

**Factors influencing the uptake of long acting
reversible contraceptives among women at primary
health clinics in eThekweni District**

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Health Sciences in Nursing in the Faculty of Health Sciences at the Durban
University of Technology

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Declaration

This is to certify that the work is entirely my own and not of any other person, unless explicitly acknowledged (including citation of published and unpublished sources). The work has not previously been submitted in any form to the Durban University of Technology or to any other institution for assessment or for any other purpose.

Signature of student

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Dedication

This dissertation is dedicated to My God Almighty, for being with me all the way, all the time, and for giving me wisdom and strength to carry on. I also dedicate my work to my supervisor Professor M.N. Sibiya for her constant support and patience with me throughout the whole process; co-supervisor Ms Michelle Munsamy for her support throughout; my beloved husband Mduduzi Nhlumayo for his encouragement when I felt weary and tired; my handsome sons, Lethukuthula and Nkanyezi Nhlumayo for their love and support; my dad Mr Musa Nsele for his love and support and my late loving mom, Carol Nsele who was laid to rest on 29 August 2015. I will always love you Mom.

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Abstract

Background

Unintended pregnancy is a major global challenge among sexually active women of childbearing age. Non-use of modern contraception and inconsistent use of short term contraceptive methods are the main reasons associated with unintended pregnancy. Long acting reversible contraceptives (LARCs) have proven to be highly effective with good continuation rates, and are cost-effective compared to other methods, when used more than one year. However, there is low uptake of LARC methods globally and in South Africa.

Aim of the study

The aim of the study was to determine factors influencing the uptake of LARC methods among women at the primary health care (PHC) clinics in eThekweni District.

Methodology

A quantitative, descriptive survey was used in this study. Purposive sampling of six fixed PHC clinics from the three sub-districts was done. Convenience sampling resulted in 371 participants. A survey questionnaire in English and isiZulu was used to collect data. Data was analysed using SPSS version 23.0. Inferential statistics were used to determine the relationship between the variables.

Results

The results of this study revealed that the contraceptive injection was most common LARC used, and the least used method was the intrauterine contraceptive device. The side effects were the main reasons for discontinuation with LARCs and all other contraceptive methods. Irregular vaginal bleeding was the main side effect cited by respondents associated with contraceptive implant usage. The respondents had positive attitudes and

perceptions towards LARCs; however, the majority of respondents were not interested in using LARC methods. Common myths and misconceptions were not negatively associated with LARCs, since respondents disagreed with them all.

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Glossary of terms

Contraception is defined as any means to prevent pregnancy that can be either temporary or permanent (International Planned Parenthood Federation 2012 cited in Mazuba 2013: 1).

Contraceptive implant is defined as one or more small rods containing progesterone that are implanted under the skin of a woman's upper arm and which release a steady dose of progestin thus preventing pregnancy (Singh and Espey 2012: 28).

Intrauterine contraceptive device (IUCD): The term intrauterine contraceptive device is used interchangeably with the term intrauterine device. Copper uterine device (Cu IUCD) is described as a small, flexible plastic device with copper sleeves or wire around the base that is inserted in the uterus to prevent pregnancy (World Health Organization [WHO] 2007: 131). Levonorgestrel intrauterine device (LNG-IUCD) is a T-shaped plastic device that steadily releases small amounts of levonorgestrel each day to prevent pregnancy (WHO 2007: 157).

Long acting reversible contraceptives (LARC) are methods that require administration less than once per menstrual cycle or month, and they include intrauterine devices, contraceptive implants and progestogen only injectable contraceptives (Madden *et al.* 2014: 2; Espey and Ogburn 2011: 705).

Primary health care is defined as “an essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community by means acceptable to them and at a cost that the community and the country can afford to maintain at every stage of their development in a spirit of self-reliance and self-determination” (WHO 1978: 5).

Primary health care clinic is a facility that provides comprehensive quality health care that includes promotion, preventive, curative, rehabilitative and palliative interventions at a level below that of a hospital (Department of Health 2001: 7).

Unintended pregnancy is a pregnancy that was either mistimed or unwanted (Guttmacher 2016: 1). Mistimed pregnancy is when a woman did not want pregnancy at the time of conception, whereas unwanted pregnancy is when a woman had no plans to become pregnant (Dutta, Shekhar and Prashad 2015: 1; Guttmacher Institute 2016: 1).

Acronyms

Acronym	Full word/sentence
COCs	Combined oral contraceptives
CHC	Community Health Centre
CPR	Contraceptive prevalence rate
Cu IUCD	Copper intrauterine contraceptive device
HIV	Human Immunodeficiency Virus
DHS	Demographic and Health Surveys
DUT	Durban University of Technology
HBM	Health Belief Model
KZN	KwaZulu-Natal
LAPM	Long-Acting Permanent Methods
LARCs	Long acting reversible contraceptives
POPs	Progestin-only pills
PHC	Primary health care
IREC	Institutional Research Ethics Committee
IUD/IUCD	Intrauterine device/Intrauterine contraceptive Device
SDGs	Sustainable Development Goals
STIs	Sexually transmitted infections
UK	United Kingdom
USA	United States of America
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization

CHAPTER 1 : OVERVIEW OF THE STUDY

1.1 INTRODUCTION AND BACKGROUND TO THE STUDY

Globally, unintended pregnancy is a major challenge among women who are sexually active and of child bearing age, which is 15-49 years (Nyambo 2013: 1; Espey and Ogburn 2011: 705). Non-use of modern contraception and inconsistent use of short term contraceptive methods are the main reasons associated with unintended pregnancy (Nyambo 2013: 1; Arrowsmith 2013: 39). Guttmacher Institute (2016: 1) defines unintended pregnancy as either mistimed or unwanted pregnancy. Mistimed pregnancy is when the woman does not want pregnancy at the occurrence of pregnancy at that particular time, but does want to fall pregnant sometime in the future (Guttmacher Institute 2016: 1; Dutta, Shekhar and Prashad 2015: 1). An unwanted pregnancy is when the woman does not want to fall pregnant at all during the occurrence of the pregnancy (Guttmacher Institute 2016: 1; Dutta, Shekhar and Prashad 2015:1). The Guttmacher Institute and United Nations Population Funds (UNFPA) released a report in 2012 which revealed that about 54 million unintended pregnancies resulted in 26 million abortions, of which 16 million were unsafe; 79 000 maternal deaths and 1.1 million infant deaths (White 2007 cited in Nyambo 2013: 1; Speidel and Harper 2008:197). Trasada (2013: 2) stated that in sub-Sahara Africa about 14 million unintended pregnancies occur every year. Provision of quality and effective family planning services to women can combat unintended pregnancies (Joti 2014: 11).

Unmet family planning needs are associated with unintended pregnancies (Kakaire, Nakiggude, Lule and Byamugisha 2014: 1088). An unmet family planning need is when a woman wants to avoid pregnancy for a period of two years or more, but does not use any modern method of contraception (Hills 2014: 3). The United States has been rated as having approximately double

the rate of unintended pregnancy as compared to other developed countries, with adolescents at high risk (Kumar and Brown 2016: 1). Unintended pregnancies are a cause for concern globally. The global 2012 Family Planning Summit held in London set a goal of providing modern contraception to 120 million women worldwide, with unmet family planning needs, by 2020 (Jain, Obare, Ramarao and Askew 2013: 133). The 2012 Family Planning Summit set another goal of reducing the high rate of contraceptive discontinuation by facilitating the method mix or switching among methods to meet the unmet family planning needs by 2020 (Jain *et al.* 2013: 133). In public health, contraception is regarded as one of the most powerful tools for the development of any country (Department of Health 2012a: 2). It is of importance to understand contraception use and unmet family planning needs in order to improve women's reproductive health (Joshi, Khadilkar and Patel 2015: 560; Kakaire *et al.* 2014: 1088).

The World Health Organization (WHO) (2013: 1) defines contraceptive prevalence as the "percentage of women who are currently using, or whose sexual partner is currently using, at least one method of contraception, regardless of the method used and is usually reported for married women, or in-union women aged 15-49 years". The prevalence of contraceptive use among married or in-union women of child bearing age has gradually increased globally from 55% in 1990 to 63% in 2011 (Joshi, Khadilkar and Patel 2015: 560; Mazuba 2013: 27). It is further reported that in low-income countries, contraceptive prevalence is about 36% of married women or in-union women (Joshi, Khadilkar and Patel 2015: 560; Mazuba 2013: 27). In high income countries, this number is almost doubled to 66% (Joshi, Khadilkar and Patel 2015: 560; Elfstrom and Stephenson 2012: 1). It has been reported that 53% of women of child bearing age in the UK use some form of reversible method, with only 13% use long acting reversible contraceptive (LARC) methods, which include intrauterine contraceptive devices (IUCDs) and contraceptive implants (Joshi, Khadilkar and Patel 2015: 560; Gebremichael *et al.* 2014: 349).

Contraceptive prevalence rate (CPR) in South Africa is among the highest in sub-Saharan Africa with 65%, as reported by Osman (2011: 1; Lince-Deroche, Harries, Mullick, Mulongo, Sinanovic, Pleaner, Morroni, Firnhaber and Holele 2016: 97). However, like many other countries in the region, South Africa is facing a high unmet need for contraception, and nearly 40% of women are at risk of unintended pregnancy (Trasada 2013: 2; Builu and Naidoo 2015: 27). Provision of quality fertility management services in the country is crumbling, as per consensus reached by practitioners and social scientists (Osman 2011: 1; Department of Health 2012a: 2). The use of LARC methods across the country is limited, with the prevalence of IUCDs only being 0.8% (Osman 2011: 1). There is a high rate of unplanned pregnancies worldwide, and South Africa is not spared (Arrowsmith 2013: 13; Department of Health 2012a: 3; Patel 2014: 644). The Department of Health has taken a stand by prioritising LARC methods availability in public sector. Contraceptive implants were introduced in South Africa in 2013, and IUCDs are being revived as a method of contraception (Department of Health 2012a: 13; Patel 2014: 644).

1.2 PROBLEM STATEMENT

LARC methods have a proven record of very high effectiveness, prompt reversibility when pregnancy is desired, cost-effectiveness, and are user friendly to a variety of women (Speidel and Harper 2008: 197; Ferreira, Nunes, Modesto, and Goncalves 2014: 17). Despite all advantages that have been mentioned about LARC methods, there is a low uptake of these methods in the United States of America (USA) and many countries worldwide (Shoupe 2016: 5; Speidel and Harper 2008: 197; Ferreira *et al.* 2014: 17). Utilisation of LARC methods is very low in sub-Saharan Africa, which includes South Africa (Gebremichael, Haile, Dessie, Birhane, Alemayehu and Yebyo 2014: 350; Todd, Jones, Garber, Afnan-Holmes, Woolgar, Bekker and Myer 2012: 1).

EThekweni District has experienced low uptake of IUCDs and sub-dermal implants accompanied by high requests for removal of sub-dermal implants. In an email communication on 22 February 2016, the Manager, District Health Information System, indicated that between April and December 2015 there were 137 IUCDs inserted, 442 new sub-dermal implants inserted, 533 sub-dermal implants inserted (existing), which made a total of 975, but during that same period 1 793 sub-dermal implants were removed. Figures 1.1 and 1.2 below illustrate the sub-dermal implant insertions and removals as well as IUCD uptake in eThekweni District between April 2015 and December 2015.

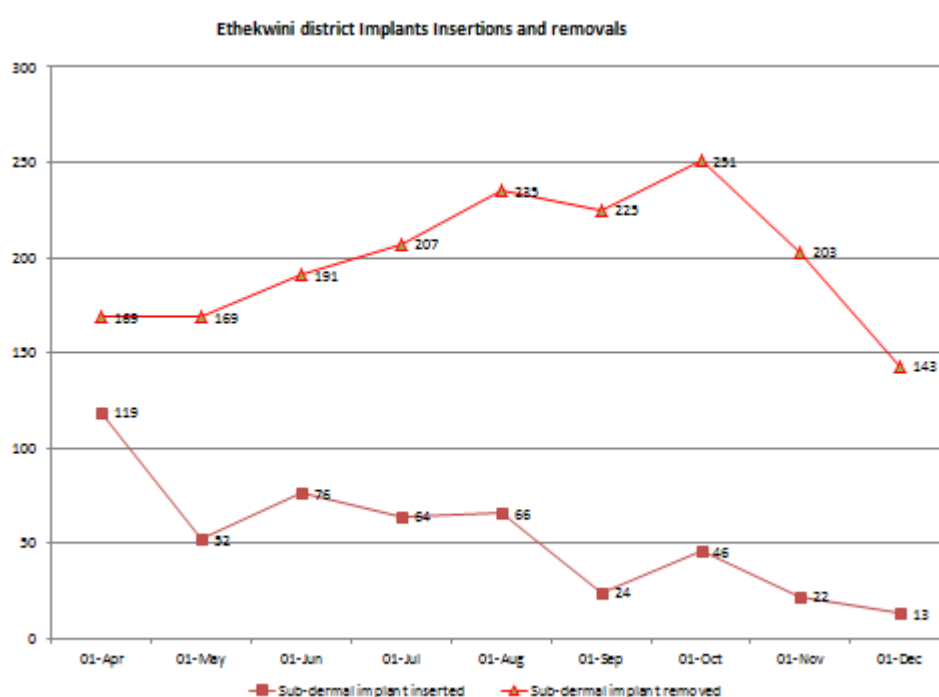


Figure 1.1: EThekweni District sub-dermal implants insertions and removals

Source: DHIS 2016

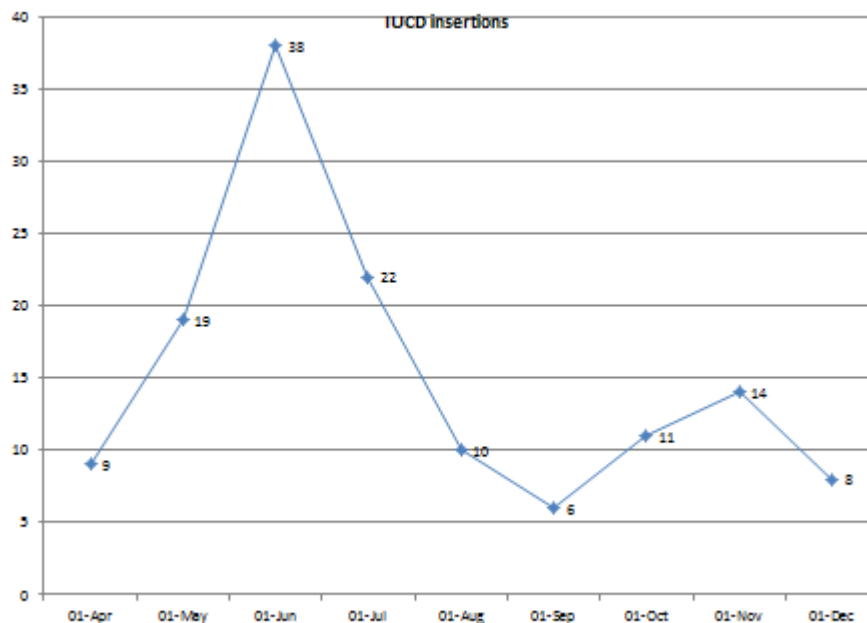


Figure 1.2: IUCD insertions in eThekweni District

Source: DHIS 2016

1.3 AIM OF THE STUDY

The aim of the study was to determine the factors influencing the uptake of LARC methods among women at primary health care (PHC) clinics in eThekweni District.

1.4 RESEARCH QUESTION

What are the factors that influence the uptake of LARC among women at PHC clinics in eThekweni District?

1.5 OBJECTIVES OF THE STUDY

The objectives of the study were to:

- Determine the attitudes and perceptions of women about LARCs.
- Identify myths and misconceptions about LARCs.
- Identify side effects and adverse events related to LARCs.

1.6 SIGNIFICANCE OF THE STUDY

Of all pregnancies in the United States, about 51% are unintended and 40% of these result in induced abortions (Birgisson, Zhao, Gina, Secura, Madden and Peipert 2015: 349; Ferreira *et al.* 2014: 17). One in every three maternal deaths globally can be prevented through effective family planning (Gebremichael *et al.* 2014: 349; Birgisson *et al.* 2015: 349). Many women are reported as using modern contraceptive methods, but the rate of unplanned pregnancies remains high (Ferreira *et al.* 2014: 17; Speidel and Harper 2008: 197). This has been reported as being related to incorrect and inconsistent use of modern short term contraceptive methods (Ferreira *et al.* 2014:17; Speidel and Harper 2008:197). Estimates are that about 200 million women across the globe would like to avoid pregnancy, though they are not using effective contraceptive methods (WHO 2016: 1). One potential solution is encouraging women to use LARCs because of their reported effectiveness, reversibility and reliability with minimal effort by the user (Speidel and Harper 2008: 197). LARC methods such as IUCDs and implants prevent unintended pregnancies for a period of three to ten years, with immediate return to fertility once removed (Goldstone, Mehta, McGeechan, Francis and Black 2014: 412; Nyambo 2013: 3). The continuation rate of LARC methods is defined by the percentage of women who continue using LARC methods at one year (Patel 2014: 645). Because of this, a great interest worldwide in the use of LARC methods has been reported (Ferreira *et al.* 2014: 18).

Joti (2014: 12) states that in Ethiopia, the Ethiopian Demographic and Survey of 2005 revealed that contraception knowledge has remained consistently high among married women and 88% of these women have heard of at least one method of modern contraception. However, it was reported that contraceptive practices among women of child bearing age in that country was very low (Joti 2014:12). Considering South African laws, policies and guidelines on contraception service delivery, and its CPR as compared to other African countries, the country is doing very well (Lince-Deroche *et al.* 2016: 99). In south Arica 93.4% of all women in the country have heard of modern contraceptive methods, and 70.5% have ever used at least one

(Lince-Deroche *et al.* 2016: 99). However, South Africa is faced with a high rate of unplanned and unintended pregnancies with an increasing demand for termination of pregnancy services (Department of Health 2012a: 2; Mazuba 2013: 1). Patel (2014: 644) stated that at every consultation, contraception and fertility planning should be offered to women routinely, since it is the key in combating maternal mortality and morbidity associated with unplanned pregnancies in South Africa.

The Department of Health has recognised the importance of contraception and fertility planning to address the challenges of unintended pregnancy, and has revived the use of effective LARC methods to meet family planning unmet needs (Department of Health 2012a: 2). Provider knowledge, interest and training play an important role in patient education about LARC methods (Shoupe 2016: 7). For the above reason, training of health care providers on insertion and removal of contraceptive implants as well as insertion of IUCDs has been prioritised as one of the strategies National Department of Health has embarked on with the hope of encouraging the usage of LARC methods in South Africa (Department of Health 2012a: 3). In response to high levels of unintended pregnancies, the KZN Provincial Department of Health in collaboration with United Nations Population Fund developed the KZN Provincial 5-Point Contraceptive Strategy 2011-2016 (KZN Department of Health 2011: 2). Five key priority strategies were identified and key priority two, which is to improve contraceptive method mix, emphasised the re-introduction of IUCDs and acceptance of hormonal sub-dermal implants (KZN Department of Health 2011: 6).

Lince-Deroche *et al.* (2016: 105) recommend the engagement of the research community to determine the best way to improve family planning, provider attitudes and quality counselling. However, this study sought to find factors influencing the uptake of LARCs which is a user perspective approach and will help to find the gaps between the provider and the user. The value of contraceptive research and development has been highlighted in the mission and vision of the WHO, since this guides the policy makers when making

decisions based on evidence-based practice (WHO 2016: 2). It is further mentioned that development of safe, effective and acceptable contraceptive methods can contribute to achieving the Sustainable Development Goals (SDGs) and reduce the number of unintended pregnancies (WHO 2016: 3). In his foreword during the launch of National Contraceptive Clinical Guidelines and Policy, the Minister of Health, prioritized five key actions for successful implementation of these guidelines, namely the provision of quality contraceptive services; stimulating community awareness and demand; putting integration into practice; strategic multi-sectorial collaboration and evidence guided planning and provision of contraceptives (Department of Health 2012a: 3). He further stated that the implementation of the policy should be monitored and evaluated and that the decisions and planning should be informed by international as well as local research (Department of Health 2012a: 3).

Many researchers have investigated possible contributing factors on usage of LARC by women on an international level, but not much at a local level. There is a need for on-going research at a local level on LARC methods and their usage. The promotion and prioritisation of LARC methods should be a cornerstone of a strategy to combat unintended pregnancies globally, nationally and locally (Espey and Ogburn 2011: 716). This study is conducted to fill the information gap about the practice of LARCs in eThekweni District, since there appears to be no previous research on LARC use and factors influencing their uptake in this District. This study should contribute knowledge on why women choose to use or not to use LARC even though contraception in the public sector is free of charge in South Africa. This information will also help policy makers to design appropriate strategies to encourage the proper use of LARC methods and reduction in demand for removals of implants.

EThekweni Health District, and institutions that participated in the study on factors influencing uptake of LARC methods among women at PHC clinics in eThekweni District, will be informed of the study results. The knowledge of factors influencing the uptake of LARC will enhance its acceptance and

uptake (Adako and Okunfulure 2016: 117). In this way it will contribute to the efforts to increase uptake and continuous usage of LARC methods by women in eThekwin District, and so help decrease unintended pregnancies.

1.7 OUTLINE OF THE DISSERTATION

Chapter 1: Background to the study.

Chapter 2: Literature review.

Chapter 3: Theoretical frame work.

Chapter 4: Research methodology.

Chapter 5: Presentation of results.

Chapter 6: Discussion of results.

Chapter 7: Conclusion, limitations and recommendations.

1.8 SUMMARY OF THE CHAPTER

This chapter has presented the introduction and background to the study, problem statement, research question, aim of the study, objectives of the study, significance of the study and the outline of the dissertation. The next chapter presents literature that was reviewed by the researcher.

CHAPTER 2 : LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter presented an introduction and background to the study, problem statement, aim of the study, research question, objectives of the study, significance of the study, and concluded with the outline of the dissertation. This chapter presents the process of data search, the global view of contraception and LARC methods, trends in contraception and LARC methods in Africa, as well as in South Africa.

2.2 PROCESS OF DATA SEARCH

In this study, the purpose of the literature review was to obtain relevant information on factors influencing the uptake of LARC methods among women at primary health care clinics in eThekweni District. The researcher used the following search engines in the search for relevant data: Durban University of Technology Repository, World Wide Web using Google search scholar and EBSCO host. Key words used were unintended pregnancy, contraception, sub-dermal implants, intrauterine contraceptive devices, and LARC methods.

2.3 CONTRACEPTION

Contraception is defined as any means to prevent pregnancy which can be either temporary or permanent (International Planned Parenthood Federation 2012 cited in Mazuba 2013: 16; Nyambo 2013: 1). There are two main modern methods of contraception, permanent and temporary methods (WHO 2007: 165; Perry 2015: 236). In this study, permanent methods will be described and temporary contraceptive methods namely oral contraceptives, injectable contraceptives, intrauterine devices and contraceptive implants will be discussed in detail.

2.3.1 Permanent contraceptive methods

The permanent ending of reproductive function both in males and females is known as the surgical sterilisation method, which would be bilateral tubal ligation in females and vasectomy in males, both done to hinder the sperm-oocyte mixing. (Mazuba 2013: 26; WHO 2007: 165). Vasectomy involves cutting and tying of two tubes in the scrotum preventing sperm from mixing with ejaculate (Mazuba 2013: 26; Department of Health 2012a: 51). Tubal ligation involves the occlusion of the fallopian tubes either by cutting or tying them, which can be done through laparoscope, under local anaesthesia (Mazuba 2013: 26; WHO 2007: 162). Sterilisation is said to be over 99.5% to 99.8 % effective (Department of Health 2012a: 49).

2.3.2 Temporary contraceptive methods

There are various types of contraceptive methods namely barrier methods, hormonal contraceptive methods, IUCDs and contraceptive implants and these are discussed in detail below.

2.3.2.1 Barrier methods

These methods provide a physical barrier by hindering movement of sperm into the female reproductive tract, for example, female and male condoms (Mazuba 2013: 170; WHO 2007: 199; Department of Health 2012a: 74).

2.3.2.2 Hormonal contraceptive methods

Progestin-only pill (POP)

The progestin-only pill (POP) prevents pregnancy by thickening the cervical mucus, which hinders the sperm from meeting the egg and also by preventing the release of an egg from the ovaries (WHO 2007: 25; Mazuba 2013:18). The POP offers a choice to women who are contraindicated for oestrogen and can be used by smokers, older women and those breastfeeding (Perry 2015: 236). The efficacy of POP is 99% with correct use, and its duration is a one

month cycle (Perry 2015: 238; French 2009: 40). The POP should be taken every day at the same time, and if late it must be taken within at least three hours to maintain continuous effectiveness (Perry 2015: 238; WHO 2007: 26). The disturbance of the usual menstrual pattern is the most common side effect (Perry 2015: 238). Acne, breast tenderness, weight gain and headaches are minor side effects associated with use of POP, usually around initiation of it (WHO 2007: 26; Perry 2015: 238). Contraindications for the use of POP are current or past history of heart disease or stroke, liver disease, systemic lupus erythematosus, current breast cancer or breast cancer within the past five years (Perry 2015: 328; WHO 2007: 27).

Combined oral contraceptive pill

The combined oral contraceptive pill (COCs) contains low doses of two hormones, namely, a progestin and an oestrogen (WHO 2007: 1; Perry 2015: 236). The COC mimics the natural hormones in the body of a woman and prevents pregnancy by inhibiting the ovulation process, thickening the cervical mucus thus preventing sperm penetration, and preventing implantation by reducing the endometrium lining (French 2009: 40; Perry 2015: 236; Mazuba 2013: 19). COCs are said to be 99% effective when used correctly. COCs are available as monophasic which is 21 active pills (with equal amount of oestrogen and progesterone) and seven placebo pills; and, Triphasic which contains low dose of both hormones and are divided into three different doses with slight different strengths, followed by seven placebo pills (Gobbler 2003: 36 cited in Mazuba 2013: 19).

The COC pill can be of help for women experiencing dysmenorrhoea and menorrhagia as it has been reported that they relieve dysmenorrhoea in up to 80% of women and lead to a 50% reduction in the amount of blood loss for women using it regularly (Armstrong 2010 cited in Perry 2015: 237). The COC pill usage can reduce acne, which is caused by excessive secretion of sebum production. The higher androgen levels are related to increased sebum production (Borgelt-Hansen 2001 cited in Perry 2015: 237). Thromboembolism is the most serious adverse effect associated with the

COC pill (WHO 2007: 3). Absolute contraindications to the COC pill are history of stroke, ischemic heart disease, current breast cancer, history or current thromboembolism, liver tumours and breastfeeding women under six weeks postpartum (Perry 2015: 238; WHO 2007: 3).

Injectable contraceptives

The depot medroxyprogesterone acetate and norethisterone enanthate progesterone each contain progestin similar to the natural hormone in a woman's body (WHO 2007: 59; Perry 2015: 239). They continuously hinder release of an egg from the ovaries and also thicken the cervical mucus making it impossible for fertilisation (Department of Health 2012a: 28; Perry 2015: 239; Mazuba 2013: 19; French 2009: 41). Injectable contraceptives are given intramuscularly, and when given within five days of a menstrual cycle, immediate cover is ensured (WHO 2007: 61; Perry 2015: 239). Depot medroxyprogesterone acetate has duration of 12 weeks, and norethisterone enanthate progesterone 8 weeks (Perry 2015: 239; French 2009: 44). These methods are very effective, over 99% when given within the recommended time (WHO 2007: 74; French 2009: 44). Disadvantages and adverse effects include abnormal bleeding patterns, ranging from prolonged or infrequent bleeds, spotting or amenorrhea, weight gain, and delay in return to fertility with prolonged use. Women with a history of cardiovascular disease, stroke, liver disease, breast cancer or unexplained vaginal bleeding are contraindicated from using these methods (WHO 2007: 62; French 2009: 44).

2.3.2.3 Intrauterine contraceptive devices

In South Africa, there are two types of intrauterine devices available in the public sector which are the copper uterine device (Cu IUCD) and the levonorgestrel intrauterine device (Department of Health 2012a: 11; Gobbler 2003 cited in Mazuba 2013: 20). The Cu IUCD is described as a small, flexible plastic device with copper sleeves or wire wrapped around it (WHO 2007: 131). It is inserted in the uterus to prevent pregnancy. It works primarily by providing chemical changes which incapacitate or damage the sperm and

the egg before they meet (WHO 2007: 131; French 2009: 43). It is effective for 10 years and beyond, but registered here in South Africa for 10 years (WHO 2007: 132; French 2009: 43).

The levonorgestrel intrauterine device (LNG-IUCD) is a T-shaped plastic device that steadily releases small amounts of levonorgestrel each day (WHO 2007: 157). Its primary function is to suppress the growth of the lining of uterus which is the endometrium and so prevents implantation (WHO 2007: 157; French 2009: 43). It is approved to be used for five years in South Africa (Department of Health 2012a: 38).

IUCDs are effective with immediate insertion and can be effective for duration of up to 10 years depending on the type of device (WHO 2007:132; Perry 2015: 238). Increased bleeding and pain are the most common side effects associated with IUCDs. Contraindications to IUCDs are suspected or known pregnancy, unexplained vaginal bleeding and known pelvic inflammatory disease.

2.3.2.4 Contraceptive implants

The contraceptive implants are small plastic rods or capsules, each about the size of a matchstick, that release a progestin similar to the natural hormone in a woman's body (WHO 2007: 109; French 2009: 45). Contraceptive implants are also defined as one or more small rods containing progesterone that are implanted under the skin of a woman's upper arm and release a steady dose of progestin thus preventing pregnancy (French 2009: 45). In South Africa, there are two types of implants available in the public sector, namely, Janelle which is two rods, and Implanon which is a single rod (Department of Health 2012a: 32; WHO 2007: 109). Contraceptive implants are characterised by high effectiveness in prevention of pregnancy, are long lasting, user-independent and promptly reversible on removal (United States Agency for International Development [USAID] 2015: 2). The contraceptive implant works by inhibiting the sperm motility by thickening the cervical mucus and thinning the lining of the endometrium (WHO 2007: 110). Contraceptive implants are

over 99% effective up to five years depending on the type (Shagrer 2002 cited in Perry 2015: 239). The main side effect with contraceptive implants is changes in bleeding pattern (Mommers *et al.* 2012 cited in Perry 2015:239). Weight gain, headaches, and mood swings have been associated with these methods (Brady *et al.* 2014 cited in Perry 2015: 239). Contraindications include any history of liver disease, undiagnosed vaginal bleeding and history of breast cancer (Perry 2015: 239; WHO 2007: 114).

2.3.2.5 Long acting reversible contraceptives methods

LARC are methods with long duration of action and with no need for active adherence once initiated (Espey and Ogburn 2011: 705; Winner, Peipert, Zhao, Buckel, Madden, Allsworth and Secura 2012: 1999). Though the contraceptive injection is classified as one of the LARC methods, the contraceptive injection is not confirmed as a LARC method, since it is not as long acting as IUCDs and contraceptive implants (Bertrand *et al.* 2014 cited in USAID 2015: 1). In this study, LARC methods include IUCDs and contraceptive implants. LARC methods are the most effective modern contraceptive methods, with a great potential for reducing unintended pregnancies two-fold compared to other methods like oral hormonal contraceptives, patches or rings (Goldstone *et al.* 2014: 412; Nyambo 2013: 3; Winner *et al.* 2012: 1999). LARC methods are effective in reducing high levels of unwanted pregnancies as well as maternal mortality and morbidity especially in developing countries (Gudaynhe, Zegeye, Asmamaw, and Kibret 2014: 2257).

2.4 GLOBAL TRENDS IN CONTRACEPTION

Nearly half of all pregnancies in the US are unintended, totalling more than three million per year (Kavanaugh, Jerman, Hubacher, Kost and Finer 2011: 1349). Of all unintended pregnancies, about 52% are related to the non-use of contraception (Kavanaugh *et al.* 2011: 1349; Winner *et al.* 2012: 1999). Inconsistence and incorrect use of contraception are responsible for 43% of unintended pregnancies (Kavanaugh *et al.* 2011: 1349; Arrowsmith 2013: 19;

Winner *et al.* 2012: 1999). In the developed countries, such as the United Kingdom (UK), contraceptive use is high, but unintended pregnancies are also common (Glasier, Scorer and Bigrigg 2008: 213; Espey and Ogburn 2011: 706). Arrowsmith (2013: 19) also reported on unintended pregnancy as being common particularly among teenagers. Pills and condoms are the most common contraceptive methods used in the UK, but these methods require consistent and correct use (Glasier, Scorer and Bigrigg 2008: 213; Espey and Ogburn 2011: 705).

In the study on reducing unmet family planning needs by supporting women with met need, Jain *et al.* (2013: 133) collected data on contraceptive discontinuation from married women in demographic and health surveys conducted in 34 countries between 2005 and 2010. The findings revealed that there was high contraceptive discontinuation among both past and present contraceptive users, contributing to current unmet needs as well as future unmet contraceptive needs (Jain *et al.* 2013: 138). Loehner (2014: 2) also reported short-acting contraceptive methods as being associated with high discontinuation rates and higher unintended pregnancy rates compared to LARC methods. Jain *et al.* (2013: 139) suggested that the best way to reduce contraceptive discontinuation was to expand the contraceptive choice by offering a full range of methods, including LARC (ICUDs and contraceptive implants), and permanent methods like sterilisation.

Tsui, McDonald-Morsely and Burke (2010: 152) reviewed family planning's efficacy in preventing unintended pregnancies and their health burden. Their report indicated the efficacy of family planning in reducing the number of abortions, and lowering maternal mortality and maternal morbidity associated with unintended pregnancies (Tsui, McDonald-Morsely and Burke 2010: 155; Smith, Ashford Gribble, and Clifton 2009: 6). A new generation of research work was recommended from this study to investigate the relationship between unintended pregnancy and contraceptive use rate, which would ultimately contribute in deriving the full health benefits of a proven and cost-

effective reproductive technology (Tsui, McDonald-Morsely and Burke 2010: 155).

Azmat, Ali, Ishaque, Mustafa, Hameed, Khan, Abbas, Temmerman and Munroe (2015: 25) conducted a baseline survey on predictors of contraceptive use and demand for family planning services in underserved areas of Punjab province in Pakistan. In their findings, proximity, availability of quality and affordable family planning services, spousal communication, and in-laws approval were reported as predictors associated with contraceptive use (Azmat *et al.* 2015: 25). These findings were consistent with that of Melino (2014: 37) who reported barriers to contraceptive use in Burundi as being associated with socio-cultural factors such as religious influences and the need for spousal approval.

The LARC methods have been recommended by the WHO as effective methods of contraception for women and couples interested in planning and spacing their families (USAID 2015: 13; Gudaynhe *et al.* 2014: 2257). In New Zealand, teenage pregnancy and abortion rates are among the highest in developed countries. More than half of the women seeking abortion are below 25 years of age (Rose, Cooper, Baker, and Lawton 2011: 1729; Connolly *et al.* 2014: 961). Contraception counselling and choice of contraception before discharge is part of abortion packages given to women seeking abortion (Ross and Stoker 2013 cited in USAID 2015: 1). Despite all that, one-third of women seeking abortion will have subsequent abortions in their child bearing years (Rose *et al.* 2011: 1729). Based on this background, Rose *et al.* (2011: 1729) studied attitudes towards LARC methods among young women seeking abortion in New Zealand. Results showed a lack of prior LARC knowledge, both implants and IUCDs being associated with LARC use (Rose *et al.* 2011: 1729). Cost was also a key factor associated with LARC methods (Speidel and Harper 2008: 198). Researchers concluded that access issues like costs and awareness in relation to LARC needed urgent attention (Rose *et al.* 2011: 1729; Speidel and Harper 2008: 198).

In a similar study conducted by Goldstone *et al.* (2014: 412), low uptake of LARC among women presenting for abortion was reported. Their recommendation was that public health policy in Australia needed to facilitate access to LARC methods post abortion, to prevent further unintended pregnancies (Goldstone *et al.* 2014: 414). Tang *et al.* (2013: 52) studied the characteristics associated with interest in LARC methods in a postpartum population in United States. Their study reported an association between high interest in LARC methods and postpartum women, especially those that had recent unintended pregnancy, as well as those wanting to avoid pregnancy in the two years postpartum (Tang, Dominik, Re, Brody and Stuart. 2013: 52; USAID 2015: 15). Connolly, Pietri, Yu, and Humphreys (2014) studied the association between LARC methods use, teenage pregnancy and abortion rate in England between 1998 and 2011. A statistical increase in LARC usage was observed during that period and was associated with decreased teenage pregnancy rates and decreased abortion rates in women below 19 years of age (Connolly *et al.* 2014: 970).

Two Australian researchers, Lucke and Herbert (2014: 112), explored factors associated with uptake of LARC and permanent methods of contraception. They focused on women residing in rural and remote areas of Australia. A cohort of women born 1973-1978 and included in an Australian longitudinal study on women's health was studied over a period of time (Lucke and Herbert 2014: 113). These women had to report their contraceptive use at three surveys (2003, 2006 and 2009). The findings of the survey revealed that women from rural regions were more likely to use LARC and permanent methods compared to women residing in big cities (Lucke and Herbert 2014: 113). The difference in the use of LARC and permanent methods was associated with location of residence (Lucke and Herbert 2014: 114). The researchers further associated these results with the possibility that in Australia women in rural regions were more likely to have their children earlier in life and have many (Lucke and Herbert 2014: 114).

Garrett, Keogh, Kavanagh, Tomnay and Hocking (2015: 12) studied the low uptake of LARC methods by young women in Australia from a health care professional's perspective. The results of this study indicated barriers to LARC methods including misconceptions, norms, and LARC methods access issues. The strength of this study was that participants were health care providers, which assisted in understanding the low uptake of LARC methods from their perspective (Garrett *et al.* 2015: 12). These results were consistent with that of Anguzu, Tweheyo, Sekandi, Zalwango, Muhumuza, Tusiime and Serwadda (2014: 16) who reported that LARCs were perceived as for married women only and recommended the need to dispel these myths. In the USA Romero *et al.* (2015: 363) reported an increase in the use of LARCs by teens (15-19 years) from 0.4% in 2005 to 7.1% in 2013. Strategies such as education of LARC providers about safety of LARC method use in teens was recommended, along with training on LARC methods insertion and removals as well as the client-centred counselling (Romero *et al.* 2015: 368). In agreement with the previous study, Shelton and Burke (2016: 2) reported that the global health community must invest in providing skills and training to LARC methods providers.

Glasier, Scorer and Bigrigg (2008: 213) conducted a qualitative study to explore the attitudes of women in Scotland towards contraception and to explore the acceptability of LARC methods. The results from the focus group discussions with 55 women indicated that many factors influenced contraception choice (Glasier, Scorer and Bigrigg 2008: 213; Birgisson *et al.* 2015: 349). The need to see a health care professional was verbalised as one of the barriers to LARC (Glasier, Scorer and Bigrigg 2008: 213). Key message points from this study were that women tend to choose contraceptive methods which they are used to and that are used by their peers; women want more information from primary health care (PHC) providers about the range of available contraceptive methods; and that the need for an invasive/vaginal examination deters women from choosing LARC (Glasier, Scorer and Bigrigg 2008: 213). Recommendations were that PHC providers need to emphasise

the advantages of using LARC such as their long protection, reversibility, and lack of weight gain (Glasier, Scorer and Bigrigg 2008: 213).

Kumar and Brown (2016: 4), arising from their recent study related to barriers to access to LARC for adolescents in the USA, reported barriers as including costs involved in provision of these methods by institutions and clients. Systematic coordinated efforts by health care institutions, professional organisations and countries' governmental agencies were recommended as essential steps in addressing the barriers for adolescents to access LARC (Kumar and Brown 2016: 5; USAID 2015). Bharadwaj, Akintomide, Brima, Copas and D'Souza (2012: 298) concurred with other studies by reporting low use of LARC methods among adolescent girls and young women due to side effects associated with insertion of these methods. Espey and Ogburn (2011: 705) state that in the USA, LARC methods use among young women has been regarded as a priority by the National Institute of Medicine.

A global view when it comes to LARC dynamics was conducted by the USAID (2015: 1) using information from the Demographic and Health Surveys (DHS). An analysis of contraception data was conducted in relation to uptake and discontinuation of LARC methods among married women in 21 low-income countries across the globe. A life cycle approach was used to understand the pattern the women followed, including when they started using contraceptives, the reasons for stopping, and their status after three months having stopped the method (USAID 2015: 8). The study also looked into the method mix, and changing from one method to the other includes traditional methods (USAID 2015: 8). Other factors such as how individual and country characteristics affected the risk of discontinuation while still in need were also examined (USAID 2015: 10). The findings of the study were modelled in terms of failure and discontinuation. The failure rates were much lower for LARC than for other modern and traditional methods (USAID 2015: 55). Some evidence of higher failure rate than expected for IUCDs was also found, which researchers suggested further investigation (USAID 2015: 55). Regarding discontinuations, IUCDs and implants had a low discontinuation rate (USAID

2015: 55). This was thought to be related to the requirement for assistance of a health provider for the removal of these two IUCDs (USAID 2015: 56; Melino 2014: 4). Joshi, Khadilkar and Patel (2015: 560) reported on the training of health care providers on LARC methods and increased client awareness about LARC methods as being effective and necessary to increase the uptake of LARC. Peipert *et al.* (2011: 1105) reported that both IUCDs and contraceptive implants have the highest rate of satisfaction and 12-month continuation. This report was from their study on continuation and satisfaction of LARC methods, as compared with other methods, over 12 months (Peipert *et al.* 2011: 1105).

Other studies on LARC methods (Eeckhaut, Sweeny and Gipson 2014; Mavranouzouli 2008; Lipetz, Phillips and Fleming 2009) agreed on the effectiveness, prompt reversibility and cost-effectiveness when used, with increase in duration. Blumenthal, Voedisch and Gemzell-Danielsson (2010) conducted a literature review of the studies on unintended pregnancies and LARC methods from January 1990 or May 2009. They found that it is important that women who are considering IUCD and implants as methods of contraception check with health care professionals the benefits as well as the potential side effects related to these methods (Blumenthal, Voedisch and Gemzell-Danielsson 2010: 122; WHO 2007: 120). They also should review other details like process of method initiation, correct use and removal with their health care professionals so that these women take/make an informed decision about the method of their choice that suit their contraception needs (Blumenthal, Voedisch and Gemzell-Danielsson 2010: 122; WHO 2007: 1143).

Hall and Kutler (2016: 36) state that intrauterine contraception is the first line option for young people yet relatively few prospective studies have been conducted in nulliparous women using currently available IUCDs. Many providers are still reluctant to provide this option to nulliparous women. However, more attention has to be given to nulliparous young people by the research community (Hall and Kutler 2016: 36), because they are at the prime

of their lives (18-30 years), some are at tertiary educational level, some have started working, and some are starting their families. The results of this survey (IUCD contraception in nulliparous women) by Hall and Kutler (2016: 39) followed participants for over 18 months post insertion and revealed overall satisfaction of 83% of 100 women. The researchers concluded that even though significant symptoms were experienced during insertion, intrauterine device contraception was effective, safe and well tolerated (Hall and Kutler 2016: 39; WHO 2007: 149). Thonneau and Almont (2008: 12) conducted a survey study on contraceptive efficacy of IUCDs, and reported excellent effectiveness of all types of IUCDs with a global cumulative pregnancy rate of < 2% over a period of 5 years.

One of the features of the contraceptive implants is that they are cost-effective since they are used for a long period (WHO 2007: 110). The Implanon has been identified by the National Institute for Health and Clinical Excellence as the most cost-effective type of contraceptive implant, and is promoted because of its usability over a long period (Lipetz, Phillips and Fleming 2009: 75). Contraceptive implant continuation rate was explored by Harvey, Seib, and Lucke (2009 cited in Loehner 2014: 8). The continuation rate over a period of six months was 94%, over a year 74% and over 2 years 50% (Harvey *et al.* 2009 cited in Loehner 2014: 8). Discontinuation rate was found to be mostly associated with bleeding pattern disruption (Harvey *et al.* 2009 cited in Loehner 2014: 8; WHO 2007: 124).

2.5 CONTRACEPTION VIEW IN AFRICA

According to Hills (2014: 3), sub-Saharan Africa has the highest fertility rates in the world with a total fertility rate of 5.1 children per woman. Taye, Woldie and Sinaga (2014:1) state that sub-Saharan Africa region has the highest unmet need of family planning in the world hovering at 48, 8 million women; almost half of these women (about 21 million) are currently using modern methods of contraception. Of these women, only one in seven married women of child bearing age are using LARC methods (Taye, Woldie and Sinaga 2014: 2). Unmet contraceptive needs are said to be directly contributing to

unplanned and unwanted pregnancies (Hills 2014: 3; Jain *et al.* 2013:133). Unmet need for contraceptives is still very high despite an increase in contraceptive use (Ross and Stoker 2013 cited in USAID 2015: 84). Adako and Okunfulure (2016: 117) stated that in many sub-Saharan African countries, the CPR is low despite the high knowledge and awareness of contraception. Unplanned and unintended pregnancies are associated with high morbidity and mortality among women of child bearing age (Tsui, McDonald-Morsely and Burke 2010: 152; Sahilemichael, Temesgen and Gemechukejela 2015: 1). Unintended pregnancy is said to be the primary cause of termination of pregnancy (Mqhayi *et al.* 2004 cited in Mazuba 2013: 1; Sahilemichael, Temesgen and Gemechukejela 2015: 1).

Burundi has been ranked as the country with the third highest fertility rate in the world after Niger and Mali (Melino 2014: 3). In contrast, this country is experiencing low contraceptive use especially in rural areas. In her study, Melino (2014: 4) assessed barriers to contraceptive use in rural Burundi. Findings revealed 2.96% average uptake of family planning (Melino 2014: 35). The number of trained health professionals actively involved in service provision was associated with increased uptake, whereas socio-cultural factors such as fear of disclosure, stigma, and shame associated with contraceptive use were associated with low uptake (Melino 2014: 35; USAID 2015: 55). Recommendations included training of health providers in provision of family planning services, community-based family planning services, contraceptive awareness campaigns and education of youth about reproductive health (Melino 2014:37).

Like many studies conducted in the African continent and the rest of the world, Gudaynhe *et al.* (2014: 9) also reported LARC methods as being highly recommendable in reducing high levels of unintended and unwanted pregnancies, especially in developing countries, though certain factors impact on LARC methods use. In this study, factors that determined the use of LARC methods were age of women, occupation of the women, and husband-wife discussion (Gudaynhe *et al.* 2014: 2262; Kavanaugh *et al.* 2011: 1351). The

LARC methods have been referred to as forgettable contraceptive methods because the only intervention required is discontinuation (Espey, and Ogburn 2011: 705). In her study of knowledge, attitudes and practices of LARC methods, Hills (2014: 21) surveyed 117 couples postpartum, from 13 government health centres, during the period July to August 2013. Results of this study revealed the high levels of same feelings among couples when it comes to personal fertility desires, and this predicted accurately the desires of their partners (Hills 2014: 46). Many couples regarded LARC methods as ideal for their future family planning needs, though expression of concerns about side effects of LARC were evident (Hills 2014: 50).

Nyambo (2013: 43) reported the prevalence of LARC use in Malawi as being 26%. The suggestion was that the strengthening of family planning interventions was needed if LARC method use among sexually active women were to increase in Malawi. The use of mobile family planning workers was also recommended, increasing awareness and knowledge about LARC methods (Nyambo 2013: 49). The necessity for research on the LARC methods prescribing practices of health care providers was recommended as well (Nyambo 2013: 49). This is similar to Melino's recommendation regarding the need to include community family planning services in her study conducted in Burundi (Melino 2014: 35).

Morse, Chipato, Blanchard and Harper (2013: 1387) conducted a study on the provision of LARC methods in HIV prevalence countries. The findings of this study revealed that there was low provision of LARC methods by clinicians/nurses in rural areas and lack of health care providers training on LARC methods, which contributed to the low uptake of these methods (Morse *et al.* 2013: 1388). The researchers recommended that providers should be trained on LARC methods to improve uptake of these methods (Morse *et al.* 2013: 1388). The final recommendation was the need to train providers and to address health care delivery issues, so that more LARC methods become more widely available which will increase the potential for broad public health impact (Morse *et al.* 2013: 1388).

The uptake of hormonal implants contraceptives in Zaria, Northern Nigeria, was explored by Madugu, Abdul, Bawa and Kolawole (2015: 268) after the recent introduction of implants in their teaching hospital. Data on clients accepting these implants was collected between June 2009 and November 2013 at ABUTH Teaching hospital (Madugu *et al.* 2015: 270). The results showed an overall discontinuation rate of 45% which was regarded as a very high discontinuation rate among users (Madugu *et al.* 2015: 270). These results were consistent with those of Balogun, Olaomo, Adeniran and Fawole (2014: 1) in their study on Implanon sub-dermal implant, an emerging method of contraception in Nigeria. They also reported a high discontinuation rate of Implanon, related to side effects and the desire to fall pregnant. LARC methods were reported as suitable for most women with minimal side effects but unfortunately underutilised (Balogun *et al.* 2014: 4).

The prevalence and factors affecting the use of long acting and permanent methods (LAPM) in Jinka Town, Southern Ethiopia, was studied by Mekonnen, Enquselassie, Tesfaye and Semahegn (2014: 1). Results of this study indicated an overall low prevalence of LAPM (7.3%) and knowledge of contraceptive methods, and the age of a woman was associated with the use of long acting and permanent methods. These findings were consistent with those of Gebremariam and Addissie (2014: 24) in more or less the same type of study in Ethiopia but in Adigrat town, Northern Ethiopia. A provision of extensive health information on contraception was recommended (Mekonnen *et al.* 2014: 2).

2.6 CONTRACEPTION IN SOUTH AFRICA

2.6.1 Current trends in contraception

According to Oluwole and Skaal (2016: 2071), contraceptive knowledge in South Africa is high but uptake of contraceptives is low, resulting in a high level of unintended and unwanted pregnancies. For this reason, these two researchers were motivated to conduct a study to establish the contraceptive practices among women seeking termination of pregnancy in one of the public

hospitals in Eastern Cape in South Africa. The researchers proposed that in order to reduce unplanned pregnancies and terminations of pregnancy, there should be improvement of socio-economic factors associated with contraceptive practices, programmes, policies and guidelines of contraception (Oluwole and Skaal 2016: 2071; Lince-Deroche *et al.* 2016: 102). This will improve the factors determining contraceptive usage (Oluwole and Skaal 2016: 2071; Lince-Deroche *et al.* 2016: 102).

Lebese, Maputle, Ramathuba and Khoza (2013: 2) conducted a study with the aim of determining factors influencing the uptake of contraception services by Vatsonga adolescents in a rural community of Vhembe district, Limpopo Province, South Africa. They employed a qualitative research method which was explorative, descriptive, and contextual in nature, to investigate the contraception service phenomenon, from adolescents' point of view (Lebese *et al.* 2013: 3). In their findings, factors associated with the uptake of contraception were identified as cultural barriers related to communication about sex related matters, and cultural role players in sexual education of Vatsonga by peers (Lebese *et al.* 2013: 5). These findings were similar to those of the study conducted by Peer and Morojele (2013: 411), which reported low CPR (39.9%) among sexually active women from the rural population in Western Cape. Contraceptive prevalence was associated with cultural barriers such as male partners' consent and approval (Peer and Morojele 2013: 411).

A study on contraceptive use and associated factors among South African youth (18-24 years) was conducted by Seutlwadi, Pelzer, Mchunu and Tutshana (2012: 2). A cross-sectional population-based house-hold survey was conducted in four provinces (KZN, Eastern Cape, Mpumalanga, and Gauteng Provinces) out of the nine provinces in South Africa. From this survey, one learnt that sexual behaviour of South African youth is extremely risky. Contraceptive use factors like previous pregnancy, HIV status and concurrent partners sadly were no longer predictors of contraceptive use among this group. Contraception use was low, as evidenced by the high

pregnancy rate (Seutlwadi *et al.* 2012: 5; Department of Health 2012a: 9). Programmes such as adolescent friendly clinic-initiatives, comprehensive sexual and reproductive health services, and contraception, were recommended (Department of Health 2012a: 3; Seutlwadi *et al.* 2012: 2). Another South African study related to contraception was conducted by Crede, Hoke, Constant, Green, Moodley and Harries (2012: 2). Their interest was on factors impacting knowledge, and use of long acting and permanent methods by both HIV positive and negative postpartum women in Cape Town (Crede *et al.* 2012: 2). Findings showed that health care providers play an important role in influencing women in using methods of contraception (Crede *et al.* 2012: 5).

2.6.2 LARC methods in South Africa

One of the research studies that formed the ground work for the establishment of LARC methods in South Africa was conducted by Trasada (2013: 2). The research concluded that an IUCD was a safe and highly effective method of contraception, although not much was known about it as a method of contraception among potential acceptors (Trasada 2013: 23; Hall and Kutler 2016: 41; WHO 2007: 132). Trasada (2013: 22) also called for comprehensive and intense campaigns to see improvement in IUCD use, since counselling about IUCD only is not enough to motivate clients. An IUCD should be introduced as a contraception option in different situations such as during the postpartum period or after abortion or miscarriage. The study also highlighted the need for the number of trained health care service providers to be increased, and the need for evaluation of community attitudes and barriers that hinder the LARC use (Department of Health 2012a: 3; Trasada 2013: 23). Builu and Naidoo (2015: 27) reported poor knowledge about IUCDs among women using public sector health facilities in Pietermaritzburg. Misconceptions about IUCDs were reported and women were found to be dependent on clinic information, hence, the researchers made the recommendation that health care providers could improve the situation by educating women (Builu and Naidoo 2015: 30).

Mazuba (2013: 25) explored the knowledge, utilisation of contraceptives, and sexual activity, among clients who chose to terminate a pregnancy at Prince Mshiyeni Memorial Hospital. This study demonstrated knowledge of contraceptives (75.4%) among participants with only 11.5% reported to having never heard of contraception. There was a high percentage (79%) of clients who had used hormonal contraceptives before (Mazuba 2013: 83). Provision of long term or permanent contraception methods in public was recommended (Mazuba 2013: 85). In 2012, the National Department of Health launched the National Contraception and Fertility Policy to make provision of LARC methods and other services. Contraceptive implants were introduced for the first time in South Africa (Department of Health 2012a: 13; Patel 2014: 2).

The Millennium Development Goals (Goal Number 5) included universal access to sexual and reproductive health services which has been carried forward in the new SDGs (Department of Health 2012a: 6; Patel 2014: 1). The Family Planning 2020 initiative has prioritised the access to contraception, and South Africa has committed itself to SDGs and Family Planning 2020 initiative (Lince-Deroche *et al.* 2016: 95).

Lince-Deroche *et al.* (2016: 95) conducted a study to explore the potential for achieving universal access to contraceptive services in South Africa (Lince-Deroche *et al.* 2016: 95). The study described the legal frame work in South Africa as supportive in ensuring the universal access to contraceptive services (Lince-Deroche *et al.* 2016: 96). Five policies and guidelines were highlighted:

- The constitution of the country which ensures the right to access healthcare services, including sexual and reproductive health care services for all (Republic of South Africa 1996: 6).
- The National Health Act No. 61 of 2003 which acknowledges the particular health needs of vulnerable groups which include women, and children (Republic of South Africa 2003: 10).
- The new National and Adolescent Sexual and Reproductive Health and Rights frame work Strategy (2014-2019), which is supportive of adolescents and women's rights and access to health care services,

especially access to sexual and reproductive health care services (Department of Social Development 2015: 20).

- The Strategic Plan for Maternal, New born, Child and Women's Health and Nutrition in South Africa (2012-2016) which emphasises access to contraceptive services including the full range of contraceptive methods (Department of Health 2012b: 10).
- The National Development Plan which emphasises the provision of affordable access to quality health service while promoting health and wellbeing (National Planning Commission 2011: 19).
- The National Contraception and Fertility Planning Policy and Service Delivery Guidelines and National Contraception Clinical Guidelines 2012 (Department of Health 2012a: 3).

The introduction of the sub-dermal contraceptive implant was an example of a step taken towards improving quality of contraceptive services and increasing the access to LARC methods (Patel 2014: 2; Department of Health 2012a: 3). Among challenges identified in their study was one related to the introduction of sub-dermal contraceptive implants in 2013, which was characterised later by the increasing number of women requesting early removal of sub-dermal contraceptive implants, which brought about great concern (Lince-Deroche *et al.* 2016: 96). It is reported that a formal monitoring system was needed; estimates and preliminary data collection from provinces suggested that as of December 2014, 840 implants were removed (Lince-Deroche *et al.* 2016: 96).

Trasada (2013: 22) recommended evaluation of community attitudes and barriers that hinder the use of LARC methods, and further suggested in-depth studies that would provide insight into community beliefs and attitudes. The current study emanates from the above recommendation, since the results of the study will contribute by identifying the attitudes and barriers associated with LARC methods usage. Lince-Deroche *et al.* (2016: 96) reported great concern due to the high number of women requesting early removal of contraceptive implants. The current study sought to identify factors influencing

the uptake of LARC methods among women in primary health clinics in eThekweni District.

2.7 SUMMARY OF THE CHAPTER

This chapter presented the process of data search, a brief discussion on contraception and contraceptive methods, global trends in contraception, LARC methods in a global perspective, contraception view and LARC methods in Africa, contraception and current trends of contraception as well as LARC methods in South Africa. The next chapter presents the theoretical framework that guided the study.

CHAPTER 3 : THEORETICAL FRAMEWORK

3.1 INTRODUCTION

The previous chapter covered the process of data search, and literature reviewed by the researcher. This chapter presents the theoretical framework that guided the study. In this study, the Health Belief Model has been identified by the researcher as ideal to give guidance in explaining study results in relation to the aim and objectives of the study (Polit and Beck 2012: 136).

3.2 THE THEORETICAL FRAME WORK THAT GUIDED THE STUDY – THE HEALTH BELIEF MODEL

In the USA in the 1950s many people did not want to participate in public health preventive programmes related to free screening for tuberculosis. In response, social psychologists who were working in public health services embarked on developing a model that would explain that behaviour, which came out to be known as the Health Belief Model (HBM) (Nathanson and Becker 1983: 39).

The Health Belief Model is a cognitive interpersonal frame work that views humans as rational beings who use a multi-dimensional approach to decision making regarding whether to perform a health behaviour or not (Hall 2012: 76; Nathanson and Becker 1983: 39). The HBM is based on the understanding that a person will take a health-related action based on core assumptions (Rosenstock 1974: 330; Hall 2012: 75). The model attempts to identify the pattern of health behaviours, and is appropriate for complex and preventive health behaviour like contraceptive behaviour (Mohsen, El-Abbassy and Khalifa 2016: 55). In the HBM, the possibility that an individual will follow a

preventive behaviour is influenced by the way he/she perceives the costs and benefits of the action (Hall 2012: 75; Polit and Beck 2012: 136).

The HBM was among the first models used to predict and explain differences in contraceptive behaviour among women in the 1970s and 1980s (Hall 2012: 75). Contraceptive behaviour is defined as activities involved in the process of identifying and using a contraceptive method to prevent pregnancy which can include specific actions like contraceptive initiation, continuation or discontinuation, misuse, non-use, compliance and adherence (Hall 2012: 76; Mohsen, El-Abbassy and Khalifa 2016: 55). Strategies to prevent unintended pregnancy are required, and they should be theory-driven (Hall. 2012: 74). Based on this background the researcher identified HBM as appropriate in guiding the study and as an ideal model for explaining the factors that motivate women to accept or not to accept LARC as methods of choice and to continue using them (Mohsen, El-Abbassy and Khalifa 2016: 56). For an individual to take a health-related action, the person has to anticipate a negative health outcome which can be avoided (Polit and Beck 2014: 138).

3.3 CONSTRUCTS OF THE HBM

The HBM comprises primary constructs which are: perceived susceptibility, perceived threat, perceived severity, perceived benefits and perceived barriers to action (Polit and Beck 2012:136; Hall 2012: 76; Nathanson and Becker 1983: 41). In this study, the HBM predicts that for a woman of childbearing age to be motivated to use LARCs, she has to perceive herself to be at risk or susceptible to unintended pregnancy (perceived susceptibility), that unintended pregnancy has got potential serious consequences (perceived severity), and understand that negative consequences of unintended pregnancy are avoidable through use of effective contraceptives (perceived benefits) (Mohsen, El-Abbassy and Khalifa 2016: 56). However, there are costs associated with the use of LARCs (perceived barriers), so perceived benefits need to be weighed against these perceived barriers (Nathanson and Becker 1983: 41; Hall 2012: 76). Using the HBM constructs,

at the end of the study, the researcher would be able to identify the perceived benefits, perceived barriers as well as modifying factors that influence the uptake of LARCs, among women at PHC clinics in eThekweni Health District (Mohsen, El-Abbassy and Khalifa 2016: 56). Figure 3.1 reflects the HBM constructs.

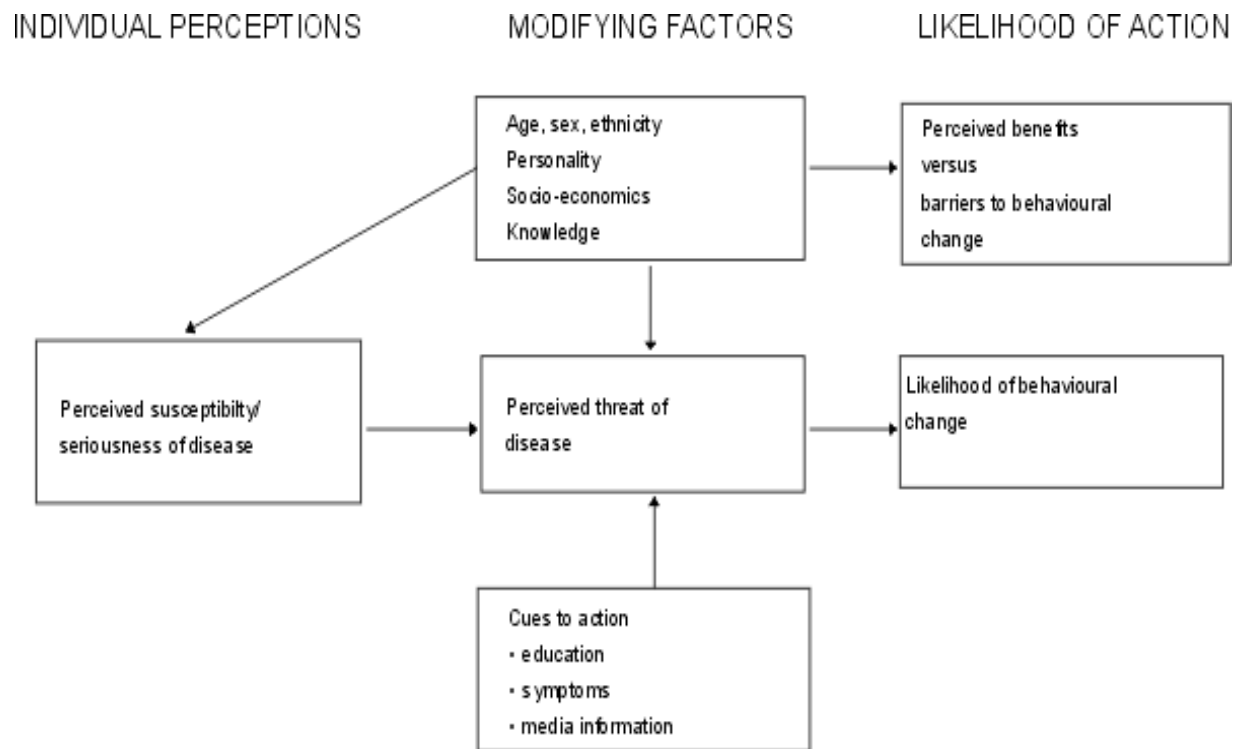


Figure 3.1: Constructs of the Health Belief Model

Source: Glanz *et al.* (2002)

3.3.1 Individual perceptions

3.3.1.1 Perceived susceptibility

In HBM, the individual judges him/herself as being at high risk of acquiring the disease or of being vulnerable to a preventable condition (Hall 2012: 74; Polit and Beck 2012: 136). In this study, a woman of reproductive age will perceive or not perceive herself as susceptible to unintended/unwanted pregnancy, which will depend on individual factors (Joti 2014: 18; Speidel and Harper 2008: 197).

3.3.1.2 Perceived seriousness of the condition

In the HBM it is assumed that after an individual has identified himself/herself as susceptible to the condition, he/she would perceive the severity of the condition as serious, which would make the individual think of the consequences thereafter (Mohsen, El-Abbassy and Khalifa 2016: 58). In this study, women of child bearing age may or may not perceive unintended and unwanted pregnancy as a threat. This may be determined by other factors which are modifying factors. Those that perceive unintended pregnancy as serious are likely to perceive consequences of unwanted pregnancy such as abortions, birth, and parenthood as very serious (Hall 2012: 3; Nathanson and Becker 1983: 49).

3.3.1.3 Perceived threat

Perceived susceptibility and perceived seriousness of the condition both become a perceived threat. Once an individual perceives a condition as being a threat, an urge to act sets in and will be influenced by information available about the condition (Hall 2012: 76; Nathanson and Becker 1983: 45). In this study, a woman would perceive unintended pregnancy as serious and posing a threat in her life, unless she takes an action to prevent it (Mohsen, El-Abbassy and Khalifa 2016: 58). This would motivate the woman to consider using a reliable contraceptive method; in this case it would be LARC methods, depending on other factors (Joti 2014: 23).

3.3.2 Modifying or enabling factors

In the HBM factors such as age, ethnicity, personality, psychological, socio-economic knowledge, cultural and educational level are associated with behaviour modification when there is a perceived threat (Polit and Beck 2012: 136; Hall 2012: 76). In this study, unintended pregnancy is likely to be perceived as a threat by the women of childbearing age, since they are still in a reproductive stage. Contraceptive behaviour as viewed through HBM is

motivated by a woman's desire to prevent unintended pregnancy (Hall 2012: 76)

3.3.3 Likelihood of action

In HBM, likelihood of behavioural change leading to action is determined by how an individual has perceived benefit of action versus perceived barriers to action. A dominating perception will determine the likelihood of action. In this study, the HBM will help the researcher to explain the reasons cited by women as related to usage of LARCs (Hall 2012: 76; Mohsen, El-Abbassy and Khalifa 2016: 58). This constructs relates to the attitudes and perceptions of women about LARC methods usage, which is one of the study objectives.

3.3.4 Perceived benefit

In HBM, an individual will perceive the proposed action as appropriate and effective to prevent the perceived threat. In this study the woman of childbearing age will perceive the use of LARCs as effective and appropriate to prevent unintended pregnancy (Nathanson and Becker 1983: 48; Mohsen, El-Abbassy and Khalifa 2016: 58). This construct relates to one of the objectives of the study, which is to determine the attitudes and perceptions of women about LARC methods.

3.3.5 Perceived barriers to taking action

In HBM, any pain, expenses, or disadvantages associated with the action would be perceived as a barrier (Mohsen, El-Abbassy and Khalifa 2016: 58). Perceived barriers to taking action would be disadvantages of using contraceptives like side effects, inconveniences, myths and misconceptions (Rosenstock 1974: 331; Polit and Beck 2012: 136). The objectives myths and misconceptions about LARC methods and side effects and adverse events of LARC methods are related to this construct of the HBM.

3.3.6 Stimulus/Cue to action

In the HBM, the internal and external stimulus would ignite action. In this study, it could be health education on LARC methods from clinics, media information, and contraceptive methods awareness campaigns (Hall 2012: 76).

3.4 SUMMARY OF THE CHAPTER

This chapter outlined the theoretical framework that guided the study. The following chapter presents the methodology employed to guide the study.

CHAPTER 4 : RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

The previous chapter focused on the theoretical frame work that guided the study. This chapter presents the research design and methodology, research rigour and ethical considerations.

4.2 DESIGN

A quantitative, descriptive survey was used to determine the factors influencing the uptake of LARC methods among women at PHC clinics in eThekweni District (Polit and Beck 2012: 10; De Vos *et al.* 2011: 32). A survey research is non-experimental in nature and involves obtaining information about peoples' activities, beliefs, preferences and attitudes through direct questioning (Polit and Beck 2012: 55). In this study, the researcher was required to identify the research design that will answer the research question "What are the factors that influence the uptake of LARC methods among women at PHC clinics in eThekweni District"? The researcher employed a survey method because the research conducted was non-experimental in nature, and the use of a self-administered questionnaire was going to help in gathering information required to answer the research question (Polit and Beck 2012: 223). The data collection tool used gathered information about participants in relation to their demographic information, reproductive history, contraceptive usage, attitudes and perceptions about LARC methods, myths and conceptions, side effects and adverse events associated with LARC methods (French 2009: 42). This design looked at gathering numerical information about the research problem in a systematic way, which was analysed statistically (Polit and Beck 2012: 14).

4.3 PARADIGM

A paradigm is how one views the world and its complexities (Polit and Beck 2012:10). Grove, Burns and Gray (2013: 702) refer to paradigm as being a particular way of viewing phenomena that encompasses a set of philosophical assumptions and guides one's approach to enquiry. In this study, a positivist paradigm was used as it is associated with quantitative research. A positivist paradigm uses a traditional scientific approach with an assumption that there is an orderly reality that can be objectively studied (Polit and Beck 2012: 738). The positivist paradigm is based on knowledge gained from 'positive' verification of observable experience rather than on introspection or intuition. The study sought to be as objective as possible in the pursuit of knowledge by using a quantitative research design in determining factors influencing the uptake of LARC methods among women at PHC clinics in eThekwin District.

4.4 SETTING

The research setting is the physical location in which data collection takes place (Polit and Beck 2012: 743). EThekwin District is a Metropolitan Health District made up of 103 wards which are urban, rural and peri-rural in nature (KZN Department of Health 2011: 8). It is a very dense district with a population of approximately 3 464 205 in a 2 297 square metre area. About 62% of eThekwin District population is below 35 years with a high birth rate and infant mortality rate (KZN Department of Health 2011: 8). In this dissertation, eThekwin District is divided into three large sub-districts which are Central sub-district, South sub-district and North-west sub-district.

Polit and Beck (2014: 392) define a setting as the physical location and conditions in which data collection takes place in a study. The study was conducted at six fixed PHC clinics, two from each sub-district. Purposive sampling of two clinics from each of the three sub-districts in eThekwin District was conducted (Polit and Beck 2014: 389). Commercial City and Addington Gateway clinics were selected from Central sub-district; R.K. Khan

Gateway clinic and KwaMashu CHC from North-west sub-district; and Umlazi U21 and Folweni clinics from South sub-district. A Gateway clinic is a PHC facility located within a hospital which provides PHC services (KZN Department of Health 2011).

4.5 SAMPLING PROCESS

4.5.1 Population

According to Polit and Beck (2014: 387) population is the entire population or individuals with same the characteristics. In this study, the population was women between 18-49 years accessing family planning. An estimated monthly total number of women accessing family planning were established from the facilities, concerned per telephone. Table 4.1 reflects the study population.

Table 4.1: Study population

Clinic	Population size
Addington Gateway clinic	800
Commercial city clinic	1500
R.K. Khan Gateway clinic	467
Kwamashu CHC	1651
Umlazi U21 clinic	1500
Folweni clinic	600
Total Population	6518

4.5.2 Sampling and sample size

Cluster sampling method would be an ideal sampling technique for the clinics however, eThekweni district and its sub-districts is too vast and financial implications for the researcher limited her. Purposive sampling is defined as a non-probability sampling method in which the researcher selects participants based on personal judgement about which ones will be more informative (Polit and Beck 2014: 389). In this study PHC clinics were purposively sampled because of geographical location, catchment area, diversity of women

accessing family planning services, and comprehensive family planning services offered. Convenience sampling involves selection of the most readily available persons as participants in a study (Polit and Beck 2014: 377). In consultation with the statistician (Appendix 8), a convenience sampling method was used to sample 371 participants. This method was ideal for the researcher because population list for random sampling could not be established as women coming for family planning services at the clinics come at any time of the day. The formula that was used to calculate the sample size was $ss=384/(1+384/population)$. Table 4.2 reflects the number of participants who were selected from each clinic. Figure 4.1 depicts the percentage (as per sample size) of each facility which participated in the study.

Table 4.2: Sample size per clinic

Clinic	Sample size
Addington Gate way clinic	46
Commercial city clinic	85
R.K. Khan Gate way clinic	27
KwaMashu CHC	94
Umlazi U21 clinic	85
Folweni clinic	34
Total	371

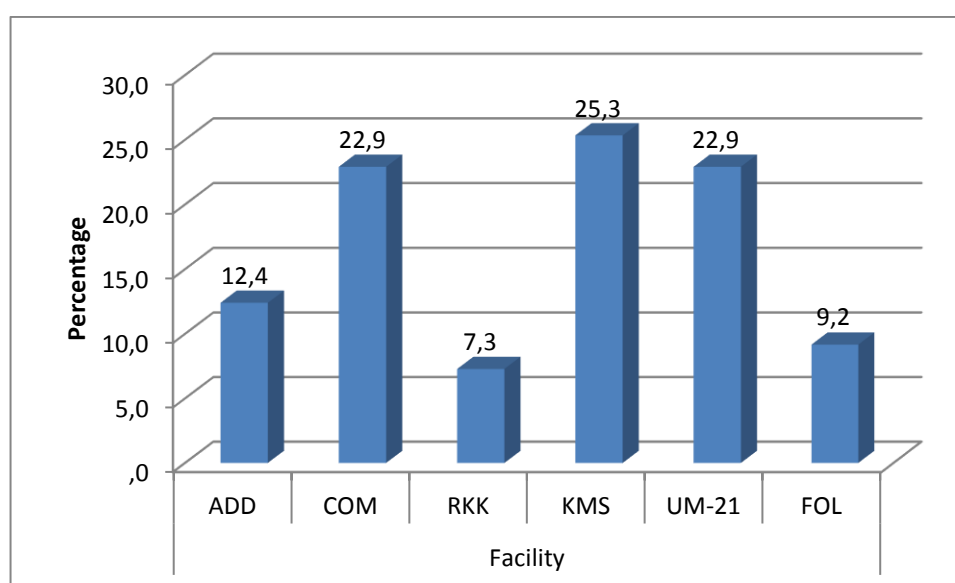


Figure 4.1: Percentages of facilities

4.5.3 Inclusion criteria

- Women between 18-49 years of age.
- Sexually active or in an intimate heterosexual relationship.
- Women who can read and write isiZulu or English.
- Women who have the mental capacity to understand and give informed consent.

4.5.4 Exclusion criteria

- Women who are less than 18 years of age, and above 49 years.
- Women who have reached menopause.
- Unable to read or write isiZulu or English.

4.6 PRE-TESTING OF THE DATA COLLECTION TOOLS

Pre-testing of data collection tools involves collection of baseline data using a newly developed instrument, before the main study is conducted (Polit and Beck 2012: 296). The pre-test of the questionnaire, which was available in English and isiZulu, was conducted with four women who met the inclusion criteria, of which two responded in English and two in isiZulu. The results of the pre-test were analysed for reliability and validity, and revealed clear understanding of the questionnaires (Polit and Beck 2012: 336). The women who participated in the pre-test were excluded from the main study and the data generated from the pre-test were excluded from the rest of the study data.

4.7 DATA COLLECTION TOOL

The data collection tool was a self-administered questionnaire which was available in English (Appendix 7a) and isiZulu (Appendix 7b). It was developed by the researcher with the assistance of the qualified statistician (Appendix 8). The study's aim and objectives of the study guided the development of the questionnaire. The reproductive history was developed in

consideration of what would be expected for a woman of child bearing age, like number of pregnancies, number of live births and any voluntary termination of pregnancies. The researcher read a variety of literature on contraception, contraceptive methods including LARC methods and their usage, as detailed in Chapter 2. The reports from these studies assisted the researcher to identify challenges associated with LARCs, and questions were developed based on these factors. In addition, information from the eThekweni Health District report on contraceptive implants and IUCDs (mentioned in the problem statement in Chapter 1) was used in the development of questions. The statistician assisted with the technical presentation of the questionnaire.

The data collection tool was divided into five sections (Polit and Beck 2012: 725). Section A comprises demographic data of the participants, namely: age, marital status of the participant, highest level of education passed, home language and the race of the participant. The demographic data analysed in chapter five and further discussed in chapter 6. Section B is related to reproductive history with four questions and contraceptive usage with eleven questions. The questions assessed reproductive history and measured the level of contraception usage among women which was crucial. Section C consists of attitudes and perceptions about LARC methods, and there are eleven statements. Section D is related to myths and misconceptions related to LARC methods, with eight statements. Section E is related to side effects and adverse events related to LARC methods. There are thirteen questions in this section.

4.8 DATA COLLECTION PROCESS

The data collection process involves gathering of research data using a data collection tool so as to address a research problem (Polit and Beck 2012: 725). The potential participants were identified in the waiting area of the clinics where the study took place, but were interviewed during their tea and lunch breaks, so as not to interfere with clinic services. The researcher conducted an information session in English and isiZulu with potential

participants, using an information letter about the study (Appendices 5a and 6a). The interested participants were offered an information letter and informed consent to read. They were given the opportunity to ask questions if they needed clarifications, and they signed consent prior to the data collection process (Appendices 5b and 6b). In each clinic, the researcher requested any available room from clinic management, to explain further about the study to those interested, sign informed consent and for completion of the questionnaire thereafter. The researcher was assisted by the Research Assistant with distribution of questionnaires, attending to concerns from respondents like clarification of questions but not helping them with completion of the questionnaire. The time spent by participants differed with understanding and literacy level. Each participant had one encounter with the researcher. The whole process took about 30-35 minutes of participants' time. The researcher was available in the background to attend to questions or concerns pertaining to the questionnaire (De Vos *et al.* 2011: 188). The participants put their completed questionnaires into a sealed box that was only opened by the researcher. The data collection process was done from 17 November 2016 to 14 January 2017.

4.9 DATA ANALYSIS

Data analysis involves systematic organization and synthesis of research data and, in quantitative studies involves the testing of hypotheses using those data (Polit and Beck 2012: 725). Descriptive statistics are statistics used to describe and summarise data (Polit and Beck 2012: 725). Polit and Beck (2012: 721) define inference in research as drawing a conclusion from the study evidence, taking into account the method used to generate that evidence (Polit and Beck 2012: 737). The statistician assisted the researcher with the reduction and analysis of the data, using SPSS version 23.0. Inferential statistics were used to determine any relationship between variables. Descriptive statistics including means and standard deviations where applicable were used in this data analysis, for example in the

description of the reproductive history of the respondents (Polit and Beck 2012: 725). Frequencies were represented in tables and graphs.

A chi-square goodness of fit test was applied to the data regarding contraceptive use, to see if any of the response options were selected significantly more often than the others. Under the null hypothesis, it is assumed that all responses are equally selected (Polit and Beck 2012: 408). Binomial tests were used to test whether significant proportions of participants selected yes or no in response to interest in LARC use (Polit and Beck 2012: 407). Binomial tests were again used to test significant responses of participants to side effects and adverse events of LARC methods. One-sample tests were used to test significant agreement/disagreement of participants regarding attitudes and perceptions as well as myths and misconceptions towards LARC methods (Polit and Beck 2012: 410). A five point Likert scale was used to assess attitudes and perceptions of participants towards LARC, and to assess myths and misconceptions about LARC methods (Polit and Beck 2012: 732).

4.10 RESEARCH RIGOUR

According to Grove Burns and Gray (2013: 708 cited in Singh 2014: 25), rigour refers to striving for excellence in research through the use of discipline, scrupulous attention to detail, and strict accuracy. Because of sampling technique used research rigour was not according to the standard of the principles of quantitative research design (Polit and Beck 2012: 59). This was identified as one of the study limitations. Two PHC clinics from each sub-district of the three participating sub-districts were purposively sampled, as explained in Section 4.5. The participants were conveniently sampled from these clinics. The data collection tool was solely developed for this study with the help of the statistician, to ensure that all three objectives of the study were represented in the questionnaire.

4.10.1 Validity

Validity is defined by Polit and Beck (2012: 745) as the degree to which an instrument measures what it is intended to measure. Brink (2009: 200) defines content validity as an assessment of how well the instruments represent all the components of the variable to be measured. The questionnaire was developed by the researcher with the help of the statistician for this study, to ensure that all the objectives of the study and components of variables were represented. Section C consisted of questions that required participants to indicate their agreement with the attitudes and perceptions about LARC methods, which was related to the first study objective as stated in chapter one. In HBM, perceived benefits construct relates to the perceived effectiveness, feasibility and other advantages of using the contraceptive methods, which influence the attitude and perception of a woman towards contraceptives; in this case LARC methods (Hall 2013: 4). Section D comprised questions on myths and misconceptions related to LARC methods, which was in line with second study objective. The HBM constructs related were perceived barriers which were negative consequences of using LARC methods, possibly influenced by misinformation from myths and misconceptions (Kakaire 2014: 1090; Hall 2014: 3). Section E constituted side-effects and adverse events of LARC methods, also was in line with third study objective. Perceived barriers of using LARC methods, (HBM construct) were side effects and adverse events related to the third objective (Hall 2014:3). The researcher was informed by literature reviewed when developing the questionnaire. The pre-test of the questionnaire was tested for wording and ambiguity on four respondents of which two responded in English and two in isiZulu. The feedback indicated that the questionnaire was understood by respondents.

4.10.2 Reliability

According to Polit and Beck (2012: 741), reliability is the degree of consistency or dependability with which an instrument measures an attribute it

is designed to measure. The questionnaire was translated from English to isiZulu and back translated to English by a competent translator to ensure consistency. The Cronbach Alpha is applicable if there is a set of questions that measure one theme. So this did not apply in this study because of several yes/no questions and other categories. Data collection tool was initially drafted in English and was submitted to the Statistician for technical presentation. It was then translated into isiZulu, and back translated into English. It was approved by the ethics committee after minor corrections were attended to by the researcher. Furthermore, it was pre-tested, and the feedback from participants assisted in ensuring consistency.

4.11 ETHICAL CONSIDERATIONS

Permission to conduct the study and collect data was sought from the KZN Department of Health (Provincial Department of Health) (Appendices 2a and 2b), eThekweni Health District (Appendices 3a and 3b) and Chief Executive Officers (CEOs) of the selected hospitals (Appendices 4a and 4b). Ethical approval was obtained from the Institutional Research Ethics Committee (IREC No 108/16) (Appendix 1). Participants were informed that their participation was voluntary (Appendices 5a and 6a), and were requested to sign an informed consent (Appendices 5b and 6b). They were also informed that they could withdraw from participating in the study at any point without any form of penalty (self-determination) (Brink 2009: 32). The informed consent form was written in English and isiZulu to ensure clear understanding of the information contained therein. Completed informed consent forms with participants' particulars were kept under lock and key by the researcher. Code numbers instead of names were used to ensure anonymity and confidentiality (right to privacy) (Brink 2009: 33). The study was conducted at the local clinics during the clinic visit (right to protection from discomfort and harm) so there were no extra travelling costs for the participants (Brink 2009: 33).

4.12 SUMMARY OF THE CHAPTER

This chapter presented the research design and methodology, inclusion and exclusion criteria; data collection process, data analysis; research rigour; and ethical considerations. The next chapter will present the results.

CHAPTER 5 : PRESENTATION OF RESULTS

5.1 INTRODUCTION

The previous chapter presented the research design and methodology, inclusion and exclusion criteria, data collection process, data analysis, research rigour, and ethical considerations. In this chapter, the data collected through use of the questionnaire will be presented and analyzed. A total number of 371 participants from six fixed PHC clinics participated in the study. The data collection was conducted between 17 December 2016 and 14 January 2017. There was 100% (n = 371 participants) response as per sample size. The research instrument used consisted of five sections. Section A consisted of demographic data, which described the characteristics of participants. Section B was divided into two sub-sections which was reproductive history and contraceptive usage of participants. Section C consisted of attitudes and perceptions of participants about LARC methods. Section D was made up of myths and misconceptions of participants towards LARC methods and section E consisted of side effects and adverse events of LARC methods.

Different statistics and tests were used to report the study results arising from data analysis. These were explained in detail in Chapter 4. The results are presented below.

5.2 SECTION A: DEMOGRAPHIC INFORMATION

This section describes the characteristics of participants, namely age, marital status, highest level of education, language, and race.

5.2.1 Age

Descriptive statistics were used to describe the minimum and maximum age of participants, mean, and standard deviation (Polit and Beck 2012: 725). The minimum age of participants was 18 and maximum was 49 years, with mean of 28.32 and standard deviation of 6.501 (Table 5.1).

Table 5.1: Age of participants

	N	Minimum	Maximum	Mean	Std. Deviation
Age – Exact	371	18	49	28.32	6.501
Valid N (list wise)	371				

Figure 5.1 below reflects the age distribution of participants. The majority of participants were in the 21-30 years of age group (60.1%, n = 223), followed by the 31-40 group (27%, n = 100), the up to 20 years group (7.8%, n = 29), and the over 40 group (5.1%, n = 19).

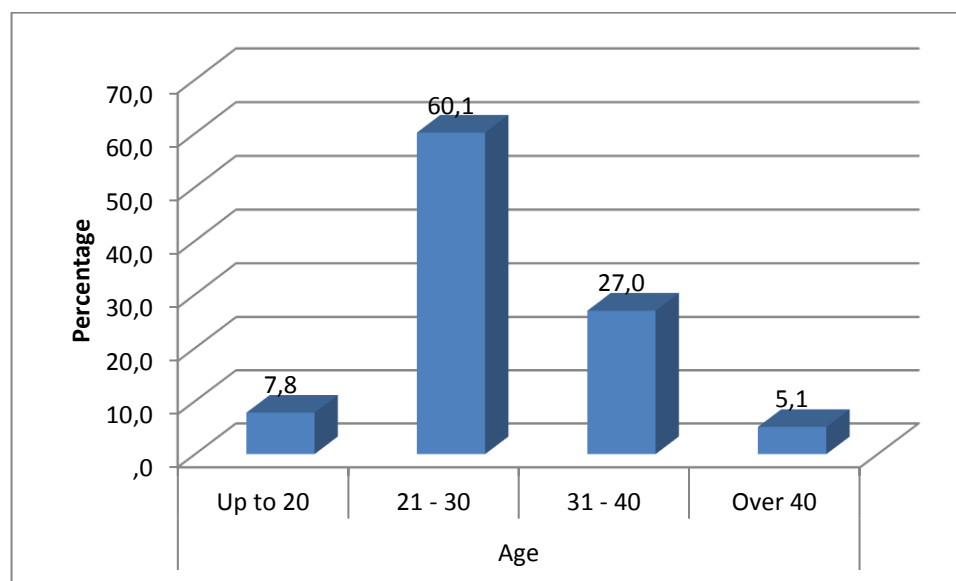


Figure 5.1: Age distribution

5.2.2 Marital status

Of the 371 participants 83.3% (n = 309) were single, 16.2% (n = 60) married, and 0.5% (n = 2) were divorced. Figure 5.2 reflects the marital status of participants.

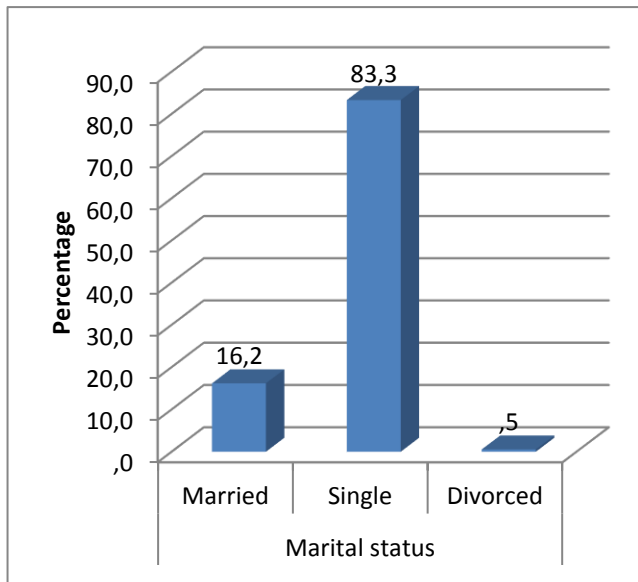


Figure 5.2: Marital status of participants

5.2.3 Level of highest education

Of the 371 participants 2.4% (n = 9) were ranging between grade R to 6, 7.0% (n = 26) grade 7-9, 63.1% (n = 234) grade 10-12, and 27.5% (n = 102) had tertiary education, as reflected in Figure 5.3.

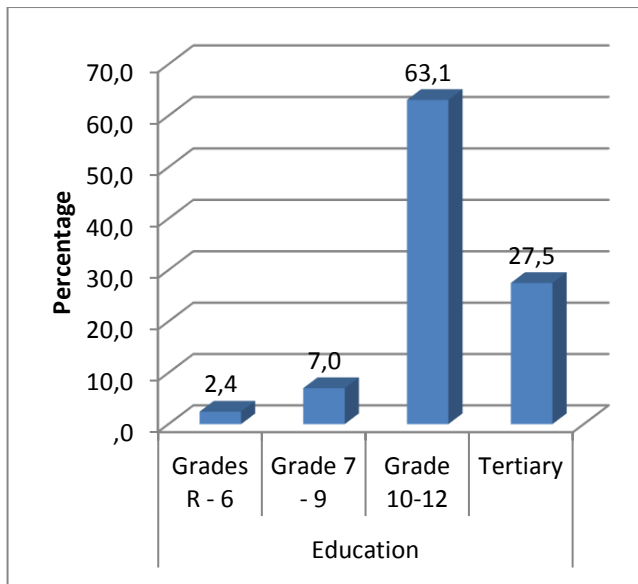


Figure 5.3: Highest level of education

5.2.4 Home language

Figure 5.4 outlines the language of choice of participants. With 8.6 % (n = 32) of the participants, English was the home language, 84.1% (n = 312) isiZulu, 6.5% (n = 24) isiXhosa, and 0.8% (n = 3) had some other language as their home language.

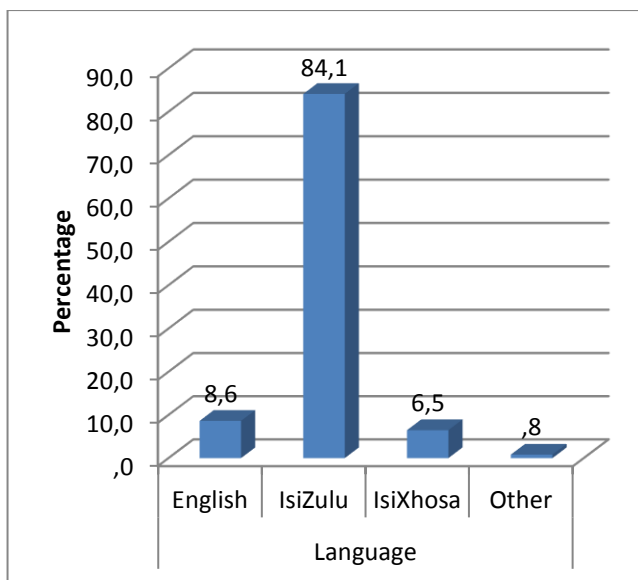


Figure 5.4: Home language

5.2.5 Race

Of the 371 participants 96.0% (n = 356) were Black, followed by Coloured 1.9% (n = 7), Indian 1.6% (n = 6), White 0.3% (n = 1) and other 0.3% (n = 1), as reflected in Figure 5.5.

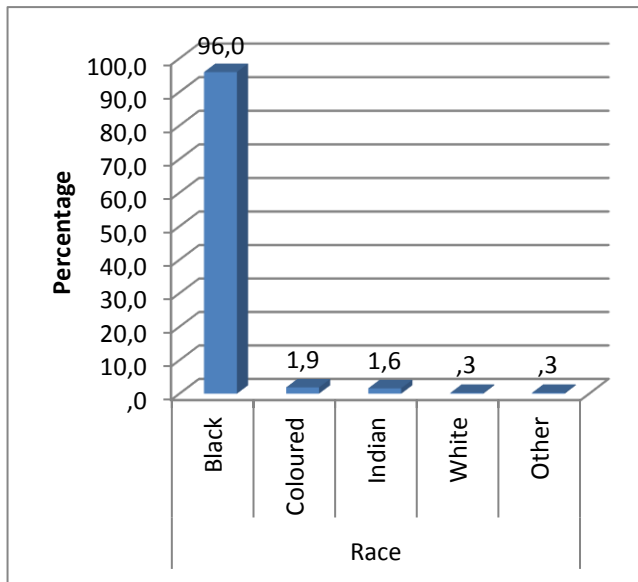


Figure 5.5: Race

The study results as outlined in Figure 5.6 indicate that most participants were single, with a highest level of education ranging between grades 10-12, isiZulu speaking, and Black.

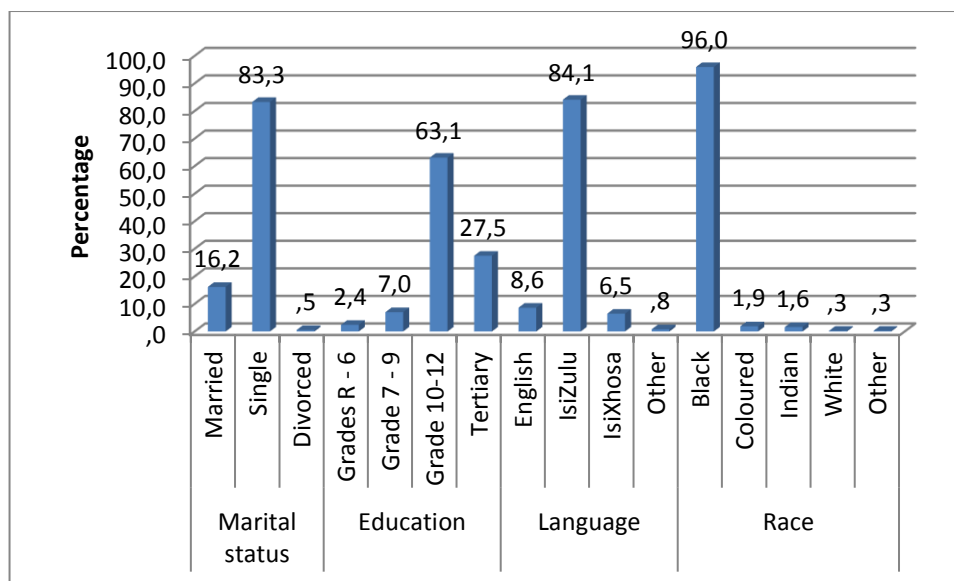


Figure 5.6: Demographic information of participants

5.3 SECTION B: REPRODUCTIVE HISTORY

This section enquired into the reproductive history of participants, namely, number of own children, number of pregnancies, number of live births, and number of voluntary terminations of pregnancy. Contraceptive usage of participants was also outlined.

5.3.1 Number of children of your own

As can be seen from Figure 5.7, of the 371 participants, 4.9% (n = 18) reported to have no children, 43.7% (n = 162) reported one child of their own, 30.5% (n = 113) reported two, 15.6% (n = 58) reported three, 4.3 % (n = 16) reported four, and 1.1% (n = 4) reported to have five children of their own.

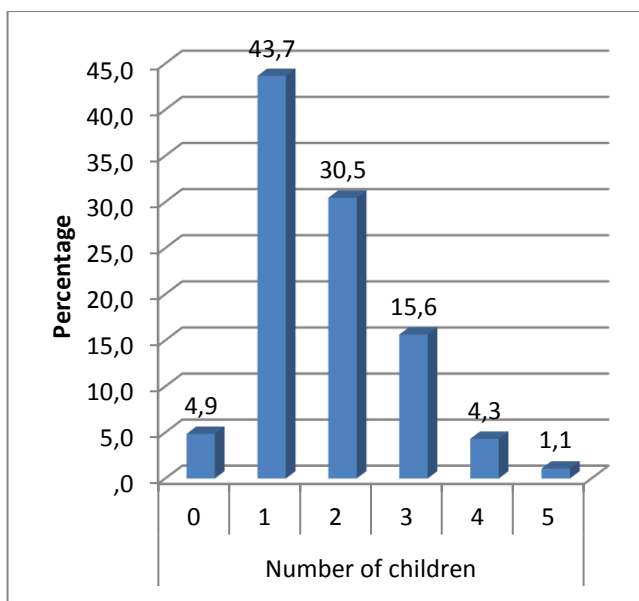


Figure 5.7: Number of children

5.3.2 Number of pregnancies

As can be seen from Figure 5.8, of the 371 participants, 4.6% (n = 17) reported zero number of pregnancies, 39.9% (n = 148) reported one; 31.8% (n = 118) reported two; 16.3% (n = 60) reported three; 5.9% (n = 22) reported four, and 0.3% (n = 1) reported five pregnancies.

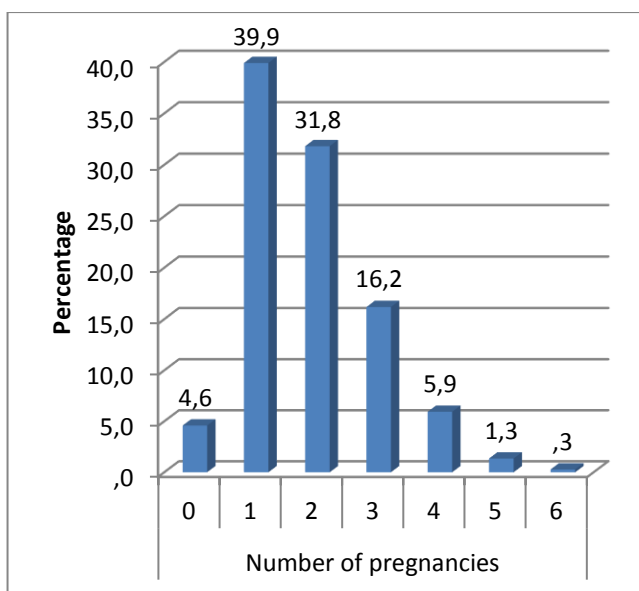


Figure 5.8: Number of pregnancies

5.3.3 Number of live births

As can be seen from Figure 5.9, of the 371 participants, 4.9% (n = 18) reported zero live births, 43.9% (n = 163) reported one, 30.5% (n = 113) reported two, 15.4% (n = 57) reported three, 4.3% (n = 16) reported four, and 1.1% (n = 4) reported five live births.

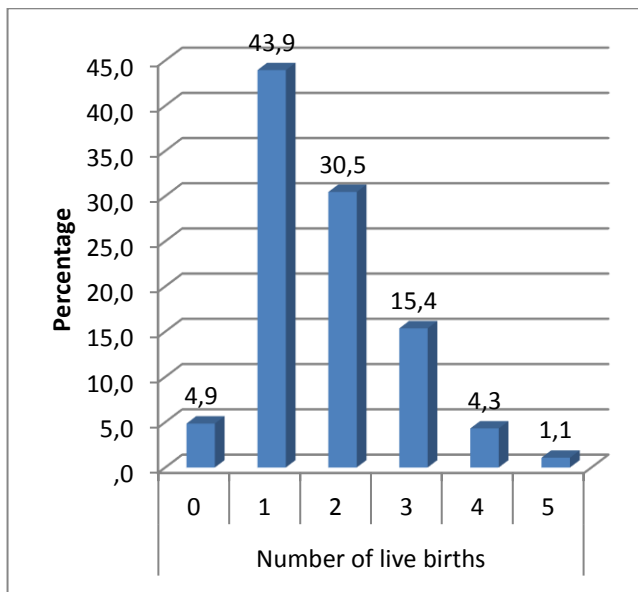


Figure 5.9: Number of live births

5.3.4 Number of voluntary termination of pregnancy

As can be seen from Figure 5.10, of the 371 participants, 93.0% (n = 346) reported no voluntary termination of pregnancy, 5.9% (n = 22) reported having had one, and 1.1% (n = 4) reported two terminations of pregnancy.

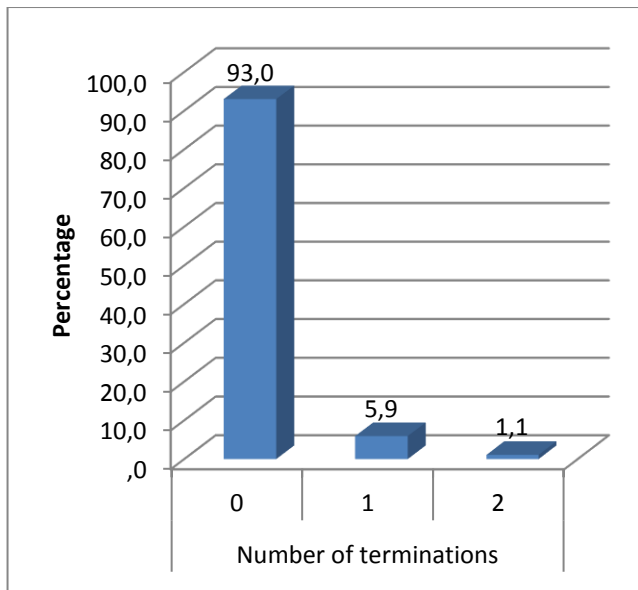


Figure 5.10: Number of voluntary termination of pregnancy

Descriptive statistics (Table 5.2) were used to describe the minimum number of children of own which was minimum 0, maximum 5, mean 1.74, and standard deviation 0.996. Participants having been pregnant was minimum 0, maximum 6, mean 1.84, and standard deviation 1.060. The number of live births was the same as number of children of own. Voluntary termination of pregnancy was minimum 0, maximum 2, mean 0.08, and standard deviation 0.310.

Table 5.2: Reproductive history of participants

	N	Minimum	Maximum	Mean	Std. Deviation
1.1 Number of children of your own.	371	0	5	1.74	.996
1.2 Number of times you have been pregnant.	371	0	6	1.84	1.060
1.3 Number of live births.	371	0	5	1.74	.995
1.4 Number of voluntary terminations of pregnancy / abortions you have had (this does NOT include miscarriages).	371	0	2	.08	.310
Valid N (list wise).	371				

The study results indicated that more participants had one child of own, one pregnancy, one live birth and never had termination of pregnancy as outlined in Figure 5.3.

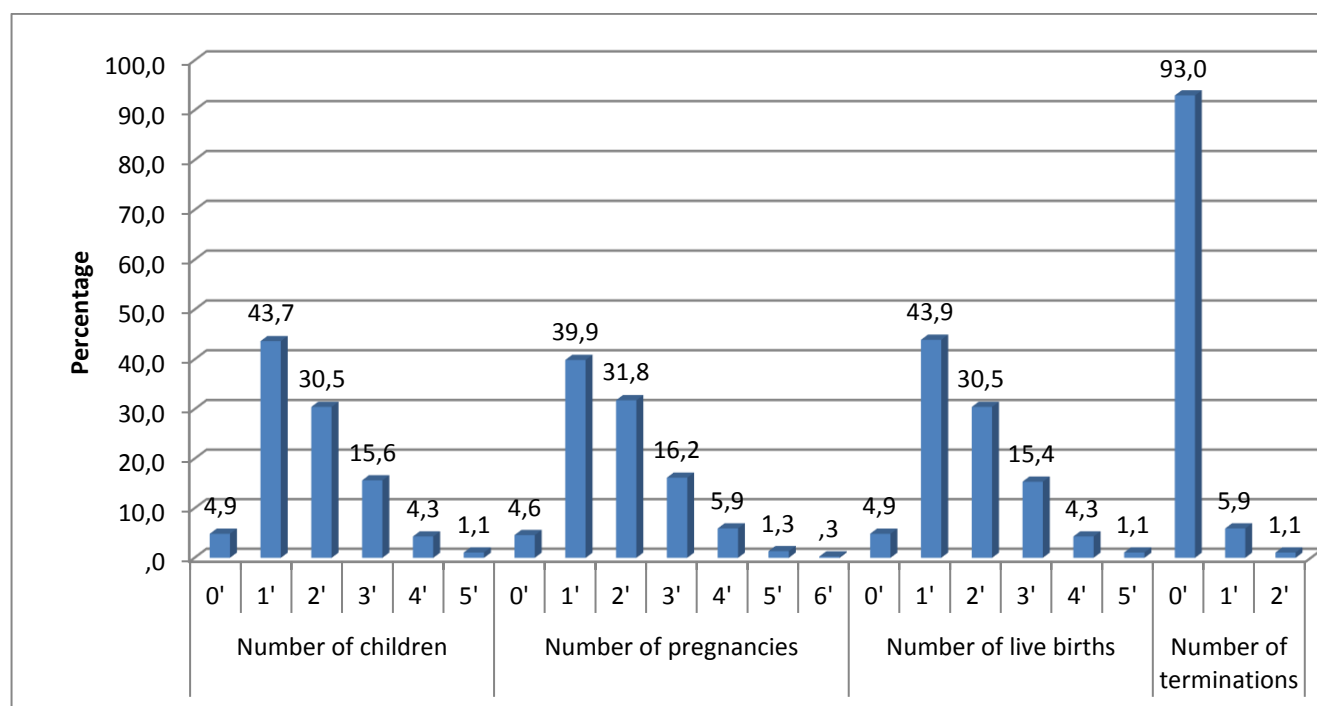


Figure 5.11: Reproductive information of participants

5.3.5 Contraceptive usage

- Oral contraceptive pills: of the 371 participants, 72.8% (n = 270) reported to have never used contraceptive pills, 13.2% (n = 49) used but stopped, and 14.0% (n = 52) were still using.
- Injection: 9.2% (n = 34) participants never used injections, 24 % (n = 89) used but stopped, and 66.8% (n = 248) were still using.
- Intrauterine device: 94.9% (n = 352) participants never used intrauterine devices, 3.0% (n = 11) used but stopped, and 2.2% (n = 8) were still using.
- Contraceptive implants: 87.3% (n = 324) participants never used contraceptive implants, 5.7% (n = 21) used but stopped, and 7.0% (n = 26) were still using.

- Other methods: Of the 371 participants, 89.8% (n = 333) did not answer the “used but stopped using” question. Out of the 38 participants that responded, 0.3% (n = 1) never used, and 10.0 % (n = 37) were still using. Figure 5.4 reflects the results of the question on contraception use.

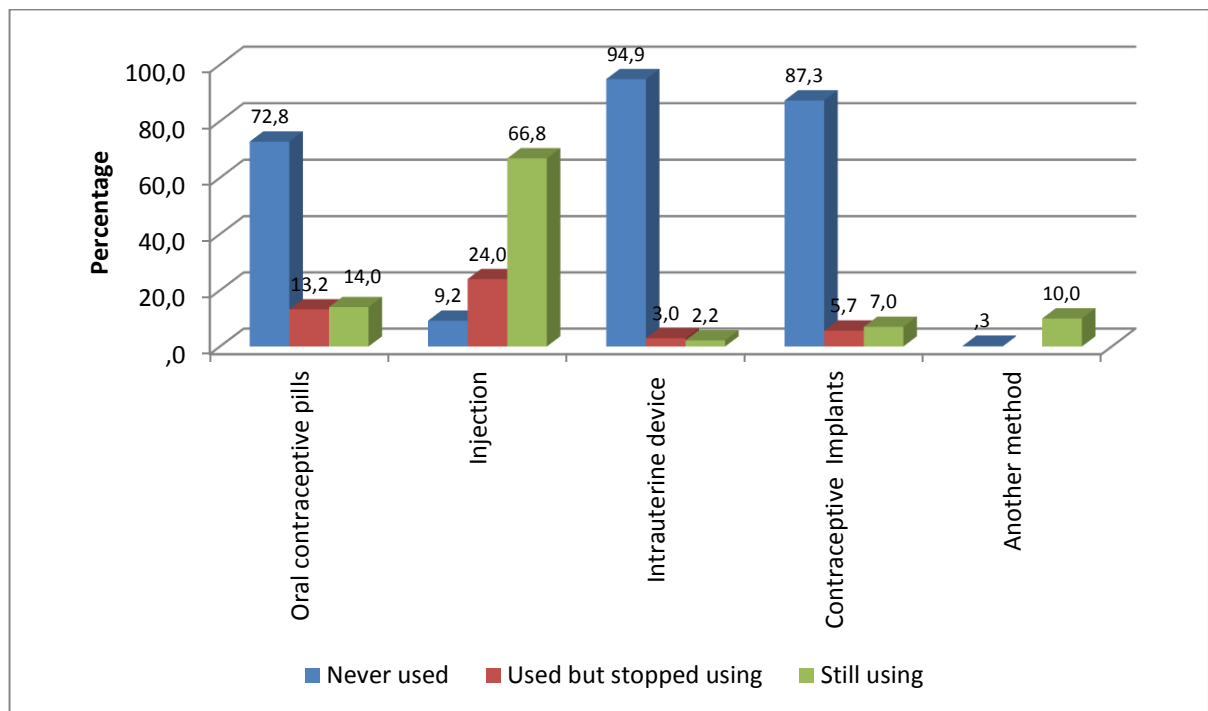


Figure 5.12: Results of contraception use

A chi-square goodness of fit test (Table 5.3) was used to test if any of the response options was selected significantly more often than the others. A significant number indicated that they have never used: the contraceptive pill ($\chi^2 (2) = 259.768$, $p < .0005$); an intrauterine device ($\chi^2 (2) = 632.415$, $p < .0005$); or contraceptive implants ($\chi^2 (2) = 486.895$, $p < .0005$). A significant number indicated that they were still using the injection ($\chi^2 (2) = 199.736$, $p < .0005$).

Table 5.3: Chi-square goodness of test – significant responses to contraceptive use

	Oral contraceptive pills	Injection (depot medroxyprogesterone acetate and / or norethisterone enanthate)	Intrauterine device sometimes called loop	Contraceptive Implants
Chi-Square	259.768 ^a	199.736 ^a	632.415 ^a	486.895 ^a
Df	2	2	2	2
Asymp. Sig.	.000	.000	.000	.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 123.7.

5.3.6 The main reasons for stopping contraception

Contraceptive pills (Table 5.4): Of the 12.9% (n = 48) of the participants who stopped using the contraceptive pill, the majority 66.7% (n = 32) indicated that their discontinued use was because they had experienced side effects (χ^2 (3) = 50.167, $p < .0005$). A further 6.3% (n = 3) wanted to fall pregnant, 2.1% (n = 1) stopped because their partner did not want them to continue using the pill, and 25% (n = 12) stopped for another reason.

Table 5.4: Oral contraceptive pills

	Observed N	Expected N	Residual
Wanted to fall pregnant	3	12.0	-9.0
Experienced side effects	32	12.0	20.0
My partner did not want me to continue using it	1	12.0	-11.0
Another reason	12	12.0	.0
Total	48		

Injection (Table 5.5): Of the 23.4% (n = 87) of those who stopped using the injection, the majority 83% (n = 72) indicated that their discontinued use was because they had experienced side effects (χ^2 (3) = 156.543, $p < .0005$). A further 2.2% (n = 2) wanted to fall pregnant, 3.4% (n = 3) stopped because their partner did not want them to continue using the injection, and 11.4% (n = 10) stopped for another reason.

Table 5.5: Injection (depot medroxyprogesterone acetate and/or norethisterone enanthate)

	Observed N	Expected N	Residual
Wanted to fall pregnant	2	21.8	-19.8
Experienced side effects	72	21.8	50.3
My partner did not want me to continue using it	3	21.8	-18.8
Another reason	10	21.8	-11.8
Total	87		

Intrauterine device (Table 5.6): Of the 3.2% (n = 12) of participants who stopped using the intrauterine device, the majority 58.3% (n = 7) indicated that their discontinued use was because they had experienced side effects (χ^2 (3) = 8.000, p = .048). A further 8.3% (n = 1) wanted to fall pregnant, 8.3% (n = 1) stopped because their partner did not want them to continue using the intrauterine device; and 25% (n = 3) stopped for another reason.

Table 5.6: Intrauterine device sometimes called loop

	Observed N	Expected N	Residual
Wanted to fall pregnant	1	3.0	-2.0
Experienced side effects	7	3.0	4.0
My partner did not want me to continue using it	1	3.0	-2.0
Another reason	3	3.0	.0
Total	12		

Contraceptive implant (Table 5.7): Of the 6% (n = 21) of the participants who stopped using the contraceptive implant, the majority 71.4% (n = 15) indicated that their discontinued use was because they had experienced side effects (χ^2 (3) = 25.286, p < .0005). A further 5% (n = 1) wanted to fall pregnant, 5% (n = 1) stopped because their partner did not want them to continue using the contraceptive implant, and 19.0% (n = 4) stopped for another reason.

Table 5.7: Contraceptive implants

	Observed N	Expected N	Residual
Wanted to fall pregnant	1	5.3	-4.3
Experienced side effects	15	5.3	9.8
My partner did not want me to continue using it	1	5.3	-4.3
Another reason	4	5.3	-1.3
Total	21		

The chi-square tests (Table 5.8) showed that a significant number of participants had experienced side effects: contraceptive pill ($\chi^2 (3) = 50.167$, $p < .0005$); intrauterine device ($\chi^2 (3) = 8.000$, $p = .048$); contraceptive implants ($\chi^2 (3) = 25.286$, $p < .0005$); injection ($\chi^2 (3) = 156.540$, $p < .0005$).

Table 5.8: Chi-square Test Statistics. Main reasons for stopping contraception use

	Oral contraceptive pills	Injection (depot medroxyprogesterone acetate and / or norethisterone enanthate)	Intrauterine device sometimes called loop	Contraceptive implants
Chi-Square	50.167 ^a	156.540 ^b	8.000 ^c	25.286 ^d
Df	3	3	3	3
Asymp. Sig.	.000	.000	.046	.000
Exact Sig.	.000	.000	.048	.000
Point Probability	.000	.000	.011	.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 12.0.

The study results indicated that the main reason for stopping contraception use were side effects and adverse events of LARC methods. Figure 5.13 depicts the main reasons for stopping contraception use.

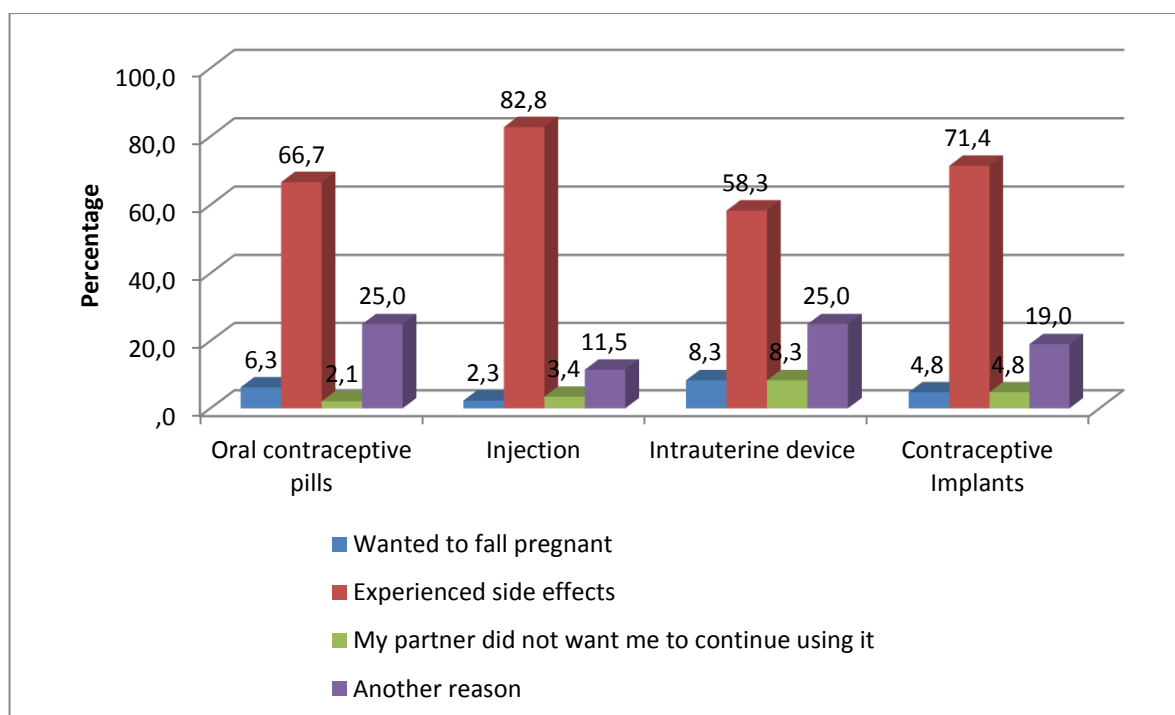


Figure 5.13: The percentage of the main reasons for stopping contraception use

5.3.7 Interest in using LARC methods

Binomial tests were used to test the significance of the proportion who indicated yes or no as reflected in Table 5.9. A significant number 61% (n = 225) indicated that they were not interested in using LARC methods in the form of intrauterine device or implants ($p < .0005$). This is also shown in Figure 5.14.

Table 5.9: Interest in using LARC methods

		Category	N	Observed Prop.	Test Prop.	Asymp. Sig. (2-tailed)
Are you interested in using long acting reversible contraceptive methods in the form of intrauterine device or implants?	Group 1	Yes	146	.39	.50	.000 ^a
	Group 2	No	225	.61		
	Total		371	1.00		

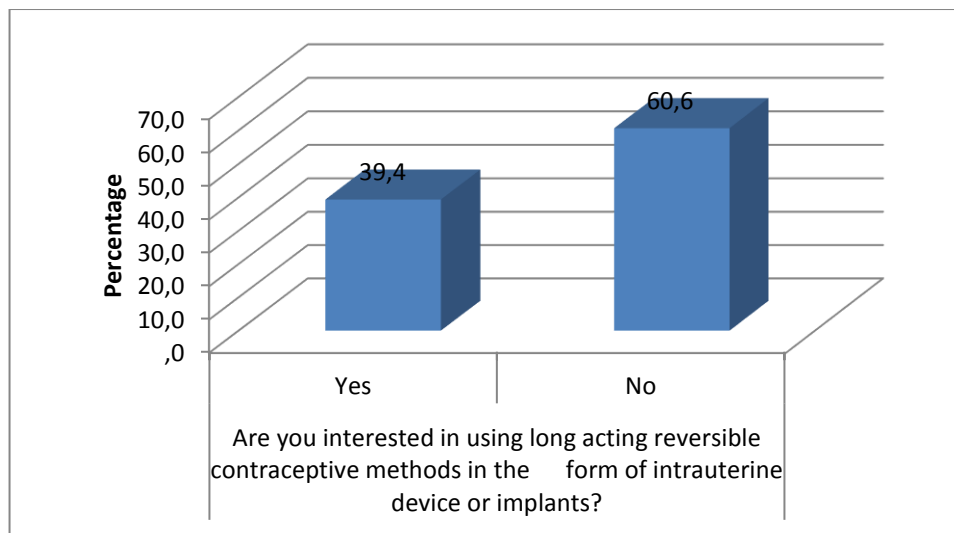


Figure 5.14: The percentage of interest in using LARC methods

5.4 SECTION C: ATTITUDES AND PERCEPTIONS OF PARTICIPANTS TOWARDS LARC METHODS

Section C consisted of questions which were aimed at determining attitudes and perceptions of participants towards LARC methods. There were 11 questions. A five point Likert scale was used to assess attitudes and perceptions of participants about LARC methods.

One-sample tests were used to test significant agreement/disagreement of participants about attitudes and perceptions. There is significant agreement that: using an intrauterine device is good because it gives a chance to have a pelvic examination ($t(370) = 3.483, p < .001$); an intrauterine device is good because a monthly visit to the clinic is not necessary ($t(370) = 7.956, p < .0005$); implants are suitable for young women, especially those in high school, they are suitable for those doing tertiary education, and those who have just started working ($t(370) = 4.753, p < .0005$); using an intrauterine device is good for women because they can space the birth of their children ($t(370) = 9.751, p < .0005$). LARC methods are good because, when used consistently, they prevent unintended pregnancies ($t(370) = 10.163, p < .0005$); and LARC methods are for women who have previously had children ($t(369) = 3.617, p < .0005$).

There is significant disagreement that: an intrauterine device is suitable for young women who have never been pregnant ($t(370) = -7.013, p < .0005$); a woman needs the approval of her male partner in order to use LARC methods ($t(370) = -8.352, p < .0005$); it is better to use implants because one does not have to go through a pelvic examination ($t(370) = -7.533, p < .0005$); and using implants is associated with stigma in the community ($t(370) = -16.041, p < .0005$). Figure 5.15 outlines the results of attitudes and perceptions of participants towards LARC methods

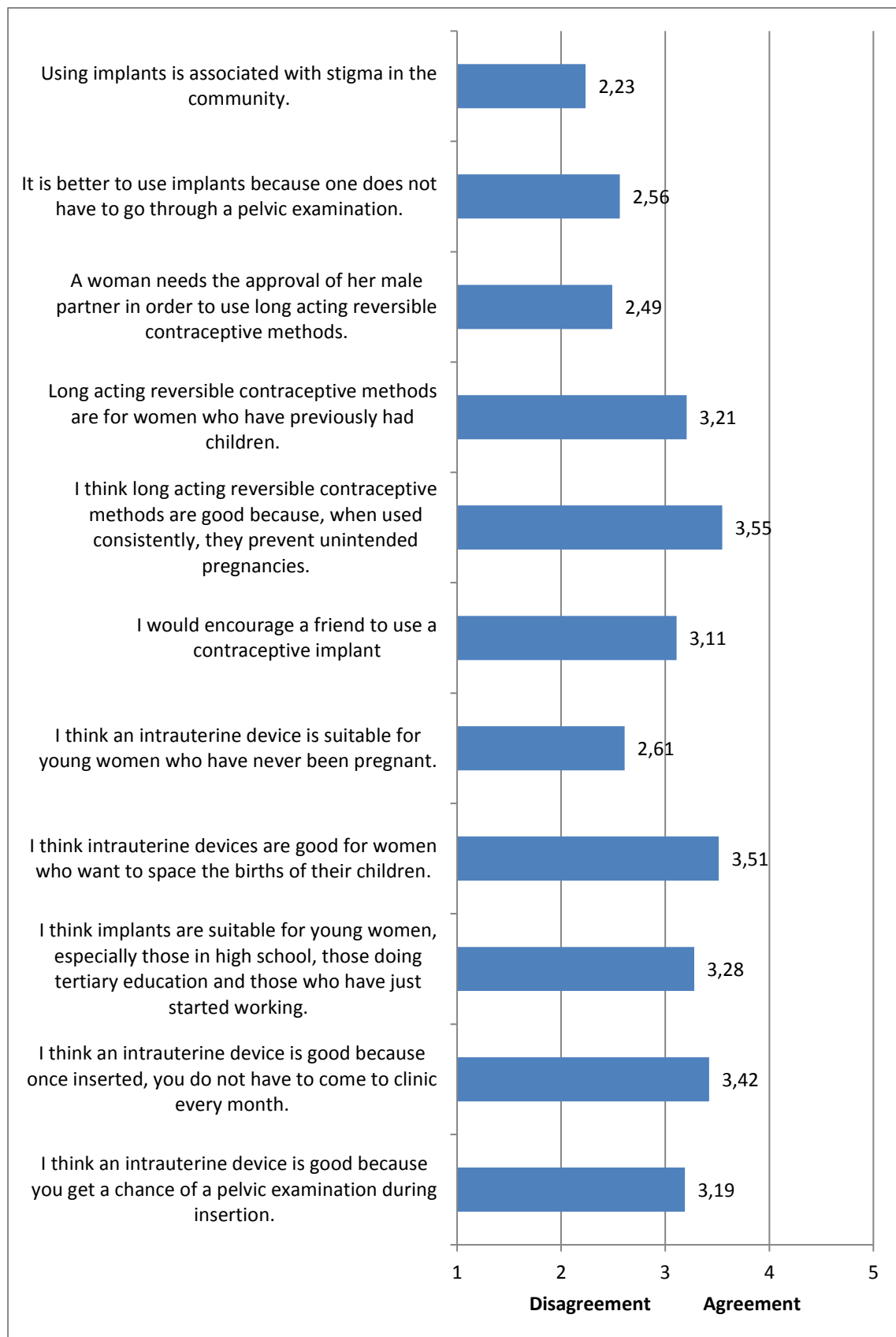


Figure 5.15: Results of attitudes and perceptions towards LARC methods

5.5 SECTION D: MYTHS AND MISCONCEPTIONS ABOUT LARC METHODS

This section investigated myths and misconceptions about LARC methods (Figure 5.16). Eight questions were asked. A five point Likert scale was used to assess myths and misconceptions about LARC methods.

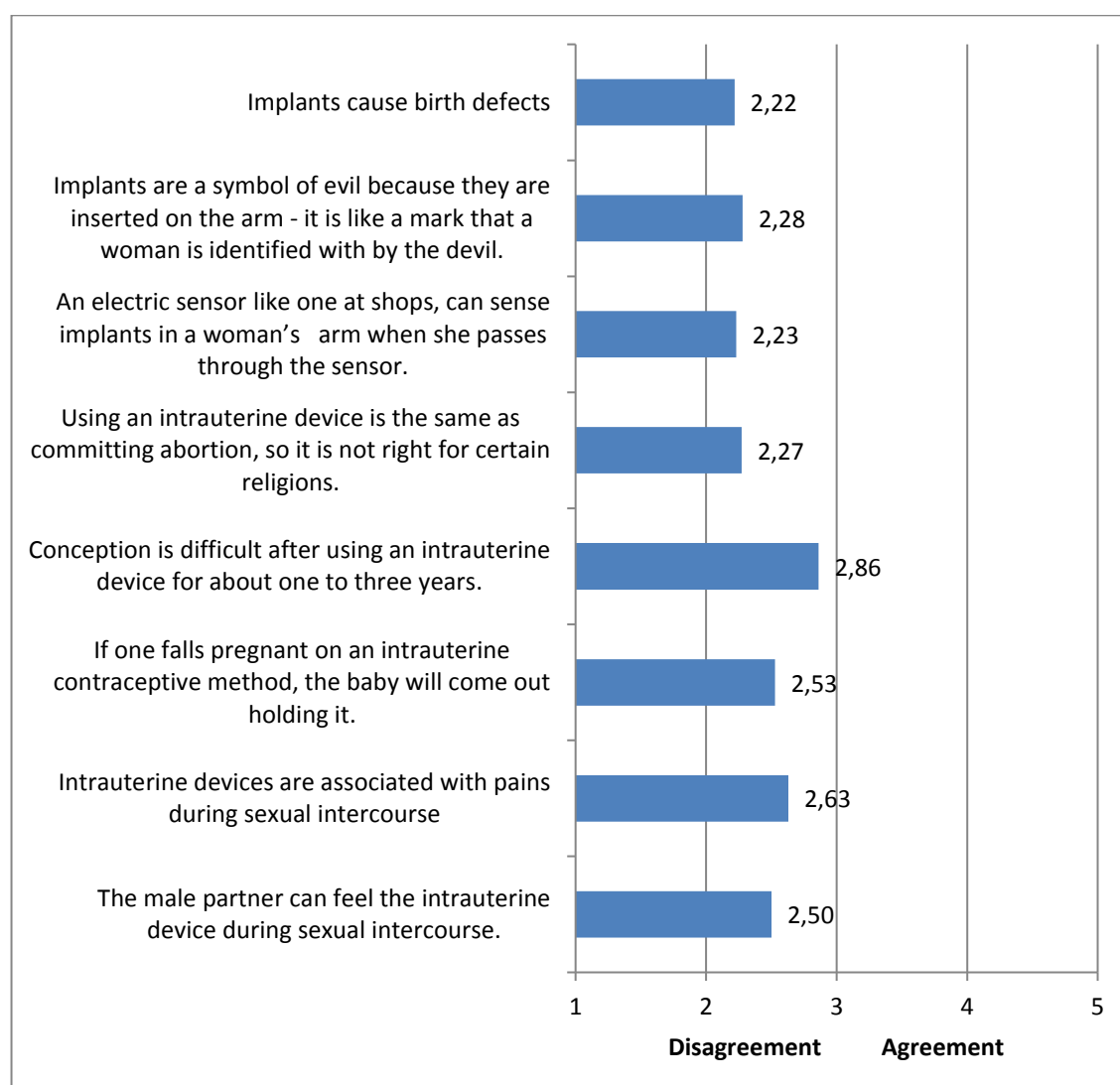


Figure 5.16: Results of myths and misconceptions of LARC methods

5.6 SECTION E: SIDE EFFECTS AND ADVERSE EVENTS OF LARC METHODS

Section E investigated side effects and adverse events of LARC methods. Five questions were about side effects and adverse events related to intrauterine devices and eight questions were about contraceptive implants.

For the analysis of side effects and adverse events towards LARC methods, the researcher considered only those to whom the questions applied. A binomial test was used to test whether a significant proportion of participants responded yes or no to side effects and adverse events. This is outlined in Table 5.12. A significant 78% (18 out of 23) proportion indicated that they did not suffer from pelvic inflammatory disease while using an intrauterine device ($p = .011$); 95% (18 out of 19) had no intrauterine device removed because it partially came out on its own ($p < .0005$); 100% (19 out of 19) had no intrauterine device removed because it had perforated the cervix ($p < .0005$); 100% (19 out of 19) had no ectopic pregnancy while using an intrauterine device as a method of contraception ($p < .0005$).

A significant 66% (29 out of 44) proportion suffered irregular vaginal bleeding when they started using implants ($p = .049$); 91% (41 out of 45) did not fall pregnant while on a contraceptive implant ($p < .0005$); 100% (45 out of 45) had no contraceptive implant removed because it migrated to the chest area ($p < .0005$); 76% (34 out of 45) indicated that it was not very painful when the contraceptive implant was removed ($p = .001$); 86% (37 out of 43) indicated they did not suffer severe skin rash from a contraceptive implant insertion ($p < .0005$); 66% (29 out of 44) did not experienced breast tenderness and mood swings when started using contraceptive implants ($p = .049$).

The study results indicated that there were no participants 100% (19 out of 19) who had an ectopic pregnancy while using intrauterine device, and no participants 100% (19 out of 19) had an intrauterine device removed because it perforated the cervix. The study results also revealed that more than half of

participants 66% (29 of 44) who were using contraceptive implants reported that they suffered irregular vaginal bleedings when they started using it. Figure 5.17 outlines the results of the responses of participants to side effects and adverse events of LARC methods.

The relationship between age and the myths and misconceptions was tested and no correlations exist between age and any of these items. A binomial test was conducted to see if the side effects were experienced differently depending on age. Only one significant result presented. The average age for those responding 'yes' ($M = 33.3$) to suffering a skin rash is significantly higher than for those responding 'no' ($M = 26.7$), $p = .029$.

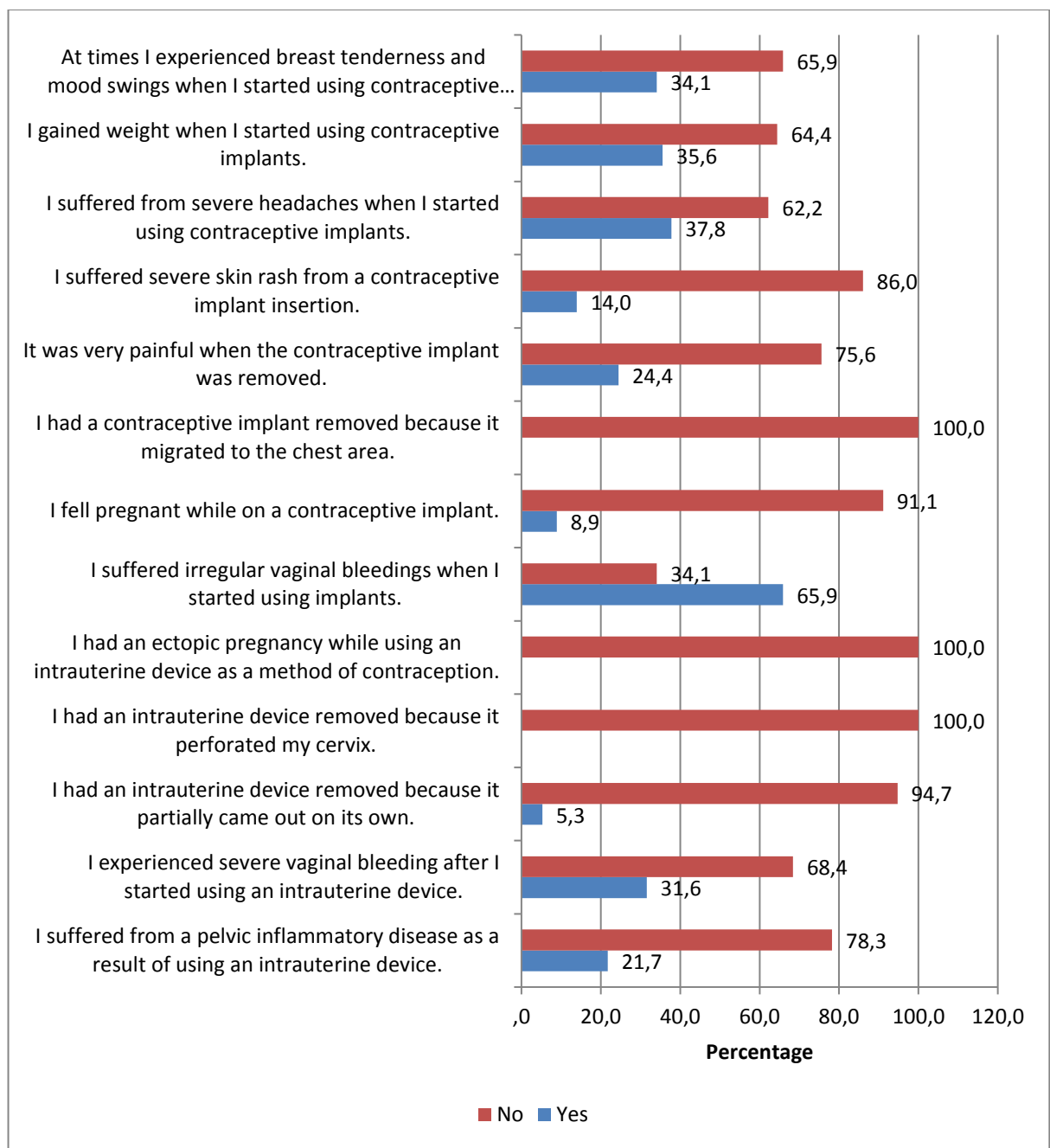


Figure 5.17: The percentage of side effects and adverse events

5.7 SUMMARY OF THE CHAPTER

This chapter presented study results in details. The next chapter will focus on discussion of study results.

CHAPTER 6 : DISCUSSIONS OF RESULTS

6.1 INTRODUCTION

The previous chapter presented the study results. This chapter will discuss the study results based on the aim of the study, which was to identify factors influencing the uptake of LARC methods among women at the PHCs in eThekweni Health District. The study results will be discussed in relation to the research objectives, the theoretical frame work that guided the study and other research studies on contraception where applicable.

6.2 OVERVIEW OF RESEARCH DISCUSSION

The study objectives were to:

- Determine the attitudes and perceptions of women about LARCs.
- Identify myths and misconceptions about LARCs.
- Identify side effects and adverse events related to LARCs.

6.3 DEMOGRAPHIC DATA OF PARTICIPANTS

6.3.1 Age

In this study, the results revealed that the majority (60.1%) of respondents accessing family planning were between 21-30 years of age followed by 31-40 years (27%) up to 20 years (7.8%) and over 40 years of age (5.1%). The majority of respondents were at the peak of child bearing age. In support of these results, Stephenson (2007 cited in Nyambo 2013: 44) stated that age is a demographic factor which has an influence on modern contraception usage and is well established in literature. He further mentioned that explanations differ per study as to how age influences modern contraception use.

A similar study was that of Tibaijuka *et al.* (2017: 1), who reported that the median age of respondents was 28 years among rural respondents and 25 years among urban respondents. Elfstrom and Stephenson (2012: 1), in their study, had similar results to the current study in terms of age and contraception usage in that the greatest proportion of respondents using modern contraceptives was ranged between 20 and 34 years (Elfstrom and Stephenson 2012: 5).

6.3.2 Marital status

The majority of respondents were single (83.3%), followed by married (16.2%) and divorced (0.5%). In support of these results, Peer and Morojele (2013: 2) stated that global CPR refers to sexually active women who are married or in-union; however marital rates in South Africa are low, therefore use of sexually active women as denominators is more relevant or realistic than sexually active women who are married or women in-union as the basis of estimating CPR. Oluwole and Skaal (2016: 2071) reported similar demographic characteristics of respondents; 55.4% of their respondents were aged 20-29, 33% were 30-39, and 15.7% less than 20 years of age. The majority of respondents (84.6%) were Black, (14.7%) were Coloured, and less than 1% were White. The majority (93.9%) of respondents were single.

6.3.3 Highest level of education passed

As revealed by the study results, the majority of respondents (63.1%) were ranged between grade 10-12; followed by those with tertiary education (27.5%), grades 7-9 (7.0%), and the least educated grade R to 6 (2.4%). In the HBM, it is stated that an individual is motivated by modifying factors to adopt a health seeking behaviour, to prevent or minimise the chances of developing a condition (Hall 2012: 77). Education has been identified in this model as one of the modifying factors. In this study, level of education was a modifying factor for respondents, as the study results indicated that the majority of respondents (63.1%) had the highest level of education ranging

between grade 10-12, which was a possible modifying factor for them having to access family planning (Hall 2012: 4; Mohsen, El-Abbassy and Khalifa 2016: 58). In agreement with current study results, Balogun *et al.* (2014: 3), in their study of the Implanon sub-dermal implant, found that respondents were educated since they had at least secondary education, and further stated that educated participants could be better informed about the need for contraception and possible side effects. In support of the current study results, Fikree *et al.* (2001 cited in Kei, Ndwiga and Okong'o (2015: 500) reported that the incidence of unwanted pregnancies was high among less educated women. Similar study results by Ehlers (2009 cited in Kei, Ndwiga and Okong'o 2014: 501) stated that a less educated woman relies on her husband for support and the husband decides for her in everything including size of the family and contraceptive use. Other results that were in line with these results were those of Elfstrom and Stephenson (2012: 2) who reported that educational attainment was associated with contraceptive use at the community level where both mean number of years and the proportion with at least primary education were associated with positive contraceptive uptake. Tibaijuka *et al.* (2017: 11) also agreed with the above results, saying that increased education may improve contraceptive use and reduce unintended pregnancies.

6.3.4 Home language

In this study, results revealed that the majority of respondents were isiZulu speaking (84.1%), followed by English speaking (8.6%), isiXhosa speaking (6.5%), and other language (0.8%). Ndida, Ndhlovu and Khalema (2017: 353) concurred with the current study results as they reported that about 81% of the population in KZN speaks isiZulu.

6.3.5 Race

The study results showed that the majority of respondents were Black, (96.0%) followed by Coloured (1.9%), Indian (1.6%), White (0.3%), and other

(0.3%). The overall demographic characteristics of respondents in this study were that most participants were of the age group 21-30 years (60.1%), were single (83.3%), had a highest level of education ranging between grades 10-12 (63.1%), were isiZulu speaking (84.1%), and were Black (96%). All respondents were accessing family planning. Mazuba (2013: 82) concurred with these results as she reported that the majority of respondents in her study ranged between 18 to 27 years, were still in high school (28.1%) or had just completed grade 12 (31.6%), or were undergoing further schooling in tertiary, were single (91%), lived with parents (33.3%), and were dependent on government grants as a source of income (36.1%). All of them were Black (Mazuba 2013: 82).

In line with these demographic characteristics were the findings of van der Westhuizen and Hanekom (2016: 43), who reported that participants ranged between 18-49 years with the majority (91.6%) between 20-39 years and a mean of 31 years, and were unmarried (63.2%), including divorced and cohabiting. About 4.1% had no schooling, 31.1% had completed grade 12, and 10.4% had completed tertiary education (van der Westhuizen and Hanekom 2016: 43). The South African Demographic and Health Survey for 2003, in terms of racial groups and CPR, reported that Black women had the lowest CPR (62.2%) and White women the highest (80.9%); the difference was associated with South African history of unequal access to education, economic opportunities, and health services accessibility (Peer and Morojele 2013: 2).

With the exception of race, similar demographic characteristics were reported in the study of Ndida *et al.* (2017: 353). Their study findings indicated that all participants were Black, and further reported that about 81% of the population in KZN speaks isiZulu (Ndida *et al.* 2017: 5). About 37.7% of the participants were over 20 years old and had 12 years of schooling compared to that of the general population of the same age in Gauteng province (Ndida *et al.* 2017: 353). They also reported that more than two thirds of the participants had

1 never married, a quarter were married or cohabiting, less than 5% of the participants were widowed and 2.9% were separated or divorced (Ndida *et al.* 2017: 353).

6.4 REPRODUCTIVE HISTORY OF RESPONDENTS

The study results showed that 43.7% of respondents had one child of their own, 39.9% had one pregnancy, and 43.9% one live birth. The majority (93.0%) of respondents never had voluntary termination of pregnancy. These results were in line with those of Nyambo (2013: 83) who reported that the majority of respondents in her study had been pregnant once prior to contraception usage. She reported further that in South Africa women were educated on contraception only after the first pregnancy or birth, and they delay the birth of the second child (Nyambo 2013: 83).

In support of these results, Hodes (2016: 79) reported that although abortion was legalised in South Africa through the Choice of Termination of Pregnancy (CTOP) Act No. 92 of 1996, illegal abortions remain common (Hodes 2016: 79). A lack of knowledge about how to access safe, legal abortion in the public health sector, accompanied by fear of mistreatment by health care workers, were among the reasons for the on-going high rate of illegal abortions in the country (Hodes 2016: 79). In 2001, the CTOP (Act 92 of 1996) implementation brought about a 91% decline in maternal mortality in South Africa (Hodes 2016: 79). However, few women were reported to use free family planning services, rather they resort to illegal unsafe abortions. The authors further stated that if the demand for CTOP is not met in the public health sector, the incidence of illegal abortions will continue to rise, which would be a major concern (Hodes 2016: 79).

Similar findings are those of Gresh and Maharaj (2014: 681), who reported that for the majority of women, abortion was a context-driven choice, and the major barriers to accessing abortion services were stigma, cultural beliefs, finances, and negative attitudes of health care providers (Gresh and Maharaj

2014: 681). A study conducted in KZN revealed that 68% of participants were not only unaware of the abortion legislation, but they were also unaware of any existing facility for *CTOP* (Moodley and Akinsooto 2003 cited in Gresh and Maharaj 2014: 682).

6.5 CONTRACEPTIVE USE

6.5.1 Oral contraceptive pills

The results indicated that oral contraceptive methods were the second (14%) most common method used by respondents, with 72.8% of respondents indicating that they had never used these methods and (13.2 %) having used them but stopped. These results concur with those of Kei *et al.* (2014: 505) who found that oral contraceptives were the second most common method used. Another study with similar results regarding oral contraception usage was that of Mayondi, Wirth, Morroni, Moyo, Ajibola, Diseko, Sakoi, Magetse, Moabi, Leidner, Makhema, Kammerer and Lockman (2016: 2), who reported that male condoms was the most common method, followed by oral contraceptives, injectable contraceptives and LARC methods. Tibaijuka *et al.* (2017: 1), in support of the current study, reported oral contraceptives to be second to injectables as the most commonly used short acting method. Bharadwaj *et al.* (2012: 305) reported that young women in developed countries were more likely to use oral contraceptives so as to have regular episodes of bleeding as an assurance of not being pregnant, hence oral contraceptives were the most commonly used.

6.5.2 Injection methods

As indicated in the study results, the majority of respondents (66.8%) were using the contraceptive injection method, while 24% had stopped using it and 9.2% had never used it. Similar study results were obtained by Joti (2014: 12) who reported injection as being the most common method of contraception (21%). The injection was reported as being more practical, requiring less training of health care providers, and resulting in fewer concerns regarding

adherence issues (Joti 2014: 12). Stephenson *et al.* (2008: 66-67 cited in Mazuba 2013: 84) demonstrated that there was a relationship between the community an individual resides in and availability of method of choice. The authors further stated that the choice of the contraceptive method follows racial stratification; Whites tends to use less public family planning services and use a wide range of modern contraceptive methods; Blacks and Coloureds rely mostly on public family planning services and use the injection, accounting for 25% and 35% respectively (Stephenson *et al.* 2008: 66-67 cited in Mazuba 2013: 84). The injection was reported as the main source of contraception in the public sector (Mazuba 2013: 84). Trasada (2013: 2) also reported that of the modern methods of contraception used in sub-Saharan Africa, 25.7% of women cited injection as their method of choice.

Nyambo (2013: 32) reported prevalence in the use of the LARC methods injection (Depo-Provera), IUCDs, and implants. Injection (26%) was most commonly used, followed by implants (1.4%), with the IUCD being the lowest of them all. Poor male involvement in family planning was reported as being associated with injectable method preference since women can use injectables without their partners' knowledge (Tibaijuka *et al.* 2017: 10). In agreement with these results, Adetunji (2011 cited in USAID 2015: 3) reported an increase in injectable use in sub-Saharan Africa because of convenience of use; it can be easily given to a woman at a health clinic, or through mobile outreach programme, without needing permission from the male partner or family members who might be against its use. It was further reported that the secrecy theory behind advantages of injectables has been reported, tested, and proven (Adetunji 2011 cited in USAID 2015: 3).

6.5.3 Intrauterine contraceptive device

In this study, the majority (94.9%) of respondents never used IUCDs, while 3% had used but stopped, and 2.2% were still using. IUCD was the least used method of contraception in this study, compared to implants (7%). Builu and Naidoo (2015: 30) concurred with current study results. They reported poor

knowledge and low IUCD usage (2.7%) in their study which investigated attitudes towards and knowledge about intrauterine contraceptive devices among women in the reproductive age group in a resource-constrained setting in Pietermaritzburg. A study on patient knowledge about intention to use the IUCD at a tertiary-level hospital conducted by van der Westhuizen and Hanekom (2016: 42) who found poor knowledge and use of IUCDs, which was in agreement with the current study. Rose (2011 cited in Nyambo 2013: 48) supported the current study results by reporting that a lack of knowledge about LARC methods, especially IUCD and implants, was one of the main reasons for low use among women at risk of unintended pregnancy.

6.5.4 Contraceptive implant

The study results indicated that the majority of respondents (87.3%) never used contraceptive implants, 5.7% used but stopped, and 7.0% were still using. Of the respondents who were still using LARC methods, the majority (7%) used contraceptive implants and 3% used an intrauterine device. In support of these results, Tibaijuka *et al.* (2017: 6) reported that the overall prevalence of ever-use of LARC methods was low at 23.3%, and an implant was more commonly used than an IUCD. Similar results from the study of Gebremichael *et al.* (2014: 349) were that overall acceptance was 16.4 %, with the majority (80.4%) accepting the implant. Madugu *et al.* (2015: 270) also reported low uptake (7%) of the contraceptive implant. Joti (2014: 55) also concurred with the results by reporting that 57% of married women were using a contraceptive implant, and 6.2% an IUCD, which indicated a high percentage compared to IUCDs.

6.5.5 Other methods

Participants indicated that other methods of contraception used by them were either condoms or female sterilisation, but they were not distinguished as being important. The study results indicated that only 10% were still using other methods, 89.8% did not indicate whether they stopped using these

methods, and 3% never used them. The other methods were not discussed any further since they were not of interest in this study.

The overall current contraceptive use as indicated by the results in this study indicates that the majority of respondents were still using the injection (depot medroxyprogesterone acetate and/or norethisterone enanthate) followed by oral contraceptive pills, other methods, contraceptive implants, and IUCDs. Taye, Woldie and Sinaga (2014: 5) concurred with these results as they reported in their study that utilisation of LARC methods was dominated by short term family planning methods. About 16% of participants used LARC methods, of which 76.1% used contraceptive implants, followed by 23.9% using IUCDs (Taye, Woldie and Sinaga 2014: 5). A different finding about LARC use was reported by Rose (2011 cited in Nyambo 2013: 48), namely, that lack of knowledge about LARC methods (IUCDs and implants) was the one of the main reasons for very low use among women of child bearing age who were at risk of unintended pregnancy.

6.6 THE MAIN REASONS FOR STOPPING CONTRACEPTION

As the study results indicate, the main reason for stopping contraception use in all contraceptive methods was side effects and adverse events: contraceptive pill (66.7%), injection (depot medroxyprogesterone acetate and/or norethisterone enanthate) (83%), IUCD (58.3%), and contraceptive implants (71.4%).

These results support those of Izale, Govender, Fina and Tumbo. (2014: 604), whose study revealed barriers of contraception as mainly being fears of side effects and infertility, followed by cost, male partner's objection, unavailability of contraception, and religious beliefs. Ochako, Mbondo, Aloo, Kaimenyi, Thompson Temmerman and Kays (2015: 118) also reported that a primary barrier and common reason for discontinuation was perceived and actual side effects of contraceptive methods.

6.6.1 Oral contraceptive pills

The majority of respondents (66. 7%) who stopped using the contraceptive pill, discontinued use because they had experienced side effects. Other reasons wanted to fall pregnant (6.3%), because their partner did not want them to continue using the pill (2.1%), and “another reason” (25%). In agreement with the current study, Joti (2014: 14) reported that in developing countries 20% to 30% of women who use oral contraceptives or injectables stop within two years of starting because of side effects. In agreement with these study results, Glasier, Scorer and Bigrigg (2008: 215) reported that though oral contraceptives were perceived by respondents as effective, convenient, and familiar, side effects such as headaches, sickness and weight gain were problematic and were associated with discontinuation of use. Winner *et al.* (2012: 2005), in their study of effectiveness of LARC methods, found that participants using oral contraceptive pills, a transdermal patch, or vaginal ring were at high risk of contraceptive failure – more than 20 times as high – compared to LARC methods.

6.6.2 Injection methods

The study results indicated that the majority (83%) of those who stopped using the injection did so because they had experienced side effects. A further 2.2% wanted to fall pregnant, 3.4% stopped because their partner did not want them to continue using the injection, and 11.4% stopped for another reason. Similar results of a study on attitudes towards LARC methods reported side effects such as weight gain, and depression, as main reasons for discontinuation (Rose *et al.* 2011: 1736). In agreement with the current study results, Arrowsmith (2013: 25) reported that heavy bleeding and weight gain among injection users were the main reasons for discontinuation. In support of these study results, USAID (2015: 33) documents that in all the countries that were studied, about 61% of injection discontinuations were related to side effects.

6.6.3 Intrauterine contraceptive device

In this study, the majority (58.3%) of those who stopped using the intrauterine device did so because they had experienced side effects. A further 8.3% wanted to fall pregnant, 8.3% stopped because their partner did not want them to continue using the intrauterine device, and 25% stopped for another reason. In contrast, a study by Sufrin, Oxnard, Goldenson, Simonson and Jackson (2015: 203) reported that the main reasons for IUCD discontinuation was because of wanting to fall pregnant, and Blacks were more likely to discontinue than Whites. In agreement with the current study results, the USAID (2015: 5) study reported side effects associated with IUCDs as being the main reason for discontinuation. In support of the current study, Hills (2014: 32) in her study of knowledge, attitudes and practices of LARC methods reported side effects as the main reason for discontinuation of LARC use, and greater concern regarding IUCDs than contraceptive implants.

6.6.4 Contraceptive implants

It was reflected in the study results that the majority of participants (71.4%) who were using contraceptive implants but stopped indicated that their discontinued use was because they had experienced side effects. A further 5% wanted to fall pregnant, 5% stopped because their partner did not want them to continue using the contraceptive implant, and 19.0% stopped for another reason. In support of the results, Patel (2014: 3) reported the change in bleeding pattern as the main reason for women discontinuing the use implants especially if not counselled during insertion. In agreement with the current study, Lipetz, Phillips and Fleming (2009: 78) reported that about 30% of patients requested removal of contraceptive implants because of side effects of which 68% of them were not treated for these side effects. Another study with similar results was that of Madugu *et al.* (2015: 270), where the main reason for discontinuation of contraceptive implant was cited as menstrual irregularity (in frequency, amount and duration). It was further reported that desire to fall pregnant was another reason for discontinuation

(Madugu *et al.* 2015: 271). In contrast to the current study, Balogun *et al.* (2014: 4) reported a desire to fall pregnant (35%) as the main reason for discontinuation followed by menstrual disturbance (26.1%). Lapidó *et al.* (2005 cited in Balogun *et al.* 2014: 4) state that the continuation rate of contraceptive implant use was higher among participants who were pre-counselled before insertion of implant than those who were not counselled.

Cross tabulation was used to give the pattern of responses between contraceptive use and the main reasons for stopping contraception. Some respondents, who responded as having used the method, but stopped, differed when responding to the main reasons for stopping the method. The discrepancy could have taken place because some respondents did not read the question properly; although they indicated that they used but stopped, they also indicated N/A (never using or still using).

6.7 INTEREST IN USING LARC METHODS

The majority of respondents (61%) were not interested in using LARC methods. These results concurred with Gomez, Fuentes and Allina (2014: 171) who reported that even with perfect knowledge and no barriers to access; many women would still not choose LARC methods. The high knowledge of LARC methods does not ensure actual higher use of LARC methods (Anguzu *et al.* 2014: 153). Shoupe (2017: 6) in her report indicated that when obstetrician gynaecologists were surveyed in connection with contraceptive use of implants, 46% of them cited lack of interest of women as reasons for not offering contraceptive implants. Ndinda *et al.* (2017: 7) also reported that availability and high levels of awareness of contraceptives among youth did not translate into changes in sexual behaviour and or prevention of unwanted pregnancies. Magadi (2003 cited in Nyambo 2013: 47) reported that women never married and in a unstable relationship with their partners were less likely to use LARC methods, rather using condoms as a protection against sexually transmitted infections (STIs).

6.8 ATTITUDES AND PERCEPTIONS TOWARDS LARC METHODS

The first study objective was to determine the attitudes and perceptions of women about LARC methods. In the HBM, perceived benefits are related to a person's opinion of the value or usefulness of a new behaviour in decreasing the risk of developing a condition. It further states that people tend to adopt a healthier behaviour when they believe the new behaviour will reduce chances of developing a condition (Hall 2012: 76). In this study, the results indicated that the majority of respondents had positive attitudes and perceptions regarding LARC methods.

The study results showed that there was agreement that using an intrauterine device was good, because it provided an opportunity to have a pelvic examination. In contrast, in a study on attitudes of women in Scotland, Glasier, Scorer and Bigrigg (2008: 216) reported that the need for invasive procedures like vaginal examination deterred women from accepting LARC methods, especially IUCD. Gebremariam and Addissie (2014: 24) differed with these results in that their findings indicated that participants were concerned with the need for vaginal examination, discomfort during sex, side effects, effects on long term fertility, and lack of protection against sexual transmitted infections. In contrast with these results, Joti (2014: 55) reported that invasion of privacy during its insertion and removal was perceived negatively by participants in the study which assessed factors influencing LAPM methods among married women in Ethiopia. Other concerns in that study were: interference with sexual intercourse, cancer, delay of pregnancy, and husbands' disapproval (Joti 2014: 55). Gebremariam and Addissie (2014: 24) reported women's concerns regarding the need for a vaginal examination related to IUCD use.

The study results showed a significant agreement that a monthly visit to the clinic was not necessary. In support of the current study results, the WHO (2007: 123) documented that a 3-6 weeks follow-up visit post IUCD insertion was recommended, and thereafter a woman was advised to come to the clinic

at that time and after that only if experiencing problems. In agreement with the results, the Department of Health (2012: 36) documents that after the insertion of an IUCD, a 3-6 week follow-up visit is recommended. The only essential return visit after that is the date of removal which should be recorded on the card given to the woman.

A significant agreement was reflected in the results that implants were suitable for young women, especially those in high school, those doing tertiary education and those who have just started working. In support of the results, the WHO (2007: 113) recorded that almost all women can safely use contraceptive implants including adolescents and young women. The current study results revealed that respondents had a significant agreement that the IUCD was good for women because they can space the birth of their children. In support of the study results, Kakaire *et al.* (2014: 1096) reported that IUCD use was perceived as good for women who wanted to space children. In a similar report, the WHO (2007: 134) documented that IUCDs can be used by women of almost all ages and parity. In support of the study results, the Department of Health (2012a: 37) recorded that IUCDs can be used by any woman who requires effective contraception to delay or space births or when she feels the family is complete.

The study results also revealed significant disagreement on whether IUCDs were suitable for young women who have never been pregnant. In disagreement with the study results the National Collaboration Centre for Women's health (2005 cited in Blumenthal, Voedisch and Gemzell-Danielsson 2010: 125) reported that LARC methods such as IUCDs can be used by nulliparous women including adolescents. Singh and Espey (2012: 28) reported that professional organisations such as the American College of Obstetricians and Gynaecologists endorse the use of IUCDs in nulliparous as well as multiparous teenagers. Hall and Kutler (2016: 36) were incongruent with study results, as they reported that despite significant symptoms with insertion, IUCDs were safe, effective and well tolerated in nulliparous women.

There was no significant agreement in this study on whether a friend would be encouraged to use contraceptive implants. In line with these study results, Glasier, Scorer and Bigrigg (2008: 213) reported that women were likely to choose a contraceptive method which their peers were using. Taye, Woldie and Sinaga (2014: 5) reported that participants were aware of LARC methods but had limited knowledge of individual methods and mostly relied on second-hand information from friends and other sources. A study on LARC methods conducted by Madden *et al.* (2014: 19) indicated friends and older relatives as main sources of contraception information, with most of it being unfounded, vague, hearsay, and confusing, as well conveying negative experiences.

In this study, the results indicated that there was a significant agreement that LARC methods were good because when used consistently they prevent unintended pregnancy. In agreement with the current study results, Peipert *et al.* (2011: 6) reported that LARC methods were the most effective reversible methods of contraception, and that they should be the first option for women who wanted to prevent unintended pregnancy. Branum and Jones (2015: 7) also concurred with the results by reporting that safety, convenience and ability of LARC methods to combat high rates of unintended pregnancy has been documented in clinical trials and in other health care settings. In support of these results, Winner *et al.* (2011: 2006) reported that LARC methods were more effective in preventing unintended pregnancy than short-acting contraceptive methods. Respondents had significant agreement that LARC methods were suitable for women who have previously had children. Branum and Jones (2015: 1) concur with these results by reporting that LARC method usage was higher among women who had at least one child as compared to women who had no previous child.

The study results showed significant disagreement that a woman needed the approval of her male partner in order to use LARC methods. In contrast, Anguzu *et al.* (2014: 153), who assessed the level of knowledge and attitudes towards LARC methods as well as factors associated with its use among

women of reproductive age attending reproductive health services in Lubanga, Kampala, reported that about 48.1% of the women in their study thought that their male partners had to take a contraceptive use decision for them, which implied that socio-cultural perceptions played an important role in contraceptive usage. Other African countries like Kenya and Ethiopia also indicated that male partners and husbands gave approval for family planning services and acceptance of contraceptives (Anguzu *et al.* 2014: 153; Gebremichael *et al.* 2014: 353). Other results in contrast with the current study were those of Izale *et al.* (2014: 599) who studied factors influencing contraceptive use among women in Vanga health district, Democratic Republic of Congo. One of the results of this study was that about 15.6% of respondents indicated that their husbands disapproved of contraceptive usage (Anguzu *et al.* 2014: 153). Quantitative data from a mixed method study of Tibaijuka, Odongo, Welikhe, Mukisa, Kugonza, Businye, Nabukalu, Ngonzi, Asimwe, and Bajunirwe (2017: 11) suggested that respondents' partners were supportive of contraception, yet qualitative findings from the same study indicated that women participants did not want their partners to know their contraceptive use, because they would be against it.

In this study respondents showed significant disagreement that it was better to use implants because one did not have to go through pelvic examination. In contrast with the current study, Rose *et al.* (2011: 3), in their study of attitudes towards LARC methods, found that implants were most acceptable because they only had to go in a woman's arm, with no interference with genitals and did not have to go into the uterus.

The current study results also revealed significant disagreement that using implants is associated with stigma in the community. Melino (2014: 37) reported fear of disclosure, stigma and shame as associated poor uptake of contraceptives in Burundi.

6.9 MYTHS AND MISCONCEPTIONS ABOUT LARC METHODS

The second study objective was to identify myths and misconceptions about LARC methods. In the HBM, modifying or enabling factors interact with an individual's perception of a condition that needs to be prevented. Factors such as life experiences of an individual, and psycho-social factors, are mentioned as influential in modifying a behaviour change (Hall 2012: 77; Mohsen, El-Abbassy and Khalifa 2016: 58). In this study, the results revealed that respondents disagreed with all myths and misconceptions related to the use of LARCs, which indicated that they were not discouraged by myths and misconceptions to consider LARC use.

The respondents showed significant disagreement with the statement that the male partner could feel the intrauterine device during sexual intercourse. In contrast with these results, Madden, Eckley, Hughes, Lavin, and Timpson (2014: 9) reported that an IUCD was feared by participants as being a foreign body that could be felt by male partner during sexual intercourse. Again, there was significant disagreement from the responses of respondents, that intrauterine devices were associated with pain during sexual intercourse. In contrast, Kakaire *et al.* (2014: 93) reported discomfort and pain during sexual intercourse as being associated with IUCD usage. Also in contrast with the study results, Gebremariam and Addissie (2014: 7) reported that women were concerned about discomfort and pain during sex associated with the use of IUCD. Joti (2014: 55) also reported fears of IUCD use as causing interference and discomfort during sexual intercourse.

The study results revealed significant disagreement with the statement that if one falls pregnant on an intrauterine contraceptive method, the baby would come out holding it. In contrast with these results, Madden *et al.* (2014: 9) reported that a participant from a focus group reported that her relative gave birth to a baby with an IUCD attached/stuck on the head.

In this study, results showed significant disagreement with the statement that conception was difficult after using an intrauterine device for about one to three years. In contrast, Kakaire *et al.* (2014: 93) reported that women verbalised fear of infertility associated with the use of IUCDs. About 21% of participants cited fear of infertility after IUCD use (Gebremariam and Addissie 2014: 3). Taye, Woldie and Sinaga (2014: 1) reported that there was no evidence of delay in return of fertility after removal of an IUCD. Gebremichael *et al.* (2014: 349) reported that 40.9% of women feared infertility after LARC use, especially an IUCD. In agreement with these results, Joti (2014: 55) reported IUCD use as being associated with delayed pregnancy, as perceived by participants.

The study results indicate that there was significant disagreement with the statement that using an IUCD was the same as committing abortion, so it was not right for certain religions. In contrast with these results, Speidel and Harper (2008: 198) reported that patient's fears and incorrect information accompanied by lack of knowledge were related to negativity towards IUCDs as causing abortion. Melino (2014: 37) also reported that religious influences were cited as one of the barriers of contraceptive use in Burundi. In disagreement with the current study results, Taye, Woldie and Sinaga (2014: 4) reported that when health care providers were asked about the main reasons women did not choose LARC methods, they reported lack of adequate information about these methods, relying on rumours, and religious prohibitions including that LARC methods were perceived as foreign material (mostly among Muslim respondents).

The respondents through their responses showed significant disagreement with the statement that an electric sensor like one at shops can sense implants in a woman's arm when she passes through the sensor. There was also a significant disagreement with the statement that implants were a symbol of evil because they were inserted on the arm therefore being like a mark that a woman was identified with the devil. Glasier, Scorer and Bigrigg

(2008: 216) found that a contraceptive implant was viewed as a disgusting foreign object in the arm.

In this study, the results revealed significant disagreement with the statement that implants caused birth defects. In contrast to this, Ochako *et al.*'s (2015: 7) findings highlighted myths and misconceptions such as birth defects and abnormal disruption of normal body processes perceived by women as being associated with implants. Another study with different results from the current study was one in which focus group participants verbalised fears of deformed babies associated with pregnancy while on the contraceptive implant (Madden *et al.* 2014: 11).

6.10 SIDE EFFECTS AND ADVERSE EVENTS OF LARC METHODS

The third study objective was to identify side effects and adverse events related to LARCs. In the HBM, perceived barriers are the most significant determinants of behaviour change, in all constructs (Hall 2012: 76). An individual weighs perceived benefits against perceived barriers to adopt a new behaviour, and the outcome will determine a decision (Polit and Beck 201: 136). In this study, the majority (66%) of respondents who were using contraceptive implants suffered irregular vaginal bleeding when they started using it, as indicated in the study results. The main reasons for discontinuation of LARC use were cited by respondents as being side effects. The study results gave an implication that, side effects were possibly perceived by respondents as barriers to the usage of LARCs (Mohsen, El-Abbassy and Khalifa 2016: 58).

In support of the study results, Singh and Espey (2012: 29) reported irregular bleeding as the main adverse event associated with contraceptive implants. In agreement with the current study, Madugu *et al.* (2015: 271) reported bleeding disturbances (frequency, amount and duration) as the main side effects associated with contraceptive implants. The results of the study of Gebremichael *et al.* (2014: 352) also concurred with these results, since

36.5% of their respondents cited irregular bleeding associated with usage of contraceptive implants. Peipert, Zhao, Allsworth, Petrosky, Madden, Eisenburg and Secura, (2011: 4) reported unpredictable bleeding as the most common reason for contraceptive discontinuation. In contrast, Shoupe (2016: 4) reported that contraceptive implants were associated with reduced bleeding and further added that a complete cessation of menstrual flow can take place.

The majority of respondents (78%) who were using IUCDs did not suffer from pelvic inflammatory disease, as revealed by the study results. These results concurred with those of Sufrin *et al.* (2015: 203) who reported that there were no cases of pelvic inflammatory diseases or other insertion complications in IUCD users, and no serious complications in implant users. In a similar study conducted by Singh and Espey (2012: 26), results were that the risks of developing pelvic inflammatory diseases in the first twenty days after IUCD insertion were less than 1%. Another study found that the incidence of pelvic inflammatory diseases was reported as 1.6 per 1000 woman-years irrespective of the type of IUCD (Farley *et al.* 1992 cited in Blumenthal, Voedisch and Gemzell-Danielsson 2011: 127).

The study results indicated no significance in severe vaginal bleeding associated with starting use of an intrauterine device. In support of the study results, Peipert *et al.* (2011: 4) reported the most common reason for discontinuation of IUCD to be bleeding and/or cramping, affecting 14% of all copper IUCD users and 5% of all levonorgestrel intrauterine system (LNG-IUCD) users. In agreement, Shoupe (2016: 4) reported that the Copper-IUCD was associated with heavier bleeding as a side effect. She further reported that this was different to the hormonal IUCD usage because with that system there was a dramatic reduction in vaginal bleeding and often amenorrhea, with reduced cramping and pain (Shoupe 2016: 4). Hall and Kutler (2016: 36) also reported heavy menses and dysmenorrhoea associated with the use of copper T 380A. Ferreira *et al.* (2014: 17) reported unscheduled bleeding

caused by IUCD use that was reported by women as being the main reason for switching to other methods.

The study results reflected that the majority of IUCD user respondents (95%) did not have the device removed because it partially came out on its own. In support of these results, the WHO (1987 cited in Blumenthal, Voedisch and Gemzell-Danielsson 2011: 127) reported expulsion of IUCDs in 1 in 20 women usually observed within the first three months of insertion and during menstruation. Similar results were those of Singh and Espey (2012: 26) who reported that the risk of cervical perforation and that of IUCD expulsion was very low. In another study, expulsion rates were reported as being 5% or less (Kaneshiro and Salcedo 2015: 54). According to Glasier, Scorer and Bigrigg (2008: 216), IUCDs were negatively perceived by respondents, perceived as of poor efficacy (from hearsay), expulsions, infections and weight gain, most suitable for women who had a child, and lacked protection against STIs. None of the respondents (100%) who were using IUCDs had it removed because it perforated the cervix. Shoupe (2016: 4) concurred with the results as she reported that due to advanced IUCD designs there was a smaller percentage of uterine perforation and expulsion compared to the past. The WHO has documented one of the rare complications associated with IUCDs as being the puncturing or perforation of the uterine wall (WHO 2007: 132).

In this study, none of the respondents who were using IUCDs had an ectopic pregnancy. In support of the study results, the National Collaboration Centre for Women's Health (2005 cited in Blumenthal, Voedisch and Gemzell-Danielsson 2013: 127) reported a very low risk of ectopic pregnancy, of about 1 in 1000 in 5 years. They further reported that women who used IUCDs had a lower risk of ectopic pregnancy as compared to those not on contraception (National Collaboration Centre for Women's Health 2005 cited in Blumenthal, Voedisch and Gemzell-Danielsson 2011: 127). A study on health professionals' perceptions of LARC methods revealed that 23% of them highlighted the risk of ectopic pregnancy associated with IUCD usage

(Middleton *et al.* 2012 cited in Madden *et al.* 2014: 16). Joshi, Khadilkar and Patel (2015: S62) also reported very low risk of ectopic pregnancy associated with IUCD use.

In this study no respondent reported falling pregnant while on a contraceptive implant. Incongruent with these results, Madden *et al.* (2014: 8) reported that pregnancy while on contraceptive implant was reported by participants on two occasions. Espey and Ogburn (2011: 714) reported non-insertion of the device in implant users as being the most likely cause of pregnancy, though the women had undergone insertion procedures. Absence of detectable etonogestrel levels confirmed non-insertion (Espey and Ogburn 2011: 714). Post marketing analysis of actual contraceptive implant performance documented a pregnancy rate of about 1 per 1000 contraceptive implants (Espey and Ogburn 2011: 714). In support of these results, Madugu *et al.* (2015: 270) reported no incidence of pregnancy documented during their study period (June 2009 to November 2013).

As revealed by study results, no respondent had a contraceptive implant removed because it migrated to the chest area. It has been reported that migration of a contraceptive implant from the site of insertion may occur if it was deeply inserted (Espey and Ogburn 2011: 714). According to Taye, Woldie and Sinaga (2014: 1), implant providers reported that women were afraid of the possibility of the implant going missing or migrating to other parts of the body. Madden *et al.* (2014: 7) reported movement of the implant as related to physical activity such fighting, as reported by participants in their study. In support of these results, the WHO reported that implants do not move around the woman's body if inserted properly. Only in very rare cases will a rod come out, most often within first four months after insertion and usually only if it was not inserted properly or because of infection around the site of insertion (WHO 2007: 129).

The majority of respondents (76%) indicated that it was not very painful when the contraceptive implant was removed. In agreement with these results, Espey and Ogburn (2011: 714) reported that in a summary of international trials, 1% of women experienced insertion complications and none was major, and 1.7% of women experienced removal complications with none being major (Espey and Ogburn 2011: 714). In this study, 43.2% of respondents reported pain during insertion and removal of contraceptive implants as being a great concern (Gebremichael *et al.* 2014: 352). The fear of pain during removal of an implant was one of the concerns raised by women in the study conducted by Taye, Woldie and Sinaga 2014: 4). Bharadwaj *et al.* (2012: 304) reported that fear of pain and a needle was the most significant deterrent for LARC method use among young women, though local anaesthesia was routinely used during implant insertion.

The majority of respondents (86%) indicated that they did not suffer severe skin rash from a contraceptive implant insertion. Espey and Ogburn (2011: 714) concurred with these results by reporting that hematoma and slight bleeding were observed at the site of insertion in the international trials summary. In support of these results, the WHO (2007: 112) indicated that skin problems are uncommon; if they do happen, it is mostly because of infection at the insertion site within two months of insertion of the implant. In contrast, Kane *et al.* 2009 (cited in Madden *et al.* 2014: 18) reported localised itching around the insertion site as reported by participants in their study.

The respondents indicated that there was no significance related to suffering from severe headaches when started to use contraceptive implants. In contrast, Glasier, Scorer and Bigrigg (2008: 216) reported headaches related to implant use as being one of the concerns raised by participants. Kane *et al.* (2009 cited in Madden *et al.* 2014:18) also reported headaches associated with the use of contraceptive implants. The WHO has documented headaches as being one of side effects associated with contraceptive implant usage (WHO 2007: 111).

The study results reflected no significance related to gaining weight when starting to use contraceptive implants. Kakaire *et al.* (2014: 1092) reported weight gain as a common reason for the discontinuation of the hormonal contraceptives including contraceptive implants. Weight gain associated with contraceptive implant usage was perceived negatively by participants in the study by Glasier, Scorer and Bigrigg (2008: 216). Weight changes have been associated with contraceptive implant usage (WHO 2007: 111).

In this study, the results showed that the majority of respondents (66%) did not experience breast tenderness and mood swings when starting to use contraceptive implants. Incongruent with the results, the WHO refers to breast tenderness and mood changes as expected with contraceptive implant usage (WHO 2007: 111). The Department of Health has also documented breast tenderness as one of the common side effects associated with the use of contraceptive implants (Department of Health 2012a: 32).

6.11 SUMMARY OF THE CHAPTER

This chapter discussed the study results in detail. The next chapter will outline the conclusion, limitations of the study and the recommendations.

CHAPTER 7 : SUMMARY OF FINDINGS, CONCLUSION, LIMITATIONS AND RECOMMENDATIONS OF THE STUDY

7.1 INTRODUCTION

The previous chapter outlined the report of the results. This chapter concludes the research study with limitations of the study and recommendations.

7.2 SUMMARY OF RESULTS

The first study objective was to determine the attitudes and perceptions of participants towards LARCs. The study results revealed that the majority of respondents were not interested in using LARCs though they had positive attitudes towards LARCs. The second objective was to determine the myths and misconceptions related to LARCs. The myths and misconceptions were not perceived by respondents as barriers to LARCs usage, since all respondents disagreed with all of them, as indicated by their responses on a five point Likert scale in the questionnaire. The third objective was to identify side effects and adverse events of LARCs. The side effects were cited by respondents as the main reasons for stopping LARCs and other contraceptive methods. The majority of respondents reported that they experienced severe vaginal bleeding when they started using the contraceptive implant. In this study, side effects and adverse events were perceived as barriers to LARCs usage, which is in line with the HBM constructs, as discussed in Chapter 6.

7.3 CONCLUSION

The research question was “What are factors that influence the uptake of LARC methods among women at PHC clinics in eThekweni?” Irregular vaginal

bleeding was cited by respondents as associated with the use of contraceptive implants. Respondents using other contraceptive methods also cited side effects as being the main reasons for discontinuation of contraception usage.

7.4 LIMITATIONS OF THE STUDY

The study was conducted at six fixed PHC facilities which were purposively sampled from three sub-districts. PHC clinics were purposively sampled because of geographical location, catchment area, diversity of women accessing family planning services, and the extent of family planning services being offered. The results can only be generalised to the geographic areas where these facilities are situated since purposive sampling is a non-probability technique.

The participants were conveniently sampled, which is a non-probability sampling technique. The study excluded the population less than 18 years of age and above 49 years, though it was looking at women of child bearing age. In South Africa, young girls of 12 years can legally access family planning services without parents' consent, but they could not participate in the study due to the inclusion/exclusion criteria. This criterion was decided upon in the first place because if an individual is under 18 years old the ethical requirements of the study would have required a guardian or parent to provide consent on their behalf, and that would have compromised the privacy and confidentiality of the individual concerned.

The data collection instrument did not distinguish between two types of injectable contraceptives, depot medroxyprogesterone acetate and norethisterone enanthate. The data collection instrument also did not ascertain whether both categories of respondents (those who used LARC methods but stopped, and those still using) who were experiencing side effects accepted the side effects and adverse events in terms of a cost/benefit ratio according to the HBM model. The study results revealed a significant

disagreement that an electric sensor like one at shops, could sense implants in a woman's arm when she passes through the sensor. There was no literature available known to the researcher pertaining to this myth. Besides these limitations, the results of the study enabled the researcher to draw conclusions about factors influencing the uptake of LARC methods among women of child bearing age, at PHCs in eThekweni Health District.

7.5 RECOMMENDATIONS

The following recommendations are made with special reference to policy development and implementation, institutional management and practice, training of health care providers, and further research.

7.5.1 Policy development and implementation

A recommendation is made for sexual and reproductive health services outcomes to be part of performance appraisal for the Professional Nurses and Operational Managers at PHC facilities to ensure responsibility and accountability in these categories. There should be a policy on the regular conducting of small scale surveys of Professional Nurses at PHC facilities who are rendering sexual health and reproductive services, with special focus on LARC methods usage. This will help in evaluation of the service, early identification of challenges and also on evidence-based practice.

7.5.2 Institutional management and practice

The PHC Supervisors and Operational Managers should render support to trained health care providers on insertion of LARC methods by making sure that all resources are available at the facility level, to prevent referral of women to other facilities related to lack of resources. Community awareness campaigns and education of the community about availability of LARC methods should be encouraged through use of available structures such as community health care givers who are already working with the community at PHC facility level.

7.5.3 Training of health care providers

Training of all Professional Nurses at the PHC clinics on insertion and removal of contraceptive implant and IUCD is highly recommended, to ensure continuity of the service. The partners of the Department of Health, who provide training on LARC methods, should provide on-going support to trained Professional Nurses until they are confident to run the programme. There should be on-going mentorship of the trained health care providers, followed by monitoring and evaluation of the service.

7.5.4 Further research

Exploration of experiences and attitudes of health care providers in rendering LARC methods is recommended. The effectiveness and cost-effectiveness of the contraceptive implant training programme, and its sustainability in the public sector, should be explored so as to inform policy makers in the Department of Health regarding capacity development of staff.

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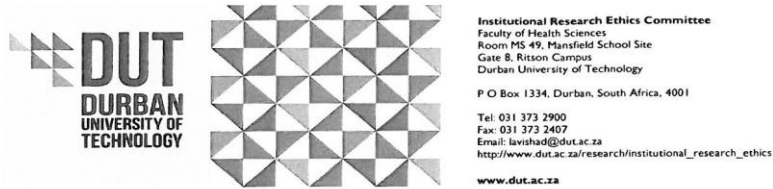
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APPENDICES

Appendix 1: University ethics clearance



8 November 2016

IREC Reference Number: **REC 108/16**

Ms V T Nhlumayo
P O Box 70943
Overport
4067

Dear Ms Nhlumayo

Factors influencing the uptake of long acting reversible contraceptives, among women at primary health clinics in eThekweni District

The Institutional Research Ethics Committee acknowledges receipt of your final isiZulu data collection tool for review.

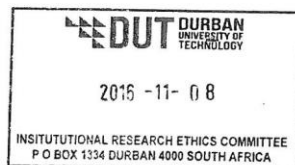
We are pleased to inform you that the questionnaire has been approved. Kindly ensure that participants used for the pilot study are not part of the main study.

In addition, the IREC acknowledges receipt of your gatekeeper permission letters.

Please note that FULL APPROVAL is granted to your research proposal. You may proceed with data collection.

Yours Sincerely,

Professor J K Adam
Chairperson: IREC



Appendix 2a: Letter of permission to the eThekwini District Manager

P.O. Box 70943
Overport
4067

The District Manager
EThekwini Health District
Private Bag X54318
Durban
4000

Dear Sir

REQUEST FOR PERMISSION TO CONDUCT A STUDY

I am a student registered for a Master's Degree in Nursing at the Durban University of Technology. The topic of my study is "*Factors influencing the uptake of long acting reversible contraceptives among women at primary health clinics in eThekwini District*". The study aims to determine attitudes and perceptions of women about long acting reversible contraceptive methods, to identify myths and misconceptions by women about long acting reversible contraceptive methods and to identify side effects and adverse events related to long acting reversible contraceptive methods, at Addington Gateway clinic, Commercial City, R.K. Khan Gateway, KwaMashu CHC, Umlazi U21 and Folweni clinics.

A quantitative, descriptive survey will be employed to determine the factors influencing the uptake of long acting reversible contraceptives among women at the selected facilities. Convenience sampling of 371 participants will be done in six facilities that will be purposively sampled from three sub-districts. Self-administered questionnaires will be used to collect data. Confidentiality

and anonymity of institution will be maintained at all times. Feedback will be given on completion of the study.

Permission is requested to conduct the study at these facilities. Ethical approval will be obtained from Durban University of Technology Research Ethics Committee. The researcher will collect data during tea and lunch breaks to ensure that the service delivery is not interrupted. Enclosed is a copy of research proposal. Your permission and support to conduct the study in your facility will be highly appreciated. Please do not hesitate to contact Prof. M.N. Sibiya, my supervisor if you have questions. Her telephone number is 031-373 2606. Her email address is nokuthulas@dut.ac.za.

Yours sincerely

.....
Ms. V.T.Nhlumayo (Master's student)
Email: vtnhlumayo@webmail.co.za
Tel: 031-327 2686
Cell: 082 485 2058

Appendix 2b: Approval letter from the eThekweni District Manager



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

Physical Address : 83 King Cetshwayo Highway, Mayville, Durban, 4001
Postal Address: P Bag X54318, Durban 4000
Tel: 031 - 2405308 Fax: 031 2405555 Email: somaroo@ukzn.ac.za

DIRECTORATE:

eThekweni District Office

27 September 2016

Dear Ms Nhlumayo

Re: Factors influencing the uptake of long acting reversible contraceptives, among women at primary health clinics in eThekweni District.

I have pleasure in informing you that your application to conduct research in Ethekeweni district has been approved at the following health care facilities:

- i. Commercial City
- ii. Addington Gateway clinic
- iii. Umlazi U21 clinic
- iv. Folweni clinic
- v. R.K. Khan Gateway
- vi. KwaMashu Community Health Centre

Please note the following:

- i. All research activities must be conducted in a manner that does not interrupt clinical care at the health care facility,
- ii. logistical details must be arranged with the CEO/medical manager /operational manager of the facility,
- iii. this research project should only commence after final approval by the KwaZulu-Natal Health Research and Knowledge Unit, and full ethical approval, has been granted, and
- iv. a report of your findings should be forwarded to the Ethekeweni district office on completion of your project.

Yours sincerely

H Somaroo (Dr)
Public Health Medicine Specialist

Fighting Disease, Fighting Poverty, Giving Hope

Appendix 3a: Letter of permission to the KZN Department of Health

P.O. Box 70943
Overport
4067

The Health Research and Knowledge Management Component
KwaZulu-Natal Department of Health
Private Bag X9051
Pietermaritzburg
3201

Dear Dr Lutge

REQUEST FOR PERMISSION TO CONDUCT A STUDY

I am a student registered for a Master's Degree in Nursing at the Durban University of Technology. The topic of my study is "*Factors influencing the uptake of long acting reversible contraceptives among women at primary health clinics in eThekweni District*". The study aims to determine attitudes and perceptions of women about long acting reversible contraceptive methods, to identify myths and misconceptions by women about long acting reversible contraceptive methods and to identify side effects and adverse events related to long acting reversible contraceptive methods, at Addington Gateway clinic, Commercial City, R.K. Khan Gateway, KwaMashu CHC, Umlazi U21 and Folweni clinics.

A quantitative, descriptive survey will be employed to determine the factors influencing the uptake of long acting reversible contraceptives among women at the selected facilities. Convenience sampling of 371 participants will be done in six facilities that will be purposively sampled from three sub-districts. Self-administered questionnaires will be used to collect data. Confidentiality

and anonymity of institution will be maintained at all times. Feedback will be given on completion of the study.

Permission is requested to conduct the study at these facilities. Ethical approval will be obtained from Durban University of Technology Research Ethics Committee. The researcher will collect data during tea and lunch breaks to ensure that the service delivery is not interrupted. Enclosed is a copy of research proposal. Your permission and support to conduct the study in your facility will be highly appreciated. Please do not hesitate to contact Prof. M.N. Sibiya, my supervisor if you have questions. Her telephone number is 031-373 2606. Her email address is nokuthulas@dut.ac.za.

Yours sincerely

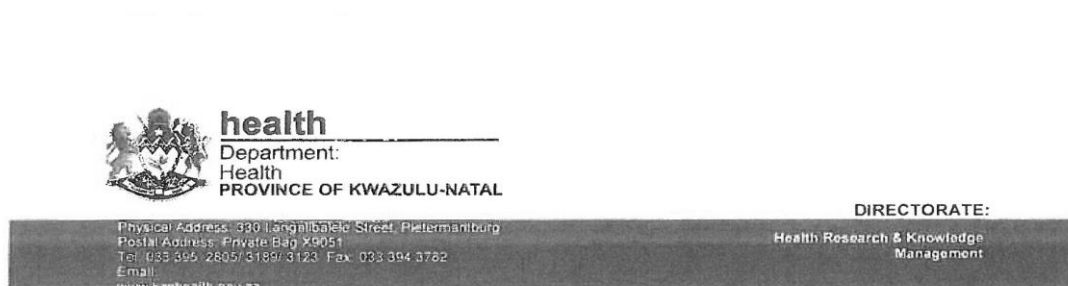
.....
Ms. V.T.Nhlumayo (Master's student)

Email: vtnhlumayo@webmail.co.za

Tel: 031-327 2686

Cell: 082 485 2058

Appendix 3b: Approval letter from the KZN Department of Health



HRKM Ref: 339/16
NHRD Ref: KZ_2016RP38_75

Date: 31 October 2016
Dear Ms VT Nhlumayo

Approval of research

1. The research proposal titled '**Factors influencing the uptake of long acting reversible contraceptives among women at primary health care clinics in eThekweni District**' was reviewed by the KwaZulu -Natal Department of Health.

The proposal is hereby **approved** for research to be undertaken at Addington and RK Khan Gateway clinics, Commercial City FP clinic, Folweni, Umlazi U21, KwaMashu Poly clinic.

2. You are requested to take note of the following:
 - a. Make the necessary arrangement with the identified facility before commencing with your research project.
 - b. Provide an interim progress report and final report (electronic and hard copies) when your research is complete.
3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to hrkm@kznhealth.gov.za

For any additional information please contact Mr X. Xaba on 033-395 2805.

Yours Sincerely

Dr E Lutge¹

Chairperson, Health Research Committee

Date: 02/11/16

Appendix 4a: Letter of permission to the CEO of the selected hospital

P.O. Box 70943
Overport
4067

The Chief Executive Officer
Addington Hospital
Prince Street
Durban
4000

Dear Madam/Sir

REQUEST FOR PERMISSION TO CONDUCT A STUDY

I am a student registered for a Master's Degree in Nursing at the Durban University of Technology. The topic of my study is "*Factors influencing the uptake of long acting reversible contraceptives among women at primary health clinics in eThekweni District*". The study aims to determine attitudes and perceptions of women about long acting reversible contraceptive methods, to identify myths and misconceptions by women about long acting reversible contraceptive methods and to identify side effects and adverse events related to long acting reversible contraceptive methods, at Addington Gateway clinic, Commercial City, R.K. Khan Gateway, KwaMashu CHC, Umlazi U21 and Folweni clinics.

A quantitative, descriptive survey will be employed to determine the factors influencing the uptake of long acting reversible contraceptives among women at the selected facilities. Convenience sampling of 371 participants will be done in six facilities that will be purposively sampled from three sub-districts. Self-administered questionnaires will be used to collect data. Confidentiality

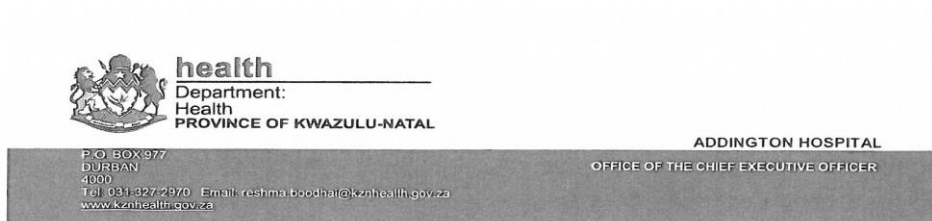
and anonymity of institution will be maintained at all times. Feedback will be given on completion of the study.

Permission is requested to conduct the study the Gateway clinic of your hospital. Ethical approval will be obtained from Durban University of Technology Research Ethics Committee. The researcher will collect data during tea and lunch breaks to ensure that the service delivery is not interrupted. Enclosed is a copy of research proposal. Your permission and support to conduct the study in your facility will be highly appreciated. Please do not hesitate to contact Prof. M.N. Sibiya, my supervisor if you have questions. Her telephone number is 031-373 2606. Her email address is nokuthulas@dut.ac.za.

Yours sincerely

.....
Ms. V.T.Nhlumayo (Master's student)
Email: vtnhlumayo@webmail.co.za
Tel: 031-327 2686
Cell: 082 485 2058

Appendix 4b Approval letter from the CEO of the selected hospital



Reference: 9/2/3/R

Date: 17th November 2016

Principal Investigator:
➤ Ms VT Nhlumayo

PERMISSION TO CONDUCT RESEARCH AT ADDINGTON HOSPITAL: "FACTORS INFLUENCING THE UPTAKE OF LONG ACTING REVERSIBLE CONTRACEPTIVES AMONG WOMEN AT PRIMARY HEALTH CARE CLINICS IN ETHEKWINI DISTRICT"

I have pleasure in informing you that permission has been granted to you by Addington Hospital Management to conduct the above research.

Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure this office is informed before you commence your research.
4. Addington Hospital will not provide any resources for this research.
5. You will be expected to provide feedback on your findings to Addington Hospital.


DR M NDLANGISA
HOSPITAL MANAGER
ADDINGTON HOSPITAL

Appendix 5a: Letter of information in English



Warm greetings. Thank you for agreeing to participate in this study.

Title of the Research Study: Factors influencing the uptake of long acting reversible contraception among women at primary health care clinics in eThekweni district

Principal Investigator/researcher: Ms. Virginia Tholakele Nhlumayo, B Cur.

Supervisor: Prof. M.N. Sibiya (D Tech: Nursing)

Co-Supervisor: Ms. M. Munsamy (M. Tech: Nursing)

Brief Introduction and Purpose of the Study: South Africa is faced with high rate of unplanned and unintended pregnancies with an increasing demand for termination of pregnancy services. National Department of health has revived the use of effective long acting reversible contraceptives (LARC) to meet family planning unmet needs. LARC prevents unintended pregnancies for a period of three to ten years, with immediate return to fertility once removed. Although effectiveness and reversibility of fertility is prompt, utilization of LARC is accompanied by low uptake across the globe and in South Africa.

eThekweni District experienced low uptake of IUDs and implants accompanied by high requests of removal of implants, a year ago. Between April and December 2015, there were 137 intrauterine devices inserted, 442 new sub-dermal implants inserted, 533 sub-dermal implants inserted (existing), which made a total of 975 and 1 793 sub-dermal implants removed. The researcher is interested in studying the possible contributing factors to these challenges. The aim of the study is to determine factors influencing the uptake of LARC among women at primary health care clinics in eThekweni District.

Outline of the Procedures: You are kindly requested to answer the questions in the questionnaire. The questionnaire should take approximately 30-35 minutes to complete. I am available to clarify should there be a need but will not assist in answering questions in any way. You can choose to answer

either in isiZulu and English. A sealed box is provided for completed questionnaires and no questionnaires may be taken away. Kindly fold and place completed questionnaire in the sealed box provided. At the end of the session I will personally take the box away.

Risks or Discomforts to the Participant: None

Benefits: Findings of the study will be shared with six PHC clinics participated in the study. Recommendations will be made available to the relevant health authorities about findings of the study. Results of the study will also be published in journals and the researcher will present it in conferences.

Reason/s why the Participant May Be Withdrawn from the Study: Your participation in this study is totally voluntary and confidential, whether or not you participate in this study, will not affect your right to, or experience of treatment and care at this or any other clinic now or in future. You may withdraw from the study at any stage if for any reason you don't want to participate anymore in the study. There will be no adverse consequences should you choose to withdraw from the study.

Remuneration: There will be no re-imbursement for participation in this study.

Costs of the Study: There will be no cost to participants at all.

Confidentiality: Participants will be allocated study code numbers to use instead of their particulars. The informed consent with the participants name and signature will be locked and kept in safe place to ensure confidentiality and privacy. All collected data will be handled by the researcher only and will be kept under lock and key for five years and thereafter will be destroyed by shredding.

Persons to Contact in the Event of Any Problems or Queries: Please contact the researcher, Ms. V.T. Nhlumayo on 082 485 2058; my supervisor, Professor M.N. Sibiya on 031-373 2606; or the Institutional Research Ethics administrator on 031-373 2900. Complaints can be reported to the Director: Research and Postgraduate Support, Prof S Moyo on 031-373 2577 or moyos@dut.ac.za.

Appendix 5b: Consent in English



Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, Virginia Tholakele Nhlumayo, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: _____,
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant
Thumbprint

Date

Time

Signature/Right

I, Virginia Tholakele Nhlumayo herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Virginia Tholakele Nhlumayo

Full Name of Researcher

Date

Signature

Full Name of Witness (If applicable)

Date

Signature

Full Name of Legal Guardian (If applicable)

Date

Signature

Appendix 6a: Incwadi yolwazi



Sawubona. Ngiyabonga ukuthi uvume ukubamba iqhaza kulolucwaningo.

Isihloko socwaningo: Izinto ezinomthelela ekusetshenzisweni kwezivikela kukhulelwa ezisebenza isikhathi eside, ezihoxisekayo kubantu besifazane emitholampilo yomphakathi eThekwini.

Umcwaningi: Ms. Virginia Tholakele Nhlumayo, B Cur.

UMphathi kamcwaningi: Prof. M.N. Sibiya (Iziqu zobudokotela)

Isekela Mphathi: Ms. Michelle Munsamy (Iziqu zeMastazi)

Isingeniso esifishane kanye nenhloso socwaningo: INingizimu Afrika ibhekene nezinga eliphezulu lokukhulelwa okungahleliwe nokungahlosiwe kanye nokukhula kwesidingo sokuhushulwa ikwezisu ngokuzikhethela. UHulumeni kazwelonke wezempilo uvuselele ukusetshenziswa kwezivikela nzalo ezisebenza kahle nezisebenza isikhathi eside nezihoxisekayo ezibizwa phecelezi (ama-LARC) ukuhlangabezana nezidingo zokuhlela umndeneni ezingafeziwe. Ama LARC (ahlanganisa iluphu kanye nama-implant) avikela ukukhulelwa okungahlosiwe cishe iminyaka emithathu kuya kweyishumi okuhambisana nokubuyela ethubeni lokukhulelwa ngokushesha uma isihoxisiwe/isusiwe emzimbeni. Nakuba ukusebenza kahle kanye nethuba lokukhulelwa libuya ngokushesha okuhambisana nama-LARC, ukusetshenziswa kwawo kusezingeni eliphansi umhlaba wonke kanye nalapha eNingizimu Afrika. ITheku lihlangabezane nezinga eliphansi lokusetshenziswa kwama-luphu kanye nama-implant okuhambisana nezinga eliphezulu lezicelo zokukhipha ama-implants onyakeni odlule. Phakathi kuka-Epreli noDisemba 2015, kufakwe ama-luphu awu-137, nama implant awu-442 amasha, nawu 533 abevele efakiwe, sekuhlanganisiwe kwenze kube u-975, kanye nama-implant awu 1 793 akhishiwe. Umcwaningi unesifiso sokufunda kabanzi ngezinto eziholele kulezizingqinamba.

Inhloso yocwaningo ukuthola izinto ezinomthelela ekusetshenzisweni kwezivikela nzalo ezisebenza isikhathi eside nezihoxisekayo ezibizwa phecelezi (ama-LARC) ngabantu besifazane ezikhungweni zezempilo ezisemphakathini lapha eThekwini.

Uhlelo lwemigomo ezolandelwa

Uyacelwa ukuba uphendule imibuzo esohleni lwemibuzo. Kufanele kuthathe cishe imizuzu ewu-30 -35 ukuqeda Uhlu lwemibuzo. Ngikhona ukucacisa lapho uma kuba nesidingo kodwa angizukukusiza ekuphenduleni imibuzo nanomayiphi indlela. Ungakhetha ukuphendula ngesiZulu noma ngeSingisi. Ibhekisi elivaliwe okufakwa kulo uhlelo lwemibuzo ephendulwe ngokuphelele. Uhlu lwemibuzo alufanele ukukuthathwa uhambe nalo. Uyacelwa ukuthi ugoqe uhlu lwemibuzo egcwalisiwe ebese uyifaka kwi bhokisi elivaliwe. Ekupheleni kwalesisigaba ngizolithatha mina uqobo lelibhekisi

Ukungaphatheki kahle kombambi qhaza: Ukukho

Izinzuzo: Imiphumela yocwaningo iyodluliselwa kuzikhungo zezempilo eziyisithupha ezibambe iqhaza kulolucwaningo. Izincomo ezimayelana nemiphumela yocwaningo ziyotholakala kuziphathi mandla zezempilo. Imiphumela yocwaningo iyobuyele ikhishwe kumajenali kanti futhi umcwaningi uyoyethula kwizingqungquthela.

Isizathu/Izizathu ezingenza ukuthi umbambi qhaza ahoxiswe: Ukubamba kwakho iqhaza kulolucwaningo okokuzikhethela ngokuphelele, futhi kuyimfihlo. Ukubamba noma ukungabambi kwakho iqhaza kulolucwaningo angeke kuphazamise ilungelo lakho lokwelashwa nokunakekelwa kulomtholampilo noma umuphi umtholampilo, manje nangesikhathi esizayo. Ungahoxisa noma inini ukubamba iqhaza, nanoma ngasiphi isizathu. Angeke ibekhona imiphumela engemihle ngalokho, uma ukhethe ukuhoxa ekubambeni iqhaza kulolucwaningo.

Izinzuzo: Angeke kubekhona ukukhokhelwa ngokubamba iqhaza kulolucwaningo.

Izindleko zocwaningo: Angeke zibekhona nakancane Izindleko ezizobhekana nombambiqhaza.

Imfihlo: Ababambiqhaza bonikwa izinamba ukuba bazisebenzise esikhundleni seminingwane yabo. Imvume unolwazi enegama nesiginesha yombambiqhaza, yogcinwa ikhiyelwe endaweni ephephile ukuqinisekisa imfihlo nengasese. Yonke iminingwane ngocwaningo yophathwa umcwaningi kuphela futhi yogcinwa ikhiyelwe endaweni ephephile iminyaka emihlanu emva kwalokho iyodatshulwa ngomshini.

Ukulimala okungaphathelana nocwaningo: Lolucwaningo alunasizathu engaholela ebungozini noma ukulimala.

Ubungozi obuhlobene nocwaningo: ungathintanta nomcwaningi, Nkk. T.V. Nhlumayo kunombolo yakhe 082 485 2058; Umcwaningi omkhulu, uSolwazi M.N. Sibiya on 031-373 2606; noma umabhalane

wocwaningo enyuvesi kulenombolo 031-373 2900. Izikhalo zingadluliselwa ku Mphathi womnyango wezocwaningo enyuvesi, uSolvazi S Moyo on 031 373 2577 noma moyos@dut.ac.za.

Appendix 6b: Consent in isiZulu



ISIVUMELWANO

Isivumelwano sokuhlanganyela kucwaningo:

- Ngiaqinisekisa ukuthi ngithintwe umcwaningi, u Virginia Tholakele Nhlumayo, ngemvelaphi inzuzo, (nobunzima) bocwaningo. Inombolo yemigoma yocwaningo: - _____.
- Ngitholile, ngafunda ngazengaqondisisa ngokumbandakanyeka kulolucwaningo.
- Kusobala kimi ukuthi imiphumela yalolu cwaningo ihlangene nezimfihlo zami maqondana nobulili, iminyaka, usuku lokuzalwa. Amagama ami kumbe ibizo lami kuzoba imfihlo kulolucwaningo.
- Umangibheka izidingo zocwaningo ngiyavuma ukuthi yonke imininingwane eqoqeke ngesikhathi kucwaningwa, kungenzeka igcinwe kwisikhahlezi somcwaningi.
- Kungenzeka noma kunini ngaphandle kwesivumelwano ngihoxe ekuzibandakanyeni kocwaningo.
- Sengibenesikhathi esanele ukubuza (nginga phoqiwe) ukuzilungiselela ngizabandakanye nocwaningo.
- Ngiaqonda ukuthi lonke ulwazi olwanele olutholakale ngokuzimba ndakanya kwami kulolucwaningo ngiyokwaziswa ngalo.

Igama eliphelele
Isithupha isigxivizo

Usuku

Isikhathi

Soyina/kwesokudla

Mina mcwaningi Virginia Tholakele Nhlumayo ngiaqinisekisa ukuthi lombandakanyi ongenhla uchazelwe ngokuphelele ngemvelaphi, nangezimiso zocwaningo.

Virginia Tholakele Nhlumayo

Igama eliphelele lomcwaningi

Usuku

Isikhathi

Igama eliphelele lofakazi

Usuku

Sayina

Igama eliphelele lomgcini osemthethweni

Usuku

Sayina

Appendix 7a: Questionnaire in English

Please select ONE answer for each question by using 'X'.

Do not write your name on the questionnaire.

SECTION A

Demographic information

1. What is your age?

2. Marital status

Married	
Single	
Divorced	
Widowed	

3. Highest level of education passed

No formal education	
Some/ all Grades R-6	
Some/ all Grades 7-9	
Some/ all Grades 10-12	
Post school education	

4. Home language

English	
IsiZulu	
IsiXhosa	
Other: Please specify _____	

5. Race

Black	
Coloured	
Indian	
White	
Other: Please specify _____	

SECTION B

1. Reproductive history

Please indicate the number that applies to you with regard to the following.
Enter 0 (zero) if it does not apply to you.

1.1 Number of children of your own	
1.2 Number of times you have been pregnant	
1.3 Number of live births	
1.4 Number of <u>voluntary</u> terminations of pregnancy / abortions you have had (this does NOT include miscarriages)	

2. Contraceptive usage

Indicate your usage of the following forms of contraception. Select only ONE response for each method)

	Never used	Used but stopped using	Still using
2.1 Oral contraceptive pills.			
2.2 Injection (depot medroxyprogesterone acetate and / or norethisterone enanthate).			
2.3 Intrauterine device sometimes called loop.			
2.4 Contraceptive Implants.			
2.5 Any other method: Please specify: _____			

3 If you stopped using one of these forms of contraception, please indicate the MAIN reason why you stopped. Select ONE option only for each question.

	Wanted to fall pregnant	Experienced side effects	My partner did not want me to continue using it	Another reason: Please specify	Not applicable as I never used it or still use it
3.1 Oral contraceptive pills.					
3.2 Injection (depot medroxyprogesterone acetate and/ or norethisterone enanthate).					

3.3 Intrauterine device sometimes called loop.					
3.4 Contraceptive Implants.					
3.5 Any other method: Please specify: _____					

4. Are you interested in using long acting reversible contraceptive methods in the form of intrauterine device or implants?

Yes	No

SECTION C

5. Attitudes and perceptions about long acting reversible contraceptives

Indicate your agreement with the following statements regarding your attitudes towards and perceptions of long acting reversible contraceptives. Select only one answer by using 'X'.

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
5.1 I think an intrauterine device is good because you get a chance of a pelvic examination during insertion.					
5.2 I think an intrauterine device is good because once inserted, you do not have to come to clinic every month.					
5.3 I think implants are suitable for young women, especially those in high school, those doing tertiary education and those who have just started working.					
5.4 I think intrauterine devices are good for women who want to space the births of their children.					
5.5 I think an intrauterine device is suitable for young women who have never been pregnant.					
5.6 I would encourage a friend to use a contraceptive implant.					
5.7 I think long acting reversible contraceptive methods are good because, when used consistently, they prevent unintended pregnancies.					
5.8 Long acting reversible contraceptive methods are for women who have previously had children.					

5.9 A woman needs the approval of her male partner in order to use long acting reversible contraceptive methods.					
5.10 It is better to use implants because one does not have to go through a pelvic examination.					
5.11 Using implants is associated with stigma in the community.					

SECTION D

6. Myths and misconceptions

Indicate your agreement with the following statements:

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
6.1 The male partner can feel the intrauterine device during sexual intercourse.					
6.2 Intrauterine devices are associated with pains during sexual intercourse.					
6.3 If one falls pregnant on an intrauterine contraceptive method, the baby will come out holding it.					
6.4 Conception is difficult after using an intrauterine device for about one to three years.					
6.5 Using an intrauterine device is the same as committing abortion, so it is not right for certain religions.					
6.6 An electric sensor like one at shops, can sense implants in a woman's arm when she passes through the sensor.					

6.7 Implants are a symbol of evil because they are inserted on the arm - it is like a mark that a woman is identified with by the devil.					
6.8 Implants cause birth defects.					

SECTION E

7. Side effects and adverse event

Indicate your agreement that the following are side effects/adverse events from using long acting reversible contraceptive methods

Side effect	Yes	No	Not applicable
7.1 I suffered from a pelvic inflammatory disease as a result of using an intrauterine device.			
7.2 I experienced severe vaginal bleeding after I started using an intrauterine device.			
7.3 I had an intrauterine device removed because it partially came out on its own.			
7.4 I had an intrauterine device removed because it perforated my cervix.			
7.5 I had an ectopic pregnancy while using an intrauterine device as a method of contraception.			
7.6 I suffered irregular vaginal bleedings when I started using implants.			
7.7 I fell pregnant while on a contraceptive implant.			
7.8 I had a contraceptive implant removed because it migrated to the chest area.			

7.9 It was very painful when the contraceptive implant was removed.			
7.10. I suffered severe skin rash from a contraceptive implant insertion.			
7.11 I suffered from severe headaches when I started using contraceptive implants.			
7.12 I gained weight when I started using contraceptive implants.			
7.13 At times I experienced breast tenderness and mood swings when I started using contraceptive implants.			

Thank you for your participation in this study

Appendix 7b: Questionnaire in isiZulu

Maka impendulo yakho ngokukhetha okukodwa ngokusebenzisa u 'X'.

Ungalibhali igama lakho kuloluhlu lwemibuzo.

ISIGABA A

Ulwazi ngemvelaphi

1. Uneminyaka emingaki? _____

2. Ubudlelwano obusemthethweni

Ushadile	
Usingili	
Wehlukanisile umshado	
Ngumfelokazi	

3. Izinga eliphezulu lezemfundo oluphasile

Ayikho imfundo esemthethweni	
Ingxenyewonke amazinga R-6	
Ingxenyewonke amazinga 7-9	
Ingxenyewonke amazinga 10-12	
Izinga eliphakeme emva kokuqeda isikole	

4. Ulimi olukhulunywa ekhaya

IsiNgisi	
IsiZulu	
IsiXhosa	
Olunye Chaza _____	

5. Ubuzwe

Umnyama	
Ulikhaladi	
Omdabu waseNdiya	
Umhlophe	
Okunye: Chaza _____	

ISIGABA B

1. Umlando ngenzalo

Uyacelwa ukuthi ukhethe inamba ehambelana nawe. Faka iqanda (O) uma kungahambelani nawe

1.1 Inani lezingane zakho onazo	
1.2 Amasu okukhulelwa obenawo	
1.3 Izingane ozibelethe ziphila	
1.4 Inani lokukhipha/ukuchitha ngenhloso isisu, hayi ukuphuphunyelwa isisu.	

2. Ukusetsheziswa kwezivimba nzalo

Faka umaka kwinhlobo yokuvimbela ukuzala oyisebenzisayo. Khetha EYODWA ngenhlobo ngayinye

	Angika ze ngiyise benzise	Ngama ukuyise benzisa	Ngisayi sebenzi sa
2.1 Amaphilisi okuvikela ukuzala.			
2.2 Umujovo (i-depot medroxyprogesterone acetate kanye / noma i-norethisterone enanthate).			
2.3 I-luphu			
2.4 I-implanti eyisivikela kukhulelwa.			
2.5 Enye: Ngicela uchaze_____			

3 Uma wayeka ukusebenzisa enye yalezinhlobo zokuvikela ukuzala, sicela ukhombise Isizathu ESIKHULU esenza ukuthi uyeke. Khetha EYODWA kuphela impendulo ngombuzo ngamunye.

	Ngasengifuna ukukhulelwa	Angiphathe kanga kahle	Uphathina wami akafunanga ngiqhubeke nokuyisebenz isa	Esinye Isizathu: Ngicela uchaze _____	Akukho, ngoba Angikaze ngiyisebenzise noma Ngisayisebenzisa
3.1 Amaphilisi okuvikela ukukhulelwa.					
3.2 Umujovo (i-depot medroxyprog esterone acetate kanye / noma i- norethisteron e enanthate).					
3.3 I-luphu					
3.4 I-implant evikela ukukhulelwa					
3.5 Enye inhlobo: Ngcela uchaze _____ —					

4 Ngabe uyathanda ukusebenzisa izinhlobo ezivikela ukukhulelwa isikhathi eside kodwa ezinokuhlehliseka uma usufuna ukukhulelwa njengeluphu noma i-implanti?

Yebo	
Cha	

ISIGABA C

5. Indlela ozizwa ngayo kanye nemibono ngama-LARC

Khombisa ukuvumelana nalezitatimende eziphathelele nemibono yakho.

Isitatimende	m	u	k	u	h	a	a	k
5.1 Ngicabanga ukuthi i-luphu ikahle ngoba uthola ithuba lokuhlolwa esingezansi ngesikhathi ifakwa.								
5.2 Ngicabanga ukuthi i-luphu ikahle ngoba, uma isifakiwe awulokhu ubuyela emtholampilo nyangazonke.								
5.3 Ngicabanga ukuthi ama-implanti abafanele abesifazane abasebancane, kakhulukazi abasesikoleni samabanga aphezulu nabasemfundweni yezinga eliphakeme nabasanda kuqala ukusebenza.								
5.4 Ngicabanga ukuthi i-luphu ibafanele abesifazane abafuna ukuba ngesikhathi esanele sokulamanisa izingane.								
5.5 Ngicabanga ukuthi i-luphu ibafanele abesifazane abangakaze bakhulelwe.								
5.6 Ngingamkhuthaza umngani wami ukuthi asebenzise i-implanti.								

5.7 Ngicabanga ukuthi ama-LARC (iluphu ne-implanti) akahle ngoba uma esetshenziswa ngokunganqamuki, avikela ukukhulelwa okungahlosiwe.					
5.8 Ama-LARC (iluphu nama-implant) awabesifazane asebeke bathola abantwana ngaphambili.					
5.9 Owesifazane udinga imvume yophathina wakhe wesilisa ukuze akwazi ukusebenzisa ama-LARC.					
5.10 Kungcono ukusebenzisa ngoba umuntu akabhekani lokuhlolwa esingezansi.					
5.11 Ukusebenzisa i-implanti kuhambelana nokucwaswa emphakathini.					

ISIGABA D

6. Izinkolelo nolwazi okungelona

Khombisa ukuvumelana kwakho nalezitatimende ezilandelayo:

Isitatimende	Angivumi kakhulu	Angivumi	Ngiphakathi i nendawo	Ngiyavuma	Ngivuma kakhulu
6.1 Uphathina wesilisa uyayizwa i-luphu ngesikhathi nisocansini.					
6.2 Ama-luphu ahambelana nobuhlungu ngesikhathi usocansini.					
6.3 Uma ukhulelwa usebenzisa iluphu, ingane iphuma nayo iyiphethe ngesandla.					

6.4 Akulula ukukhulelwa uma ususebenzise i-luphu kusuka onyakeni kuya eminyakeni emithathu.					
6.5 Ukusebenzisa iluphu kufana nokukhipha isisu, ngakho akuhambelani nezinye izinkolo.					
6.6 Isensa kagesi enjengalena esezitolo iyayizwa i-implanti isengalweni yowesifazane uma edlula ngakuyona.					
6.7 Ama-implanti awuphawu lobubi ngoba afakwa engalweni, abanjengomaka owesifazane obonwa ngawo u-devil.					
6.8 Ama-implanti abanga izidalwa/ukuzala ingane ekhubazekile.					

ISIGABA E

7. Ukungaphatheki kahle kanye nokugula okungalindelekile

Khombisa ukuvumelana kwakho ukuthi okulandelayo ukungaphatheki kahle okulindelekile kanye nokugula okungalindelekile kubangwa ukusebenzisa ama-LARC (iluphu ne-implanti).

Ukungaphatheki kahle	Yebo	Cha	Akukho
7.1 Ngaphathwa isifo sesinye kanye nesingenzansi ngenxa yokusebenzisa iluphu.			
7.2 Ngopha kakhulu esithweni sanga sese emva kokufakwa iluphu.			
7.3 Kwafanele ukuthi ikhishwe i-luphu ngoba yase ivele iziphumele ngokwayo ngokungaphelele.			

7.4 Ngakhishwa i-luphu ngoba yayisihlabe isibeletho.			
7.5 Ngaba nokukhulelwa okusethinjini eliseceleni lesibeletho (ectopic pregnancy) ngesikhathi ngisebenzisa iluphu.			
7.6 Ngabanenkinga yokopha esithweni sangasese okwakubakhona kubuye kuphele ngisebenzisa i-implanti.			
7.7 Ngakhulelwa ngisebenzisa i-implanti.			
7.8 Ngakhishwa i-implanti ngoba isihambe ngaphakathi yaze yafika esifubeni.			
7.9 kwababuhlungu kakhulu ukukhishwa i-implant.			
7.10. Ngaphathwa isikhumba okukhulu lapho kwafakwa khona i-implant.			
7.11 Ngaphathwa ubuhlungu bekhanda obukhulu emva kokuqala ukusebenzisa i-implanti.			
7.12 Ngavele ngakhuluphala emva kokuqala ukusebenzisa i-implanti.			
7.13 Kwesinye isikhathi bengizwa ubuhlungu bamabele kanye nokuba nenhliziyo encane kwesinye isikhathi, emva kokuqala ukusebenzisa i-implanti.			

Ngiyabonga ngokubamba kwakho iqhaza kulolucwaningo.

Appendix 8: Letter of consultation from the statistician

Appendix 4: Letter from a statistician confirming consultation

Gill Hendry B.Sc. (Hons), M.Sc. (Wits), PhD (UKZN)
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25 April 2016

To whom it may concern

Please be advised that I will be assisting Ms V.T. Nhlumayo (student number 21646791) who is presently studying for a Master of Health Sciences in Nursing with the statistical aspects of her study.

Yours sincerely

Gill Hendry (Dr)

Appendix 9: Certificate from the professional editor

DR RICHARD STEELE

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EDITING CERTIFICATE

Re: Virginia Tholakele Nhlumayo

Master's dissertation: Factors influencing the uptake of long acting reversible contraceptives, among women at primary health clinics in eThekweni District

I confirm that I have edited this dissertation and the references for clarity, language and layout. I am a freelance editor specialising in proofreading and editing academic documents. My original tertiary degree which I obtained at the University of Cape Town was a B.A. with English as a major and I went on to complete an H.D.E. (P.G.) Sec. with English as my teaching subject. I obtained a distinction for my M.Tech. dissertation in the Department of Homeopathy at Technikon Natal in 1999 (now the Durban University of Technology). During my 13 years as a part-time lecturer in the Department of Homeopathy at the Durban University of Technology I supervised numerous Master's degree dissertations.

Dr Richard Steele

30 May 2017

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