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**CHILDREN EATING BEHAVIOUR IS FORMED BY  
PARENTS GENERAL NUTRITION KNOWLEDGE  
AND PARENTAL FEEDING PRACTICES  
AMONG THE PRESCHOOLERS IN  
SELANGOR.**



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**SHU BO YUE**

**SULTAN IDRIS EDUCATION UNIVERSITY**

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**“Thank you all for being a part of this important milestone in my academic career**





## ABSTRACT

The aim of this study is to determine the relationship between parental feeding practices, parent general nutrition knowledge, and children eating behaviours and test the mediate relationship of parent general nutrition knowledge between parental feeding practices and children eating behaviour. A quantitative approach is used to identify the variable and sub-variables relationship between parental feeding practices, parent general nutrition knowledge and children eating behaviour. Quantitative approaches were used to test the level and relationship of the variable by using descriptive analysis, Pearson correlation Analysis and Multiple regression analysis. The sample for the study consisted of 300 pre-schooler parents whose have child between 3 to 6 years old from Selangor and was selected using simple random sampling technique. Three instruments employed were child eating behaviour questionnaire, comprehensive feeding practices questionnaire and general nutrition knowledge questionnaire. A Pearson correlation analysis showed that there is positive correlated between Feeding practices and children eating behaviour between  $r(298) = 0.126, p = 0.029$  and  $r(298) = 0.423, p = 0.000$  but some of the sub-variables of parental feeding practices didn't correlate with certain sub-variables of children eating behaviour with  $p\text{-value} > 0.05$ . Thus, the relationship between parent nutrition knowledge and parent feeding practices and parent nutrition knowledge and children eating shows the same result that were some of the sub-variables have correlated with parent general nutrition knowledge between  $r(298) = -0.137, p = 0.008$  and  $r(298) = -0.117, p = 0.043$  but some of the sub-variable have no correlated with parent general nutrition knowledge. In conclusion, parent feeding practices and parent general nutrition have affected one particular child eating behaviour. As implication, this study shall be conducted in more specific factors that affected the children eating behaviour.





## TINGKAH LAKU PEMAKANAN KANAK-KANAK DIPENGARUHI OLEH PENGETAHUAN PEMAKANAN UMUM IBU BAPA DAN AMALAN PEMBELIAN MAKANAN IBU BAPA DI KALANGAN KANAK-KANAK PRASEKOLAH DI SELANGOR

### ABSTRAK

Tujuan kajian ini adalah untuk menentukan hubungan antara amalan pembelian makanan ibu bapa, pengetahuan pemakanan umum ibu bapa dan tingkah laku pemakanan anak-anak dan menguji hubungan pengantaraan dari pengetahuan pemakanan umum ibu bapa antara amalan pembelian makanan ibu bapa dan tingkah laku pemakanan anak-anak. Pendekatan kuantitatif digunakan untuk mengenal pasti hubungan pembolehubah dan sub-pembolehubah antara amalan pembelian makanan ibu bapa, pengetahuan pemakanan umum ibu bapa dan tingkah laku pemakanan kanak-kanak. Pendekatan kuantitatif digunakan untuk menguji tahap dan hubungan pembolehubah dengan menggunakan analisis deskriptif, Analisis korelasi Pearson dan analisis regresi berbilang. Sampel untuk kajian ini terdiri daripada 300 ibu bapa prasekolah yang mempunyai anak berusia antara 3 hingga 6 tahun dari Selangor dan dipilih menggunakan teknik persampelan rawak yang mudah. Tiga instrumen yang digunakan ialah soal selidik tingkah laku pemakanan kanak-kanak, soal selidik amalan pemakanan yang komprehensif dan soal selidik pengetahuan pemakanan umum. Analisis korelasi Pearson menunjukkan bahawa terdapat hubungan positif antara amalan pembelian makanan dan tingkah laku makan kanak-kanak antara  $r(298) = 0.126, p = 0.029$  dan  $r(298) = 0.423, p = 0.000$  tetapi beberapa sub-pembolehubah amalan pembelian makanan ibu bapa tidak berkaitan dengan sub-pembolehubah tertentu dengan nilai  $p > 0.05$ . Selain itu, hubungan antara pengetahuan pemakanan ibu bapa dan amalan pembelian makanan ibu bapa dan pengetahuan pemakanan ibu bapa dan tingkah laku pemakanan anak-anak menunjukkan keputusan yang sama iaitu beberapa sub-pembolehubah telah berkorelasi dengan pengetahuan pemakanan umum ibu bapa antara  $r(298) = -0.137, p = 0.008$  dan  $r(298) = -0.117, p = 0.043$  tetapi beberapa sub-pembolehubah tidak berkaitan dengan pengetahuan pemakanan umum ibu bapa. Kesimpulannya, amalan pemakanan ibu bapa dan pemakanan umum ibu bapa telah menjejaskan tingkah laku makan anak tertentu. Sebagai implikasi, kajian ini akan dijalankan dalam faktor-faktor yang lebih spesifik yang mempengaruhi tingkah laku pemakanan kanak-kanak.





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## LIST OF ABBREVIATIONS

AMOS	Analysis of Moment Structure
CC	Child control
CEBQ	Child Eating Behaviour Questionnaire
CFPQ	Comprehensive Feeding Practice Questionnaire
DD	Desire to Drink
DV	Dependent Variable
E	Environment
EBV	Encourage Balance and variety
EF	Enjoyment of food
EOE	Emotional over-eating
ER	Emotion Regulation
EUE	Emotional under-eating
FF	Food Fussiness
FR	Food as Reward
FR	Food Responsiveness
GNKQ	General Nutrition Knowledge Questionnaire
IV	Independent Variable
IV	Involvement
MN	Monitoring
MO	Modelling
MV	Mediator Variable





P	Pressure
RFN	Restriction for Health
RWC	Restriction for Weight Control
SE	Slowness in Eating
SPSS	Statistical Package for Social Science
SR	Satiety Responsiveness
TN	Teaching about Nutrition



## LIST OF APPENDICES

- A Questionnaire English Version
- B Questionnaire Malay Version
- C Letter Seeking Permission to Use Questionnaire
- D Turnitin Result
- E SPSS Analysis Data

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

This chapter will be discussing the research introduction and provide an overview of this study. Hence, this chapter will begin by introducing the background of this study and the problem statement. Follow by the research objective, research questions, research hypothesis, significance of the study, and definition of the term.

#### 1.2 Background of the Study

Food is the main source to keep a human being stay energetic and provides important nutrition for the body. Foods like drugs are ultimately chemicals, but they are more than that. It was a symbol, a part of rituals, pathways to body images, and vehicles through which love is expressed (Connors, 1989). Every single person they have their eating behaviours and the way they acquire that particular food from their early years. Good nutrition is a vital part of growing up. Young children are particularly in need of good



nutrition because of the rapid growth of every single part of their body and all their body systems (Crowther, 2005). Having a requisite diet and good nutrition started from early years is critical to children's healthy development as well as eating behaviours that they have learned. They might practice their adolescence and adulthood which caring for their lifelong eating habits (Zarnowiecki, Sinn, Perkov, and Dollman, 2012).

According to National Health and Morbidity Survey (NHMS, 2015), the prevalence of overweight and obesity among children below 18 years old is 11.9% and the highest prevalence was the children between the age group 5 to 9 years old was 14.8%. One of the national statistics reported that the obesity epidemic in children under 18 years old has increased rapidly from 3.9 % in the years of 2011 to 11.9 % in the years of 2015 (Ministry of Health Malaysia, 2015). According to Segal and Sanchez (2001), children who were affected by obesity and when they reach the age of six years old are more likely to continue to become obese in adulthood with a probability exceeding 50%, which makes early prevention of obesity in childhood a crucial approach to get a grip with obesity in adolescent and adulthood. One of the studies that been conducted in selected pre-school reported the prevalence of overweight and obesity was 18.4% which is considerably higher among the pre-schoolers in Malaysia. The increasing trend of childhood obesity was a sign to show the probability of this issue might become disgraceful in the future (Poh, Kathryn Tham, Wong, Winnie Chee & Tee, 2012).

Obesity is the main health issue that has been focused on worldwide and it was the most serious public health challenge of this century (Nittari et al., 2019). Worldwide obesity has more than doubled since 1980. In recent decades, fat mass





accumulation in children and adolescents has become much more significant in the United States and other developed countries, as reflected by increasing rates of obesity among these age groups (Anderson, Root, and Garner, 2015). According to World Health Organisation (2015), obesity among children below 5 years old are increasing especially in developing country such as the United States, and more than 42 million children below 5 years old were overweight in the years 2013. In the year 2013, the estimation of overweight and obese children is increasing to 18 million in Asia country Malaysia was one of the Asia countries on the list (WHO, 2015).

Children that were overweight or obese were statistically found to consume higher levels of energy intake, carbohydrates, sugar, and sodium compared to normal children. According to the Dietary Guideline for Americans, a normal intake for each child is between 1,000 to 1,600 calories per day (Melisa and Kimberley, 2018). In Malaysia, the recommended caloric intake for each child that is 3 years old is 1,000 calories and for 4 to 6 years old the calories should be taken is 1,300 per day (Ministry of Health Malaysia, 2013). Children who are overweight and obese are at high risk of suffering from diabetes, heart attack, and cancer which have a detrimental effect on their physical or psychological health throughout their growing process. One of the studies that been conducted by Rusell-Mayhew, Mc Vey, Bardick & Ireland (2012) found that the child that been facing obesity have the lowest self-esteem compared to normal-weight children.

The social factor is one of the major impacts on children's dietary intake that unquestionably parental influences withal have a significant impact in determining children's eating behaviours (Santos et al., 2011). Family members especially







parents are the one that offers the foods for the children that they started to accept and have in their early years. Children started the earliest eating and food experiences in the environment that had been provided or created by their parents, which had been described as food availability, cooking skills and food preparation, social modeling, feeding styles, and discussion about healthy food (Zarnowiecki et al., 2012). According to Gibson, Wardle, and Watts (1988), the strong liability of the parents creates the environment through their nutrition knowledge, thus acting as an indirect determinant of children's food preferences and eating behaviours. All children enjoy familiarity in their environment. The environment that been provided either home or preschool should produce a secure and familiar lifestyle that been prepare from the adults. This extends to mealtimes activities. Most prefer meals and snacks regularly on a regular's schedule and in familiar surroundings (Crowther,



Parental feeding practices have been linked to eating and weight status in young children. Parents can influence a child's eating behaviors in several different ways, both direct and indirect (Melisa and Kimberley, 2018). Choosing food for children can be complex practice and many ideas of circumstances influence the food choices that parents make for their children. The environment and the individual circumstance combine to result in food choices influenced by the beliefs, values, norms, and knowledge along with the cost, quality, and availability of various foods (Boak, Virgo, and Hoare, 2016). According to Jensen, Ryan, and Arovian (2013) evidence suggests that the eating habits of one particular child developed during toddler and preschool age may influence lifelong eating behaviours. Once children





begin school, most of them have already developed their food likes and dislikes, so achieving behaviour change may be more difficult (Melisa and Kimberley, 2018).

Bad eating behaviours might cause unhealthy eating styles and dietary intake in their daily life. For instance, fewer fruits and vegetable intake ground to dislikes and pickiness, high energy due to overeating, and limited quality and variety of diets as only preferred certain familiar foods (Nekitsing, Hetherington and Blundell-Birtill, 2018). Eating behaviours can be specific into different concepts when explaining the tendency to approach or avoid the food. Food approach behaviours indicate behaviours and movement toward food or craving the food to eat. For example, enjoyment of food, emotional overeating, food responsiveness, and desire to drink. On the other, some of the children have food avoidance behaviors moments away from food, such as emotional undereating, slowness in eating, satiety responsiveness, and food fussiness. Some of these specific eating behaviours such as food responsiveness, enjoyment of food, and emotional overeating had been reported to have a strong relationship with childhood obesity (Santos et al., 2011).

According to the Curriculum Development Centre (2007), Private preschools in Malaysia contained 42.61% in total and the number of preschoolers contained 40.43% (285.722). Parents in the Selangor district they more prefer to enroll their children in private preschools rather than public preschools due to private preschools in Malaysia are more equipped and have more staff compared to public preschools (Lydia, Palanisamy, Moqana, and Carynne, 2018). Besides parents of different educational levels, beliefs and perception might influence their choices of preschool for their children. Furthermore, some parents may be influenced by marketing claims





like advertisements and brand names (Mustafa, Yunus & Azman, 2014). According to Dahari, and Ya (2011) it shows that 84% of parents willing to choose branded preschools compare with non-branded preschool that was 13.6% in the fact of brand image perception directly affect customer loyalty (Allen and Rao, 2000).

In addition, parents now day will be more focusing on working to cover their daily expenses, children's tuition fees, loan payments, monthly bills, and others to maintain the household expenses, especially those who stay in the urban area. They willing to send their children to the preschool that has day care services so they can grab their child after their work. That is another reason why the researcher wants to focus on the children who enroll in private preschool it is because children will be spending most of their time in the preschool. Thus, parents unable to identify children's daily food intake and it might cause their child suffer in obesity, overweight, underweight or others health issues due to their nutrition knowledge and their feeding practices affected on their child eating behaviour. Moreover, most of the people perform research in public preschools rather than private preschool so it has piqued people's interest in getting more information regarding it.

Upon that, parents and caregivers are the ones that we address as a significant role that involves a central role in establishing children's food preferences and eating behaviours. The nutrition knowledge does not completely assure a healthy eating style not to mention the influences of attitude, practice, and motivation to eat healthily, but the nutrition knowledge is still requisite (Watkins, 2007).



### 1.3 Problem Statement

Most of the studies that have been conducted are related to either the feeding practices with eating behaviour or nutrition knowledge with eating behaviour but there are quite a few studies that combine those three main keywords that are “feeding practices”, ‘Nutrition knowledge” and “children eating behaviour” into one study. Thus, parent feeding practice will influence children eating behaviour but parents' general nutrition knowledge should not be laid off as it was a piece of important information that might affect a child's eating diet. Hence, this study will bring an awareness of important feeding practices and general nutrition knowledge that might affect one child's eating behaviour and health.

The most serious public health challenge that has been faced globally is obesity and the probability exceeds half of the percentage of an adult who's obese which shows they have a history of obesity during their childhood times (Segal and Sanchez, 2017). According to WHO (2015), Asian countries were estimated to increase 18 million overweight and obese children in the year 2013. Malaysia is one of the most obese countries in Asia, with the second-highest rate of childhood obesity among children aged 5 to 19 in ASEAN, while children under the age of 5 are overweight (WHO, 2019).

Besides COVID 19 pandemic that was declared on 11 March 2020, the government of Malaysia enforced a Movement Control Order (MCO) that started on 19 March 2020 (Shah et al., 2020) has brought an impact on children's health during this period. According to Adams, Caccavale, Smith, and Bean (2020), due to the pandemic, parents prefer to avoid going out to buy groceries, thus they buy more



low-cost, shelf-stable foods that are less healthful and nutritionally deficient. And children's unable to attend school thus the number of food intake might increase compared to before and it causes children's health changes.

One of the review papers that been conducted by Birch, Savage, and Ventura (2007) indicated that children eating patterns are related to parental influences such as knowledge, attitude, feeding practices, food availability, and social modeling for dietary intake and pattern. Parents' nutrition knowledge does not directly determine their children's eating behaviour to the point that parents make food choices and provide various food to their children depending on their nutrition knowledge and attitudes, which shape children's eating behaviours and habits indirectly. Melissa and Kimberley (2018) have the same point of view that food choices are a multiplex human behaviour that begins in early childhood when children deploy independence in selecting what to eat and what not to eat. Dietary drive mainly by many factors influences food choices. Family, peers, schools, culture, and food marketing play an important role and building the environment that shapes dietary intake during preadolescents.

A few studies that have been conducted by some researchers found that overweight parents were engaging in a sedentary lifestyle and dietary preferences were shown to be the most consistent risk factors for childhood overweight and obesity (Mahaletchumy, Rampal & Sharif, 2019). Usually, children will be observing their parents, parents are the ones that play an important role in being the role model to their children especially in shaping children's behavior of practicing a healthy lifestyle (Faisal, Mustapha, Alauddin, Moniruddin & Sifat, 2016). Successful





intervention for early childhood obesity treatment typically involves parents and integrating support in parenting skills with information on a healthy lifestyle (Loveman et al., 2015).

Many studies that have been conducted are focusing on restrictive and pressure maternal feeding practices and neglect the importance of other feeding practices (Musher-Eizenman & Holun, 2007). This indicates that other feeding practices such as emotion regulation, encourage balance and variety, environment, food as a reward, involvement modeling, monitoring, pressure, restriction for health, restriction for weight control, child control, and teaching about nutrition and instrumental feeding practices are rarely being mentioned in most of the studies. Burnier, Dunois & Girard (2011) mentioned that other feeding practices such as instrumental feeding practices or monitoring feeding are influencing children's eating behavior as well.

Mcphie, Skouteris, Daniels and Jansen (2014) have linked parental feeding practices with childhood obesity. Consecutively, Rodgers et al., (2013) stated that maternal feeding practices have been proposed to play an important role in early childhood weight gain. During early and middle childhood, the family environment is a key factor influencing the development of food preferences, energy intake eating behaviours, and physical preferences and patterns, which may subsequently influence the onset of obesity (Birch and Davison, 2001). According to Worsley (2002), there are not many studies related to the relationship between nutrition knowledge and food behaviour and many studies show no relationship between them.





Childhood obesity is a significant problem in Malaysia, with increasing rates over the years (National Health and Morbidity Survey, 2019). Unhealthy dietary habits, sedentary lifestyles, and environmental factors such as easy access to high-calorie foods and limited opportunities for physical activity are contributing to the rising prevalence of childhood obesity (Rezali, Chin, & Mohd Yusof, 2012). According to a study published in the International Journal of Environmental Research and Public Health, Malaysian children who consume high-calorie, low-nutrient foods, and beverages, and engage in low levels of physical activity are at higher risk of obesity. Cultural norms that promote larger body sizes and misconceptions about healthy body weight can also influence children's perceptions and behaviors related to food and physical activity (National Health and Morbidity Survey, 2019).



Inadequate nutrition is another pressing issue faced by some children in Malaysia, including deficiencies in essential nutrients such as vitamins and minerals (Mohd Shariff et al., 2015). Poor dietary practices, limited access to nutritious foods, and food insecurity contribute to inadequate nutrition among children (Rathuan, Zalbahar, & Sulaiman, 2020). Additionally, factors such as poverty, low parental education, and lack of nutrition education can further exacerbate inadequate nutrition among children in Malaysia (Wong, Moy, & Nair, 2014).

In addition, Contemporary parents are often preoccupied with work, daily expenses, children's tuition fees, loan payments, and monthly bills, particularly those residing in urban areas (Furstenberg, 2018). Consequently, they may opt to enroll their children in preschools that offer daycare services, allowing them to collect their





children after work. That is another reason why the researcher wants to focus on the children who enroll in private preschool it is because children will be spending most of their time in the preschool. Thus, parents unable to identify children's daily food intake and it might cause their child suffer in obesity, overweight, underweight or others health issues due to their nutrition knowledge and their feeding practices affected on their child eating behaviour. Moreover, most of the people perform research in public preschools rather than private preschool so it has piqued people's interest in getting more information regarding it (Datta, Cleland, & Dasgupta, 2017; Li & Julian, 2012).

#### **1.4 Purpose of the Study**

In this section, the researcher will describe what is the purpose of running the study. In this study, the researcher would like to explore the role of nutrition knowledge as a mediator of feeding practices and children's eating behaviour among the parents of preschoolers. Although parents or caregivers have the skills of feeding practices if nutrition knowledge is a mediator between it how it bringing the mediating impact on children eating behaviours and a healthy eating diet. Most of the studies that have been conducted by researchers are focusing on either parent feeding practices and children's eating behaviours or parental general nutritional knowledge and children's eating behaviours. But there are quite a few studies that involve three key points that is feeding practices, parental general nutrition knowledge, and children's eating behaviours one study.





## 1.5 Research Objective

This study aims to investigate Feeding Practices, nutrition knowledge, and children eating behaviour. Hence, the research objective for this research is as below:

- i.) To identify the level of feeding practices.
- ii.) To identify the level of parental general nutrition knowledge.
- iii.) To identify the level of children eating behaviour.
- iv.) To identify the relationship between parental feeding practices and children's eating behaviour.
- v.) To identify the relationship between parental feeding practices and parental general nutrition knowledge.
- vi.) To identify the relationship between parental general nutrition knowledge and children's eating behaviour.
- vii.) To investigate the relationship of parental general nutrition knowledge as a mediator between parental feeding practices and children's eating behaviour.

## 1.6 Research Question

This research will be focused on answering the question below:

- i.) What is the level of feeding practices?
- ii.) What is the level of parental general nutrition knowledge?
- iii.) What is the level of children's eating behaviour?



- iv.) Is there a significant relationship between parental feeding practices and children's eating behaviour?
- v.) Is there a significant relationship between parental feeding practices and parental general nutrition knowledge?
- vi.) Is there a significant relationship between general nutrition knowledge and children's eating behaviour?
- vii.) Is there a significant relationship between parental general nutrition knowledge as a mediator between parental feeding practices and children's eating behaviour?

## 1.7 Research Hypothesis

The research hypothesis for this research is as below:

- H<sub>01</sub>:** There is no significant relationship between parents feeding practices and children's eating behaviour
- H<sub>02</sub>:** There is no significant relationship between parental feeding practices and parental general nutrition knowledge.
- H<sub>03</sub>:** There is no significant relationship between parental general nutrition knowledge and children's eating behaviours
- H<sub>04</sub>:** Nutrition knowledge has no significantly mediates the relationship between feeding practices and children's eating behaviour.



## 1.8 Conceptual Framework of Research

Based on the conceptual framework Figure 1.1 the study claims that there is a direct effect between feeding practices and children's eating behaviours. However, the mediator variable “general nutrition knowledge” is also one of the variables that mediate the causal effect of those two variables. The independent variable “parental feeding practices” break down to child control, emotional regulation, encouraging balance and variety, environment, food as reward, involvement, modeling, monitoring, pressure, restriction for health, and weight control. The dependent variable “Children eating behaviours” has been categorized as food responsiveness, emotional overeating, enjoyment of food, desire to drink, satiety responsiveness, slowness in eating, emotional undereating, and food fussiness. Last but not least the mediator variable “nutrition knowledge” contains dietary recommendations, food groups, healthy food choices, diet, disease, and weight management. Jansen et al., 2012 stated that previous literature has found evidence for such a bidirectional connection between feeding practices and children’s eating behaviour.



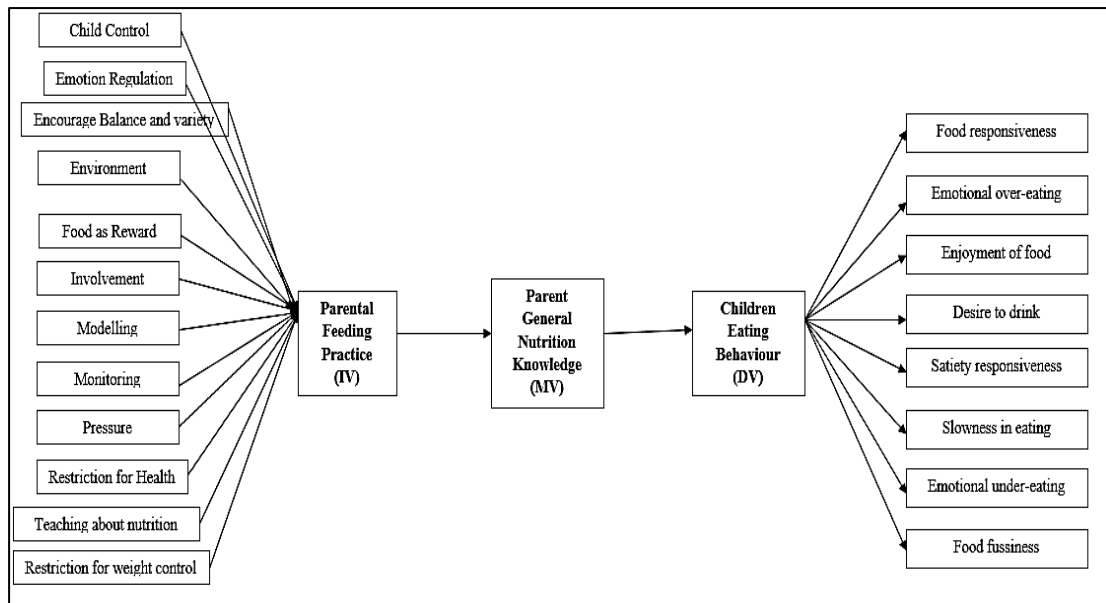
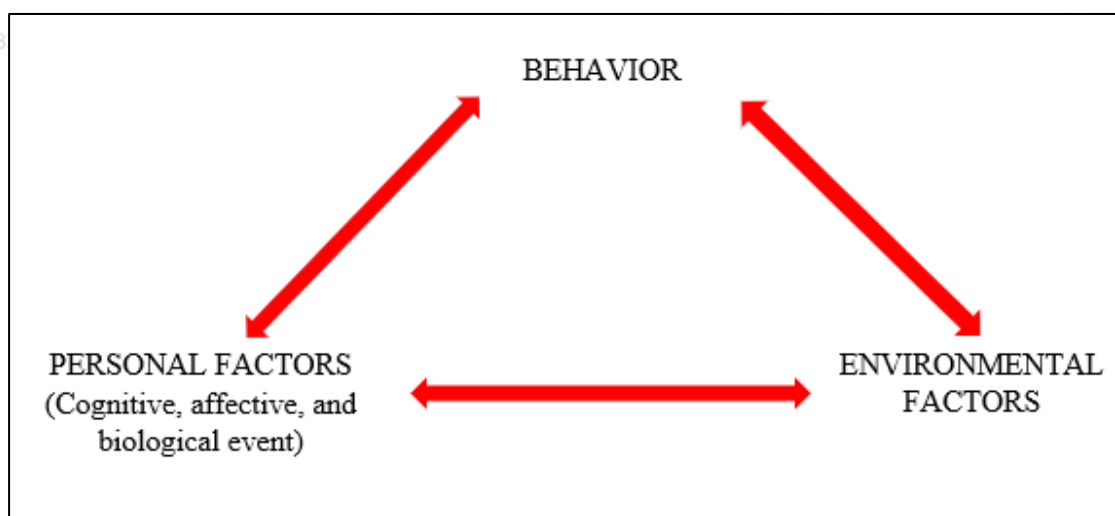


Figure 1.1. Conceptual Framework

## 1.9 Theoretical Framework of Research

Albert Bandura's Social Learning Theory (1986) proposes that human behaviour can be explained by a reciprocal relationship between cognitive factors, environmental factors, and behavioral factors. Based on figure 1.2 and figure 1.3 the cognitive factors include one's knowledge expectations and attitudes to perform certain behaviours. The environmental factors include one's social and physical environment. Family members, friends, and colleagues are examples of the social environment which are the individuals that we usually interact with. While behavioral factors include one's skills, practice, and self-efficiency to perform desirable behaviour. Each factor is interrelated with each of the other factors. For example, the environment affects the person's behaviour, while the behaviour may change the environment, the same goes with the individual thinking and feelings.

The theory was widely used to explain nutritional behaviours, such as dietary choices made by an individual (Poddar, Hosig, Anderson, Nickols & Duncan, 2010) and it has been known to be useful in changing dietary behaviours (Anderson, Witnett & Wojcik, 2007). Parents are the ones who play an important role that influencing children in terms of their health and eating behaviours. Parents are the individuals who interact most of the time with their children and directly affect how their children will grow. Hence in this study, parental influence is described as the social environmental factors that influence the children's eating behaviour. Parents tend to utilize receiving the nutritional information or knowledge in making food choices and purchasing the foods for their children, hence their nutrition knowledge can be important in shaping children's eating behaviour (Zarnowiecki et al., 2012).



*Figure 1.2.* Social Learning Theory from Albert Bandura Adapted from Pajares (2002). (Pajares (2002). Overview of Social Cognitive Theory and Self-Efficacy. Retrieved month day, year, from <http://www.emory.edu/EDUCATION/mfp/eff.html>)

Another theory that has been integrated into this study is Bronfenbrenner's Ecological System Theory which was developed by Urie Bronfenbrenner. Through this theory, we can understand how different contexts of environments interact and



affect children's growth. Ecological System Theory highlighted the importance of the environment has been applied to the predictors of overweight and obesity in children (Davison & Birch, 2001). According to figure 1.4, there are five levels of the external system which are microsystem, mesosystem, exosystem, macrosystem, and chronosystem (Neal & Neal, 2013).

The environment that contacted with the child immediately and including daily environment and organization such as home, kindergarten and daycare center, namely microsystem. It is composed of immediate and direct personal relationships such as family, caregivers, and peer groups (Neal & Neal, 2013). The parent is one of the caregivers or family members that have an intimate relationship with their children in their development. Hence, feeding practices and children's eating behaviour are interrelated as mothers tend to have the authority to influence the children's decisions in consuming their food.

The next level would be mesosystem which are the connections of different microsystems such as between school and home or between parents and friends. Those linkages between the connections of the microsystem will bring either positive or negative impacts to the children (Darling & Steinberg, 1993). For instance, if one particular parent is having issues with the child studying in, then the child might feel stressed out as both of the closest microsystems with the child are having conflict with each other. In this study, parental feeding practices will be one of the influences on one particular child's eating behaviour due to parent might talk with the school about their child is unable or don't like to eat that particular food and try to avoid giving them.





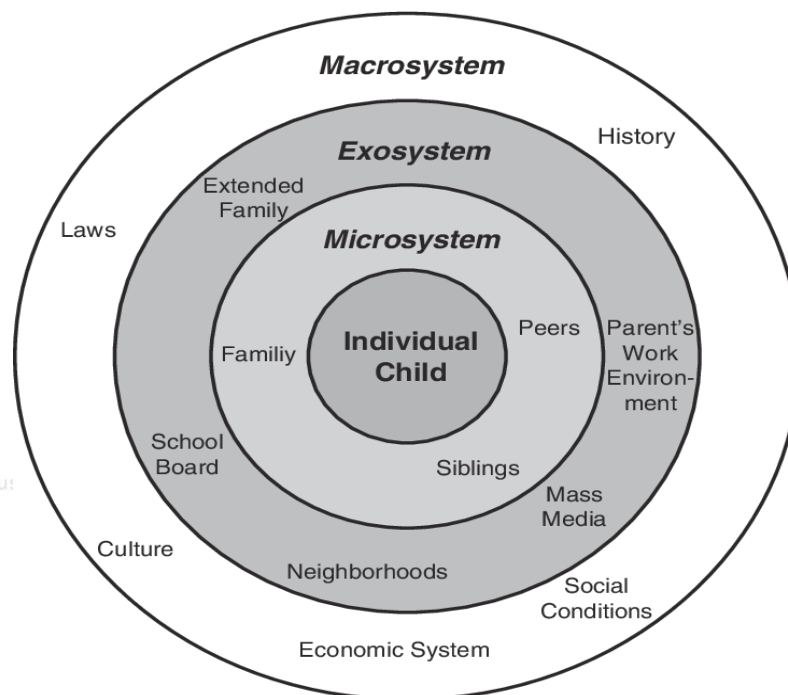
The third level of the Ecological system theory will be the exosystem which is made up of indirect environments and relationships. Indirect environments and relationships are such as parents' workplaces, mass media, extended family, or friends' parents. The influence was indirect, but it is still able to affect the children (Sarah, 2018). Children may pledge their parents for a treat in the fast-food restaurant and parents may use instrumental feeding practices such as rewarding the child with fast food if they behave well. According to Harris, Bargh & Brownell (2009), children consumed 45% more when being exposed to food advertising.

The consecutive level will be the macrosystem which encompassed children's culture, patterns, norms and values, politics, and also the economy. According to Becker and Todd (2018), the macrosystem is comprised of the socioeconomic status of the individual, race, ethnicity, and the condition of the country where the individual was living. For example, if the child was born in a higher SES family, he or she will be more able to access more options in choosing the food. The last level is the chronosystem. It is involving the socio-historical context, changes over time, and the transitions in one's lifespan (Becker and Todd, 2018). For instance, the transition of a family from one child to two children will affect the rearing practice of the parents.

Bronfenbrenner (1986) stated that development cannot be fully understood without consideration of the context or ecological position in which the person exists. the environments that a person living in should be taken into account such as family, school, neighborhood, or country when studying the growth process. This indicated that the act of nurturing is significant in deciding the children's behaviour such as



eating behaviour. Besides the societal factors that influence eating behaviours such as mass media, the proximal influence would be maternal behaviour towards children's food consumption patterns (Bjorklund, 2014). This is because parents play the role of the microsystem and have the most intimate relationship with children in influencing their children's behaviour.



*Figure 1.3.* Bronfenbrenner's Ecological System Theory (Bronfenbrenner's Ecological Model of Human Development (1979). Retrieved from [https://openi.nlm.nih.gov/detailedresult.php?img=PMC2676270\\_1471-2458-9-94\\_1&req=4](https://openi.nlm.nih.gov/detailedresult.php?img=PMC2676270_1471-2458-9-94_1&req=4))

According to the theory of social learning by Albert Bandura and the ecological system theory by Bronfenbrenner their framework has a few of the points that have aligned in the study. Based on the theory of social learning behaviour one particular person will be affected by the environmental factors, behaviour factors, and personal factors regarding one particular incident and its accordance with the study. Environment factors can be the person who interacts with us such as family members, or friends, and how they influence us in one particular knowledge or



behaviour, or personal thought. Behaviour factors are included on a particular person's practice and self-efficiency imprints a permissible behaviour on the subject. Based on the respective author's study the 3 factors are correlated with one another's. In short, the previous research indicated a mediator flow, which in my personal view was palatable in my study to perceive a strong objective in parenting knowledge on nutrition, child feeding behaviour, and feeding practice. As the three-factor adamantly engaged with one another. Knowledge is a pioneer source of understanding while it, directly and indirectly links with individual practice and behavior. Mediator flow is a suitable approach to further understanding the nutrition knowledge and eating behaviour among the pre-schooler.

Moreover, Urie Bronfenbrenner developed the Ecological system theory, further distinguish into five-level in figure 1.4 microsystem, Mesosystem, Exosystem, Macrosystem, and chronosystem from this theory we can be acknowledged that different contexts of environment engaged directly and indirectly affect the child growth. On the contrary, Bronfenbrenner's study focuses on the wide context of development as there is less emphasis on the micro emanate factor of child development. Still, the whole theory reference is a good platform for understanding the different factors in a large context affecting child development. My study was accentuated on children eating behaviour, in which parenting plays a prominent role in child feeding practice.

Whereas this study acquiesce few levels point out by Bronfenbrenner from the Microsystem level indicated the daily routine and environment which personally close contact with them such as a parent, sibling, and peers. Mesosystem portrait a

paradigm connection between the microsystem sphere, for example, children daily activity in daycare or school, parent play a pertinent role to guide their children eating behaviour usually the first day of attending preschool parent will consult children to avoid sweet and fried latent with high cholesterol. In sum, the Ecological system theory conceives a firm understanding of the level of engagement that renders children versatile growth, while it serves as a great reference for my study.

## 1.10 Operational Definition

In this part, the researcher will be explaining the operational definition and conceptual definition for each term that has been used in the research. Below is the term with the definition and explanation.

### 1.10.1 Feeding Practices

According to Shloim, Edelson, Martin, & Hetherington (2015), feeding practices are a practice that refers to the specific goal-directed behaviours used by parents to directly sway their children's eating. Russell et al. (2018) stated that parental feeding practices are food or eating – specific behaviour or strategies that use by the parents to influence what, when, and how much their children eat in daily life. Common feeding practices include modeling eating behaviours, restricting types of food, pressuring children to eat, rewarding positive behaviours with food, and availability of food at home. In this research, the term feeding practices is a mediator that indicates between nutrition knowledge and children's eating behaviour among the pre-schoolers. Monitoring, pressure, restriction, instrumental, and encouragement feeding practices are based on a



Comprehensive Feeding Questionnaire (CFPQ) developed by Musher- Eizenman and Holub (2007). The researcher was using a Comprehensive Feeding Questionnaire (CFPQ) as one of the instruments in this research.

### **1.10.2 Nutrition Knowledge**

The term nutrition refers to the science of food it is a chemical component nutrient and its relationship to health and disease. It includes the processes involved in food (Marotz, 2020). According to Soderberg, Miller, and Cassady (2015), the term nutrition knowledge is generally defined as “knowledge of concepts and processes related to nutrition and health including knowledge of diet and health, diet and disease, food representing major sources of a nutrient, and dietary guidelines and recommendations.

In this research, the researcher will be using General Nutrition Knowledge Questionnaire (GNKQ) that been developed by Parmenter and Wardle in 1999.

### **1.10.3 Children's Eating Behaviour**

The term Eating is an essential need, and without food one particular human being could die within a matter of a week (Dovey, 2010). According to Furman (2012), children eating behaviour is a thought, action, and intention that an organism enacts to ingest solids or liquids. In this research, eating behavior is used to mean the way and pattern of how a particular person or a child eats, which is measured by using the Children Eating Behaviour Questionnaire (CEBQ) that was developed by Wardle, Guthrie, Sanderson, and Rapoport in 2001. The element's contents of the Children's Eating Behaviour Questionnaire (CEBQ) such as enjoyment of food, emotional over-eating,





and under-eating, desire to drink, food responsiveness, satiety responsiveness, slowness in eating, and food fussiness.

#### **1.10.4 Pre-schooler**

According to Marotz (2020) Preschool- age children are between 2 ½ to 6 years old that are generally easier going and more cooperative than the toddler. They are willing to listen and follow adult directions to please but are not always compliant. Families and teachers can anticipate that many of these developmental characteristics will be reflected in the pre-schooler's eating behaviours and responses to food. As one particular child matures, they will become more eager to eat, although some of the pre-schoolers will develop even firmer thoughts about the foods that do or do not like (Marotz, 2020). That indicate the parent's feeding practices as well as the knowledge toward the nutrition that given impact of their eating behaviours.

#### **1.10.5 Mediator**

According to Vigers (2011), mediation is a procedure in which a third party, who has no endowed interest in the situation or matter in discussion, facilitates discussion between the parties to help them resolve their difficulties to reach an agreement. The mediator has no domination to manipulate a solution on the parties but should remain both neutral and impartial. The mediator's roles are to help the parties negotiate together and to reach their joint agreements (Marvin, 1972). Kraemer, Stice, Kazdin, Offord, and Kupfer (2001) specified that mediators as variables that change over time after an intervention.





### 1.11 Study Limitations

On 11 March 2020, World Health Organization (WHO) declared COVID 19 as a pandemic, and Malaysia has been recorded as having the highest number of COVID 19 cases in Southeast Asia (Che Mat, Edinur, Abdul Razab, & Safuan, 2020). Due to the pandemic, there is difficulty in collecting the data and information physically. Most of the time the researcher is only able to get that information and respond through devices such as WhatsApp, email, or Facebook. In addition, it was quite difficult to collect all the data during this period for reason that some of the respondents they unable to answer the questionnaire due to the language problem and confusion about the term in the question that had been provided.

Besides, other limitations of this study are due to the pandemic issue most of the preschools located in Kajang are not allowing an outsider to enter the preschool area due to the center's need to fulfill the SOP that has been set by the government. And it causes the procedure of collecting data been delaying or unable to continue. Another limitation of this study is the number of the questionnaire. This study is focusing on 3 different variables that are parental feeding practices, general nutrition knowledge, and children eating behaviour. so it was using 3 different questionnaires for proceeding with the data collection and answering the research questions. It affected the validity of the data due to the respondent was unable to focus on too many questions.



## 1.12 Importance of Research

In this study, the researcher would like to see the feeding practices as the mediator between feeding practices and children's eating behaviour among preschoolers. Although parents might have practices on how they feed their children nutritional knowledge also can be one of the reasons that influence their child's eating behaviours during the early stage of growing up. There are few of the study that has been conducted by other researchers around the world for studying how parental nutrition knowledge affected children eating behaviour and how feeding practices affected children's eating behaviour.

In Malaysia, few studies have been conducted by local researchers such as the study conducted by Wan, Norazawati, and Lee (2012) which mentioned parents play an important role in child feeding, especially among young children. A study that been conducted by Chong, Wu, Yatimah, Bragt, and Poh (2016) stated that a relatively high rate of the irregular meal can assumptions and its potential influence on dietary nutrient intake, persistent efforts must be continued to promote and inculcate healthy eating habits among children from an early age. Another researcher mentioned investigating the relationships can further enhance the knowledge of food-related parenting practices at mealtimes and it might help to identify the preventative measures aimed at reducing obesity rates (Gramm, 2017). Through the study that has been run by those researchers either local in Malaysia or worldwide this study is quite important to run in enhancing the parental feeding practices and nutritional knowledge at the same time identifying that both of the variables affected children's eating behaviour.



### 1.13 Summary

In this topic, the researcher has covered the topic and subtopic in the study that needs to be conducted. Such as the background of the study, problem statement, research objective, research questions, limitation of the research, and others. Generally, this study is to identify the is there any relationship between the nutrition knowledge mediator between the feeding practices and children's eating behaviour among the pre-schoolers. The next topic will cover the literature review for this study.

