MATERNAL KNOWLEDGE, ATTITUDE AND PRACTICES ON THE DIETARY OMEGA 3 AND 6 IN CHILDREN AGED 1-2 YEARS OLD IN LABUHANBATU UTARA REGENCY, INDONESIA

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ความรู้ ทัศนคติ และการปฏิบัติของมารดาต่ออาหารที่มีกรดโอเมกา 3
และ 6 ในเด็กอายุ 1-2 ปี ในเขตลาบูฮานบาตู อูทารา ประเทศอินโดนีเซีย

น.ส.สินาร์ ยูนิตา เพอบาร์

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาธาร
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Thesis Title	MATERNAL KNOWLEDGE, ATTITUDE AND PRACTICES ON THE DIETARY OMEGA 3 AND 6 IN CHILDREN AGED 1-2 YEARS OLD IN LABUHANBATU UTARA REGENCY, INDONESIA
By	Miss Sinar Yunita Purba
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สินาร์ ยูนิตา เพอบาร์ : ความรู้ ทัศนคติ และการปฏิบัติของมารดาต่ออาหารที่มีกรดโอเมกา 3 และ 6 ในเด็กอายุ 1-2 ปี ในเขตลาบูฮานบาตู อูทารา ประเทศอินโดนีเซีย. (MATERNAL KNOWLEDGE, ATTITUDE AND PRACTICES ON THE DIETARY OMEGA 3 AND 6 IN CHILDREN AGED 1-2 YEARS OLD IN LABUHANBATU UTARA REGENCY, INDONESIA) อ.ที่ปรึกษาหลัก : วันดี ศิริโชคชัชวาล

บทนำ : อินโดนีเซียเป็นหนึ่งในประเทศที่มีทรัพยากรมนุษย์ที่อาจไม่ได้คุณภาพ รวมถึงประเด็นด้านการทำงานของสมองต่อทักษะความคิดสร้างสรรค์ มารดาจึงมีบทบาทหน้าที่สำคัญต่อการที่เด็กอายุ 1-2 ปี จะได้รับโอเมกา 3 และ 6 อย่างเพียงพอ อย่างไรก็ตาม มีการศึกษาอย่างจำกัดต่อระดับความรู้ ทัศนติ และการปฏิบัติของมารดาต่ออาหารที่มีกรดโอเมกา 3 และ 6 อย่างเพียงพอสำหรับเด็กอายุ 1-2 ปี ดังนั้นการศึกษานี้มีวัตถุประสงค์เพื่อหาระดับความรู้ ทัศนคติ และการปฏิบัติของมารดา และปัจจัยที่เกี่ยวข้องกับการบริโภคโอเมกา 3 และ 6 ในเด็กอายุ 1-2 ปี ในเมืองลาบูฮานบาตู อูทารา ประเทศอินโดนีเซีย. วิธีการดำเนินงานวิจัย : การศึกษาแบบภาคตัดขวางโดยดำเนินการวิจัยในมารดาของเด็กอายุ 1-2 ปี จำนวน 428 ราย โดยใช้การสัมภาษณ์แบบตัวต่อตัว ด้วยแบบสอบถาม จากการสุ่มตัวอย่างแบบหลายชั้นตอนจากหมู่บ้านในแปดตำบลของลาบูรา และ นำเสนอค่าเฉลี่ยและส่วนเบี่ยงเบนมาตรฐานสำหรับการวิเคราะห์เชิงพรรณนา และใช้สถิติวิเคราะห์การถดถอยโลจิสติคทวิเพื่อหาความสัมพันธ์ระหว่างตัวแปรอิสระต่อระดับการปฏิบัติที่ดีของมารดาในการบริโภคโอเมกา 3 และ 6 ของเด็กอายุ 1-2 ปี โดยมีนัยสำคัญทางสถิติที่ค่า $p < 0.05$. ผลการศึกษา: ผู้เข้าร่วมการศึกษาเกือบครึ่งมีความรู้ในระดับดี (ร้อยละ 41.8) ในขณะที่มีเพียงร้อยละ 7.2 และ ร้อยละ 2.3 ของผู้เข้าร่วมทั้งหมดที่มีทัศนคติและการปฏิบัติที่ดีต่อการบริโภคอาหารที่มีโอเมกา 3 และ 6 ตามลำดับ และพบว่ามีตัวแปรอิสระ 8 ตัว ได้แก่ ศาสนาคริสตนิกายเพนเทคอสต์ อาศัยในพื้นที่เขตเมือง ชาติพันธุ์มาเลย์ เพศของเด็กที่ได้รับการศึกษา การเลี้ยงลูกด้วยนมแม่ในปัจจุบัน และแหล่งข้อมูล 2 แหล่ง คือรายการโทรทัศน์และสตรีที่ประสบปัญหา ร่วมกับระดับทัศนคติปานกลาง มีความสัมพันธ์อย่างมีนัยสำคัญทางสถิติกับระดับการปฏิบัติที่ดีของมารดาต่อการบริโภคโอเมกา 3 และ 6 ในเด็กอายุ 1-2 ปี. สรุปผลการศึกษา : ผลการศึกษาพบว่ามีหลายปัจจัยที่เกี่ยวข้องกับการปฏิบัติที่ดีของมารดาต่อการบริโภคโอเมกา 3 และ 6 ในเด็กอายุ 1-2 ปี ในเมืองลาบูฮานบาตู อูทารา ประเทศอินโดนีเซีย ด้วยเหตุนี้ การศึกษาครั้งนี้จึงเสนอให้ การวิจัยในอนาคต รวมถึงการทำการวิจัยแบบแทรกแซงเพิ่มเติม ควรมุ่งเน้นไปที่ปัจจัยเหล่านี้โดยเฉพาะทัศนคติของมารดา.

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สาขาวิชา	สาธารณสุขศาสตร์	ลายมือชื่อนิสิต ....
ปีการศึกษา	2563	ลายมือชื่อ อ.ที่ปรึกษาหลัก ....

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Sinar Yunita Purba : MATERNAL KNOWLEDGE, ATTITUDE AND PRACTICES ON THE DIETARY OMEGA 3 AND 6 IN CHILDREN AGED 1-2 YEARS OLD IN LABUHANBATU UTARA REGENCY, INDONESIA . Advisor: Wandee Sirichokchatchawan, Ph.D.

Background: Indonesia is one of the countries with low quality human resources including the issue on cognitive performances from brain functioning creativity. In the effort to fulfil Omega 3 and 6 in children aged 1-2 years, the most responsible person to the period are mothers. Therefore, the study aimed to determine the level of maternal knowledge, attitude, and practices and factors associated with the dietary omega 3 and 6 consumption in children aged 1-2 years old in Labuhanbatu Utara, Indonesia. Method: This cross-sectional study was conducted among 428 mothers of children aged 1-2 years using a face-to-face interview with a structured questionnaire. A multi-stage sampling was drawn from villages in eight subdistricts of Labura. Frequency, percentage, mean and standard deviation were presented for descriptive analysis. Chi-square and Binary logistic regression were used to describe the relationship between the selected independent variables and level of good maternal practices with statistically significant at p-value <0.05.Results: Almost half of participants has good level of knowledge (41.8%). Whereas only 7.2% and 2.3% of all participants have good level of attitude and practice on dietary omega 3 and 6, respectively. Eight variables (Pentecostal-religion, living in urban area, malay-ethnic, sex of subjected children, current breastfeeding, and sources of information, along with a fair level of attitude were significantly associated with the good level of maternal practices on consumption of omega 3 and 6 to the children aged 1-2 years.Conclusion: The study found that many factors were associated with good maternal practices on consumption of dietary omega 3 and 6 among 1-2 years old children in Labuhanbatu Utara, Indonesia. Therefore, further research and intervention focuses on those factors, especially on attitude of the mothers should be considered.

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Field of Study: Public Health	Student's Signature ....
Academic Year: 2020	Advisor's Signature ....

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For mom and dad, who accompanied and cooked eggs in the middle of the night for knowing I was doing research, make me warm ginger tea, and allow me sleep longer during the day because of my sacrifice doing research at midnight. During the process of this research, my younger siblings were also sacrificed in doing the house cleaning work that I usually do because they knew I was busy at my desk doing this research for months. Thank you very much to my family who always support me.

Last but not least, my friends in Chulalongkorn University, and student communities during my study in Chulalongkorn University, Thailand, thank you.
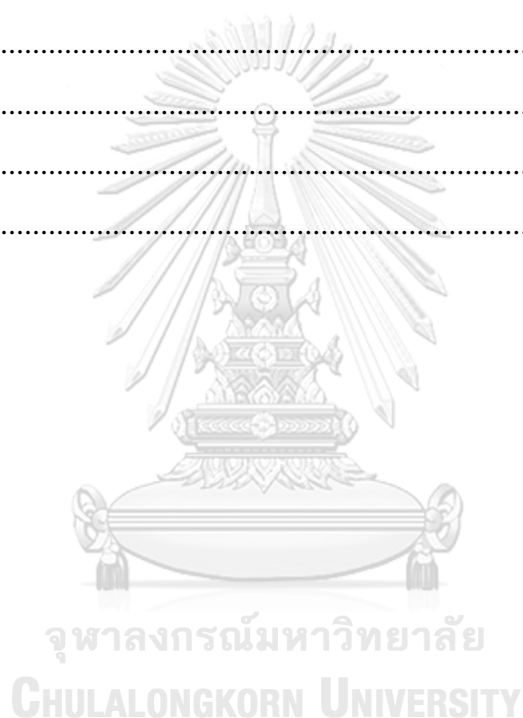
Sinar Yunita Purba

TABLE OF CONTENTS

<div align="right">**Page**</div>

LIST OF TABLES

Page

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

LIST OF FIGURES

Page

จุฬาลงกรณ์มหาวิทยาลัย

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CHAPTER I
INTRODUCTION

1.1 Background

Human Development Index in Asia was quite faster through 1970-2010. Indonesia get the top 4th country who has faster growth HDI in 2010, with non-income dimension in 10th top Asian countries and 6th top Asian countries for economic growth. But still, it just a fifth from HDI of all over the developed countries such as European Country (Statistics 2013). Indonesia's HDI value for 2018 is 0.707— which put the country in the high human development category—positioning it at 111 out of 189 countries and territories (Statistics 2012).

Automatically, Indonesia was one of the countries with low quality human resources. One of the parameters of quality human resources was the creativity of each individual (UNDP 2019). Problem solving is one of the cognitive performances from brain functioning creativity (Helland, Smith et al. 2003). Intelligence and creativity can be stimulated if Omega 3 and 6 are met (Talukdar, Zamroziewicz et al. 2019).

Omega 3 and 6 were essential fatty acids that play an important role in the development of the quality of the human brain. Omega 3 and 6 have n-3 and 6 carbon chains in their lipid molecular branches (*Gvozdjáková A.* 2008). Omega 3 fatty acids moleculized into Docosahexanoic Acid then particularly divided into Eicosapentanoic Acid and Alpha-Linoleic Acid (Sediaoetama, 2010). This nutrient functions for the development of nerve cells in the brain and retina (Bradbury 2011). Bryan Janet in his research *"Nutrients for Cognitive Development in School-aged Children (Bryan, Osendarp et al. 2004)"* stated that Omega 6 can be break into Arachidonic Acid and this molecule functioning as a myelin nerve wrapper, and coating of fat membranes in the brain. More consistent results have been found in favor of PUFA supplementation when studies have used more specific measures of cognitive performance, such as visual recognition memory or problem-solving ability (Tommy Cederholm 2013). It suggested that there is a critical timing of intervention to produce a long-term effect, such that supplementation throughout the first 24 months (Bryan, Osendarp et al. 2004).

Almost all research about Omega 3 and 6 related to the HDI come up with same conclusion during this 20th century. From British, particularly Susan Walker, in her 16th year follow-up study of a randomised controlled trial published on 2006, found the effect of a longer duration that more than two years dietary supplementation in early childhood of may have led to greater benefits cognitive intelligence functioning in late adolescence. From Asia, Chai Yu Chang in Taiwan wrote his findings in *Essential Fatty Acids and Human Brain* about clinical observation studies had related imbalance dietary intake of fatty acids to impaired brain performance and diseases. He also mentioned that the period of milestone optimum brain development was in first 5 years age of children's life, particularly in 1-2 years life of children (Chang, Ke et al. 2009).

In the effort to fulfil Omega 3 and 6 in children under aged 1-2 years, the most responsible person to the period were mothers. The mother should have knowledge about Omega 3 and 6 so that she realized that Omega 3 and 6 were very important for the development of her children's brain cells, so that the adequacy of Omega 3 and 6 in children can be fulfilled. Knowledge also influenced the Attitude of giving Omega 3 and 6 to children (Kluyts 2003). Factors that influenced the mother's knowledge, attitude, and practice are education, type of work, age, socio economic, mother's experience and the existence of information sources (Blomkvist, Hillesund et al. 2019).

Research was taken a place in Kualuh Hulu, Labuhanbatu Utara. Labura is the one of the youngest regencies in Indonesia, with the rapid growth of children population as much as 37.465 children on aged 1-5 years. Kualuh Hulu district had the most heterogeneous education and employment status and become the largest population growth in Labuhanbatu Utara with 71.274 citizen. It consisted of 13 subdistricts and 104 public health centre who covered babies on aged 1-2 years (Regency 2020).

Although prior researches had established a relationship between mother's knowledge with giving sufficient Omega 3 and 6 to the children under aged 1-2 years, no studies have specifically examined the attitude and practice of mothers in administration sufficiency Omega 3 and 6 to the children under aged 1-2 years, then researcher were interested in conducting research to examine maternal knowledge, attitude, and practice dietary Omega 3 and 6 to the children aged 1-2 years old in Labuhanbatu Utara regency, Indonesia.

1.2 Research Questions

1) What were the maternal knowledge, attitude, and practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia?

2) Was there an association between the general characteristics of the mothers and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years old in Labuhanbatu Utara, Indonesia?

3) Was there an association between the household characteristics and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years old in Labuhanbatu Utara, Indonesia?

4) Was there an association between the children characteristics and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years old in Labuhanbatu Utara, Indonesia?

5) Was there an association between the food taboo and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years old in Labuhanbatu Utara, Indonesia?

6) Was there an association between the source of information on omega 3 and 6 and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years old in Labuhanbatu Utara, Indonesia?

7) Was there an association between the level of knowledge and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years old in Labuhanbatu Utara, Indonesia?

8) Was there an association between level of attitude and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years old in Labuhanbatu Utara, Indonesia

1.3 Research Objectives

1.3.1 General objective

To determine the level of maternal knowledge, attitude, and practices and factors associated with the dietary omega 3 and 6 consumption in children aged 1-2 years old in Labuhanbatu Utara, Indonesia.

1.3.2 Specific objectives

1. To determine the association between the general characteristics and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

2. To determine the association between the household characteristics and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

3. To determine the association between the children characteristics and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

4. To determine the association between the food taboo and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

5. To determine the association between source of information on omega 3 and 6 and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

6. To determine the association between level of knowledge and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

7. To determine the association between level of attitude and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia

1.4 Research Hypothesis

1.4.1 Null Hypothesis

There is no association between the general characteristics and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

Alternative Hypothesis

There was an association between the general characteristics and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

1.4.2 Null Hypothesis

There was no association between the household characteristics and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

Alternative Hypothesis

There was an association between the household characteristics and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

1.4.3 Null Hypothesis

There was no association between the children characteristics and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

Alternative Hypothesis

There was an association between the children characteristics and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

1.4.4 Null Hypothesis

There was no association between food taboo and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

Alternative Hypothesis

There was an association between food taboo and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

1.4.5 Null Hypothesis

There was no association between source of information on omega 3 and 6 and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

Alternative Hypothesis

There was an association between source of information on omega 3 and 6 and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

1.4.6 Null Hypothesis

There was no association between level of knowledge and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

Alternative Hypothesis

There was an association between level of knowledge and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

1.4.7 Null Hypothesis

There was no association between level of attitude and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

Alternative Hypothesis

There was an association between level of attitude and level of practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

1.5 Conceptual Framework

Independent Variables	Dependent Variable

General Characteristics of the mothers:

1. Age
2. Religion
3. Marital Status
4. Educational level
5. Occupation
6. Place of Resident
7. Ethnicity

Household characteristics:

1. Family arrangement
2. Monthly household income

Children Characteristics

1. Weight
2. Length
3. Gender baby who will be the targeted subject
4. Current breastfeeding status
5. Food Allergy

Food taboo of Children

Source of information on dietary omega 3 and 6

Maternal knowledge on dietary omega 3 and 6 consumption in children aged 1-2 years

Maternal attitude on dietary omega 3 and 6 consumption for children aged 1-2 years

Maternal practices on dietary omega 3 and 6 consumption in children aged 1-2 years

Figure 1 Conceptual Framework

1.6 Operational Definition

General Characteristics of the mothers

1. Age: Referred to self-reported of age of the mother in last completed birthday at the time of interview.

2. Religion: Referred to the statement belief in higher power such as God, Goddess, Rabbi. Mother applied her religion rules to her daily activities and do praying as required by her religion, which categorizes into:

   ❖ Protestant

   ❖ Advent

   ❖ Pentecostal

   ❖ Orthodox

   ❖ Catholic

   ❖ Moslem

   ❖ Buddhist

   ❖ Hinduism

   ❖ Other, please specify

3. Marital Status

   Referred to the distinct options that describe a person's relationship with a significant other at the time of interview. Categorized as married, divorce/separated and widowed.

4. Educational Level

Referred to the highest attained level education of respondent at the time of interview. It was categorized as Illiterate, Elementary, Intermediate, High school, higher education".

5. Occupation

Referred to the job of mother which was the source of monthly income at the time of interview. It was categorized as "government Employee", "private company employee", "entrepreneur", "housewife".

6. Place of Resident

Referred to the civil subdivision of a city in which the individual resides at the time of interview. Place residents categorized as Rural and Urban area.

7. Ethnicity

Ethnicity referred to the origins of respondent at the time of interview. It is categorized into "malay", "batak", "java", and other.

Household characteristic

1. Family arrangement

Referred to the family members those stay in one house as a family at the time of interview.

Nuclear family: Father, Mother and their children living in the same household.

Extended family: Father, mother, their children and other family members living in the same household.

2. Monthly household income

Referred to monthly income of mothers and fathers as parents who responsible to taking care children 1-2 years in the house at the time of interview.

Children Characteristics

1. Weight

   Referred to body weight of children 1-2 years old in the house. Measurement was based on WHO guidelines. It was categorized according to weight for age into 3 categories; underweight (<-2SD), normal (-2SD to +2SD) and overweight (>+2SD).

2. Length

   Referred to body length of children 1-2 years old in the house. It was categorized according to length for age as short (<-2SD), average (-2SD to +2SD) and tall (>+2SD).

3. Gender baby who was the subjected to the study

   Referred to the sex type of children 1-2 years that was the targeted subject and was categorized as girl and boy.

4. Current Breastfeeding Status

   Referred to the history breastfeeding of targeted children in the last 3 months (till present). It was categorized as currently breastfed which was breastmilk only, breastfed + formula milk, formula milk or UHT.

5. Food Allergy

   Referred to the allergic factor from the subjected children 1-2 years in the house to some item foods. It was categorized as yes or no.

Food taboo

Referred to the personal/family beliefs as cultural part of their ethnic to consume some food at the time of interview towards the child feeding. It was categorized with "Yes" or "No" to the question.

Source of information on dietary omega 3 and 6

Referred to the how they can get the information of Omega 3 and 6. Content of information Omega 3 and 6 could be varied by knowing definition omega 3 and 6, what was the sources of foods, where was the source of foods could be find, what was the functions of Omega 3 and 6, when it should be given for optimum benefit to the children, why mothers should give it to their children, and how much they could give the omega 3 and 6 source foods, how often mother could give it, also were the children 1-2 years old happy to eat the sources of omega 3 and 6. The source of these information had been categorized as

- ❖ TV Programs
- ❖ Newpaper and Magazines
- ❖ Friends/Neighbour
- ❖ Family Member
- ❖ Experiencing women in the families
- ❖ Medical Practitioner
- ❖ Social Media

Maternal knowledge on dietary omega 3 and 6 consumption in children aged 1-2 years

Referred to the knowledge of mothers during the interview and questionnaire given. Understand the benefit of omega 3 and 6 as most important period to eat omega 3 and 6 in first 1-2 years aged of children, and food sources of omega 3 and 6. The topics were such as definition omega 3 and 6, benefit of omega 3 and 6, and source of omega 3 and 6. Omega 3 were 9 statements, omega 6 were 9 statements, and omega 3 along with omega 6 were 9 statements.

Maternal attitude on dietary omega 3 and 6 consumption in children aged 1-2 years

Attitude of the mother towards menu arrangement omega 3 and 6, food processing of omega 3 and 6 sources, serving food sources of omega 3 and 6, and the attitude to give food sources of omega 3 and 6 in children 1-2 years. The attitude was measured by a variety of question items expressed in the response category by the Likert method. Statement of attitude referred to the topic were consist of preparation source omega 3 and 6, appearance of daily meal which contain omega 3 and 6, food taboo appliance in the plate, variousity and regularity menu of source omega 3 and 6, menu composition of omega 3 and 6, the person who responsible to the meals of children in the house. The statement of omega 3 were total 9 statements, and omega 6 were total 8 statements.

Maternal practices on dietary omega 3 and 6 consumption in children aged 1-2 years.

Referred to how mothers apply what they know about omega 3 and 6 for their children aged 1-2 years. The omega 3 and 6 had administered by mother with many

food sources to the children aged 1-2 years. There were 10 food groups that will

be appear in section VII for practice variables.

Group I: Yogurt, milk, and cheese.

Group II : Fruits.

Group III: Vegetables.

Group IV: Chocolate.

Group V: Desert

Group VI: Carbohydrates

Group VII: Meat

Group VIII: Fish and Seafood

Group IX : Nuts and Legumes

Group X: Supplement
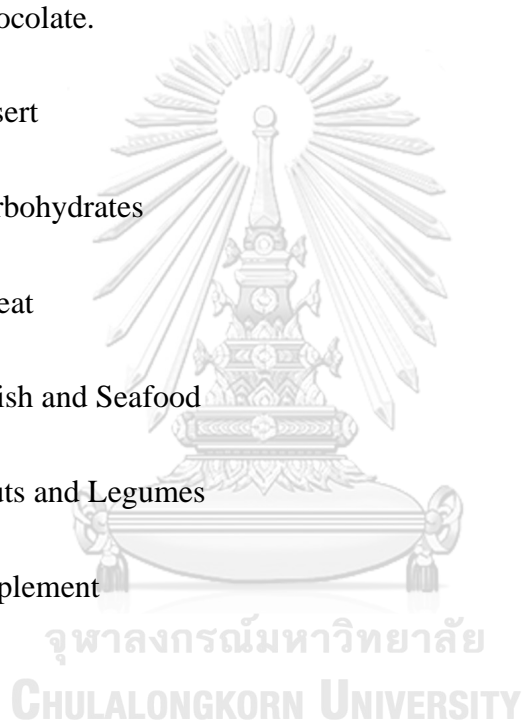
CHAPTER II

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter presents the literature studies on 1) Omega-3 fatty acids, 2) Omega-6 fatty acids, 3) Omega-3 and Omega-6 for Intelligent Quotient, 4) Babies 1-2 years old with Omega-3 and 6, 5) Growth and development at 1st year of milestone in 1 year old, 6) Growth and development at 2nd year of milestone in 2 year old, 7) Maternal Knowledge, Attitude, and Practice on dietary Omega-3 and 6.

2.1 Omega-3 fatty acids

2.1.1 Definition of Omega-3

Omega-3 is one of the unsaturated fatty acids with structure chemical chain consist of many double bonds, with carboxyl bonds founded in the 3rd methyl groups in the COOH chain. Omega-3 fatty acids are a type of polyunsaturated fat, considered an essential fatty acid because it cannot be manufactured by the body. As a result, people must obtain omega-3 fatty acids from foods such as fish, nut, and plant-based oils such as canola oil and sunflower oils (Lauritzen 2001).

2.1.2 The types of Omega-3

a) ALA – ALA, is alpha-linolenic acid, has 18-carbon chain on 3 double bond. α- Linolenic acid constituted approximately 80% of total n-3 intake. α-linolenic acid came from soybean oil, whereas that of docosahexaenoic acid and eicosapentaenoic acid is mackerel (Ha and Kim 2018).

b) EPA – EPA is eicosapentaenoic acid. EPA is a shorter chain than DHA. The EPA polyunsaturated fatty acid chain contains 20 carbons on 5 double bond. EPA is one of the most important of Omega-3. Eventhough they have an important role to the brain development, the role is tend to used for hormonal system and immune system.

c) DHA – DHA is docosahexaenoic acid which has 22-carbon chain on 6 double bond with the first double bond founded at the edge of third carbon chain of methyl. DHA makes up about 12-15% by weight of total fatty acids in the human brain (Salem, Litman et al. 2001).
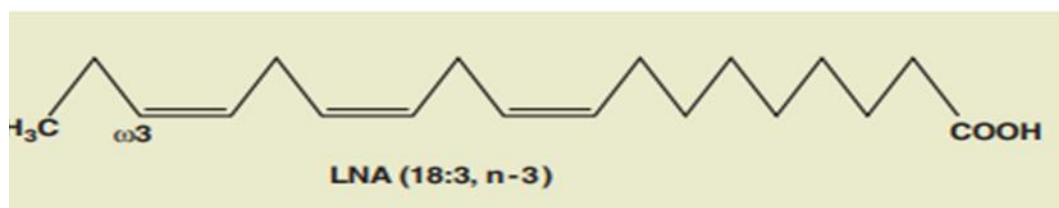
Chemical structure of LNA

Figure 2. Chemical Structure of LNA.
(Gvozdjáková A. 2008).

LNA is converted to eicosapentanoic acid (EPA), and then to docosahexanoic acid (DHA), while LA is the metabolic precursor of arachidonic acid (AA)(Gocen, Bayarı et al. 2018).

Healy-Stoffel and Levant   Page 36

n-3 Series   **n-6 Series**

α-Linolenic acid (ALA;18:3n-3)   Linoleic acid (LA;18:2n-6)

↓   ↓
↓ Δ^6-desaturase   ↓
↓   elongase   ↓
↓ Δ^5-desaturase   ↓

Eicosapentaenoic acid (EPA; 20:5n-3)   Arachidonic acid (20:4n-6)

↓   ↓
↓   elongase   ↓
↓   elongase   ↓
↓ Δ^6-desaturase   ↓
↓   peroxisomal oxidation   ↓

Docosahexaenoic acid (DHA; 22:6n-3)   Docosapentaenoic acid (n-6 DPA; 22:5n-6)
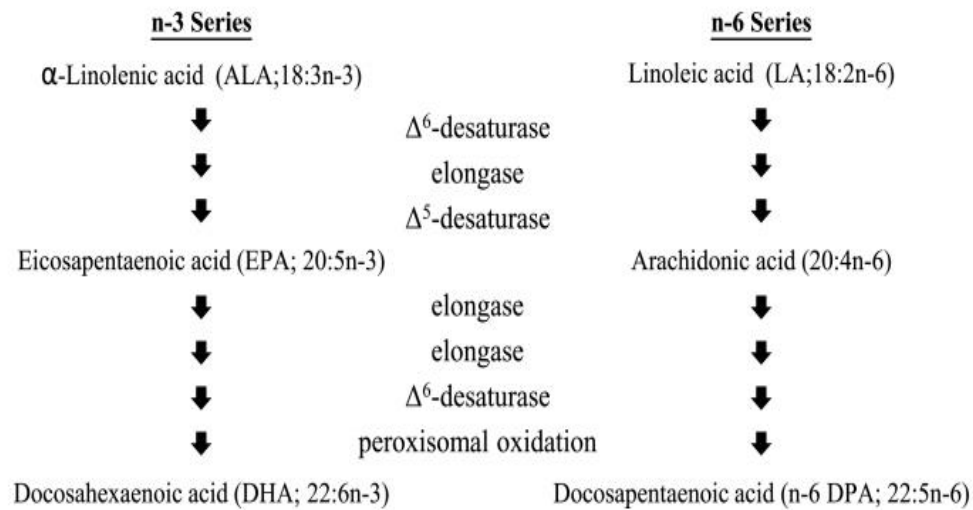
Figure 3 Biosynthesis Omega-3 and 6
(Healy-Stoffel and Levant 2018).

DHA transform by the results of ALA metabolism through the process of decreasing
oxygen saturation and the incorporation of amino acid bonds as described in Figure
1. Through the Omega-6 chain bonds, the same method is used to convert LA to AA
then into DPA. Syntaxin-3 is a type of synapsis stimulated by DHA, wherein
syntaxin-3 is an important factor in the growth and regeneration of neurons, which
can contribute to the further role of DHA, namely for optimal brain growth and
development (Healy-Stoffel & Levant, 2018).

EPA is a DHA precursor which has a chemical structure formula of 20: 3n-3. In 1-
2% of the total brain fatty acids in brain phospholipids, there is EPA. EPA acts as an
anti-inflammatory mediator in its function in maintaining brain cells. Accordingly,
the relative abundance of ALA and LA influences the amounts of DHA and AA
produced (Healy-Stoffel & Levant, 2018).

In the biological activity of cells, DHA plays a role in protecting the apoptotic wall culture model in which the cell membrane contains phospholipids. Phospholipids are also called phosphatidylserines. If apoptosis is protected then cell phosphatidylserine feeding will also increase. But when DHA is lost, eating phosphatidylserine is also lost. Thus, through its effects on phosphatidylserine, DHA may play an important role in the regulation of cell signaling and in cell proliferation (Salem, Litman, Kim, & Gawrisch, 2001). An adequate intake of omega-3 PUFA is essential for optimal visual function and neural development (Dyall & Michael-Titus, 2008).

Omega 3 is one of the fatty acids that fall into the PUFA category. PUFA are a type of dietary fat that is important for the human body. PUFA, which has a long chain of 20 carbons, serves to coat cells in the body. Its molecules are also useful for energy delivery in all body tissues including the brain. The major species of n-6 PUFAs in brain is arachidonic acid/AA or 20:4n-6, which is 20 carbons in length, with four double bonds beginning with the sixth carbon from the methyl end, and which makes up 8–11% of the total fatty acids in the brain (Healy-Stoffel and Levant 2018).

Some literature states that the AA diet is useful for increasing the ability of cells to adapt when cell function is needed quickly. AA helps cells to form new interconnections of nerves and reorganize the brain's abilities so that the brain develops faster (Fukaya et al., 2007). AA is useful for thickening transcription of cells through PPAR ų which help to make nerve cells stronger and have rarely inflammated so that AA protects cells from free radicals. When the cells are stronger protected, the brain cells will develop properly (Whelan 2008).
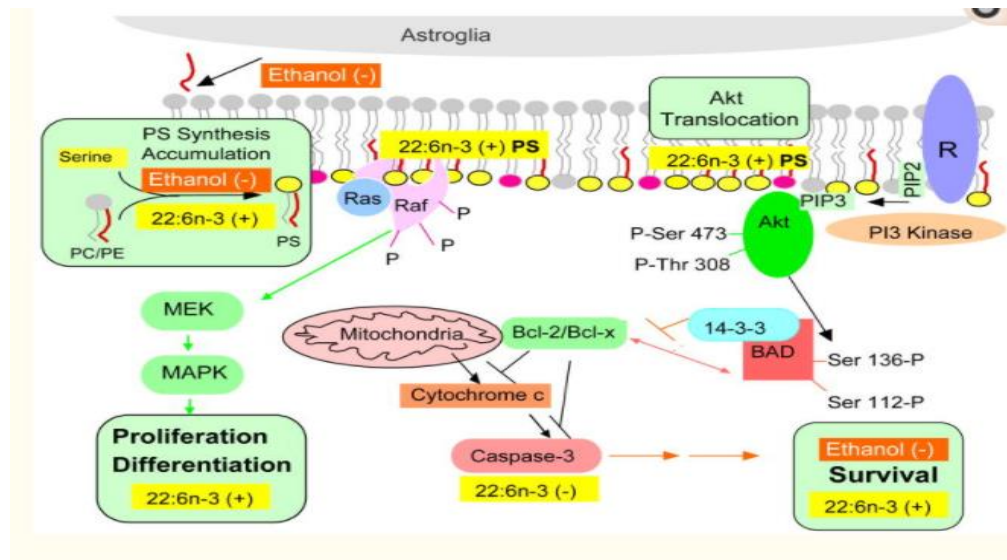
Figure 4 Positive Effect of DHA on Neuronal Survival
(Kim 2008).

Based on the explanation of Figure 3, DHA is an important basis for the maintenance of long or short life of nerve cells in the brain. Why? Because DHA is in the life process of brain cells, it functions to increase PS accumulation in the central nervous system. However, DHA requires the participation of the PS itself and the PI3 kinase. From the DHA protected PS, the Akt signal will translocate very fast. Not only the translocation in the Akt signal but also the Raf-1 translocation is poared by DHA. Raf-1 plays a role in the process of delivering signals for nerve cell differentiation. Thus, if n-3 is reduced, it will then be followed by reduced PS function in the central nerve, so that the cells have a short lifespan and can disappear significantly in the event of nerve dysfunction. In this study, cells cultured with ethanol exposure showed the function of DHA to be very clear in the process of cell differentiation. The observation that DHA increases PS particularly in nerve cells may indicate the presence of a unique PSS isoform in nerve cells (Kim 2008).
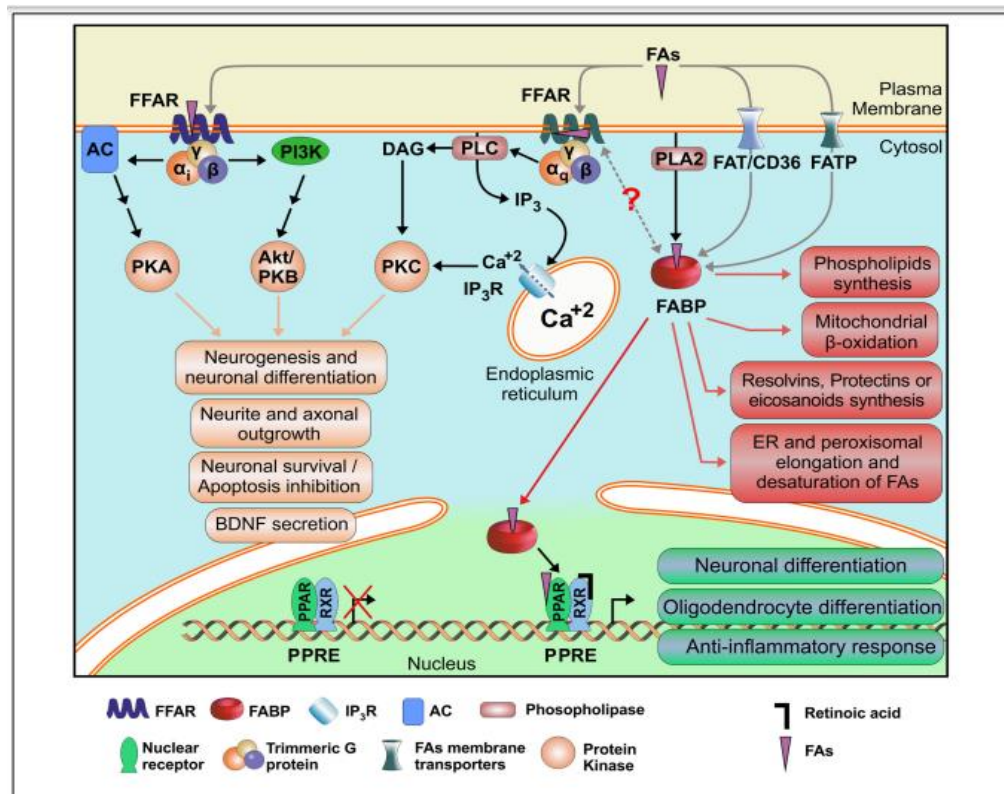
Figure 5 Neural Free Fatty Acid Receptors
(Falomir-Lockhart, Cavazzutti, Giménez, & Toscani, 2019).

Fatty acids play a role in the function of neurons and glial cells since humans are still in embryonic form, to support memory and intellectual functions. Fatty acids are also preventive in the prevention of brain trauma and other neurological diseases. Fatty acids cannot stand alone in carrying out important functions in the brain, their chemical structures are simple and difficult to dissolve, their nature is to make fat aided by proteins called the FFAR receptor membrane, cytosol transcription protein, FABP, and PPAR nuclear transcription. These proteins are intermediates of fatty acids for the cells that contain fatty acids (Falomir-Lockhart, Cavazzutti et al. 2019). n-3 and n-6 are electron donors for PPAR, the variously self-resolving nuclear transcription factors coupled with the receptor from RXR retinoid X to bind to DNA for gene transcription assistance. This PPAR gene that has been finished will be

useful for early brain assistance. PPAR gene will thicken stem cells to increase brain function. DHA and ARA are electron donors for RXR in the brain. RXR will meet RAR and together will do its job for the development of new cells, adapt to new functions, multiply and form cells in each body tissue. If DHA is reduced, gene expression will also change. The expression of this generation will make cells less flexible in adapting, less fast in delivering signals to tissues, assembling new cell coatings, transduction of signals and forming ion channels. This will prevent the brain from developing optimally in its intellectual function (Innis 2007).

2.1.3. The sources of these omega-3 fatty acids

a) ALA – Canola, Soybeans, Walnuts, and Flaxseed (Kris-Etherton, Harris, & Appel, 2003) Previous study find about there is shift in production away from small, family-owned farms to industrial-scale agribusiness operations. Foods produced and consumed in the early 20th century had different essential fatty acid compositions than modern grain-fed poultry and livestock products (Blasbalg, Hibbeln et al. 2011 Majchrzak, & Rawlings, 2011 Majchrzak, & Rawlings, 2011).

b) EPA – Oily fishes such as Cod Liver, and fishes such as Herring, Mackerel, Salmon, and Sardines (Pike & Jackson, 2010).

c) DHA – Oily fishes such as Cod Liver, Herring, Mackerel, Salmon, and Sardines, and also are produced from algal fermentation (Nguyen, Li, & Oben). Seafood is currently the best and generally a safe source of long-chain omega-3 oils amongst the common food groups. LC omega-3 oils are also obtained in lower amounts per serve from red meat, egg and selected other foods. As global population increases the opportunities to increase seafood

harvest are limited, therefore new alternate sources are required. Emerging sources include microalgae and under-utilized resources such as Southern Ocean krill (Nichols, Petrie, & Singh, 2010).

2.1.4 Benefits of omega-3 fatty acids

Omega-3 fatty acids balance the modern diet to prevent degenerative disease. Heart disease, stroke, and cancer can prevent by n-3 (Kew, Mesa et al. 2004). Previous studies found the positive result when rodent is supplemented n-3 determine substantial portion of their lives reduces risk of amyloid-β deposition and hippocampal neuron loss and improves cognitive functioning. The study recommend fish consumption to support memory abilities during elderly .

ALA – Cholesterol and triglyceride level, rigid blood vessels, and fat deposits in the artery is reduced by ALA to prevent heart disease. In fact, the National Institutes of Health has reported the majority of U.S. Diets with omega-3 fatty acids needed by our bodies for overall health and wellness ((Kew, Mesa et al. 2004).

EPA/DHA – Chang explained that Dietary decosahexaenoic acid is needed for the optimum functional maturation of the retina and visual cortex, with visual acuity and mental development seemingly improved by extra DHA. Studies show that diets high in amounts of EPA and DHA help with brain and eye development, prevents cardiovascular disease, and can help to prevent Alzheimer's disease. (Chang, Ke, & Chen, 2009)

DHA is useful for protecting against the aging process in the retina of the eye to improve cognitive intelligence in children aged nine months. In a previous study patients with myocardial infarction who are given a dose of EPA / DHA 1.8 ± 1.2 g

/ day and a mean duration of follow-up is 2.2 ± 1.2 years are found to reduce the risk of cardiovascular death (Marik, Varon, & Disease, 2009). All infant formula also now supplemented with DHA (Hoffman, Ziegler, Mitmesser, Harris, & Diersen-Schade, 2008)

DHA plays an important role in the development of brain structures, as a messenger, message, brain neurotransmitter function, and a molecule of the immune system. DHA also functions in the prevention of nerve injury (Chang, Ke, & Chen., 2009). The role of n-3 PUFAs is strongly used in functional brain plasticity and intelligence impact on psychological health, aging, and disease (Talukdar, Zamroziewicz et al. 2019 & Barbey, 2019 & Barbey, 2019). n-3 serves to increase cerebral blood flow through vasodilation (Parletta & Howe, 2008). n-3 PUFA-sensitive regions is reliably predict general intelligence. The anterior, posterior and amygdala cingulate gyrus are used for intelligence functions such as decision making, attention modulation - cognitive skills as well as in intelligence intelligence (Buckner, Andrews-Hanna, & Schacter, 2008) (Talukdar et al., 2019).

2.2 Omega-6 fatty acids

2.2.1 Definition of Omega-6

Omega-6 is one of the unsaturated fatty acids with more than one double bond, with carboxyl bonds found in the 6th methyl groups in the COOH chain (Gocen, Bayarı, & Guven, 2018). Body could not produce Omega-6 fatty acid by their own, and because this is essential from human body, human should take Omega-6 fatty acid from foods (Saini & Keum, 2018).

2.2.2. Types of Omega-6
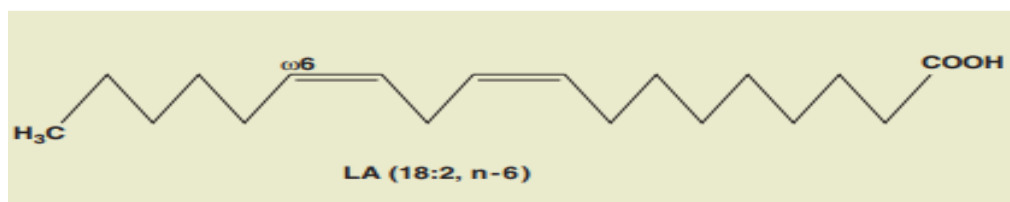
.2 Chemical structures of LA

Figure 6 Chemical Structures of LA

(Gvozdjáková A. 2008)

a) LA – LA is linolenic acid. Chemically, it is an 18-carbon chain. The first double bond is located at the sixth carbon from the edge of chain. Linoleic acid constituted 97% of total n-6 intake (Ha & Kim, 2018).

b) AA – AA is Arachidonic acid. It is the major species of n-6 which contains 20-carbon chain. Its first double bond is located at the sixth carbon from the omega end of the fatty acid. Brain has 8–11% AA from the total fatty acids (Healy-Stoffel and Levant 2018).

Common Name	Chemical Name	Shorthand Notation	Chemical Formula
Linoleic (LA)	cis, cis-9,12-Octadecadienoic	18:2 n-6	$CH_3(CH_2)_3(CH_2CH=CH)_2(CH_2)_7COOH$
α-Linolenic (LNA)	all cis-9, 12, 15-Octadecatrienoic	18:3 n-3	$CH_3(CH_2CH=CH)_3(CH_2)_7COOH$
γ-Linolenic (GLA)	all cis-6, 9, 12-Octadecatrienoic	18:3 n-6	$CH_3(CH_2)_3(CH_2CH=CH)_3(CH_2)_4COOH$
Stearidonic	all cis-6,9,12,15-Octadecatertaenoi	18:4 n-3	$CH_3(CH_2CH=CH)_4(CH_2)_4COOH$
Dihomo-γ-linolenic	all cis-8,11,14-eicosatrienoic	20:3 n-6	$CH_3(CH_2)_3(CH_2CH=CH)_3(CH_2)_4COOH$
Meads	all cis-5,8,11-eicosatrienoic	20:3 n-9	$CH_3(CH_2)_6(CH_2CH=CH)_3(CH_2)_2COOH$
Arahidonic (AA)	all cis-5,8,11,15-Eicosatetraenoic	20:4 n-6	$CH_3(CH_2)_6(CH_2CH=CH)_4(CH_2)_3COOH$
Eicosapentaenoic (EPA)	all cis-5,8,11,14, 17-eicosapentaenoic	20:5 n-3	$CH_3(CH_2CH=CH)_5(CH_2)_3COOH$
Docosapentaenoic (DPA)	all cis-7,10,13,16, 19-docosapentaenoic	22:5 n-3	$CH_3(CH_2CH=CH)_5(CH_2)_5COOH$
Docosahexaenoic (DHA)	all cis-4,7,10,13, 16,19-docosahexaenoic	24:6 n-3	$CH_3(CH_2CH=CH)_6(CH_2)_2COOH$

Figure 7 Nomenclature of Polyunsaturated Fatty Acids (PUFA)
(Finley & Shahidi, 2001)

AA is hidden behind synaptosomes requires stimulation of the phospholipid membrane through the action of endogenous phospholipase A2 to engage in signal transfer that is useful for cell growth until the end of the mature synapses. AA collaborates with DHA to stabilize the membrane fluid external environment and exemplify the correct neurotransmitter to replicate. Not only that, AA plus DHA summons lipids and binds them so that there are no unwanted interactions with nerve cells (Uauy & Dangour, 2006).

2.2.3 The sources of omega-6 fatty acids

LA – Soybean oil, Corn oil, Safflower Oil, Sunflower Oil, Peanut Oil, Cottonseed oil, and Rice Bran Oil (Meyer et al., 2003).

AA – Peanut Oil, Meat, Eggs, and Dairy Product. Pork (Ha and Kim) and egg are the major food sources of arachidonic acid and dihomo-γ-linolenic acid, respectively (Øyen et al., 2018).

2.2.4. The Benefits of Omega-6 fatty acids
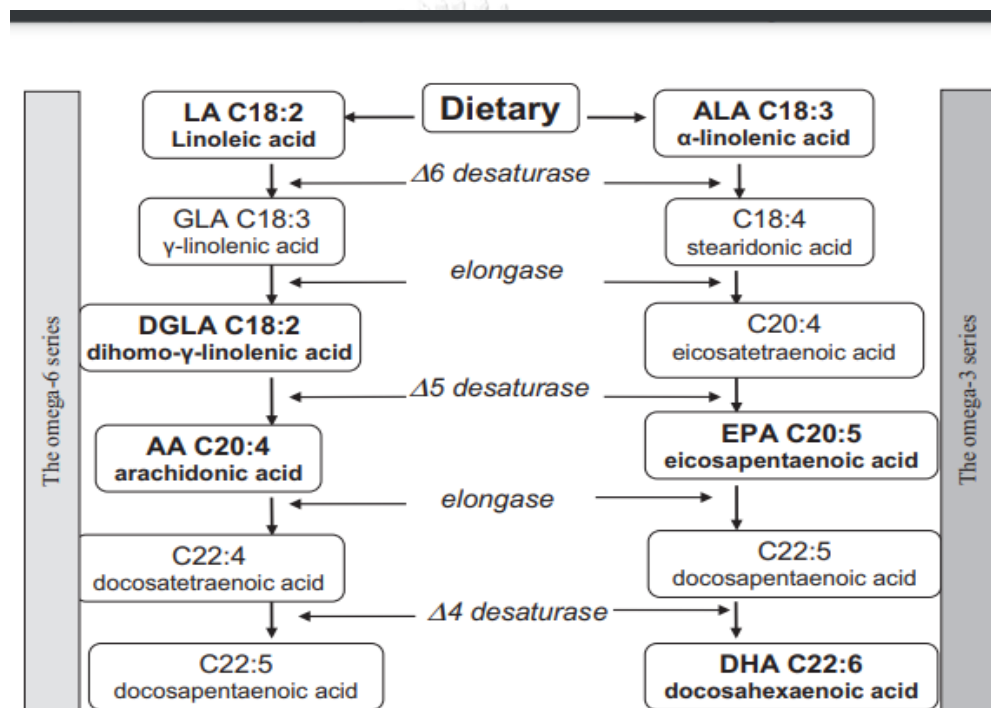
₂. 2. Pathways of biosynthesis of unsaturated fatty acids omega-6 and -3 series

Figure 8 Pathways of biosynthesis of unsaturated fatty acids Omega-3 and Omega-6 series **(Wiktorowska-Owczarek, Berezinska, & Nowak, 2015).**

The omega-6 series derives from linoleic acid and includes arachidonic acid (AA or ARA; C20 :4ω-6), the last one being docosapentaenoic acid (DPA; C22 : 5ω-6) (Wiktorowska-Owczarek et al., 2015).

prostaglandin E₂ (PGE₂), prostacyclin I₂ (PGI₂,) thromboxane A₂ (TXA₂)

prostanoids

prostaglandin E₃ (PGE₃) prostacyclin I₃ (PGI₃) thromboxane A₃ (TXA₃)

cyclooxygenase

lipoxins

resolvins

arachidonic acid (AA)

eicosapentaenoic acid (EPA)

docosahexaenoic acid (DHA)

5-lipoxygenase

5-HPETE

5-HPEPE

neuroprotektin D1

LTA₄→LTB₄ ↓ LTC₄→LTD₄

leukotrienes

LTA₅→LTB₅ ↓ LTC₅→LTD₅

Metabolic pathways of a polyunsaturated fatty acids omega-6 and omega-3 series

Figure 9 Metabolic Pathways of a polyunsaturated fatty acids n3- and n-6 series (Wiktorowska-Owczarek et al., 2015).

In the next Figure 8 above, states that omega-3 and omega-6 are extracted for the latest Prostaglandins, Prostacyclins, thromboxane and leukotrienes. AA is an eicosanoid that is responsible for capturing inflammatory signals through the formation of series 2 prostanoids. Prostaglandins have a different way of keeping cells from becoming inflamed, namely by injecting lipoxygenase so that they can produce more lipoxins. AA also plays a role in the process of expanding blood vessels and decreasing the number of cancer cells (Wiktorowska-Owczarek et al., 2015). Most of the plant oils contain Omega-6. Omega-6 develops forebrain function (Bryan et al., 2004).

2.3 Omega-3 Omega-6 fatty acids: For Intelligence Quotient

Arachidonic acid and docosahexaenoic acid are essential for brain growth and cognitive development (Helland, Smith et al. 2008).

Previous studies reviewed several important points where children who are given formula milk with DHA levels had higher IQ scores than children who drank only unfortified formula. Then the long chain polyunsaturated fatty acids that the mother gives to her child through breast milk production will stimulate the child's cognitive development. Consumption at the age of 6-24 years will have long-term effects at the age of 8 children (Ghazi, md isa, Sutan, badila, & Mehmet, 2014). Human integrity and the ability of humans to work broadly are the important roles of fatty acids. Many studies have proven that inadequately consumed fatty acids will cause impaired brain performance and degenerative diseases. This makes the role of fatty acids very important coupled with brain growth that completes at the age of 5-6 years. EFA, DHA, AA, ALA, DPA are Omega-3 and Omega-6 molecules that play a role in enhancing human brain development from the fetus (Chang, Ke, & Chen, 2009).

Talking about the benefits of Omega-3 and Omega-6, this can be well explained because Omega-3 and Omega-6 are nutrients. Individual brain development follows a genetic program which is influenced by environmental factors including nutrition (Blomkvist, Hillesund, Helland, Simhan, & Øverby, 2019). Since brain development continues through childhood, cognitive development related to Omega-3 fat levels through diet and/or supplementation in children (Eilander, Hundscheid, Osendarp, Transler, & Zock, 2007). Provision of longer DHA consumption can increase positive results for children's cognitive development (Øyen et al., 2018).

Remember to determine the level of fatty acid balance of whatever food we consume so that if this consumption is balanced, children's brain development will be optimal at the age of 1-5 years. Among them, the age of 1-2 years is a critical age for children's brain development towards its golden age at the age of 5 years. The nutritional adequacy rate of Omega-3 and 6 for babies in 1-2 years old needs 7 grams / day of Omega-3 and 0.7 grams / day for Omega-6 (Lupton 2002). The rates is same

for boys and baby girls (Aranceta & Pérez-Rodrigo, 2012). In the meantime it is advised to follow the general CDC dietary recommendations of 2-3 fish meals per week or the equivalent intake of long chain n-3 fatty acids, particularly DHA (Cederholm et al., 2013).

Omega-6 and omega-3 fatty acids have a similar ratio in the instant diet in the West. So that in previous studies there, it is found that the Western diet is deficient in Omega-3(Holub and acids 2009). Omega-6 and omega-3 FA are not interconvertible in the human body and are important components of practically all cell membranes (Simopoulos, 2011). Omega-3 and omega-6 reduce the effects of inflammation, improve the digestion of lipids, and sharpen cognitive (Ballard & Morrow, 2013).

The smarter a person is, the more polyunsaturated fatty acids are in the blood. Because the adequacy of processing each function in the core network is well fulfilled so that the connection patterns between the nerves in the brain are strong. A mediation analysis is implemented to investigate the relationship between empirically derived patterns of fatty acids, general intelligence, and underlying intrinsic connectivity networks (Zamroziewicz, Paul, Zwilling, & Barbey, 2017).

Omega-3 and 6 used to nourish hair and scalp. Adequate consumption can also heal lesions, eczema, and dermatitis on the skin (Medicines, 2002).

With the provision of Omega-3 and 6 balanced at the age of 1-2 years old, will increase the number of baby brain cells. An increasing number of brain cells will cause the child to better digest the stimulus from the environment (Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987).

This stimulates the speed at which neurotransmitters deliver stimulation to the centre of the brain and along the neurons, so that the quality of brain cells branching is getting better, the better the synaptic function between brain cells of infants and toddlers. Fatty acids make the membrane structure denser. The longer the Omega-3 and Omega-6 carbon chains, the more necessary it is for the differentiation of brain cell function. If not fulfilled, linolenic acid is upset and disrupts the chemical composition of the brain cell membranes, in nerve cells, olidendrocytes, and astrocytes. In its application to the human body, humans experience disturbances in

touch and behaviour disorders. Membrane phospholipids in animals are more effective at relieving the effects of alpha-linolenic deficiency. In contrast, omega-9 fatty acid deficiency, specifically oleic acid deficiency, induces a reduction of this fatty acid in many tissues, except the brain (Bourre 2004).

2.4 Babies 1-2 years old with Omega-3 and 6

There is study about *N-3 Long-Chain Polyunsaturated Fatty Acids for Optimal Function During Brain Development and Ageing* (Dangour & Uauy, 2008) conclude accretion of DHA in brain tissue continues after birth, reaching a total of 4g of DHA in the brain between 1-2 years of age, suggesting that n–3 LCP intake in the early years being important for brain development.

Babies brain consists of two major parts, namely the right brain and the left brain. The right brain functions in terms of equality, fantasy, creativity, shape or space, emotions, music, and color (Ghosh et al., 2010).

The left brain mostly using in academics such as memory differences in numbers, sequence, writing, language, calculation, and logic (Corballis 2014). Some aspects of physical growth become stable in preschool years. The average time of heart rate and breathing decreased only slightly to 90x per minute and breathing 22-24x per minute. Blood pressure rises slightly to an average value of 95/58 mmHg. The average body weight for 5 years is about 21 kg, almost 6 times the birth weight (WHO 2018).

At the age of 1 years, the bodyweight average of babies will increase till 3x of bodyweight when they are born and became 4x at the age of 2 years (Winship & Boyle, 2012). Growth starts slowly in the pre-school period. Increase in BB is approximately 2 kg/ year, then constant growth starts to the end (Kohl III & Cook, 2013).

Pre-school age children grow 5-7.5 cm per year. This length doubled the length of birth at the age of 4 years and is at an average height of 109 cm on their fifth birthday. Leg extension results in a thinner appearance (Huelke, 1998). The more frequent consumption of DHA on three consecutive days found a significant effect on the

calculation of total saturated fatty acids in the blood (Nyaradi, Li et al. 2013). Dietary intake of fish, fruits and vegetables is also strongly associated with higher neurodevelopmental scores, even after adjustment for breastfeeding and maternal education (Blomkvist et al., 2019).

Breastfeeding is one important activity for mothers to complete the nutrients for their babies in first years and second year of baby's life. As we know, breastmilk delivery during 1-2 years old babies by mothers will increase the intelligence during the school period of the babies. Breastmilk has one of the highest and complete Omega-3 and 6 nutrition as enough resource for the baby. Children who are adequately breastfed have better cognitive development and function better into adolescence. Gradual cognitive increase with continuous consumption. Omega-3 and Omega-6 given at breakfast can also be useful for children's cognitive development (Nyaradi, Li et al. 2013).

ALA is a part of Omega-3 which is the first to show various functions that affect the structure, biochemistry, physiology of brain function (Bourre 2004). DHA is one of the main structures of brain fat membranes and is needed most for nerve function. Not alone, long chain will help ALA improve visual, nervous, and intellectual abilities (Agostoni, Trojan et al.). Consequently, the nature of polyunsaturated fatty acids present in formula milks for infants conditions the visual, neurological and cerebral abilities, including intellectual (Simopoulos 2011).

Research on children aged 1-2 years and preschool age found less when it comes to the role of nutrition in brain development. The difficulty of a mother when determining a menu for her child can determine the quality of nutrition and its levels. Differences in character, neural activity that will still be developing and emotional instability of preschool have caused research for pre-school children to have its own challenges. (Rosales, Reznick, & Zeisel, 2009).

2.5 Growth and Development at first year of milestone in 1 year old

2.5.1 Length and weight

Anthropometric standards for children in Indonesia refer to WHO Child Growth Standards for children aged 0-5 years and WHO Reference 2007 for children 5 (five) to 18 (eighteen) years. The standard is how a child can grow meet certain conditions. Research shows that children from any country will grow up equal if nourished, health and proper upbringing are met. Through various studies and expert discussion, Indonesia decided to abolish this standard become the official standard to be used as a standard Children's nutritional status through a Ministerial Decree Health Number 1995 / Menkes /SK/XII/2010 concerning Standards Anthropometric Assessment of Children's Nutritional Status. (Agostoni, Trojan et al.)

2.5.2. Physical change

At this age, your baby's muscle strength and balance have developed to make it easier to stand without anyone's help for a few moments. He also be able to take a small object between the thumb and index finger. This ability enables him to feed himself, write with crayons, and build tower beams.

2.5.3 Communication skills

Children can follow the orders of their mother. For the simple command category like holding your own spoon. Children who eat more fish have better social skills at 15 months of age (Daniels, Longnecker et al. 2004).

2.5.4 Social Ability

A typical 1 year old is shy when meeting new people or strangers. Sometimes, babies will prefer to be around mom and cry when she wants to leave him alone.

2.6 Growth and Development at second year of milestone in 2 years old

2.6.1 Body length and weight

Body Length Index (PB) is used on children aged 0-24 months as measured in the supine position. When the child is of age 0-24 months measured in a standing position, then the measurement results are corrected by adding 0.7 cm. Meanwhile, for the height index (TB) used in children over 24 months as measured by position stand up. If the child over 24 months is measured in the supine position, then the measurement results are corrected by subtracting 0.7 cm (WHO, 2008)

Children's Anthropometry Standards are based on weight parameters and length / height consisting of 4 (four) indexes, including:

1. Weight Index for Age (BW/U)

This BB / U index describes the relative body weight in comparison with the age of the child. This index is used to assess children with underweight or severely less underweight), but cannot be used to classify overweight or very obese children. It is important to know that a children with low W / A, possibly having problems growth, so it needs to be confirmed with the W / L index or W / L or BMI/A before intervention.

2. Body Length Index according to Age or Height according To Age

The L/A index describes the growth in length or the child's height according to their age. This index can be identified children who are short (stunted) or very short (severely stunted), which is caused by malnutrition prolonged or frequent illness. Children who are classified as tall according to their age can also identified. Children with above normal height (height once) is usually caused by an endocrine disorder, however it is rarely occurs in Indonesia.

3. Weight Index according to Body Length / Height (W /L)

The body weight index or body weight/height describes what was body weight child according to growth in length/height. Index this can be used to identify undernourished children. Malnourished can be under or over nutrition.

4. Body Mass Index by Age (BMI/A)

BMI/A index was used to determine the category of malnutrition, nutrition lack, good nutrition, risk of over nutrition, over nutrition and obesity. Chart BMI/A and W/ L charts tend to show results the same one. However, the BMI/A index was more sensitive for screening child over nutrition and obesity. Children with BMI/U threshold > + 1SD has the risk of over nutrition so it needs to be handled further for prevent over nutrition and obesity. (Ministry of Health, 2020)

2.6.2 Physical change

Muscle strength and balance will be more honed Little. This development allows Little to run more smoothly, run slowly, and make small jumps. The ability to coordinate will also develop, so that at this age some children can already open the door, push the table, to change their own clothes.

2.6.3   Communication skills

Some children are able to put together several words at once even though they are stuttering. So, don't be surprised if baby still uses "baby language" or incomplete sentences when talking. For example, "mbim" for cars, "sawat" for planes, "mamam" for eating, and other words.

2.6.4 Social Ability

Babies are more open with new people around him. They will be interested in playing with other children, even though the mother needs to help her to get acquainted and socialize with her new environment. A child's development can be seen from three things: physical development (Agostoni et al., 1997), cognition, and emotion. Their main skills are finding out before act, and understanding everyday language (Council 2015).

From the cognitive side, understanding of objects has been steadier. Toddler language skills grow rapidly. In the early toddler period, namely the age of two years, the average vocabulary of toddlers is 50 words (Fernald, Marchman, & Weisleder, 2013). The emotional development of children can be seen from their very egocentric characteristics (Newton & Harrison, 2005).

2.7 Food Taboo

Taboo food is established as a way to protect a certain population of society from extinction. Keeping them from the possibility of suffering from disease as a trusted rule is an instruction from a trusted (God Meyer-Rochow, Victor Benno, 2009). Why food taboo was very important to be used as a variable in this study? Because the food taboo was one of the causes that affects the entry of nutrients into the human body. This will become more distinctly different and measurable because

of the socio-ecological system, demographics, and the political and economic environment.

The food taboo that exists in Tajikistan where dietary restrictions exist to provide an example of a natural resource where these resources are limited in the country. Accessibility and availability is other reason while gender male is highly often migrated to work. The research is conducted in Rural Area at Kathlon Province, Tajikistan. Food taboos is one of the reason in 5% of children under the age of 5 years suffering from acute undernutrition,30% from chronic undernutrition (stunting), and 11% from underweight. Tajikistan faces the highest rate of undernutrition in Central Asia (McNamara, Katharine and Wood, Elizabeth, 2019).

In another research on Northeastern Madagascar, food taboos is a part of taboo that happen because the effects of social change on wildlife consumption. (Golden, Christopher D. and Comaroff, Jean, 2015). According to the UNICEF Food-Care Health conceptual framework, cultural norms, taboos and beliefs lie within the contextual factors included as one of the basic causes of malnutrition (UNICEF, 2014).

In the Gambia where due to some traditional belief, women of 'Fulla' ethnicity are usually forbidden from eating several types of food rich in carbohydrate, animal proteins, and micronutrients during pregnancy. Colostrum is not given to many newborn babies, who are instead fed on water with sugar or water with milk during their first days of life. (Martínez Pérez, Guillermo and Pascual García, Anna, 2013)

Food taboos and myths in South Eastern Nigeria: The belief and practice of mothers in the region is believed eating snail and grass-cutter meat makes a child sluggish and labour difficult respectively while starting egg early for a child could predispose them to stealing later in life. (Martínez Pérez, Guillermo Pascual García, Ann, 2013),

In Indonesia itself, that has 365 ethnical tribals quite diverse in practice of food taboos. As 5 big islands in over 37 provinces, has various food taboos. In Dayak tribal is constricted to eat some seafood during lactation, pregnancy and early

childhood because of smelly bad in children when child is born, in some story for other cultures mentioned it will cause morbidity in early children age. (Huda, Siti Nurul, 2014)

Research related factor related to food intake among mother under 2 years old in Indonesia However, there are no recent national data available on micronutrient status and risk factors associated with nutritional problems in children. A national study on vitamin A was conducted in 1991 and on iodine deficiency in 2002. According to Riskesdas 2010, the overall coverage of vitamin A programme is 69 % (74 % in urban areas and 66 % in rural areas). The lower prevalence of vitamin A deficiency in urban areas may be attributed to a higher coverage and a better intake of vitamin A from foods in urban areas (Sandjaja, 2013).

Another study has shown that weaning diets met only 50% of the energy and protein needs and that only 9.5% of poor families fed their children according to the best practice guidelines (USAID, 2010)

2.8. KAP of Mothers in Omega-3 and 6

2.8.1 Literature Review for Knowledge
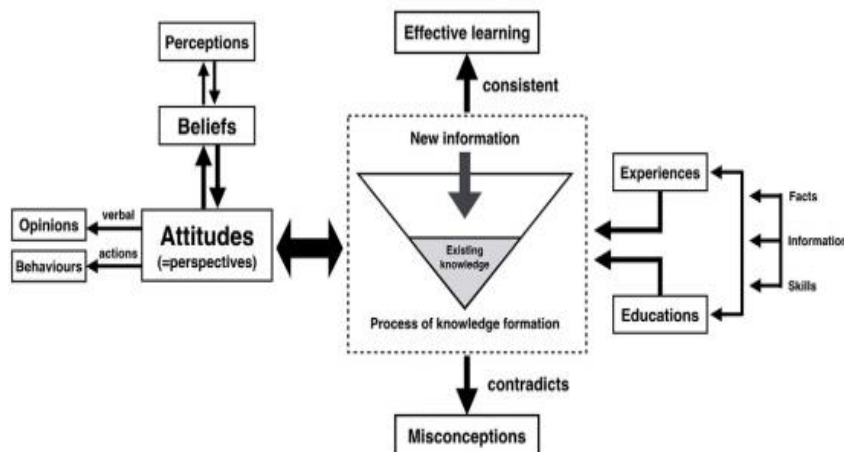
Fig. 1. Diagram demonstrating the relationship between 'knowledge' and 'attitude'. Knowledge develops from experiences and education, which come from the facts, information, and skills provided to an individual. While acquiring new knowledge, we use knowledge to help us make sense of the new information. When existing knowledge is consistent with the new information, the new information can be learned easily, but if the prior beliefs/knowledge contradicts the new information, a patient may be drawn into misconceptions and misunderstanding. A person's attitude is the way they express their beliefs and perceptions through speech (as opinions), and actions (behaviours). Knowledge influences attitude by blending beliefs and perceptions with previous experiences and education in a construct referred to as 'attitude-relevant knowledge'.

Figure 10 Knowledge, attitudes and practices diagram

(Jitkritsadakul, Boonrod et al. 2017 2017 2017)

Every form of facts, information, skills that come from education and experience is called knowledge. Knowledge becomes relevant coupled with beliefs and culture that underlie the building of an experience. This knowledge then determines a person in declaring (Jitkritsadakul, Boonrod, & Bhidayasiri, 2017) (Fabrigar, Petty, Smith, & Crites, 2006). There are three components to the traditional ("tripartite") analysis of knowledge. According to this analysis, justified, true belief is necessary and sufficient for knowledge.

The Tripartite Analysis of Knowledge:

S knows that p if p is true;

S believes that p; S is justified in believing that p (Ichikawa, Summer 2018).

The process of seeing and hearing which can be seen from an object is called knowledge. Knowledge is obtained from various sources such as TV, newspapers, magazines, health workers, families. Knowledge acquired with positive awareness will determine a positive attitude. This positive attitude will

last a long time. Knowledge can use written tests, questionnaire questions and interviews.

Previous research about KAP in Administration of Omega-3 and 6 with different population studies concluded that a lack of knowledge would translate into low intakes of n- 3 fats (Kaminski, 2011).

Mother's knowledge of Omega-3 and the mother's social class also affects them in providing omega-3 intake for their children. Nutritional knowledge indirectly affects behaviour by influencing attitudes and attitudes is a good predictor of fat intake. The low-fat diet group had a negative attitude towards fatty foods and the non-fat diet group had a positive attitude towards fat-containing foods (Packman & Kirk, 2000). The insufficient knowledge of pregnant women about PUFA also triggered by lack of health care services to do not provide adequate information on the importance of eating foods high in LC n-3 PUFA during pregnancy (Sinikovic, Yeatman, Cameron, & Meyer, 2009).

2.8.2 Literature review about attitude

In the Oxford Dictionary, the word attitude is essentially a synonym of perspective, but in social psychology there are subtle difference between these two words (Languages, June 12, 2009). Perspective, which is a particular attitude towards a way of regarding something, is a determinant of attitude change by mediating the way someone labels his/her attudinal beliefs (Ostrom, 1966).

The words "perception" is similar in meaning to the word "belief". In addition, prior knowledge is important since it helps us make sense of new information and a higher level of knowledge is associated with a greater influence on attitude. The attitude of women is due to the knowledge that if they are not in accordance with the information that has been previously available, they tend to trust old knowledge. This will make more difficult for them to accept knowledge of Omega-3 and 6 in children aged 1-2 years (Lipson, 1982).

Attitude will influence intention and planning. Changed behaviour requires a changed attitude first, then confidence must be instilled to achieve the desired

attitude (Patch, Tapsell, & Williams, 2005). Meanwhile, in several studies, found an insignificant relationship between omega-3 administration and eating behaviour. Because irregular eating behaviour may be more influenced by the attitude of the mother in serving her food (Cazares & Curti, 2017).

Often the perception of the amount of fat in food is inaccurate. The group that did not care about fat intake did tend to have less concern for change, and they tended to have less knowledge than those who are concerned about the perception that fat intake is indispensable to the body. Unrealistic underestimation of fat intake is a cognitive barrier to dietary change and people who underestimate dietary fat intake may require more intensive intervention to change their diets (O'Brien, Fries, & Bowen, 2000).

2.8.3 Literature review about Practice

Maternal eating behaviour is the most important predictor for both of these n-3 PUFA rich foods in infants' nutrition (Stimming, Mesch, Kersting, & Libuda, 2015) Commitment in fulfilling nutrition, influence related to activity, self-motivation are important components for mothers in providing Omega-3 and Omega-6 to their children (Mh, Prahasiwi, Wahyuni, Nursalam, & Efendi, 2018)

Mothers who have a higher level of nutritional knowledge in feeding their children will provide vegetables, fruit, legumes, and not fast-food preservative drinks. Mothers with high knowledge believe more about the importance of nutrition for health. The provision of meat in the diet has more effect on pre-school age children. The provision of fatty fish in the child's menu by the mother can improve children's cognitive (Nurcan, Kisac, & Karakuş, 2014)

Maternal knowledge, attitudes and practices regarding nutrition are influenced by socio-demographic factors and sources of information. Increased knowledge of maternal attitudes and practices will have a direct effect that can be felt on improving children's nutrition and children's brain development (Berra, 2014).

CHAPTER III

METHODOLOGY

The chapter was constituted of research design, study area, study population, sampling technique, sample size, measurement tools, ethical considerations, limitations, expected benefits and applications.

3.1 Research Design

A cross-sectional study was employed to examine (1) maternal knowledge, attitude, and practice on dietary omega 3 and 6 consumption in children aged 1-2 years old; (2) the general characteristics and household characteristics; (3) children characteristics; (4) food taboo; (5) source of information on dietary omega 3 and 6; and (6) the association between all independent variables and dependent variable in the study.

3.2 Study Area

There were 514 regencies and 34 provinces in Indonesia. This study was conducted in the regency "Labuhanbatu Utara" in Sumatera Utara province which was one of the youngest regencies in Indonesia. Labuhanbatu Utara regency was established on 15 January 2009 and comprised of eight subdistricts as shown in Table 1. Kualuh Hulu subdistrict was the second largest subdistrict in Labuhanbatu Utara Regency, with the area of 637.39 km². Geographically, the Kualuh Hulu subdistrict locates in 2034'6''NL, 99038'22 EL and 5-105 meters above sea level. The subdistrict was further subdivided into 13 villages (Table 2 and Figure 11). Aek Kanopan village was purposively selected since it was the capital village of the Kualuh Hulu subdistrict, along with the highest population all the 13 villages in this subdistrict.

Table 1 List of the subdistricts in Labuhanbatu Utara Regency
Note: information from Statistics of Labuhanbatu Utara Regency, 2020 (Labuhanbatu Utara in Figures, 2020)

	Subdistricts	Capital of Subdistrict	Area (Km²)
1	NA X-IX	Aek Kota Batu	554.00
2	Merbau	Merbau	355.90
3	Aek Kuo	Aek Korsik	250.20
4	Aek Natas	Bandar Durian	678.00
5	Kualuh Selatan	Damuli	344.51
6	Kualuh Hilir	Kampung Mesjid	385.48
7	**Kualuh Hulu**	**Aek Kanopan**	**637.39**
8	Kualuh Leidong	Tanjung Leidong	340.32
	Labuhanbatu Utara		**3545.80**

Table 2 List of the villages in Kualuh Hulu subdistricts

No	Villages	North Latitude	East Latitude
1	Kuala Beringin	2.3230	99.3136
2	Pulo Dogom	2.3337	99.3321
3	Perk. Londut	2.348	99.3317
4	Perk. Kanopan Ulu	2.349	99.3635
5	Parpaudangan	2.3336	99.3721
6	Perk. Membang Muda	2.3417	99.3911
7	Aek Kanopan	2.3305	99.402
8	Perk. Labuhan Haji	2.3208	99.4226
9	Perk. Hanna	2.3458	99.4323
10	Aek Kanopan Timur	2.3419	99.392
11	Sukarame	2.3458	99.4324
12	Sukarame Baru	2.3358	99.4631
13	Sonomartani	2.3337	99.5203

Note: Geographical Location by Village / Kelurahan (Statistics Kualuh Hulu in Figures,2019)

Labuhanbatu Utara Regency

Villages in Kualuh Hulu subdistricts
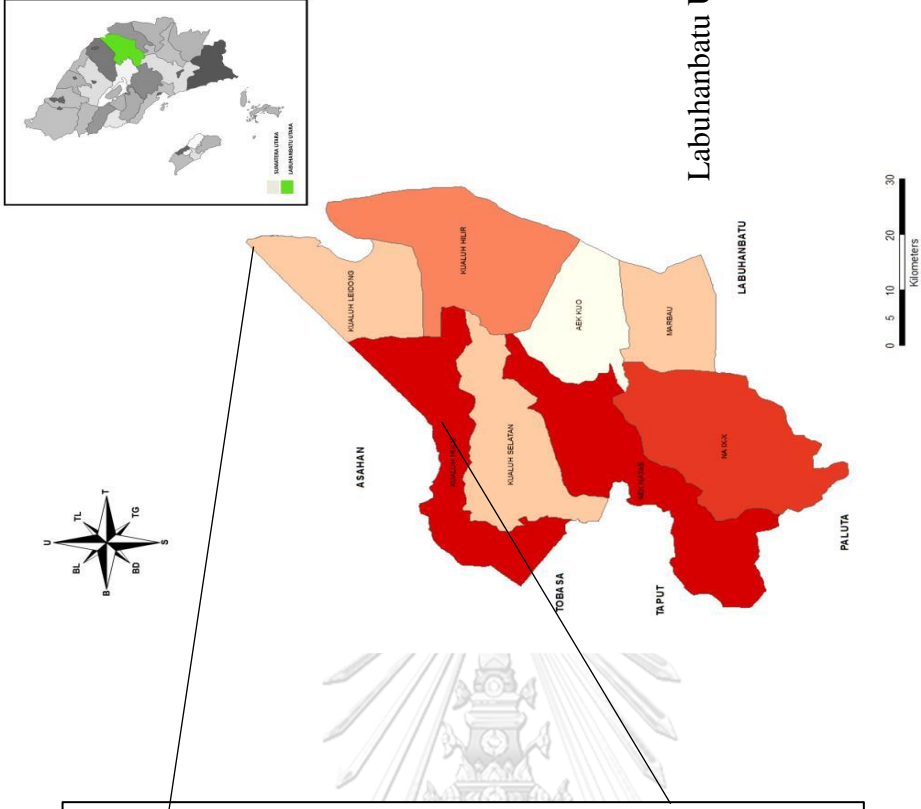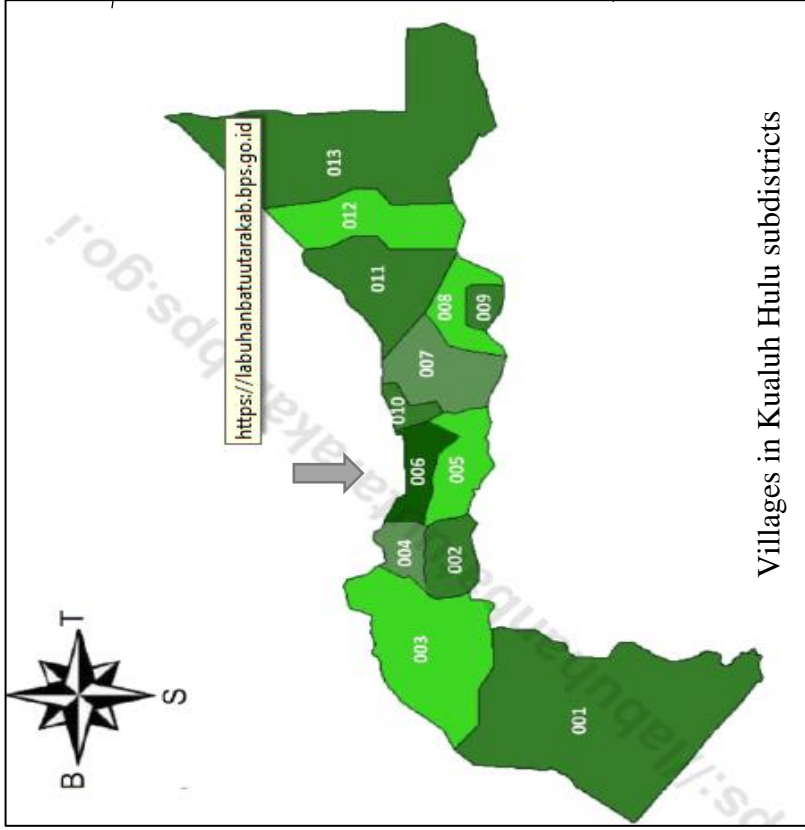
Figure 11 Map of villages of Kualuh Hulu Subdistricts [Statistics of Labuhanbatu Utara Regency, 2020(Labuhanbatu Utara in Figures, 2020)]

3.3 Study Population

The total population of Labuhanbatu Utara regency as per the 2019 census was 363,816 with the total household population in Labuhanbatu Utara 84,441 household (Regency 2020). The total population of Kualuh Hulu as per 2019 census is 71,907 population in total area of 637.39 km². Based on the projection 2010 Population Census, population of Kualuh Hulu Subdistrict reached 71,907 with population density of 112.81 people/km². The largest population size of Kualuh Hulu Subdistrict is Aek Kanopan village, which is 15,379 people with population density of 6.251.63 people/km² (Kualuh Hulu Subdistrict in Figures, 2019).

Male population in Kualuh Hulu Subdistrict was larger than female population. In 2019, the number of male population reached 36,254 compared to the number of female population of 35,653. Kualuh Hulu subdistrict had 16,461 households in population (Kualuh Hulu Subdistrict in Figures, 2019).

The total population of mothers in Labuhanbatu Utara regency was 82,633, and the total population of the mothers with have 1-2 years old children in Kualuh Hulu subdistrict according to 2019 census is 15,573 mothers. According to the study area, the research participants was randomly selected from Aek Kanopan village. The total population mothers who had children 1-2 years old in Aek Kanopan is 7,871 (District 2020).

3.3.1 Inclusion Criteria

The inclusion criteria in the study were:

- Mothers of 1-2 years old child

- Mothers who were responsible for her child diet/meals

- Able to communicate in Bahasa or English language or both.

- Age 18 years and above

3.3.2 Exclusion criteria

The exclusion criteria of the study were:

- Those who had some form of disability such as hearing loss, or those who were severely ill and were in no position to answer the questions.

- Those who were not willing to participate.

3.4 Sample Size

Sample size for this study was calculated based on the Taro Yamane formula using the confidence interval of 95% (Yamane 1967) with total population of 15,573 mothers, who have 1-2 years old children in Kualuh Hulu (District 2020). The sample size calculation is stated below:

$$n = \frac{N}{1+(N*(e^2))}$$

$$= \frac{15573}{1+(15573*(0.05^2))}$$

$$= 389.98 = 390$$

Where, n = sample size

N = total population of mothers who have 1-2 years old children in the study area

e = level of precision = 0.05

Taking into account the chance of refusal to participate in the study, dropout during the interview or missing information, consideration of additional 10% will be added to the sample size. Therefore, the total sample size will be **428 participants.**

3.5 Sampling Technique

Multi-stage sampling was applied in this study (Figure 12). Firstly, Labuhanbatu Utara regency was selected by simple random sampling from all the regencies in Indonesia used lottery method. Next, the same simple random sampling with lottery method was performed to select the study subdistrict.

Kualuh Hulu subdistrict was selected out of the 8 subdistricts in Labuhanbatu Utara regency as shown in Table 1.

Furthermore, Aek Kanopan village was purposively selected since it was the capital village of Kualuh Hulu subdistrict, and it also had the highest number of populations among the 13 villages in the subdistrict.

Total number citizen of each villages in Kualuh Hulu based on 2019 data as below:

1	Kuala Beringin	435
2	Pulo Dogom	415
3	Perk. Londut	909
4	Perk. Kanopan Ulu	382
5	Parpaudangan	900
6	Perk. Membang Muda	458
7	Aek Kanopan	7871
8	Perk. Labuhan Haji	775
9	Perk. Hanna	889
10	Aek Kanopan Timur	762
11	Sukarame	446
12	Sukarame Baru	678
13	Sonomartani	653
	Total	15573

Then the researcher contacted and ask for the assistance from the primary healthcare centre of the village for the list of mothers with 1-2 years old children. From the list, a total of 428 participants fit the inclusion and exclusion criteria was selected randomly by generating random numbers used the random number function (RAND) in the Microsoft Excel.

However, when the mother had two or more children age 1-2 years old, only one of children was selected based on the month in which they are born. The individual member whose month of birth comes first was selected as the child related to the questions asked for the questionnaire in the study. If there was any inconvenience or the mother was not comfortable to participate further in the study, the mother with the next closest number on the list was selected. Participants was approached, and the data was collected in the conference hall centre of the primary health care centre followed the schedule of the health promotion, which was held by primary health care centre every week.

The researcher was checked the attendance of participants used medical record from the primary health care centre. Medical record was Child and Mother's Health Book. It was not the book that contain all the sickness or treatment of mother and children. Child and Mother's Health Book were one of the Indonesian government program to maximize child and mother's health under assistance of primary health care centre. The information contained at the book are information of weight and height children, menu meals of children, and the data of mother since mother was pregnant till the baby is born. The medical record was taken for necessities on looking to the weight and height of children record too. The legal permission was made with fulfil

administrative criteria from subdistrict government office and asking primary health care centre to assist on the record collection. Medical record held by research assistant who worked for primary health centre. It was given back to the primary health centre when the interview was done.

If the participants were not present in the conference hall centre according to the schedule of the health promotion, the researcher was contacted the missed participants and ask for their consent to participate in the study. If those participants were not convenient to come to the conference hall centre, the researcher went to the participant's house to do data collection. Within one day, there was approximately 20 participants attending the conference hall centre. The interview was scheduled into four time slots starting from 09.00-10.30 AM, 10.30 – 11.30 AM, 13.00-14.30 PM, to 14.30-15.30 PM.

There was about 5 participants per one time slot. Seven interviewers, including both the principal researcher and research assistants, was presented to perform the data collection. Body temperature was performed before an individual can come into the centre. The mask and alcohol gel/spray was also be provided for everyone in the centre. The process of data collection was carried out until the collection reaches 428 participants. The estimated time had taken for data collection was around 20 to 30 days.

3.5.1 Sampling flowchart
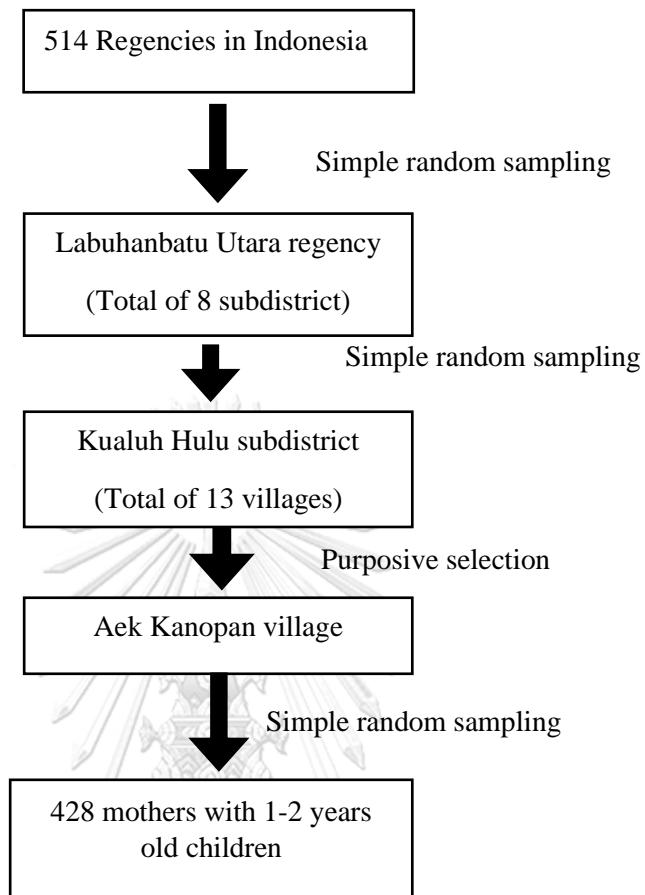
Figure 12. Sampling flowchart

3.6 Study Period

The proposed study period of the study February 2021 to April 2021.

3.7 Measurement Tools

Questionnaire

Detailed study of various literatures on similar previous researches was performed to identify potential items for the study instrument such questionnaire matched the objectives of the study. Based on the review of three studies in Nebraska and Indonesia (Angkasa, Agustina et al. 2019) (Ritter-Gooder, Lewis et al. 2008) (Lora, Lewis et al. 2010). The questionnaire was developed in English language and adjusted to suit the local context of in Labuhanbatu Utara regency, Indonesia. Two bilingual translators who were fluent English was hired to translate the questionnaire formulated in English into Indonesian language used the forward and backward translation. Then the accuracy and meaning of the translated versions, was assessed and necessary recommendations was incorporated. Lastly, a mono-lingual Indonesianese citizen who was from the study area asked to identify the items that were not clear or hard to understand. Those items had revised following the comments as appropriate.

The questionnaire consisted of a total of 161 questions and was sub-divided into five main sections: (1) general characteristics (7 question), (2) Household characteristics (3 questions), (3) Children characteristics (5 questions), (4) Food taboo (2 questions), (5) source of information on dietary omega 3 and 6 (7 questions), (6) Maternal knowledge towards dietary omega 3 and 6 consumption in children aged 1-2 years old (omega 3 contains of 9 questions; omega 6 contains of 9 questions; omega 3 dan 6 contains of 9 questions) (7) maternal attitude towards dietary omega 3 and 6 consumption in children aged 1-2 years old (9 questions for omega 3 and 8 question for omega 6), and (8) maternal practices on dietary omega 3 and 6 consumption in children

aged 1-2 years old (7 questions for food group milk, yogurt and cheese; 13 questions for fruit; 8 questions for vegetables; 9 questions for chocolates; 3 questions for dessert; 4 questions for rice/biscuits; 14 questions for meat; 23 questions for fish and seafood; 15 questions for nuts and legumes; 4 questions for supplement.

SECTION I and II: General and household characteristics

In section I, there was a total of 11 questions which comprised of questions such as age, religion, marital status, educational level, occupation, place of resident, ethnicity, family arrangement, gender of 1-2 years old children in the household, and monthly household income.

SECTION III: Children characteristics

Consist of 5 questions. It was weight, height, gender, breastfeeding status, and food allergy. Because of limited time in data collection, the data of weight body and height will be taken based on last data in child and mother's health book that permitted by primary health care centre for necessity of research. For make sure the privacy and confidentiality, the child and mother's health book (medical record) was opened by the mother directly in front of the research assistant and health workers by primary health care centre staff when the interview face to face was started. The permission to use data weight and height of her children was asked to mother before interview is start. If mother didn't allowed researcher to use the data from the book, subjected children was measured manually by weighing scale and ruler like usual at their houses. Weight and height data was used for completing data of children. The interpretation was not limited to find the effect of administration omega 3 and 6 to the growth of children 1-2 years old. For body weight measurement on age 0-60 months criteria, was categorized by

underweight, normal and overweight. For length was categorized by short, average, and tall.

SECTION IV: Food Taboo

Food taboo consisted of 2 questions which asking about kind of food source that prohibited to eat for children 1-2 years old and the reason for considering food taboo to the mother towards the child feeding.

SECTION V: Source of information on dietary omega 3 and 6

Consisted of 7 questions which asked about the source from health practitioner, media social, newspaper, neighbour, etc.

SECTION VI: Maternal knowledge on dietary omega 3 and 6

This section consisted of 27 questions, which was designed to assess maternal knowledge on dietary omega 3 and 6 regarding omega 3 (9 questions), omega 6 (9 questions), and benefit omega 3&6 (9 questions).

The responses were recorded into Yes, No, and Don't Know. The answers were graded as 'Right' or 'Wrong' for each statement. The 'Right' answers assigned a score of 1 while the 'Wrong' answer is 0. *The score is ranged from 0-27*. Bloom's cut off point (Bloom, 1968) is used to classify the maternal knowledge into 3 categories as mentioned below:

Poor	**Moderate**	**Good**
< 16 score	16-21 score	> 21 score
(<60%)	(60-80%)	(>80%)

Section VII: Maternal attitude towards dietary omega 3 and 6 consumption in children aged 1-2 years

This section consisted of a total of 17 statements/questions on attitude towards dietary omega 3 and 6 consumption in children aged 1-2 years. The 17 positive attitude statements were regarded completion of menu arrangement omega 3 and 6, food processing of omega 3 and 6 sources, serving foods sources of omega 3 and 6, administer omega 3 and 6.

A five-point Likert scale categorized as "Strongly Disagree", "Disagree", "Neutral", "Agree" and "Strongly Disagree" is used to evaluate the study participant's responses. The rating scale was measured as follows

Positive Statement	
Choice	Score
Strongly Agree	5
Agree	4
Neutral	3
Disagree	2
Strongly Disagree	1

Answers from all the respondents will be summed up and mean and standard deviation was calculated and represented as mean ± standard deviation. The attitude of respondent was categorized as follows:

Poor attitude	Score ≤ mean - standard deviation
Fair attitude	Mean - standard deviation < score < mean + standard deviation
Good attitude	Score ≥ mean + standard deviation

SECTION VIII: **Maternal practice on dietary omega 3 and 6 consumption in children aged 1-2 years**

The 10 statements were regarded the self-administration practice of mothers with Omega 3 and 6 in last 3 months measured as on a 6-point Likert scale ranging from "Never", "Rarely", "Sometimes", "Often", "Always", and "Everyday".

The 10 statements for 10 food group as consisted of milk/yoghurt/cheese, dessert, fruit, vegetable, rice, meat, nuts/legume, chocolate, fish and seafood, and supplement.

Questions was measured in 6-point Likert Scale ranging from Never", "Rarely", "Sometimes", "Often", "Always", "Everyday". The score was calculated as:

Positive Statements

Choice	Score
Never	1
Rarely	2
Sometimes	3
Often	4
Always	5
Every day	6

Poor practice	Score ≤ mean - standard deviation
Fair practice	Mean - standard deviation < score < mean + standard deviation
Good practice	Score ≥ mean + standard deviation
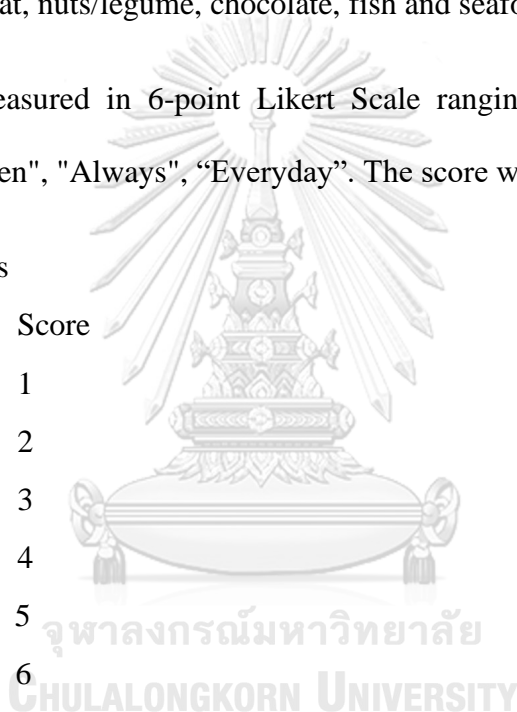
3.8 Validity

The questionnaire in this study was revised based on the previous relevant researches conducted in Nebraska and Indonesia and was modified to meet the study's context. (Angkasa, Agustina, Khusun, & Prafiantini, 2019) (Ritter-Gooder, Lewis, Barber-Heidal, & Waltz-Hill, 2008) (Lora, Lewis, Eskridge, Stanek-Krogstrand, & Ritter-Gooder, 2010)

To ensure the content validity of this study's questionnaire, Item-Objective Congruence (IOC) Index was conducted by at least three experts to evaluate the content of the questionnaire. A content expert was evaluated each item by gave the item a rate of 1 (for clearly measuring), -1 (clearly not measuring), or 0 (degree to which it measured the content area is unclear). The average IOC score for each item must be over 0.5 as recommended (Rovinelli & Hambleton, 1977). The IOC calculation is as follows:

IOC calculation:

IOC = Sum (R)/n
Where, R = total score of the it item,
n = number of experts
IOC of at least 0.5 is considered acceptable.

IOC Result as below:

Statement No.	Name of Expert			Total (R)	Total Number of Expert (n)	IOC Result
	Dr. Avi	Aj.Napaphan	Aj. Ratana			
1	1	1	1	3	3	1
2	0	1	1	2	3	0.666667

3	1	1	1	3	3	1
4	1	1	1	3	3	1
5	0	1	1	2	3	0.666667
6	1	1	1	3	3	1
7	-1	1	1	1	3	0.333333
8	0	1	1	2	3	0.666667
9	1	1	1	3	3	1
10	1	1	1	3	3	1
11	0	1	1	2	3	0.666667
12	1	1	1	3	3	1
13	1	1	1	3	3	1
14	1	0	1	2	3	0.666667
15	1	1	1	3	3	1
16	0	0	1	1	3	0.333333
17	1	1	1	3	3	1
18A.1	1	1	-1	1	3	0.333333
18A.1	1	1	-1	1	3	0.333333
18A.1	1	1	-1	1	3	0.333333
18A.1	1	1	-1	1	3	0.333333
18A.1	1	1	-1	1	3	0.333333
18A.1	1	1	-1	1	3	0.333333
18A.2	1	1	1	3	3	1
19A.1	1	1	1	3	3	1
19A.2	1	1	1	3	3	1
19A.3	1	1	1	3	3	1
19A.4	1	1	1	3	3	1
19A.5	1	1	1	3	3	1
19A.6	1	1	1	3	3	1
20A.1	1	1	1	3	3	1
20A.2	1	1	1	3	3	1
20A.3	1	1	1	3	3	1
20A.4	1	0	1	2	3	0.666667
20A.5	1	1	1	3	3	1
20A.6	1	1	1	3	3	1
20A.7	1	1	1	3	3	1
20A.8	1	1	1	3	3	1
20B.1	1	1	1	3	3	1
20B.2	1	1	1	3	3	1
20B.3	1	1	1	3	3	1
20B.4	1	1	1	3	3	1
20B.5	1	1	1	3	3	1
20B.6	1	1	1	3	3	1

20B.7	1	1	1	3	3	1
20B.8	1	1	1	3	3	1
20B.9	1	1	1	3	3	1
20C.1	1	1	1	3	3	1
20C.2	1	1	1	3	3	1
20C.3	1	1	1	3	3	1
20C.4	1	1	1	3	3	1
20C.5	1	1	1	3	3	1
20C.6	1	1	1	3	3	1
20C.7	1	1	1	3	3	1
20C.8	1	1	1	3	3	1
20C.9	1	1	1	3	3	1
21A.1	1	1	1	3	3	1
21A.2	1	1	1	3	3	1
21A.3	1	1	1	3	3	1
21A.4	1	1	1	3	3	1
21A.5	1	1	1	3	3	1
21A.6	1	1	1	3	3	1
21A.7	1	0	1	2	3	0.666667
21A.8	1	0	1	2	3	0.666667
21A.9	1	0	1	2	3	0.666667
21B.1	0	0	1	1	3	0.333333
21B.2	1	0	1	2	3	0.666667
21B.3	1	0	1	2	3	0.666667
21B.4	1	0	1	2	3	0.666667
21B.5	1	0	1	2	3	0.666667
21B.6	1	0	1	2	3	0.666667
21B.7	1	0	1	2	3	0.666667
21B.8	1	0	1	2	3	0.666667
22.1	1	0	1	2	3	0.666667
22.2	0	0	1	1	3	0.333333
22.3	0	0	1	1	3	0.333333
22.4	0	0	1	1	3	0.333333
22.5	0	0	1	1	3	0.333333
22.6	0	0	1	1	3	0.333333
22.7	0	0	1	1	3	0.333333
22.8	0	0	1	1	3	0.333333
23.1	1	0	1	2	3	0.666667
23.2	1	0	1	2	3	0.666667
23.3	1	0	1	2	3	0.666667
23.4	1	0	1	2	3	0.666667
23.5	1	0	1	2	3	0.666667

23.6	1	0	1	2	3	0.666667
23.7	1	0	1	2	3	0.666667
23.8	1	0	1	2	3	0.666667
23.9	1	0	1	2	3	0.666667
23.10	1	0	1	2	3	0.666667
23.11	1	0	1	2	3	0.666667
23.12	1	0	1	2	3	0.666667
23.13	1	0	1	2	3	0.666667
24.1	1	0	1	2	3	0.666667
24.2	1	0	1	2	3	0.666667
24.3	1	0	1	2	3	0.666667
24.4	1	0	1	2	3	0.666667
24.5	1	0	1	2	3	0.666667
24.6	1	0	1	2	3	0.666667
24.7	1	0	1	2	3	0.666667
24.8	1	0	1	2	3	0.666667
25.1	0	0	1	1	3	0.333333
25.2	1	0	1	2	3	0.666667
25.3	0	0	1	1	3	0.333333
25.4	1	0	1	2	3	0.666667
25.5	1	0	1	2	3	0.666667
25.6	1	0	1	2	3	0.666667
25.7	0	0	1	1	3	0.333333
25.8	1	0	1	2	3	0.666667
25.9	1	0	1	2	3	0.666667
25.10	1	0	1	2	3	0.666667
26.1	1	0	1	2	3	0.666667
26.2	0	0	1	1	3	0.333333
26.3	1	0	1	2	3	0.666667
27.1	1	1	1	3	3	1
27.2	1	1	1	3	3	1
27.3	1	1	1	3	3	1
27.4	1	1	1	3	3	1
28.1	1	0	1	2	3	0.666667
28.2	1	1	1	3	3	1
28.3	1	0	1	2	3	0.666667
28.4	1	0	1	2	3	0.666667
28.5	1	0	1	2	3	0.666667
28.6	1	0	1	2	3	0.666667
28.7	1	0	1	2	3	0.666667
28.8	1	0	1	2	3	0.666667
28.9	1	0	1	2	3	0.666667

28.10	1	0	1	2	3	0.666667
28.11	1	0	1	2	3	0.666667
28.12	1	0	1	2	3	0.666667
28.13	1	0	1	2	3	0.666667
28.14	1	0	1	2	3	0.666667
29.1	1	0	1	2	3	0.666667
29.2	1	0	1	2	3	0.666667
29.3	1	0	1	2	3	0.666667
29.4	1	0	1	2	3	0.666667
29.5	1	0	1	2	3	0.666667
29.6	1	0	1	2	3	0.666667
29.7	1	0	1	2	3	0.666667
29.8	1	0	1	2	3	0.666667
29.9	1	0	1	2	3	0.666667
29.10	1	0	1	2	3	0.666667
29.11	1	0	1	2	3	0.666667
29.12	1	0	1	2	3	0.666667
29.13	1	0	1	2	3	0.666667
29.14	1	0	1	2	3	0.666667
29.15	1	0	1	2	3	0.666667
29.16	1	0	1	2	3	0.666667
29.17	1	0	1	2	3	0.666667
29.18	1	0	1	2	3	0.666667
29.19	1	0	1	2	3	0.666667
29.20	1	0	1	2	3	0.666667
29.21	1	0	1	2	3	0.666667
29.22	1	0	1	2	3	0.666667
29.23	1	0	1	2	3	0.666667
30.1	1	0	1	2	3	0.666667
30.2	1	0	1	2	3	0.666667
30.3	1	0	1	2	3	0.666667
30.4	1	0	1	2	3	0.666667
30.5	1	0	1	2	3	0.666667
30.6	1	0	1	2	3	0.666667
30.7	1	0	1	2	3	0.666667
30.8	1	0	1	2	3	0.666667
30.9	1	0	1	2	3	0.666667
30.10	1	0	1	2	3	0.666667
30.11	1	0	1	2	3	0.666667
30.12	1	0	1	2	3	0.666667
30.13	1	0	1	2	3	0.666667
30.14	1	0	1	2	3	0.666667

30.15	1	0	1	2	3	0.666667
31.1	1	0	1	2	3	0.666667
31.2	1	0	1	2	3	0.666667
31.3	1	0	1	2	3	0.666667
31.4	1	0	1	2	3	0.666667
Total	156	64	168			

The result of validity test stated some of questions could not be used because the score was less than 0.5. It was deleted from the questionnaire. The questions with less than 0.5 score were question no.16, 18A.1, 18A.1, 18A.1, 18A.1, 18A.1, 18A.1, 21B.1, 22.2, 22.3, 22.4, 22.5, 22.6, 22.7, 22.8, 25.1, 25.3, 25.7, 26.2.

3.9 Reliability

The reliability of the questionnaire was ensured by performing a pre-test carried out by the principal research among 20 participants in a nearby village. The pilot tested of the questionnaire was done among women with young children. The internal consistency was tested by using Cronbach's Alpha coefficient. The alpha value of 0.7-0.9 is considered as an indication of good internal consistency (Tavakol & Dennick, 2011). Value of Cronbach Alpha for the questionnaire was 0.75. The questionnaire was reliable.

3.10 Ethical Consideration

Prior to data collection, ethical approval was taken from National Research Committee North Sumatera, Indonesia (IRB No 94/XII/2020) or by the Ethics Review Committee of Chulalongkorn University for the research involving human (COA No. 103/2021). Before conducted face to face interview with the study participants, the purpose of the study, each section of the questionnaire, and expected benefits was explained to the participants. A written informed consent was taken by the research

assistants, indicating their anonymity, voluntary participation, freedom of withdrawal at any point and use of data strictly for the purpose of the study conducted. For participants who were illiterate and cannot read or write, thumb impression was taken instead of a signature.

3.11 Data Collection

The data collection was done through face-to-face interview from the mothers of 1-2 years old children in Aek Kanopan village, Kualuh Hulu subdistrict used a structured questionnaire developed in this study. Six research assistants who had background education in Bachelor and Master of Nutrition, health promoter with background midwifery, or public health from 10 sites of Public Health Centres was hired for the purpose of data collection. A one-day training program was organized and performed to brief them on the overall purpose and objectives of the study. Training was provided by the principal researcher on data collection, that was, how to conduct interviews and elicit informed consent. Even interviewers were 6 person, but because of covid 19, time constraint and procedure of prevention covid-19, limited effort only in one day training.

Practice session held to assess the knowledge and skills of the research assistants regarding the objectives of the study and method of collecting data. The interview was conducted in either Indonesian or English based on the comfortability of the participants. The interview was around 30 - 45 minutes. It took longer time to do interview, the interview was done till questions were finished for one participant. But it will be avoided due to limited slot in each day. Finally, after completion of each

interview, the research assistants will check the questionnaire to ensure all sections are answered completely.

3.12 Data Analysis

After completion of data collection, the data will be cleaned, coded, entered and analyzed using Statistical Package for the Social Sciences (SPSS) version 25.

Descriptive statistic

The variables that are in nominal or ordinal scale will be presented as frequency and percentage(%). Whereas the continuous variables will be presented in mean ± standard deviation (SD). The variables and their measurement scale are presented in the Table 1.

Inferential statistic

Bivariate analysis was conducted to determine the association between independent and dependent variables. For categorical data, Chi-square test was performed to analyse the association between independent and dependent variables. Binary and multiple logistic regression analyses were used to determine the association between independent and dependent variables in this study. The statistically significant was determined at p <0.05.

Table 3 The variables and their measurement scale.

Variables	Measurement	
Age	Ordinal	Mean ± SD
Religion	Nominal	Frequency and %
Marital Status	Nominal	Frequency and %
Ethnicity	Nominal	Frequency and %
Educational level	Ordinal	Frequency and %
Occupation	Nominal	Frequency and %
Place of resident	Nominal	Frequency and %
Family arrangement	Nominal	Frequency and %
Gender of 1-2 years old children	Nominal	Frequency and %
Monthly household income	Ordinal	Mean ± SD
Weight	Ordinal	Mean ± SD
Length	Ordinal	Mean ± SD
Sex of child as subjected	Nominal	Frequency and %
Breastmilk history	Nominal	Frequency and %
Food allergy	Ordinal	Frequency and %
Food taboo	Nominal	Frequency and %
Source of information on omega 3 and 6	Nominal	Frequency and %
Level of Knowledge	Ordinal	Frequency and %
Level of Attitude	Ordinal	Frequency and %
Level of Practices	Ordinal	Frequency and %

CHAPTER IV

RESULT

The main objectives of this study were to determine level of maternal knowledge, attitude, and practices on the dietary omega 3 and 6 consumption in children aged 1-2 years, to determine the factors associated with the practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

The results are divided into three main parts as follow:

1. Descriptive Findings include:

    -   General characteristic of participants

    -   Household characteristics of participants

    -   Children characteristics

    -   Food taboo

    -   Source of information of Omega 3 and 6

2. Maternal knowledge of dietary Omega 3 and 6 consumptions to the children aged 1-2 years

3. Maternal attitude of dietary Omega 3 and 6 consumptions to the children aged 1-2 years

4. Maternal practice of dietary Omega 3 and 6 consumptions to the children aged 1-2 years

5. Inferential findings.

Study Findings

4.1. Descriptive Findings

4.1.1 General Characteristics

Table 4 shows the general characteristics of participants. More than one third of the participants, 33.9% mothers were age ≤ 25 years old. More than a half of the participants, 52.1% were Moslem. Most of the participants were in married status (82.0%), and more than a half of the participants have graduated from higher education, 54.4%. More than one third of participants, 38.6% are occupied as private company employee. More than a half of participants are staying in urban area (62.6%). Almost a half of total participants are batak (45.6%).
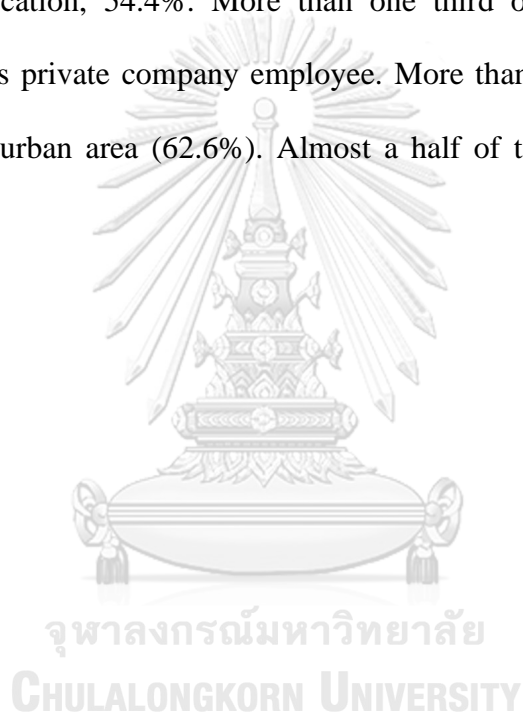
Table 4. General Characteristics of Participants (n=428)

Characteristics	Frequency	Percent (%)
Age		
• ≤25	145	33.9
• 26 - 30	135	31.5
• 31 – 35	98	22.9
• ≥36	50	11.7
Mean ± SD	28.39 ± 4.926	
Min - Max	19 – 38 years old	
Religion		
Moslem	223	52.1
Protestant	102	23.8
Advent	45	10.5
Pentecostal	33	7.7
Others (Buddhism, Hindu, Catholic)	25	5.8
Marital status		
Married	351	82.0
Divorced/Widowed	77	18.0
Education level		
Middle High School	34	7.9
Senior high school	161	37.6
Higher education	233	54.4
Occupation		
Civil servant	85	19.9
Private company employee	165	38.6
Entrepreneur	65	15.2
Housewife	113	26.4
Place of Resident		
Urban Area	268	62.6
Rural Area	160	37.4
Ethnicity		
Malay	108	25.2
Javanese	125	29.2
Batak	195	45.6

4.1.1.2 Household Characteristics

Based on household characteristics in Table 5, more than half participants (65.2%) were nuclear family, where they stayed with their children only. Most of participants (84.8%) have only 1 child aged 1-2 years stayed in their house. Majority of the participants (88.8%) had monthly income higher than district minimum wage ≥ IDR 2,869,292 (Kalderakita, 2021) or approximately 202.16 U.S. Dollar.

Table 5. Household Characteristics (n=428)

Characteristics	Frequency	Percent (%)
Family Arrangement		
Nuclear family	279	65.2
Extended family	149	34.8
Monthly household income		
≤ 2.869 mill IDR per month (USD 202.16)	48	11.2
≥ 2.870 mill IDR per month (USD 202.17)	380	88.8

*Remark:
- Cut-off according to district minimum salary rate
Currency rate: 1 USD = 14,176 IDR

4.1.1.3 Children Characteristics

For the children characteristics, all subjected children were examined for their birthdate to make sure that their age is 1 – 2 years old. As shown in Table 6, more than half of participants (86.9%) has 1-2 years old children with average ideal body weight as normal (-2 SD till 2 SD). Majority of children were categorized as Tall (≥2SD) with 38.8 % and normal (-2 SD till 2 SD) with 61.2% respectively. Most of the subjected children 1-2 years old were boys (62.1%).

Almost a half of participants (49.1%) fed their 1-2 years old child only with formula milk since last 3 months till present. As far as the participants realized, almost of all children did not have any allergy to the foods, 98.8%.

Table 6. Children Characteristics (n=428)

Characteristics	Frequency	Percent (%)
Body weight (weight for age)		
Underweight (<-2 SD)	0	0
Normal (-2 SD till 2 SD)	372	86.9
Overweight (>+2 SD)	56	13.1
Mean ± SD	10.92 ± 1.10971	
Min – Max	8.20 – 13.90	
Length (length for age)		
Short (<-2 SD)	0	0
Average (-2 SD till 2 SD)	262	61.2
Tall (>+2 SD)	166	38.8
Mean ± SD	81.00 ± 4.299	
Min – Max	72.0 – 88.9	
Sex of child subjected to this study		
Boys	266	62.1
Girls	162	37.9
Current breastfeeding status		
breastmilk only	59	13.8
Breastmilk+formula milk	137	32.0
Formula based milk only	210	49.1
UHT milk only	22	5.1
Food Allergy (n = 428)		
Yes	5	1.2
No	423	98.8

4.1.2 Food Taboo

Table 7 shows that almost all participants have no taboos on meat, 89.5%. However, 45 participants (10.5%), who showed taboo on meat, selected all three meat products (chicken, beef, duck). All participants did not have any taboos on staple food. 45.6% of the participants had taboo towards jackfruit, while the rest of the participants had no taboos with other kinds of fruits. 10.5% of the participants show taboo towards fish, where most had taboo to bale fish (3.3%), followed by balana fish (2.1%). However, there were about 3.3% of participants who had taboo towards many kinds of fish (the catfish, bale fish, balana, ciko and shark). About one-fourth of the participants showed taboo towards seafood, with most of them had taboos with octopus (25.2%), and only one participant had taboo with crab. With vegetables category, there is no taboo on other vegetables, while less than one third of participants were taboos to the eggplants. More than a half of participants (75.7%) mentioned the reason of they avoided those food was because hygiene reason like children will get worm, and urine will smell fishy with some of seafood consumption as presented in Table 8.

Table 7. Food Taboo (n=428)

Characteristics	Yes n (%)	No n (%)
Meat		
Total taboo on meat	45 (10.5)	383 (89.5)
Chicken, beef, duck (each participant thick all three of them)	45 (10.5)	383 (89.5)
Staple Food		
Taboos on staple food	0 (0.0)	428 (100.0)
(For examples, rice, cassava, and purple sweet potatoes)		
Fruit		
Jackfruit	195 (45.6)	233 (54.4)
*Remark: No taboos on other fruit		
Egg		
Taboos on egg product	0 (0.0)	428 (100.0)
Fish		
Total taboo on fish	45 (10.5)	383 (89.5)
• Catfish	1 (0.2)	427 (94.5)
• Bale	14 (3.3)	414 (96.7)
• Balana fish	9 (2.1)	419 (97.9)
• Shark fish	5 (1.2)	423 (88.8)
• Ciko fish	2 (0.5)	426 (99.5)
• Catfish, bale, balana, shark, ciko	14 (3.3)	414 (96.7)
Seafood		
Total taboo on seafood	109 (25.5)	319 (74.5)
• Shrimp	0 (0.0)	0 (100.0)
• Crab	1 (0.2)	427 (99.8)
• Octopus	108 (25.2)	320 (75.8)
Vegetables		

• Eggplants	124 (29.0)	304 (71.0)

*Remark: No taboos on other vegetables (cassava leaves, moringa leaves, and kales)

Table 8. Reason for food taboo

Reason for food taboo	Frequency	Percentage
• Hygiene (children will get worm, urine smell fishy)	324	75.7
• Health (cause diseases, allergies, veganism, vegetarianism)	100	23.3
• Culture/norms/belief	34	7.9
• Two or more reasons	16	3.7
• No reason	2	0.5

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4.1.3 Source of information omega 3 and 6

Table 9 shows more than half of participants (87.9%) had been heard information about omega 3 and 6 from friends or neighbor and only some participants received information about omega 3 and 6 from twitter (5.4%). More than half of participants have not received information about omega 3 and 6 from experiencing women (52.1%).

Table 9. Source of Information omega 3 and 6 (n=428)

Characteristics	Frequency	Percent (%)
TV Programs		
Yes	336	78.5
No	92	21.5
Newspaper		
Yes	228	53.3
No	200	46.7
Friends/neighbor		
Yes	376	87.9
No	52	12.1
Family Member		
Yes	277	64.7
No	151	35.3
Medical Practitioner		
Yes	283	66.1
No	145	33.9
Experiencing women		
Yes	205	47.9
No	223	52.1
Social Media		
Twitter	23	5.4
Facebook	230	53.7
IG	175	40.9

4.2 Maternal knowledge regarding dietary in consumption omega 3 and 6 to the children 1-2 years old

4.2.1 Scores of maternal knowledge regarding dietary in consumption omega 3 and 6 to the children 1-2 years old

Related to the "omega 3" topic as shows by Table 10, more than half of participants (60.5%) knew about the definition of omega 3 and 6. Almost half of participants (42.1%) knew that omega 3 could not produce by human body, and more than half of participants (55.1%) know about definition and function of DHA in brain and retina. However, 54.7% did not know that omega 3 help retina development at early age of children. For the food sources of omega 3, more than half of participants acknowledge the freshwater fish (66.1%), seawater fish (61.0%), algae oil (63.3%), and meats (67.5%), but only 38,3% of participants realized shrimps is one of food source omega 3.

For "omega 6" topic, more than half of participants (61.9%) know the definition of omega 6. While more than half of participant know coconut (61.7%), spinach (62.9%), nuts (68.2%), tofu (62.6%), and eggs (62.4%) are the food source whose contain omega 6, 70.1% of participants does not know that pumpkin and corn oil (59.3%) are another food source of omega 6. Two third of participant does not know that omega 6 can reduce high blood pressure.

Table 10 Frequencies and Distribution of maternal knowledge scores regarding dietary in consumption omega 3 and 6 to the children aged 1-2 years (n=428)

Statement	Omega 3	
	Incorrect Answers n (%)	Correct Answers n (%)
Omega 3 is a component of fatty acid	169 (39.5)	25.8 (60.5)
Human body cannot produce omega 3	248 (57.9)	180 (42.1)
DHA (Docosahexaenoic acid) is a major fatty acid in brain and the retina	192 (44.9)	236 (55.1)
Freshwater fish is an important source of omega 3	145 (33.9)	283 (66.1)
Seawater fish is an important source of omega 3	167 (39.0)	261 (61.0)
Algae oil is an important source of omega 3	157(36.7)	271(63.3)
Meats are an important source of omega 3	129(32.5)	289(67.5)
Shrimps are an important source of omega 3	264(61.7)	164(38.3)
Omega 3 helps in the retina development during an early age of children	234(54.7)	194(45.3)

Table 10 Frequencies and Distribution of maternal knowledge scores regarding dietary in consumption omega 3 and 6 to the children aged 1-2 years (n=428) (continue)

Statement	Omega 6	
	Incorrect Answers n (%)	Correct Answers n (%)
Omega 6 is a part of fatty acid and cannot be produced by human body	163(38.1)	265(61.9)
Nuts are an important source of omega 6	136(31.8)	292(68.2)
Coconut is rich in omega 6	164(38.3)	264(61.7)
Spinach is an important source of omega 6	159(37.1)	269(62.9)
Pumpkin is an important source of omega 6	300(70.1)	128(29.9)
Corn oil are an important source of omega 6	254(59.3)	174(40/7)
Tofu is an important source of omega 6	160(37.4)	268(62.6)
Eggs are an important source of omega 6	161(37.6)	267(62.4)
Omega 6 can help reduce high blood pressure	310(72.4)	118(27.6)

Table   10 Frequencies and Distribution of maternal knowledge scores regarding dietary in consumption omega 3 and 6 to the children aged 1-2 years (n=428) (continue)

Statement	Omega 3 and 6	
	Incorrect Answers n (%)	Correct Answers n (%)
Omega 3 and 6 can help in prevention of anxiety and depressive disorder	151(35.3)	277(64.7)
Omega 3 and 6 can help prevent skin rash	171(40.0)	257(60.0)
Omega 3 and 6 help supporting the development of learning and memory abilities	146(34.1)	282(65.9)
Consumption of Omega 3 and 6 is better to start at an early age	159(37.1)	269(62.9)
Omega-3s help improve inattention and task completion on hyperactivity behavior in children	135(31.5)	293(68.5)
Omega 3 and 6 can help in decreasing cholesterol	167(39.0)	261(61.0)
Omega 3 and 6 help keeping the heart healthy	162(37.9)	266(62.1)
Omega 3 and 6 can help increasing the ability to focus on reading	149(34.8)	279(65.2)
Omega 3 and 6 help in strengthening hair and hair growth	179(41.8)	249(58.2)

From "omega 3 and 6" topic, more than half of participants know omega 3 and 6 can help in prevention of anxiety and depressive disorder (64.7%), can help to prevent skin rash (60.0%), supporting development of learning and memory abilities (68.5%), improve inattention and task completion on hyperactivity behavior of children (61.0%), decrease cholesterol (65.2%), healthy heart living (62.1%), be able to focus on reading book, and strengthening hair (58.2%). However, more than half of participants does not know omega 3 and 6 has to started in early age of children (62.9%).

4.2.2 Level of maternal knowledge towards dietary omega 3 and 6 consumption to the children aged 1-2 years

Knowledge score were categorized into poor knowledge, moderate, and good knowledge by Bloom's cut off point. As shows in Table 11, among a total 428 participants, almost half of participants had good knowledge level (41.8%) towards dietary omega 3 and 6 consumption in the children aged 1-2 years, followed by poor level (35.7%) and moderate level of knowledge (22.4%).

Table 11 Level of maternal knowledge towards dietary omega 3 and 6 consumption to the children aged 1-2 years (n=428)

Level of knowledge	Frequencies	Percentage (%)
Poor	153	35.7
Moderate	96	22.4
Good	179	41.8
Mean ± SD	15.87 ± 8.927	
Min – Max	1- 26	
Range	0 - 27	

4.3 Maternal attitude towards dietary omega 3 and 6 consumption for children aged 1-2 years

4.3.1 Distribution of maternal attitude towards dietary omega 3 and 6 consumption for children aged 1-2 years

There are 17 statements in attitude section which contain 9 statements for highlighted omega 3 and 8 statements represent omega 6. All statement are positive statements. Table 12 shows the frequency of participants' response to the statements. The score of each statement is given by 5 points Likert scale. More than half of participants are strongly agree (54.7%) the importance of paying attention omega 3 in the meal composition for their children. More than half of participants also strongly agree variation of omega 3 in children meal is important (54.2%) even variation in processing method such as boiled, steamed or baked (58.6%). Not only that, more than half of participants strongly agree to consider the food source of omega 3 will provide for their children based on what their children likes (54.4%). For any food sources of omega 3, more than half of participants (52.6%) are strongly agree to provide meat in their children meal when in the same time participants also strongly agree (55.6%) to consider food taboo before they provide omega 3 in their children plates. More than half of participants has strongly agree to give formula milk as food source omega 3 to their children (58.2%).

Table 12 Frequencies and distribution of maternal attitude towards dietary omega 3 consumption

to the children aged 1-2 years (n=428)

Statement (Omega 3)	Frequencies	Percent (%)
1. I think it is important to pay attention on the meal composition with omega 3 for my children		
Strongly disagree	22	5.1
Disagree	1	0.2
Neutral	154	36.0
Agree	17	4.0
Strongly Agree	234	54.7
2. Variation of omega 3 in children's meal is important for their growth		
Strongly disagree	21	4.9
Disagree	1	0.2
Neutral	157	36.7
Agree	17	4.0
Strongly Agree	232	54.2
3. I consider the food source of omega 3 for the children based on the food she likes		
Strongly disagree	21	4.9
Disagree	1	0.2
Neutral	157	36.7
Agree	16	3.7
Strongly Agree	233	54.4
4. I pay attention to food taboo in determining the food source of omega 3 for my children		
Strongly disagree	12	2.8
Disagree	1	0.2
Neutral	155	36.2
Agree	22	5.1
Strongly Agree	238	55.6

Table 12 Frequencies and distribution of maternal attitude towards dietary omega 3 consumption to the children aged 1-2 years (n=428) (continue)

Statement (Omega 3)	Frequencies	Percent (%)
5. I agree to provide meat which rich in omega 3 (such as fish and beef) to my children anytime whenever one of those sources are available		
Strongly disagree	12	2.8
Disagree	24	5.6
Neutral	133	31.1
Agree	34	7.9
Strongly Agree	225	52.6
6. I prefer the formula milk based as daily source of omega 3 to my children		
Strongly disagree	14	3.3
Disagree	0	0
Neutral	140	32.7
Agree	25	5.8
Strongly Agree	249	58.2
7. The provision of omega 3 food sources for children is carried out regularly according to the meal schedule		
Strongly disagree	12	2.8
Disagree	0	0
Neutral	133	31.1
Agree	33	7.7
Strongly Agree	250	58.4
8. Not just on prepare the menu, but the processing method that I do in processing omega 3 food for children must vary (for example: boiled, baked, blended or steamed		
Strongly disagree	12	2.8
Disagree	1	0.2
Neutral	141	32.9
Agree	23	5.4
Strongly Agree	251	58.6

Table 12 Frequencies and distribution of maternal attitude towards dietary omega 3 consumption to the children aged 1-2 years (n=428) (continue)

Statement (Omega 3)	Frequencies	Percent (%)
9. When making meals for children, I will add omega 3 source to the porridge		
Strongly disagree	12	2.8
Disagree	0	0
Neutral	134	31.3
Agree	33	7.7
Strongly Agree	249	58.2

Table 13 shows frequencies and distribution of maternal attitude towards dietary omega 6 consumption to the children aged 1-2 years where more than half of participants has agree not only to concern to the menu composition when omega 6 provided to their children (58.4%) but also the appearance and interesting decoration of plant-based diet will help their children to eat better (60.5%). More than half participants disagree to provide omega 6 various and regularly (54.7%), and to limited the amount of omega 6 consumption for their children in daily basis (54.7%). But more than half of participants agree to balancing omega 6 to their children's plate.

Table 13. Frequencies and distribution of maternal attitude towards dietary omega 6 consumption to the children aged 1-2 years (n=428)

Statement (Omega 6)	Frequencies	Percent (%)
1. I think the appearance and interesting decoration of plant-based diet will help my children to eat better		
Strongly Disagree	0	0.0
Disagree	6	1.4
Neutral	141	32.9
Agree	250	58.4
Strongly Agree	31	7.2
2. I agree to use plant source based that rich in omega 6 (such as walnut, soybean, flexseed, almond or leaf lettuce) to my children anytime when one of those sources is available		
Strongly Disagree	0	0.0
Disagree	7	1.6
Neutral	133	31.1
Agree	259	60.5
Strongly Agree	29	6.8
3. I am concern with the amount of omega 6 that I give to my children		
Strongly Disagree	0	0.0
Disagree	234	54.7
Neutral	130	30,4
Agree	33	7.7
Strongly Agree	31	7.2
4. I think making various menu from food rich in omega 6 for children is important, even they are from the same ingredients		
Strongly Disagree	0	0.0
Disagree	234	54.7
Neutral	132	30.8
Agree	33	7.7
Strongly Agree	29	6.8

Table 13 Frequencies and distribution of maternal attitude towards dietary omega 6 consumption to the children aged 1-2 years (n=428) (Continue)

Statement (Omega 6)	Frequencies	Percent (%)
5. I pay attention to the menu composition of omega 6 for my children		
Strongly Disagree	0	0.0
Disagree	7	1.6
Neutral	131	30.5
Agree	260	60.7
Strongly Agree	30	7.0
6. It is important to provide omega 6 food sources for children regularly		
Strongly Disagree	0	0.0
Disagree	234	54.7
Neutral	130	30,4
Agree	33	7.7
Strongly Agree	31	7.2
7. I agree that balancing food that rich in omega 6 to my children is important for their health		
Strongly Disagree	0	0.0
Disagree	7	1.6
Neutral	130	30.4
Agree	259	60.5
Strongly Agree	32	7.5
8. I think I am the only person who responsible to fulfil the needs of Omega 6 my children in my house		
Strongly Disagree	0	0.0
Disagree	233	54.4
Neutral	130	30.4
Agree	32	7.5
Strongly Agree	33	7.7

4.3.2 Level of attitude towards dietary omega 3 and 6 consumption to the children aged 1-2 years

Attitude score were categorized into poor attitude, fair, and good attitude. The mean score of attitude section is 62.51. The standard deviation is 10.514.From Table 14, there was 31 (7.2%) participants who has good attitude regarding dietary omega 3 and 6, and more than half of the participants (59.8%) have fair attitude towards dietary omega 3 and 6 consumption to their children aged 1-2 years.

Table 14 Level of maternal attitude towards dietary omega 3 and 6 consumption to the children aged 1-2 years (n=428)

Level of Attitude	Frequencies	Percentage (%)
Poor Attitude (≤52)	141	32.9
Fair Attitude (53-72)	256	59.8
Good Attitude (≥ 73)	31	7.2
Mean ± SD		62.51 ± 10.514
Min – Max		25-84
Range		17-85

4.4 Maternal practice towards dietary omega 3 and 6 consumption for children aged 1-2 years

4.4.1 Distribution of maternal practice towards dietary omega 3 and 6 consumption for children aged 1-2 years

The 10 statements are regarding the self-administration practice of mothers with Omega 3 and 6 in last 3 months measured as on a 6-point Likert scale ranging from "Never", "Rarely", "Sometimes", "Often", "Always", and "Everyday".

The 10 statements for 10 food group as consist of milk/yoghurt/cheese, dessert, fruit, vegetable, rice, meat, nuts/legume, chocolate, fish and seafood, and supplement.

The result from Table 4.12 shows participant's practice towards dietary omega 3 and 6. For the group of milk, yoghurt, and cheese, majority of participants sometimes used soymilk (e.g. vanilla or fortified chocolate soymilk) for their children, 328(76.6%) followed by baby food cereal brown rice dry instant, 198(46.3%). Half of participants most often cooked baby food cereal oatmeal banana prepared with whole milk, 219 participants (50.2%) followed by cereal green bean flavor, 217 (50.7%).

For fruits category, almost all participants had fed papaya in most often times to eat, 387(90.4%), but more than two third participants always used banana 385 (78.3%), followed by avocado, 339 (79.2%). Only some of participants had papaya, 3(0.7%), honeydew melon, 2(0.5), banana, 4(0.9), starfruit, 4(0.9%), grape, 3(0.7%), pear, 2(0.5%), and apple, 2(0.5%), everyday to the children aged 1-2 years.

Table 15 also shows majority participants giving broccoli everyday to their children, 338 (79.0%) and more than half of participants always put spinach in their children's meal, 341(79.7%). But almost all participants most often to used Kale in their child meals, 373(87.1%), and in 1 day/ week participants choose cauliflower to the plates for children, 363 (84.8%).

At the dessert food group, found majority of participants never had snack potato chips lightly salted giving to the children aged 1-2 years, 360 (84.1%).

For giving rice/biscuits, brown rice is most often used by participants to their children, 194(45.3%), while some participant had spinach egg noodles, 2(0.5%) and milk biscuit, 4 (0.9%) given everyday to their children.

For meats category, almost half of participants had chicken liver cooked to the children aged 1-2 years, 171 (40.0%), followed by chicken soup cream, 166(38.8%). Interestingly, almost all participants never had chicken intestine to consumed by their children, 418 (97.7%).

For fish and seafood, majority of participants always had fried anchovy in their children meal, 347 (81.1%). Sardine canned has never consume by their children, 421(98.1%).

For practice to give nuts and legumes sources of omega 3 and 6, almost half of participants ensure red kidney beans is always given to the children, 205 (47.9%). It followed by cooked soft tofu, 199 (46.5%). Almost all the participants, 346 (92.5%) never has cowpeas cooked to their children aged 1-2 years.

For any supplement which enriched omega 3 and 6, almost half participants give cod liver oil to their children aged 1-2 years, 178 (41.6%) while corn oil and olive oil never used to their children by all the participants, 428 (100%).

Table 15 Frequencies and distribution of maternal practice towards dietary omega 3 and 6 consumption to the children aged 1-2 years (n=428)

Food group I: Milk, yogurt, and cheese	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
Food item			Frequencies (%)			
Soymilk (e.g. Vanilla, or fortified chocolate soymilk)	7 (1.6)	52(12.1)	328 (76.6)	34(7.9)	7(1.6)	0 (0.0)
babyfood cereal brown rice dry instant	139(32.5)	56(13.1)	198(46.3)	33(7.7)	2(0.5)	0 (0.0)
babyfood cereal oatmeal dry fortified	144(33.6)	53(12.4)	184(43.0)	45(10.5)	2(0.5)	0 (0.0)
babyfood cereal oatmel banana prepared with whole milk	139(32.5)	54(12.6)	14(3.3)	219(51.2)	2(0.5)	0 (0.0)
babyfood cereal green bean dices toddler	143(33.4)	38(8.9)	28(6.5)	217(50.7)	2(0.5)	0 (0.0)
babyfood cereal mix prepared with whole milk	143(33.4)	38(8.9)	42(9.8)	203(47.4)	2(0.5)	0(0.0)
babyfood vegetable spinach cream strained	143(33.4)	53(12.4)	185(43.2)	45(10.5)	2(0.5)	0 (0.0)

Table 15 Frequencies and distribution of maternal practice towards dietary omega 3 and 6 consumption to the children aged 1-2 years (n=428) (cont.)

Food group II: Fruit	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
Food item			**Frequencies (%)**			
Mango	0(0.0)	24(5.6)	35(8.2)	362(84.6)	7(1.6)	0(0.0)
Guava	5(1.2)	362(84.6)	14(3.3)	33(7.7)	14(3.3)	0(0.0)
Avocado	14(3.3)	4(0.9)	18(4.2)	53(12.4)	339(79.2)	0(0.0)
Jackfruit	396(92.5)	21(4.9)	9(2.1)	2(0.5)	0(0.0)	0(0.0)
Strawberries	17(4.0)	350(81.8)	16(3.7)	42(9.8)	3(0.7)	0(0.0)
Mango (raw)	352(82.5)	18(4.2)	55(12.9)	3(0.7)	0(0.0)	0(0.0)
Papaya	1(0.2)	1(0.2)	32(7.5)	387(90.4)	4(0.9)	3(0.7)
Honeydew Melon	1(0.2)	1(0.2)	38(8.9)	368(86.0)	18(4.2)	2(0.5)
Banana	1(0.2)	14(3.3)	19(4.4)	55(12.9)	385(78.3)	4(0.9)
Starfruit	11(2.6)	345(80.6)	24(5.6)	35(8.2)	9(2.1)	4(0.9)
Grape	1(0.2)	2(0.5)	381(89.0)	37(8.6)	4(0.9)	3(0.7
Pear	1(0.2)	2(0.5)	380(88.8)	38(8.9)	5(1.2)	2(0.5)
Apple	1(0.2)	2(0.5)	366(85.5)	52(12.1)	5(1.2)	2(0.5)

Table 15 Frequencies and distribution of maternal practice towards dietary omega 3 and 6 consumption to the children aged 1-2 years (n=428) (cont.)

Food group III: Vegetables	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
			Frequencies (%)			
Food item						
Kale	1(0.2)	2(0.5)	45(10.5)	373(87.1)	3(0.7)	4(0.9)
Cauliflower	1(0.2)	12(2.8)	363(84.8)	37(8.6)	14(3.3)	1(0.2)
Spinach	1(0.2)	2(0.5)	9(2.1)	59(13.8)	341(79.7)	16(3.7)
Broccoli	1(0.2)	16(3.7)	7(1.6)	39(6.1)	27(6.3)	338(79.0)
Enoki Mushroom	52(12)	359(83.9)	16(3.7)	1(0.2)	0(0.0)	0(0.0)
Tomato	15(3.5)	27(6.3)	343(80.1)	30(7.0)	8(1.9)	5(1.2)
Eggplant	391(91.4)	20(4.7)	16(3.7)	0(0.0)	1(0.2)	0(0.0)
Yellow sweet corn	15(3.5)	25(5.8)	347(81.1)	38(8.9)	3(0.7)	0(0.0)

Table 15 Frequencies and distribution of maternal practice towards dietary omega 3 and 6 consumption to the children aged 1-2 years (n=428) (cont.)

Food group IV: Chocolate

Food item	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
			Frequencies (%)			
Fudge Chocolate with Nuts prepared from recipes	369(86.2)	15(3.5)	39(9.1)	2(0.5)	3(0.7)	0 (0.0)
Soft fruit and Nut squares	195(45.6)	189(44.2)	39 (9.1)	2(0.5)	3(0.7)	0 (0.0)
Fudge vanilla with nuts	380(88.8)	1(0.2)	39(9.1)	2(0.5)	5(1.2)	1(0.2)
Toblerone Chocolate with honey and Almond Nouget	380(88.8)	1(0.2)	39(9.1)	2(0.5)	4(0.9)	2(0.5)
Nestle 100 grand bar	380(88.8)	1(0.2)	39(9.1)	2(0.5)	6(1.4)	0 (0.0)
White Chocolate	366(85.5)	1(0.2)	53(12.4)	2(0.5)	5(1.2)	1(0.2)
Milk Chocolate with Almond	4(0.9)	207(48.4)	212(49.5)	2(0.5)	3(0.7)	0 (0.0)
Milk Chocolate with rice cereal	5(1.2)	411(96.0)	7(1.6)	2(0.5)	3(0.7)	0 (0.0)
Sweet Chocolate	2(0.5)	379(88.6)	42(9.8)	2(0.5)	3(0.7)	0 (0.0)

Table 15 Frequencies and distribution of maternal practice towards dietary omega 3 and 6 consumption to the children aged 1-2 years (n=428) (cont.)

Food group V: Dessert	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
Food item			Frequencies (%)			
Soft Chocolate Ice cream	170(39.7)	213(49.8)	40(9.3)	2(0.5)	3(0.7)	0 (0.0)
Extruded corn chips	169(39.5)	214(50.0)	40 (9.3)	2 (0.5)	3(0.7)	0 (0.0)
Snack Potato Chips Lightly Salted	360(84.1)	9(2.1)	40(9.3)	16(3.7)	3(0.7)	0 (0.0)
Food group VI: Rice/Biscuits	**Never** (Never or less than once a month)	**Rarely** (1-3 days a month)	**Sometimes** (1 day a week)	**Often** (2-4 days a week)	**Always** (5 – 6 days a week)	**Everyday**
Food item			Frequencies (%)			
brown rice	1(0.2)	164(38.3)	66(15.4)	194(45.3)	3(0.7)	0 (0.0)
spinach egg noodles	1(0.2)	164(38.3)	78 (18.2)	178(41.6)	5(1.2)	2(0.5)
milk biscuit	0 (0.0)	11(88.8)	227(53.0)	183(42.8)	3(0.7)	4(0.9)
White bread	1(0.2)	164(38.3)	50(11.7)	194(45.3)	19(4.4)	0 (0.0)

Table 15 Frequencies and distribution of maternal practice towards dietary omega 3 and 6 consumption to the children aged 1-2 years (n=428) (cont.)

Food group VII: Meat	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
Food item			Frequencies (%)			
Chicken liver, cooked	39(9.1)	3(0.7)	36(8.4)	179(41.8)	171(40.0)	0(0.0)
Chicken soup, cream	39(9.1)	0(0.0)	39(9.1)	184(43.0)	166(38.8)	0(0.0)
Chicken, boiled, light meat	53(12.4)	0(0.0)	40(9.3)	178(41.6)	157(36.7)	5(1.2)
Chicken, roasted, breast	374(87.4)	33(7.7)	6(1.4)	14(3.3)	1(0.2)	0(0.0)
Chicken, meat, fried, breast	210(49.1)	33(7.7)	11(2.6)	174(40.7)	0 (0.0)	0(0.0)
Chicken, intestine, cooked	418(97.7)	5(1.2)	2(0.5)	3(0.7)	0 (0.0)	0(0.0)
Chicken, meat, leg	384(89.7)	33(7.7)	5(1.2)	4(0.9)	1(0.2)	1(0.2)
duck, meat, roasted	404(94.4)	19(96.0)	2(0.5)	2(0.5)	1(0.2)	0(0.0)
beef, braised meat, short-ribs chuck stew	208(48.6)	37(8.6)	177(41.4)	5(1.2)	1(0.2)	0(0.0)
buffalo, meat, roasted	415(97.0)	4(0.9)	4(0.9)	3(0.7)	2(0.5)	0(0.0)
buffalo, meat, cooked	402(93.9)	8(1.9)	4(0.9)	11(2.6)	2(0.5)	1(0.2)
buffalo, meat, broiled	409(95.6)	4(0.9)	10(2.6)	2(0.5)	3(0.7)	0(0.0)
lamb, liver, cooked	407(95.1)	5(1.2)	4(0.9)	8(1.9)	1(0.2)	3(0.7)
lamb, meat	406(94.9)	11(2.6)	4(0.9)	3(0.7)	4(0.9)	0(0.0)

Table 15 Frequencies and distribution of maternal practice towards dietary omega 3 and 6 consumption to the children aged 1-2 years (n=428) (cont.)

Food group VIII: Fish and Seafood	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
Food item				Frequencies (%)		
egg, chicken, raw	331(77.3)	5(1.2)	8(1.9)	47(11.0)	22(5.1)	15(3.5)
egg, chicken, omelette	0(0.0)	0(0.0)	11(9.1)	222(51.9)	179(41.8)	16(3.7)
egg, fried	0(0.0)	0(0.0)	11(9.1)	221(51.6)	181(42.3)	15(3.5)
egg, scrambled	0(0.0)	0(0.0)	10(2.3)	238(55.6)	164(38.3)	16(3.7)
Eel, boiled	0(0.0)	37(8.6)	192(44.9)	184(43.0)	15(3.5)	0(0.0)
fish gabus, fried	28(6.8)	0(0.0)	6(1.4)	217(50.7)	176(41.1)	0(0.0)
fish, freshwater, fried gurami	28(6.8)	0(0.0)	6(1.4)	217(50.7)	176(41.1)	0(0.0)
fish, freshwater, cooked in turmeric spice	43(10.0)	0(0.0)	6(1.4)	217(50.7)	162(37.9)	0(0.0)
fish, freshwater, steamed in banana leaf	374(87.4)	1(0.2)	5(1.2)	47(11.0)	1(0.2)	0(0.0)
egg, chicken, half boiled	29(6.8)	1(0.2)	188(43.9)	209(48.8)	1(0.5)	0(0.0)
fish, milk fish (gurami, nila)	29(6.8)	1(0.2)	189(48.2)	208(48.6)	1(0.5)	0(0.0)
Fish mujaer	49(11.4)	1(0.2)	51(11.9)	318(74.3)	9(2.1)	0(0.0)

Table 15 Frequencies and distribution of maternal practice towards dietary omega 3 and 6 consumption to the children aged 1-2 years (n=428) (cont.)

Food group VIII: Fish and Seafood	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
Food item			Frequencies (%)			
fish, sea, dried, salted (kembung)	48(11.2)	1(0.2)	51(11.9)	318(74.3)	10(2.1)	0 (0.0)
fish, sea, fried	45(10.5)	15(3.5)	9(2.1)	346(80.8)	13(3.0)	0 (0.0)
fish, tongkol, fried	175(40.9)	221(51.6)	2(0.5)	8(1.9)	15(3.5)	7(1.6)
Lobster, cooked	187(43.7)	210(49.1)	1(0.2)	9(2.1)	15(3.5)	6(1.4)
Shrimp, fried	360(84.1)	1(0.2)	35(8.2)	9(2.1)	10(2.3)	13(3.0)
Scallop, cooked	347(81.1)	14(3.3)	33(7.7)	11(2.6)	14(3.3)	9(2.1)
Crab, boiled	207(48.4)	172(40.2)	33(7.7)	2(0.5)	14(3.3)	0 (0.0)
Cod, cooked	207(48.4)	172(40.2)	33(7.7)	2(0.5)	14(3.3)	207(48.4)
anchovy, fried	35(8.2)	0 (0.0)	41(9.6)	5(1.2)	347(81.1)	0 (0.0)
anchovy dried	50(11.7)	0 (0.0)	41(9.6)	4(0.9)	333(71.8)	0 (0.0)
sardine, canned, in tomato sauce	420(98.1)	0 (0.0)	8(1.9)	0(0.0)	0 (0.0)	0 (0.0)

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Food group IX: Nuts and Legume	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
Food item			Frequencies (%)			
Edamame	365(85.3)	33(7.7)	10(2.3)	9(2.1)	11(2.6)	0 (0.0)
Kidney beans	356(83.2)	8(1.9)	8(1.9)	22(5.1)	1(0.2)	0 (0.0)
Red Kidney beans, cooked	149(34.8)	15(3.5)	43(10.0)	11(2.6)	205(47.9)	5(1.2)
Red Kidney beans, boiled	140(32.7)	25 (0.5)	58(13.6)	9(2.1)	191(38.3)	5(1.2)
Lentils, cooked	182(42.5)	34(7.9)	191(44.6)	11(2.6)	7(1.6)	3(0.7)
Soybean Flour, powder	389(90.9)	14(3.3)	9(1.9)	5(1.2)	7(1.6)	4(0.9)
Oncom/Fermented Tofu	34(7.9)	204(47.7)	177(41.4)	4(0.9)	7(1.6)	3(0.7)
Mung beans, cooked	202(47.2)	189(44.2)	25(5.8)	4(0.9)	6(1.4)	2(0.5)
Peanut, butter	49(11.4)	175(40.9)	189 (44.2)	4(0.9)	10(2.3)	1(0.2)
Peanut, raw	408(95.3)	13(3.0)	7(1.6)	0 (0.0)	0 (0.0)	0 (0.0)
Black eyed peas, cooked	2(6.8)	43(0.2)	189(48.2)	208(48.6)	1(0.5)	0 (0.0)
Cowpeas, cooked	396(92.5)	11(2.6)	6(1.4)	14(3.3)	1(0.2)	0 (0.0)
Firm Tofu, cooked	170(39.7)	44(10.3)	15(3.5)	198(46.3)	1(0.2)	0 (0.0)
Soft Tofu, cooked	2(0.5)	43(10)	182(42.5)	199(46.5)	2(0.5)	0 (0.0)

	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
Tofu prepared with Calcium	174(40.9)	45(51.6)	10(0.5)	184(1.9)	1(3.5)	14(1.6)

Food group X: Supplements	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
Food item			Frequencies (%)			
Cod liver oil	196(77.3)	35(8.2)	0 (0.0)	0 (0.0)	19(4.4)	178(41.6)
Coconut oil	398(93.0)	3(0.7)	0 (0.0)	0(0.0)	27(6.3)	0 (0.0)
Corn oil	428(100)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Olive oil	428(100)	0 (0.0)	0 (0.0)	0(0.0)	0 (0.0)	0 (0.0)

Table 15 Frequencies and distribution of maternal practice towards dietary omega 3 and 6 consumption to the children aged 1-2 years (n=428) (continue)

4.4.2 Level of maternal practice towards dietary omega 3 and 6 consumption for children aged 1-2 years

Table 16 shows among 428 participants, only 10 participants (2.3%) had good practice on dietary omega 3 and 6 consumption to the children aged 1-2 years, followed by fair practice 260 (60.7%).

Table 16 Level of maternal practice towards dietary omega 3 and 6 consumption to the children (n=428)

Level of Practice	Frequencies	Percentage (%)
Poor practice	158	36.9
Fair practice	260	60.7
Good practice	10	2.3
Mean ± SD	252.70 ± 32.624	
Min – Max	161-334	

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4.5 Inferential Findings

4.5.1 Bivariate Analysis

4.5.1.1 Association between the general characteristics and practice on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia

Bivariate analysis using Chi-square test was conducted to determine the association between independent and level of maternal practices on dietary omega 3 and 6 consumption in children aged 1-2 years old (dependent variable).

Table 17 describes association between general characteristics with level of maternal practices which was analyzed by Chi-Square test. Categories of age was merged to the four group, "less than or equal twenty-five years old, 26-30 years old, 31-35 years old and more than or equal 36 years old". Religion was merged to the five group- "protestan, advent, pentecostal, moslem, and others" which was comprised of chatolic, buddhism, and hindu". Marital status merged into two groups as "married, divorced/widowed". Educational level was merged into two group as" middle and high school, and higher education". Occupation categorized into four groups such as "civil servant, private company employee, entrepreneur, and housewife". Place of resident was categorized into "urban and rural area". Ethnicity was merged into three groups- "Malay, batak, and java".

According to table 17, there was statistically significance difference between religion and practice, educational level, occupation, resident area, and ethnicity (p- value <0.001). However, found no association between age to the level practice of mother and marital status. Highest good level of practice found in pentacostal religion with 6 (18.0%). Highest fair level of practice found in moslem religion with 111 (49.8%) along with highest poor level of practice 111 (49.8%). Participant who graduated from higher education had the highest fair level of practice as much as 175 (75.1%) and 7(3.0% had a good level of practice. Middle high school had the poorest level of practice as much as 107 (67.7%). Mother who worked on private company had highest good level of practice 5(3.0%), with 151(91.5%) had highest number of fair practice. The

poorest level of practice was applied by housewife group which was 80 (70.8 %).

Table 17 Association between general characteristics with level of maternal practices on dietary omega 3 and 6 consumption in children aged 1-2 years old (n=428)

Variables	Level of practice			Chi-square	p-value
	Poor n (%)	Fair n (%)	Good n (%)		
General Characteristics					
Age group (years)				3.617	0.728
≤ 25	46 (31.7)	94 (64.8)	5 (3.4)		
26-30	52 (38.5)	81 (60.0)	2 (1.5)		
31-35	40 (40.8)	56 (57.1)	2 (2.0)		
≥36	20 (40.0)	29 (58.0)	1 (2.0)		
Religion				75.322	**<0.001***
Protestant	25 (24.5)	77 (75.5)	0 (0.0)		
Advent	11 (24.4)	32 (71.1)	2 (4.4)		
Pentecostal	8 (24.2)	19 (56.6)	6 (18.2)		
Moslem	111 (49.8)	111 (49.8)	1 (0.4)		
Others	3 (12.0)	21 (84.0)	1 (4.0)		
Marital Status				2.089	0.352
Married	134 (38.2)	210 (80.8)	7 (2.0)		
Divorced/Widowed	24 (31.2)	50 (19.2)	3 (3.9)		
Education Level				49.619	**<0.001***
Middle and High School	107 (67.7)	85 (32.7)	3 (1.5)		
Higher Education	51 (21.9)	175 (75.1)	7 (3.0)		
Occupation				142.769	**<0.001***
Civil servant	30 (35.3)	52 (5.5)	3 (30.0)		
Private company employee	9 (5.7)	151 (91.5)	5 (3.0)		
Entrepreneur	39 (60.0)	24 (36.9)	2 (3.1)		
Housewife	80 (70.8)	33 (29.2)	0 (0.0)		
Place of resident				33.434	**<0.001***
Urban Area	73(7.2)	191(71.3)	4(1.5)		
Rural Area	85(53.1)	69(43.1)	6(3.8)		
Ethnicity				50.021	**<0.001***
Malay	43(39.8)	58(53.7)	7(6.5)		
Batak	19(15.2)	104(83.2)	2(1.6)		
Java	96(49.2)	98(50.3)	1(0.5)		

*Significant at p-value <0.05

4.5.1.2 Association between the household and children characteristics and practice on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia

Table 18 described association between household and children characteristics towards the maternal practice. Household characteristics categorized by two variables such as family arrangement and monthly income. Family arrangement categorized to two groups, "Nuclear", "extended" family. Monthly income merged to be two groups –"≤2.86 mill" and "≥2.87 mill".

According to table 18, there was statistically significance difference between family arrangement (p-value < 0.001) to the maternal practice. There was not any association between monthly income (p-value = 0.589) of parents to the maternal practice. Highest poor level of practice occurred in extended family, 101 (67.8%). Highest fair level of practice found in nuclear family 215 (77.1%) and good level of practice was 7 (2.5 %).

Table 18 described the children characteristics which was represented by body weight, height, sex of subjected children, current breastfeeding status, and food allergy. Body weight was merged by three categories – "underweight," "normal", "overweight". Body length of children was merged to the three categories – "short". "average", "tall". Sex of subjected children for the research consist of two groups, "boys" and "girls". Current breastfeeding status merged into four groups such as "breastmilk only" "breastmilk +formula milk, ," "formula-based milk only, and "UHT milk only". Food allergy was categorized into two groups based on the answers of participants to the question" Do your children have any food allergy?", "yes" or "no".

According to table 18, there was statistically significance difference between height of children (p-value = 0.003), sex of children (p-value <0.001), and current breastfeeding status (p-value <0.001). However, it found there was no association between body weight (p-value 0.563) of children to the level of maternal practice to the dietary omega 3 and 6 consumption to their children, and so do food allergy (p-value 0.195) to the level of practice.

Average length of children found to be the fairest of level practice mother to dietary omega 3 and 6, 112 (69.1%), and tall children 89 (53.6%) had the second highest number in fair level of maternal practice.

Mother, who had boys, had highest number fair of level practice – 146 (54.9 %) among mothers who had girls. However, 7 (4.3%) mothers who had girls had good practice on dietary omega 3 and 6, more than mothers who had boys which was 3 (1.1%). For current breastfeeding status, children who consumed formula-based milk only as much as 116 (79.0%) been highest fair level of practice dietary omega 3 and 6. Seven participant (3.3%) in category formula-based milk had good level of practice dietary omega 3 and 6. Poorest level of

maternal practice found in current breastfeeding status and or breastmilk by cup along with formula-based milk, 83 (60.6%).

Table 18 Association between household characteristics and children characteristics with level of maternal practices on dietary omega 3 and 6 consumption in children aged 1-2 years old (n=428)

Variables	Level of practice			Chi-square	p-value
	Poor n (%)	Fair n (%)	Good n (%)		
Household Characteristics					
Family Arrangement				94.213	**<0.001***
Nuclear	57(20.4)	215(77.1)	7(2.5)		
Extended	101(67.8)	45(30.2)	3(2.0)		
Monthly Income				1.059	0.589
<=2.86 mill IDR	19(39.6)	27(56.3)	2(9.2)		
>=2.87 mill IDR	139(36.4)	233(61.3)	8(2.1)		
Children Characteristics					
Body weight				2.967	0.240
Underweight	0(0.0)	0(0.0)	0(0.0)		
Normal	133(36.0)	229(61.5)	10(2.5)		
Overweight	25(44.6)	31(55.4)	0(0.0)		
Length				16.314	**0.001***
Short	0(0.0)	0(0.0)	0(0.0)		
Average	83(29.6)	171(69.1)	8(1.2)		
Tall	75(45.2)	89(53.6)	2(1.2)		
Sex of subjected children				17.880	**<0.001***
Boys	117(44.0)	146(54.9)	3(1.1)		
Girls	41(25.3)	114(70.4)	7(4.3)		
Current Breastfeeding				86.700	**<0.001***
Breastmilkonly	35(54.3)	22(37.3)	2(3.4)		
Breastmilk+formula milk	83(60.6)	53(38.7)	1(0.7)		
Formula Based Milk	37(17.6)	166(79.0)	7(3.3)		
UHT	3(13.6)	19(86.4)	0(0.0)		
Food Allergy				3.269	0.195
Yes	0(0.0)	5(100.0)	0(0.0)		
No	158(37.4)	255(60.3)	10(2.4)		

*Significant at p-value <0.05

4.5.1.3 Association between food taboo and practice on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia

From table 19, described food taboo with five food items such as food taboo on "meat", "fruit", "fish", "seafood", "vegetables", and reason to do food taboo in children. The answers for each item comprised by two categories, "yes"- means parents applied food taboo in their daily consumption omega 3 and 6 to their children, and "no" answers if they did not applied any food taboo to their children. Reason to do food taboo merged to four categories, "none", "health", "hygiene", "culture", "and if mothers have more than 1 reason include health, hygiene, culture".

According to table 4.15, there was found statistically significance difference between meats (p-value 0.036*), fruit (p-value <0.001*), fish (p-value 0.036*), seafood (p-value 0.003*), vegetables (p-value <0.001*), and reason to do food taboo (p-value 0.001*) to the maternal practice. There was 6 variables in food taboo associated significant to the maternal practice in dietary omega 3 and 6 consumption to their children.

Mothers who did not have any food taboo on meats had fair practice 226(59.0%) and good practice as much as 8(2.1%) compared to group of mothers who have any food taboo on meats. However, mothers who did not have any food taboo on fish had highest percentage of poor practice 149(38.9%) in dietary omega 3 and 6 consumption to their children among all other food item. In the same time, mothers who did not have any food taboo on fish also had the highest number of fair practice dietary omega 3 and 6 as much as 226(59.0%). Mothers who did not have any food taboo on fruits had the highest number of good practices as much as 9 (3.9%) dietary omega 3 and 6 consumption to their children among all other food item.

Highest number of fair practices in dietary omega 3 and 6 to the children found when mothers did food taboo because of hygiene reason 177(57.5%) followed by health reason, 59(70.2%) then culture reason, 15(83.3%), then the last one was if the mothers had more than one reason to do food taboo 7(43.8%). Highest number participant to do good practice found at health reason as much as 5(1.3%) then followed by hygiene reason 4(1.3%).

Table 19 Association between food taboo and level of maternal practices on dietary omega 3 and 6 consumption in children aged 1-2 years old (n=428)

Variables	Level of practice			Chi-square	p-value
	Poor n (%)	Fair n (%)	Good n (%)		
Food Taboo					
Meat				6.669	**0.036***
Yes	9(20.0)	34(75.6)	2(16.4)		
No	149(38.9)	226(59.0)	8(2.1)		
Fruits				26.304	**<0.001***
Yes	96(49.2)	98(50.3)	1(0.5)		
No	62(26.6)	162(69.5)	9(3.9)		
Fish				6.669	**0.036***
Yes	9(20.0)	34(75.6)	2(4.4)		
No	149(38.9)	226(59.0)	8(2.1)		
Seafood				11.577	**0.003***
Yes	43(39.4)	59(54.1)	7(79.0)		
No	115(36.1)	201(63.0)	3(30.0)		
Vegetables				36.755	**<0.001***
Yes	19(15.3)	103(83.1)	2(20.0)		
No	139(145.9)	157(51.6)	8(80.0)		

*Significant at p-value <0.05

4.5.1.4 Association between source of information and practice on the dietary omega 3 and 6 consumption in children aged 1-2 years

Based on table 20, described source of information variables with consist of "TV Programs", "Magazine", "Family member", "Friends/Neighbor", "medical practitioner", "experiencing women", and "social media". Social media was categorized into three group "Twitter", "Facebook", "and Instagram". Mothers who had not received or heard any information about omega 3 and 6 from one of those source information had chosen "no" answer. If mothers received any information about omega 3 and 6 at one of all sources mentioned, mothers had chosen "yes" answer.

According to table 20, there was statistically significant difference between TV program (p-value <0.001*) to the level of maternal practice, magazine (p-value<0.001*) to the level of maternal practice, friends/neighbor (p-value<0.001*) to the level of maternal practice, family member (p-value 0.002*), medical practitioner (p-value <0.001*), experiencing women (p-value <0.001*) to the maternal practice and social media (p-value <0.001*) to the level of maternal practice.

Mothers who received any information about omega 3 and 6 from medical practitioner 8(80.0%) had highest percentage of good practice in dietary omega 3 and 6 consumption to their children compared to all other source information. Mothers who received any information about omega 3 and 6 from social media-instagram as much as 164 (96.7%) was the highest percentage in did fair practice dietary omega 3 and 6 to their children compared to all source information, followed

by information about omega 3 and 6 which was received from experiencing women, 188 (91.7%) fit well in fair practice dietary omega 3 and 6 consumption to their children.

In the reverse, the poorest practice dietary omega 3 and 6 consumption to the children found in group of mothers who had not looked after information about omega 3 and 6 from medical practitioner, 102 (70.3%) followed by group of mothers who had not received information omega 3 and 6 from family member, 105 (70.2%) and experiencing women, 151 (67.7%).

Table 20 Association between source of information and practice on the dietary omega 3 and 6 consumption in children aged 1-2 years

Variables	Level of practice			Chi-square	p-value
	Poor n (%)	Fair n (%)	Good n (%)		
TV Program				31.349	**<0.001***
Yes	147(43.8)	182(54.2)	7(2.1)		
No	11(12.0)	78(84.8)	3(3.3)		
Magazine and Newspaper				137.285	**<0.001***
Yes	26(11.4)	196(86.0)	6(2.6)		
No	8(15.4)	43(82.7)	1(1.9)		
Friends/Neighbour				12.169	**0.002***
Yes	150(39.9)	217(57.7)	9(2.4)		
No	8(15.4)	43(82.7)	1(1.9)		
Family Member				111.183	**<0.001***
Yes	52(18.8)	216(78.0)	9(3.2)		
No	106(70.2)	44(29.1)	1(0.7)		
Medical Practitioner				105.306	**<0.001***
Yes	56(19.8)	219(77.4)	8(80.0)		
No	102(70.3)	41(28.3)	2(20.0)		
Experiencing Women				192.578	**<0.001***
Yes	7(3.4)	188(91.7)	10(4.9)		
No	151(67.7)	72(32.3)	0(0.0)		
Social Media				162.584	**<0.001***
Twitter	3(13.0)	18(78.3)	2(8.7)		
Facebook	147(63.9)	78(33.9)	5(2.2)		
Instagram	8(7.6)	164(93.7)	3(1.7)		

* significant at p <0.05

* Significant at p <0.05

4.5.1.5 Association between knowledge and attitude towards practice on the dietary omega 3 and 6 consumption in children aged 1-2 years

Table 21 Association between level of maternal knowledge and attitude with level of maternal practices on dietary omega 3 and 6 consumption in children aged 1-2 years old (n=428)

Variables	Level of Practices			Chi-square	p-value
	Poor n (%)	Fair n (%)	Good n (%)		
Knowledge				216.043	**<0.001***
Poor	132(93.6)	8(5.7)	1(0.7)		
Moderate	5(2.0)	244(95.3)	7(2.7)		
Good	21(67.7)	8(25.8)	2(6.5)		
Attitude				346.544	**<0.001***
Poor	126(82.4)	26(17.0)	1(0.7)		
Fair	4(4.2)	90(93.8)	2(2.1)		
Good	28(15.6)	144(80.9)	7(3.9)		

From Table 21, described knowledge and attitude level towards practices mother in dietary omega 3 and 6 consumption to their children. Knowledge was categorized into three groups- "poor", "moderate knowledge", and "good knowledge" of omega 3 and 6. Attitude level was categorized into three groups-"poor attitude", "fair attitude", and "good attitude".

According to Table 21, there was statistically significant between knowledge (p-value <0.001*) and attitude (p-value <0.001*) to the maternal practice, which means moderate knowledge, 244 (95.3%) was resulted fair practice of dietary omega 3 and 6. The next highest number of good attitudes had led to fair practice as much as 144 (80.9%).

Most poor attitude had led to poorest practice into 82.4 % and poor knowledge led to

highest number of poor practices as much as 132 participants (93.6%).

4.5.2 Multivariate Analysis

4.5.2.1 Factor significantly associated with level of maternal practice

Ordinal regression analyses was used to determine the association between independent and dependent variables in this study. The statistics significant will be determined at p <0.05. Ordinal regression was to analysed predictors for level of practice-classified as "poor, fair practice, and good practice". The reference category for the outcome variables was: good practice", was compared to the reference group. Religion, educational level, occupation, place of resident, ethnicity, family arrangement, sex of subjected children, current breastfeeding, source of information, food taboo, knowledge and attitude were found to be the predictors of maternal practice.

4.5.2.1.1 Factor of General Characteristic associated with level of maternal practice

Table 22 described pentecostal-religion (p-value 0.001*), urban area (p-value 0.040*), and malay-ethnic (p-value 0.024*) were found independently associated to the good level of maternal practice. Pentecostal (OR=10.158, p-value=0.001*, CI=1.361-5.710) were more like 10 times higher than other religion listed in the research who had good practice in dietary omega 3 and 6 to the children. Urban area was 4 times higher more than rural area significant associated to the maternal practice (OR= 4.197 times, CI= 0.048 - 2.165, p-value 0.040*). Malay ethnic was times higher associated to the maternal practice more than batak ethnic (OR= 0.043, p-value=0.836, CI = -15.707-19.417).

Table 22 Association between maternal characteristics and good maternal practice in dietary omega 3 and 6 to the children aged 1-2 years old (n=428)

Variables	Category	Good level of maternal practice			
		AOR (Exp.B)	p-value	95% CI	
				Lower	Upper
General Characteristics of mothers					
1.Religion	Protestant	0.133	0.715	-1.593	2.322
	Advent	2.986	0.084	-0.249	3.958
	Pentecostal	10.158	**0.001***	1.361	5.710
	Moslem	1.534	0.215	-3.307	0.746
2.Education level	Middle and high school	0.559	0.455	-1.577	0.706
3.Occupation	Civil servant	0.178	0.673	-2.379	1.536
	Private company employee	1.635	0.201	-0.715	3.398
	Entrepreneur	0.000	0.986	-1.915	1.880
4. Place of resident	Urban area	4.197	**0.040***	0.048	2.165
4.Ethnicity	Malay	5.130	**0.024***	0.211	2.929
	Batak	0.043	0.836	-15.707	19.417

* Significant at p <0.05

4.5.2.1.2 Factor of household characteristic associated with level of maternal practice

Table 23 describes household characteristic which was family arrangement who had predictor of good level maternal practice. But when it measured by ordinal regression test found it was independently not significant associated to the good level of maternal practice (OR=0.027, p-value = 0.868, CI= -1.272-1.074).

Table 23 Association between household characteristics, children characteristics and good maternal practice in dietary omega 3 and 6 to the children aged 1-2 years old

Variable	Category	Good level of maternal practice			
		AOR	p-value	95% CI	
				Lower	Upper
I.Household Characteristics					
Family arrangement	Nuclear family	0.027	0.868	-1.272	1.074
II. Children Characteristics					
1.Sex of subjected children	Boys	11.997	**0.001***	-3.009	-0.834
2. Body Length	Average	6.250	**0.012***	0.129	1.067
3.Current breastfeeding	Breastmilk by cup with breastfeeding;	10.587	**0.001***	-3.057	-0.759
	Current breastfeeding or breastmilk by cup and with formula milk	13.193	**<0.001***	-3.088	-0.923
	Formula based milk only	0.013	0.909	-1.133	1.009

*Significant at p <0.05

Table 23 describes children characteristic which were sex of subjected children, body length of children, and current breastfeeding as predictors to the good level of maternal practice. Body length of children was categorized as three categories. It was short, average body length, and tall. But, when it analyzed by ordinal regression through SPSS, showed that average body length of children was the factor of body length of children associated with level of maternal practice (p-value = 0.012*). Average body length of 1-2 years old children was likely 6 times higher to had good level of maternal practice than mother who had fair level practice of maternal practice in dietary omega 3 and 6 consumption to their children (OR=6.250;p-value=0.012; CI=0.129-1.067). Current breastfeeding was merged as four group, and two groups were independently significant associated to good level of maternal practice. Those variables were (1) exclusive breastfeeding; and breastmilk by cup with exclusive (p-value 0.001*) breastfeeding; (2) Current breastfeeding or breastmilk by cup with formula milk (p-value < 0.001*). Current breastfeeding or breastmilk by cup with formula milk was likely 13 times higher more than exclusive breastfeeding to had good level of maternal practice than mother who used formula-based milk only (OR=0.013; p-value=0.909; CI = -1.133-1.009).

4.4.2.1.4 Factor of food taboo and source of information associated with level of maternal practice

Table 24 describes source information variables and food taboo as predictors to the good level of maternal practice. Some of source information variables were independently significant associated to the good practice of mother such as information that received from TV Program (p-value 0.056*) and experiencing women (p-value <0.001*). TV program likely 3.6 times higher than social media/twitter (OR =1.173; p-

value 0.279; CI= -2.917-0.841) to made mother had good practice in dietary omega 3 and 6 consumption to their children. Experiencing women was the highest significant associated to the good level of maternal practice 13 times higher more than medical practitioner (OR=0.273; p- value 0.602, CI= -1.750-1.014) and TV program (OR=3.664; p-value 0.056*; CI=-2.612-0.031).

According to table 24, there was no significant association between food taboo to the good maternal of practice (p-value = 0.775) independently.

Table 24 Association of source of information and food taboo with of good maternal practice in

dietary omega 3 and 6

Variable	Category	Good level of maternal practice			
		AOR	p-value	95% CI	
				Lower	Upper
III. Source of Information					
	Tv program	3.664	**0.056***	-2.612	0.031
	Newspaper	0.404	0.525	-1.744	0.890
	Family member	0.070	0.792	-1.353	1.774
	Medical practitioner	0.273	0.602	-1.750	1.014
	Experiencing women	13.707	**<0.001***	1.579	5.132
	Social media (Twitter)	1.173	0.279	-2.917	0.841
	Facebook	0.422	0.516	-1.535	0.771
IV. Food Taboo					
	No taboo of vegetables	0.082	0.775	-14.985	20.112

*Significant at p <0.05

4.4.2.1.5 Level of knowledge with level of maternal practice

Table 25 described knowledge variables as predictor to the good level of maternal practice. Knowledge was divided as poor (p-value 0.252), and moderate (p-value 0.466) which was both of them found there was no any significant associated to the good level of maternal practice.

Table 25 Level of knowledge with good maternal practice in dietary omega 3 and 6 to the children

aged 1-2 years old

Variable		Category	Good level of maternal practice			
			AOR (ExpB)	p-value	95% CI	
					Lower	Upper
V.	**Knowledge**	Poor knowledge	1.311	0.252	-3.259	0.855
		Moderate knowledge	0.530	0.466	-0.800	1.747

* Significant at p <0.05

4.5.2.1.6 Factor of attitude associated with level of maternal practice

Table 26 described variable of attitude as predictor significant to the good level of maternal practice dietary omega 3 and 6 consumption to their children. It was divided by two categories such as poor attitude and fair attitude. According to table 27 found there was no significant association between poor attitude as the independent factor of good practice. However, fair attitude was found significant associated to the good level of maternal

practice (p-value 0.001), and likely 10 times higher effected good level of practice more than groups of mothers who had poor attitude (OR = 1.924, p-value=0.165, CI= -3.750-0.642).

Table 24 Attitude with good maternal practice in dietary omega 3 and 6 to the children aged 1-2 years old

	Variable	Category	Good level of maternal practice			
			AOR (ExpB)	p-value	95% CI	
					Lower	Upper
VI.	**Attitude**	Poor attitude	1.924	0.165	-3.750	0.642
		Fair attitude	10.994	**0.001***	1.328	5.169

* Significant at p <0.05.

Table 27. Summary Of Factors Significant To The Good Practice

Variable	**Category**	**Good level of maternal practice**			
		AOR	p-value	95% CI	
				Lower	Upper
I.General Characteristic of Mother					
1.Religion	Pentacostal	10.158	**0.001***	1.361	5.710
2.Place of resident	Urban area	4.197	**0.040***	0.048	2.165
3.Ethnicity	Malay	5.310	**0.024***	0.211	2.929
II.Children Characteristics					
1.Sex of subjected children	Boys	11.997	**0.001***	-3.009	-0.834
2. Length	Average	6.125	**0.012***	0.129	1.067
3.Current breastfeeding	Breastmilk by cup with breastfeeding;	10.587	**0.001***	-3.057	-0.759
	Current breastfeeding or breastmilk by cup and with formula milk	13.193	**<0.001***	-3.088	-0.923
III.Source of Information					
	Tv program	3.664	**0.056***	-2.612	0.031
	Experiencing women	13.707	**<0.001***	1.579	5.132

| **IV.Attitude** | Fair attitude | 10.994 | **0.001*** | 1.328 | 5.169 |

* significant at p <0.05

CHAPTER V

The objective of this study was to determine the maternal practice on dietary omega 3 and 6 to the children aged 1-2 years old in Labuhanbatu Utara Regency, Indonesia, to assess the general characteristics of mothers and to enhance the association towards practice, to assess the household characteristics and find the association to the practices, to assess children characteristics and its association toward practices, to determine the association between the food taboo and practices, source of information toward practices, to assess level of knowledge and its association towards practice on the dietary omega 3 and 6 consumption, and to assess the level of attitude and its association towards practices on the dietary omega 3 and 6 consumption in children aged 1-2 years in Labuhanbatu Utara, Indonesia.

The study population was mothers who has children 1-2 years old stayed with them in their house at Labuhanbatu Batu Utara Regency, Indonesia.

5.1 Discussion on general characteristic of the study participants

Out of 428 participants, majority group age of mother was less than 25 years old,145 participants. Moslem was 223 participant which presented Indonesia as a country with huge moslem population among other religion in Indonesia (Anwar,Dewi; 2011). Similar findings was found in other study conducted in Jakarta, Indonesia that being Indonesian Moslem family is a privilege due to Indonesia was a largest moslem country in the world. (JM Muslimin, 2011).

Participants had been married when researched conducted in Labuhanbatu Utara, Indonesia as much as 351 participants. This result findings supported statement that Indonesia as general quite strict in socio-culture norm which was

adult woman should be engage in marriage status better than a single or widow (Utomo,A.2016). However, based on previous study in comparation North Sumatera province and Jakarta, Indonesia by Utomo Aria, found the tendencious of endogamy which was married with same ethnic quite strongly found in both provinces. Labuhanbatu Utara was the regency in North Sumatera province, ethnicity could be the reason of marriage status of adult woman.

Out of 428 participants, there was 233 participants were graduated from higher education. Growth development in education and economic at Labuhanbatu Utara regency was rapidly increased observed since many years ago (Fahmi Mohammad, 2017). Private company employee was the most highest participant group which was 165 participants. Mother who stayed in urban area was 268 mothers. Batak was the most participant with 195 mother. North Sumatera was a province with originally Batak was came from. Labuhanbatu Utara regency was the urban regency that has pluralism on ethnicity include Malay and Java, the ethnic who transmigrated from Java Island.

5.2 Discussion on general characteristic towards practice of mother

5.2.1 Religion as the predicting factor towards practice dietary omega 3 and 6 to the children 1-2 years old

Pentecostal is significant related to how mother could practice dietary omega 3 and 6 to their children's meal in daily basis. This is because of some prohibited food due to belief requirement to God, if Pentecostal insisted to take those prohibited food, they believe that they will fall to the sin. Prohibited food will takes more chance to did not get any omega 3 and 6, also other nutrition. As the substitute, other food resources will be taken

with the contain a bit difference than usual. In India, infant mortality is lowest in the prov-inces with the highest percent Christian. In addition, conversion to Pentecostalism is generally associated with increased religiosity—which, as mentioned above, is associated with health (Woodberry, R., 2006).

5.2.2 Place of resident as the predicting factor towards practice dietary omega 3 and 6 to the children 1-2 years old

Urban area is 0.040 times more likely higher to contribute the chance doing practice dietary omega 3 and 6 to the children 1-2 years old but it was not significant related to the maternal practice dietary omega 3 and 6 consumption to the children 1-2 years old. The findings of the study were consistent with findings of study conducted in Jakarta, Indonesia when the traditional diets high in cereal and plant products, as well as traditional food practices continue to be dominant in both rural and urban areas, despite the context of rapid socio-economic change and urbanisation. (Coloza D.2019). Similar findiings was also reported from study conducted in West Africa which was researched food consumption in urban area was not significant to the dietary consumption, but food consumption by people maintaining their in-home food habits shows the pertinence of studies focusing on individuals (Ag.Bendech,1996). Previous study mentioned urban and rural area may strongly influence food intake, as indicated by the remarkable gaps observed between urban and rural areas. This is likely due to many grocery store, convenience store, and food outlets found more in urban areas, but

similar result mention differ dietary intake not only because of urban or rural area as resident place independently (Kosaka, Satoko.2018) (N. Sudharsanan and J. Y. Ho, 2020)

5.2.3 Ethnicity as the predicting factor towards practice dietary omega 3 and 6 to the children 1-2 years old

Malay is 5.130 times more likely higher effecting practice dietary omega 3 and 6 to the children than other ethnic such as Batak (0.043) and Javanese (0.027). As we know, malay has many requirement in their culture/beliefs, and it was effected to the practice dietary omega 3 and 6 to the children. Most of them still believe that some prohibited food such as shrimps and jackfruit, if it is consume by children, children will get worm and urine will smell fishy (Ali, Husin, 1975).

5.3 Discussion on househould characteristic towards practice dietary omega 3 and 6 to the children 1-2 years old

Family arrangement had the association significantly to the maternal practice dietary omega 3 and 6 to the children. Half of participant, 279 stayed in nuclear family which was consist of mother's spouse and children only. The findings of the study was found the reason of nuclear family become significant to the practice of mother, because mother would concern more to fed their children and family member in the house more better than stayed in house with extended family. Timely management occurred effectively used to take care the family member along with smaller daily food expenditure. The findings of the study was consistent to other study in Pakistan stated nuclear family system showed

that people having higher education level and higher socioeconomic status were more satisfied as compared to no education & low SES respectively (F. Saqib Lodhi, A. Ahmed Khan, O. Raza, T. Uz Zaman, U. Farooq and K. Holakouie-Naieni, 2019). In reverse of this study, the overall health status of members of nuclear families was poor as compared to members of joint families (B.Sb, S.Dixit, 2014). Another study whose concern for well-being health outcome, suggested besides of nuclear or extended family, the companionship and the presence of family or other people concerned for one's well being acts as a buffer against deleterious influence of living in small family that will lead to improved quality of health outcome (A. R. Turagabeci, K. Nakamura, M. Kizuki and T. Takano, 2007).

5.4 Discussion on children characteristic towards practice dietary omega 3 and 6 to the children 1-2 years old

5.4.1 Sex of children that subjected to the study towards practice dietary omega 3 and 6

Boys were 11.996 times more likely higher in effecting maternal practice dietary omega 3 and 6 than having girls as children at home. This was caused of their growth and development more rapidly looked by appearance, and so they need a lot more nutrition for their body structure. Boys also often spend time to waste their energy after meals, they use their body nutrition more often than girls do.

5.4.2 Length of children towards practice dietary omega 3 and 6

Average length of children were 6 times more likely higher found in mother that had a good practice in dietary omega 3 and 6 consumption to their 1-2 years old

children. The limited researches had been found to support part of this findings. But, there were many literatures mentioned the effect of omega 3 and 6 in pregnancy period. One of the studies, with title "A balance of omega-3 and omega-6 polyunsaturated fatty acids is important in pregnancy", studies have suggested that the intake of longer chain n-3 PUFA can improve pregnancy outcomes, especially in birth weight and gestational length, but not specifically body length of newborn till they infant. (Akerele and Cheema 2016)

In other research on children and adolscents categories, "Effect of omega-3 fatty acids supplementation on anthropometric indices in children and adolescents: A systematic review and meta-analysis of randomized controlled trials", found Omega-3 FAs supplementation did not change anthropometric indices in children and adolescents ((Jazayeri, Heshmati et al. 2020).

It may not significant related to the body length or body weight because omega 3 and 6 was one of the micronutrients that related to other nutrient to contribute effects in anthropometries measurement during 1-2 years old children period. Mothers who had good practice on dietary omega 3 and 6 consumption to their 1-2 years old children may have practice the balance of other macronutrient such as vitamin D and A, calcium, that needs to be found furthermore in detail. Then, when the research of practice dietary omega 3 and 6 consumption was done to the 1-2 years old children, the good practice significantly found in categories of average body length children.

5.4.3 Current breastfeeding as the predicting factor towards practice dietary omega 3 and 6 to the children 1-2 years old

Current breastfeeding with formula milk or Breastmilk by cup with formula milk 13.193 times more likely higher effecting practice in dietary omega 3 and 6 than breastfeeding only or Breastmilk by cup along with breastfeeding (10.587 times). Current breastfeeding with formula milk become more important in its contribution to dietary omega 3 and 6 to the children 1-2 years old, since formula milk have nutritious composition to support development of golden age. But it is not the one that WHO recommend for mother to fed their children. WHO recommend exclusive breastfeeding for the first 6 months of life and introduction of nutritionally-adequate and safe complementary (solid) foods at 6 months together with continued breastfeeding up to 2 years of age or beyond. (Victora, Bahl et al. 2016) (Rollins, Bhandari et al. 2016)It is reasonable since the breastmilk has natural nutritious, especially omega 3 and 6. In the result of chapter 4, current breastfeeding status significantly related to the practice dietary omega 3 and 6 for children 1-2 years old which means if the mother could not fed the children with breastmilk or and along with formula milk, will give more source omega 3 and 6 to their growth and development milestone.

5.5 Discussion on source of information towards practice dietary omega 3 and 6

Experiencing women as the predicting factor 13.707 times more likely higher to the practice of dietary omega 3 and 6 than other source of information. It was caused by the longer women living life, the deeper they get the experience. The second factor is TV Program that 3.456 times more likely

second higher often give more information about Omega 3 and 6 to the practice of dietary omega 3 and 6. Since we know is TV Program has many informative channel that contain information about health promotion, medicines or multivitamin from pharmacies product, also often has many TV talk show that invited great resources from health practitioner related how nutritious omega 3 and 6, the importance of omega 3 and 6 for human body, etc. This result in chapter IV means that more often we see TV program and watch even some advertisement about omega 3 and 6, we reached more possibilities to gain information about omega 3 and 6.

5.6 Discussion on food taboo towards practice dietary omega 3 and 6

Different social environments can also result in different cultural values regarding food and nutrition, such as food taboos and ideal body shape, which affect individuals' food-related behaviors. Considering these social and food environments, it seems likely that the relationships between individual characteristics and food intake patterns differ according to the level of urbanization (Kosaka, Satoko.2018). Ethnographic research from poor communities in Latin America also stated that Pentecostals have better hygiene (Woodberry, 2006).

5.7 Discussion on knowledge towards practice dietary omega 3 and 6

Many of participants had poor knowledge and fair knowledge. Poor knowledge led to poor practice dietary omega 3 and 6 because human being could not practice the things if they did not have any knowledge behind as the

reason why human practice the things. This findings study was consistent to other study that stated Nutrition knowledge is a fundamental factor for obtaining a healthy diet. Studies have shown that attitudes on diet, food choices, and dietary quality can be influenced by

good nutrition knowledge and can later provide a beneficial effect against obesity among children and young adolescents (Guntari Prasetya1*, Ali Khomsan; 2021). Similarly result found in other research at Parental nutrition knowledge and attitudes play a fundamental role in their children's food knowledge. However, little is known about their influence on their children's diet quality and micronutrient intake (A. Romanos-Nanclares, I. Zazpe, S. Santiago, L. Marín, A. Rico-Campà and N. Martín-Calvo, 2018)

5.8 Discussion on attitude towards practice dietary omega 3 and 6

Fair attitude was become the factor if mother want to have good practice dietary omega 3 and 6 to children aged 1-2 years old. It is 10.994 times more likely higher to support the reason behind practice dietary omega 3 and 6 of mother to their children.

5.9 Limitation of the Study

Because ot study in time limited, practically research on the field was not properly openness , as the pandemic COVID-19 reason behind. Most of participants a bit uncomfortable with the interview face-to face during data collection due to limitation time and talks with mask used. It was more possible validity in result when study sample could be larger than the sample used in this research. The use of multi-stage sampling technique can lead to large errors due to involvement of division and sub-divisions of various strata

in each stage. A study using non-probability, so that the results can not be generalized to the entire population.

5.10 Conclusion

The cross-sectional study conducted among 428 participants in Labuhanbatu Utara regency provides a baseline data regarding the knowledge, attitude and practice of dietary omega 3 and 6 consumption to the children 1-2 years old. The study found the prevalence of good level maternal practice was low (10 participants only). The analysis of the level of knowledge, attitude and practice showed that 35.7% of the respondents had poor knowledge of omega 3 and 6, more than half participants had fair attitude (59.8%) and 60.7% had fair practice. The study highlighted that religion, educational level of mother, occupation of mother, place of resident mother, and ethnicity were general characteristics factors significantly associated to the practice of mother in dietary opmega 3 and 6 consumption to their children 1-2 years old. The study highlighted that nuclear family as family arrangement was the one household characteristics factor associated significant to the maternal practice. Children characteristics resulted some variables significant associated to the maternal practice such as body height of children, sex of subjected children to the study, and current breastfeeding status. Surprisingly, independent variables on food allergy was not significant associated to the maternal practice. Food taboos did not have any significant relationship to the good level of maternal practice. It was because mother could look the other alternative food items that can substituted the micronutrient that children needs, instead of take food which was prohibited by culture, norms, and habit. Reason for food taboo more likely higher in belief in hygiene reason, followed by belief in health reason The finding was quite similar to other studies as well where Palu, eastern part of Indonesia's one of

tribune had culture that support to do food taboo in term of belief smell fishy if the children eats the fish . Further, very limited number of participants were able to received information about omega 3 and 6 from medical practitioner.. This indicates a need of health promotion in primary care center with topic "Food source and Benefit of Omega 3 and 6 to the 1-2 years old children". Most of participants stayed in urban area instead of rural area, which supported health practitioner do mapping health promotion to rural area more regularly in order to balance the information received on Omega 3 and 6.

5.11 Recommendation

5.11.1 Recommendation for future research

1. This study was carried out in only three districts of Labuhanbatu Utara regency, Indonesia ; hence, future research can involve the general public of all the three districts to give a better picture of the prevalence insufficient omega 3 and 6 data in children 1-2 years old.

2. Because of resource constraints, multi stage sampling and random sampling was used in the study. A study using probability sampling could be done in future so that the results can be generalized to the entire population.

3. A comparative study could be done comparing rural and urban locations in the village to understand how the factors associated with maternal practice were vary in the two locations.

4. Several other factors like food allergy and food taboo in different setting which could be associated with knowledge, attitude and practice can also be studied in future research.

5. Effectiveness of educational interventions programs on intake omega 3 and 6 in children 1-2 years old can be conducted which would be helpful in providing information on its impact on knowledge, attitude and practice of dietary omega 3 and 6 consumption to the children 1-02 years old.

6. Qualitative studies such as in-depth interviews and focused group interviews could be conducted to provide further information on the omega 3 and 6.

5.11.2 Recommendation for policy maker

1. The key findings of this study will help policy makers in designing appropriate intervention programs targeting key population (those with low level of education, negative attitude and inappropriate practices) to promote omega 3 and 6. All possible media such as television, newspaper and the internet should be utilized for effective public educational programs.

2. There should be stringent monitoring and regulation of health promotion omega 3 and 6 in children aged 1-2 years old in health care facilities to update maternal knowledge about omega 3 and 6

3. Communication should also be improved between personnel involved in health care and the mothers regarding benefit omega 3 and 6 to the children 1-2 years old.

4. The government should also highlight the role of health promoter in health education and promotion and in information delivery with training skilled.

5. Policy makers should also make strict regulations regarding involvement of only those who have correct qualification and knowledge to deliver the information about omega 3 and 6.

5.11.3 Recommendation for health practitioner

1. Provide information regarding prevalence maternal knowledge, attitude, and practice dietary of Omega 3 and 6 to the 1-2 years old children based on the research as reference.

2. Developing and initiating effective interventions to increase the administration of food related to omega 3 and 6 such as provide regularity distribution of food source package omega 3 and 6 (tempeh and tofu and formula milk to the community.

3. Distribution of leaflet and booklet regulary once a week for mothers in "administration Omega 3 and 6 also with health promotion title omega 3 and 6 for children 1-2 years old", through coordinated efforts from the government, private and the public side. This will help in increasing human development index in the future of Indonesia, especially will have brighter future of children in the long run.

5.12 Expected benefits

The study was expected to provide information regarding maternal knowledge, attitude, and practice dietary of Omega 3 and 6 to the 1-2 years old children. The findings were expected to be particularly useful in developing and initiating effective interventions to increase the administration of food related to omega 3 and 6. Also, the information from the study could be used in developing a program to increase health promotion for mothers in administration Omega 3 and 6, through coordinated efforts from the government, private and the public side. This helped in increasing human development index in the future of Indonesia,

especially to had brighter future of children in the long run. Lastly, although the study was not intended to measure the prevalence of mothers who did administration Omega 3 and 6 for their 1-2 years old children in Labuhanbatu Utara, it could provide a rough estimate of the prevalence.

5.13 Possible obstacles and strategies to overcome

The possible difficulties for this study are (1) asked and approached the primary healthcare centre for their assistance and cooperation; (2) COVID-19 situation in Indonesia may lead to difficulty to travel and perform interview, along with the fear of participants on COVID-19 infection. Additionally, time was limited during the data collection phase of the study which was another obstacle. To overcome the mentioned obstacles, the researcher tried to convince and reach out to the primary healthcare officers to explain the objectives and benefits of the study. Ensured the safety of participants during the data collection by measured their temperature, and provided mask and alcohol spray or hand sanitizer. Everyone wore mask at all time.

5.14 Budget

The budget required for the research is estimated below:

	Description	Cost
1	Research assistance allowance (10 persons x 1000 BHT)	10,000 BHT
2	Training and Orientation	8,000 BHT
3	Ethical Approval process	3,000 BHT
4	Participant's compensation (440 persons x 50 BHT for fabric mask)	22,000 BHT
5	Printing and photocopy cost	2,000 BHT
6	Pre-testing of questionnaires	5,000 BHT
	TOTAL	**50,000 BHT**

147

Study Schedule (Research Activities) — Time Frame (month)

Research Activities	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	June 2021	July 2021
Literature review	■									
Proposal Writing	■	■								
Proposal Exam		■								
Ethical approval			■	■						
Respond to the comments from research ethic review				■	■					
Pre-test questionnaire					■					
Contact and train the research assistants for data collection					■					
Data collection						■	■			
Data entry							■			
Data analysis								■		
Thesis writing and thesis defense								■	■	■
Total										10 months

APPENDIX I
QUESTIONNAIRE OF MATERNAL KNOWLEDGE, ATTITUDE AND PRACTICE ON OMEGA 3 AND 6 CONSUMPTION TO THE 1-2 YEARS AGED CHILDREN

SECTION 1 - GENERAL CHARACTERISTICS				
1	Age	…………….. years old		
2	Religion	☐ 1. Protestant	☐2. Advent	☐ 3. Pentecostal
		☐ 4. Catholic	☐ 5.Moslem	☐ 6. Buddhist
		☐ 7. Hinduism	☐ 8.Orthodox	☐ 9. Other, please specify……..
3	Marital Status ¨ ☐ 1. Married ☐ 2. Divorced/Separated ☐ 3. Widowed			
4	Educational level ☐ 1. Illiterate ☐ 2. Elementary ☐ 3. Intermediate ☐ 4. High school ☐ 5. Undergraduate or higher			
5	Occupation ☐ 1. Government Officer ☐ 2. Private Officer ☐ 3. Self-Employed ☐ 4. Housewife			
6	Place of Resident ☐ 1. Urban Area ☐ 2. Rural Area			
7	Ethnicity ☐ 1. Malay ☐ 2. Batak ☐ 3. Javanese ☐ 4. Others, please specify……………....			
SECTION II - HOUSEHOLD CHARACTERISTIC				
8	Family arrangement ☐ 1. Nuclear family			

	☐ 2. Extended family
9	Gender of 1-2 years old children in the household (Tick all applicable) ☐ 1. Boy, ……….person ☐ 2. Girl, ……….person
10	Monthly household income ……………………….. (per month)
SECTION III: CHILDREN CHARACTERISTICS	
11	Weight……………..kilogram
12	Height……………..centimetre
13	Gender (for the target subject in this questionnaire) ☐ 1. Boy ☐ 2. Girl
14	Breast milk 1. Currently breastfed 1.1 Exclusive breastfed 1.2 Breastfed + Formula milk 1.3 Breastfed + pasteurized, sterilized or UHT 2. Breast milk by cup or bottle 2.1 Only having breast milk by cup or bottle 2.2 Breast milk + breastfed 2.3 Breast milk + Formula milk 2.4 Breast milk + pasteurized, sterilized or UHT 3. Only formula milk 4. Only pasteurized, sterilized or UHT
15	Food allergy (of your child) ☐ 1. Yes, please specify………………………… ☐ 2. No
SECTION IV – Food Taboo	
18A: ☑ Check all that apply. What food items on this list do you consider to <u>be taboo or forbidden for your children?</u>	

18A.1	1.1 Meat →
	      ☐ 1. Chicken ☐ 2. Beef ☐ 3. Duck
	      ☐ 4. Other, please specify…………………….
	
	 1.2 Staple Food →
	      ☐ 1. Rice ☐ 2. Cassava ☐ 3. Purple sweet potatoes
	      ☐ 4. Other, please specify………………………….

	1.3 Fruit →
	    ☐ 1. Jackfruit ☐ 2. Corn ☐ 3. Pineapple
	    ☐ 4. Orange ☐ 5. Banana
	    ☐ 6. Other, please specify…………………………..
	
	 1.4 Egg and Fish -→
	    ☐ 1. Egg ☐ 2. Catfish ☐ 3. bale-bale fish
	    ☐ 4. balana fish ☐ 5. Shark fish ☐ 6. Ciko fish
	    ☐ 7. Other, please specify……………………………….
	
	 1.5 Seafood →
	    ☐ 1. Shrimp ☐ 2. Crab ☐ 3. Octopus
	    ☐ 4. Other, please specify…………………………….
	
	 1.6 Vegetables →
	    ☐ 1. Cassava Leaves ☐ 2. Moringa Leaves ☐ 3. Kale
	    ☐ 4. Eggplant
	    ☐ 5. Other, please specify…………………

18A.2	2. If you checked any of the above, what reason do you consider the food to be taboo? Check all that apply ☐ 1. Religion ☐ 2. Culture/Social Norms/ Beliefs ☐ 3. Hygiene (children will get worm, urine smell fishy, etc) ☐ 4. Health (cause diseases, allergies, veganism, vegetarianism, etc) ☐ 5. Ethics ☐ 6. Other (please specify……………………………………………..)

SECTION V: SOURCE OF INFORMATION ON DIETARY OMEGA 3 AND 6

19A Did you receive information on dietary omega 3 and 6 from?	
19A.1	TV Programs ☐ 1. Yes ☐ 2. No
19A.2	Newspaper and Magazines ☐ 1. Yes ☐ 2. No
19A.3	Friends/Neighbour ☐ 1. Yes ☐ 2. No
19A.4	Family Member ☐ 1.Yes ☐2.No
19A.5	Medical Practitioner ☐ 1.Yes ☐2.No
19A.6	Experiencing women in the families ☐ 1.Yes ☐2.No
19A.7	Did you receive information on dietary omega 3 and 6 from other sources (Check all that apply)? 1.Twitter 2.Facebook 3.IG ☐ 4. Other, please specify……

	Question	Yes	No	Do not know
SECTION VI-Maternal knowledge on dietary omega 3 and 6 consumption in children aged 1-2 years old				
20A: Omega 3				
20A.1	Omega 3 is a component of fatty acid			
20A.2	Human body cannot produce omega 3			
20A.3	DHA (Docosahexaenoic acid) is a major fatty acid in brain and the retina			
20A.4	Freshwater fish is an important source of omega 3			
20A.5	Seawater fish is an important source of omega 3			
20A.6	Algae oil is an important source of omega 3			
20A.7	Meats are an important source of omega 3			
20A.8	Shrimps are an important source of omega 3			
20A.9	Omega 3 helps in the retina development during an early age of children			
20B: Omega 6				
20B.1	Omega 6 is a part of fatty acid and cannot be produced by human body			
20B.2	Nuts are an important source of omega 6			
20B.3	Coconut is rich in omega 6			
20B.4	Spinach are an important source of omega 6			
20B.5	Pumpkin are an important source of omega 6			
20B.6	Corn oil are an important source of omega 6			
20B.7	Tofu are an important source of omega 6			
20B.8	Eggs are an important source of omega 6			
20B.9	Omega 6 can help reduce high blood pressure			

20C: Omega 3 and 6			
	Question	**Yes**	**No**	**Do not know**
20C.1	Omega 3 and 6 can help in prevention of anxiety and depressive disorder			
20C.2	Omega 3 and 6 can help prevent skin rash			
20C.3	Omega 3 and 6 help supporting the development of learning and memory abilities			
20C.4	Consumption of Omega 3 and 6 is better to start at an early age.			
20C.5	Omega-3s help improve inattention and task completion on hyperactivity behaviour in children			
20C.6	Omega 3 and 6 can help in decreasing cholesterol			
20C.7	Omega 3 and 6 help keeping the heart healthy			
20C.8	Omega 3 and 6 can help increasing the ability to focus on reading			
20C.9	Omega 3 and 6 help in strengthening hair and hair growth			

No	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
SECTION VII - Maternal attitude on dietary omega 3 and 6 consumption in children aged 1-2 years old						
21A	**Omega 3**					
21A.1	I think it is important to pay attention on the meal composition with omega 3 for my children					
21A.2	Variation of omega 3 in children's meal is important for their growth					
21A.3	I consider the food source of omega 3 for the children based on the food she likes					
21A.4	I pay attention to food taboo in determining the food source of omega 3 for my children					
21A.5	I agree to provide meat which rich in omega 3 (such as fish and beef) to my children anytime whenever one of those sources are available					
21A.6	I prefer the formula milk based as daily source of omega 3 to my children					
21A.7	The provision of omega 3 food sources for children is carried out regularly according to the meal schedule					
21A.8	Not just on prepare the menu, but the processing method that I do in processing omega 3 food for children must vary (for example: boiled, baked, blended or steamed)					
21A.9	When making meals for children, I will add omega 3 source to the porridge					

21B	Omega 6					
No	**Statement**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
21B.1	I think the appearance and interesting decoration of plant-based diet will help my children to eat better					
21B.2	I agree to use plant source based that rich in omega 6 (such as walnut, soybean, flexseed, almond or leaf lettuce) to my children anytime when one of those sources is available.					
21B.3	I am concern with the amount of omega 6 that I give to my children					
21B.4	I think making various menu from food rich in omega 6 for children is important, even they are from the same ingredients					
21B.5	I pay attention to the menu composition of omega 6 for my children					
21B.6	It is important to provide omega 6 food sources for children regularly					
21B.7	I agree that balancing food that rich in omega 6 to my children is important for their health					
21B.8	I think I am the only person who responsible to fulfil the needs of Omega 6 my children in my house.					

SECTION VIII - Maternal practices on dietary omega 3 and 6 consumption in children aged 1-2 years

22	**Omega 3 and Omega 6 Food group I: Milk, yogurt, and cheese**

Note: How frequently your child consumes **at least 200 ml of the milk** (e.g. a cup of milk at the picture)?

How frequently your child consumes **at least 250 ml of the babyfood cereal** (e.g. 3/4 bowl of food at the picture)?

Please response with the match choice of your practice.

Never = Never or less than once a month. Rarely = 1-3 days a month;

Sometimes = 1 day a week; Often = 2-4 days a week;

Always = 5-6 days a week; Everyday
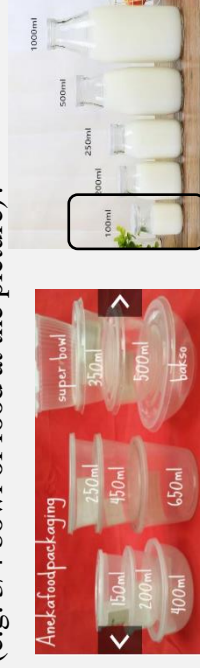
Question		Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
22.1 (3&6)	Soymilk (e.g. Vanilla, or fortified chocolate soymilk)						
22. 2 (3&6)	babyfood cereal brown rice dry instant						
22. 3 (6)	babyfood cereal oatmeal dry fortified						
22.4 (3,6)	babyfood cereal oatmel banana prepared with whole milk						
22.5 (6)	babyfood cereal green bean dices toddler						
22.6 (6)	babyfood cereal mix prepared with whole milk						
22.7 (6)	babyfood vegetable spinach cream strained						
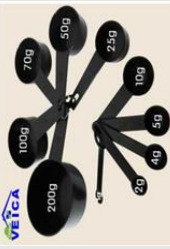
Food group II: Fruit

Note: How frequently your child consumes **at least 90 gram** (e.g. three small slices of fruits at the picture)

Please response with the match choice of your practice.

Never = Never or less than once a month; Rarely = 1-3 days a month;

Sometimes = 1 day a week. Often = 2-4 days a week; Always = 5-6 days a week; Everyday

	Question	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
23.1 (3,6)	Mango						
23.2 (3,6)	Guava						
23.3 (3,6)	Avocado						
23.4 (3)	Jackfruit						
23.5 (3,6)	Strawberries						
23.6 (3,6)	Mango (raw)						
23.7 (3)	Papaya						
23.8 (3)	Honeydew Melon						
23.9 (3,6)	Banana						
23.10 (3,6)	Starfruit						
23.11 (3,6)	Grape						
23.12 (6)	Pear						
23.13 (6)	Apple						

24	**Omega 3 and 6 Food group III: Vegetable**

Note: How frequently your child consumes **at least 30 gram** of the food (e.g. two tablespoons per serving of vegetable at the picture). Please response with the match choice of your practice.

Never = Never or less than once a month; Rarely = 1-3 days a month; Sometimes = 1 day a week; Often = 2-4 days a week; Always = 5-6 days a week; Everyday

	Question	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
24.1 (3,6)	Kale						
24.2 (3,6)	Cauliflower						
24.3 (3)	Spinach						
24.4 (6)	Broccoli						
24.5 (6)	Enoki Mushroom						
24.6 (6)	Tomato						
24.7 (6)	Eggplant						
24.8 (6)	Yellow sweet corn						

25 | Omega 3 and 6 Food group IV: Chocolate

Note: How frequently your child consumes **at least 25 gram** of the chocolate
(e.g. a quarter bar of chocolate at the picture)
Please response with the match choice of your practice.
Never = Never or less than once a month; Rarely = 1-3 days a month;
Sometimes = 1 day a week; Often = 2-4 days a week; Always = 5-6 days a week; Everyday

Question	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
25.1 (6) Fudge Chocolate with Nuts prepared from recipes						
25.2 (6) Soft fruit and Nut squares						
25.3 (6) Fudge vanilla with nuts						
25.4 (3,6) Toblerone Chocolate with honey and Almond Nouget						
25.5 (6) Nestle 100 grand bar						
25.6 (6) White Chocolate						
25.7 (6) Milk Chocolate with Almond						
25.8 (6) Milk Chocolate with rice cereal						
25.9 (6) Sweet Chocolate						

26	Omega 3 and 6 Food group V: Dessert

Note: How frequently your child consumes **at least 25 gram** of the food (e.g. a spoon scope of dessert at the picture) Please response with the match choice of your practice.

Never = Never or less than once a month; Rarely = 1-3 days a month; Sometimes = 1 day a week; Often = 2-4 days a week; Always = 5-6 days a week; Everyday

Questions	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
26.1 (3,6)	Soft Chocolate Ice cream					
26.2 (3,6)	Extruded corn chips					
26.3 (3,6)	Snack Potato Chips Lightly Salted					

Food group VI: Rice/biscuits (carbohydrates)

Note: How frequently your child consumes **at least 40 gram** of the food (e.g. two plates per serving or 3-4 tablespoon rice at the picture).

Please response with the match choice of your practice.

Never = Never or less than once a month; Rarely = 1-3 days a month; Sometimes = 1 day a week; Often = 2-4 days a week; Always = 5-6 days a week; Everyday

Questions	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
27.1 (6)	brown rice					
27.2 (6)	spinach egg noodles					
27.3 (3,6)	milk biscuit					
27.4 (3,6)	White bread					

28	**Food group VII = Meat**

Note: How frequently your child consumes **at least 30 gram** per serving of the meat (e.g. two tablespoon per serving at the picture)? Please response with the match choice of your practice.

Never = Never or less than once a month; Rarely = 1-3 days a month; Sometimes = 1 day a week;

Often = 2-4 days a week; Always = 5-6 days a week; Everyday

Questions	**Never** (Never or less than once a month)	**Rarely** (1-3 days a month)	**Sometimes** (1 day a week)	**Often** (2-4 days a week)	**Always** (5 – 6 days a week)	**Everyday**
28.1 (3,6) Chicken liver, cooked						
28.2 (3,6) Chicken soup, cream						
28.3 (3,6) Chicken, boiled, light meat						
28.4 (3,6) Chicken, roasted, breast						
28.5 (3,6) Chicken, meat, fried, breast						
28.6 (3,6) Chicken, intestine, cooked						
28.7 (3,6) Chicken, meat, leg						
28.8 (3,6) duck, meat, roasted						
28.9 (6) beef, braised meat, short-ribs chuck stew						
28.10 (3,6) buffalo, meat, roasted						
28.11 (3,6) buffalo, meat, cooked						
28.12 (6) buffalo, meat, broiled						
28.13(3,6) lamb, liver, cooked						
28.14 (3,6) lamb, meat						
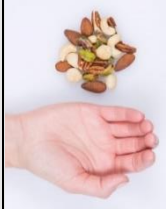
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CHULALONGKORN UNIVERSITY

29	**Omega 3 and 6 Food group VIII: Fish and seafood**

Note: How frequently your child consumes **at least 40 gram** of the fish (e.g. two tablespoon per serving) and at **least 30 gram boiled egg** (e.g a half of egg per serving at the picture)?

Please response with the match choice of your practice.

Never = Never or less than once a month; Rarely = 1-3 days a month;

Sometimes = 1 day a week; Often = 2-4 days a week; Always = 5-6 days a week; Everyday

Questions	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
29.1 (3,6) egg, chicken, raw						
29.2 (3,6) egg, chicken, omelette						
29.3 (3,6) egg, fried						
29.4 (3,6) egg, scrambled						
29.5 (3) Eel, boiled						
29.6 (3,6) fish gabus, fried						
29.7 (3,6) fish, freshwater, fried gurami						
29.8 (3,6) fish, freshwater, cooked in turmeric spice						
29.9 (3,6) fish, freashwater, steamed in banana leaf						
29.10 (3,6) egg, chicken, half boiled						
29.11 (3,6) fish, milk fish (gurami, nila)						
29.12 (3,6) fish, sea (mujaer)						

Note: How frequently your child consumes **at least 40 gram** of the fish (e.g. two tablespoon per serving) and at **least 30 gram boiled egg** (e.g a half of egg per serving at the picture)?

Please response with the match choice of your practice.

Never = Never or less than once a month; Rarely = 1-3 days a month;

Sometimes = 1 day a week; Often = 2-4 days a week; Always = 5-6 days a week; Everyday

	Question	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
29.13 (3,6)	fish, sea, dried, salted (kembung)						
29.14 (3,6)	fish, sea, fried						
29.15 (3,6)	fish, tongkol, fried						
29.16 (3,6)	Lobster, cooked						
29.17 (3,6)	Shrimp, fried						
29.18 (3,6)	Scallop, cooked						
29.19 (3,6)	Crab, boiled						
29.20 (3,6)	Cod, cooked						
29.21 (3,6)	anchovy, fried						
29.22 (3,6)	anchovy dried						
29.23 (3)	sardine, canned, in tomato sauce						

30	Omega 3 and 6 Food group IX: Nuts and Legumes

Note: How frequently your child consumes **at least 50 gram** of the nuts and legumes (e.g. a half of cupped palm at that picture)?

Please response with the match choice of your practice.

Never = Never or less than once a month; Rarely = 1-3 days a month; Sometimes = 1 day a week; Often = 2-4 days a week; Always = 5-6 days a week; Everyday

	Questions	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
30.1 (3,6)	Edamame						
30.2 (3,6)	Kidney beans						
30.3 (3,6)	Red Kidney beans, cooked						
30.4 (3,6)	Red Kidney beans, boiled						
30.5 (3,6)	Lentils, cooked						
30.6 (3,6)	Soybean Flour, powder						
30.7 (3,6)	Oncom/Fermented Tofu						
30.8 (6)	Mung beans, cooked						
30.9 (6)	Peanut, butter						
30.10 (6)	Peanut, raw						
30.11 (3)	Black eyed peas, cooked						
30.12 (3,6)	Cowpeas, cooked						
30.13 (3,6)	Firm Tofu, cooked						
30.14 (3,6)	Soft Tofu, cooked						
30.15 (3,6)	Tofu prepared with Calcium						

31	**Omega 3 and 6 Food group X: Supplement**					

Note: How frequently your child consumes **at least 0.7 gram** of the fish oil (e.g. 1/8 teaspoon fish oil at that picture)?

Please response with the match choice of your practice.

Never = Never or less than once a month; Rarely = 1-3 days a month; Sometimes = 1 day a week; Often = 2-4 days a week; Always = 5-6 days a week; Everyday

Questions	Never (Never or less than once a month)	Rarely (1-3 days a month)	Sometimes (1 day a week)	Often (2-4 days a week)	Always (5 – 6 days a week)	Everyday
31.1 (3,6) Cod liver oil						
31.2 (3,6) Coconut oil						
31.3 (6) Corn oil						
31.4 (3) Olive oil						

APPENDIX II
LIST OF FOOD WHICH CONTAINS OF OMEGA 3 AND 6 COMMONLY CONSUMED IN INDONESIA

List of Food which contains of Omega 3 and 6 in Indonesia.

Rank order	Food	Omega-3 fatty acid intake		omega-3 content/ medium serving[b]
		% of total	Cumulative %	
1	English walnuts	30.00	30.00	2.57 g/1 oz
2	Ground flaxseeds	27.81	57.81	2.00 g/1 TB
3	Salmon, cooked	4.92	62.73	1.27 g/3 oz
4	Canola oil	4.73	67.46	0.42 g/1 tsp
5	Uncle Sam cereal	2.98	70.44	1.20 g/1/2c
6	Miracle whip	2.14	72.58	0.29 g/1 tsp
7	Soybeans, cooked	1.84	74.42	1.45 g/1/2 c
8	Soy beverage	1.51	75.93	0.24 g/1c
9	White bread	1.46	77.39	0.13 g/1 sl
10	Beef, cooked	1.32	78.71	0.17 g/3 oz
11	Omega-3 egg	1.16	79.87	0.35 g/1 egg
12	Loose-leaf Lettuce	0.98	80.85	0.13 g/1/2c
13	Chicken, cooked	0.94	81.79	0.09 g/3 oz
14	Almonds	0.88	82.67	0.11 g/1 oz
15	Banana	0.75	83.42	0.04 g/1 med
16	Baked beans	0.75	84.17	0.16 g/1/2c
17	Tuna, canned	0.71	84.88	0.23 g/3 oz
18	Cantaloupe/muskmelon	0.70	85.58	0.07 g/1/2c
19	Soy nuts	0.67	86.25	0.40 g/1 oz
20	Navy beans	0.53	86.78	0.19 g/1/2c
21	Potato, cooked	0.46	87.24	0.04 g /1/2c
22	Turkey, cooked	0.44	87.68	0.08 g/3 oz
23	Pecans	0.42	88.10	0.28 g/1 oz
24	Cheddar cheese	0.41	88.51	0.10 g/1/4c
25	Pork, cooked	0.34	88.85	0.09 g/3 oz
26	Zucchini, cooked	0.34	89.19	0.12 g/1/2c
27	Strawberries	0.33	89.52	0.06 g/1/2c
28	1% milk	0.31	89.83	0.04 g/1c

a. Intake assessed by food frequency questionnaire.

Jenis Ikan (fishes Item)	URT (Household measurement)	Asam Lemak Omega 3 (gram)/fatty acid Omega 3
Tuna	2 pieces middle size (2 pieces middle size)	2,1
Sardine	2 potong sdg (2 pieces middle size)	1,2
Salmon	2 potong sdg (2 pieces middle size)	1,6
Mackarel	2 potong sdg (2 pieces middle size)	1,9
Hering	2 potong sdg (2 pieces middle size)	1,2
Teri	8 sdm (8 tbsp)	1,4
Tongkol	2 potong sdg (2 pieces middle size)	1,5
Tenggiri	2 potong sdg (2 pieces middle size)	2,6
Tawes	2 potong sdg (2 pieces middle size)	1,5
Kembung	2 potong sdg (2 pieces middle size)	2,2
Kepiting	2 potong sdg (2 pieces middle size)	0,5
Kerapu	2 potong sdg (2 pieces middle size)	2,0
Kerang	1 ¼ gelas (750 ml)	2,0
Lobster	1 potong sdg (1 pieces middle size)	1,5
Lele	2 potong sdg (2 pieces middle size)	1,2
Gurami	2 ptg sdg (2 pieces middle size)	2,2
Nila	2 ptg sdg (2 pieces middle size)	1,2

Mujahir	2 ptg sdg (2 pieces middle size)	1,4
Kakap	1 potong (1 pieces middle size)	1,3
Udang	½ gelas (a half of glass)	1,5
1 potong sedang (1 middle piece size) same as 5 cm x 4 cm x 0.6 cm. 1 oz = 29.5 ml.		

Daftar Bahan Makanan: Jenis Daging dan Telur beserta Olahannya yang mengandung
Omega 3 dan 6 (g/ 100 gram makanan)

Jenis Daging dan Telur (Kind of meat and eggs)	URT (household measurement)	Tanpa Kulit		Dengan Kulit	
		Omega 3	Omega 6	Omega 3	Omega 6
Babat	1 ptg sdg (1 pieces middle size)	0,1	0,00	0,01	0,00
Dadih Ayam	2 ptg sdg (2 pieces middle size)	0,00	0,00	0,00	0,00
Dadih Sapi	1 ptg sdg (1 pieces middle size)	0,00	0,00	0,00	0,00
Daging Babi Gemuk	1 ptg sdg (1 piece middle size)	2,0	1,2	2,5	0,00
Daging ayam Kampung	1 ptg sdg (1 piece middle size)	0,4	0,005	2,2	0,00
Daging sapi	2 ptg sdg (1 piece middle size)	0,2	0,00	0,2	0,00
Daging Kambing	2 ptg sdg (2 pieces middle size)	0,2	0,00	0,2	0,00
Daging Kerbau	2 ptg sdg (2 pieces middle size)	0,2	0,00	0,2	0,00
Daging ayam direbus	2 ptg sdg (2 pieces middle size)	0,22	0,01	1,33	0,08
Daging Ayam Broiler	2 ptg sdg (2 pieces middle size)	0,08	0,8	2,07	0,10
Daging Raw Turkey	2 ptg sdg (2 pieces middle size)	0,27	0,01	1,48	0,10
Daging bebek	2 ptg sdg (2 pieces middle size)	0,80	0,10	10,7	0,7
Hati bebek	4 ptg sdg (2 pieces middle size)	0,37	-	-	-
Hati angsa	4 ptg sdg (2 pieces middle size)	0,18	0,01	-	-
Hati ayam	4 ptg sdg (2 pieces middle size)	24,7	0,9	24,7	0,9
Hati sapi	2 ptg sdg (2 pieces middle size)	24,7	0,9	-	-

Otak	2 ptg sdg (2 pieces middle size)	0,00	0,00	-	-
Telur ayam bagian kuning	½ gelas (2 pieces middle size)	0,1	4,2	-	-
Telur ayam bagian putih	½ gelas (2 pieces middle size)	0,5	4,8	-	-
Telur ayam bagian Kuning (Segar)	½ gelas (2 eggs)	13,9	0,4	-	-
Telur bagian kuning yang dikulkaskan	½ gelas (2.5 eggs)	2,94	0,06	-	-
Telur Olahan (kuning)	½ gelas (2.5 eggs)	6,42	0,13	-	-
Telur ayam	2 butir (2 eggs)	0,4	0,04	-	-
Telur bebek	1 butir (1 egg)	0,8	0,08		
Telur bebek (Kuning)	1 butir (1 egg)	0,5	0,05		
Telur bebek (Putih)	1 butir (1 egg)	0,3	0,03	-	-
Usus Sapi	2 ptg sdg (2 pieces middle size)	0,00	0,00	-	-

(Disadur dari Fatty Acids in Foods and their Health Implications,Third Edition, 2012. ISSFAL. pp. 126)

Daftar Bahan Makanan: Camilan dan Lauk yang Mengandung Omega 3 dan 6 beserta kadar kandungan Omega 3 dan 6 di dalamnya. (g/100 gram makanan) *List of Food Ingredients: Snacks and Side Dishes Containing Omega 3 and 6 along with the levels of Omega 3 and 6 in them. (g / 100 grams of food)*

Jenis Makanan (Food Item)	URT (household measurement)	Omega 3	Omega 6
Brokoli	1 gls (600 ml)	-	0,307
Indomie	2 gls (1200 ml)	-	0,392
Makaroni	¾ gls (750 ml)	0,015	0,032
Kentang manis	2 ptg sdg (2 pieces middle size)	-	0,980
Kacang Granola, Almond	10 sdm (10 tbsp)	0,080	0,940
Coklat Chip	10 sdm (10 tbsp)	0,060	0,760
Selai Kacang	10 sdm (10 tbsp)	0,010	0,100
Puding Pisang	10 sdm (10 tbsp)	0,050	0,020
Spaghetti	2 ptg sdg (2 pieces middle size)	0,062	-
Pizza	2 ptg sdg (2 pieces middle size)	2,511	0,112
Kentang goreng	2 ptg sdg (2 pieces middle size)	52,9	0,7
Keju	3 ptg sdg (3 pieces middle size)	0,11	0,04

(ISSFAL, 2012)

Bahan Pangan (Food material)	Jenis Makanan (Food Item)	Ukuran/Porsi (Size/Portion)	Jumlah Kandungan Asam Lemak (Fatty Acid contains quantity)	
			n-3	n-6
	Sate Ayam/Sapi	6 tusuk (6 small size)	0,3	0,6
	Ayam Panggang	1 porsi (1 portion)	0,1	2,4
	Bebek Panggang	1 porsi (1 portion)	0,3	4,8
	Kambing Bakar	1 potong (1 piece middle size)	0,6	0,9
	Babi Panggang	1 potong (1 piece middle size)	0,7	1,0
Daging	Ayam Goreng Dada	1 potong (1 piece middle size)	0,3	2,9
	Ayam Goreng Paha	1 potong (1 piece middle size)	0,3	2,9
	Rendang Sapi	1 potong (1 pieces middle size)	0,3	2,9
Catatan: 1 potong ± 50 gram, 1 porsi ± 100 gram				
Makanan Laut	Bakso Ikan Rebus	8 biji sedang (8 pieces middle size)	1,7	1,4
	Udang Goreng	4 ekor sedang (4 shrimp middle size)	0,2	0,1
	Udang Rebus	5 ekor sedang (5 shrimp middle size)	0,2	0,1
Catatan: 1 biji ± 10 gram; 1 ekor± 10 gram				
Sayuran	Gado-Gado	1 porsi	0,00	0,00
	Sayur Hijau Cah	1 porsi	0,00	0,00
	Sayur Rebus	1 porsi		
Catatan: 1 porsi ± 100 gram				
Kue Biskuit	Kue Basah	1 potong	0,00	0,00
	Kue Mentega	1 potong	0,00	0,2
	Kue Bolu	1 potong	0,00	0,00
	Roti Cokelat	1 potong	0,00	0,1
	Pisang Goreng	1 potong	0,00	0,1
	Cokelat	1 potong kecil	2,3	3,6
	Risoles	1 potong	0,00	0,00

Catatan: 1potong kue ± 50 gram ; 1 biji bakcang± 100 gram				
Minuman	Soft Drink	1 gelas	0,1	0,00
	Coklat Susu	1 gelas	0,1	0,1
	Milo tanpa Gula	2 sendok	2,1	1,2
	Susu Kedelai	1 gelas	2,8	35,4
	Kacang Hijau	1 mangkok	0,3	0,7
	Cendol	1 gelas	0,00	0,00
Catatan: 1 gelas ± 200 cc; 1 sdk ± 10 gram; 1 mangkok ± 100 gram				

Catatan: Jumlah Omega 3 dan 6 di atas merupakan kurang lebih, karena bergantung pada jumlah minyak atau gula yang digunakan.

Daftar Buah-buahan beserta kadar Kandungan Omega 3 dan 6 di dalamnya (g/100 gr makanan) *List of Fruits and theirs Omega 3 and 6 in them (g / 100 gr food)*

Jenis Makanan (Food Item)	URT (household measures)	Omega 3	Omega 6
Apel	¾ buah sedang	0,1	0,2
Belimbing	1 buah sedang	0,1	0,2
Bengkuang	1 biji besar	0,00	0,00
Jambu biji	1 buah besar	0,00	0,00
Jambu air	2 buah sedang	0,00	0,00
Jambu bol	1 buah sedang	0,00	0,00
Jeruk (Lokal)	1 buah sedang	0,00	0,00
Jeruk (Bali)	½ buah sedang	0,00	0,00
Kedondong	1 buah besar	0,00	0,00
Nanas	1 buah sedang	0,00	0,00
Papaya	1 potong sedang	0,00	0,00
Semangka	1 potong besar	0,2	0,4
Alpukat	1 buah besar	0,1	0,9
Duku	20 biji	0,1	0,2
Durian	6 biji	0,2	0,4
Mangga Golek	1 buah besar	0,1	0,3
Mangga Indramayu	1 buah besar	0,1	0,4
Nangka masak	6 biji	0,00	0,00
Pisang Ambon	2 buah sedang	0,3	0,9
Pisang emas	2 buah sedang	0,3	0,9
Pisang Raja	3 buah kecil	0,3	0,9
Pisang Susu	2 buah sedang	0,4	0,8
Pisang Uli	3 buah kecil	0,1	0,3
Rambutan	3 buah sedang	0,1	0,3
Raspberry	15 biji	0,1	0,2
Strawberry	3 buah sedang	0,1	0,2

Salak	1 ¼ buah sedang	0,00	0,00
Sawo	2 buah sedang	0,00	0,3
Sirsak	¾ gelas	0,00	0,00
Srikaya	1 gelas	0,00	0,00

Buah-Buahan ditimbang tanpa kulit dan biji.

Daftar Bahan Makanan: Golongan Serealia, Umbi dan Hasil Olahannya yang mengandung Omega 3 dan 6 (g/100 gram makanan) *List of Food Material: Cereals, Side Dish and Their Processed Products that contain Omega 3 and 6 (g / 100 grams of food)*

Jenis Makanan (Food Item)	URT (Household measures)	Omega 3	Omega 6
Beras Merah	¾ gelas	0,3	0,6
Beras Giling	¾ gelas	0,1	0,2
Beras Jagung	¾ gelas	0,2	0,3
Bubur Beras	½ gelas	0,1	0,3
Biskuit	10 bh	0,00	0,00
Bihun	½ mangkok	-	-
Havermout	1 potong	-	-
Kentang	2 potong sedang	0,3	0,5
Kraker	2 lembar	-	-
Mayonaisse	10 sdm	2,0	16,0
Mi kering	¼ mangkok	0,00	0,00
Mi basah	¼ mangkok	0,00	0,00
Nasi Putih	½ mangkok	0,1	0,3
Nasi Tim	½ mangkok	0,1	0,3
Roti Putih	2 lembar	0,2	0,4
Singkong	2 potong sedang	0,00	0,00
Talas	10 sdm	0,00	0,00
Tape singkong	10 sdm	0,00	0,00
Tepung beras	10 sdm	0,2	0,4
Tepung Gaplek	10 sdm	0,00	0,00
Tepung Hunkwee	10 sdm	0,1	0,3
Tepung terigu	10 sdm	0,1	0,3
Ubi Jalar Merah	2 potong sedang	0,00	0,00
Ubi Jalar Putih	2 potong sedang	0,00	0,00

Daftar Kacang-Kacangan, Biji-Bijian, dan hasil Olahannya yang mengandung Omega 3 dan 6 (g/100 gram makanan) *List of Nuts, Seeds, and Processed Products that contain Omega 3 and 6 (g / 100 grams of food)*

Jenis Makanan (Food Item)	URT (Household Measures)	Omega 3	Omega 6
Kacang Hijau	8 ½ sdm	0,1	6,7
Kacang Kedelai	8 ½ sdm	1,6	9,3

Kacang Merah	8 ½ sdm	0,1	3,9
Kacang Mete	8 ½ sdm	0,3	6,7
Kacang Polong	8 ½ sdm	0,5	3,9
Kacang Almond	8 ½ sdm	1,4	7,2
Kacang tanah (Rebus)	10 sdm	0,2	0,2
Kacang Tanah (Sangrai)	10 sdm	0,1	0,5
Kacang Kulit	10 butir	0,1	0,4
Keju Kacang Tanah	10 sdm	0,7	0,6
Gandum	10 sdm	1,4	11,0
Biji Bunga Matahari	5 sdm	3,9	3,4
Biji Labu	5 sdm	0,1	5,4
Biji zaitun	5 sdm	1,4	2,5
Biji blueberry	10 sdm	13,3	14,2
Biji berry merah	10 sdm	13	14,4
Biji Ghooseberry	10 sdm	12,3	5,5
Biji Redcurrant	10 sdm	29-31	15,1
Biji Blackcurrant	10 sdm	12-14	4,2
Biji Walnut	10 sdm	10,4	12,3
Biji Canola	10 sdm	11,1	11,1
Bubur Kacang Hijau	½ gelas (1/2 cup)	0,2	3,1
Bubur Kacang Kedelai	½ gelas (1/2 cup)	2,8	3,1
Bubur Kacang Merah	½ gelas (1/2 cup)	0,1	3,9
Kwaci	½ gelas (1/2 cup)	0,1	14,1
Oncom	½ gelas (1/2 cup)	2,4	1,2
Tahu	4 potong sedang	5,1	3,2
Tempe Kedelai	4 potong sedang	0,5	3,8
Tofu	4 potong sedang	0,3	2,1
Nato	5 lembar	1,3	9,6

Daftar Susu dan Hasil Olahannya yang mengandung Omega 3 dan 6 (g/ 100 gr makanan)   *List of Milk and Processed Products that contain Omega 3 and 6 (g / 100 gr food)*

Jenis Makanan (Food Item)	URT (Household measures)	Omega 3	Omega 6
Keju Cheddar	3 potong sedang	0,4	0,5
Keju Roquefort	3 potong sedang	0,7	0,6
Susu Sapi	1 gelas	0,1	-
Susu Kambing	½ gelas	0,1	-

Susu Kedelai	½ gelas	2,8	35,4
Susu Kerbau	½ gelas	0,1	-
Susu Kental Manis	1 gelas	-	-
Tepung Whole Milk	15 sdm	0,1	-
Tepung susu skim*	15 sdm	0,1	-
Tepung saridele	20 sdm	5,1	40,1
Yoghurt	½ gelas	4,0	5,8

Keterangan: yang diberi tanda (*) berarti perlu tambahan 1 ½ satuan penukar minyak untuk melengkapi lemaknya

Daftar Bahan Makanan: Minyak dan Lemak beserta hasil olahannya yang mengandung Omega 3 dan 6 (g/100 gram makanan) *List of Food Material: Oils and Fats and their processed products containing Omega 3 and 6 (g / 100 grams of food)*

Food Item	URT (Household measures)	Omega 3	Omega 6
Daging Kelapa Tua	2 potong sedang (2 pieces of middle size)	2,1	12,2
Kelapa	2 potong kecil	1,0	11,1
Kelapa Parut	15 sdm	1,0	11,1
Lemak Ayam	10 potongan kecil	0,05	19,9
Lemak Bebek	10 potongan kecil	1,0	11,9
Lemak Babi	10 potong kecil	1,0	11,1
Lemak Sapi	10 potong kecil	0,08	11,1
Minyak Sayur	10 sdm	1,1	9,8
Margarin	10 sdm	2,4	31,0
Mentega (Butter)	10 sdm	1,2	1,8
Minyak hati Ikan Kod	10 sdm	28, 1	30,0
Minyak Ikan Sardin	10 sdm	3,7	0,5
Minyak Ikan Hering	10 sdm	12,0	4,1
Minyak Ikan Salmon	10 sdm	20,9	9,0
Minyak biji tomat	10 sdm	2,3	51,1
Minyak Walnut	10 sdm	10,4	53, 3
Minyak Gandum	10 sdm	6,9	59, 0
Minyak Kelapa	10 sdm	1,6	17,5
Minyak Kelapa Sawit	10 sdm	1,1	9,8

Minyak Wijen	10 sdm	1,8	2,9
Minyak Kedele	10 sdm	2,8	35,4
Minyak Jagung	10 sdm	0,3	17,7
Minyak Zaitun	10 sdm	0,1	1,1
Minyak Kanola	10 sdm	11,1	22,2
Minyak biji bunga Matahari	10 sdm	6,8	51,1
Santan Kental	1 gelas	0,00	0,00
Gula Aren	10 sdm	0,00	0,00
Gula Kelapa	10 sdm	0,00	0,00
Gula Pasir	10 sdm	0,00	0,00
Madu	10 sdm	0,00	0,00
Selai Kacang	10 sdm	8,7	40,0
Sirup	10 sdm	0,00	0,00

Daftar Sayur-Sayuran beserta dengan Kandungan Omega 3 dan 6 di dalamnya (g/100 gram makanan) *List of Food Material: Oils and Fats and their processed products containing Omega 3 and 6 (g / 100 grams of food)*

Jenis Makanan	URT	Omega 3	Omega 6
Baligo	1 gelas	0,1	Trace
Bayam	1 gelas	0,1	0,00
Biet	1 gelas	Trace	Trace
Buncis	1 gelas	0,3	0,2
Bunga kol	1 gelas	0,1	Trace
Cabe hijau Besar	1 gelas	0,1	0,1
Daun Bluntas	1 gelas	0,1	0,1
Daun bawang	1 gelas	0,1	0,1
Daun Ketela Rambat	1 gelas	0,1	0,1
Daun Kecipir	1 gelas	Trace	Trace
Daun Kacang Panjang	1 gelas	Trace	Trace
Daun Koro	1 gelas	0,1	0,1
Daun Labu Siam	1 gelas	Trace	Trace
Daun Leunca	1 gelas	0,1	0,1
Daun Lompong	1 gelas	0,1	0,1
Daun Mangkokan	1 gelas	0,1	0,67
Daun Melinjo	1 gelas	0,1	0,77
Daun Pakis	1 gelas	0,1	0,35
Daun Singkong	1 gelas	0,1	0,1
Daun Pepaya	1 gelas	0,2	0,1
Daun Waluh	1 gelas	0,67	1
Daun Lobak	1 gelas	0,67	1
Genjer	1 gelas	0,1	0,1
Jagung Muda	1 gelas	0,3	17,7

Jamur Segar	½ mangkok	0,1	Trace
Oyong (Gambas)	1 gelas	0,1	Trace
Kacang Panjang	1 gelas	0,67	Trace
Kacang Kapri	1 gelas	2,6	10,8
Kacang Mete	1 gelas	2,6	10,8
Kangkung	1 gelas	0,00	0,00
Katuk	1 gelas	0,00	0,00
Ketimun	1 gelas	0,00	0,00
Kucay	1 gelas	0,00	0,00
Tomat	1 gelas	0,00	0,00
Kecipir Muda	1 gelas	0,00	0,00
Kol	1 gelas	0,1	0,2
Labu Air	1 gelas	0,1	5,4
Labu Siam	1 gelas	0,1	5,4
Labu Waluh	1 gelas	0,1	5,4
Lobak	1 gelas	0,1	Trace
Nangka Muda	1 gelas	0,00	0,00
Pare	1 gelas	0,00	0, 3
Pepaya muda	1 gelas	0,00	0,2
Percay	1 gelas	0,00	0,1
Rebung	1 gelas	0,3	0,2
Sawi	1 gelas	0,1	Trace
Seledri	1 gelas	0,2	0,1
Selada ijo	1 gelas	0,7	0,4
Selada merah	1 gelas	0,7	0,4
Taoge	1 gelas	0,8	0,2
Tebu Terubuk	1 gelas	0,00	0.00
Tekokak	1 gelas	0,8	0,2
Terong	1 gelas	0,1	Trace
Wortel	**1 gelas**	**0,1**	**Trace**

Ket:

Satu satuan penukar= 100 gram sayuran mentah= 1 gelas setelah direbus dan ditiriskan.

Sayuran ditimbang bersih dan dipotong seperti biasa di rumah tangga

APPENDIX III
Inform Consent in Bahasa Indonesia

Lembar Informasi Peserta Penelitian dan Formulir Persetujuan

Judul proyek penelitian Pengetahuan, sikap, dan praktik ibu tentang pola makan konsumsi omega 3 dan 6 pada anak usia 1-2 tahun di Labuhanbatu Utara, Indonesia

Nama Peneliti Kepala Sekolah Sinar Yunita Purba Jabatan MPH Mahasiswa di CPHS

Alamat Rumah Jl. Kutilang No 301 Wonosari Lk 1 Aek Kanopan, Kecamatan Kualuh hulu, Kabupaten Labuhanbatu Utara, Indonesia

Telepon (kantor) - Telepon (rumah) +6282330036488

Telp +62 82330036488 E-mail: sinarpurba@gmail.com

Anda diundang untuk mengambil bagian dalam proyek penelitian. Sebelum Anda memutuskan untuk berpartisipasi, penting bagi Anda untuk memahami mengapa penelitian dilakukan dan apa yang akan tercakup di dalamnya. Mohon luangkan waktu untuk membaca informasi berikut dengan hati-hati dan jangan ragu untuk bertanya jika ada yang kurang jelas atau Anda ingin informasi lebih lanjut.

1. Proyek penelitian ini dilakukan dengan tujuan utama untuk mengetahui tingkat pengetahuan, sikap, dan praktik ibu tentang pemberian makanan omega 3 dan 6 pada anak usia 1-2 tahun di Kabupaten Labuhanbatu Utara, Indonesia. Informasi dan hasil yang diperoleh dapat digunakan untuk mendukung pengembangan pedoman yang mempromosikan konsumsi diet omega 3 dan 6 pada anak usia 1-2 tahun.

2. Peneliti dan asisten peneliti akan memberikan semua dokumen dan secara lisan menjelaskan semua dokumen dan informasi termasuk lembar informasi, kuesioner, dan formulir persetujuan mengenai penelitian ini secara rinci kepada masing-masing peserta. Formulir persetujuan akan diperoleh dengan meminta tanda tangan peserta setelah semua informasi dijelaskan dengan jelas. Bagi peserta yang buta huruf dan tidak bisa membaca atau menulis, akan diambil cap jempol sebagai pengganti tanda tangan di inform consent.

3. Rincian peserta

Karakteristik populasi sampel dalam penelitian ini adalah ibu yang memiliki anak usia 1 sampai 2 tahun yang bertempat tinggal di Kabupaten Labuhanbatu Utara, Indonesia. Jumlah partisipan dalam penelitian ini adalah 429 ibu dengan anak usia 1-2 tahun.

Untuk mendekati peserta, peneliti menghubungi dan bekerja sama dengan petugas di puskesmas di wilayah studi. Daftar ibu dengan anak 1-2 tahun akan diperoleh dari Puskesmas. Dari daftar tersebut, sebanyak 429 peserta yang memenuhi kriteria inklusi dan eksklusi akan dipilih secara acak dengan menghasilkan bilangan acak menggunakan fungsi bilangan acak (RAND) di Microsoft Excel. Peserta terpilih akan didekati, dan datanya akan dikumpulkan di gedung pertemuan Puskesmas mengikuti jadwal promosi kesehatan yang akan diadakan oleh puskesmas setiap minggu. Peneliti akan mengecek kehadiran peserta dengan menggunakan rekam medis dari puskesmas. Jika peserta tidak hadir di gedung pertemuan sesuai dengan jadwal promosi kesehatan, peneliti akan menelepon untuk menghubungi peserta yang hilang dan meminta persetujuan mereka untuk berpartisipasi dalam penelitian. Jika peserta tersebut merasa tidak nyaman untuk datang ke conference hall center, peneliti akan mendatangi rumah peserta untuk melakukan pendataan.

Dalam satu hari, akan ada sekitar 20 peserta yang menghadiri pusat gedung pertemuan. Wawancara akan dijadwalkan dalam empat slot waktu mulai pukul 10.00-11.00, 11.00 - 12.00, 13.00-14.00, hingga 14.00-15.00. Akan ada sekitar 5 peserta per satu slot waktu. Tujuh pewawancara, termasuk peneliti utama dan asisten peneliti, akan disajikan untuk melakukan pengumpulan data. Suhu tubuh akan dilakukan sebelum seseorang dapat masuk ke tengah. Masker dan gel / semprotan alkohol juga akan disediakan untuk semua orang di tengah. Proses pendataan akan dilakukan hingga pendataan mencapai 429 peserta.

4. Detail proses penyaringan kriteria atau kualifikasi inklusi / eksklusi.

Ibu yang mengikuti program promosi kesehatan di gedung pertemuan pusat Puskesmas, dan memenuhi kriteria inklusi dan eksklusi berikut ini yaitu:

Kriteria inklusi dalam penelitian ini adalah:

1. Ibu dari anak 1-2 tahun

2. Ibu yang bertanggung jawab atas pola makan / makan anaknya

3. Mampu berkomunikasi dalam Bahasa Indonesia atau Bahasa Inggris atau keduanya.

4. Usia 18 tahun ke atas

Kriteria eksklusi dari penelitian ini adalah:

1. Mereka yang memiliki beberapa bentuk kecacatan seperti kehilangan pendengaran, atau mereka yang sakit parah dan tidak dalam posisi untuk menjawab pertanyaan.

2. Mereka yang tidak mau berpartisipasi dalam studi.

akan diminta untuk tinggal selama 30-45 menit lagi setelah program selesai. Kuisioner akan dikumpulkan di hall center pada pukul 10.00 pagi dan seterusnya. Daftar ibu sudah dikelompokkan oleh petugas promotor kesehatan. Peneliti bersama asisten akan mengumpulkan kuesioner.

akan diminta untuk tinggal selama 30-45 menit lagi setelah program selesai. Kuisioner akan dikumpulkan di hall center pada pukul 10.00 pagi dan seterusnya. Daftar ibu sudah dikelompokkan oleh petugas promotor kesehatan. Peneliti bersama asisten akan mengumpulkan kuesioner dari para ibu dengan menggunakan wawancara tatap muka. Wawancara akan memakan waktu sekitar 30 - 45 menit untuk setiap peserta.

Jika dalam proses penapisan calon peserta menemukan seseorang tidak memenuhi kriteria inklusi dan membutuhkan bantuan / nasehat, peneliti akan memberikan nasehat yang sesuai dan merujuk peserta kepada otoritas yang relevan dengan masalah yang dihadapi peserta tersebut.

5. Prosedur peserta:

Tidak ada intervensi, atau pengumpulan data campur tangan dengan perawatan dalam penelitian ini. Peserta hanya diminta menjawab kuesioner mengenai pengetahuan, sikap, dan praktik ibu tentang pemberian diet omega 3 dan 6 pada anak usia 1-2 tahun di Kabupaten Labuhanbatu Utara, Indonesia. Kuisioner terdiri dari 8 bagian yaitu Bagian I - Ciri umum terdiri dari 7 pertanyaan, Bagian II - Ciri rumah tangga terdiri dari 4 pertanyaan, Bagian III - Ciri Anak terdiri dari 6 pertanyaan, Bagian IV - Tabu

makanan terdiri dari 7 pertanyaan, Bagian V - Sumber Informasi 7 pertanyaan, Bagian VI - Pengetahuan ibu tentang pola makan konsumsi omega 3 dan 6 pada anak usia 1-2 tahun terdiri dari 26 pertanyaan, Bagian VII - Sikap ibu terhadap pola makan omega 3 dan konsumsi 6 pada anak usia 1-2 tahun tahun terdiri dari 17, Bagian VIII - Sikap ibu terhadap pola makan omega 3 dan 6 konsumsi pada anak usia 1-2 tahun terdiri dari 10 pertanyaan. Wawancara akan memakan waktu sekitar 30 - 45 menit untuk setiap peserta.

6. Penelitian ini tidak diantisipasi akan menyebabkan kerugian atau ketidaknyamanan bagi Anda. Tidak ada potensi bahaya atau tekanan fisik dan / atau psikologis lebih dari apa yang para peserta hadapi dalam kehidupan sehari-hari.

7. Hasil dari penelitian ini diharapkan dapat memberikan waisan tentang pengetahuan, sikap, dan praktik ibu tentang pemberian diet omega 3 dan 6 kepada anak usia 1-2 tahun di Kabupaten Labuhanbatu Utara Indonesia untuk lebih mendukung pembangunan. pedoman untuk mendukung praktik ibu tentang diet omega 3 dan 6 untuk anak usia 1-2 tahun.

8. Informasi yang berhubungan langsung dengan Anda akan dijaga kerahasiaannya. Hasil penelitian akan dilaporkan sebagai gambaran total. Anda tidak akan dapat diidentifikasi atau diidentifikasi dalam laporan atau publikasi apa pun. Setiap data yang dikumpulkan tentang Anda dalam kuesioner akan dihancurkan setelah proyek berakhir.

9. Hardcopy kertas kuisioner akan dimusnahkan dengan menggunakan kertas mesin penghancur setelah dilakukan penelitian. Softcopy akan dihapus secara permanen.

10. Paket makanan ringan dan buku gambar anak akan diberikan sebagai kompensasi kepada setiap peserta atas kehilangan waktu / ketidaknyamanan.

11. Keikutsertaan dalam studi bersifat sukarela dan setiap saat peserta berhak untuk menolak dan / atau mengundurkan diri dari studi, tidak perlu memberikan alasan apapun, dan tidak akan berdampak buruk bagi peserta tersebut. Jika peserta memutuskan untuk ambil bagian, Anda akan dapat menyimpan salinan lembar informasi ini dan Anda harus menunjukkan persetujuan Anda pada formulir

persetujuan. Anda tetap bisa menarik dana kapan saja. Anda tidak perlu memberi alasan.

12. Jika Anda memiliki pertanyaan atau ingin mendapatkan informasi lebih lanjut, peneliti dapat dihubungi setiap saat. Jika peneliti memiliki informasi baru mengenai manfaat risiko / bahaya, peserta akan diinformasikan secepatnya.

13. Jika peneliti tidak melakukan pada peserta seperti yang ditunjukkan dalam lembar informasi peserta dan formulir persetujuan, peserta dapat melaporkan kejadian tersebut kepada Komite Peninjau Etika Penelitian untuk Penelitian yang Melibatkan Peserta Penelitian Manusia, Kelompok I, Universitas Chulalongkorn (RECCU) Jamjuree 1 Bldg. , 254 Phyathai Rd., Distrik Patumwan, Bangkok 10330, Thailand, Tel./Fax. 0-2218-3202, 0-2218-3049 Email: eccu@chula.ac.th "

Saya telah dijelaskan oleh peneliti dan memahami semua detail yang diberikan. Dan saya secara sukarela menandatangani nama saya untuk mendaftar dalam proyek ini dan menerima salinan dokumen ini.

TTD.. TTD..

(...) (...)

Peneliti/Assisten peneliti   Partisipan

Tgl......./............./.................. Tgl......./............./..................

TTD..

(...)

Saksi

APPENDIX IV
QUESTIONNAIRE IN BAHASA INDONESIA LANGUAGE

KUESIONER PENGETAHUAN, SIKAP, DAN PERILAKU IBU TERHADAP PEMBERIAN OMEGA 3 DAN 6 PADA ANAK USIA 1-2 TAHUN DI LABUHANBATU UTARA

BAGIAN 1 – Karakteristik Umum				
1	Usia	…………….. tahun		
2	Agama	☐ 1. Protestan	☐2. Adven	☐ 3. Pentakosta
		☐ 4. Katolik	☐ 5. Islam	☐ 6. Buddha
		☐ 7. Hindu	☐ 8.Orthodoks	☐ 9. Lainnya

3	Status Pernikahan ☐ 1. Menikah ☐ 2. Cerai hidup ☐ 3. Cerai mati
4	Pendidikan Terakhir ☐ 1. Tidak sekolah ☐ 2. SD ☐ 3. SMP ☐ 4. SMA ☐ 5. S1-S3
5	Pekerjaan ☐ 1. PNS ☐ 2. Pegawai Sista ☐ 3. Wirasista ☐ 4. Ibu Rumah Tangga
6	Daerah Pemukiman Tempat Tinggal ☐ 1. Perkotaan ☐ 2. Pedesaan
7	Suku ☐ 1. Melayu ☐ 2. Batak ☐ 3. Jawa ☐ 4. Lainnya……………...
BAGIAN II - HOUSEHOLD CHARACTERISTIC	
8	Susunan Anggota Keluarga yg tinggal di rumah 1. Keluarga Inti 2. Keluarga Besar
9	Jumlah anggota keluarga yang berusia 1-2 tahun tinggal di rumah (anak kandung/tiri/angkat) …………………………… orang.
10	Jenis kelamin anak usia 1-2 tahun yang tinggal di rumah (Centang jika semua ada) 1. Laki-laki, ……….orang

	2. Perempuan, ……….orang
11	Penghasilan dalam sebulan ……………………….. (per bulan)
BAGIAN III: CHILDREN CHARACTERISTICS	
12	Tanggal Lahir anak …………………… Catatan- Format internasional: DD/MM/YYYY [Contoh, 25/12/2020]
13	BB……………..kilogram
14	TB………………..sentimeter
15	Jenis Kelamin (untuk anak yang akan dijadikan subjek penelitian) ☐ 1. Laki-laki ☐ 2. Perempuan
16	Penggunaan ASI saat ini 1. Menyusui saat ini 1.1 ASI eksklusif 1.2 ASI + Susu formula 1.3 ASI + susu UHT 2. ASI yang disendok lewat cangkir 2.1 Hanya ASI saja 2.2 ASI sendok + dan ASI eksklusif 2.3 ASI + susu formula 2.4 ASI + susu UHT 3. Hanya susu formula 4. Hanya susu UHT
17	Alergi makanan (si anak usia 1-2 tahun) ☐ 1. Ya ………………………… ☐ 2. Tidak

BAGIAN IV – Pantangan Makanan	
18A: ☑ Centang semua yang berlaku. Apa jenis makanan dari list di bawah ini yang ibu pertimbangkan sebagai pantangan/larangan untuk anak dana?	
18A.1	1.1 Daging → ☐ 1. Ayam ☐ 2. Sapi ☐ 3. Bebek ☐ 4. Lainnya ……………………. 1.2 Makanan Pokok → ☐ 1. Nasi ☐ 2. Ubi ☐ 3. Ubi jalar ☐ 4. lainnya……………………….…… 1.3 Buah-buahan → ☐ 1. Nangka ☐ 2. Jagung ☐ 3. Nanas ☐ 4. Jeruk ☐ 5. Pisang ☐ 6. Lainnya …………………………….. 1.4 Telur dan Ikan → ☐ 1. Telur ☐ 2. Ikan Lele ☐ 3. Ikan Bale ☐ 4. Ikan Balana ☐ 5. Ikan hiu ☐ 6. Ikan Ciko ☐ 7. Lainnya ……………………………… 1.5 Makanan Laut → ☐ 1. Udang ☐ 2. Kepiting ☐ 3. Gurita ☐ 4. Lainnya ……………………………. 1.6 Sayuran → ☐ 1. Daun Singkong ☐ 2. Daun Moringa ☐ 3. Kale ☐ 4. Terong

	□ 5. Lainnya ……………………

18A.2	2. Dari beberapa alasan di bawah ini, manakah yg menjadi alasan itu dipertimbangkan menjadi pantangan makanan? Silahkan centang jika semua alasan ini berlaku.
	☐ 1. Agama
	☐ 2. Budaya/Norma sosial/ kepercayaan
	☐ 3. Kebersihan diri (anak akan mengalami kecacingan, air seni akan bau amis,dll)
	☐ 4. Kesehatan (dapat menyebabkan penyakit, allergi, hanya makan sayur, budaya tidak makan daging-dagingan, dll)
	☐ 5. Etika
	☐ 6. Lainnya ………………………………………………..

BAGIAN V: SUMBER INFORMASI TENTANG OMEGA 3 DAN 6

19A Did you receive information on dietary omega 3 dan 6 from?

19A.1	TV Programs
	☐ 1. Ya　　　　　　☐ 2. Tidak
19A.2	Majalah dan Koran
	☐ 1. Ya　　　　　　☐ 2. Tidak
19A.3	Teman/tetangga
	☐ 1. Ya　　　　　　☐ 2. Tidak
19A.4	Anggota Keluarga
	☐ 1.Ya　　　　　　☐2.Tidak
19A.5	Praktisi Kesehatan
	☐ 1.Ya　　　　　　☐2. Tidak
19A.6	Wanita berpengalaman dalam keluarga
	☐ 1.Ya　　　　　　☐2. Tidak
19A.7	Apakah ibu menerima informasi tentang omega 3 dan 6 dari media sosial di bawah ini (Centang jika semuanya berlaku)?
	1.Twitter
	2.Facebook
	3.IG

	☐ Lainnya ……

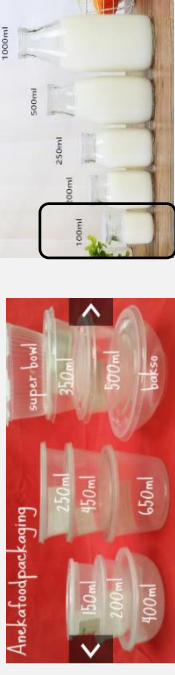|	Nama Item	Yes	No	Do not know
BAGIAN VI- Pengetahuan Ibu tentang Pemberian Omega 3 dan 6 pada anak usia 1-2 tahun				
20A: Omega 3				
20A.1	Omega 3 adalah komponen dari asam lemak			
20A.2	Tubuh manusia tidak dapat memproduksi omega 3			
20A.3	DHA (Docosahexaenoic acid) adalah asam lemak yang terdapat di otak dan retina.			
20A.4	Ikan tawar adalah sumber makanan penting yang mengdanung omega 3			
20A.5	Ikan laut adalah sumber makanan penting yang mengdanung omega 3			
20A.6	Minyak ganggang adalah sumber makanan penting yang mengdanung omega 3			
20A.7	Daging adalah sumber makanan penting yang mengdanung omega 3			
20A.8	Udang adalah sumber makanan penting yang mengdanung omega 3			
20A.9	Omega 3 membantu perkembangan retina selama usia awal masa kanak kanak			
20B: Omega 6				
20B.1	Omega 6 adalah bagian dari asam lemak dan tidak dapat diproduksi oleh tubuh manusia			
20B.2	Kacang adalah sumber informasi yang mengdanung omega 6			
20B.3	Kelapa kaya akan omega 6			
20B.4	Bayam adalah sumber makanan penting yang mengdanung omega 6			
20B.5	Labu adalah sumber makanan penting yang mengdanung omega 6			

20B.6	Minyak jagung adalah sumber makanan penting yang mengdanung omega 6			
20B.7	Tofu adalah sumber makanan penting yang mengdanung omega 6			
20B.8	Telur adalah sumber makanan penting yang mengdanung omega 6			
20B.9	Omega 6 dapat membantu menurunkan tekanan darah			

20C: Omega 3 dan 6				
	Nama Item	**Ya**	Tidak	**Tidak tau**
20C.1	Omega 3 dan 6 dapat membantu dalam pencegahan munculnya rasa cemas dan depresi			
20C.2	Omega 3 dan 6 dapat membantu mengurangi alergi kulit			
20C.3	Omega 3 dan 6 membantu perkembangan belajar dan daya ingat			
20C.4	Konsumsi Omega 3 dan 6 sebaiknya dimulai sejak dini			
20C.5	Omega-3 meningkatkan fokus dan penyelesaian tugas pada anak dengan tingkah laku hiperaktif			
20C.6	Omega 3 dan 6 dapat menurunkan kolesterol			
20C.7	Omega 3 dan 6 dapat menjaga kesehatan jantung			
20C.8	Omega 3 dan 6 dapat meningkatkan fokus ketika membaca			
20C.9	Omega 3 dan 6 dapat menguatkan akar rambut			

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No	Statement	Sangat setuju	Setuju	Neutral	Tidak setuju	Sangat tidak setuju
BAGIAN VII – Sikap Ibu dalam memberikan makanan yang mengandung omega 3 dan 6						
21A	**Omega 3**					
21A.1	Saya pikir itu penting untuk memperhatikan komposisi makanan omega 3 pada anak saya					
21A.2	Menu yang bervariasi pada omega 3 sangat penting bagi anak					
21A.3	Saya mempertimbangkan sumber makanan omega 3 untuk anak berdasarkan makanan yang dia suka					
21A.4	Saya memperhatikan pantangan makanan saat menghidangkan sumber makanan yang mengandung omega 3 untuk anak saya					
21A.5	Saya setuju untuk menyediakan makanan yang kaya dengan omega 3 seperti ikan dan sapi untuk anak saya kapanpun dan dimanapun saat sumber makanan tersebut tersedia.					
21A.6	Saya lebih memilih susu formula sebagai sumber nutrisi omega 3 sehari hari untuk anak saya					
21A.7	Pemberian sumber omega 3 dilakukan mengikuti jadwal pemberian makanan.					
21A.8	Tidak hanya mempersiapkan menu, tapi cara memproses dapat dilakukan dengan memproses omega 3 secara bervariasi.					
21A.9	Ketika membuat makanan untuk anak-anak, saya akan menambahkan sumber omega 3 ke makanannya.					

21B	Omega 6				
No	Pernyataan	Sangat setuju	Setuju	Netral	Tidak Setuju	Sangat tidak setuju
21B.1	Saya berpikir tampilan dan dekorasi hidangan makanan dapat membantu anak-anak saya makan dengan baik.					
21B.2	Saya setuju untuk menggunakan tanaman yang kaya omega 6 seperti walnut, kacang kedele, almond dan daun bayam) ketika salah satu atau semua sumber tersedia.					
21B.3	Saya perduli dengan jumlah omega 6 yang saya berikan kepada anak-anak.					
21B.4	Saya pikir membuat menu bervariasi dari makanan yang kaya omega 6 untuk anak-anak itu penting.					
21B.5	Saya memperhatikan untuk komposisi menu omega 6 untuk anak-anak.					
21B.6	Penting untuk menyediakan sumber makanan omega 6 untuk anak-anak secara teratur.					
21B.7	Saya setuju menyeimbangkan makanan kaya omega 6 untuk anak-anak menjadi penting bagi kesehatan mereka.					
21B.8	Saya pikir saya hanya orang-orang yang bertanggung jawab untuk memenuhi kebutuhan omega 6 anak-anak.					

BAGIAN VIII - Tingkah laku ibu saat memberikan omega 3 dan 6 pada anak

22	Kelompok makanan I: Milk, yogurt, dan cheese

Note: Seberapa sering anak mengkonsumsi paling sedikit **200 ml susu**(e.g.secangkir susu seperti di gambar)?

Seberapa sering anak mengkonsumsi paling sedikit 250 ml **sereal** (e.g. 3/4 mangkuk seperti di gambar)?

Tolong response dengan jawaban yang cocok.

Tidak pernah = Tidak pernah atau kurang dari sekali sebulan. Jarang = 1-3

Kadang = 1 hari dalam se minggu; Sering = 2-4 hari dalam se minggu;

Selalu = 5-6 hari dalam se minggu; Setiap hari

Nama Item	Tidak pernah (Tidak pernah atau kurang dari sekali sebulan)	Jarang (1-3 hari dalam sebulan)	Kadang (1 hari dalam se minggu)	Sering (2-4 hari dalam se minggu)	Selalu (5 – 6 hari dalam se minggu)	Setiap hari
22.1 (3&6) Susu kedelai (e.g. Vanilla, or sortiran susu kedelai cokelat)						
22. 2 (3&6) Makanan sereal beras merah bayi instan						
22. 3 (6) Makanan sereal beras merah bayi sortiran						

22.4 (3,6)	Sereal gandum dan pisang dicampur susu
22.5 (6)	Sereal kacang hijau untuk bayi
22.6 (6)	sereal mix dengan susu bayi
22.7 (6)	Sup krim bayam untuk bayi

Kelompok makanan II: Buah-Buahan

Note: Berapa sering anak anda mengkonsumsi **paling sedikit 90 gram** (e.g.tiga potongan kecil buah seperti di gambar)

Tolong dijawab dengan pilihan yang sesuai dengan yang ibu praktikkan.

Tidak pernah = Tidak pernah atau kurang dari sekali sebulan; Jarang = 1-3 hari dalam sebulan;

Kadang = 1 hari dalam se minggu. Sering = 2-4 hari dalam se minggu; Selalu = 5-6 hari dalam se minggu; Setiap hari

Nama Item	Tidak pernah (Tidak pernah atau kurang dari sekali sebulan)	Jarang (1-3 hari dalam sebulan)	Kadang (1 hari dalam se minggu)	Sering (2-4 hari dalam se minggu)	Selalu (5 – 6 hari dalam se minggu)	Setiap hari
23.1 (3,6) Mangga						
23.2 (3,6) Jambu						
23.3 (3,6) Alpukat						
23.4 (3) Nangka						
23.5 (3,6) Strawberi						

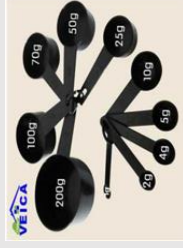|	
23.6 (3,6)	Mangga mentah
23.7 (3)	Pepaya
23.8 (3)	Melon Madu
23.9 (3,6)	Pisang
23.10 (3,6)	Belimbing
23.11 (3,6)	Anggur
23.12 (6)	Pir
23.13 (6)	Apel

Kelompok makanan III: sayuran

24

Note: Berapa sering anak anda mengkonsumsi **paling sedikit 30 gram** of the food (e.g. two tablespoons per serving of vegetable at the picture). Tolong dijawab dengan pilihan yang sesuai dengan yang ibu [
Tidak pernah = Tidak pernah atau kurang dari sekali sebulan; Jarang = 1-3 hari
Kadang = 1 hari dalam se minggu; Sering = 2-4 hari dalam se minggu; Selalu = 5
minggu;
Setiap hari

	Nama Item	Tidak pernah (Tidak pernah atau kurang dari sekali sebulan)	Jarang (1-3 hari dalam sebulan)	Kadang (1 hari dalam se minggu)	Sering (2-4 hari dalam se minggu)	Selalu (5 – 6 hari dalam se minggu)	Setiap hari
24.1 (3,6)	Kale						
24.2 (3,6)	Bunga Kol						
24.3 (3)	Bayam						
24.4 (6)	Brokoli						
24.5 (6)	Jamur enoki						
24.6 (6)	Tomat						
24.7 (6)	Terung-terungan						
24.8 (6)	Jagung manis						

Kelompok makanan IV: Coklat

Note: Berapa sering anak anda mengkonsumsi **paling sedikit 25 gram** of the chocolate

(e.g. ¼ bar coklat di gambar)

Tolong dijawab dengan pilihan yang sesuai dengan yang ibu praktikkan.

Tidak pernah = Tidak pernah atau kurang dari sekali sebulan; Jarang = 1-3 hari dalam sebulan;

Kadang = 1 hari dalam se minggu; Sering = 2-4 hari dalam se minggu; Selalu = 5-6 hari dalam se minggu; Setiap hari

Nama Item	Tidak pernah (Tidak pernah atau kurang dari sekali sebulan)	Jarang (1-3 hari dalam sebulan)	Kadang (1 hari dalam se minggu)	Sering (2-4 hari dalam se minggu)	Selalu (5 – 6 hari dalam se minggu)	Setiap hari
25.1 (6) Cokelat campur kacang batangan						
25.2 (6) Kacang dan buah buahan dibuat dalam cokelat lembut						
25.3 (6) Extra vanilla dan kacang kacangan						
25.4 (3,6) Cokelat Toblerone						
25.5 (6) Cokelat batangan nestle						
25.6 (6) Cokelat putih						
25.7 (6) Cokelat susu dengan almond						
25.8 (6) Cokelat susu dan sereal						
25.9 (6) Cokelat manis						

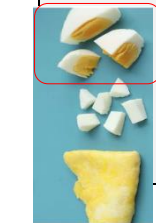| 26	**Kelompok makanan V: Dessert**					
	Note: Berapa sering anak anda mengkonsumsi **paling sedikit 25 gram** of the food (e.g. satu scope seperti di gambar) Tolong dijawab dengan pilihan yang sesuai dengan yang ibu praktikkan. Tidak pernah = Tidak pernah atau kurang dari sekali sebulan; Jarang = 1-3 hari dalam sebulan; Kadang = 1 hari dalam se minggu; Sering = 2-4 hari dalam se minggu; Selalu = 5-6 hari dalam se minggu; Setiap hari					
	Nama Items	**Tidak pernah** (Tidak pernah atau kurang dari sekali sebulan)	**Jarang** (1-3 hari dalam sebulan)	**Kadang** (1 hari dalam se minggu)	**Sering** (2-4 hari dalam se minggu)	**Selalu** (5 – 6 hari dalam se minggu)	**Setiap hari**
26.1 (3,6)	Es krim coklat lembut						
26.2 (3,6)	Es serut jagung						
26.3 (3,6)	Keripik kentang asin						

	Kelompok makanan VI: nasi/biscuit (karbohidrat)					
	Note: Berapa sering anak anda mengkonsumsi **paling sedikit 40 gram** of the food (e.g. two plates per serving or 3-4 tablespoon rice at the picture). Tolong dijawab dengan pilihan yang sesuai dengan yang ibu praktikkan. Tidak pernah = Tidak pernah atau kurang dari sekali sebulan; Jarang = 1-3 hari dalam sebulan; Kadang = 1 hari dalam se minggu; Sering = 2-4 hari dalam se minggu; Selalu = 5-6 hari dalam se minggu; Setiap hari					
	Nama Items	**Tidak pernah** (Tidak pernah atau kurang dari sekali sebulan)	**Jarang** (1-3 hari dalam sebulan)	**Kadang** (1 hari dalam se minggu)	**Sering** (2-4 hari dalam se minggu)	**Selalu** (5 – 6 hari dalam se minggu)	**Setiap hari**
27.1 (6)	Nasi merah						
27.2 (6)	Mi bayam dengan telur						
27.3 (3,6)	Biscuit susu						

27.4 (3,6)	Roti putih					

28 Kelompok makanan VII = Daging

Note: Berapa sering anak anda mengkonsumsi **paling sedikit 30 gram** per serving of the daging (e.g. two tablespoon per serving at the picture)? Tolong dijawab dengan pilihan yang sesuai dengan yang ibu praktikkan.

Tidak pernah = Tidak pernah atau kurang dari sekali sebulan; Jarang = 1-3 hari dalam sebulan; Kadang = 1 hari dalam se minggu;

Sering = 2-4 hari dalam seminggu; Selalu = 5-6 hari dalam seminggu; Setiap hari

	Nama Items	Tidak pernah (Tidak pernah atau kurang dari sekali sebulan)	Jarang (1-3 hari dalam sebulan)	Kadang (1 hari dalam se minggu)	Sering (2-4 hari dalam se minggu)	Selalu (5 – 6 hari dalam se minggu)	Setiap hari
28.1 (3,6)	Hati ayam, matang						
28.2 (3,6)	Sup Krim Ayam						
28.3 (3,6)	Ayam daging, rebus						
28.4 (3,6)	Ayam bakar, dada						
28.5 (3,6)	Ayam, daging goreng, dada						
28.6 (3,6)	Usus ayam dimasak matang						
28.7 (3,6)	Ayam daging, kaki						
28.8 (3,6)	Bebek, daging, dibakar						
28.9 (6)	Sapi, daging, iga bakar						
28.10 (3,6)	kerbau, daging, bakar						
28.11 (3,6)	kerbau, daging, matang						
28.12 (6)	kerbau, daging, rebus						
28.13(3,6)	domba, hati, matang						
28.14 (3,6)	domba, daging						

29

Kelompok makanan VIII: Ikan dan makanan laut

Note: Berapa sering anak anda mengkonsumsi **paling sedikit 40 gram** of the ikan (e.g. two tablespoon per serving) dan paling sedikit **30 gram**
rebus egg (e.g a half of egg per serving at the picture)?

Tolong dijawab dengan pilihan yang sesuai dengan yang ibu praktikka...
Tidak pernah = Tidak pernah atau kurang dari sekali sebulan; Jarang = 1-3 hari da...
Kadang = 1 hari dalam se minggu; Sering = 2-4 hari dalam se minggu; Selalu = 5-6 hari dalar...

Nama Items	Tidak pernah (Tidak pernah atau kurang dari sekali sebulan)	Jarang (1-3 hari dalam sebulan)	Kadang (1 hari dalam se minggu)	Sering (2-4 hari dalam se minggu)	Selalu (5 – 6 hari dalam se minggu)	Setiap hari
29.1 (3,6) telur, ayam, mentah						
29.2 (3,6) telur, ayam, dadar						
29.3 (3,6) telur, goreng						
29.4 (3,6) telur, scrambled						
29.5 (3) Belut rebus						
29.6 (3,6) ikan gabus, goreng						
29.7 (3,6) Ikan tawar, goreng gurami						
29.8 (3,6) Ikan air tawar, dimasak di tungku						
29.9 (3,6) Ikan air tawar, di kukus di daun pisang						
29.10 (3,6) Telur ayam setengah matang						
29.11 (3,6) Ikan susu (gurami, nila)						
29.12 (3,6) Ikan laut (mujaer)						

Note: Berapa sering anak anda mengkonsumsi **paling sedikit 40 gram** of the ikan (e.g. two tablespoon per serving) dan paling sedikit **30 gram**
rebus egg (e.g a half of egg per serving at the picture)?

Tolong dijawab dengan pilihan yang sesuai dengan yang ibu praktikkan.

Tidak pernah = Tidak pernah atau kurang dari sekali sebulan; Jarang = 1-3 hari dalam sebulan;
Kadang = 1 hari dalam se minggu; Sering = 2-4 hari dalam se minggu; Selalu = 5-6 hari dalam se minggu; Setiap hari

Nama Item	Tidak pernah (Tidak pernah atau kurang dari sekali sebulan)	Jarang (1-3 hari dalam sebulan)	Kadang (1 hari dalam se minggu)	Sering (2-4 hari dalam se minggu)	Selalu (5 – 6 hari dalam se minggu)	Setiap hari
29.13 (3,6) Ikan kembung kering diasinkan						
29.14 (3,6) Ikan goreng laut						
29.15 (3,6) ikan, tongkol, goreng						
29.16 (3,6) Lobster, matang						
29.17 (3,6) Shrimp, goreng						
29.18 (3,6) Scallop, matang						
29.19 (3,6) Crab, rebus						
29.20 (3,6) Cod, matang						
29.21 (3,6) ikan teri, goreng						
29.22 (3,6) ikan teri kering						
29.23 (3) Sardine kalengan dalam saus						

30 Omega 3 dan 6 Kelompok makanan IX : Kacang dan biji bijian

Note: Berapa sering anak anda mengkonsumsi **paling sedikit 50 gram** of kacang dan biji bijian (e.g. setengah telapak tangan pada gambar)? Tolong dijawab dengan pilihan yang sesuai dengan yang ibu praktikkan.

Tidak pernah = Tidak pernah atau kurang dari sekali sebulan; Jarang = 1-3 hari dalam sebulan; Kadang = 1 hari dalam se minggu; Sering = 2-4 hari dalam se minggu; Selalu = 5-6 hari dalam se minggu; Setiap hari

	Nama Items	Tidak pernah (Tidak pernah atau kurang dari sekali sebulan)	Jarang (1-3 hari dalam sebulan)	Kadang (1 hari dalam se minggu)	Sering (2-4 hari dalam se minggu)	Selalu (5 – 6 hari dalam se minggu)	Setiap hari
30.1 (3,6)	Edamame						
30.2 (3,6)	Kacang mete						
30.3 (3,6)	Kacang merah, matang						
30.4 (3,6)	Kacang merah, rebus						
30.5 (3,6)	Lentils, matang						
30.6 (3,6)	Kacang kedelai, bubuk						
30.7 (3,6)	Oncom						
30.8 (6)	Kacang kapri matang						
30.9 (6)	Selai kacang						
30.10 (6)	Kacang, mentah						
30.11 (3)	Kacang black eyed peas, matang						
30.12 (3,6)	Kacang sapi, matang						

30.13 (3,6)	Tahu keras, matang				
30.14 (3,6)	Tahu sutra, matang				
30.15 (3,6)	Tahu tinggi kalsium				

31	**Kelompok makanan X: Supplement**					

Note: Berapa sering anak anda mengkonsumsi **paling sedikit 0,7 gram** of the ikan oil (e.g. 1/8 teaspoon ikan oil at that picture)?

Tolong dijawab dengan pilihan yang sesuai dengan yang ibu praktikkan.

Tidak pernah = Tidak pernah atau kurang dari sekali sebulan; Jarang = 1-3 hari dalam sebulan; Kadang = 1 hari dalam se minggu; Sering = 2-4 hari dalam se minggu; Selalu = 5-6 hari dalam se minggu; Setiap hari

	Nama Items	Tidak pernah (Tidak pernah atau kurang dari sekali sebulan)	Jarang (1-3 hari dalam sebulan)	Kadang (1 hari dalam se minggu)	Sering (2-4 hari dalam se minggu)	Selalu (5 – 6 hari dalam se minggu)	Setiap hari
31.1 (3,6)	Minyak Ikan kod						
31.2 (3,6)	Minyak kelapa						
31.3 (6)	Minyak jagung						
31.4 (3)	Minyak zaitun						

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