

**KNOWLEDGE AND ATTITUDE TOWARDS
LONG ACTING- REVERSIBLE
CONTRACEPTIVE (LARC) AMONG MARRIED
WOMEN WHO ATTENDED THE OUTPATIENT
CLINIC AT HOSPITAL PAKAR UNIVERSITI
SAINS MALAYSIA (HPUSM)**

NUR ATIQAH BINTI ISMAIL

**BACHELOR IN NURSING
SCHOOL OF HEALTH SCIENCES
UNIVERSITI SAINS MALAYSIA**

2025

**KNOWLEDGE AND ATTITUDE TOWARDS
LONG ACTING- REVERSIBLE
CONTRACEPTIVE (LARC) AMONG MARRIED
WOMEN WHO ATTENDED THE OUTPATIENT
CLINIC AT HOSPITAL PAKAR UNIVERSITI
SAINS MALAYSIA (HPUSM)**

by

NUR ATIQA H BINTI ISMAIL

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

August 2025

DECLARATION

I hereby declare that this dissertation is the result of my own investigations, 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.



.....
Nur Atiqah Binti Ismail

Date: ..05 August 2025.....

ACKNOWLEDGEMENT

First and foremost, I would like to express my heartfelt gratitude to my supervisor, Ms. Salwismawati Badrin, for her continuous support, guidance, and encouragement throughout the course of my research. Her patience, motivation, and wealth of knowledge have been invaluable in shaping the direction of this study. As this was my first experience conducting a research project, her expertise and insights were crucial in helping me navigate the challenges and complete this thesis successfully.

I would also like to extend my deepest appreciation to my beloved family for their unwavering love, support, and encouragement throughout my academic journey. To my parents, Ismail bin Ibrahim and Jaharah binti Mamat, thank you for always believing in me and for being my constant source of strength and inspiration. A special thank you goes to my siblings and my dear friends Ain Husniyyati, Siti Nor Najwa, and Atirah for their moral support, encouragement, and companionship during this journey. I am truly grateful for your presence and positivity. To my partner, Suhazli Zakaria thank you for your endless motivation, patience, and emotional support throughout this journey. Your belief in me has been a source of strength, and I am truly grateful to have you by my side. I would also like to sincerely thank Ala Afa, and Hanis Hazirah for generously sharing their knowledge and for their continuous support. To everyone who has contributed to this study, whether directly or indirectly, your support has played a meaningful role in helping me reach this milestone. I am truly grateful.

TABLE OF CONTENTS

CERTIFICATE	iii
DECLARATION	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF ABBREVIATIONS	xii
LIST OF APPENDICES	xiii
ABSTRAK	xiv
ABSTRACT	xvi
CHAPTER 1 INTRODUCTION	1
1.1 Introduction	1
1.2 Background of Study.....	2
1.3 Problem Statement	4
1.4 Research Questions	7
1.5 Research Objectives	8
1.5.1 General Objective.....	8
1.5.2 Specific Objectives.....	8
1.6 Research Hypothesis	9
1.7 Significance of study	10
1.8 Definitions of Operational Terms	11
CHAPTER 2 LITERATURE REVIEW	13
2.1 Introduction	13
2.2 Definition of LARC	13
2.2.1 1UCD	14

2.2.2	Implanon.....	15
2.3	Knowledge towards LARC	17
2.4	Attitude towards LARC	18
2.5	Association between Selected Socio-Demographic and Level of Knowledge and Attitude	20
2.5.1	Age	20
2.5.2	Education.....	21
2.5.3	Occupation.	22
2.5.4	Parity	22
2.6	Conceptual framework of the study	23
CHAPTER 3 METHODOLOGY.....		28
3.1	Introduction	28
3.2	Research Design	28
3.3	Study Setting and Population	28
3.3.1	Sample criteria.....	29
	3.3.1(a) Inclusion criteria	29
	3.3.1(b) Exclusion criteria	29
3.4	Sampling Plan	29
3.4.1	Sample Size Estimation.....	29
3.4.2	Sampling Methods.....	33
3.5	Instrumentation.....	34
3.5.1	Instrument.....	36
3.5.2	Translation of instrument	36
3.5.3	Validation and reliability of instruments.....	36
3.6	Variables.....	37
3.6.1	Measurement of Variables and Variable Scoring	37
3.7	Data collection methods	38
3.7.1	Flow Chart of Data Collection	40

3.8	Ethical Consideration	40
3.9	Data Analysis	42
CHAPTER 4 RESULT		43
4.1	Introduction	43
4.2	Demographic Characteristics	43
4.3	The Level Of Knowledge Toward Long – Acting Reversible Contraceptive Among Married Women Who Attended The Outpatient Clinic At Hospital Pakar Universiti Sains Malaysia (HPUSM). Objective 1.....	45
4.4	The Level Of Attitude Toward Long – Acting Reversible Contraceptive Among Married Women who attended the Outpatient Clinic At Hospital Pakar Universiti Sains Malaysia (HPUSM).	47
4.5	The association between the level of knowledge and a level of attitude toward LARC among married women who attended the outpatient clinic at HPUSM.	49
4.6	The association between selected socio-demographic characteristics (age, occupation, education, parity) and level of knowledge toward LARC among married women who attended the outpatient clinic at HPUSM.....	50
4.7	The association between selected socio-demographic characteristics (age, occupation, education, parity) and level of attitude toward LARC among married women who attended the outpatient clinic at HPUSM.....	52
CHAPTER 5 DISCUSSION		54
5.1	Introduction	54
5.2	Level of Knowledge Toward LARC Among Married Women Who Attended The Outpatient Clinic at HPUSM.	54
5.3	Level of Attitudes Toward LARC Among Married Women who Attended Outpatient Clinic at HPUSM.....	55
5.4	Association Between Knowledge and Attitude Toward LARC Among Married Women who Attended Outpatient Clinic at HPUSM.	55
5.5	Association Between Socio-Demographic Characteristics and Knowledge Toward LARC Among Married Women who Attended Outpatient Clinic at HPUSM.	56
5.6	Association Between Socio-Demographic Characteristics and Attitude Toward LARC Among Married Women who Attended Outpatient Clinic at HPUSM.	57
5.7	Strength and Limitations	58

CHAPTER 6	CONCLUSION AND FUTURE RECOMMENDATIONS.....	60
6.1	Introduction	60
6.2	Summary of the study findings	60
6.3	Implication and Recommendations	61
6.3.1	Implication to Nursing Practice.....	61
6.3.2	Implication to Nursing Education	61
6.3.3	Recommendation for Future Research.....	62
6.4	Conclusion.....	62
	REFERENCES.....	63
	APPENDICES	

LIST OF TABLES

	Page
Table 1.1 Conceptual and Operational Definition.....	11
Table 3.1 Sample size for fourth objective.....	32
Table 3.2 Independent and dependent variables.....	37
Table 3.3 Scoring knowledge toward LARC	38
Table 3.4 Scoring for attitude toward LARC.....	38
Table 4.1 Percentage and Frequency of Participants' Demographic Characteristics	44
Table 4.2 Percentage and Frequency of Participants' level of Knowledge regarding long-acting reversible contraceptive among married women who attended the outpatient clinic at HPUSM.....	46
Table 4.3 Frequency and Percentage the Level of Knowledge towards LARC among married women who attended the outpatient clinic at HPUSM.....	47
Table 4.4 The Percentage and Frequency of Participants' Attitudes regarding use of long-acting reversible contraceptive.....	48
Table 4.5 Frequency and Percentage of attitude toward LARC among married women who attended the outpatient clinic at HPUSM.	49
Table 4.6 Association between the level of knowledge and a level of attitude toward LARC among married women who attended the outpatient clinic at HPUSM.	50
Table 4.7 Association between selected socio-demographic characteristics (age, occupation, education, parity) and level of knowledge toward LARC.	51
Table 4.8 Association between selected socio-demographic characteristics (age, occupation, education, parity) and level of attitude toward LARC ...	53

LIST OF FIGURES

	Page
Figure 2.1 Theory of Planned Behaviour (Adapted from Ajzen 1991).	23
Figure 2.2 Adaptation of theory planned behavior by (Ajzen 1991)	24
Figure 3.1 The outpatient clinic at HPUSM.....	28
Figure 3.2 Overall Flow of the Data Collection Process	40

LIST OF ABBREVIATIONS

LARC	Intrauterine Contraceptive Device
IUD	Intrauterine Device
IUCD	Intrauterine Contraceptive Device
HPUSM	Hospital Pakar university Sains Malaysia

LIST OF APPENDICES

Appendix A	Questionnaire
Appendix B	Research Information For Participants
Appendix C	Consent From Author
Appendix D	Ethical Approval
Appendix E	Letter of Institutional Approval
Appendix F	Recruitment Poster

**PENGETAHUAN DAN SIKAP TERHADAP KONTRASEPTIF
REVERSIBEL BERTINDAK LAMA DALAM KALANGAN WANITA
BERKAHWIN YANG MENGHADIRI KLINIK PESAKIT LUAR DI HPUSM**

ABSTRAK

Kontraseptif reversibel bertindak lama (LARC) merupakan kaedah perancang keluarga moden yang sangat berkesan dan memberi perlindungan jangka panjang dengan intervensi minimum daripada pengguna. Kajian ini bertujuan untuk menilai tahap pengetahuan dan sikap terhadap LARC dalam kalangan wanita berkahwin yang menghadiri klinik pesakit luar di Hospital Pakar Universiti Sains Malaysia (HPUSM). Satu kajian keratan rentas telah dijalankan di HPUSM dari Januari hingga Mac 2025 melibatkan 136 wanita berkahwin yang dipilih secara persampelan mudah, menggunakan borang soal selidik yang diisi sendiri untuk menilai tahap pengetahuan dan sikap mereka. Soal selidik ini merangkumi maklumat sosio-demografi, pengetahuan mengenai kaedah LARC (seperti IUCD dan Implanon), serta sikap terhadap penggunaannya. Dapatan kajian menunjukkan bahawa 32.4% responden mempunyai pengetahuan tinggi, 39.7% sederhana dan 27.9% rendah; manakala 30.1% mempunyai sikap positif, 24.3% sederhana dan 45.6% negatif terhadap LARC. Purata umur responden adalah 35 tahun ($SP = 7.89$), dengan julat umur antara 19 hingga 49 tahun. Terdapat hubungan yang signifikan antara tahap pengetahuan dan sikap ($p < 0.001$), dan faktor sosio-demografi seperti umur, pekerjaan, tahap pendidikan dan pariti juga menunjukkan hubungan yang signifikan dengan tahap pengetahuan dan sikap ($p < 0.05$). Kesimpulannya, walaupun kesedaran umum terhadap LARC wujud dalam kalangan wanita berkahwin di HPUSM, pengetahuan terperinci dan sikap

positif masih terhad, menunjukkan keperluan untuk intervensi pendidikan yang lebih berfokus bagi meningkatkan pemilihan kontraseptif secara bermaklumat

**KNOWLEDGE AND ATTITUDE TOWARDS LONG ACTING-
REVERSIBLE CONTRACEPTIVE (LARC) AMONG MARRIED WOMEN
WHO ATTENDED THE OUTPATIENT CLINIC AT HOSPITAL PAKAR
UNIVERSITI SAINS MALAYSIA (HPUSM)**

ABSTRACT

Long-acting reversible contraceptives (LARC) are modern contraceptive methods known for their high effectiveness and long-term protection with minimal user intervention. This study aimed to assess the level of knowledge and attitude towards LARC among married women who attended the outpatient clinic at Hospital Pakar Universiti Sains Malaysia (HPUSM). A cross-sectional study was conducted at HPUSM from January to March 2025 involving 136 conveniently selected married women, using a self-administered questionnaire to assess their knowledge and attitude. The questionnaire included items on socio-demographic data, knowledge of LARC methods (such as IUCD and Implanon), and attitudes regarding their use. The findings showed that 32.4% of respondents had high knowledge, 39.7% moderate, and 27.9% low knowledge; while 30.1% had a positive attitude, 24.3% moderate, and 45.6% negative attitude toward LARC. The mean age of respondents was 35 years (SD = 7.89), ranging from 19 to 49 years. A significant association was found between knowledge and attitude levels ($p < 0.001$), and socio-demographic factors such as age, occupation, education, and parity were also significantly associated with knowledge and attitude ($p < 0.05$). In conclusion, although general awareness of LARC exists among married women at HPUSM, detailed knowledge and positive attitudes remain limited, highlighting the need for targeted educational interventions to improve informed contraceptive choices.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Family planning is a cornerstone of public health, directly contributing to improved maternal and child health outcomes, economic development, and the empowerment of women. Among the various contraceptive methods available, long-acting reversible contraceptives (LARC)—which include intrauterine devices (IUDs) and contraceptive implants—are recognized as some of the most effective and reliable options for preventing unintended pregnancies (Bhandari et al., 2019). LARC methods offer several advantages over short-acting contraceptives, such as pills or condoms, including longer duration of action, minimal need for user compliance, and high efficacy rates. Despite these benefits, the uptake of LARC remains suboptimal in many parts of the world, including Malaysia, where cultural beliefs, limited awareness, and misconceptions continue to hinder their widespread acceptance (Nelson et al., 2022).

Understanding the factors that influence women's knowledge and attitudes towards LARC is vital for designing effective interventions to increase their utilization. Previous studies have shown that socio-demographic factors such as age, education level, occupation, and parity significantly impact both knowledge and attitudes towards LARC (Mitwaly et al., 2019; Samat et al., 2022). Women with higher educational attainment and those who are formally employed generally demonstrate better knowledge and more favorable attitudes, while younger women and those with lower socio-economic status often face greater barriers to access and acceptance (Bolarinwa & Olagunju, 2020).

In the context of Malaysia, and specifically at Hospital Pakar Universiti Sains Malaysia (HPUSM), there is a need to assess the current level of knowledge and attitudes towards LARC among married women who attended the outpatient clinics. Such an assessment is crucial for identifying gaps and tailoring educational and counseling programs that can support informed contraceptive choices. This study, therefore, aims to evaluate the level of knowledge and attitudes towards LARC among married women at HPUSM, as well as to explore the associations between these factors and selected socio-demographic characteristics. The findings are expected to provide valuable insights for healthcare providers and policymakers to enhance family planning services and promote the responsible use of effective contraceptive methods.

1.2 Background of Study

Globally, between 2015 and 2019, an estimated 121 million unintended pregnancies occurred annually, with a significant number leading to unsafe abortions and other maternal health complications. Unintended pregnancies remain a critical public health issue worldwide, contributing to adverse maternal and neonatal outcomes, such as low birth weight, preterm births, and maternal mental health challenges, including increased stress and depression (Ticona et al., 2024). These outcomes highlight the urgent need for effective family planning services and reliable contraceptives to reduce unintended pregnancies (High Rates of Unintended Pregnancies Linked to Gaps in Family Planning Services, n.d.).

Long-Acting Reversible Contraceptives (LARC), including intrauterine devices IUCD (Intrauterine Contraceptive Device) and contraceptive implants, are among the most effective methods for preventing unintended pregnancies (Bhandari et al., 2019). Compared to short-acting methods like pills and condoms, LARC provide

long-term protection with minimal user intervention, making them highly recommended by healthcare providers. Despite their proven efficacy, LARC adaptation and usage remain relatively low in many regions, particularly in low- and middle-income countries. Barriers such as lack of awareness, cultural misconceptions, fears of side effects, and limited access to healthcare services contribute to their underutilization (Nelson et al., 2022). Attitudes toward LARC are influenced by various factors, including education, cultural beliefs, and socioeconomic status (Age, education, occupation, parity, husband's education level, and household income significantly influence women's knowledge, attitudes, and use of Long-Acting Reversible Contraceptives (LARC). Younger women, particularly those under 24, show lower awareness and acceptance of LARC due to limited exposure, societal norms, and healthcare access barriers (Mitwaly et al., 2019; Bolarinwa & Olagunju, 2020). Women with higher education, formal employment, and those with more children tend to have better knowledge and greater acceptance of LARC (Samat et al., 2022; Mitwaly et al., 2019). Husbands with higher education support LARC use, contributing to shared decision-making (Osei et al., 2021). Income also plays a role, with wealthier women having greater access to information and resources, while cost remains a significant barrier for lower-income women (Akinyemi et al., 2020; Miller et al., 2022). These findings highlight the need for targeted family planning programs to address these factors and promote informed contraceptive choices across populations

In regions with limited access to formal education and healthcare, women may rely on informal sources of information, which can perpetuate myths and misconceptions about LARC. Additionally, cultural and religious beliefs, such as a preference for large families, may discourage the use of long-term contraceptive

methods. Studies suggest that these barriers are particularly prominent in regions like sub-Saharan Africa and South Asia, where LARC uptake is lower (Bahamondes et al., 2018).

Understanding how women perceive these contraceptive methods is crucial for addressing barriers to their uptake. Previous studies have shown that while awareness of LARC is generally high, including methods like IUCD injections and implants, actual usage rates remain low. This can be attributed to misconceptions, cultural beliefs, and concerns about side effects (Ticona et al., 2024).

Healthcare providers play a pivotal role in disseminating knowledge about LARC. Women often rely on information from hospitals, relatives, and health workers when making decisions about family planning. Despite positive attitudes toward LARC and the recognition of the health benefits of birth spacing, many women still face obstacles such as spousal opposition, societal pressures, and fear of adverse effects, which prevent them from adopting these methods (Nelson et al., 2022).

The findings will contribute to developing targeted interventions to improve family planning services, address misconceptions, and promote the use of LARC, ultimately leading to better reproductive health outcomes and a reduction in unintended pregnancies.

1.3 Problem Statement

On While various knowledge, attitude, and practice (KAP) surveys have been conducted on family planning methods, there is a notable lack of focused research on LARC. This gap underscores the need for a deeper understanding of women's

awareness and perceptions of LARC methods, such as intrauterine contraceptive devices (IUCDs) and hormonal implants.

Understanding women's knowledge and attitudes toward LARC is crucial for several reasons. First, it helps identify the barriers women face in accessing these methods. For example, research conducted in Malaysia highlighted how cultural beliefs and misconceptions significantly influenced women's attitudes toward contraceptive use (Zainal et al., 2021). Similar socio-cultural factors in countries like India and Nigeria have also been shown to affect contraceptive use, with many women expressing concerns about side effects or societal stigma associated with modern contraceptive methods (Khan et al., 2022; Osei et al., 2021).

In Malaysia, family planning issues are further complicated by socio-economic factors. Although government initiatives have been launched to promote family planning, many women remain insufficiently informed about the available contraceptive options. A study by Zainal et al. (2021) found that only a small proportion of women were well-informed about LARC methods, highlighting a critical need for more effective educational campaigns. Additionally, cultural norms that favour larger families often discourage women from seeking family planning services (Zainal et al., 2021). For instance, a study in Tamil Nadu, India, revealed that while attitudes toward contraceptives were generally positive, actual usage rates remained low due to concerns about side effects and a preference for traditional methods (Khan et al., 2022).

The insights gained from this study will be pivotal in developing effective strategies to improve family planning services and increase awareness and acceptance of LARC in the region. By addressing the specific misconceptions and concerns that

women may have about these methods, healthcare providers can design tailored educational programs that better resonate with the target audience. Such interventions will not only enhance women's reproductive health but also contribute to broader public health goals by reducing unintended pregnancies and improving maternal health outcomes.

Family planning plays a crucial role in supporting women's health, particularly through the use of long-acting contraceptive methods like intrauterine devices (IUDs) and hormonal implants. A key benefit of these methods is that they promote maternal health by allowing for improved birth spacing, which reduces the risks associated with frequent pregnancies, such as complications during labor and delivery. By enabling sufficient time for physical and emotional recovery between pregnancies, family planning helps mothers maintain better health (NCBI, 2016). Additionally, effective family planning can contribute to lower infant mortality rates. Well-timed pregnancies decrease the likelihood of premature births and low birth weights, which are leading causes of infant mortality. This ultimately supports healthier outcomes for both mothers and their children (HealthPlus Pharmacy, n.d.).

Family planning also has significant economic benefits. By allowing women to control the timing of pregnancies, it provides them with greater opportunities to pursue education and careers, enhancing economic stability within families. Planned pregnancies help families allocate resources more effectively, ensuring better financial preparedness for each child's needs and contributing to a higher quality of life (Guttmacher Institute, 2013). Furthermore, family planning aids in poverty reduction, as families with manageable child-rearing costs can invest more in each child's

healthcare and education, which benefits both individual households and community development (HealthPlus Pharmacy, n.d.).

In summary, family planning, especially with long-acting contraceptive options, supports women's health, reduces risks for infants, and enhances economic stability. By understanding and implementing family planning, families can experience improved quality of life, while society benefits from healthier, more economically secure communities.

1.4 Research Questions

The research questions for this study are as follows:

1. What is the level of knowledge toward LARC among married women who attended outpatient clinic at HPUSM?
2. What is the level of attitudes toward LARC among married women who attended outpatient clinic at HPUSM?
3. Is there any association between the level of knowledge and level of attitude toward LARC among married women who attended the outpatient clinic at HPUSM ?
4. Is there any association between selected socio-demographic characteristics (age, occupation, education, parity) and level of knowledge toward LARC among married women who attended outpatient clinic at HPUSM?
5. Is there any association between selected socio-demographic characteristics (age, occupation, education, parity) and level of attitude

toward LARC among married women who attended outpatient clinic at HPUSM?

1.5 Research Objectives

1.5.1 General Objective

To assess knowledge and attitude towards LARC among married women who attended the outpatient clinic at HPUSM

1.5.2 Specific Objectives

The specific objectives for the study are as follows:

1. To determine the level of knowledge towards LARC Among married women who attended the outpatient clinic at HPUSM.
2. To determine the level of attitudes toward LARC among married women who attended the outpatient clinic at HPUSM.
3. To determine the association between the level of knowledge and level of attitude toward LARC among married women who attended the outpatient clinic at HPUSM.
4. To determine the association between selected socio-demographic characteristics (age, occupation, education, parity) and level of knowledge toward LARC among married women who attended outpatient clinic at HPUSM.
5. To determine the association between selected socio-demographic characteristics (age, occupation, education, parity) and level of attitude

toward LARC among married women who attended the outpatient clinic at HPUSM.

1.6 Research Hypothesis

Hypothesis 1 **(H₀)** There is no association between the level of knowledge and the level of attitude towards LARC methods among married women who attended the outpatient clinic at HPUSM

(H₁) There is an association between the level of knowledge and the level of attitude towards LARC among married women who attended the outpatient clinic at HPUSM.

Hypothesis 2 **(H₀)** There is no association between selected socio-demographic characteristics (age, mother's occupation, mother's education, parity) and level of knowledge toward LARC among married women who attended the outpatient clinic at HPUSM

(H₁) There is an association between selected socio-demographic characteristics (age, mother's occupation, mother's education parity) and the level of knowledge toward LARC among married women who attended the outpatient clinic at HPUSM

Hypothesis 3

- (H₀)** There is no association between selected socio-demographic characteristics (age, mother's occupation, mother's education, parity) and level of attitude toward LARC among married women who attended the outpatient clinic at HPUSM
- (H₁)** There is an association between selected socio-demographic characteristics (age, mother's occupation, mother's education, parity) and the level of attitude toward LARC among married women who attended the outpatient clinic at HPUSM

1.7 Significance of study

This study investigates the knowledge and attitudes toward Long-Acting Reversible Contraceptive (LARC) among married women of reproductive age. This study is significant as it provides insights into the knowledge and attitude regarding Long-Acting Reversible Contraceptive (LARC) among married women who attended the outpatient at HPUSM and particularly among Kelantanese women. Additionally, in Malaysia, a study among married women there is limited research on the knowledge and attitudes toward Long-Acting Reversible Contraceptives (LARC). Understanding these factors is crucial for designing effective family planning interventions and improving access to contraceptive methods. The findings can help healthcare providers tailor their counseling and educational efforts to address misconceptions and enhance

awareness of LARC, ultimately contributing to better reproductive health outcomes in the region.

1.8 Definitions of Operational Terms

Table 1.1 Conceptual and Operational Definition

	Conceptual Definition	Operational Definition
Knowledge	understanding of or information about a subject that you get by experience or study, either known by one person or by people generally (Cambridge Dictionary, 2023).	In this study, the level of knowledge toward LARC among married women who attended the outpatient clinic HPUSM will be assessed using a self-administered questionnaire.
Attitude	A feeling or opinion about something or someone, or a way of behaving that is caused by this (Cambridge Dictionary, 2023).	In this study, a level of attitude toward LARC among married women who attended the outpatient clinic hospital USM will be assessed using a self-administered questionnaire.
IUCD/IUD	An intrauterine device (IUD) is a small plastic T-shaped device used for birth control. It is inserted into the uterus where it stays to prevent pregnancy (MedlinePlus, 2022).	For this study, IUCD/IUD refers to any intrauterine contraceptive method used by married women who attended the outpatient clinics at HPUSM. Knowledge and attitudes regarding IUCD/IUD will be assessed through specific questions in the survey,
Implant / Implanon	Implanon is designed to prevent unintended pregnancies for up to three years by inhibiting ovulation, thickening cervical mucus to block sperm passage, and altering the uterine lining to prevent implantation (Drugs.com, 2024).	For this study, Implanon refers to a small contraceptive rod inserted under the skin of the upper arm, providing pregnancy prevention for up to three years by releasing hormones.,
Women	An adult female human	Women in this study are defined as those aged 19-49 years and married who

	(Oxford Advanced Learner's Dictionary ,n.d.)	have access to family planning services and are eligible for contraceptive methods such as Implanon and iuccd.
LARC	LARC stands for Long Acting Reversible Contraceptives, which are methods For this study, Long-Acting Reversible Contraceptives (LARC) refer to contraceptive methods, including intrauterine devices (IUDs/IUCDs) and implants designed to provide effective pregnancy prevention for an extended period without requiring frequent follow-up visits (Jabeen & Umbreen, 2016).	For this study, Long-Acting Reversible Contraceptives (LARC) refer to contraceptive methods, including intrauterine devices (IUDs/IUCDs) and implants

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Family planning refers to the practice of controlling the number and spacing of children in a family using contraceptive methods and other reproductive health services. It allows individuals and couples to make informed decisions about their reproductive lives, including when to have children and how many to have. Family planning is recognized as a key element in reducing fertility rates and improving maternal and child health outcomes. The World Health Organization identifies birth spacing as one of the essential health interventions needed to achieve safe motherhood, emphasizing the importance of family planning in promoting health and well-being. Various contraceptive methods, including LARC methods such as implants and intrauterine devices, are available to help individuals effectively manage their reproductive health (Mitwaly et al., 2019).

2.2 Definition of LARC

Long-Acting Reversible Contraceptive (LARC) encompasses a group of highly effective birth control methods that provide long-term pregnancy prevention with minimal maintenance, offering failure rates of less than 1% (Bhandari et al., 2019). LARC options include Intrauterine Devices (IUDs) and hormonal implants, both designed for women seeking reliable, low-maintenance contraceptive. Another LARC option, the subdermal implant, is a small rod inserted under the skin of the arm that releases hormones to prevent ovulation, providing 3 to 5 years of contraceptive. LARC methods not only offer convenience by eliminating the need for daily attention or frequent refills but also maintain high effectiveness under typical use, reducing the

chances of unintended pregnancies (Mitwaly et al., 2019). Furthermore, LARC are reversible women can have them removed whenever they wish to conceive, with fertility typically returning rapidly after discontinuation, thus granting flexibility and control over reproductive health (Stoddard et al., 2011).

2.2.1 IUCD

An intrauterine contraceptive device (IUCD), or intrauterine device (IUD) is a small T-shaped devices placed in the uterus by a healthcare provider, come in two main types of hormonal and non-hormonal (copper). Hormonal IUDs release progestin to thicken cervical mucus, block sperm, and can make periods lighter, lasting 3 to 7 years, while copper IUDs release copper ions toxic to sperm and can remain effective for up to 10 years or more (Jabeen & Umbreen, 2016). Hormonal IUDs, however, release levonorgestrel, a synthetic hormone that thickens cervical mucus to block sperm and may also prevent ovulation. Hormonal IUDs generally last three to five years and have an even lower failure rate of about 0.2% in the first year (Yale Medicine, 2023).

As one of the most effective contraceptive options, IUCDs reduce the likelihood of unintended pregnancies more reliably than methods like oral contraceptives or condoms (Better Health Channel, 2024). They are also convenient for users, offering long-lasting protection without daily attention, and are reversible with a quick return to fertility after removal. Additionally, IUCD are cost-effective over time due to their durability, and most users experience minimal side effects. While copper IUCDs may increase menstrual bleeding and cramping, hormonal IUCDs can reduce or even stop menstrual bleeding after a few months (Healthdirect Australia, 2024). Though rare, serious complications can occur, such as device expulsion or uterine perforation during insertion.

It is recommended that women considering an IUCD discuss their health history and menstrual preferences with a healthcare provider, as these factors can influence which type is best for them. Overall, IUCDs provide a reliable, long-term contraceptive option, offering significant benefits in reducing unintended pregnancies and improving family planning (Healthdirect Australia, 2024).

According to a study by Anguzu et al. (2014), knowledge of IUDs in Uganda, particularly regarding their duration of effectiveness and administration, varies among participants. About 68.5% of respondents understood the length of pregnancy protection provided by IUDs, indicating a moderate awareness level for this contraceptive method. Additionally, knowledge of the site of administration was relatively high, with 75.9% correctly identifying where IUDs are inserted.

However, a notable 24.02% of participants were unsure of the duration of IUD effectiveness, highlighting gaps in knowledge that could impact contraceptive decisions. This gap is significant as current IUD use was strongly associated with knowledge of duration, with users knowledgeable about effectiveness being 1.46 times more likely to use an IUD than those unaware. Moreover, misconceptions persist, with 32.9% of respondents believing that IUDs cause permanent infertility, a misconception that may further discourage IUD adoption. These findings emphasize the need for improved education to clarify misconceptions and enhance knowledge of IUDs to promote informed contraceptive choices. (Anguzu et al., 2014).

2.2.2 Implanon

On Implanon, also called the etonogestrel implant, is a highly effective form of long-acting reversible contraceptive (LARC) that offers reliable pregnancy prevention for up to three years. The implant is a small, flexible plastic rod, similar in size to a matchstick, and is inserted under the skin in the upper arm by a trained healthcare

provider. Once placed, it steadily releases the hormone etonogestrel which prevents ovulation and thickens cervical mucus, making it difficult for sperm to reach an egg and reducing the chances of fertilization (Mayo Clinic, 2024). The insertion procedure is quick and minimally invasive, using a preloaded applicator to place the implant under local anaesthesia in an outpatient setting, typically taking only a few minutes (Drugs.com, 2024).

Implanon is highly effective, with a failure rate of less than 1%, and once in place, it requires no daily attention, making it a convenient option for those seeking long-term contraceptive without daily pills or regular injections (NPS MedicineWise, 2024). Fertility typically returns quickly after removal, so women who choose to conceive afterward can do so without delay (Mayo Clinic, 2024). However, like all contraceptives, Implanon has potential side effects, including irregular bleeding, headaches, mood swings, and weight changes some women experience lighter or no periods, while others may encounter heavier bleeding (Drugs.com, 2024). Importantly, Implanon does not protect against sexually transmitted infections (STIs), so additional protection, like condoms, is recommended for STI prevention (FDA Labeling Information, 2009). In summary, Implanon offers a highly effective, convenient, and reversible contraceptive solution for those looking for reliable, long-term birth control (Mayo Clinic, 2024).

According to a study by Anguzu et al. (2014), knowledge of implants in Uganda reveals moderate to high awareness levels among women. Approximately 69.9% of respondents understood the duration of pregnancy protection provided by implants, which is slightly higher than the awareness level for IUDs. Awareness of the site of implant administration was also high, with 80.2% of participants knowing the correct location. However, 22.35% of respondents were uncertain about the effectiveness

duration, potentially affecting their decision-making. Notably, current implant use was significantly associated with knowledge of duration, with a PRR of 1.45 for those knowledgeable compared to those who were not. Misconceptions, such as implants causing permanent infertility, remain a barrier to uptake, echoing similar issues observed with IUDs (Anguzu et al., 2014).

2.3 Knowledge towards LARC

Knowledge and understanding of Long-Acting Reversible Contraceptives (LARC) are essential in promoting their adoption and improving reproductive health outcomes. Research has demonstrated varying levels of awareness about LARC across different regions and demographics, highlighting both strengths and gaps in public understanding.

In a study conducted in Lahore, Pakistan, the overall knowledge of LARC among married women was found to be low. While 73% of participants were aware of intrauterine contraceptive devices (IUCDs), only 34% had knowledge of contraceptive implants. Furthermore, just 20% of women knew that implants effectively prevent pregnancy, and 44.8% understood the protective role of IUCDs against pregnancy. A significant portion of respondents (55.2%) were unaware of the duration of pregnancy prevention offered by IUCDs (Jabeen & Umbreen, 2016).

Similarly, research in urban Upper Egypt indicated high awareness of LARC, with 99% of participants reporting familiarity with methods such as Depot Medroxyprogesterone Acetate (DMPA) and IUCDs. However, despite this awareness, only 16.6% of women reported having used LARC methods. This discrepancy suggests that while knowledge of LARC may exist, misconceptions, cultural beliefs, and

concerns about side effects often hinder their practical application (Mitwaly et al., 2019).

Educational attainment has been identified as a key determinant of LARC knowledge. Women with higher educational backgrounds are more likely to be aware of LARC methods and their benefits. Studies from Ghana and Pakistan have shown that women with secondary or tertiary education are significantly more informed about LARC compared to those with limited or no formal education (Osei et al., 2021; Jabeen & Umbreen, 2016).

In conclusion, while awareness of LARC varies across regions there is a consistent gap between knowledge and actual usage. Addressing misconceptions and improving education about the efficacy, safety, and accessibility of LARC is essential. Healthcare providers play a critical role in enhancing knowledge and facilitating informed decision-making among women, ultimately increasing the adoption of LARC methods.

2.4 Attitude towards LARC

Attitudes toward Long-Acting Reversible Contraceptives (LARC) among married women are shaped by a combination of knowledge, cultural beliefs, and misconceptions. In Lahore, Pakistan, attitudes were mixed, with only 29% of women reporting that they made their own contraceptive decisions, while 69% indicated that decisions were made jointly with their partners. This dynamic suggests a collaborative approach but also highlights a lack of autonomy for women in reproductive decision-making (Jabeen & Umbreen, 2016).

Negative beliefs and misconceptions about LARC were prevalent in this demographic. A significant portion of women (53%) were unsure if LARC caused

permanent infertility, while 36% believed they did not, and 11% believed they did. Additionally, 70% of women were unaware that implants do not move freely in the body, and 73% were uncertain whether implants caused pain. Misconceptions also extended to intrauterine devices (IUCDs), with 44% of women believing that IUCD use could restrict normal activities and 31% thinking that implants required a proper diet. These misconceptions contributed to a generally negative attitude, with many women reluctant to adopt LARC due to fears of side effects and infertility (Jabeen & Umbreen, 2016).

Conversely, in urban Upper Egypt, women's attitudes toward LARC were more positive. A large majority (94.24%) supported the use of LARC, and 94.2% agreed on the importance of birth spacing. Additionally, 61% of women recognized the benefits of LARC in promoting a healthier and more comfortable lifestyle. Despite these favourable attitudes, cultural beliefs and barriers remained significant. Many women felt that contraceptives should only be used after having a certain number of male children. Opposition from husbands and fears about potential impacts on fertility also limited LARC adoption, even among those with positive attitudes (Mitwaly et al., 2019).

These findings highlight the contrast between positive attitudes toward LARC and the low levels of usage due to cultural, social, and informational barriers. Addressing these barriers through education, dispelling misconceptions, and engaging male partners in family planning discussions is critical to improving the uptake LARC.

2.5 Association between Selected Socio-Demographic and Level of Knowledge and Attitude

2.5.1 Age

Age is a crucial factor influencing the knowledge, attitudes, and use of contraceptive methods, particularly Long-Acting Reversible Contraceptives (LARC). Various studies have demonstrated that different age groups exhibit varying levels of awareness and acceptance of LARC, which are often linked to distinct stages of reproductive life and associated family planning needs.

In a study conducted in urban Upper Egypt, most participants were aged between 26 and 35 years, with an average age of 31.1 years. This age group is typically more engaged in family planning, balancing both personal and family goals. As a result, women in this age range are more likely to consider long-term contraceptive methods such as LARC, which provide effective and reliable pregnancy prevention (Mitwaly et al., 2019). Similar trends have been observed in other studies, where women in their late twenties to early thirties show greater openness to and knowledge of LARC, as they are already familiar with various contraceptive options.

A study in Nigeria by Bolarinwa and Olagunju (2020) further supports this finding, highlighting age as a critical determinant of contraceptive use. In their study, younger women, particularly those between 15 and 24 years, were significantly less likely to use LARC compared to older women. This gap was attributed to factors such as lower awareness of LARC options, societal norms around contraceptive use for younger populations, and access barriers like provider biases or the absence of youth-friendly reproductive health services. These findings underscore the role of age-related social factors and accessibility issues in influencing LARC uptake, particularly among younger women.

Similarly, evidence from Pakistan further supports the impact of age on LARC awareness. A study by Jabeen and Umbreen (2016) conducted in Lahore found that younger women and those with higher educational levels were more knowledgeable about LARC. Women aged 29-39 years had the highest level of knowledge, with 70% aware that LARC prevent pregnancy, compared to lower knowledge levels in younger and older age groups. Additionally, this age group also showed a more positive attitude towards LARC, although overall, women aged 29-39 had a negative attitude towards their use.

2.5.2 Education

The level of education of the wife is another crucial determinant of contraceptive knowledge and use. The study in Egypt by Mitwaly (2019), 44.3% of participants had secondary education, and 34.6% had a university education. This reflects a trend where educated women are more proactive in seeking contraceptive options due to better access to information and resources (Mitwaly et al., 2019). Research has shown that women with higher educational attainment tend to have greater awareness of reproductive health issues and increased autonomy in decision-making (Samat et al., 2022).

A study conducted in Ghana similarly highlighted that woman with secondary school education were significantly more likely to use contraceptives compared to those without formal education (Osei et al., 2021). This correlation underscores the importance of women's education in enhancing their ability to make informed choices about family planning.

Education level was another critical factor influencing knowledge and attitude. Among the respondents, in Lahore, Pakistan over 46% were illiterate, and only 7.8% had completed secondary school. The study indicated that knowledge about LARC

was low overall, with only 34% of participants aware of implants 5. This lack of education correlates with misconceptions about LARC, as many women believed that these methods could cause illness or infertility (Jabeen & Umbreen, 2016).

2.5.3 Occupation.

Occupation can significantly affect a woman's knowledge and understanding of Long-Acting Reversible Contraceptives (LARC). Studies show that employed women, especially those in formal jobs, tend to be more informed about LARC methods compared to women who are housewives or not formally employed. Working women are often exposed to more educational resources and social networks, which can help them learn about the benefits and options of LARC, such as their effectiveness in preventing pregnancy over the long term. In contrast, women who don't work outside the home might have fewer chances to access this information, leading to less awareness or misconceptions about LARC. (Mitwaly et al., 2019).

This suggests that occupation can influence how much women know about contraceptives, and it's important to consider this factor when creating family planning programs. Non-working women could benefit from targeted information to help them understand the benefits of LARC, while employed women might already have some background knowledge.

2.5.4 Parity

Parity refers to the number of children a woman has and is a critical factor influencing contraceptive use. In the current study by Mitwaly (2019) held at Egypt, it was found that 66.5% of participants had a parity of 2-4 children, indicating that women in this range are more inclined to consider contraceptive options. This observation aligns with findings from other research, which suggests that women with higher parity are more likely to use contraceptives as they may wish to space or limit future

pregnancies. For instance, a study conducted in Nepal indicated that women with three or more live children had a significantly higher likelihood of using long-acting reversible contraceptive (LARC) compared to those with fewer children (Khan et al., 2022). This trend suggests that as women have more children, they become increasingly aware of the need for family planning methods to manage their reproductive health effectively

2.6 Conceptual framework of the study

The Theory of Planned Behavior (Figure 2.1) can further explain knowledge and attitude towards the use of Long-Acting Reversible Contraceptive (LARC).

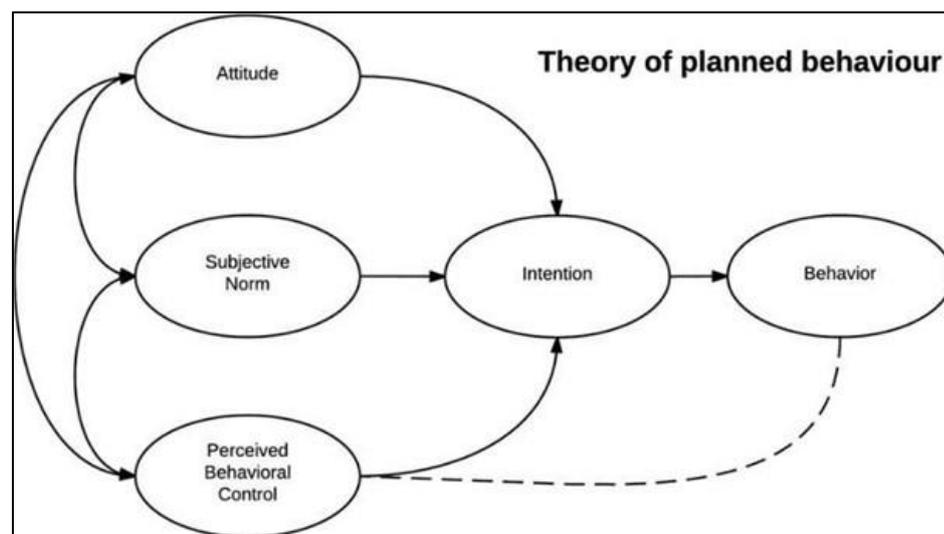


Figure 2.1 Theory of Planned Behaviour (Adapted from Ajzen 1991).

Figure 2.1 Conceptual Framework of Study: Knowledge and Attitudes Towards Long-Acting Reversible Contraceptive (LARC). Adapted from the Theory of Planned Behaviour.

This study utilizes the Theory of Planned Behaviour (TPB) to explore the factors influencing married women's knowledge, and attitudes, regarding Long-Acting

Reversible Contraceptive (LARC) at HPUSM. TPB, developed by Ajzen (1991), posits that an individual's intention to perform a behaviour is influenced by three factors: attitude, subjective norms, and perceived behavioural control. Attitude refers to the personal evaluation of the behaviour, subjective norms involve perceived social pressures, and perceived behavioural control reflects the ease or difficulty of performing the behaviour. (Ajzen, 1991.)

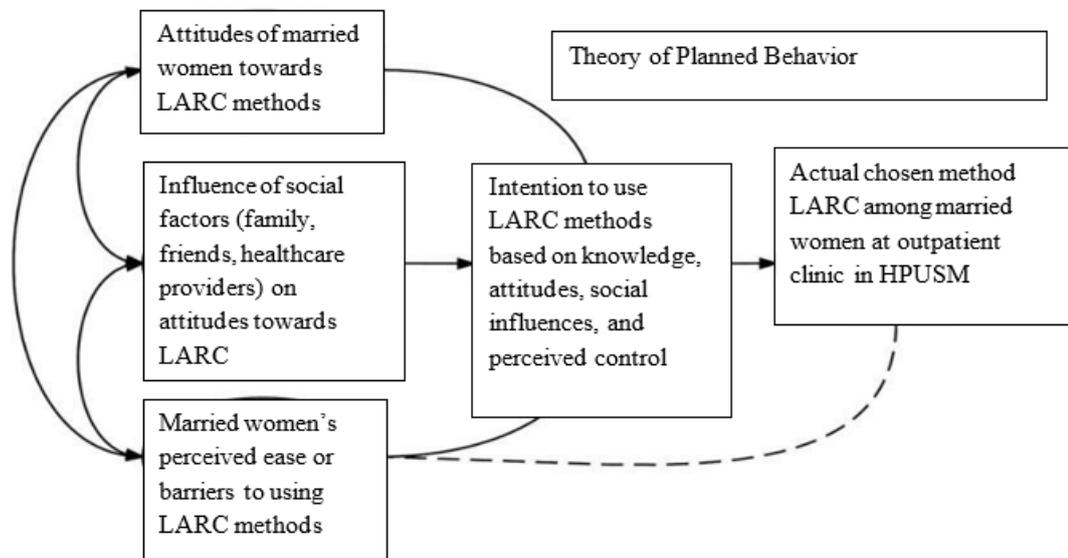


Figure 2.2 Adaptation of theory planned behavior by (Ajzen 1991)

The Theory of Planned Behavior (TPB) provides a structured framework for understanding the factors that influence the use of Long-Acting Reversible Contraceptive (LARC) methods among married women who attended the outpatient services at HPUSM. TPB posits that behavior is primarily determined by behavioral intentions, which are, in turn, shaped by three key factors: attitudes, subjective norms, and perceived behavioral control. Applying TPB to this study allows for a detailed examination of how knowledge, attitudes, social influences, and socio-demographic factors such as age, occupation, and education level impact the decision-making process around LARC methods.