

POSTPARTUM FOOD TABOOS AND DIETARY INTAKE AMONG  
MALAY WOMEN

by

NUR FARIEHAN BINTI KAMARUDIN

Thesis submitted in partial fulfillment  
of the requirements of the degree of  
Bachelor of Health Sciences (Nutrition)

JULY 2013

## **ACKNOWLEDGEMENT**

I would love to thank God because He lets me finish this thesis on time. Thank you to my supervisor, Dr Sharifah Zahhura Syed Abdullah who keeps supporting and helping throughout the research process. Besides, I would love to thank my friends especially Nurul Munirah Mohd Suppian and others who keep accompanying and assisting me throughout the data collection. I cannot finish the data collection without their assistance especially for those who assisted the transportation and who became an enumerator. In addition, thank you to adorable Sisters from each clinic who give the permission to do research in their work place. Most of all, I really need to thank all the respondents who give their support and cooperation during the data collection. Last but not least, I would love to thank Prof Wan Abdul Manan Wan Muda the course coordinator who keeps give us chances to do our best for this thesis. In conclusion, I really thank all of individual who assisting me in doing this research either directly or indirectly.

## TABLE OF CONTENT

DECLARATION .....	ii
ACKNOWLEDGEMENT .....	iii
LIST OF TABLE .....	vi
LIST OF FIGURE .....	vii
ABSTRAK .....	viii
ABSTRACT .....	x
<b>CHAPTER ONE: INTRODUCTION .....</b>	<b>1</b>
1.1 BACKGROUND	
1.2 RATIONALE	
1.3 RESEARCH QUESTION	
1.4 RESEARCH OBJECTIVE	
1.4.1 GENERAL OBJECTIVE	
1.4.2 SPECIFIC OBJECTIVES	
1.5 RESEARCH HYPOTHESIS	
1.6 CONCEPTUAL FRAMEWORK	
<b>CHAPTER TWO: LITERATURE REVIEW .....</b>	<b>10</b>
2.1 POSTPARTUM TRADITIONAL PRACTICES	
2.2 POSTPARTUM FOOD TABOOS	
2.3 POSTPARTUM DIETARY INTAKE	
2.4 FACTORS ADHERING TO THE FOOD PRESCRIPTION AND FOOD PROSCRIPTION	
<b>CHAPTER THREE: METHODOLOGY .....</b>	<b>20</b>
3.1 STUDY DESIGN	
3.2 SAMPLING METHOD	
3.3 STUDY LOCATION	
3.4 SAMPLE OF STUDY	
3.5 SAMPLE SIZE	
3.6 INCLUSION AND EXCLUSION CRITERIA	
3.7 DATA COLLECTION	
3.8 DATA ANALYSIS	
3.9 FLOW CHART OF RESEARCH AND DATA COLLECTION	
<b>CHAPTER FOUR: RESULTS .....</b>	<b>26</b>
4.1 SOCIO-DEMOGRAPHIC CHARACTERISTICS	
4.2 DIETARY PRACTICES DURING POSTPARTUM PERIOD	
4.2.1 DURATION OF POSTPARTUM PERIOD	

4.2.2 FACTORS/ASPECTS THAT INFLUENCE WOMEN ADHERING TO THE RESTRICTIONS	
4.2.3 FOOD TABOOS AND FOOD ACCEPTANCE	
4.2.4 FOOD INTAKE FREQUENCY DURING POSTPARTUM PERIOD	
4.2.5 SOCIO-DEMOGRAPHIC ASSOCIATION ON FOOD TABOOS AND DIETARY INTAKE DURING POSTPARTUM	
<b>CHAPTER FIVE: DISCUSSION .....</b>	<b>50</b>
5.1 POSTPARTUM FOOD TABOOS AND DIETARY INTAKE	
5.2 FACTORS ADHERING TO THE PRACTICES	
<b>CHAPTER SIX: CONCLUSION .....</b>	<b>55</b>
6.1 SUMMARY	
6.2 LIMITATION AND RECOMMENDATION	
REFERENCES .....	59
APPENDICES .....	62

## LIST OF TABLE

Table 4.1	Socio-demographic characteristics of respondents .....	26
Table 4.2	Women’s view on postpartum food taboos and dietary intake that had been practiced .....	31
Table 4.3	Acceptance of various vegetables and their properties by the respondents .....	34
Table 4.4	Acceptance of various fruits and their properties by respondents ...	35
Table 4.5	Acceptance of protein foods and their properties by respondents ...	36
Table 4.6	Acceptance of carbohydrate foods and their properties by respondents .....	37
Table 4.7	Acceptance of spices and their properties by respondents .....	38
Table 4.8	Acceptance of beverages and their properties by respondents .....	39
Table 4.9	Frequency of cereals, breads, and starches intake by respondents ...	42
Table 4.10	Frequency of eggs, meat, and fish intake by respondents .....	43
Table 4.11	Frequency of dairy foods intake by respondents .....	44
Table 4.12	Frequency of vegetables intake by respondents .....	45
Table 4.13	Frequency of fruits intake by respondents .....	46
Table 4.14	Frequency of beverages intake by respondents .....	47
Table 4.15	Frequency of sweets, bake goods, and miscellaneous intake by respondents .....	48
Table 4.16	Socio-demographic association on selected food taboos and dietary intake .....	51

## LIST OF FIGURE

Figure 1.1	Conceptual Framework of Food Choice Model Sobal and Lee, 1997 .....	7
Figure 1.2	Details of the personal food system Sobal, 1997 .....	8
Figure 4.1	Duration of confinement period .....	29
Figure 4.2	Factors/aspects that influence women adhering to the restrictions ..	30

## **Pantang Larang Makanan dan Pengambilan Makanan Selepas Bersalin dalam kalangan Wanita Melayu**

### **ABSTRAK**

**Latar Belakang:** Masyarakat Melayu mempercayai bahawa proses kelahiran akan menyebabkan kehilangan haba dan wanita yang melahirkan akan mengalami keadaan terlampau sejuk. Wanita Melayu akan menjalani tempoh rehat selepas bersalin selama 40 hari mengikut kepercayaan Islam. Kajian ini bertujuan untuk menjelaskan makanan pantang larang selepas bersalin dan pengambilan makanan dalam kalangan wanita Melayu, untuk mengenal pasti factor-faktor yang mempengaruhi pantang larang makanan dan corak pemakanan, untuk menentukan kekerapan pengambilan buah-buahan dan sayur-sayuran semasa berpantang, dan untuk mengenal pasti kewajaran mengamalkan pantang larang makanan tradisi dan pemakanan selepas bersalin.

Satu kajian rentas telah dijalankan di klinik-klinik kerajaan yang dipilih secara tetap di Kota Bharu, Kelantan dari April hingga Mei 2013. 88 orang wanita Melayu yang mempunyai anak berusia setahun atau kurang telah ditemu-bual. Satu set boring soal-selidik telah digunakan untuk mendapatkan maklumat mengenai latar belakang sosioekonomi, pantang larang makanan, dan pengambilan makanan dalam tempoh selepas bersalin.

Majoriti responden berusia antara 25 hingga 29 tahun, mendapat pendidikan di sekolah menengah (61.4%), merupakan suri rumah (48.9%), dan pendapatan isi rumah antara RM1000 dan RM2000 (39.8%). Kebanyakan responden berpantang selama 31 hingga 40

hari. Ibu serta ibu mertua merupakan individu yang paling berpengaruh dalam tempoh selepas bersalin. Kebanyakan sayur-sayuran dan buah-buahan dianggap “sejuk” dan dilarang makan kecuali sawi. Pengambilan ikan selar amat digalakkan dalam tempoh selepas bersalin. Terdapat hubungan yang signifikan antara umur responden dan ubi keledek dan makanan laut ( $\chi^2 = 32.35$ ,  $df = 15$ ,  $P < 0.006$ ) dan ( $\chi^2 = 45.16$ ,  $df = 10$ ,  $P < 0.0001$ ).

Pantang larang makanan dan pemakanan selepas bersalin masih popular dalam kalangan wanita Melayu di Kelantan. Satu garis panduan pengambilan makanan yang tepat khusus dalam tempoh selepas bersalin dapat membantu wanita dan penjaga dalam menggunakan maklumat bagi memperoleh manfaat kepada wanita dan bayi mereka.

## Postpartum Food Taboos and Dietary Intake among Malay Women

### ABSTRACT

Malay culture believes that during parturition heat is lost and the women undergo a state of outrageously cold. Malay women comply a 40-day period of resting in accordance with Islamic beliefs. This present study aims to describe the postpartum food taboos and dietary intakes among Malay women, to identify the influential factors in relation to food taboos and dietary pattern, to determine the frequency of fruits and vegetables intake during confinement, and to identify the rationale of practicing the traditional food taboos and dietary intake during confinement.

A cross-sectional study was conducted in purposively selected government clinics in Kota Bharu, Kelantan from April to May 2013. A total of 88 Malay mothers of children less than one year old were interviewed. A set of questionnaire was used to obtain information on socioeconomic background, food taboos, and dietary intakes during postpartum period.

Majority of the respondents were aged 25 to 29 years old, had secondary education (61.4%), were homemakers (48.9%), and household income between RM1000 and RM2000 (39.8%). Most respondents restrict their diet for 31 to 40 days. Mother and mother-in-law were the most influential person during the period of postpartum. Most vegetables and fruits were considered “cold” and were prohibited except for mustard. *Ikan selar* was encouraged and must be eaten during postpartum period. There was

significant association between age of respondents and sweet potato and seafood restriction ( $\chi^2=32.35$ , d.f.=15,  $P<0.006$ ) and ( $\chi^2=45.16$ , d.f.=10,  $P<0.0001$ ) respectively.

Postpartum food taboos and dietary intake were still popular among Malay women in Kelantan. A proper guideline on dietary intake during period of postpartum will help women and their care givers to ensure the information will be utilized and would benefit women and their baby.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background

Postpartum period starts about an hour after the delivery of the placenta and includes the following six weeks (WHO, 1998). During the time of childbirth and postpartum period, most societies view the mother and neonate as vulnerable. This is because, physiological changes including pregnancy and confinement alter the humoral balance of the body as according to humoral medical theory, health is maintained through equilibrium (Manderson, 1981). As women body needs to heal and recover from pregnancy and childbirth, a good postpartum care and well balanced diet is crucial for women health (Liu et al., 2006). Thus, women in every society experienced a series of postpartum practices to protect both mother and neonate (Piperata, 2008).

Food taboo or dietary precautions is one of the basic postpartum practices together with other behavioral restrictions. The definition of food taboo is a prohibition against consuming certain foods. The word “taboo” is Polynesian and means ‘sacred’ or ‘forbidden’. Eventually, food taboo is a regular avoidance of certain foods that turns into tradition (Freud, 1918). Food taboos are known from virtually all human societies. It is probably exist in one form or another in every society on Earth, for it is a fact that perhaps nowhere in the world, a people, a tribe, or an ethnic group, makes use of full potential of edible items in its surroundings (Patil et al., 2010). Childbirth is considered

to be a cold state. Coldness may prevent the circulation of blood, inhibit the discharge of lochia, delay woman's recovery, or may cause illness and even death (Manderson, 1981). According to Liu et al., 2006, women body can be easily attacked by 'heat' or 'cold' which may cause some health problems like headache, backache, and dizziness in the month or in later years. Thus, women are advised to follow specific postpartum practices to avoid suffering a poor health in their later life.

Malay culture as similar to the other Asian believe that pregnancy is a hot state, while during parturition heat is loss and the women undergo a state of outrageously cold. Hence, the care given to them during postpartum period is intended to restore the women to a state of equilibrium (Manderson, 1981). According to Laderman (1987), Malay women comply a 40-day period of resting in accordance with Islamic beliefs. Consequently, this confinement period is called '*dalam pantang*' (Eliana et al., 2011). Foods those are thought to be hot such as turmeric, ginger, lemon grass, herbs and spices, coconut oil, and peppers are given. These foods are thought to help women in many ways. For instance, turmeric root is assured to help flatten the stomach, improved the blood, and kept the women look young. Moreover, spices and lemon grass together with coconut oil will shrink the uterus and strengthen the abdominal muscles (Manderson, 1981).

Otherwise, the consumption of cold foods during confinement period could cause swelling, increase lochia discharge, and make the uterine and vagina 'watery'. In conclusion, failure to obey the proscriptions could cause health problems in later life. Besides, the oily foods, sharp foods, windy foods, and poison foods, all of them are proscribed to the women during their postpartum period. The oily foods might cause the

uterus 'watery', while the sharp foods like pineapple and sour mango could cause rashes and veins to swell. In addition, foods those believed as poison would weaken the women, plus would inhibit their recovery, and some could cause convulsions, coma, and even death (Manderson, 1981). However, the proscription of fruits and vegetables on newly-delivered mother has been attacked by Western medical practitioners as fruits and vegetables are rich with nutrients for health. In contrast, certain aspects of traditional confinement are approved with some scientific basis. For instance, the consumption of hot foods together with application of heat is related to the need to discharge the blood and to dry out the womb (Manderson, 1981).

Women compliance as found by Eliana et al. (2011), is associated with the influence of their mother or mother-in-law and also their care or fear about their future. Furthermore, women believed that sticking to traditional practices would give them a sense of balance, help to protect them and their baby, and assure their health during the susceptible postpartum period (Eliana et al., 2011). Nevertheless, Liu et al. (2006) found that the women in three regions of Hubei, China consumed a variety of foods during postpartum period. This was compatible with the contemporary nutrition principles although there are still a great number of women who yet comply with the original dietary restrictions during their confinement period. Modern technology such as internet and magazines influence women to challenge the tradition as they are the sources of the new information lead to the modification or rejection of the traditional practices (Eliana et al., 2011).

## **1.2 Rationale of The Study**

The study of the postpartum food taboos and dietary intake among Malay women should be carried out in order to get the new information related to the confinement practices. There are very few studies related to the dietary practices in accordance to confinement period after childbirth carried out in Malaysia recently. Millis (1958) notified modifications in food selection observed by Malays women during pregnancy and confinement, Jensen (1967) discussed various aspects of Iban birth, Kuah (1972) researched Malay customs in relation to childbirth, Chen (1973) analyzed customs related to childbirth in rural Malay culture, Manderson (1981) reported Malay confinement practices of roasting, smoking, and dieting, and recently, Poh et al. (2005) discussed postpartum dietary intakes and food taboos among Chinese women in Kuala Lumpur.

Although there are several studies related to Malay culture, but the information could be invalid as the time passes. In addition, the research that had been conducted is likely not representing the whole population of Malay women. The influential factors of the dietary practices during confinement among Malay women do not being exposed yet. Hence, this study will be conducted to describe Malay women dietary pattern and food taboos during confinement period, to identify the influential factors in relation to the dietary practices and food taboos, to determine the degree of differences between the postpartum and daily dietary intakes, and to compare the dietary intake during the confinement period with Recommended Nutrient Intake (RNI). The outcomes of this research will contribute to the current understanding of culture-based health practices and notify health education for women and health professionals.

### 1.3 Research Questions

- What is the postpartum food taboos and dietary intake among Malay women?
- Do demographic factors influence the pattern of dietary intake during confinement period?
- Who is influencing women's dietary intake during confinement period?
- What is the frequency of fruits and vegetables intake during confinement period?
- What is the reasons women still/not practice the food taboos during confinement?

### 1.4 Research Objectives

- **General Objectives:**
  - To describe the postpartum food taboos and dietary intakes among Malay women
- **Specific Objectives:**
  - To identify Malay women dietary intake and food taboos during confinement period
  - To identify the influential factors in relation to food taboos and dietary pattern
  - To determine the frequency of fruits and vegetables intake during confinement
  - To identify the rationale of practicing the traditional food taboos and dietary intake during confinement

## 1.5 Research Hypothesis

- **Null hypothesis,  $H_0$ :** There is no association between demographic factors and postpartum food taboos and dietary intake among Malay women.

**Alternative hypothesis,  $H_A$ :** There is an association between demographic factors and postpartum food taboos and dietary intake among Malay women.

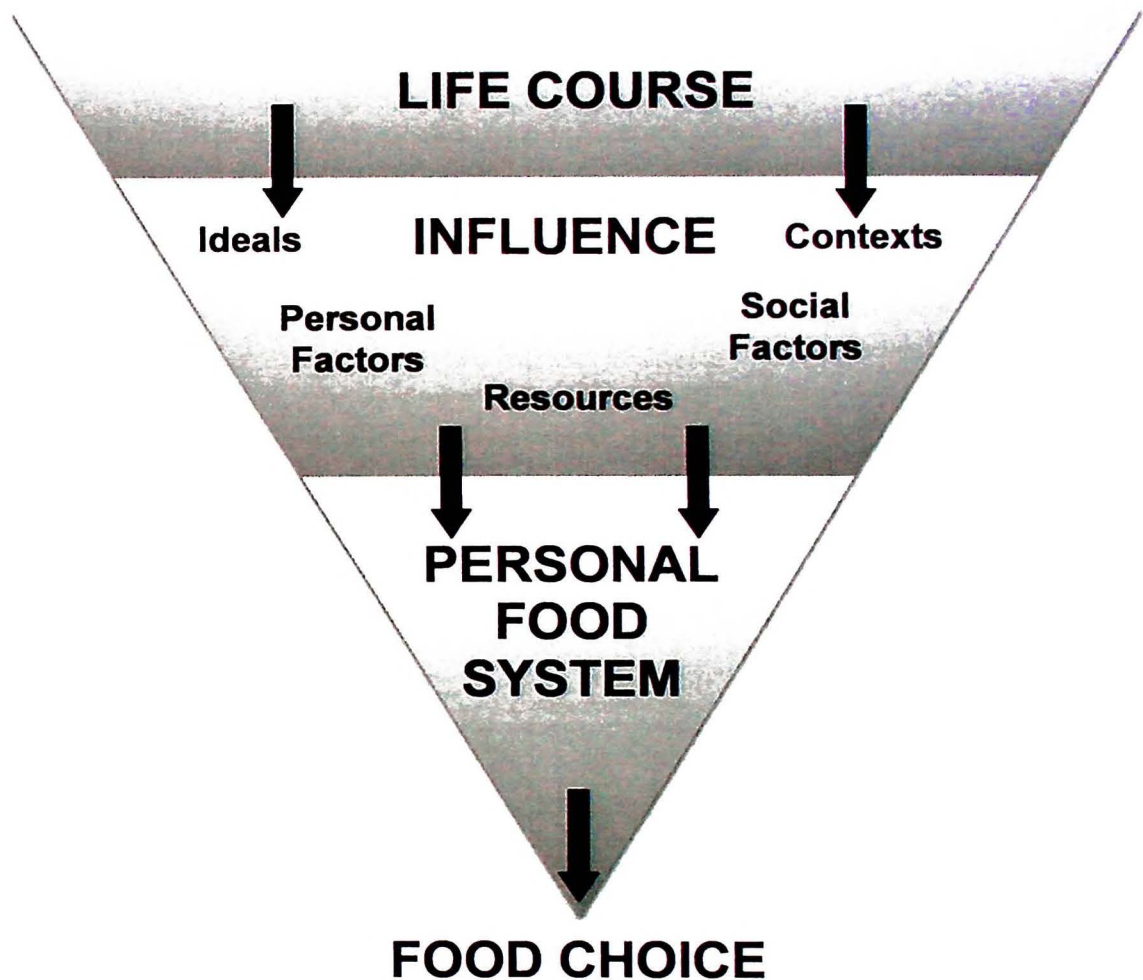
- **Null hypothesis,  $H_0$ :** There is no association between demographic factors and the frequency of fruits and vegetables intake during confinement.

**Alternative hypothesis,  $H_A$ :** There is an association between demographic factors and the frequency of fruits and vegetables intake during confinement.

## 1.6 Conceptual Framework

Food choice involves the selection and consumption of foods and beverages, considering what, how, when, where and with whom people eat as well as other aspects of their food and eating behaviors, hence it determines which nutrients and other substances enter the body and subsequently influence health, morbidity and mortality (Sobal et al., 2006). This model assumes that a key process in selecting foods is the construction of food choices based on cognitions and social negotiations. This model includes three major components that operate together when people construct food choice: the life course, influences and personal systems. People often attribute current eating patterns to prior experiences, so the “life course” is a key component of the model. As people describe food choices, they explain how various factors emerging from past experiences and current situation shape their eating, and these are labeled “influences” in the model.

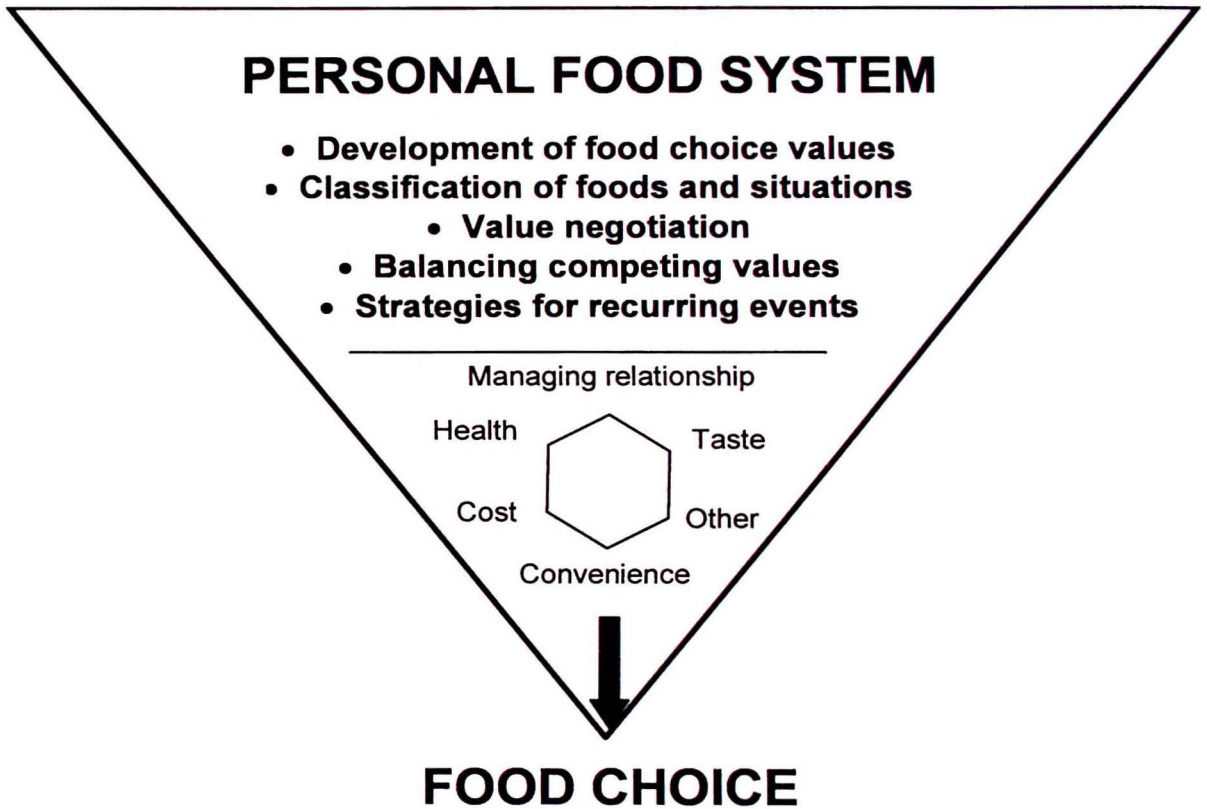
Meanwhile, the “personal food system” for selecting food is the process whereby people controlling influences on food choices (Sobal et al., 2006).



**Figure 1.1** Conceptual Framework of Food Choice Model (Sobal and Lee, 1997)

Life course explained as people develop and change over time they were shaped by their environments and personally construct and individual life course that involves past and current food and eating experiences and situations as well as expectations about future possibilities. This suggests that food choices are dynamic and evolve over time.

Trajectories are a central concept in life course thinking which includes a person's thoughts, feelings, strategies, and actions over the lifespan (Sobal et al., 2006). People develop food choice trajectories within specific situational and historical contexts that become persistent, exhibiting their own momentum and continuity.



**Figure 1.2** Details of the personal food system (Sobal, 1997).

Personal food systems are the mental processes whereby people translate influences upon their food choices into how and what they eat particular situations (Sobal et al., 2006). It includes the processes of constructing food choice value, classifying foods and situations according to these values, negotiating these personally

defined values in food choice setting, balancing competing values, and developing strategies for food selection and eating in different situations. Food choice values represent a set of considerations important in constructing food choices; taste, convenience, cost, health, and managing relationships (Sobal et al., 2006).

People categorize objects into foods and non-foods, and further classify foods according to their personally constructed food choice values. Personally operational classification schemes for food and eating situations are embedded in classification schemes that are significant for one's close social environment such as family or friend, which are embedded in classification schemes provided by the wider cultural environments such as region or nation (Sobal et al., 2006).

Value negotiation is a key food choice process because only rarely can all food choice be satisfied in a particular food and eating situation. The priority of food choice values according to individual traits, personal states and situational contexts. Meanwhile, balancing is a process that people use to resolve many food choice value conflicts. Balancing occurs over personally defined frames of reference such as times, eating occasions, places or eating partners. Lastly, strategies are the behavioral plans, routines, and rules that develop for how and what they eat in recurring situations by eliminating the cognitive effort and time required for deliberation about every food choice (Sobal et al., 2006).

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Postpartum Traditional Practices**

This chapter presents a review of existing empirical research and the broader scholarly literature that is relevant to the thesis topic. The discussion starts with an explanation of postpartum period. Next, a discussion on postpartum food taboos is given. This is followed by an explanation of postpartum dietary intake. The remainder of this chapter is a discussion of relevant literature on factors adhering to the food prescription and food proscription

The postpartum period is a very special phase in the life of a woman and her newborn as it is the time for women to recuperate and take on new roles (Dennis et al., 2007; Liu et al., 2006; Thi, Pasandamtom, & Rauyajin, 2004). In addition, this period is a social as well as an individual occasion and has meaning well beyond the simple physiological events which is marked by strong emotions, remarkable physical changes, new and altered relationships and the assumption of and adjustment to new role from the social status of a “woman” to that of a “mother” (Thi et al., 2004). For women experiencing childbirth for the first time, it symbolizes possibly the most noteworthy and life-changing event they have yet lived (WHO, 1998).

The term ‘traditional birthing practices’ is generally defined as all beliefs, behaviors, rituals established during antenatal, labor and birth, and postnatal periods, which are publicly constructed and formed by the perceptions and practices of the

culture (Eliana et al., 2011). In many cultures, the postpartum period is also seen as an insecure period, rendering the new mother susceptible to illness, as it is believed that postnatal women are more vulnerable to evil forces, and specific traditional practices are observed to ensure healing and avoid ill health in later years (Dennis et al., 2007; Geckil, Sahin, & Ege, 2009). Their body can be easily attacked by 'heat' or 'cold ', which may cause some health problems like dizziness, headache, backache and arthragia later (Liu et al., 2006).

During the postpartum period, the Malays believe that the utmost threat to a new mother's health is the danger of postpartum hemorrhage. A new mother is liable to infection from bacteria she can usually endure. Micro-organisms that normally live in the vagina can become pathologic in the puerperium, invading the uterus. Postpartum hemorrhage is, after infection, the major cause of maternal death. It can result from a number of causes, including hemorrhage from the placental site, from lacerations incurred in the birth process, and from retained products of conception. They try to obviate this possibility by careful obstetrical measures during delivery of the placenta, by the use of massage and heat applications during the postpartum period and by avoiding a number of foods which they believe can origin digestive upsets and uterine hemorrhage during this time of increased susceptibility (Laderman, 1987).

According to Chinese beliefs, postpartum traditional practices called *Zuo yuezi* serves as a physical restoration, a preventative measure, a social sanction to rest, a consolation, and a prompt for Chinese women to concentrate on their baby and their role of breast feeding. It also serves as an occasion to strengthen intra-family ties, especially between the woman and her mother or mother-in-law. Besides, these practices aimed to

restore the balance of *yin* (cold) and *yang* (hot) in her body. The Chinese system of *yin-yang* encourages a balance of those foods categorized as *yin* (which include items that are typically raw, soothing, cooked at low temperatures, white or light green in color) with those classified as *yang* (mostly high-calorie foods, cooked in high heat, spicy, red-orange-yellow in color), avoiding extremes in both (Kittler & Sucher, 2004). During the postpartum period, the mother is in the period of strongest *yin*, and accordingly her diet should be based upon *yang* foods, which are naturally those high in energy and protein (Poh, Wong, & Norimah, 2005).

Aspect of *yin-yang* diet theory is similar to system of balance focused on the *hot-cold* classification or humoral system practiced by Malays. Malays believe that the act of parturition, which depletes a mother's body of the hot element, blood, puts her into a cold state for the liminal time of the 40 day postpartum period. During this time her body balance must be restored by the addition of heat internally and externally (Laderman, 1984). After childbirth, however, a woman with a weak physique can be made stronger with food therapy (Holroyd, Katie, Chun, & Ha, 1997). An excellent postpartum concern and well balanced diet during puerperal period is very important for the health of a woman. Women in modern industrialized societies no less than in small-scale communities follow dietary and behavioral precautions to ensure a healthy pregnancy, safe delivery and rapid recovery, acting upon their own and others' beliefs regarding both physical changes and metaphysical and ritual vulnerability (Manderson, 1981).

Traditional practices during postpartum period include dietary precautions, such as eating more food and avoiding cold food; and behavioral precautions, such as staying

inside the home, avoiding housework and limiting visitors; hygiene precautions, such as restricting bathing and dental hygiene; and practices associated with infant feeding, including supplementary feeding and giving honeysuckle herb to the infant (Raven, Chen, Tolhurst, & Garner, 2007). In many cultures, certain foods are especially encouraged to promote remedial or return health, while consuming prohibited foods are thought to cause illness either immediately or in the future (Dennis et al., 2007).

Postpartum period is one of the special occasions of following food restriction. Also, food is one of the most universal symbols of culture, holding one of the key points in the postpartum period. Women believed that certain food might have bad physically or mentally effect to the body, both mother and her child, and in the long run (Thi et al., 2004). Many women adhere to traditions of food restrictions and prescriptions during the postpartum period (Geckil et al., 2009). In Asia, postpartum maternal food restrictions ('food avoidances') are common practices, which may have important health consequences in reducing the nutritional content of breast milk (Barenes et al., 2009).

According to Wang et al. (2008), traditional postpartum behaviors were widely followed by rural Chinese women in their own country. The findings from that survey showed that women were discouraged to consume some foods but encouraged to consume others. It is assumed that if a woman does not observe these restrictions, she may undergo a pitiable health at her later life. These traditional postnatal believes and practices are often passed down from elder females in the family to the younger generations and popularly complied by young and first child mother because of lacking of experiences (Kaewsarn, Moyle, & Creedy, 2003; Liu et al., 2006; Thi et al., 2004).

The confinement period for Malay women is usually ranged from 40 to 44 days after the childbirth (Eliana et al., 2011; Laderman, 1984; Manderson, 1981).

## **2.2 Postpartum Food Taboos**

Food is one of the most universal symbols of cultural materialism, holding particular powers in the postpartum period (Holroyd et al., 1997). Food was used as a type of tonic or remedy to restore the balance of the good blood in the body. Food, in addition to restoring the body's harmony after childbirth, was seen as aiding in the expulsion of bad blood. Loss of great amount of blood during childbirth moves the mother to an extremely cold state which coldness may prevent the circulation of blood, inhibit the discharge of lochia, delay the woman's recovery, or cause illness and even death either immediately or at a much later date (Manderson, 1981). Thus, care should be taken during postpartum period of 40 days to restore the women to a state of equilibrium.

In general, hot foods are therefore encouraged to restore harmony and balance, while cold foods are to be avoided (Dennis et al., 2007). Manderson, (1981) found that the reasons of cold foods proscription are that cold foods could cause swelling, increase the lochia discharge, and make the uterine and vaginal muscles 'watery'. Cold foods included fruits and vegetables such as bananas, papaya, watermelon, cabbage, spinach, cucumbers, mustard greens, and *kangkung*. Besides, oily foods could also make the uterus 'watery'. Other than that, sharp foods such as pineapple, sour mango, citrus fruit, bamboo shoot, and vinegar may cause rashes and veins swelling (Manderson, 1981; Poh et al., 2005).

Malays believed that foods like eggs, large number of sea water fish, sea foods, and sometimes chicken and beef might inhibit the general recovery of the new mother, and prevented healing of torn or episiotomy part. Furthermore, food described as ‘windy’ in Malay culture including yam, taro, sweet potato, cassava, and jackfruit was also generally avoided because it could forced the body to expel air within the body. Foods classified as poisonous (*bisa*) were also avoided since they could weaken the women, inhibit the recovery, would cause convulsions, and even coma and death. High water contents food such as soups and curries were also to be avoided (Manderson, 1981).

Foods that considered taboo are wide variety internationally. Piperata, (2008) found that people in Amazon belief that foods being eaten by mother could harm the infant. Hence, some foods are classified as taboo such as certain fish, monkeys, tapir, caiman, some turtles, wild pigs, and numerous fruits. The acidity and fattiness of the foods were the main reason for that fruits to be avoided. Otherwise, new mother in Hubei, China were strictly avoid spicy, raw, and cold foods. In Liu et al., (2006) study 77.9% of the research participants believed that cold foods such as fruit, cold drinks, vegetables, and cooling foods are prohibited. Subsequently, Laos new mothers also are proscribed eating popular Laos foods such as raw fermented vegetables, fruits, pork meat chopped with vegetables, fermented fish sauce, white skinned mammals, liquid meals and sauce, sugar, and spices (Barennes et al., 2009).

Moreover, South Eastern Turkey people also believed that cooled water and raw vegetables should be restricted during the confinement period. Geckil and colleagues (2009) found that around a quarter of the women interviewed avoided certain foods such

as sun-cooked vegetables and fruits during postpartum period, and 18.3% did not drink water for 2 to 3 days after birth. Furthermore, 19% of women mentioned that they were not permitted to eat for 3 to 4 days after caesarean section. In addition, Malaysian Chinese as reported by Poh et al., (2006) has similar belief and practice on foods during postpartum period. Hence, great amount of local and imported fruits and vegetables are proscribed to the new mother, plus sea foods and most fish as they are considered as poison.

### **2.3 Postpartum Dietary Intake**

There are wide varieties of dietary prescription to a new mother throughout the world together with the reasons of the foods taken. According to Manderson, (1981) Malay women from several states in Peninsular Malaysia reported that they have to drink a special concoction immediately after giving birth and continuously for several days later or a month later.

Special drink concoction such as a cup of tamarind pulp, sugar, and warm water may be drunk by new mother after delivery to expel lochia from uterus. In the morning postpartum women drank a juice made of turmeric root and rock salt in order to 'tighten her inside'. Later, juice from fresh ginger root and rock salt will be drunk before a concoction of boiled coconut water, lemon grass, and herbs will be taken. Besides, water boiled with ginger, and a little sugar also will be drunk to warm them and get rid of the 'air' inside their body. Therefore, most women from Peninsular Malaysia took turmeric during the confinement period since it is believed that the juice helped flatten the stomach, improved the blood, and kept the women look youthful (Manderson, 1981).

Animal protein including chicken, eggs, meat, and milk, but excluding most of fresh fish, are 'hot' (Dennis et al., 2007; Laderman, 1987; Poh et al., 2005; Raven et al., 2007). Although there are several differences on foods prescribed to new mother, the fact that foods high in protein were thought to enrich the blood, help the mother's recovery, encourage expulsion of lochia, and stimulate production of breast milk are being shared by most people from multi-national level. In fact, Chinese believed that wine could aid expulsion of stale blood and get rid of wind. Hence, they either drank wine or used it to cook meat, eggs, or herbal medicines (Holroyd et al., 1997). Women in Hubei, China frequently consumed egg, brown sugar, poultry, and rice wine.

Barrenes et al., (2009) reported that Laos women drank only unsweetened herb tea in the first 15 days postpartum as the herb tea was considered to be favorable for lactation, healing tissue injuries caused by delivery, and avoidance of cardiac failure. Otherwise, South Eastern Turkey women were encouraged to eat sweet foods (mixture of flour, fat, and sugar called 'bulamac'), and they drank a mixture of grape molasses and butter because these sweet drink and meal are believed to improve the breast milk production (Geckil et al., 2009). Furthermore, Indian women consumed milk, nuts, *ghee*, and *juggery* to return to a state of balance while dried ginger was eaten to help control postpartum bleeding and uterine cleansing agent (Choudhry, 1997).

#### **2.4 Factors Adhering to the Food Prescription and Food Proscription**

The main reason for the food prescription and food proscription to be applied by postpartum women is related to the need to drive out the blood and to dry out the womb. Puerto Ricans believe that if the lochia is not expelled, it will flow to the head and cause

nervousness, or even insanity. Furthermore, lochia like menstrual blood is considered to be defiling, and woman polluted ritually and physically even as the flow continues (Manderson, 1981). There are several factors that contribute to the adhering of the women to the various food practices during their confinement period.

Previous study by Bao et al., (2010) suggested that woman or her husband's educational level, family income levels, and the traditional concept learned from mother in-law are the main influence factors on the diet and lifestyle of a postpartum woman in addition to the influence from books and magazines, relatives, and friends or colleagues. Apart from that, Holroyd et al., (1997) proposed that four factors that determine the degree to which contemporary Hong Kong Chinese women adhere to traditional postpartum practices. They are the notion of a Chinese belief system about health and illness causation and the maintenance of Yin and Yang in women body after childbirth, secondly the effect of significant others in the family such as the mother-in-law and the power of opinion, next is a change of lifestyle patterns to dominant family patterns of nuclear families living in isolation from their parents, and the last is the effect of past experience of the relatives.

Verily, women thought that adhering to traditional birthing practices would give them a sense of balance, help to shield them and their baby, and ensure their health during the susceptible period (Eliana et al., 2011). Still, women valued advice from mothers and mothers-in-law because it was professed that these older women had expert knowledge due to their experiences of giving birth and it is also a sign of filial faithfulness that binds the family together. Apart from that, Kaewsarn et al., (2003) found that younger (20-29 age group) and less educated Thai women (primary school

educated) were more likely to follow traditional postpartum practices. Similarly to young, first child Vietnamese mothers as they were considered to be lacked of motherhood experience and knowledge. Also, they adhered to the practices because of the fear of fate that became a force motivation from their female relatives (Thi et al., 2004).

Previously, women might obey elderly advices and instructions without questioning the reasons. As time passes and the advanced in technology, women nowadays might questioning the reasons or the scientific evidence for each of the practices. Furthermore, some of the practices seem to be contradicted with principal of health and nutrition. Mothers with advanced knowledge and intelligent will choose the best way of their very own health as well their child well being. The existing literature on food systems can be categorized into numerous topics that are relevant and essential in analyzing and interpreting the data in this thesis. The postpartum period is one of the important stages in a woman's reproductive cycle. There are several factors that influence people to adhere to the food taboos during the postpartum period. The following chapter outlines and discusses the methodologies employed for this research project.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Study Design**

This was a cross-sectional study of postpartum food taboos and dietary intake conducted among Malay women in Kota Bharu, Kelantan. Cross sectional studies are primarily used to determine prevalence and they are relatively quick and easy (Mann, 2003).

#### **3.2 Sampling Method**

Convenience sampling method was used in this study for selecting the sample. Respondents in this study had to be those who had specific knowledge and expertise about postpartum food taboos. Respondents were mothers who meet the inclusion criteria who attended the Government Health Clinic in Kota Bharu. Thirteen Health Clinics in Kota Bharu were numbered by Kelantan District Health Office. Five clinics were being purposively selected. These mothers had to answer a set of questionnaire consisting of socioeconomic and demographic data, and food frequency during their clinic visit. The respondents were approached nicely and were briefly explained about the study. They were given the information statement form and were invited to participate in this study. The mothers who will to participate signed the consent form before being interviewed.

### **3.3 Study Location**

Five out of thirteen government health clinics in Kota Bharu, Kelantan were selected. The clinics involved were:

1. Klinik Kesihatan Bandar
2. Klinik Kesihatan Kubang Kerian
3. Klinik Kesihatan Wakaf Che Yeh
4. Klinik Kesihatan Pengkalan Chepa
5. Klinik 1 Malaysia Sri Cemerlang.

Briefly, the five locations selected were clinics that received a large number of visitors since their locations are near to the populations and easily accessible. Data collection took place between April and May 2013. Nevertheless, due to some limitations, only three clinics which are Klinik Kesihatan Bandar, Klinik Kesihatan Kubang Kerian, and Klinik Kesihatan Pengkalan Chepa were included in the study. The major limitations that had been faced were transportation, time, and financial restraint which will be explained later in Chapter 6.

### **3.4 Sample of Study**

In this study, Malay women who had meet the inclusion criteria, attending the selected health clinics were chosen as the respondents by convenience sampling. Once Human Research Ethics Approval (FWA Reg. No: 00007718; IRB Reg. No: 00004494) (see Appendix ) had been obtained from the Universiti Sains Malaysia for the project, permission was sought to conduct the study from the State Health Department of

Kelantan and Kota Bharu District Health Office (see Appendix ). The sampling process commenced when permission with formal letter was given.

### 3.5 Sample Size

A sample of 346 respondents was needed in this study. Sample size was calculated using formula by Daniel (1999) as below:

$$n = \frac{Z^2 p (1-p)}{d^2}$$

n = estimated sample size

Z = standard value at confidence level at 95% (1.96)

p = estimated prevalence of traditional postpartum practices (0.25) (Geckil et al., 2009)

d = margin error set ( $\alpha$ ) at 5% (0.05)

Hence,

$$\begin{aligned} n &= \frac{(1.96)^2 (0.25) (1 - 0.25)}{(0.05)^2} \\ &= 288.12 \\ &= \underline{\underline{288}} \end{aligned}$$

By taking into account a 20% withdraw rate, the estimated sample size was **346**.

However, this study only managed to obtain 88 respondents.

### **3.6 Inclusion and Exclusion Criteria**

Participants had to be Malay women aged 16 and over and currently have a child below one year old. Women who had experienced emotional distress during the postpartum period and those who are unable to answer the questionnaire were excluded from the study.

### **3.7 Data Collection**

A set of questionnaire was used to collect the data on socioeconomic, demographic background, dietary practices, and food taboos practiced by the respondents. This set of questionnaire was divided into three part; (1) Socio-demographic; (2) Food Taboos Practices; and (3) Food Frequency Questionnaire. For part one, it asked for background information like age, level of education, occupation, household income, and type of family. Food taboos practices which consist of 37 food items on food acceptance and food properties were asked in part two of the questionnaire. The third part of the questionnaire is a modified retrospective food frequency questionnaire which was used to collect information on dietary intake during the confinement period. The participants were asked to recall the frequency and approximate amount of food consumed over the postpartum period. Cup, bowl, and spoon were used to help recalling and measuring foods. Food Frequency questionnaire was used in this study because it captures general, long-term dietary patterns (Kristal et al., 1997). The interviewers were trained university students who could speak Kelantan dialect well.

A brief explanation about this study was given before the respondents signed the consent form. Every respondent needed assistance to complete the questionnaire. Some people

were not confident enough to complete the questionnaire by themselves. Assistance was given to ensure that the questions and language in the questionnaire were understood uniformly by respondents. The administration of the survey while the respondents were waiting for their appointment provided some activities to fulfill the usually long waiting time. It is worth noting, though, that because this was an assisted questionnaire, it may have been subject to interviewer bias because the participants might have given answers influenced by the desire to impress the researcher who was helping them complete it.

### **3.8 Data Analysis**

The data that have been collected were analyzed using Statistical Package for Social Science version 20.0 (SPSS 20.0). Descriptive statistics were used to examine the frequency distribution for each of variables and to describe the characteristics of the women, while mean, range, and standard deviation were used to describe continuous data. The overall amount of a particular type of food consumed during postpartum was calculated and converted to mean daily intake. Chi-square analysis was performed to determine the association of demographic characteristics and patterns of dietary intake during postpartum period.