

CONFINEMENT PRACTICES AMONG POSTNATAL MOTHERS IN
HOSPITAL UNIVERSITI SAINS MALAYSIA

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CONFINEMENT PRACTICES AMONG POSTNATAL MOTHERS IN
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by

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LIST OF ABBREVIATION

USM -Universiti Sains Malaysia

Amalan Berpantang dalam kalangan Ibu Postnatal di Hospital USM

ABSTRAK

Pengiktirafan amalan berpantang dan pemakanan mereka dalam kalangan ibu selepas bersalin termasuk tempoh berpantang adalah beberapa aspek yang perlu diberi perhatian untuk memastikan mereka mendapat rehat dan pemakanan yang mencukupi. Kajian keratan rentas telah direka untuk menentukan tempoh amalan berpantang, amalan yang telah diamalkan semasa tempoh berpantang, dan mengenal pasti kekerapan pengambilan makanan dan diet semasa tempoh berpantang dalam kalangan ibu selepas bersalin di Hospital USM. Seramai 357 responden telah diambil melalui kaedah persampelan kemudahan. Data dikumpul dengan menggunakan soal selidik yang ditadbir sendiri. Data yang dikumpul dianalisis secara statistik menggunakan perisian Statistical Package Social Sciences (SPSS) versi 26. Pengesahan kandungan instrumen telah dilakukan dan kebolehpercayaan diperoleh melalui kajian rintis dengan alpha Cronbach 0.825. Kajian ini menunjukkan lebih separuh daripada responden mempunyai tempoh berpantang selama 30-40 hari (52.9%). Dapatan kajian juga menunjukkan bahawa lebih separuh daripada responden telah berurut (85.7%), mengambil jamu/jamu tradisional (50.7%), dan mempunyai larangan untuk keluar (58.8%) semasa tempoh berpantang. Tambahan pula, lebih separuh daripada responden mempunyai lebih banyak air kosong (71.4%), ikan (71.1%), halia (51.8%), dan sayur-sayuran berdaun (51.3%) semasa tempoh berpantang. Faktor ramalan yang signifikan bagi tempoh tempoh berpantang ialah pariti, bangsa, peringkat pendidikan, status pekerjaan, dan gaji bulanan dengan $p < 0.05$.

**Confinement Practice among Postnatal Mothers
in Hospital Universiti Sains Malaysia**

ABSTRACT

Recognition of confinement practices and their diet among postnatal mothers including the duration of confinement period are some aspects that need to be aware of to make sure they have adequate rest and nutrition. A cross-sectional study was designed to determine the duration of confinement practices, the practice that has been practiced during the confinement period, and identify the frequency of foods and dietary intake during the confinement period among the postnatal mothers at Hospital USM. A total of 357 respondents were recruited through the convenience sampling method. Data were collected by using self-administered questionnaires. Data collected were statistically analyzed using the Statistical Package Social Sciences (SPSS) software version of 26. Content validation of the instrument was done and the reliability was obtained through a pilot study with Cronbach's alpha of 0.825. This study shows that more than half of the respondents had 30-40 days of confinement period (52.9%). The findings also demonstrated that more than half of the respondents had a massage (85.7%), consumed traditional herbs/ jamu (50.7%), and had restrictions to go out (58.8%) during the confinement period. Furthermore, more than half of the respondents had more plain water (71.4%), fish (71.1%), ginger (51.8%), and leafy vegetables (51.3%) during their confinement period. The significant predicting factors for the duration of the confinement period are parity, educational level, race, occupational status, and monthly salary which $p < 0.05$.

CHAPTER 1: INTRODUCTION

1.1 Introduction

1.2 Background of Study

The postpartum is known as puerperium which begins soon after the baby's delivery and usually lasts for six to eight weeks and ends when the mother returns to the nonpregnant state (Berens, 2022). During this duration, it is crucial to have a good foundation of long-term health and well-being for the woman. This is due to physiologic changes such as the genitourinary system undergoing the process of reverting to an unpregnant state. Hence, confinement is believed to be beneficial to the mother as it can help in physical recovery and gives the mother to adapt to a new identity by accepting a new member of the family (PEM Confinement Nanny Agency, 2018).

During the confinement state, mothers will be restricted as they need to follow some rules of dos and don'ts during the postnatal period. The duration of the practice is also different around the world, especially in Western and Asia. Postpartum confinement is uncommon in Western countries for example western moms normally get back to normal rather quickly without sticking to a certain fixed period. Meanwhile, Eastern moms will be emphasized to have more rest and for the meals, they are advised to not eat certain food or eat various types of confinement which will be prepared by an experienced confinement nanny (PEM Confinement Nanny Agency, 2020).

Based on studied done by Tan et al. (2022), mothers tend to avoid certain foods such as eggs which it might cause food allergies towards the breastfed infants. This is due to food proteins ingested by breastfeeding mother are absorbed and excreted into breast milk antigenically active which causing allergic manifestations in some infants (Flora Martín-Muñoz et al., 2016). Even though raw food or some species of fish might be source of infection or contain significant amount of mercury, but the risk is offset by the neurobehavioral benefits of adequate DHA intake (Jeong et al., 2017). However, misconceptions also existed amongst the mother which some of they believe consumptions of ginger is cause of the neonatal jaundice (Tan et al., 2022) but this misconceptions have been affirmed by the study conducted by Altug et al. (2013) which there is no evidence of ginger or any diet consumed by lactating mother that will cause neonatal jaundice. These common misconceptions might have been traditionally passed down from their elders hence all mothers should be educated on the appropriate dietary practices. There is some study proved that some confinement practices did not necessarily for example total bed rest which could cause venous thromboembolism (Heit, 2015). This is suggests that research is required to evaluate the safety and relevance of the confinement practices and discourage mother from practicing harmful practices.

Hence, this study was conducted to identify confinement practices among postnatal mothers in HUSM. Apart from that, the findings from this study also can determine whether the duration of the confinement period is associated with sociodemographic factors such as age, parity, race, educational status, occupational status, maternity leave, main person taking care, and family income. It is hoped that the findings of the study can be contributed to the statistics regarding the practice of postpartum confinement and can be used to guide nutrition interventions aimed at influencing maternal diet in Malaysia.

1.3 Problem Statement

According to the Centers for Disease Control and Prevention, about 700 women die each year from complications of pregnancy which can happen during pregnancy, at delivery, and even up to a year afterward (CDC, 2019). Therefore, the postnatal period is a very important period to improve both maternal and neonatal health and well-being which includes providing life-skills education, supporting healthy behaviors, facilitating breastfeeding, counseling women about family planning options and etcetera.

Confinement practices that Malaysian mothers follow differ between culture and race. In the Malay culture, they believed that a healthy womb would ensure that a woman stays glowing and beautiful. Malay people considered that the confinement period may aid mum in regaining their pre-pregnancy state of health, energy, and figure. Most often, a traditional midwife or their mother or mother-in-law will join them. The use of "bengkung" a traditional wrap containing herbs and medication, reduces the uterus and flattens the stomach. To remove any remaining blood clots in the womb, women should also conduct "bertungku," which is a hot compression composed of medicinal plants, leaves, and a heated river stone wrapped with a towel (Myint & Najimudeen, 2019). Apart from that, drink "Jamu" which refers to dietary supplements that help new mums recover after childbirth with the reason that the drinks can boost energy levels and expel excess fat and toxins which can slim down the tummy (Mohd Yusoff et al., 2018).

Meanwhile, in Chinese customs, mothers should expel toxins, rejuvenate the body, and improve blood circulation during this confinement period. The consumption of animal organs cooked with old ginger, sesame oil, or rice wine will be advocated among postpartum women. Nutritionally dense herbal soups are a staple of the diet because they help the body rejuvenate (Thiam Chye et al., 2021). Within this period, taking a bath is prohibited since it is thought that doing so may cause the wind to increase inside the body (Thiam Chye et al., 2021).

Next, like Malay and Chinese confinement practices, Indian the main purpose during this period is to help the uterus get back to its normal size and heal any “wounds”. More focus is being placed on diet, and to prevent "wind" and avoid "cooling" foods like cucumber, tomatoes, coconut milk, cabbage, and eggplant for postpartum women, also will utilize ingredients and spices like garlic, dry ginger, sesame seeds, and pineapples (Pasricha, 2021).

Women in Asian countries especially Malaysia many still believe that mental and physical wellness is due to the practices of postpartum confinement. However, it has still not been fully understood whether those practices give any significant effect on women’s health or not. Until now, healthcare providers are still not able to come out with which practices are beneficial or bring negative effects on women’s health. Postpartum confinement in Malaysia is well known and established many times ago and yet, its effect and safety profile are not fully understood (Cole, 2021). There is a study that proved that some confinement practices did not necessarily for example total bed rest which could cause venous thromboembolism (Heit, 2015). This suggests that

research is required to evaluate the safety and relevance of confinement practices and discourage mothers from practicing harmful practices.

This study hence aimed to examine the postpartum confinement experiences of postnatal mothers on previous childbirth from the three major ethnic groups in Kelantan, which are Chinese, Malay, and Indian whether their confinement period is as 30 days for the Chinese, 44 days for the Malay and 40 days for the Indians.

1.4 Research Questions

The research questions for this study are as below:

- i. What are the confinement practices among the postnatal mothers in Hospital Universiti Sains Malaysia?
- ii. What are the duration confinement practices among postnatal mothers in Hospital Universiti Sains Malaysia?
- iii. What is the frequency of food and dietary intake during confinement among the postnatal mothers at Hospital Universiti Sains Malaysia?
- iv. Is there any association between selected sociodemographic factors (age, parity, race, educational status, occupational status, family income) and duration confinement practices?

1.5 Research Objectives

1.5.1 General Objectives

To determine the confinement practices among the postnatal mothers in Hospital University Sains Malaysia.

1.5.2 Specific Objectives

- i. To determine the confinement practices among the postnatal mothers in Hospital Universiti Sains Malaysia.
- ii. To determine the duration of confinement practices among postnatal mothers in Hospital Universiti Sains Malaysia.
- iii. To identify the frequency of food intake during confinement among postnatal mothers at Hospital Universiti Sains Malaysia.
- iv. To determine the association between selected sociodemographic factors (age, parity, race, educational level, occupational status, family income) and duration of confinement practices among postnatal mothers in Hospital Universiti Sains Malaysia.

1.6 Research Hypothesis

Null Hypothesis (H_0) : There is no association between selected sociodemographic factors (age, parity, race, educational level, occupational status, family income) and duration of confinement practices among postnatal mothers in Hospital Universiti Sains Malaysia

Alternative Hypothesis (H_1) : There is an association between selected sociodemographic factors (age, parity, race, educational status, occupational status, family income) and duration of confinement practices among postnatal mothers in Hospital Universiti Sains Malaysia

1.7 Definitions and Operational Terms

The operational terms used in this research proposal are shown below:

Table 1.1 Conceptual and Operational Definitions of his study

Postnatal mother	Postnatal is defined as the period immediately after a baby has been born (Cambridge Dictionary, 2022b). In this study, it is referring to mothers who just delivered a child and placing in the obstetric ward for observation before going home.
Confinement Practice	Confinement is defined as the situation in which a person is kept somewhere by force (Cambridge Dictionary, 2022a). In this study, it referring to practices for mothers to undergo strictly which need to follow some rules of dos and don'ts which includes the some practices and dietary intakes during the postpartum period which are from Day 1 until the day they stop confinement practice.

1.8 Significance of the Study

Nowadays, the confinement practice have been practiced by mothers since century, especially they had practice some of the confinement practices which might not beneficial to them and some of them have the different period of confinement which it might interfere the healing process of mothers.

There are no much study that have further discuss regarding the duration of the confinement period among mothers in Malaysia and the diets that they take. Hence, this study is significant to increase the information about the confinement practices and the duration taken during the confinement period among the mothers in Malaysia.

The findings from this study determine confinement practices among postnatal mothers at Hospital University Sains Malaysia and including to know the portion of food and the frequency of mothers taking the food and the duration of their confinement period. Apart from that, the findings from this study also can determine whether the duration of the confinement period is associated with selected sociodemographic factors such as age, parity, race, educational status, occupational status, and family income. It is hoped that the findings of the study can be contributed to the statistics regarding the practice of postpartum confinement and can be used to guide nutrition interventions aimed at influencing maternal diet in Malaysia.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter is going to review the literature related to Confinement Practices. It also presents information on mothers' practices during postpartum confinement around the world based on previous studies. Lastly, it describes the theoretical framework chosen for this study which is Health Belief Model guiding this study.

2.2. Concept of Confinement Practice

Confinement is a period of convalescence after childbirth that lasts around 1 month. In an analysis done by Stern & Krlcxman (1983), ritualized care in "confinement practices aimed to provide protective measures to the mother, offer social seclusion, offer rest, assist with household tasks and infant care, satisfy cultural patterning, and give social recognition through rituals, gifts, and preparation of special foods and tonics.

2.2.1 Duration of Confinement Period

According to the observed study by (Thiam Chye et al., 2016), the confinement period in Malaysia for Chinese is 30 days; for Malay is 44 days, and for Indians is 40 days. This study is supported by (Pasricha, 2021) who stated that in most of North, West, and South India women will be stayed at home for about 40 days after their baby is born. Besides, one study stated that the confinement period of a Malay woman is usually 44 days,

and it will be longer for those women who had undergone Cesarean which is up to 60 days or 100 days (Mohd Yusoff et al., 2018).

Most Muslims have 40 days of rest due to their Islamic beliefs which are also known as “Dalam Pantang” (Laderman, 1987). Malay confinement practices are more focused on reversing the “cold state” in which they will lie on “roasting be” under a fire which they believe can help shrink swollen tissues, drying up the blood, and hemorrhage (Manderson, 1981). Such heating rituals are also carried out in other traditional cultures including Korea (SIGH Kleegarten, 1981).

Meanwhile, Hwong women in Melbourne, Australia undergo 30 days of confinement practice which they believe women must observe to regain strength and avoid poor health in the future (Rice, 2000). Women in Taiwan also undergo 30 days of confinement practice and they often take care of by their mother-in-law for their food preparation and household tasks(Sandel, 2014).

The duration of the confinement practice will be varying due to some factors such as the unavailability of family members and health conditions after delivery (TWS, 2018). Some mothers will have their confinement period to be extended as the unavailability of family members to take care of them. For example, they are having their confinement in a confinement center until the mothers and baby are stable in their physical and psychological state which in such circumstances the period can be extended to over 40 days. For a mother who has a case condition like postpartum depression, the period of confinement can be extended as a mother is given the necessary care psychologically to relieve stress (Ding et al., 2020).

According to a systematic review of publications from 20 countries (C. L. Dennis et al., 2007 as cited in Ismail & Nabila Jusoh, 2022), the postpartum period ranges from 21-35 days meanwhile 40-day rest period is practiced in various countries such as Mexico, Malaysia, South Africa, and Japan. However, the length of the rest period is also determined by social-economic status as most Cambodian women who are from the high socioeconomic group had extended rest periods for 2-3 months as they can afford to reduce their normal activities for a longer time (White, 2004 as cited in Ismail & Nabila Jusoh, 2022).

2.3 Confinement Practice and Postnatal mother

During the postpartum period, mothers undergo a confinement period with a set of practices to assist them in recovery from pregnancy and childbirth. In mainland China, Taiwan, Hong Kong, and Vietnam, confinement practice is a common practice (Wong & Fisher, 2009).

Postpartum confinement known as “doing the month (DTM)” is rooted in Traditional Chinese Medicine (TCM). A study has been done that categorized the composite of traditional Chinese Medicine (TCM) constitutions into nine types which are balanced, qi-deficiency, yang-deficiency, yin-deficiency, phlegm-dampness, heat-dampness, blood stasis, qi-stagnation, and inherited special constitution (Shi Lin et al., 2012). According to TCM, yin means cold air or negative energy, and yang means the “hot air” or positive energy that regulates the entire universe as well as the human body. They believe that human health is correlated with a proper balance of qi which is life energy. Hence, according to the TCM theories, a woman’s yin and yang are imbalanced for the whole process of pregnancy which lead to a physiologically vulnerable state. Hence, Chinese women are often encouraged to

undergo a postpartum confinement period (Nguyen et al., 2022). Chinese women also are advised to not bathe to prevent wind from entering the body and causing illness (Fok et al., 2016).

In Malay confinement practices like body massage, herbal use, and heat therapy are all vital components of Malay postpartum care. Heat is applied in direct exposure methods like hot compression (*bertungku*), abdominal binding, and warm baths, and indirect exposure methods such as eating "hot food" while being restricted (Withers et al., 2018). Moreover, for postpartum care in Muslim Communities, there are no specific Islamic guidelines on how a woman should be treated, and from a religious standpoint, they are exempt from performing the five daily prayers and not engaging in conjugal relations for the forty to sixty days after birth (Karraa, 2011).

For Indians, their confinement period is known as "Jaappa" which lasts approximately 40 days postpartum. The tradition originated from a need to protect the mother and baby from infection during that period. They will accompany by their mother or female relatives who come to stay with them to be their caretakers (Cole, 2021).

The methods of postnatal confinement vary across cultures but mostly are related to food and behavioral restriction (Withers et al., 2018). A study has been conducted among Malaysian women from different ethnic groups showed that they had many similar food taboos, consumed traditional herbs, received traditional massages and they are taking care of by older female family members during the postpartum period (Fadzil et al., 2016). Among the Malay community, usual confinement practice includes heat treatment, herbal baths, body wraps, hot compress, vagina steaming, and whole-body massage (Mohd Yusoff et al., 2018). 92% of women from Turkey and 99.3% of Iran women practiced abdominal binding

to help uterus involution (Ozsoy & Katabi, 2008). Closely attached to the traditional dietary practice is believed to avoid illness in later life for example some women regret in later life when they experience multiple joint pain due to the non-adherence to these traditional practices (C. L. Dennis et al., 2007 as cited in Ismail & Nabila Jusoh, 2022).

This concept also brings various behavioral recommendations such as the use of blankets or the use of steam placed atop beds with fire and the practice of hot compress to restore heat loss (Withers et al., 2018). One study also stated that heated brick applied to the abdomen, supra-pubic area, and waist after wrapping with clothes can enhance uterine involution, perineal wound healing, and reduce muscle stiffness (Sein, 2013).

A study has been conducted by (de Boer et al., 2011) showed that confinement practice used in postpartum recovery among the Lao PDR which is steam sauna medicinal plant use through dermal condensation of essential oils, and steam bath cleansing of the perineal use content terpene which documented have antimicrobial, analgesic and anti-inflammatory properties (de Boer et al., 2011). Another confinement taboo practiced by many cultures including China, Thailand, Vietnam, Malaysia, Turkey, and Myanmar is sexual abstinence throughout the confinement period (Geçkil et al., 2009; Withers et al., 2018).

A study conducted by researchers in Singapore showed that most women engaged close relatives as caregivers during confinements which are their grandmothers, mothers-in-law, mothers, aunts, and sisters (Fok et al., 2016) and according to qualitative systemic reviews done by (C.-L. Dennis et al., 2007), this is common practice that is universally adopted across many other countries.

Nutrition plays a vital role in preventing postpartum depression as dietary fat is not only an energy source but also important in brain function. Intake of polyunsaturated fatty acids (PUFAs) including docosahexaenoic acid (DHA) which is found in high concentrations in aquatics, animal sources (fish, meat, egg, and milk), and plant sources (herbs, spices, and fruit seeds) is important for receptor function, membrane fluidity, neurotransmitter uptake, and signal transmission (Abedi et al., 2014 and Sparling et al., 2016 as cited in Ismail & Nabila Jusoh, 2022)

In most cultures, the concept of heat imbalances in the body affects the dietary prescription during postnatal confinement. During the confinement period, they are encouraged to take more “hot” foods and drinks while avoiding taking “cold” foods to promote a better balance of energy in the body (Withers et al., 2018). Besides, one study that has been done by Teo et al. (2018) showed that traditional Indian dietary patterns had a protective effect against postpartum, which they might consume high vitamin B in Indian food such as legumes and ethnic bread.

Breastfeeding women need approximately 500 additional kcal/day compared to non-pregnant women and it might not meet the recommended values of the maternal calorie, macronutrients, dietary fiber, and water intake due to restriction of food types and quantity among those who practice the traditional confinement (Munirah et al., 2020). Those mothers who breastfed for 6 months and do not take additional calories during breastfeeding will loss 0.44kg of weight loss per month compared to only a month of breastfeeding (Kominiarek & Rajan, 2016).

One study that has been conducted in Singapore shows that there are significant differences in parity, especially in Indian women which is most likely multiparous (Fok et

al., 2016). There was a study showing that low parity, low educational status, and unemployment were associated with increased use of traditional practices, but the association was not statistically significant (Myint & Najimudeen, 2019).

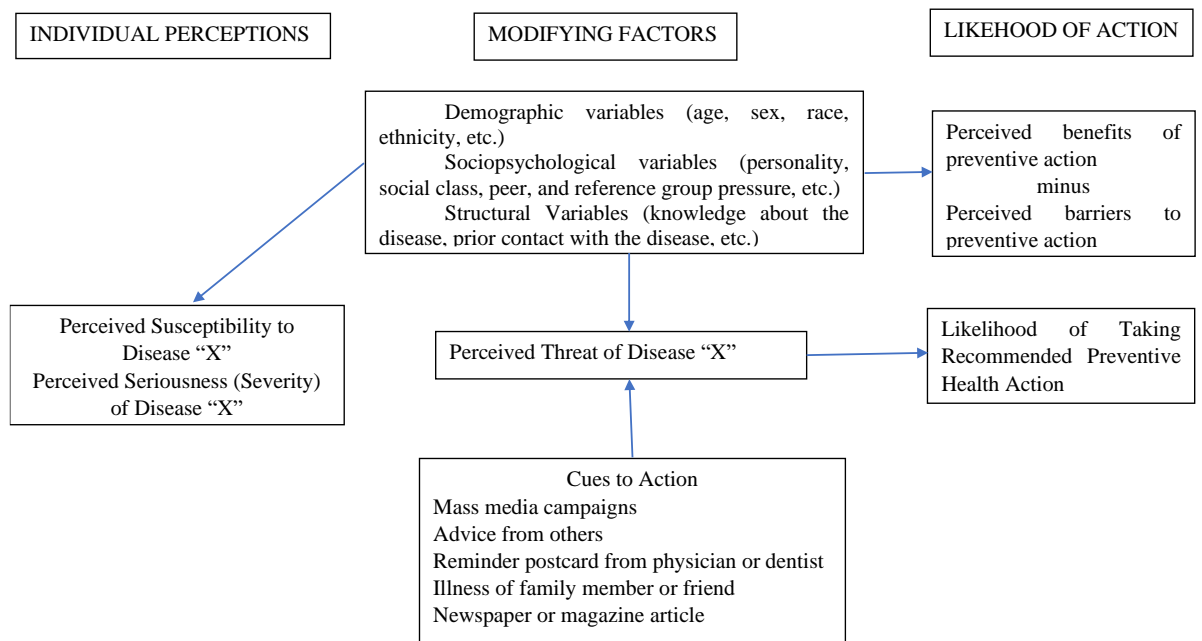
2.4 Association between Selected Socio-Demographic Characteristics with the Duration of Confinement Period among the Postnatal Mothers in Hospital USM.

Based on the study that had done by Abdul Ghani & Salehudin (2018), there was no significant association of socio-demographic data with confinement period ($p>0.05$). The socio-demographic includes the age, the level of education, job status and number of children. This probably is due to the the range of variables affects the results of the data.

2.5 Theoretical and Conceptual Framework of the Study

The theoretical framework for this study is based on the Health Belief Model (HBM) by Becker et al. (1974). The HBM attempts to predict health-related behavior in terms of certain belief patterns. This model helps in evaluating more how the belief of the practice confinement period among postnatal mothers affects the behavior in the individuals towards the prevention of illness as a self-care measure.

Figure 2.1: A schematic representation of the Health Belief Model (Becker et al., 1974)

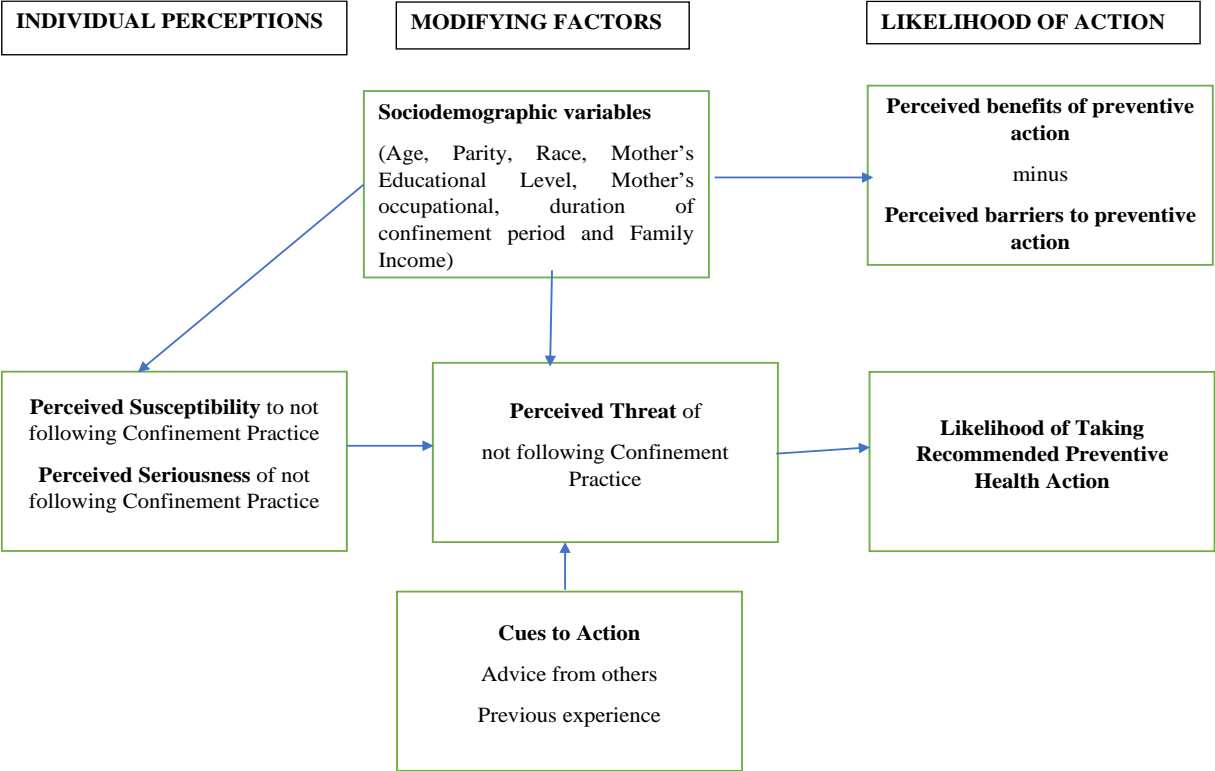


According to this model, a person's motivation to undertake a health behavior can be divided into three categories: individual perceptions, modifying factors, and the likelihood of action. Individual perceptions are factors that affect the perception of the illness and the importance of health to the individual, perceived susceptibility, and perceived severity. Modifying factors include demographic variables, perceived threats, and cues to action. The

likelihood of action is the perceived benefits minus the perceived barriers to taking the recommended health action(Becker et al., 1974). The combination of these factors causes a response that often manifests into the likelihood of the behavior occurring.

HBM proposes that the perception of a personal behavior threat is influenced by at least three factors, general health values, which include interest and concern about health; specific health beliefs about vulnerability to a particular health threat’ and beliefs about the consequences of the health problem (Rosenstock, 1974) If a person perceives a threat to their health, is consecutively cued to action, and their perceived benefits outweigh the perceived barriers, then they are likely to undertake the recommended preventive health action.

Figure 2:2: A schematic representation of the adapted Health Belief Model



CHAPTER 3: METHODOLOGY AND METHODS

3.1 Introduction

This chapter explains the approach and rationale used to support the chosen research methodology. An appropriate research design is determined to achieve the objectives of this study. An explanation of choosing the design of the study is explained in this chapter. Besides, a description of the population and setting, sampling plan, instrumentation, variables, ethical considerations, data collection method, data analysis, and Gantt chart are planned. The final section explains the expected outcome of this study.

3.2 Research Design

A cross-sectional design is used in this research. This approach is chosen for my descriptive research as we can collect information from a larger sample of people and a larger sample can reflect the actual diversity of the population which allows better generalizability(University of Central Florida, 2022).

3.3 Research Location

The study was conducted in Obstetrics and Gynecology wards, at the Hospital Universiti Sains Malaysia (Hospital USM) which is situated in Kubang Kerian, Kelantan.

3.4 Research Duration

For this study, the study duration is one year for the whole study and about 3 months of data collection after obtaining approval from the Human Ethics Committee, USM.

3.5 Research Population

This study is conducted among mothers who gave birth and stayed in the postnatal ward at the Hospital USM, Kubang Kerian, Kelantan.

3.6 Subject Criteria

3.6.1 Inclusion Criteria

Participants must meet the following criteria to be included in the study:

- Have been giving birth.
- Para 2 and above.
- Had healthy full-term infant
- Women who are well-being mentally

3.6.2 Exclusion Criteria

Participants will be excluded from this study if they:

- Post lower segment cesarean section (LSCS)
- Having instrumental delivery
- Unable to understand in Bahasa Malaysia
- Not willing to participate in the study

3.7 Sampling Plan

3.7.1 Sample size estimation

The sample size was calculated for each research objective. Single proportion formula is used to calculate the sample size for the first objectives. The first objective (to determine the confinement practices among the postnatal mothers in Hospital Universiti Sains Malaysia), the sample size was determined using a single proportion formula.

$$n = \left[\frac{z}{\Delta} \right]^2 p (1 - p)$$

Whereby,

n= Sample size

p=Anticipated population proportion

z= Value of standard normal distribution=1.96

$$\Delta = \text{Precision} = 0.05$$

The population proportion is taken based on a previous study conducted by (Abdul Ghani & Salehudin, 2018) which is $p=0.67$. Thus,

$$n = \left[\frac{1.96}{0.05} \right]^2 0.67(1 - 0.67)$$

$$n = 340$$

After considering the 10% of response rate,

$$340 \times 10\% = 34$$

Hence,

$$n = 340 + 34$$

$$n = 374$$

$$n = 374 \text{ participants}$$

Hence, the sample size needed for the first objective in this study is 374 participants who fulfilled the inclusion and exclusion criteria.

For the second objective (to determine the duration of confinement practices among postnatal mothers in Hospital Universiti Sains Malaysia), the sample size was determined using a single proportion formula.

$$n = \left[\frac{z}{\Delta} \right]^2 p (1 - p)$$

Whereby,

$$n = \text{Sample size}$$

p=Anticipated population proportion

z= Value of standard normal distribution=1.96

Δ = Precision= 0.05

The population proportion is taken based on a previous study conducted by (Abdullah et al., 2019)which is p=0.969. Thus,

$$n = \left[\frac{1.96}{0.05} \right]^2 0.969(1 - 0.969)$$

n= 47

After considering the 10% of response rate,

$$47 \times 10\% = 5$$

Hence,

$$n = 47 + 5$$

n=52

n= 52 participants

Hence, the sample size needed for the first objective in this study is 52 participants who fulfilled the inclusion and exclusion criteria.

For the third objective (to identify the frequency of foods and dietary intake during confinement among the postnatal mothers at Hospital Universiti Sains Malaysia), the sample size was determined using a single proportion formula.

$$n = \left[\frac{z}{\Delta} \right]^2 p (1 - p)$$

Whereby,

n= Sample size

p=Anticipated population proportion

z= Value of standard normal distribution=1.96

Δ = Precision= 0.05

The population proportion is taken based on a previous study conducted by (Abdul Ghani & Salehudin, 2018) which is p=0.545. Thus,

$$n = \left[\frac{1.96}{0.05} \right]^2 0.545(1 - 0.545)$$

n= 381

After considering the 10% of response rate,

$$381 \times 10\% = 38$$

Hence,

$$n = 381 + 38$$

n=419

n= 419 participants

The fourth objective (is to determine the association between selected sociodemographic factors (age, parity, race, educational status, occupational status, family income) and duration confinement practices among postnatal mothers in Hospital