

**KNOWLEDGE AND PRACTICE OF
PRECONCEPTION CARE AMONG WOMEN IN
KAMPUNG ORANG ASLI ULU KAMPAR
GOPENG PERAK**

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**KNOWLEDGE AND PRACTICE OF
PRECONCEPTION CARE AMONG WOMEN IN
KAMPUNG ORANG ASLI ULU KAMPAR
GOPENG PERAK**

by

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**Dissertation submitted in partial fulfilment of the requirements
for the degree of
Bachelor in Nursing**

August 2025

CERTIFICATE

This is to certify that the dissertation entitled "Knowledge and Practice of Preconception Care Among Women in Kampung Orang Asli Ulu Kampar Gopeng Perak" is the research work done by Ms. "Mayzuvin A/P Bah Nordin" during the period from October 2024 until August 2025 under my supervision. I have read this dissertation, and, in my opinion, it conforms to acceptable standards of supervision of scholarly presentation and is fully adequate, in scope and quality, as a dissertation to be submitted in partial fulfilment for the degree of Bachelor of Nursing (Honor).

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DECLARATION

I hereby declare that this dissertation is the result of my investigation, except where otherwise stated and duly acknowledged. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at Universiti Sains Malaysia or other institutions. I grant Universiti Sains Malaysia the right to use the dissertation for teaching, research and promotional purposes.

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LIST OF ABBREVIATIONS

DM	Diabetes Mellitus
HBM	Health Belief Model
HPT	Hypertension
HREC	Human Research Ethics Committee
IHD	Ischemic Heart Disease
JAKOA	Jabatan Kemajuan Orang Asli
PCC	Preconception Care
PMR	Penilaian Menengah Rendah
PT3	Pentaksiran Tingkatan 3
SD	Standard Deviation
SPM	Sijil Pelajaran Malaysia
SPSS	Statistical Package for the Social Sciences
WHO	World Health Organization

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**PENGETAHUAN DAN AMALAN PENJAGAAN PRA KEHAMILAN
DALAM KALANGAN WANITA KAMPUNG ORANG ASLI ULU KAMPAR
GOPENG PERAK**

ABSTRAK

Penjagaan pra-kehamilan merupakan pendekatan pencegahan penting bagi meningkatkan tahap kesihatan ibu dan anak. Namun begitu, tahap kesedaran dan amalan penjagaan pra-kehamilan masih rendah dalam kalangan masyarakat Orang Asli di Malaysia. Kajian ini bertujuan untuk menentukan tahap pengetahuan dan amalan penjagaan pra-kehamilan dalam kalangan wanita di Kampung Orang Asli Ulu Kampar, Gopeng, Perak serta menilai hubungan di antara kedua-duanya. Satu kajian keratan rentas telah dijalankan melibatkan 119 wanita Orang Asli berumur 18 tahun ke atas. Data dikumpulkan menggunakan soal selidik yang telah disahkan kesahan dan kebolehpercayaannya. Analisis data dilakukan menggunakan SPSS Versi 28.0 dengan statistik deskriptif dan inferensi. Keputusan kajian menunjukkan bahawa 63% responden mempunyai pengetahuan yang baik mengenai penjagaan pra-kehamilan, manakala 79.8% mengamalkan penjagaan pra-kehamilan yang baik. Namun begitu, tiada hubungan yang signifikan di antara pengetahuan dan amalan ($p=0.139$). Kesimpulannya walaupun kebanyakan wanita mengamalkan penjagaan pra-kehamilan dengan baik, terdapat kekurangan pengetahuan dalam aspek pemakanan dan jarak kehamilan. Pendidikan kesihatan yang lebih berkesan, perkhidmatan kesihatan yang mesra budaya, dan kajian kualitatif seterusnya dicadangkan bagi meningkatkan penjagaan pra-kehamilan dalam komuniti Orang Asli.

**KNOWLEDGE AND PRACTICE OF PRECONCEPTION CARE
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PERAK**

ABSTRACT

Preconception care is an important preventive approach to improve maternal and child health. However, the awareness and practice of preconception care remain limited among the Orang Asli community in Malaysia. This study aims to determine the level of knowledge and practice of preconception care among women in Kampung Orang Asli Ulu Kampar, Gopeng, Perak, and to examine the association between them. A cross-sectional study was conducted involving 119 Orang Asli women aged 18 years and above. Data were collected using a validated self-administered questionnaire and analysed using SPSS Version 28.0, employing descriptive and inferential statistics. The result revealed that 63% of respondents had good knowledge of preconception care, while 79.8% demonstrated good preconception care practices. However, there was no significant association between knowledge and practice ($p=0.139$). In conclusion, the majority of women practised good preconception care, knowledge gaps remain, particularly in areas such as nutrition and birth spacing. Strengthening health education, improving culturally sensitive outreach services, and conducting further qualitative research are recommended to enhance preconception care in Orang Asli communities.

CHAPTER 1

INTRODUCTION

1.1 Introduction

The health of women, newborns, and children reflects the overall well-being of a nation. Preconception care (PCC), which involves health interventions provided to women of reproductive age before pregnancy, plays a crucial role in reducing maternal and neonatal risks. Despite its importance, awareness and practice of PCC remain limited, particularly among marginalized communities. In Malaysia, the Orang Asli population experiences higher rates of perinatal mortality and low birth weight compared to the national average. Factors such as socioeconomic challenges, cultural reliance on traditional medicine, and limited access to health services contribute to poor maternal outcomes. However, studies focusing specifically on the knowledge and practice of PCC among Orang Asli women are scarce. This study aims to assess the level of knowledge and practice of preconception care among Orang Asli women in Kampung Orang Asli Ulu Kampar, Gopeng, Perak, and to explore the association between them. The findings are expected to inform culturally appropriate healthcare strategies, enhance health education efforts, and support targeted interventions to improve maternal and child health outcomes within this underserved community.

1.2 Background of Study

The health status of the population and the efficacy of healthcare systems are reflected in the health of women, newborns, and children, which is a critical indicator of a nation's wellbeing. Women must maintain optimal to facilitate healthy pregnancies and childbirth, as they are responsible for giving birth, nurturing, and managing family care (Olowokere et al., 2015). Preconception care, which is

healthcare provided to women of reproductive age regardless of their intention to conceive, is essential for optimizing health prior to pregnancy.

According to the World Health Organization (2023), approximately one woman dies every two minutes due to pregnancy-related causes on a global scale. The majority of these fatalities can be prevented through the provision of quick and sufficient healthcare. This underscores the importance of readily accessible maternal healthcare services and preconception services in the reducing maternal mortality (Godar et al., 2023).

According to Singh A HSS (2008), the perinatal mortality rate among the Orang Asli population in Malaysia is 25.7 per 1,000 population, which is significantly higher than the national perinatal mortality rate of 8.1 per 1,000. This rate is derived from stillbirths and early neonatal fatalities. Furthermore, the incidence of low birth weight among the Orang Asli is 20.5%, which is considerably higher than the national average of approximately 6% (Kaur et al., 2019). This suggests that the Orang Asli have a high incidence of adverse birth outcomes, which is analogous to the experiences of other indigenous populations worldwide (Ershad et al., 2023).

Preconception care is a multifaceted concept that can be analyzed from the perspectives of public health, individual, and biology (Stephenson et al., 2018). From a biological perspective, it includes the 14 weeks that precede conception (Welshman et al., 2023). From an individual standpoint, it commences with the decision of two individuals that are capable of reproducing to have a child. Stephenson et al. (2018) define the preconception period as the period during which health behaviors are established, prior to pregnancy. The preconception population is typically defined by three characteristics: the ability to conceive or contribute to conception, being of

reproductive age, and not being pregnant (Hill et al., 2020). Preconception care encompasses health interventions that are preventive, promotive, and curative prior to conception. This care may also encompass the interconception period (between two pregnancies) and the periconception period (three months prior to and three months following conception) (Olowokere et al., 2015).

The Orang Asli are the indigenous people of Peninsular Malaysia and are classified into three primary tribes: Senoi, Negrito, and Proto-Malay. There are also eighteen sub-tribes (T. Masron et al., 2013). The most recorded Orang Asli populations were found in Pahang and Perak between 1947 and 2010 (T. Masron et al., 2013). The distribution of indigenous settlements in Perak is comprised of the sub-ethnic groups from the main ethnic groups Senoi (58,140), Negrito (2,796), and Melayu Proto (653), based on Jabatan Kemajuan Orang Asli (2023). Ershad et al. (2023) estimate that the Orang Asli population is approximately 180,000, with approximately half residing on the east coast. The central provinces of Pahang, Kelantan, Perak, Selangor, and Negeri Sembilan are the primary locations of these indigenous communities. Although they constitute less than 2% of the population, the morbidity and mortality rates among Orang Asli are significantly elevated, and neonatal health data are scarce (Kandasamy Y & Somasundram P, 2007).

In conclusion, the Orang Asli community in Malaysia experiences a higher prevalence of maternal health issues and adverse birth outcomes than the general population. The elevated perinatal mortality rate and low birth weight incidences underscore the urgent need for enhanced maternal and preconception care services that have been designed explicitly for this indigenous population. The potential to improve

the health outcomes of the Orang Asli community and reduce maternal and neonatal health disparities exists through the establishment of effective preconception care.

1.3 Problem Statement

Preconception care aims to improve pregnancy outcomes by addressing health issues before conception early (Kasim et al., 2016). Many women of reproductive age experience unintended pregnancies, often realizing they are pregnant only after missing a menstrual period, which typically occurs around six to eight weeks into the pregnancy. As a result, the opportunity for early intervention is often restricted by the delay of initial antenatal visits until this period or later (Kasim et al., 2016).

The primary goal of preconception care is to eliminate risk factors that could adversely affect future pregnancies by offering health awareness, examinations, and targeted health interventions to women of reproductive age. According to Godar et al. (2023), preconception care aims to enhance the health of both mother and infant by addressing harmful practices, individual behaviors, and environmental factors. Only 73.1% of orang asli women in Jempol, Negeri Sembilan, were aware that the first antenatal check-up should take place within the first three months of pregnancy, as per a study conducted by Abdul Manaf and Hanafiah Juni (2011). Furthermore, nearly half of the women were ignorant of the complications associated with hypertension and diabetes during pregnancy, and approximately one-quarter were unaware of the harmful effects of smoking and alcohol during pregnancy. The necessity of enhanced health education and awareness strategies within this community is made clear by these knowledge gaps.

Ershad et al. (2023) carried out a study on adverse birth outcomes among Indigenous in Kelantan, Malaysia in 2018 to 2020. The study revealed that maternal factors such as primiparity, anemia during pregnancy, and hypertension were associated with an increased risk of low birth weight infants among the Orang Asli. This study clarifying knowledge gaps in preconception among Orang Asli women, such as understanding the risks of low birth weight and infant mortality associated with limited preconception care. Strategies to reduce gaps in health emphasize these determinants to ensure that antenatal services assist in the early identification and treatment of pregnancy-related health concerns. He says pre-pregnancy care should prioritize maternal and infant health education, particularly for first-time mothers. It, should address nutritional policies specific to the Orang Asli population.

The Orang Asli's health-seeking behavior is also significantly influenced by their cultural practices and traditional beliefs. The study results (Rahimi H et al., 2003) indicate that a substantial proportion (82.8%) of the Orang Asli continue to seek the services of traditional healers, or "bomoh," for their healthcare needs, although they are exposed to modern healthcare services and live in close contact to other communities. The quality of maternal and infant health outcomes can be influenced by this reliance on traditional medicine, which can affect the uptake of modern healthcare services, including the knowledge and practice of preconception care and antenatal care. The acceptance and effectiveness of preconception care interventions within the Orang Asli community could be improved by addressing cultural factors and integrating traditional practices with modern healthcare. In addition, there are no specific study done to test the Knowledge and practice of Orang Asli women in preconception or pre-pregnancy care in Malaysia

Preterm birth is a significant cause of infant mortality worldwide, with a particular emphasis on high- and middle-income countries. Low birth weight, birth defects, preterm deliveries, and infant mortality continue to be more prevalent than the objectives established in health agendas (Olowokere et al., 2015). These concerns are frequently associated with inadequate or absent preconception care (Olowokere et al., 2015).

Socioeconomic factors substantially influenced health disparities among the Orang Asli. In 2006, 33.53% of Orang Asli was classified as poor, and 15.4% as hardcore poor, despite the national poverty and hardcore poverty rates being 7.5% and 1.4%, respectively (Ershad et al., 2023). Moreover, barriers such as geographics isolation and limited access to educational resources, which can impact health literacy and health-seeking behavior related to preconception. The Orang Asli experiences a lower quality of life due to socioeconomic disadvantages, genetic vulnerabilities, resource alienation, and political marginalization (Durie, 2003; Ershad et al., 2023). These factors may further perpetuate poor health outcomes by contributing to limited access to healthcare services, such as preconception and antenatal care.

In summary, the necessity of this investigation is emphasised by the prevalence of adverse pregnancy outcomes and the socioeconomic obstacles encountered by the Orang Asli. This study attempts to address the Knowledge and practice of preconception care among Orang Asli women by addressing the knowledge gaps, improving health practices, and reducing the disparities in maternal and infant health outcomes. This study is crucial to developing targeted interventions that enhance health education, increase access to preconception and ultimately improve the quality of life for Orang Asli women and their families.

1.4 Research Questions

The research questions for this study are as follows:

- I. What is the level of knowledge of preconception care among women in Kampung Orang Asli Ulu Kampar Gopeng, Perak?
- II. What is the level of practice of preconception care among women in Kampung Orang Asli Ulu Kampar Gopeng, Perak?
- III. Is there any association between knowledge and practice of preconception care among women in Kampung Orang Asli Ulu Kampar Gopeng, Perak?

1.5 Research Objectives

1.5.1 General Objective

To determine the level of knowledge and practice of preconception care among women in Kampung Orang Asli Ulu Kampar Gopeng, Perak.

1.5.2 Specific Objectives

The specific objectives for this study are as follows:

- i. To determine the level of knowledge of preconception care among women in Kampung Orang Asli Ulu Kampar Gopeng, Perak.
- ii. To determine the level of practice of preconception care among Women in Kampung Orang Asli Ulu Kampar Gopeng, Perak.
- iii. To identify the association between knowledge and practice of preconception care among women in Kampung Orang Asli Ulu Kampar Gopeng, Perak.

1.6 Research Hypothesis

Hypothesis 1 (H₀): There is no significant association between knowledge and practice of preconception care among women in Kampung Orang Asli Ulu Kampar Gopeng, Perak.

(H₁): There is a significant association between knowledge of preconception care among the women in Kampung Orang Asli Ulu Kampar Gopeng, Perak.

1.7 Significance of study

The perinatal death rate for the Orang Asli is markedly elevated compared to the national norm, with a documented rate of 25.7 per 1,000 live births versus the national rate of 8.1 per 1,000 (Singh A HSS, 2008). The incidence of low birth weight newborns is significantly elevated at 20.5%, in contrast to the national average of approximately 6% (Kaur et al., 2019), highlighting the urgent need for targeted maternal health initiatives. By studying the knowledge and practices of preconception care among Orang Asli women, the purpose of this study is to reduce these disparities. The findings of this study have the potential to guide policy and resource allocation within Malaysia for indigenous healthcare. The findings could provide support for preconception care models that are culturally adapted and that boost the accessibility and effectiveness of healthcare solutions.

Besides that, this study could have a big impact on Malaysian healthcare measures that help indigenous people in the nation. The study's results can help public health officials decide the ways to allocate funds and make programs that are culturally appropriate and easy for Orang Asli women to access by demonstrating that there are gaps in information and cultural barriers that might get in the way of effective

preconception care. The Orang Asli face difficulties at the moment, such as living in a remote area, having low incomes, and relying on traditional treatment (Rahimi H et al., 2003). Thus, learning about the special needs and views of this group when it comes to preconception care can help policymakers make decisions that are both effective and respectful of their culture.

Furthermore, emphasising culturally relevant healthcare approaches is crucial, since traditional therapies may not adequately address the challenges faced by indigenous populations. The study's conclusions can facilitate the development of training programs for healthcare personnel aimed at enhancing cross-cultural understanding and fostering trust between the Orang Asli and medical professionals.

1.8 Definitions of Conceptual and Operational Terms

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

	Conceptual Definition	Operational Definition
Preconception Knowledge	Understanding of preconception health care correlates with educational attainment, utilization of family planning methods, pregnancy intention, and nulliparity (Ayalew et al., 2017).	This study assess the knowledge of preconception care among women using self-administered questionnaire adopted from (Rosnah & Aishah, 2010).
Preconception Practice	The implementation of preconception care before to pregnancy correlated with enhanced pregnancy readiness and a diminished likelihood of negative pregnancy outcomes (Kasim et al., 2016).	This study assess the practice of preconception care among women in Kampung Orang Asli Ulu Kampar Gopeng Perak using self-administered questions adopted from (Rosnah & Aishah, 2010).

Preconception Care	Preconception care (PCC) encompasses biomedical, behavioral, and social health interventions for women and couples before conception, enhancing their health status and mitigating behaviors and individual and environmental factors that adversely affect maternal and child health outcomes (Ayalew et al., 2017).	This study assess the Knowledge and practice of preconception care among women in Kampung Orang Asli Ulu Kampar Gopeng Perak using self-administered question adopted from (Rosnah & Aishah, 2010).
Women	The term "woman" generally refers to an adult female human and is used to differentiate females from males, who are called "men." That often linked to traits and roles traditionally aligned with femininity, such as nurturing, empathy, and caregiving. The interpretation of "woman" can differ across cultural, social, and historical contexts (Mcgee, 2023).	In this study, a Orang Asli women who lives in in Kampung Orang Asli Ulu Kampar Gopeng, Perak were assessed for their knowledge and practice of preconception care.
Community	A community is a collective of individuals who engage and assist one another, united by common experiences or traits, a feeling of belonging, and frequently by geographical closeness (Cobigo et al., 2016).	In this study, women who lives in the Orang Asli community in Kampung Orang Asli Ulu Kampar Gopeng, Perak were assessed for their knowledge and practice of preconception care.

Table 1.1: Conceptual and Operational Definitions

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This review aims to gather and explain what other research has found. We want to know what the indigenous women knowledge and how is their practice toward preconception care. This chapter looks at various aspects, such as, the knowledge of preconception care, the practice of preconception care the association between the knowledge and the practice of preconception care. The final section of this chapter describe the theoretical and conceptual framework used in this research.

2.2 Conceptual of Preconception Care

According to Dean et al. (2013), preconception care refers to any healthcare intervention delivered to women of reproductive age regardless of their pregnancy status or intention to conceive before pregnancy occurs. The primary aim of preconception care is to improve health outcomes for women, babies, and children. Periconceptional care, on the other hand, involves healthcare interventions delivered shortly before, during, and just after conception. This approach focuses on optimizing health outcomes during this critical window for both mother and child. Meanwhile, interconception care refers to interventions administered between pregnancies to women of reproductive age, with the goal of improving health outcomes in subsequent pregnancies, as well as the well-being of neonates and children.

Preconception counselling helps avoid adverse pregnancy results. Before starting a pregnancy, all women of reproductive age should ideally have preconception counselling. All women visiting for Pap screenings, contraception, or follow-up for

chronic conditions such as diabetes mellitus, hypertension, and epilepsy should be offered this kind of advice. Despite the fact that preconception care practices, attitudes, and knowledge are proven to positively impact pregnancy outcomes, little is known about them in Malaysia (Kasim et al., 2016).

Girls above the age of 15 and women up to the age of 49 are considered to be of reproductive age (Dean et al., 2013). Preconception care strives to develop a health continuum that benefits healthy women, mothers, and children while encouraging couples' general reproductive health. Preconception care recognizes that boys and men play important roles in mother and child health. Their habits and risk factors, including sexually transmitted illnesses, smoking, and domestic abuse, can have an impact on women's and children's health. As a result, preconception care should target both genders to enhance the overall health for adults, mothers, and babies.

Preconception or pre-pregnancy care is an approach to health promotion and preventive medicine. This examines biological, behavioural, and social health interventions to increase health and reduce behavioural, individual, and environmental variables that may contribute to poor mother and child health outcomes. Malaysia has also implemented this strategy since 2002 (Jusoh et al., 2021). A local survey of women evaluated in pre-pregnancy clinics found that nearly 70% had at least one risk factor, with 35% being overweight or obese and 14% having anaemia (Ng et al., 2014). Thus, pre-pregnancy care is critical for improving pre-pregnancy health and lowering risk factors, resulting in better mother and child health outcomes (Jusoh et al., 2021).

Although pre-pregnancy care has been shown to be effective, there is a lack of information and awareness about it (Jusoh et al., 2021). In Malaysia, many women who visited pre-pregnancy clinics expressed their initial lack of understanding of the services and emphasised some neglected locations. According to the review study by

Braspenningx et al. (2013), several scientists believe that PCC comprises some significant areas. As a physician or health care provider, you should certainly question a woman with a pregnancy desire about the following topics: personal and familial medical history, past infections and immunization status, gynecological problems, personal environment, food habits and potential exposure to teratogenic substances, drug, medication, and alcohol use, personal and family antecedents of thrombosis, congenital malformations, surgery, or pregnancy complications. Furthermore, each preconceptional consultation should be finished with a clinical examination and the administration of necessary laboratory testing, including blood group and abnormal antibodies.

2.3 Preconception Health of indigenous People in Australia, Canada, New Zealand, and the United States of America

Indigenous peoples of Australia, Canada, New Zealand, and the United States of America have similar colonial histories, as well as current experiences of intergenerational trauma, financial inequality, racism, and poor health care. These experiences have resulted in similar gaps in terms of a greater prevalence of preconception health risk factors and poor reproductive outcomes. Despite sharing comparable experiences, Indigenous populations in these four countries vary significantly, with unique histories, languages, and cultural traditions. Furthermore, each country has a distinct health system and strategy for delivering health care to Indigenous peoples. Fewer studies have studied Indigenous peoples' participation in preconception health care, including factors influencing acceptance of preconception health interventions and care, as well as Indigenous peoples' or health professionals. In

this review, the number of studies related to Knowledge and attitudes toward preconception health is (n = 4, 7.0%) (Walker et al., 2024).

The review emphasised the deficiency of studies about Indigenous groups' knowledge, attitudes, and barriers related to preconception care, alongside minimal participation in current programs. The limited amount of data and design constraints, including retrospective methodologies, hinder a thorough comprehension of preconception health, indicating a necessity for prospective investigations. Moreover, the review advocates for more focused research to bridge these gaps and guide culturally relevant therapies and policies. It underscores the significance of comprehending healthcare providers' viewpoints on administering preconception care to Indigenous communities (Walker et al., 2024). Resolving these difficulties may result in more successful and inclusive preconception health initiatives, specifically designed to address the distinct requirements of Indigenous communities and enhance mother and child health outcomes.

2.4 Knowledge of Preconception Care

Research shows that women who have pre-pregnancy care possess greater knowledge and often demonstrate risk-reduction behaviors (Kasim et al., 2016). The intake of folic acid during the advised timeframe also rises among women who obtain pre-pregnancy care.

Previous research indicated that women who undergo an intervention for preconception care possess greater awareness of the subject matter, and that even short counseling can enhance their understanding of both general and individual preconception health hazards (Dunlop et al., 2013).

This is the first study in Malaysia that examines the level of knowledge and practice of preconception care. The level of knowledge among Indian ethnic women studied in the Semenyih district shows that they have a low level of knowledge, with an average of 11.7 ± 3.8 out of a total score of 21. Ninety respondents engaged in self-administered questionnaires. Sixty-five respondents (72.2%) were married, twenty-four (26.7%) were single, and one (1.1%) was a widow. A scoring study revealed that 55 individuals (61.1%) attained a high knowledge score about pre-pregnancy care (Rosnah & Aishah, 2010).

Another cross-sectional study was undertaken at Rural Klinik Kesihatan Bachok from April to December 2012 (Kasim et al., 2016). A self-administered questionnaire was distributed to 135 participants aged 18 to 45 years. A comprehensive assessment indicated that 51.9% of the participants have adequate knowledge. However, regarding specific preconception health topics, the respondents showed little knowledge concerning the risks associated with poor birth spacing, recommendations for optimal birth spacing practices, and the implications of maternal anemia for the baby.

A mixed-methods study conducted in Australia by Klein et al. (2017) comprised a cross-sectional survey of 156 health practitioners and 11 semi-structured interviews, examining practitioners' perspectives on preconception care delivery for women with Type 2 Diabetes Mellitus in the Northern Territory, where 31% of births are to Aboriginal women. The health practitioner reported that concerns included lack of knowledge among Aboriginal women on the significance of preconception care, elevated incidence of unintended pregnancies, and obstacles associated with social and cultural factors. Practitioners typically provided opportunistic preconception counseling but encountered obstacles including difficulties in cross-cultural communication and a scarcity of preconception consultations.

2.5 Practice of Preconception Care

Study shown that preconception care before pregnancy correlates with improved pregnancy readiness and a diminished likelihood of adverse pregnancy outcomes. Their research was performed on patients with Type 1 and Type 2 diabetes mellitus. Individuals who participated in preconception care had superior glycaemic control, ingested folic acid, and arranged early care sessions (Murphy et al., 2010).

A cross-sectional study was conducted at Klinik Kesihatan Bachok. A self-administered questionnaire was distributed to 135 participants aged 18 to 45 years. The average score for suitable practices in this study was 10.13 ± 2.30 out of a maximum score of 16. This research revealed that 45.2% of women in Bachok displayed poor preconception care practices (Kasim et al., 2016).

Another cross-sectional study was performed on the Indian ethnic group to evaluate the prevalence and factors related to pre-pregnancy care (Rosnah & Aishah, 2010). This study shows the prevalence of pre-pregnancy care practices indicating that 63 individuals (70%) displayed high levels of practice.

A further study conducted by Klein et al. (2017), which investigated the perspectives of practitioners regarding the delivery of preconception care for women with type 2 diabetes in the Northern Territory, revealed that health practitioners who worked with Aboriginal women reported a low rate of attendance for preconception care. Plus, a significant number of women did not present for preconception care until after they had already become pregnant.

2.6 Association Between Knowledge and Practice of Preconception Care

The understanding of preconception care (PCC) is closely associated with practices. The prevalence of PCC among women of reproductive age is approximately 50% in high-income nations, and considerably lower in low- and middle-income ones (Martínez et al., 2024). On the other hand, prenatal consultation, although significant, is frequently considered late. Therefore, preventive intervention is important; individuals are more likely to stick to PCC standards, influenced by factors such as socioeconomic status, education, and access to healthcare facilities.

A cross-sectional study was performed among the Indian ethnic group to evaluate the prevalence and factors associated with pre-pregnancy care (Rosnah & Aishah, 2010). The study was conducted in Taman Manickavasangam, Hulu Langat, Selangor, focusing on women aged 18 to 45. Ninety respondents engaged in self-administered questionnaires. Sixty-five respondents (72.2%) were married, twenty-four (26.7%) were single, and one (1.1%) was a widow. The study indicated a significant link between the practice score and advancing age ($P=0.03$). However, only the history of previous gestation had a significant correlation with pre-pregnancy care practices, while no correlation was identified between these practices and the knowledge score (Rosnah & Aishah, 2010).

Another cross-sectional study by Martínez et al., (2024) including 138 women visiting healthcare centers in southeastern Mexico was done. Consecutive sampling was employed, and data was gathered using a standardised questionnaire. The data analysis included calculating frequencies, percentages, and inferential tests. The results indicate a positive and significant correlation between knowledge and the practice of CPA ($r_s=0.267$, $p < 0.05$).

2.7 Health Practices of Orang Asli Women in Malaysia

A study on the nutritional status and reproductive health of Orang Asli women in Pahang shows that the average nutrition intake is insufficient compared to the level required by a woman, while the reproductive health care for women is satisfactory. (Lim & Chee, 1998). An unbalanced diet causes Orang Asli women to be exposed to chronic diseases such as diabetes and obesity. The lack of availability and accessibility to healthy and sufficient food, unbalanced dietary practices, and the occurrence of food supply instability contribute to a limited food crisis for the indigenous community, affecting their health levels (Nor Haidanadia et al., 2016).

The government has undertaken various initiatives to safeguard the welfare of the community in Malaysia, especially the Orang Asli people in terms of health, yet problems still persist for this minority group. According to Wan Afizi et al. (2015), the group of Orang Asli women has low folate and high iron levels.

The study by Rosliza and Muhammad (2011) on the knowledge, attitudes, and practices of antenatal care among Orang Asli women in Negeri Sembilan showed that the level of knowledge regarding early antenatal care, screening tests, and complications of diabetes and hypertension during pregnancy was poor. Thus, Indigenous women still do not pay attention to care during pregnancy and childbirth (Abdul Manaf & Hanafiah Juni, 2011). Several detailed studies have been conducted to identify the reproductive health status of indigenous women, especially abroad.

Mohamed & Selvaratnam (2018) discussed three components in the study. The first one: Orang Asli women are also aware that planning for child spacing is important due to the pressures of socioeconomic factors such as finances, health, education, and so on, causing the component 'I am ready to plan for child spacing' to record a percentage of strongly agree 40.6% compared to strongly disagree 18.8%. Secondly,

the percentage of strong agreement involving the component 'I practice regular pelvic examinations at the Health Clinic (for example, once a year)' recorded the highest percentage at 50.0% compared to other components. This ensures that their reproductive system is healthy and capable of conceiving again (Mohamed & Selvaratnam, 2018). Lastly, Orang Asli women can accept and believe that the treatment provided by the hospital is very relevant today, alongside the component 'I am ready to receive modern medical treatment compared to traditional' which shows a high percentage of 59.4%. This shows that the Indigenous people have started to transition to a phase of life that does not solely rely on traditional medicine.

2.8 Socioeconomic, Education and Health Awareness of the Orang Asli in Malaysia

Comprehensive socioeconomic development programmed have been done since 1978 by providing modern facilities such as village resettlement, the building of rural Orang Asli, electricity and water supply, social amenities and easier access to education (Mohd Rosman et al., 2020). These changes have led to significant improvements in the health of its general population. Despite economic development and efforts continuously by the government to upgrade the quality life of Orang Asli, they remain poor and continue to lag behind in terms of health. It can be seen that poverty exacerbates the health problems faced by these communities which include malnourishment, high incidences of infectious diseases and the perpetual problem with intestinal parasitic infections (Mohd Rosman et al., 2020). It is undeniable that the health of the Orang Asli is the main current issue that has not been overcome yet.

From the study of Education and Health Awareness among Indigenous People in Perak by Edwin Micheal and Eng May Chuen 2012, the lack of medical facilities in rural areas is because these Orang Asli do not feel like it is their top priority. With the burden of educational fees and daily necessities, they feel there is no need to waste more money on modern medical treatments. These problems stem from the lack of education for Orang Asli, keeping them oblivious to modern problems and health standards (Mohd Rosman et al., 2020).

2.9 Theoretical and Conceptual Framework

Theoretical frameworks are used in health sciences research to predict and explain health behavior, as well as to lay the foundation for bio-psychosocial and behavioral interventions that aim to enhance health outcomes. Rosenstock and colleagues developed the Health Belief Model (HBM), a well-tested, comprehensive social cognitive framework, to predict and explain variations in contraceptive usage among women in the 1970s and 1980s. The HBM has hardly been used in family planning (Hall, 2012).

According to Glanz et al. (2008), the key concepts and definition of the Health Belief Model are consisting of perceived susceptibility are belief about the chances of experiencing a risk or getting a condition or disease. Perceived severity is belief about how serious a condition and its sequelae are. Perceived benefits are a belief in the efficacy of the advised action to reduce risk or seriousness of impact. The perceived barriers are belief about the tangible and psychological costs of the advised action. Cues to action are strategies to activate “readiness”. While for self-efficacy are confidence in one’s ability to take action.

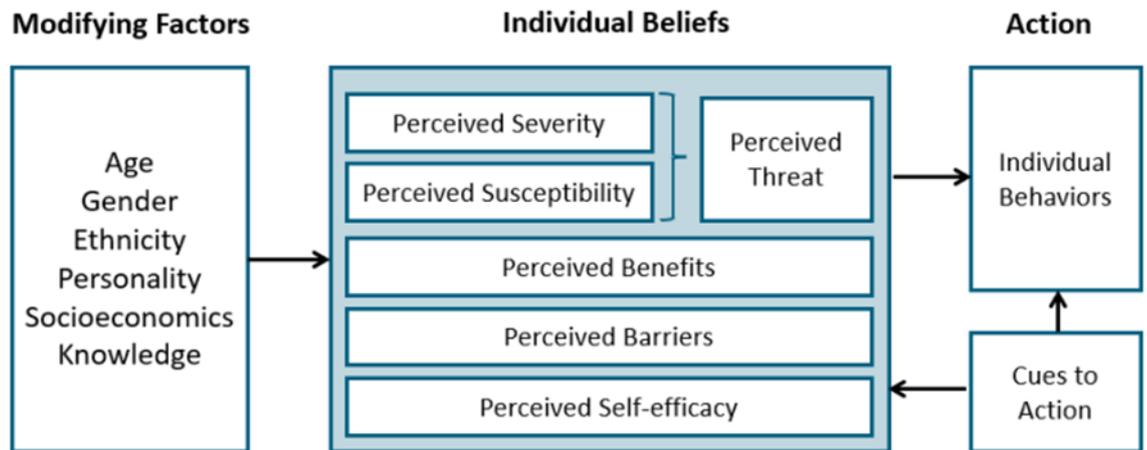


Figure 2.1: The Health Belief Model adopted from Jacobson Vann et al., (2011)

The HBM comprises four dimensions: perceived vulnerability, perceived severity, perceived advantages, and perceived barriers. According to the thesis, if people believe they are very susceptible to illness, they are more inclined to take preventative measures to lower their risk. In terms of perceived severity, people believe that the disorder has the potential to have serious repercussions and influence many aspects of their lives. Furthermore, people are more inclined to adopt behavioral changes if they believe that a certain course of action will reduce their vulnerability or the severity of negative consequences while providing other positive results, such as perceived rewards. Regarding perceived barriers, individuals have few negative thoughts about health activity, which may impede the planned behavioral change (Jones et al. 2015).

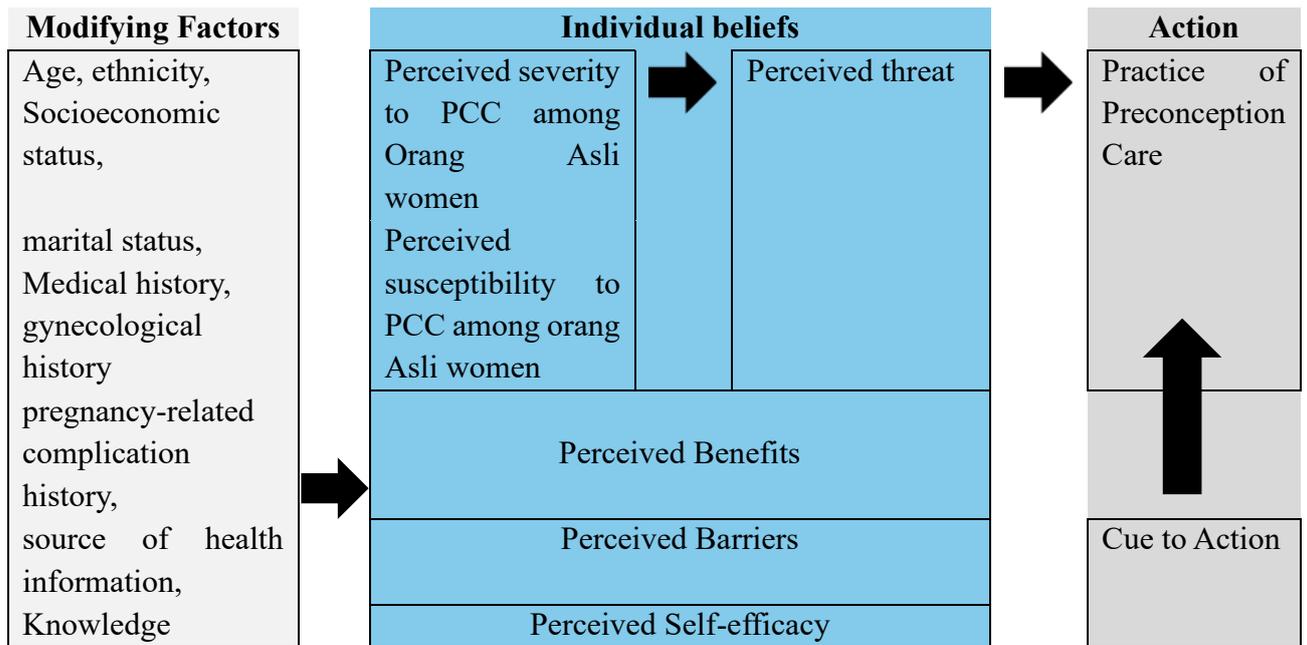


Figure 2.2: Conceptual Framework based on The Health Belief Model (HBM) adapted from Jacobson Vann et al., (2011)

The Health Belief Model (HBM) serves as a robust theoretical framework for understanding individual beliefs and modifying factors that influence health behaviors. This model has been widely validated in cross-cultural contexts, as demonstrated Glanz et al. (2008), mentioned that Champion’s HBM scales retain strong validity and reliability when adapted to different populations. For instance, in Arabic, Turkish, Korean, and Chinese contexts, the HBM scales have Cronbach’s Alpha scores of 0.75 to 0.92 across key constructs, supporting their cross-cultural applicability (Glanz et al., 2008). From these findings, HBM provides a solid theoretical framework to capture on Orang Asli women’s beliefs—shaped by cultural, socioeconomic, and individual factors—influence their engagement with preconception care.

Thus, this study used the Health Belief Model (HBM) to examine the sociodemographic characteristics, such as Age, education level, Socioeconomic status, marital status, medical history, gynecological history, pregnancy-related complication

history and source of health information alongside in individual knowledge influence the knowledge and practice of preconception care among the women.

Specifically, the HBM focuses on key constructs like perceived susceptibility and severity (e.g., risks of pregnancy complications without care), perceived benefits (e.g., the advantages of preconception care in preventing complications), perceived barriers (e.g., cost, distance, or cultural reliance on traditional healers), and perceived self-efficacy (e.g., confidence in accessing healthcare services). The model also highlights the role of cues to action, such as healthcare campaigns and advice from family or health workers, in prompting behavior change.

In summary, the Health Belief Model provides a comprehensive framework for understanding and addressing cultural barriers in health behavior among indigenous women populations by focusing on individual beliefs shaped by cultural contexts, incorporating modifying factors, enhancing self-efficacy, identifying cues to action, and addressing perceived barriers directly. This makes the HBM a valuable tool for promoting effective health interventions tailored to the needs of indigenous communities.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology applied in this study, which aims to assess the knowledge and practice of preconception care among Orang Asli women in Kampung Orang Asli Ulu Kampar, Gopeng, Perak. That describes the research design, location, population, sampling plan, and data collection process employed to achieve the study objectives. A cross-sectional study design using a self-administered questionnaire was chosen for its suitability in assessing knowledge and practices within a specific population at a single point in time. This chapter also details the inclusion and exclusion criteria, sample size estimation, and sampling method used to recruit participants. Additionally, the research instruments, data analysis plan, and ethical considerations undertaken to protect participant rights and ensure data confidentiality are discussed. This methodology ensures that the study is systematically conducted and produces valid, reliable, and culturally sensitive findings relevant to improving preconception care practices among indigenous women in Malaysia.

3.2 Research Design

The research design selected for this study is a cross-sectional study using a questionnaire. This helps to assess the knowledge and practice of preconception care among women in Kampung Orang Asli Ulu Kampar Gopeng, Perak. This method was chosen since it is versatile and covers many topics. One of the advantages of a cross-sectional study is that it is not expensive to conduct, does not require a significant amount of time, and can be conducted at a single point in time or over a brief period (Setia, 2016).