PF14	.336	.356	.245	.210	.351	.232	.285	.345
PF15	.133	.103	.157	.109	.071	.160	.055	.042
PF16	.182	.187	.232	.131	.206	.106	.238	.252
PF17	.234	.212	.166	.232	.237	.154	.376	.332
PF18	.263	.249	.219	.123	.137	.223	.036	.140
PF19	.322	.308	.312	.171	.252	.257	.228	.293
EE1	.303	.271	.219	.229	.302	.113	.421	.359
EE2	.328	.300	.265	.258	.289	.102	.405	.352
EE3	.398	.366	.283	.306	.368	.130	.465	.372
EE4	.317	.345	.276	.236	.307	.203	.375	.386
EE5	.431	.345	.305	.275	.398	.263	.279	.351
EE6	.380	.296	.244	.256	.362	.097	.466	.376
EE7	1.000	.543	.286	.402	.424	.319	.285	.397
EE8	.543	1.000	.320	.370	.401	.406	.223	.336
EE9	.286	.320	1.000	.287	.277	.309	.201	.253
EE10	.402	.370	.287	1.000	.441	.371	.323	.299
EE11	.424	.401	.277	.441	1.000	.344	.383	.520
EE12	.319	.406	.309	.371	.344	1.000	.114	.231
EE13	.285	.223	.201	.323	.383	.114	1.000	.411
EE14	.397	.336	.253	.299	.520	.231	.411	1.000
EE15	.432	.384	.245	.234	.455	.361	.254	.479
EE16	.208	.293	.376	.161	.274	.192	.241	.344
EE17	.330	.329	.310	.191	.274	.360	.128	.272
EE18	.227	.273	.228	.242	.348	.166	.358	.468
EE19	.202	.148	.157	.159	.226	.032	.439	.312
EE20	.246	.233	.242	.182	.317	.197	.284	.265
EE21	.140	.162	.184	.081	.244	.118	.232	.232

	EE7	EE8	EE9	EE10	EE11	EE12	EE13	EE14
EE22	.214	.216	.300	.188	.245	.113	.346	.247
EE23	.179	.146	.202	.150	.141	.255	.042	.130
EE24	.269	.288	.205	.216	.295	.249	.302	.384
EE25	.263	.299	.240	.197	.323	.324	.157	.290
EE26	.083	.047	.114	.091	.188	.019	.356	.255
PE1	.251	.175	.176	.194	.291	.137	.377	.412
PE2	.216	.214	.282	.235	.231	.165	.419	.336
PE3	.227	.227	.217	.201	.261	.133	.461	.381
PE4	.326	.292	.231	.197	.316	.266	.268	.352
PE5	.294	.323	.200	.162	.255	.196	.211	.340
PE6	.199	.192	.187	.199	.243	.158	.188	.250
PE7	.380	.368	.229	.244	.360	.278	.260	.341
PE8	.210	.212	.152	.234	.320	.091	.396	.370
PE9	.216	.195	.148	.154	.224	.042	.453	.308
PE10	.200	.236	.075	.027	.198	.163	.177	.195
PE11	.236	.291	.130	.100	.231	.205	.195	.253



	EE15	EE16	EE17	EE18	EE19	EE20	EE21	EE22
PF1	.166	.144	.090	.183	.243	.099	.084	.152
PF2	.155	.164	.084	.189	.311	.155	.115	.151
PF3	.246	.178	.201	.124	.179	.153	.090	.136
PF4	.281	.198	.155	.152	.226	.213	.134	.176
PF5	.333	.214	.158	.151	.186	.160	.114	.157
PF6	.435	.233	.258	.277	.185	.171	.172	.186
PF7	.302	.105	.146	.027	.081	.122	.100	.038
PF8	.206	.234	.157	.095	.038	.098	.154	.165
PF9	.365	.195	.187	.220	.266	.155	.229	.127
PF10	.336	.245	.167	.150	.207	.170	.155	.215
PF11	.304	.214	.174	.153	.058	.069	.108	.136
PF12	.221	.300	.158	.166	.066	.131	.197	.176
PF13	.262	.191	.185	.122	.097	.079	.136	.158
PF14	.419	.274	.352	.256	.260	.191	.197	.211
PF15	.131	.118	.232	.082	.043	.055	.040	.077
PF16	.185	.148	.187	.268	.226	.162	.194	.156
PF17	.283	.232	.183	.282	.265	.152	.137	.235
PF18	.214	.164	.229	.068	.020	.097	.066	.122
PF19	.340	.249	.290	.212	.158	.209	.173	.233
EE1	.293	.189	.197	.271	.326	.253	.226	.262
EE2	.301	.254	.183	.297	.350	.251	.206	.282
EE3	.317	.222	.239	.311	.341	.282	.163	.328
EE4	.293	.255	.181	.292	.283	.274	.197	.201
EE5	.369	.251	.261	.290	.295	.290	.197	.180
EE6	.272	.221	.095	.285	.366	.271	.248	.321
EE7	.432	.208	.330	.227	.202	.246	.140	.214
EE8	.384	.293	.329	.273	.148	.233	.162	.216
EE9	.245	.376	.310	.228	.157	.242	.184	.300
EE10	.234	.161	.191	.242	.159	.182	.081	.188
EE11	.455	.274	.274	.348	.226	.317	.244	.245
EE12	.361	.192	.360	.166	.032	.197	.118	.113
EE13	.254	.241	.128	.358	.439	.284	.232	.346
EE14	.479	.344	.272	.468	.312	.265	.232	.247
EE15	1.000	.385	.426	.307	.183	.244	.254	.263
EE16	.385	1.000	.387	.272	.243	.308	.342	.471
EE17	.426	.387	1.000	.292	.141	.279	.249	.233
EE18	.307	.272	.292	1.000	.348	.309	.238	.229
EE19	.183	.243	.141	.348	1.000	.347	.387	.317

	EE15	EE16	EE17	EE18	EE19	EE20	EE21	EE22
EE20	.244	.308	.279	.309	.347	1.000	.390	.362
EE21	.254	.342	.249	.238	.387	.390	1.000	.347
EE22	.263	.471	.233	.229	.317	.362	.347	1.000
EE23	.095	.159	.131	.048	.071	.138	.147	.197
EE24	.321	.281	.210	.230	.205	.256	.222	.323
EE25	.307	.217	.275	.215	.119	.260	.246	.183
EE26	.110	.137	.071	.244	.323	.183	.161	.270
PE1	.244	.194	.182	.292	.296	.171	.170	.240
PE2	.243	.199	.172	.306	.302	.193	.158	.298
PE3	.267	.220	.145	.294	.319	.220	.181	.347
PE4	.370	.255	.322	.236	.201	.254	.217	.252
PE5	.376	.282	.286	.242	.165	.183	.246	.212
PE6	.216	.210	.116	.182	.161	.172	.125	.228
PE7	.404	.320	.357	.276	.229	.207	.213	.282
PE8	.271	.254	.126	.364	.300	.190	.206	.307
PE9	.204	.224	.045	.272	.369	.208	.289	.312
PE10	.265	.224	.186	.180	.220	.168	.309	.191
PE11	.282	.260	.206	.236	.169	.184	.241	.169

	EE23	EE24	EE25	EE26	PE1	PE2	PE3	PE4
PF1	.153	.194	.099	.171	.367	.368	.370	.144
PF2	.036	.162	.059	.176	.288	.362	.412	.197
PF3	.106	.182	.132	.096	.368	.378	.377	.309
PF4	.093	.195	.155	.152	.416	.351	.345	.281
PF5	.048	.231	.172	.170	.425	.401	.416	.343
PF6	.092	.220	.225	.095	.225	.295	.293	.245
PF7	.079	.092	.175	.019	.089	.147	.119	.209
PF8	.049	.188	.175	.021	.166	.136	.196	.208
PF9	.103	.172	.248	.132	.252	.277	.215	.344
PF10	.044	.159	.079	.161	.232	.233	.275	.331
PF11	.077	.076	.133	.050	.117	.075	.055	.309
PF12	.086	.145	.155	.028	.201	.170	.116	.292
PF13	.098	.149	.125	.050	.156	.158	.189	.330
PF14	.046	.167	.223	.105	.306	.295	.275	.347
PF15	.163	.024	.077	.009	-.007	.009	.010	.123
PF16	-.020	.127	.176	.174	.261	.255	.245	.261
PF17	.031	.171	.131	.221	.284	.286	.339	.279
PF18	.133	.137	.137	.053	.096	.086	.106	.226
PF19	.126	.187	.208	.070	.228	.181	.240	.285
EE1	.041	.226	.148	.215	.442	.445	.433	.327
EE2	.059	.248	.156	.258	.462	.464	.423	.340
EE3	.050	.265	.177	.282	.459	.440	.437	.283
EE4	.074	.257	.219	.229	.360	.387	.395	.344
EE5	.052	.214	.254	.156	.252	.250	.226	.292
EE6	.088	.237	.234	.233	.449	.468	.426	.300
EE7	.179	.269	.263	.083	.251	.216	.227	.326
EE8	.146	.288	.299	.047	.175	.214	.227	.292
EE9	.202	.205	.240	.114	.176	.282	.217	.231
EE10	.150	.216	.197	.091	.194	.235	.201	.197
EE11	.141	.295	.323	.188	.291	.231	.261	.316
EE12	.255	.249	.324	.019	.137	.165	.133	.266
EE13	.042	.302	.157	.356	.377	.419	.461	.268
EE14	.130	.384	.290	.255	.412	.336	.381	.352
EE15	.095	.321	.307	.110	.244	.243	.267	.370
EE16	.159	.281	.217	.137	.194	.199	.220	.255
EE17	.131	.210	.275	.071	.182	.172	.145	.322
EE18	.048	.230	.215	.244	.292	.306	.294	.236
EE19	.071	.205	.119	.323	.296	.302	.319	.201
EE20	.138	.256	.260	.183	.171	.193	.220	.254



	EE23	EE24	EE25	EE26	PE1	PE2	PE3	PE4
EE2	.059	.248	.156	.258	.462	.464	.423	.340
EE3	.050	.265	.177	.282	.459	.440	.437	.283
EE4	.074	.257	.219	.229	.360	.387	.395	.344
EE5	.052	.214	.254	.156	.252	.250	.226	.292
EE6	.088	.237	.234	.233	.449	.468	.426	.300
EE7	.179	.269	.263	.083	.251	.216	.227	.326
EE8	.146	.288	.299	.047	.175	.214	.227	.292
EE9	.202	.205	.240	.114	.176	.282	.217	.231
EE10	.150	.216	.197	.091	.194	.235	.201	.197
EE11	.141	.295	.323	.188	.291	.231	.261	.316
EE12	.255	.249	.324	.019	.137	.165	.133	.266
EE13	.042	.302	.157	.356	.377	.419	.461	.268
EE14	.130	.384	.290	.255	.412	.336	.381	.352
EE15	.095	.321	.307	.110	.244	.243	.267	.370
EE16	.159	.281	.217	.137	.194	.199	.220	.255
EE17	.131	.210	.275	.071	.182	.172	.145	.322
EE18	.048	.230	.215	.244	.292	.306	.294	.236
EE19	.071	.205	.119	.323	.296	.302	.319	.201
EE20	.138	.256	.260	.183	.171	.193	.220	.254
EE21	.147	.222	.246	.161	.170	.158	.181	.217
EE22	.197	.323	.183	.270	.240	.298	.347	.252
EE23	1.000	.372	.291	.072	.110	.114	.045	.081
EE24	.372	1.000	.307	.181	.215	.239	.280	.269
EE25	.291	.307	1.000	.141	.235	.246	.158	.249
EE26	.072	.181	.141	1.000	.335	.277	.282	.138
PE1	.110	.215	.235	.335	1.000	.620	.534	.424
PE2	.114	.239	.246	.277	.620	1.000	.649	.408
PE3	.045	.280	.158	.282	.534	.649	1.000	.431
PE4	.081	.269	.249	.138	.424	.408	.431	1.000
PE5	.082	.230	.203	.089	.212	.225	.307	.422
PE6	.096	.250	.092	.175	.259	.246	.282	.262
PE7	.108	.301	.245	.143	.316	.352	.376	.482
PE8	.084	.270	.199	.298	.349	.336	.399	.311
PE9	.078	.158	.135	.340	.417	.387	.453	.333
PE10	.112	.196	.238	.159	.160	.140	.204	.240
PE11	.141	.215	.257	.201	.194	.182	.204	.244

	PE5	PE6	PE7	PE8	PE9	PE10	PE11
PF1	.127	.177	.199	.205	.263	.204	.211
PF2	.200	.185	.205	.274	.348	.196	.174
PF3	.160	.193	.270	.183	.169	.190	.175
PF4	.172	.241	.231	.263	.245	.262	.253
PF5	.206	.269	.254	.252	.211	.205	.215
PF6	.272	.199	.319	.217	.249	.245	.285
PF7	.107	.151	.195	.104	.134	.082	.108
PF8	.276	.145	.203	.119	.109	.140	.182
PF9	.311	.256	.420	.201	.247	.161	.195
PF10	.277	.219	.328	.298	.308	.160	.183
PF11	.182	.151	.243	.106	.116	.118	.161
PF12	.224	.192	.190	.191	.152	.174	.207
PF13	.168	.202	.194	.141	.179	.132	.178
PF14	.301	.238	.380	.309	.235	.267	.268
PF15	.083	.057	.070	-.028	.027	.099	.113
PF16	.164	.224	.210	.243	.228	.142	.102
PF17	.201	.260	.264	.330	.339	.110	.103
PF18	.141	.107	.186	.072	.006	.129	.149
PF19	.258	.195	.247	.218	.203	.217	.242
EE1	.221	.212	.266	.278	.287	.171	.184
EE2	.258	.171	.241	.310	.347	.245	.289
EE3	.199	.212	.242	.282	.260	.187	.214
EE4	.247	.213	.242	.300	.308	.263	.270
EE5	.237	.180	.298	.212	.199	.191	.266
EE6	.145	.203	.238	.270	.338	.181	.194
EE7	.294	.199	.380	.210	.216	.200	.236
EE8	.323	.192	.368	.212	.195	.236	.291
EE9	.200	.187	.229	.152	.148	.075	.130
EE10	.162	.199	.244	.234	.154	.027	.100
EE11	.255	.243	.360	.320	.224	.198	.231
EE12	.196	.158	.278	.091	.042	.163	.205
EE13	.211	.188	.260	.396	.453	.177	.195
EE14	.340	.250	.341	.370	.308	.195	.253
EE15	.376	.216	.404	.271	.204	.265	.282
EE16	.282	.210	.320	.254	.224	.224	.260
EE17	.286	.116	.357	.126	.045	.186	.206
EE18	.242	.182	.276	.364	.272	.180	.236
EE19	.165	.161	.229	.300	.369	.220	.169
EE20	.183	.172	.207	.190	.208	.168	.184
EE21	.246	.125	.213	.206	.289	.309	.241
EE22	.212	.228	.282	.307	.312	.191	.169
EE23	.082	.096	.108	.084	.078	.112	.141

	PE5	PE6	PE7	PE8	PE9	PE10	PE11
EE24	.230	.250	.301	.270	.158	.196	.215
EE25	.203	.092	.245	.199	.135	.238	.257
EE26	.089	.175	.143	.298	.340	.159	.201
PE1	.212	.259	.316	.349	.417	.160	.194
PE2	.225	.246	.352	.336	.387	.140	.182
PE3	.307	.282	.376	.399	.453	.204	.204
PE4	.422	.262	.482	.311	.333	.240	.244
PE5	1.000	.237	.410	.448	.298	.341	.306
PE6	.237	1.000	.385	.287	.286	.134	.136
PE7	.410	.385	1.000	.365	.300	.332	.349
PE8	.448	.287	.365	1.000	.520	.306	.281
PE9	.298	.286	.300	.520	1.000	.240	.235
PE10	.341	.134	.332	.306	.240	1.000	.765
PE11	.306	.136	.349	.281	.235	.765	1.000



**APPENDIX F**  
**THE EXAMPLE OF THE DEMOGRAPHIC DATA AND**  
**THE PARENTAL FEEDING BEHAVIORS QUESTIONNAIRE**  
**(INDONESIAN VERSION)**



จุฬาลงกรณ์มหาวิทยาลัย  
CHULALONGKORN UNIVERSITY

ID : \_\_\_\_\_  
 Umur anak : \_\_\_\_\_  
 BB & TB : \_\_\_\_\_

### “ KUESIONER PERILAKU ORANGTUA DALAM PEMBERIAN MAKAN”

#### Petunjuk pengisian kuesioner bagi responden penelitian:

- Kuesioner ini ditujukan untuk dilengkapi oleh orang tua dengan anak usia balita. Berikut semua pertanyaan ini tentang apa yang Bapak/Ibu lakukan untuk anak Bapak/Ibu dalam **memberikan asupan makanan yang sehat; meningkatkan perilaku makan yang sehat pada anak; dan memberikan lingkungan yang menyenangkan selama makan**. Mohon jawab pertanyaan di bawah ini sesuai dengan seberapa sering Bapak/Ibu melakukan aktivitas yang tertera dalam kuesioner ini untuk anak Bapak/Ibu dengan cara memberikan tanda centang (V) pada kotak yang tersedia

No	Pernyataan	Keterangan
1.	Saya mempelajari tentang makanan sehat dan aman dikonsumsi oleh anak usia 1-3 tahun dari tenaga kesehatan, kader atau sumber lainnya	<input type="checkbox"/> Tidak pernah <input type="checkbox"/> sering <input type="checkbox"/> Jarang <input type="checkbox"/> selalu <input type="checkbox"/> Kadang – kadang
2.	Saya bertanya kepada petugas kesehatan tentang makanan yang sehat dan aman bagi anak usia 1-3 tahun saat berkunjung ke puskesmas atau rumah sakit	<input type="checkbox"/> Tidak pernah <input type="checkbox"/> sering <input type="checkbox"/> Jarang <input type="checkbox"/> selalu <input type="checkbox"/> Kadang – kadang
3.	Saya mempelajari tentang bagaimana mempersiapkan menu sehat bagi anak usia 1-3 tahun dari petugas kesehatan, kader atau sumber lain (seperti media internet, televisi)	<input type="checkbox"/> Tidak pernah <input type="checkbox"/> sering <input type="checkbox"/> Jarang <input type="checkbox"/> selalu <input type="checkbox"/> Kadang – kadang
4	Saya mencuci tangan sebelum dan sesudah mempersiapkan dan memasak makanan	<input type="checkbox"/> Tidak pernah <input type="checkbox"/> sering <input type="checkbox"/> Jarang <input type="checkbox"/> selalu <input type="checkbox"/> Kadang – kadang
5	Saya menjaga dapur dan alat masak dalam keadaan bersih setiap hari	<input type="checkbox"/> Tidak pernah <input type="checkbox"/> sering <input type="checkbox"/> Jarang <input type="checkbox"/> selalu <input type="checkbox"/> Kadang – kadang
6	Saya memberikan makanan yang seimbang (nasi, sayur, lauk, buah, susu atau minuman lainnya) untuk dikonsumsi oleh anak usia minimal tiga kali sehari	<input type="checkbox"/> Tidak pernah <input type="checkbox"/> sering <input type="checkbox"/> Jarang <input type="checkbox"/> selalu <input type="checkbox"/> Kadang – kadang

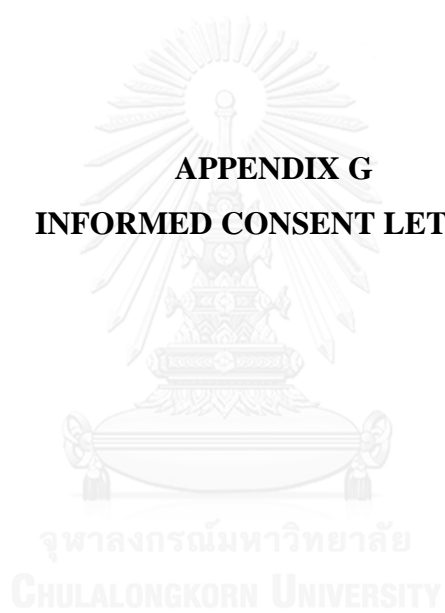
No	Pernyataan	Keterangan
7	Saya akan mencoba untuk memperkenalkan jenis makanan yang bervariasi pada anak	<input type="checkbox"/> Tidak pernah <input type="checkbox"/> sering <input type="checkbox"/> Jarang <input type="checkbox"/> selalu <input type="checkbox"/> Kadang – kadang
8	Saya akan memodifikasi makanan dengan merubah bentuk makanan menjadi menarik bagi anak (seperti membentuk wajah diatas nasi dengan sayuran)	<input type="checkbox"/> Tidak pernah <input type="checkbox"/> sering <input type="checkbox"/> Jarang <input type="checkbox"/> selalu <input type="checkbox"/> Kadang – kadang
9	Saya memotivasi anak untuk mencoba makanan baru	<input type="checkbox"/> Tidak pernah <input type="checkbox"/> sering <input type="checkbox"/> Jarang <input type="checkbox"/> selalu <input type="checkbox"/> Kadang – kadang
10	Saya memberikan contoh untuk menyukai semua jenis makanan sehat dan aman untuk dikonsumsi	<input type="checkbox"/> Tidak pernah <input type="checkbox"/> sering <input type="checkbox"/> Jarang <input type="checkbox"/> selalu <input type="checkbox"/> Kadang – kadang
11	Saya melakukan makan bersama-sama dengan anak setidaknya satukali dalam sehari	<input type="checkbox"/> Tidak pernah <input type="checkbox"/> sering <input type="checkbox"/> Jarang <input type="checkbox"/> selalu <input type="checkbox"/> Kadang – kadang

**INFORMASI UMUM**

Berilah tanda centang (V) pada kotak yang tersedia sesuai karakteristik Bapak/Ibu!

No	Pertanyaan	Pilihan jawaban
1.	Berapa usia anak Bapak/Ibu?	<input type="checkbox"/> 12 bulan sampai < 24 bulan <input type="checkbox"/> 24 bulan sampai < 36 bulan <input type="checkbox"/> 36 bulan atau lebih
2.	Apa jenis kelamin anak Bapak/Ibu?	<input type="checkbox"/> Laki-laki <input type="checkbox"/> Perempuan
3.	Berapa usia Bapak/Ibu?	<input type="checkbox"/> 18 tahun <input type="checkbox"/> 18-40 tahun <input type="checkbox"/> 40-60 tahun <input type="checkbox"/> ≥ 60 tahun
4.	Status pernikahan?	<input type="checkbox"/> Menikah <input type="checkbox"/> Bercerai <input type="checkbox"/> Hidup terpisah <input type="checkbox"/> Lain-lain, sebutkan .....
5.	Apakah suku Bapak/Ibu?	<input type="checkbox"/> Jawa <input type="checkbox"/> Non Jawa <input type="checkbox"/> Kelompok suku lain, sebutkan .....
6.	Jumlah total anak Bapak/Ibu ?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> >4
7.	Apakah ada anggota keluarga lain yang tinggal bersama Bapak/Ibu?	<input type="checkbox"/> Tidak <input type="checkbox"/> Ya, sebutkan jumlahnya .....
8.	Apakah pendidikan terakhir Bapak/Ibu?	<input type="checkbox"/> Tidak tamat SD <input type="checkbox"/> SMA <input type="checkbox"/> SD <input type="checkbox"/> Diploma <input type="checkbox"/> SMP <input type="checkbox"/> S1/S2/S3
9.	Apakah pekerjaan Bapak/Ibu saat ini?	<input type="checkbox"/> Tidak bekerja <input type="checkbox"/> Ibu rumah tangga <input type="checkbox"/> Bekerja, sebutkan .....
10.	Apakah Bapak/Ibu pernah mendapatkan penyuluhan atau penjelasan tentang kesehatan dan nutrisi pada anak usia 1-3 tahun?	<input type="checkbox"/> Tidak <input type="checkbox"/> Ya, sebutkan topik penyuluhan/penjelasan yang telah didapatkan ..... ..... .....

**APPENDIX G**  
**INFORMED CONSENT LETTER**





## INFORMED CONSENT LETTER

Prospective Research Subject: Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please take the time to read the following information carefully. Please ask the researcher if there is anything that is not clear of if you need more information at any time before, during, or after your participation in this research.

The Development of the Parental Feeding Behaviors Questionnaire (PFBQ) for Indonesian parents with toddlers

Principle Investigation:

Name: Mrs. Lely Lusmilasari  
 Department : Pediatric Nursing Department  
 Address: School of Nursing, UGM  
 Phone: 08156863414  
 E-mail: [lely\\_lusmilasari@yahoo.com](mailto:lely_lusmilasari@yahoo.com)  
 Advisor : 1. Assoc. Professor Waraporn Chaiyawat, DNS, APN  
 1. Asst. Professor Branom Rodcumdee, PhD.,RN

You are being asked to participate in a research study designed to develop Indonesian version of the Parental Feeding Behavior Questionnaire (PFBQ) for measuring feeding behavior of parents to maintain sufficient food intake for their toddlers in Yogyakarta Special Province, Indonesia. You are selected as a possible participant in this study because you are parents with toddlers that meet the criteria for this study.

You will be asked to fill out a questionnaire and it will be take approximate 10 to 15 minutes to complete all the questionnaires. There may be some words you don't understand or things that you want me to explain more about because you are interested or concerned. Please ask me to stop at anytime and I will take time to explain). There is no harm for the participants in this study and if any new information developed during the study that may affect your willingness to continue participation will be communicated to you.

There will be no direct benefit to you for your participation in this study. However, we hope that the information obtained from this study may provide new knowledge that provide an alternative way and more comprehensive for measuring the dependent-care of parents to maintain sufficient food intake for their toddlers, therefore health provider can use this information to help and to give anticipatory guidance and to generate intervention that prevents of the lifelong problem associated with malnutrition in toddlers and to solve problems.

There are no costs to you and no financial compensation for your participation in this research. Your identity in this study will be treated as confidential. The researcher and the members of the researcher's committee will review the researcher's collected data. Information from this research will be used solely for the purpose of this study and any publications that may result from this study but will not give your name or include any identifiable references to you.

Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you do decide to take part in this study, you will be asked to sign a consent form. If you decide to take part in this study, you are still free to withdraw at any time and without giving a reason. You are free to not answer any question or questions if you choose. This will not affect the relationship you have with the researcher.

If you have questions regarding your rights as a research subject, or if problems arise which you do not feel you can discuss with the Investigator, please contact the Principle Investigator at 08156863414.

By signing this consent form, I confirm that I have read and understood the information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I understand that I will be given a copy of this consent form. I voluntarily agree to take part in this study.

Participant name:

Participant Signature:  
Signature:

จุฬาลงกรณ์มหาวิทยาลัย  
CHULALONGKORN UNIVERSITY

Principal Investigator

Date:

Date:

Signature of Person Obtaining Consent:

Date

**APPENDIX H**  
**INFORM CONSENT FORM AND INFORMATION SHEET**  
**(INDONESIAN VERSION)**



จุฬาลงกรณ์มหาวิทยาลัย  
CHULALONGKORN UNIVERSITY

LEMBAR PENJELASAN  
(*INFORMATION SHEET*)

**Calon responden penelitian:** Sebelum Bapak/Ibu memutuskan untuk berpartisipasi dalam penelitian ini, Bapak/Ibu perlu memahami segala sesuatu tentang penelitian ini. Mohon Bapak/Ibu meluangkan waktu untuk membaca informasi berikut dengan seksama. Silakan meminta penjelasan kepada peneliti jika ada sesuatu yang tidak jelas jika atau Bapak/Ibu membutuhkan informasi lebih lanjut saat sebelum, selama, atau setelah partisipasi Bapak/Ibu dalam penelitian ini.

Peneliti:

Nama : Lely Lusmilasari  
 Institusi : Program Studi Ilmu Keperawatan FK UGM  
 Alamat : Jl. Cantel No. 10 A UH II Yogyakarta  
 Telepon : (0274) 546170 atau 08156863414  
 E-mail : [lely\\_lusmilasari@yahoo.com](mailto:lely_lusmilasari@yahoo.com); [lely\\_psik@ugm.ac.id](mailto:lely_psik@ugm.ac.id)  
 Pembimbing : 1. Assoc. Professor Waraporn Chaipayat, D.N .S., A.P.N.  
 2. Asst. Professor Branom Rodcumdee, Ph.D., R.N.

Bapak/Ibu dimohon untuk berpartisipasi dalam penelitian yang disusun untuk mengembangkan Kuesioner Perilaku Orangtua dalam Pemberian Makanan pada anak usia 1-3 tahun di Indonesia. Kuesioner yang akan dikembangkan mengukur perilaku orangtua dalam pemberian makanan pada anak usia 1 -3 tahun dalam menjaga asupan makanan yang cukup bagi balita mereka di Daerah Istimewa Yogyakarta. Bapak/Ibu terpilih sebagai responden dalam penelitian ini karena memenuhi kriteria yang ditetapkan dalam penelitian. Berikut penjelasan terkait dengan partisipasi Bapak/Ibu dalam penelitian ini:

A. Kesukarelaan untuk ikut penelitian

Partisipasi Bapak/Ibu dalam penelitian ini adalah sukarela. Bapak/Ibu dapat memutuskan apakah akan berpartisipasi atau tidak dalam penelitian ini. Jika Bapak/Ibu memutuskan akan berpartisipasi dalam penelitian ini, Bapak/Ibu akan diminta untuk menandatangani formulir persetujuan. Selain itu, walaupun Bapak/Ibu telah memutuskan untuk berpartisipasi dalam penelitian ini, Bapak/Ibu dapat memutuskan untuk tidak berpartisipasi setiap saat tanpa memberikan alasan apapun.

B. Prosedur penelitian

Apabila Bapak/Ibu bersedia berpartisipasi dalam penelitian ini, Bapak/Ibu dimohon untuk menandatangani lembar persetujuan yang telah disiapkan sebanyak rangkap dua, satu untuk Bapak/Ibu simpan, dan satu untuk peneliti. Prosedur selanjutnya adalah Bapak/Ibu akan dimohon untuk mengisi daftar pertanyaan sekitar 10-15 menit untuk menjawab semua pertanyaan. Bapak/Ibu dapat meminta penjelasan lebih lanjut kepada peneliti bila ada beberapa kata yang tidak mengerti atau bila terdapat informasi baru selama penelitian yang dapat mempengaruhi kesediaan Bapak/Ibu untuk melanjutkan partisipasi.

- C. Kewajiban responden penelitian  
Sebagai responden penelitian, Bapak/Ibu dimohon untuk bersedia ditemui dan memberikan keterangan yang diperlukan dengan mengisi kuesioner yang diberikan. Bila belum jelas, Bapak/Ibu dapat bertanya lebih lanjut pada peneliti.
- D. Risiko/efek samping dan penanganannya  
Penelitian ini tidak memiliki risiko atau efek samping karena dalam penelitian Bapak/Ibu hanya dimohon untuk mengisi kuesioner yang telah disediakan dan tidak ada intervensi/perlakuan apapun
- E. Manfaat  
Manfaat atas partisipasi Bapak/Ibu selama penelitian ini mungkin tidak dapat dirasakan secara langsung, namun, peneliti berharap bahwa informasi yang diperoleh dari penelitian ini dapat memberikan pengetahuan baru tentang pengukuran perilaku orangtua dalam pemberian makanan untuk menjaga asupan makanan yang cukup untuk balita mereka. Perawat atau tenaga kesehatan lainnya dapat menggunakan informasi ini untuk membantu dan memberikan bimbingan antisipasi serta mengembangkan intervensi yang mencegah dan mengatasi masalah kesehatan terkait dengan malnutrisi baik gizi kurang maupun gizi lebih.
- F. Kerahasiaan  
Identitas Bapak/Ibu dalam penelitian ini akan dirahasiakan. Peneliti akan memeriksa data penelitian yang dikumpulkan. Informasi dari penelitian ini akan digunakan secara selektif untuk tujuan ilmiah dan setiap publikasi yang mungkin timbul dari penelitian ini tetapi tidak akan mencantumkan nama Bapak/Ibu.
- G. Kompensasi  
Bapak/Ibu akan mendapatkan souvenir sebagai ucapan terimakasih peneliti atas kesediaan Bapak/Ibu berpartisipasi dalam penelitian ini.
- H. Pembiayaan  
Keikutsertaan Bapak/Ibu dalam penelitian ini tidak dipungut biaya. Semua biaya yang terkait penelitian akan ditanggung oleh peneliti.
- I. Informasi tambahan  
Jika Bapak/Ibu memiliki pertanyaan tentang hak-hak Bapak/Ibu sebagai responden penelitian, atau jika timbul masalah yang tidak diinginkan, Bapak/Ibu dapat menghubungi ketua peneliti (Lely Lusmilasari) di Program Studi Ilmu Keperawatan FK UGM, nomor telepon 08156863414

Hormat kami,  
Peneliti

SURAT PERSETUJUAN  
(*INFORMED CONSENT FORM*)

Yang bertanda tangan di bawah ini :

Nama :  
Umur : thn  
Alamat :

Menyatakan bahwa:

1. Saya telah mendapat penjelasan segala sesuatu mengenai penelitian yang berjudul: “Pengembangan Kuesioner Perilaku Orangtua Dalam Pemberian makanan pada Anak Usia 1-3 Tahun di Indonesia”.
2. Setelah saya mendapat penjelasan dan memahaminya, dengan penuh kesadaran dan paksaan dari siapapun bersedia ikut serta dalam penelitian ini dengan kondisi:
  - a) Data yang diperoleh dari penelitian ini akan dijaga kerahasiaannya dan hanya dipergunakan untuk kepentingan ilmiah.
  - b) Saya tidak mempunyai ikatan apapun dengan peneliti apabila saya mengundurkan diri dari penelitian dan bila hal itu terjadi, saya akan memberitahu sebelumnya tanpa harus menyampaikan alasan apapun.
  - c) Keikutsertaan saya dalam penelitian ini tidak dibebani biaya dan konsekuensi lainnya.

Adapun bentuk kesediaan saya adalah:

3. Bersedia ditemui dan memberikan keterangan yang diperlukan dengan mengisi kuesioner yang diberikan

Demikian pernyataan ini saya buat dalam keadaan sadar dan tanpa paksaan. Saya memahami keikutsertaan ini akan memberikan manfaat dan akan terjaga kerahasiaannya.

Yogyakarta,

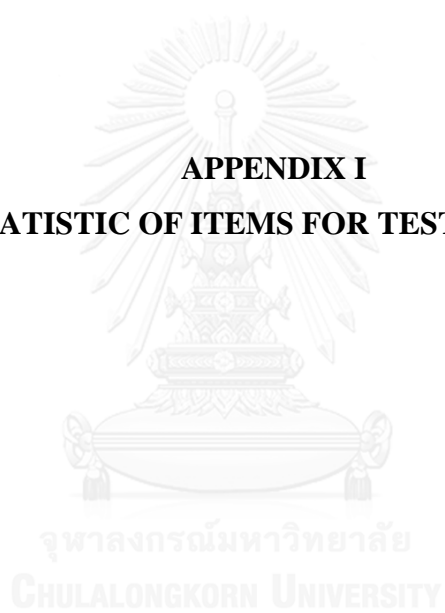
Mengetahui,  
Saksi

  
 จุฬาลงกรณ์มหาวิทยาลัย  
 CHULALONGKORN UNIVERSITY  
 Responden

( )

( )

**APPENDIX I**  
**DESCRIPTIVE STATISTIC OF ITEMS FOR TESTING ASSUMPTION CFA**



Appendix I: Descriptive statistic of items for testing assumption CFA

Items number (Zscore)	Mean	SD	Skewness	Kurtosis
1	.000000	1.00000000	-.18	-.10
2	.0000000	1.00000000	-.16	-.44
3	.0000000	1.00000000	-.27	-.01
4	.0000000	1.00000000	-.34	.15
5	.0000000	1.00000000	-.13	-.30
6	.0000000	1.00000000	-.77	.20
7	.0000000	1.00000000	-1.16	1.01
8	.0000000	1.00000000	-1.04	.48
9	.0000000	1.00000000	-.83	.13
10	.0000000	1.00000000	-.57	-.25
11	.0000000	1.00000000	-1.84	3.14
12	.0000000	1.00000000	-2.01	4.17
13	.0000000	1.00000000	-1.84	2.75
14	.0000000	1.00000000	-.83	-.24
15	.0000000	1.00000000	-2.28	5.13
16	.0000000	1.00000000	-.07	-.76
17	.0000000	1.00000000	.08	-.85
18	.0000000	1.00000000	-1.05	.10
19	.0000000	1.00000000	-.89	.22
20	.0000000	1.00000000	-.28	-.18
21	.0000000	1.00000000	-.21	-.15
22	.0000000	1.00000000	-.19	-.28
23	.0000000	1.00000000	-.28	-.23
24	.0000000	1.00000000	-.41	-.22
25	.0000000	1.00000000	-.05	-.21
26	.0000000	1.00000000	-.91	.00
27	.0000000	1.00000000	-1.06	.50
28	.0000000	1.00000000	-1.16	.86



Items number (Zscore)	Mean	SD	Skewness	Kurtosis
29	.0000000	1.0000000	-.95	.27
30	.0000000	1.0000000	-.78	.21
31	.0000000	1.0000000	-1.20	1.19
32	.0000000	1.0000000	.14	-.56
33	.0000000	1.0000000	-.45	-.05
34	.0000000	1.0000000	-.90	.83
35	.0000000	1.0000000	-.74	-.01
36	.0000000	1.0000000	-1.17	.92
37	.0000000	1.0000000	-.32	-.21
38	.0000000	1.0000000	-.17	-.49
39	.0000000	1.0000000	-.84	.43
40	.0000000	1.0000000	-.61	-.07
41	.0000000	1.0000000	-.23	-.60
42	.0000000	1.0000000	-.94	.14
43	.0000000	1.0000000	-.67	.09
44	.0000000	1.0000000	1.71	8.35
45	.0000000	1.0000000	.18	-.90
46	.0000000	1.0000000	-.13	-.22
47	.0000000	1.0000000	-.18	-.21
48	.0000000	1.0000000	-.20	-.48
49	.0000000	1.0000000	-.65	-.32
50	.0000000	1.0000000	-1.28	1.44
51	.0000000	1.0000000	-.69	-.09
52	.0000000	1.0000000	-.76	.09
53	.0000000	1.0000000	-.44	-.67
54	.0000000	1.0000000	-.03	-1.04
55	.0000000	1.0000000	-1.85	3.87
56	.0000000	1.0000000	-1.72	3.45

**APPENDIX J**  
**COLLINEARITY TESTING OF PFBQ**



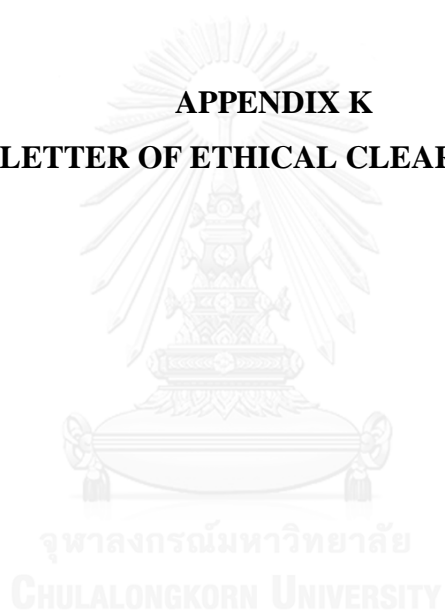
จุฬาลงกรณ์มหาวิทยาลัย  
CHULALONGKORN UNIVERSITY

**Appendix J: The results of collinearity testing**

Indicator number	Collinearity statistic	
	Tolerance	Variance of Inflation Factor (VIF)
1	.510	1.959
2	.562	1.778
3	.516	1.940
4	.517	1.933
5	.446	2.243
6	.506	1.975
7	.589	1.696
8	.688	1.453
9	.504	1.982
10	.520	1.922
11	.527	1.897
12	.573	1.744
13	.621	1.610
14	.507	1.971
15	.774	1.292
16	.664	1.505
17	.555	1.802
18	.727	1.376
19	.602	1.661
20	.403	2.481
21	.356	2.810
22	.335	2.983
23	.515	1.942
24	.538	1.860
25	.455	2.198
26	.468	2.135
27	.519	1.926
28	.621	1.611
29	.604	1.655
30	.496	2.015
31	.569	1.758
32	.493	2.029
33	.478	2.090
34	.503	1.986
35	.547	1.828
36	.554	1.806
37	.587	1.704
38	.575	1.738

Indicator number	Collinearity statistic	
	Tolerance	Variance of Inflation Factor (VIF)
39	.656	1.523
40	.612	1.635
41	.553	1.808
42	.718	1.392
43	.618	1.617
44	.856	1.169
45	.699	1.430
46	.437	2.286
47	.391	2.555
48	.411	2.431
49	.503	1.987
50	.552	1.810
51	.725	1.379
52	.494	2.025
53	.505	1.980
54	.496	2.015
55	.348	2.873
56	.352	2.843

**APPENDIX K**  
**LETTER OF ETHICAL CLEARANCE**





**MINISTRY OF EDUCATION AND CULTURE  
FACULTY OF MEDICINE GADJAH MADA UNIVERSITY  
MEDICAL AND HEALTH RESEARCH ETHICS COMMITTEE (MHREC)**

**CONTINUING REVIEW APPROVAL OF APPROVAL**

**Ref: KE/FK/572/EC Year 2012**

Ref : KE/FK/ *808* /EC

Title of the Research Protocol : The Development of the Parental Feeding Behavior Questionnaire (PFBQ) for Indonesian Parents with Toddlers

Documents Approved : 1. Study Protocol continuing review  
2. Information for Subjects Approved 03 Agustus 2012  
3. Informed consent form Approved 03 Agustus 2012

Principle Investigator : Lely Lusmilasari

Name of supervisor : 1. Assoc. Professor Dr. Warapon Cahiyawat  
2. Asst. Professor Dr. Branom Rodcumdee

Date of Approval : **10 SEP 2013**  
(Valid for one year beginning from the date of approval)

Institution(s)/place(s) of research : Yogyakarta Special Province, Indonesia

The Medical and Health Research Ethics Committee (MHREC) states that the above protocol meets the ethical principle outlined in the Declaration of Helsinki 2008 and therefore can be carried out.

The Medical and Health Research Ethics Committee (MHREC) has the right to monitor the research activities at any time.

The investigator(s) is/are obliged to submit:

- Progress report as a continuing review : Annually  
 Report of any serious adverse events (SAE)  
 Final report upon the completion of the study

Prof. dr. Ngatidjan, M.Sc., Sp.FK(K)

Chairman

dr. Arief Budiyanto, Ph.D., Sp.KK  
Secretary

Attachments:

- Continuing review submission form (AF 4.3.01-014.2012-02)  
 Serious adverse events (SAE) report form (AF 6.1.01- 019.2012-02)

*Recognized by Forum for Ethical Review Committees in Asia and the Western Pacific (FERCAP)*

9-Sep-13

## VITA

Lely Lusmilasari was born in 1974. She received a Bachelor of Nursing Science from Faculty of Nursing, University of Indonesia in 1998. She got a Master of Health from Faculty of Medicine, Universitas Gadjah Mada. Lely had two years clinical experience in Paediatric unit and 16 years of working as a lecturer in School of Nursing, Universitas Gadjah Mada. She attended Philosophy Program in Nursing Science, Faculty of Nursing, Chulalongkorn University since 2009-2014.

