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DEGREE OF**

**MASTERS IN PUBLIC HEALTH**

**Women's Knowledge and Attitudes towards Discontinuation of the Long-Acting  
Reversible Contraceptive (Implanon) in Buffalo City Municipality, South Africa**

**BY**

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**DECLARATION**

I, Khungelwa Patricia Mrwebi, do hereby declare that this research study is entirely my own work, except where it is attributed to other authors and sources; that this research study has not been previously submitted by me for a degree at this or any other university; and that it is my work in design and in execution.

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## DECLARATION ON PLAGIARISM

I, **Khungelwa Patricia Mrwebi**, student number: 201415822 hereby declare that I am fully aware of the University of Fort Hare's policy on plagiarism and I have taken every precaution to comply with the regulations.

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## **CERTIFICATION**

This thesis entitled “Women’s Knowledge and Attitudes towards Discontinuation of the Long-Acting Reversible Contraceptive (Implanon) in Buffalo City Municipality, South Africa” meets the regulation governing the award of the degree of Masters in public health of the University of Fort Hare.

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Prof. DT Goon  
Supervisor

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Date

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I would first like to thank my thesis supervisor Prof DT Goon of the Faculty of Health Sciences, University of Fort Hare. The door to Prof. Goon's office was always open whenever I ran into a trouble spot or had a question about my research or writing. He consistently allowed this paper to be my own work, but steered me in the right direction whenever he thought I needed it.

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My family, my son Vuyisa, my 1<sup>st</sup> daughter Amanda and my last born Khanya whose encouragement was a source of strength for me, my little daughter Khanya who has experienced nights without her mother. I thank you for your support and great patience at all times.

## **DEDICATION**

This dissertation is dedicated to all young women, women in general and communities whose livelihood is dependent on us healthcare workers in finding lasting solutions to better serve you and improve our health outcomes, including reproductive health solutions.

## Abstract

Unintended pregnancy remains a public health concern worldwide despite the availability of many contraceptives options. The South Africa Government introduced Implanon —a Long-acting Reversible Device— with aim to cost effectively prevent unplanned pregnancy. There are concerns that the implementation of this contraceptive option was without prior piloting to test for level of acceptance and attitude towards this contraception. Also, there is paucity of evidence on knowledge of women and their attitude to implanon as well as duration of use and reasons for discontinuation of implanon in South Africa. The present study address this gap by assessing the women's knowledge of and attitude to implanon as well as reasons for implanon discontinuation in Buffalo City Municipality in South Africa.

This prospective observational study administered a pre-validated questionnaire to 189 women who had removed implanon in the reproductive health clinic in one regional hospital and a primary health centre in Buffalo City Municipality. Descriptive statistics were used to analysis the study data.

The average duration for implanon use among the participants was 11.2 months. Most participants had poor knowledge of implanon and implanon knowledge was significantly associated was with age. Most participants opined that implanon use is associated with heavy bleeding (60.7), irregular frequent bleeding (84.3%), and weight gain (67%). The main reason for implanon discontinuation was its side effects (71.3 %). Other reasons for discontinuation of implanon are poor or wrong positioning (3.2%), want to become pregnant (4.3%). Some participants discontinued implanon because they were on treatment; 24 participants on ARV drug, one on antipsychotic drugs, and one on TB drugs. Experience of heavy bleeding (39.9%) was the most stated side of implanon leading to implanon discontinuation. The study concluded that women, even though adopted implanon, lack knowledge of implanon mechanism of action and side effects. Poor knowledge of implanon side effects could explain its early discontinuation among women in South Africa. Provider should prioritise comprehensive counselling of clients on implanon side effects and mechanism of action in order to realise the benefit of implanon in this population

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## **ABBREVIATIONS AND ACRONYMS:**

LARC Long-acting Reversible Contraceptive

WHO World Health Organisation

IUD Intra-Uterine Device

HIV Human Immunodeficiency Virus

MDG Millennium Development Goal

STI Sexually Transmitted Infection

TB Tuberculosis

CARMMA Campaign for Accelerated Reduction of Maternal Neonatal and Child Mortality in Africa

ARVs Antiretrovirals

## KEYWORDS

**Contraceptives** refers to a device or a drug that is used to prevent the occurrence of pregnancy.

**Family Planning** refers to the use of contraceptives to be able to space child birth so as to control the size of the family, that is, the number of children that the family has agreed to have.

**Epidemic levels** refers to a rapid spread of a particular condition.

**Long acting reversible device** refers to a device that is inserted to a woman as a form of a contraceptive that acts for an extended period without requiring user action. These include injections, intrauterine devices and subdermal contraceptive implants.

# CHAPTER ONE

## 1.1 INTRODUCTION

While unintended pregnancy remains a critical issue at a global scale, one cannot ignore how a woman's knowledge and attitude may create false mistrust of long-acting reversible contraceptive such as Implanon. The attitude toward discontinuation of the long-acting device and the prevalence toward prime choice of alternative methods of contraceptive suggest a lack of knowledge, preparedness and medical intervention taking place at some point in the woman's life. ( Winner, B., Peipert, JF., Zhao, Q., Buckel, C., Madden, T., Allsworth, J.E., and Secura, G.M.2012, pp. 1998-2007) stressed the success of the long-acting reversible contraceptive method: "Long-acting reversible contraceptive methods, including intrauterine devices (IUDs) and subdermal implants, are not user-dependent and have very low failure rates (less than 1%), which rival those with sterilization." What is completely not understood is why discontinuation or lack of use remains high, especially in populations of women who are at higher risk of unintended pregnancy. (Harper, C.C., Craig, A.D., Dehlendorf, C., Borrero, S., and Rocca, C.H.2008, pp. 1359-1369) see a connection between the level of applied use of these devices and a vital link between health worker training and knowledge but also this knowledge is passed onto the patient in the form of understanding the potential benefits and value of the device when in use.

Harper et al. (2008, pp. 1359-1369) further argues that the attitude toward a long-acting reversible contraceptive may be dependent upon socio-economic variables and a woman's relative understanding of how her body functions. One's personal knowledge of menstruation, conception and how the female reproductive system works on an average cycle of 28 days may have a direct relationship with not only her personal socio-economic level of disparity but also her level of access to knowledge and critical aspects of healthcare (Rocco & Harper, 2012, pp. 150-158). The issue of disparity in relationship to demographic variables found within the specific population of Buffalo City should be examined in detail to determine how these socio-economic experiences impact one's accessibility to healthcare. The demographic variables may play an important role in establishing one's personal relationship with the body at the level of understanding how contraceptives work and how application of this knowledge

greatly impacts choices of contraceptive use. The relationship between the woman's body and her perception of knowledge on the concept of contraceptives may also be directly related to social acceptance of such long-acting devices.

Rocco and Harper (2012, pp.150-158) view disparity as how the woman's attitude is shaped by socio-economic forces, possible cultural levels of acceptance for practicing family planning and lack of knowledge and poor attitude which create situations of health crisis. Weldegerima and Denekaw (2008, pp. 302-307) stress the importance of contraceptives and knowledge of reproductive health for women, taking cognisance of their family socio-cultural and economic environments, particularly those in developing countries, because in these environments, if ignored, pregnancy and medical conditions stemming from a lack of reproductive healthcare access can mean a death sentence. Weldegerima and Denekaw (2008, pp. 302-307) echoes, "Every minute of every day at least 1 woman dies from complications of pregnancy and child-birth, a total of more than 585,000 deaths every year. Ninety-nine percent of these deaths occur in developing countries." Craig, Dehlendorf, Borrero, Harper, Rocca. (2014, pp. 281-289) researched how one's race and ethnicity may prove to be barriers to knowledge about contraceptives but also how this may shape individual attitude toward seeking knowledge for informed decisions. The link between lack of knowledge and high rates of pregnancy coincide with demographic factors.

Even with advancing technology the rate of unintended pregnancies remains at epidemic levels. According to the World Health Organization (WHO, 1997), of the 182 million pregnancies estimated to occur annually in low-income countries, more than one third are unintended, and a higher rate is estimated in high-income countries, where more than 40 percent of all pregnancies are unintentional (Blumenthal, Voedisch & Gemzell-Danielsson, 2011, pp. 121-137). Such high rates of unintended pregnancy have a constraining effect, not only on the women and their families, but also on health systems, economies and the environment (Blumenthal et al., 2011, pp. 212-137). Despite annual increases in the prevalence of contraceptive use worldwide, and advances in available contraceptive options, millions of women who do not want a child or want to delay childbearing are not using contraception (Frost, Singh & Finer, 2007, pp. 48-55).

However, in low-income countries the provision of effective contraceptives is hindered by many obstacles, for example a lack of knowledge and attitudes towards the available long-acting reversible methods, poor supplies, and poor road infrastructure to access rural women (Jones, Darroch & Henshaw, 2002, pp. 294-303). These are seen as barriers to access adequate contraceptive services. The WHO (2010, pp. 557-576) document on the eligibility of contraceptive use for women paved a way in developing programmes that can be used to guide programme managers on the safety and use of different contraceptive methods.

In an attempt to provide a contraceptive method that is 100 percent effective at preventing pregnancy, it is important to take into account the level of education of the woman, societal influences, and the general belief systems of women. According to Blumenthal et al. (2011, pp. 121-137), women who are poor, illiterate, and unmarried are more likely to have an unwanted pregnancy. This phenomenon puts pressure on the service providers to prepare women through counselling and education about different methods of contraceptives rather than imposing a particular method, bearing in mind that women are attracted to particular forms of contraception for many different reasons.

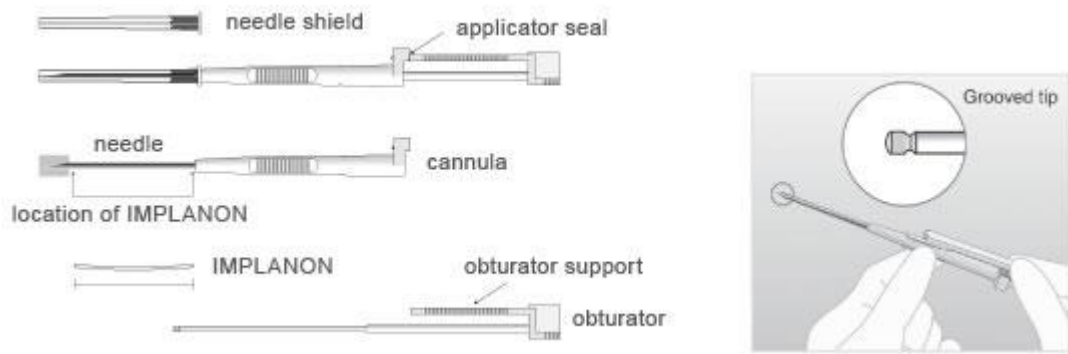
The use of contraception depends on characteristics of the contraceptive methods themselves as well as the behaviour and motivation of the user; therefore, the ideal contraceptive method should be 100 percent effective at preventing pregnancy, easy to use, long acting, have no side effects, and produce immediate though reversible sterility (Coskun, 2005, pp. 123-145). In reality, there is no contraceptive method that is currently available that meets all of the above standards; however, a progestin-only method recently approved and rolled out in 2014 by the Department of Health in South Africa has the advantage of being long acting, requiring little patient follow-up, and providing highly effective, reversible pregnancy prevention once inserted.

Besides providing women with access to safe and effective contraception, enabling them to make choices about their fertility is equally empowering and offers women better economic and social opportunities. Birth spacing also improves the opportunities for children to thrive physically and emotionally.



The range of methods available to couples has been expanded, with increased access to additional long-acting reversible contraceptives. There is, however, continual debate on the available forms of contraception. A number of reviewed articles on Implanon in the US (Mestad, Secura, Allsworth, Madden, Zhao & Peipert, 2011, pp. 493-498), New Zealand (Rose et al., 2010), and Nigeria (Ojule, Oranu & Enyindah, 2012, pp. 710-714) examined the acceptability and efficacy of Implanon, however, hardly are such studies available in South Africa, where Implanon is an added reproductive method. A study done in the US on women's beliefs about the implant showed that women who had received contraceptive counselling at clinics but chose other methods did so because of misconceptions about the severity of the implant's side effects (Frost et al., 2007, pp. 48-55). For example, more than one third believed use of the implant would make it more difficult to conceive in the future (Frost et al., 2007, pp. 48-55).

According to Harvey, Seib and Lucke (2009, pp. 39-56), Implanon is generally well tolerated. In clinical trials on the reasons for the discontinuation of Implanon, a proportion of women discontinued using it because of unacceptable side effects, particularly frequent and/or prolonged irregular bleeding. The side effect of Implanon use, however, differs between countries. More than one third of women believed the use of the implant would make it more difficult to conceive in the future (Frost et al., 2007, pp. 48-55). Furthermore, 29 percent feared long-term health problems, and 21 percent were concerned about harm to future babies (Frost et al., 2007, pp. 48-55). Some reasons stated for discontinuation are often associated with perceived risks and with real and or perceived side effects. According to Rowlands (2010, pp. 243-248), a UK group action in 1995 was mounted against the manufacturer of Norplant, with an initial allegation that the product was introduced hastily with a substandard training programme, but expert evidence did not support this. The main claim, by 275 women, was for a range of possible levonorgestrel-related side effects and difficulties with removal. Expert evidence had revealed that the effects of the product were within the predicted range of side effects.



**Figure 1. (a):** Showing: Applicator and its parts shown in the above diagram.

Tolley, Loza, Kafafi and Cummings (2005, pp. 15-23) study conducted in Egypt concerning the rate of discontinuation and knowledge about Implanon, indicates that before acceptance of any contraceptive method, women reported an average of five bleeding days per cycle during the first six months. IUD users reported an average of six days of bleeding per cycle; injectable and implant users reported 11–12 days of bleeding, which is significant compared to other methods and is an indicator of early discontinuation (Tolley et al., 2005, pp. 15-23).

## 1.2 RESEARCH PROBLEM

It has been noted with great concern that a considerable number of women in South Africa are removing the Implanon, having accepted it before, barely a year after the Long-acting Reversible Contraceptive (LARC) was introduced. It was expected that the introduction of Implanon would reduce the high rate of teenage pregnancy and its related problems. The contraceptive implant may not be an appropriate option for women who desire short-term contraceptive protection; however, it is the only reversible method that requires minor surgery for insertion and removal, and while the procedure is simple and relatively risk-free, it nonetheless entails the invasiveness that goes with any surgical intervention. Nonetheless, its efficacy is close to sterilisation with no pregnancy (Ojule et al., 2012, pp. 710-714).

Despite the benefits of Implanon, the rate of discontinuation of this newly introduced contraceptive method among the reproductive-aged women at Buffalo City Municipality is worrisome. It is therefore worthwhile examining the factors responsible for the upsurge in discontinuation rate. Therefore, this study examined the knowledge,

attitudes and reasons for the discontinuation of Implanon, a recent reproductive health programme in South Africa, among women attending health clinics in Buffalo City Municipality, Eastern Cape Province.

### **1.3 RESEARCH QUESTIONS**

The following research questions were formulated in this study:

1. What is the level of knowledge of women attending Buffalo City Municipality Clinics about implanon?
2. What is the attitude and behaviour towards implanon use by women attending Buffalo City Municipality Clinics?
3. How do women attending Buffalo City Municipality Clinics perceived implanon side effects?
4. What are the reasons for implanon discontinuation among women attending Buffalo City Municipality Clinics?

### **1.4 AIM AND OBJECTIVES**

The main aim of the study was to assess women's knowledge of and attitudes towards implanon and reasons for discontinuation of Implanon in Buffalo City Municipality, Amatole District, in order to inform public health policy concerning the newly introduced contraception. Specifically, the study examines the following objectives:

1. To examine the knowledge of women concerning Implanon use in Buffalo City Municipality Clinics.
2. To determine the attitudes and behaviour of women toward Implanon use in Buffalo City Municipality Clinics.
3. To examine the women's perception about implanon side effects women attending Buffalo City Municipality Clinics about implanon?
4. To examine the reasons for discontinuation of implanon among women in Buffalo City Municipality Clinics.

## **1.5 RATIONALE OF THE STUDY**

Sexual and reproductive health of adolescents has been a major international concern because of serious consequences of a high pregnancy rate among teenage girls with the resultant increase in maternal morbidity and mortality rates, as well as an increased rate of school drop-outs that leads to unemployment among young people (Panday et al., 2009, pp. 55-78). This is a global phenomenon and South Africa is not an exception.

About 15 million adolescents experience pregnancy each year. Because most of the pregnancies are unwanted, young women tend to have induced abortions (Coskun, 2005, pp. 78-90). There is an urgent need to develop effective programmes aimed at improving contraception in young women in South Africa; and to increase the uptake of LARC for young women to be able to better space their children. As mentioned above, birth spacing improves the opportunities for children to thrive physically and emotionally. The Minister of Health in South Africa has acknowledged the importance of contraception as one of the World Health Organization's four strategic prongs for the prevention of mother-to-child transmission of HIV (Health, 2012, pp. 67-98).

Contraception and planning for conception contributes to the reduction of HIV transmission, thereby supporting the National Strategic Plan on HIV, STIs and TB (2012-2016). It has enormous potential to contribute to South Africa achieving its Millennium Development Goals, particularly MDGs 4 and 5 (United Nations Statistics Division, 2007). It is also an important part of the strategy to ensure the successful implementation of the African Union's Campaign for the Accelerated Reduction of Maternal, Neonatal and Child Mortality in Africa (CARMMA), to which South Africa is a signatory (Health E-News, 2012). If family planning is made available and voluntary to every woman, particularly in the developing countries, proper counselling and women-friendly clinics will contribute to the reduction of maternal and newborn health care costs.

## **1.6. SIGNIFICANCE OF THE STUDY**

The findings of the study will inform public health policy concerning this newly introduced reproductive method-implanon in terms of the benefits and the

misconceptions surrounding its use. This might contribute to the reduction of maternal and newborn health care costs. The findings will create awareness concerning implanon use among women in the setting, thus promoting its use.

## **1.7 OPERATIONAL DEFINITIONS OF KEY TERMS**

**Contraceptives** refers to a device or a drug that is used to prevent the occurrence of pregnancy.

**Family Planning** refers to the use of contraceptives to be able to space child birth so as to control the size of the family, that is, the number of children that the family has agreed to have.

**Long acting reversible device** refers to a device that is inserted to a woman as a form of a contraceptive that acts for an extended period without requiring user action. These include injections, intrauterine devices and subdermal contraceptive implants.

## **1.8 OUTLINE OF THE STUDY**

**Chapter 1** deals with the background of the study, problem statement, aim, objectives, research questions, rationale of the study, significance of the study, and the definitions of key operational terms are described and presented. The chapter also describes the division of the study.

**Chapter 2** concerns the literature review. In this chapter, the existing body of knowledge on unintended pregnancy and use of contraceptive are presented first. The review covers acceptance of and barriers to use of Long Acting Reversible Contraception (LARC) and reasons for discontinuation. Lastly, a theoretical framework guiding the present study is presented.

**Chapter 3** provides the detail plan of the research through the research design and methodology. This covers the research approach, the details of the research setting, population, sampling, inclusion and exclusion criteria, research instrument, data collection procedure, reliability and validity, data analysis and ethical considerations.

**Chapter 4** presents the results of the study and the discussion.

**Chapter 5** provides a summary of the study, major findings, together with the limitations of the study are, presented. This is followed by the conclusions and recommendations.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

A review of the existing body of knowledge on unintended pregnancy and use of contraceptive are presented first. The review covers acceptance of and barriers to use of Long Acting Reversible Contraception (LARC) and reasons for discontinuation. Lastly, a theoretical framework guiding the present study is presented.

#### **2.2 UNPLANNED PREGNANCIES AND CONTRACEPTION**

Unwanted pregnancy constitutes a global public health concern, with an estimated 213 million pregnancies occurred globally in 2012, of which 40% are unintended (WHO, 2012) Unintended pregnancies are either mistimed or unwanted. The rate of unintended pregnancy is very high due to low use of contraception despite availability. Unwanted pregnancy is the main reason women seek abortion and due to restrictive abortion law in many countries, many pregnancies are being aborted by quacks in unsafe conditions leading to deaths. A study that explored the decision making of women concerning unwanted pregnancy in a hospital setting shows that most women that consulted their general practitioners for unwanted pregnancy opted for an abortion and did not change their minds. Unwanted pregnancies have social and economic consequences. Deaths resulting from abortion further increase a population's maternal mortality by 10%.

The rate of unintended pregnancy runs high in teens and young adults, primarily due to postponement of childbearing due to schooling and a lack of knowledge about contraceptive methods. Global statistics on the prevalence of induced abortion indicates that the highest prevalence of abortion in young women is predominantly found in sub-Saharan Africa. The rate of unwanted pregnancy is high in South Africa especially among young women. A study conducted in East London indicates high incidences of unplanned pregnancies and many of the women requested for termination of pregnancy when it is already too late (Mshweshwe, Mgoli, Hofmeyr, Mangesi. 2016,).

Preventing unplanned pregnancy is not always straightforward because many women often become pregnant shortly after discontinuing contraception as a result of side effects. Nonetheless, unplanned pregnancies can be prevented with the use of various contraceptive methods.

### **2.3 IMPLANON, MECHANISM OF ACTION AND BENEFITS**

Implanon is a single-rod, progestogen-only contraceptive implant that provides effective contraceptive coverage for three years (Croxatto, Urbancsek, Massai, Bennink & Van Beek, 1999, pp. 21-27). A trained healthcare provider inserts the implant under local anaesthesia in the correct subdermal plane of the inner upper arm. The implant contains 68 mg of etonogestrel, the active metabolite of desogestrel, a third-generation progestin. The initial etonogestrel release rate of 60-70 microgram/day decreases slowly and steadily over time, although serum etonogestrel levels are maintained at sufficiently high levels to effectively suppress ovulation in most women. In one study, ovulation was observed for the first time with Implanon after 30 months and ovulation rapidly resumed after removal of the implant (Makarainen, van Beek, Tuomivaara, Asplund & Coeling Bennink, 1998, pp.). On the basis of results from 11 international clinical trials of 942 healthy women aged 18 to 40 years, no pregnancies occurred while Implanon was in place, but six pregnancies were reported within 14 days of implant removal (Darne et al., 2009) The failure rate of Implanon is lower than or comparable to that of the oral contraceptive pill, most intra-uterine contraceptive devices, and female sterilisation. However, menstrual irregularities make it unpopular among some women (NICE Guideline, 2005, pp. 473-480).

Implanon as a form of contraception and its benefits have been widely researched and reviewed. The most obvious benefit of Implanon is that it does not require the user to adhere to a specific routine, such as oral contraceptive methods and barrier methods where the pill has to be taken daily and pre-coital administration of a diaphragm (Blumenthal et al., 2011, pp. 121-137). Although they require a trained healthcare professional to initiate, Implanon is highly effective among couples who use them and are regarded as having low failure rates in terms of protection (Graesslin & Korver, 2009). In a clinical trial done in the UK, comparing Norplant and Implanon's



effectiveness, no pregnancies were reported in women using either Implanon or Norplant in the period of 3-5 years respectively (NICE Guideline, 2005, pp.487-498).

Methods not requiring daily or coital adherence also make for a good choice for remote rural settings. In a study done to evaluate contraceptive methods used by older women, Godfrey, Chin, Fielding, Fiscella and Dozier (2011, pp. 4-9) noted the ease and convenience the methods brought to women, compared to other methods that are very technical and interfere with sexual intercourse. The most significant benefit that women report positively about is the low failure rate, meaning no pregnancies reported whilst the implant is inserted.

One of the most important benefits of Implanon is the fact that it is oestrogen free, making it a good choice for all the women with systemic hypertension, diabetes, anemia and endometriosis (Bonnema, Megan & Abby, 2010, pp. 621-628). With South Africa facing the quadruple burden of disease, amongst which are non-communicable diseases like diabetes, hypertension, cancer and heart diseases, counselling and discussion on the eligibility of contraception becomes an integral part of family physicians' management of these conditions (Steyn & Kluge, 2010). However, Implanon is relatively new in the country, which opens opportunities for research. Drug interactions can affect the effectiveness of contraceptives; it is therefore imperative that one considers drug interaction as these drugs which are called enzyme inducing drugs, (cytochrome p450) are capable of reducing the serum concentration of administ of contraceptives. (WHO, 2010, pp.453-469).

Another benefit of implanon is that no routine follow-up is needed for up to three years for Implanon and up to five years for Norplant, which becomes crucial in the selection of the method of contraception. According to Meirik, Fraser and d'Arcangues (2003, pp. 49-59), Implanon also enjoys excellent reversibility with return of fertility almost immediately due to the fact that implant pharmacodynamics allow it to secrete low doses of progestogens that clear rapidly from the circulation after implant removal, with the consequent resumption of ovarian function (Croxatto, 2002, pp. 21-27). However, for older women who have been on an implant with fertility declining with age, return of fertility can be delayed (Meirik et al., 2003, pp. 49-59). Implanon combine

reversibility with highly effective contraception, as they do not rely on compliance and correct use in the same way as pills (Power, French & Cowan, 2007, pp.1-38).

Additional advantages of Implanon include its cost effectiveness compared to injectables and pills (Meirik et al., 2003, pp. 49-59). Though the initial cost of insertion and purchase can be unaffordable in overseas countries, cost is not an issue in South Africa as the implant is provided free in public health facilities. Implanon can be used by women who are breastfeeding and can be inserted six weeks post-partum.

#### **2.4 ACCEPTABILITY OF AND BARRIERS TO USE OF IMPLANON**

A study done in the US through the CHOICE Project to examine the acceptability of LARC by adolescent proved that the younger group were mostly interested in the implant as a safe, effective long-acting form of contraception (Mestad et al., 2011, pp. 493-498), with very low failure rates. A non-comparative study done in Spain reported no pregnancies among Implanon users at one year (Rogers & Shreelata, 2014, pp. 57-66). As with any other other drug, failures can occur, and it is important that women should be informed that the implant failure rate is very low – fewer than one in 1000 over the three-year period of insertion.

Greater usage of implanon could decrease unintended pregnancies; however, there are barriers in terms of knowledge, attitudes and misconceptions and, most importantly, the unfriendly attitude of health workers that may be preventing its use (Harper et. al., 2008, pp. 1359-1369). A study reports that health workers do not often counsel women on implanon about the mechanism of action and side effects leading to discontinuation.(Harvey, Seib,& Lucke, 2009, pp. 39-56) Insufficient time, lack of training, concern about procedure risk, and inadequate reimbursement are health system barriers to implanon use (Harper et. al., 2008, pp. 1359-1369).

Kavanaugh et al. (2013, pp. 86-95) summarise how one sees the method also forms barriers to its use. Lack of knowledge for the device leads to lack of use by the patient but also this suggests a lack of trust in the device that may be inherent in unknown implications of use. What furthers the gap in trust is the lack of healthcare provider's training and knowledge. The patient will only be as wise as the products they are offered by their provider (Kavanaugh et al., 2013, pp. 86-95). How knowledge and

one's level of empowerment toward expressing views about knowledge may directly relate to how that person's role in direct society is viewed. Culturally speaking, attitude can be shaped by one's direct relationship with his or her surroundings, the people within their direct interaction and also those members of society and familial connections that directly impact one's belief system and learning experience.

There is the misconceived notion that use of implanon will lead to infertility. This perceived misconception is directly related to the level of knowledge about the product given to the user by the healthcare professional. In a study done by Blumenthal et al. (2011), pills and barrier methods were associated with a failure rate due to their interference with daily routine.

## **2.5 REASONS FOR IMPLANON DISCONTINUATION**

Implanon is the newly available form of contraception in South Africa, adding to a long list of already available methods of contraception, e.g. the low dose and extended cycle oral contraceptives pills, effective long-acting IUDs, low dose vaginal rings and injectables. These methods are not without side effects; most of them have been a source of litigation and controversy since their first use. According to Hubacher, Lara-Ricalde, Taylor, Guerra-Infante and Guzmán-Rodríguez (2001, pp. 561-567), the use of Dalkon Shield IUD in the 1970s and 1980s was associated with litigation and controversy in the US, which made women who were infertile and had previously used an IUD think their problem was caused by the IUD.

Women should be advised that it is highly likely that menses will change whilst on Implanon. Bleeding pattern dissatisfaction was the commonest reason for premature discontinuation (Harvey et al., 2009), and one in five women will experience amenorrhoea (Tolley et al., 2005). In clinical trials done in the US for the CHOICE Project, about 50 percent of women enrolled in the clinical trial cited bleeding problems as the main reason for discontinuation during the first six months of use (Grunloch, Casner, Secura, Peipert & Madden, 2013). Blumenthal et al. (2011) observed that the changes experienced during the first three months gave an indication of whether a woman would continue or discontinue Implanon. Women with initial favourable

bleeding patterns tended to continue with these patterns during the subsequent two years of use (Blumenthal et al., 2011).

The second and third cited side effects that account for most reasons for discontinuation are acne and headaches (Grunloch et al., 2013). For adolescents the acne problem has been cited as the most common reason for discontinuation, as teenagers are becoming more sensitive about how other people view them. Besides acne being a health problem, it is a self-esteem problem increasing the chances of discontinuation of Implanon, more especially by teenagers. Headaches, weight increase and mood changes were reported by Blumenthal et al. (2011), with headache (15%), weight gain (11%) and emotional liability (5.7%), respectively.

These observations are peculiar as studies done in Nigeria on discontinuation rate noted that women simply did not show up for removal even though the period of effectiveness had passed, showing that the side effects they experienced were not so severe for them as to remove the implant. The other reason could be that the risk of getting pregnant was too high and with disastrous consequences (Mutahir, 2007).

Education and proper counselling of women will better prepare them for the side effects, which are usually temporary. Health professionals should do their best to counsel women and know what to do in cases of severe side effects. NICE guidelines suggest mifepristone for stopping irregular bleeding can be used with good results to avoid removing the implant prematurely (NICE Guideline, 2005).

Decreasing barriers that women encounter in search of a perfect contraception and providing better educational support are important goals in an attempt to guide women for a lasting solution (Tang, Dominik, Re, Brody & Stuart, 2013). Social pressures, myths and general pressure from the spouse to conceive and bear children are all challenges faced by women and contraception. In a study done to evaluate the difference between different racial groups, Rocca and Harper (2012) identified that there were major determinants of health disparities, such as health system and provider factors, that could act as barriers besides individual knowledge, beliefs and attitudes. In South Africa, rural women are disadvantaged; the spacial divide and high levels of illiteracy put an added burden on these women in accessing contraceptives.

In the same study addressing racial and ethnic differences in the US as barriers to contraception, Rocca and Harper (2012) noted that disparities in unintended pregnancy rates were partly attributable to patterns of contraceptive use across racial lines, with nine percent of Latinos and white women at risk of unintended pregnancy compared to 16 percent of blacks. In the US, cost has been noted as another very important barrier to implant access. Eisenberg, McNicholas and Peipert (2013) provided evidence that for women and adolescents without or with limited insurance coverage, or who are paying fees for service at initial contact for implant insertion find it difficult to pay the cost. The CHOICE Project commissioned in the US, where a large number of women were recruited to family planning free of charge, shows a considerable increase in women accessing the services with a resultant decrease in unintended pregnancy (Eisenberg et al., 2013). Research should examine other mitigating factors that might contribute to a considerable amount of women using contraceptive.

Whereas costs can be an obstacle in developed countries, in developing countries myths and lack of education, lack of well-trained healthcare workforce and a patriarchal family orientation can all be important barriers in accessing contraceptive services for women in Sub-Saharan Africa. Duze and Ismaila (2006) noted a strong male dominance in family-planning decision making amongst the Hausa society in Northern Nigeria. Northern Nigeria and other parts of Nigeria are still leaning towards patrilineal lines. The influence of men is dominant in spacing children, leaving women powerless. Efforts to dispel skepticism and to educate young women and women in general about the safety of long-acting reversible contraceptives and hormonal contraceptives might decrease reluctance to use these methods. The last most important barrier to contraception by women is the negative attitudes and misconceptions of professionals about LARC. According to Kavanaugh, Forthwith, Jerman, Popkins and Ethier (2013), in a study done to assess client and provider perspectives about Implants, providers discouraged young adults from using implants, with the result that implants would be least talked about when women were counselled on choosing a contraceptive method.

A study conducted by Birhane, Hagos and Fantahun (2015, pp. 78-90) support the opposite of other studies that see demographic and socio-cultural, economic conditions as determinants for Implanon discontinuation. Birhane, Hagos, and Fantahun (2015, pp. 67-78) find correlations for discontinuing use of the device is directly related to medical conditions forming due to the lack of performance of the device. Side effects and prolonged pain due to use were cited as valid reasons for discontinuation of use. The study sees socio-cultural, economic conditions as irrelevant to the perceived value for use but the greater determining factor for success and continued use is directly related to the healthcare professional's ability to educate one's knowledge about its use and related benefits. Birhane, Hagos and Fantahun (2015, pp. 67-78) reports that participants who developed side effects are more than twice compared to those women who weren't appointed for follow up, who were 3 times, and women who weren't satisfied by the service given during the insertion of implanon were more than 3 times more likely to discontinue implanon as compared their counter parts.

What this serves to illustrate is how the degree of knowledge and transfer about the device can create a different perspective on its use. To further the notion that socio-cultural and economic conditions have little to do with forming the applied value of the device Implanon, to see that demographic variables have no bearing on successful patterns of use, (Ojule, Oranu & Enyindah, 2012, pp.710-714). Ojule, Oranu and Enyindah (2012, pp.710-714) maintain that the acceptability of hormonal contraceptives depends mainly on the level of subjective side effects especially irregular vaginal bleeding. The collective understanding for Implanon use as it pertains to safety is weighed at a higher degree of importance than other variables expressing socio-economic or social conditions found within the African context. There is a clear relationship between perceived safety and use of the product over the social acceptance of seeking birth control and family planning options. How safety in relationship to the healthcare professional's role and willingness to transfer knowledge over to the patient plays a direct role in accepting the option as viable.

Due to a lack of information at the supportive level of the healthcare professional, many women in the African setting discontinue use of the birth control device because

of unknown side effects such as change to menses and pain in the pelvic region (Tolley et al., 2005). Tolley et al. (2005, pp.15-23) view side effects as they correlate to socio-cultural context and religious belief as significant to the myriad of reasons for discontinuing use of the device. The ideology of control over menses in relationship to a lack of knowledge about known side effects and how this relates to religious and cultural beliefs, leads the level of knowledge to be stalled for these populations of users (Tolley et al., 2005, pp. 15-23).

The notion that one's beliefs and then fear of how cycles behave after use, the pain and sporadic menses incites fear for loss of fertility which is perceived as the female's role in society. Loss of fertility will mean loss of status and opportunity for her family. Furthermore, without knowledge about known side effects which shows how healthcare professionals must be proactive serves to stall acceptance of the device because the fear is real and the violation of their belief system to the user. Few studies seek correlation between healthcare professional and patient interaction for knowledge concerning device side effects and how many misconceptions can be dispelled by simple information about what to expect with use (Tolley et al., 2005, pp. 15-23). Those women using LARC in Ghana and Uganda in the Anguzu et al. (2014, pp. 153-162) study found the need for high knowledge transfer interaction between the patient and the healthcare professional as significant to success of levels for accepting the device's usefulness. Raji et al. (2013, pp. 4) found similar outcomes for perceived usefulness and the level of knowledge transfer between healthcare professional and the patient.

The correlative value found at the link between the levels of knowledge provided to the patient also resulted in higher birth control use but that this correlation was seen to be related to setting comparison between urban and rural. It was found those women and their families living in the rural setting had greater chance of pregnancy and death due to unintended pregnancy or abortion. Raji et al. (2013, pp. 4) sees the higher interaction the female is involved with family business and commodities, the less she will have a say in her sexual healthcare. Many females in this scenario put the control of their decisions in the hands of her partner or other family members. At this rural level, it was also found females in these contexts had little to no formal

education access and this lack of education leads to higher rates of maternal mortality rates. Furthermore, much of the findings from Raji et al. (2013, pp. 4) surmise strong familial expectation on the part of the female in the rural setting in relationship to the rate of living children in the household. Women in this setting felt a need to keep having children as this relates to more hands for labour purposes. Not only can she fulfil her role in the family by giving her partner more children, a source of social prestige and wealth but she can give her partner additional riches through the fact of increased farming labour resulting in increased commodities.

## **2.6 IMPLANON IN SOUTH AFRICA: WHAT WE KNOW**

Impanon is introduced in South Africa in the year 2013, however, little is known about its acceptance, level of use and discontinuation. Also, there is paucity of evidence on reasons for implanon discontinuation in the South Africa context. The South Africa government made implanon available and accessible to all women with the aim to prevent unplanned pregnancy. Implanon is believed to be cost-effective because it is a long acting reversible contraception, which would be easy to use for women without the need to visit hospitals regularly. This was done without initial piloting to see the level of acceptance and duration of use. Providers were given target regarding the number of implanon to inserted

## **2.7 THEORETICAL FRAMEWORK GUIDING THE STUDY**

The present study is guided most generally by the theory of reasoned action and planned behaviour. The theory of reasoned action is based upon people's behaviour being strongly related to their attitudes towards that behaviour (Parminter & Wilson, 2003). Parminter and Wilson describe the model as one that addresses the internal (psychological) determinants of people's behaviour across a wide range of physical and social situations. People form attitudes by systematically deliberating on any information that they have about the behaviour being considered. The variables included in the research are attitudes, knowledge and behaviour toward the discontinuation of Implanon.

Parminter and Wilson (2003) further state that attitudes result from an individual's beliefs about the consequences of a particular behaviour and their (his or her)



evaluation of those beliefs. In reviewed articles, among the many reasons why women discontinued Implanon was the belief that the irregular menses would carry on as long the implant was still in situ. The more an individual expects that a particular behaviour has good consequences for themselves, the more that individual will have a positive attitude towards that behaviour. Similarly, the more an individual expects behaviour to have undesirable consequences for themselves, the more they will have a negative attitude towards it. People's attitudes influence their behaviour through the formation of intentions to behave in certain ways. The perception that Implanon will result in permanent sterilisation therefore compels these women to discontinue its use. A similar process exists with subjective norms. Parminter and Wilson (2003) further explain that, included in the basic theory of reasoned action are behavioural beliefs, normative beliefs, attitude, subjective norm and intention. (Anguzu, Tweheyo, Sekandi, Vivian, Muhumuza, Tusiime & Serwadda, 2014, pp.153-162) concluded in a study about attitudes, socio-cultural beliefs that male partners' choice influenced the contraceptive decisions and these decisions were positively associated with the use of Implanon. On the other hand, the attitude that LARC was for married women was negatively associated with its use among the youth.

Results from studies previously reviewed (Ajzen & Fishbein, 1980, cited by Parminter & Wilson, 2003) have shown that the behavioural belief component is expected to be positively correlated with attitude, while the normative belief component is expected to be positively correlated with the subjective norm. Both attitude and subjective norm are predictive of intention in all of the studies previously reviewed (Parminter & Wilson, 2003).

Attitude is a complex concept within human nature to understand mainly because it also implies a known condition toward intention and perception of surroundings. Ajzen (2005, 87-98) and his theory for planned behaviour surmises that people will only form an intent toward a behaviour if they perceive the outcome as favourable to their surroundings and known wellbeing. However, the notion of intent also implies that they have some knowledge of the situation or cognitive ability to form a positive or negative assumption about the outcome (Ajzen, 2005, pp. 87-98). Furthermore, Ajzen (2005, pp.87-98) surmises it is human nature to constantly assess surroundings and the

people within it to determine the best possible outcomes of the situation but that this can lead to influence and further knowledge created because of other people and their attitudes. What this does is suggests there is a social construct to cognitively create one's ability to perceive and filter information about surroundings that have been predetermined by exposure. It has not been determined if such exposure creates attitude but Ajzen (2005) also supports the notion that perception values and beliefs reflected back from one's environment also creates a foundation for one's sense of self, wellbeing and forming a personality that leads to determining one's attitude. In Ajzen's (2005) theory, attitude is not a fixed concept but in fact can evolve or radically change due to environmental, socio-cultural and economic experiences. As a result, no two people have the same attitude but may bear common traits or ideologies about life due to common demographic variables.

## **2.8 CONCLUSION AND SUMMARY OF GAPS**

The review reveals several gaps in the literature, including little or no research on the training and readiness of healthcare workers in inserting and removing the implant. In addition, little consensus regarding trusted communication channels exists and studies examining contraception decision factors have failed to include myth as a variable. Also, little to no evidence exists on duration of use of implanon and reasons for discontinuation in the South Africa setting.

The review touched on prevalence of unplanned pregnancy and use of contraceptive, implanon mechanism of action and benefits, barriers to use of implanon and reasons for discontinuation. The next chapter deals with the methods adopted to examine the study objectives and the justification for the chosen methods.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 INTRODUCTION**

This chapter deals with the research methodology, research design, geographical area, the population involved in the study, sampling method, data collection and analysis, delimitation, research design that was used to investigate the knowledge and attitudes about the discontinuation of Implanon to women residing at Buffalo City Municipality.

#### **3.2 STUDY SETTING**

The study was conducted in the Eastern Cape, at the Buffalo City Municipality. The Buffalo City Municipality is a metropolitan municipality situated on the east coast of the Eastern Cape Province in South Africa. It was conducted at two reproductive health centres, one regional (Cecilia Makiwane Hospital) and the other a community health centre (Nontyatyambo Community Health Centre). Providing health services for about 755 200 population, (2011), the hospital and clinic have a total bed capacity of 750.

#### **3.3 STUDY DESIGN**

The study was a cross-sectional, descriptive and quantitative design interspersed with a retrospective review of the Implanon insertion and removal registers from 2013 to 2016 collected from Cecilia Makiwane Hospital and Nontyantyambo Community Health Centre. The aim was to assess women's knowledge of and attitudes towards implanon and reasons for discontinuation of Implanon in Buffalo City Municipality (BCMM), Eastern Cape Province.

#### **3.4 POPULATION**

Women of child-bearing age between the ages 15 and 42 years who attended the family planning clinic and have accepted Implanon as a form of contraception at Buffalo City Municipality, Amatole district were selected to participate in the study.

### **3.4.1 INCLUSION AND EXCLUSION CRITERIA**

Only women that had removed the implanon in the two selected centres, regardless of where the implanon was inserted, were eligible to participate in the study.

### **3.5 SAMPLING**

The Implanon insertion and removal register was used to purposively identify participants by calling or inviting them to participate in the study. Willing participants that honoured the invitation came to the clinic for interview. Overall, a total of 189 women of the 249 eligible participants took part in the study.

### **3.6 DATA COLLECTION INSTRUMENT**

A piloted questionnaire, containing questions on participants' demographic information, knowledge about Implanon, attitudes towards use and discontinuation of Implanon, perceived barriers to Implanon use, was administered to eligible participants. Data of interest included age, parity, level of education, marital status, religion, number of children alive, source of information about Implanon, side effects experienced, number that discontinued and the reasons for discontinuation, taking into account the duration of implant use at the clinic.

### **3.7 DATA COLLECTION PROCEDURE**

Implanon insertion and removal registers from 2013 to 2016 were collected in two institutions: Cecilia Makiwane Hospital and Nontyantyambo Community Health Centre. Information on the date of insertion, date of removal, reasons for removal, and place of insertion were extracted. However, due to incomplete information, a serial recruitment of eligible participants for an interview was done. Patients with mobile phone contacts were invited to participate in the study.

### **3.7 VALIDITY AND RELIABILITY**

A pilot study was conducted with 10 women to test their understanding of the questionnaire and their feedback was used to improve the questionnaire. The questionnaire was submitted to an expert in quantitative research (the project

supervisor) to check for face, content, and construct validity and was later modified based on feedback received.

### **3.8 DATA ANALYSIS**

Data generated through the questionnaire were coded and entered into an excel sheet and later transferred into the computer software for data analysis. Before performing any statistical analysis, data were cleaned for entry errors and outliers were removed. Descriptive statistics (frequency, mean and standard deviation) was used to analyse the data. Also, chi-square was used to examine relationship between categorical variables with p-value less than 0.05 considered statistically significant. Statistical Package for the Social Sciences (SPSS version 22.0) was used to analyse the data.

### **3.9 ETHICAL CONSIDERATIONS**

The University of Fort Hare Research Ethics and Scientific Committee, the Provincial Department of Health in the Eastern Cape and the Head of Clinical Governance at Buffalo City Municipality approved the study. In addition, the clinic management of the selected centres granted approval for the study to be conducted. All participants gave a written consent to indicate their willingness to partake in the study after the aim of the study well explained and they confirm they understood it. Benefits, risks and the purpose of the study were explained to the participants. All participants understood their right to withdraw from participation in the study at any stage without losing any benefits. Participation was voluntary and there was no penalty/difference in care if a client declines to take part in the study. The participant's name and personal details are not written on any document including electronic information. All questionnaires and documents including electronic data were anonymous. All electronic data collected are stored on disks and together with the printed documents are locked away in a secured locker. Data provided by collaborators are treated with confidentiality.

## CHAPTER 4

### RESULTS AND DISCUSSION

#### 4.1 INTRODUCTION

In this chapter, the empirical findings of the study are presented. The findings are presented according to the study objectives. Demographic characteristics of participant's are presented first to provide context to study findings.

#### 4.2 DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

The average age of participants was 26.55  $\pm$ 6.4 years. Most participants were  $\leq$ 30 years old (82.9), single (56.3), Christian (94.0), black Africans (97.3) and had more than one children (74.3). Only 22% of the respondents had prior history of abortion.

**Table 1: Demographic characteristics of respondents**

Variables	Frequency	Percentage
Age		
15-20	41	21.8
21-25	51	27.1
26-30	47	25.0
31-35	29	15.4
36-44	20	10.6
Marital status		
Single	103	56.3
Married	52	28.4
Separated/divorced	25	13.7

Widow	3	1.6
Religion		
Christianity	171	94.0
Others	11	6.0
Race		
Black African	177	97.3
White African	1	0.5
Coloured	4	2.2
Parity		
One Child	47	25.7
Two Children	93	50.8
Three Children	42	23.0
Four Children	1	0.5
Ever had abortion	38	22.0

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#### **4.2.1 MEAN DURATION OF IMPLANON USE**

The duration of implanon use among the participants ranges from one to 36 months. The mean duration for implanon removal was 11.2 (SD= $\pm$ 7.1).

### 4.3 AWARENESS AND KNOWLEDGE OF CONTRACEPTIVE METHODS

Almost all participants (97.8%) stated that they have knowledge of family planning methods (Table 2). Even though a majority of the participants (77.6%) stated that they knew that implanon is used as a birth control method, the 22.4% participants that did not know that implanon is used as a birth control method is considerably high. Health workers (85.1%) was reported as the main source of information about implanon, followed by friends and family (41.5%). Only a few participants knew about implanon from mass media, internet and class room (Table 2).

**Table 2:** Awareness and knowledge of contraception

Variables	Frequency	Percentage
Knowledge of contraception		
Yes	179	97.8
No	4	2.2
Aware that implanon is used as birth control		
Yes	142	77.6
No	15	8.2
I do not know	26	14.2
Source of information		
Hospital/health worker	160	85.1
Mass media (TV/Radio, newspaper)	12	6.4



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Friends and family	78	41.5
Classroom	2	1.1
Internet	10	5.3
Knowledge of contraception		
Oral pills	169	89.9
Injectables	176	93.6
IUCD	116	61.7
Spermicidal	3	1.6
Emergency contraception	66	35.1
Lactation amenorrhea	1	0.5
Female sterilisation	71	37.8
Male sterilisation	9	4.8
Which contraceptive methods can prevent sexually transmitted infections		
Condom	126	69.2
Condom and vaginal ring	42	23.1
Oral pills and natural methods	2	1.0

I do not know	12	6.6
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Oral pills (89.9%), Injectables (93.6), and Intrauterine device (IUCD) (61.7) were the contraceptive methods most participants were familiar with. Spermicidal (1.6%), lactation amenorrhea (0.5%), and male sterilisation (4.8%) are the contraceptive methods participants were least familiar with.

Almost all the participants knew that condom can prevent sexually transmitted infections (STIs), however, some participants believed erroneously that vaginal ring (23.1%), and oral pills (1%) can prevent STIs. Twelve participants stated they do not know what contraceptive method can prevent STIs.

#### **4.4 ATTITUDE TOWARDS CONTRACEPTION AND PERCEPTION OF CONTRACEPTIVE'S BENEFITS**

Only 37.7% of the participants stated that they were taught contraception in school and the majority of them (94.4) were taught contraception in grade 8 to 12 (Table 3). Also, the majority of the participants opined that contraception should be taught in school, and that contraception should be taught early at grade 1 to 7. Most participants consider the benefits of contraception to include; birth control and prevention of unplanned pregnancy.

**Table 3:** Attitude towards contraception and perception of contraceptive's benefits

Questions	Frequency	Percentage
Ever taught contraception in school		
Yes	69	37.7
No	114	62.3

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In what level were you taught		
Grade 1-7	3	4.2
Grade 8-12	67	94.4
Post-secondary	1	1.4
Think that contraception should be taught in school		
Yes	170	92.9
No	13	7.1
What level of schooling should it taught		
Grade 1-7	142	83.5
Grade 8-12	27	15.9
Post-secondary	1	0.6
Benefits of use of contraception		
Control number of births	75	41.7
Prevent unplanned pregnancy	95	52.8
No significant positive impact	5	2.8
I do not know	5	2.8

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#### 4.5 KNOWLEDGE OF IMPLANON

Participants' knowledge of implanon was tested with 13 items Likert scale and the findings are presented in Table 4. Generally, the knowledge of implanon among participants was poor. Most participants did not know if one can easily become pregnant after the discontinuation of implanon (87.3%); implanon side effects will not last forever (62.8%); implanon act the same way as injectables (87.3); implanon is not superior to other methods of contraception (81.5%); and using implanon does not require proper diet (77.6%). Similarly, most participants agree or were not sure whether one can still become pregnant even with the use of implanon (75.4%). The majority of the participants (89.9%) doubted the efficacy of implanon. Also, 81% of the participants were not sure if implanon can cause permanent infertility. In addition, most participants (82.6%) were not sure if the presence of foreign body in one's body can cause irreversible damage. Few women (9.5%) believed that implanon is inserted for women with many children and do know that implanon cannot prevent STIs (9.5%)

**Table 4:** Knowledge of implanon

Questions	Agree	Not sure	Disagree
One can easily become pregnant after discontinuing implanon	52 (28.9)	107 (56.4)	21 (11.7)
Implanon will not be effective after 3 years	113 (60.1)	57 (30.3)	9 (5.0)
Implanon side effects will last forever	7 (3.9)	106 (58.9)	67 (37.2)
Implanon act the say way as injectables	13 (7.2)	146 (81.1)	21 (11.7)

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Implanon is for women with more than one baby	7 (3.9)	34 (18.9)	139 (77.2)
One can still become pregnant even with the use of implanon	27 (15.1)	108 (60.3)	44 (24.6)
Implanon can prevent STI	1 (0.6)	16 (8.9)	163 (90.6)
Implanon can effectively prevent pregnancy	64 (35.8)	97 (54.2)	18 (10.1)
Implanon can cause permanent infertility	2 (1.1)	145 (81.0)	32 (17.9)
Foreign body in your body can cause irreversible damage	2 (1.1)	147 (82.6)	29 (16.3)
Implanon is inserted for people with many children	17 (9.5)	0 (0.0)	162 (90.5)
Implanon is superior to other methods as it does not reduce sexual pleasure	5 (2.8)	140 (78.7)	33 (18.5)
Using implanon requires proper diet	1 (0.6)	137 (77.0)	40 (22.5)

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#### **4.5.1 FACTORS ASSOCIATED WITH KNOWLEDGE OF IMPLANON**

The knowledge variables are scored to determine the total knowledge score for each participants. As shown in Table 5, only 9.7% of the participants had good knowledge of implanon. Most participants (66.9%) had poor knowledge of implanon. Only age

was significantly associated with knowledge of implanon. While 28 to 37% of women in age group 21-35 had moderate knowledge of implanon, only 5.3 to 7.9% of women aged 15 to 20 and 36-44 years had moderate knowledge of implanon. Younger women (73.4%) and older women (89.5%) had the highest proportion of women with poor knowledge of implanon. Parity and marital status were not significantly associated with knowledge of implanon.

**Table 5:** Knowledge of implanon by background characteristics

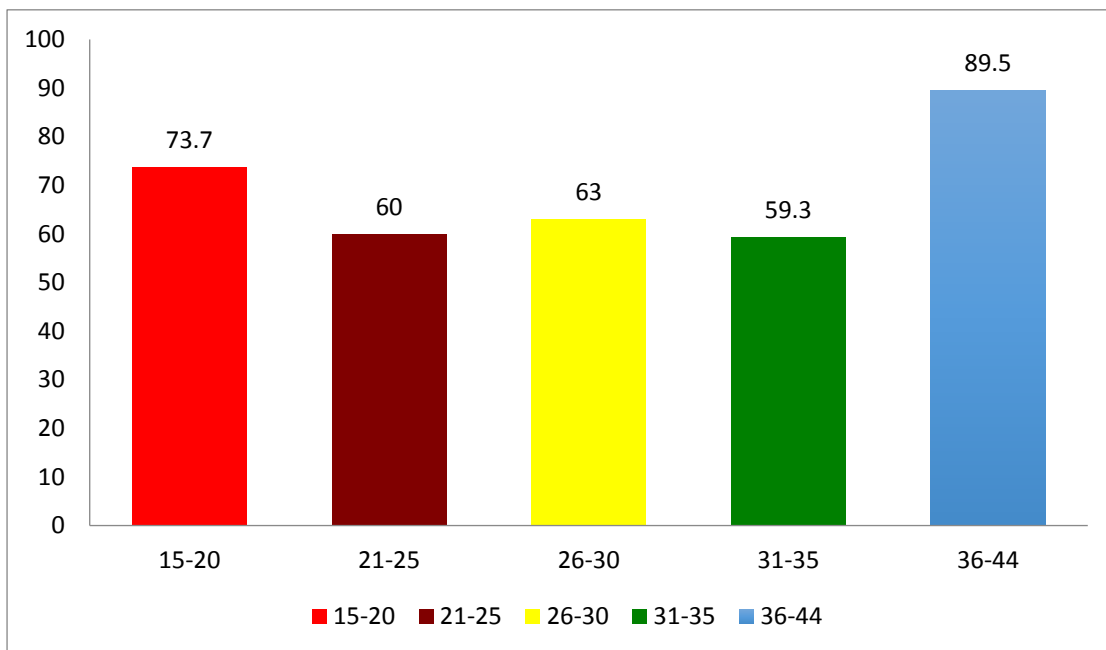
Variables	Good knowledge	Moderate knowledge	Poor knowledge	P-value
All	17 (9.7)	41 (23.4)	117 (66.9)	0.00
<b>Marital status</b>				
Single	12 (12.0)	24 (24.0)	64 (64.0)	0.40
Married	4 (8.3)	12 (25.0)	32 (66.7)	
Separated/divorced	0 (0.0)	5 (20.8)	19 (79.2)	
Widow	1 (33.3)	0 (0.0)	2 (66.7)	
<b>Parity</b>				
1	5 (11.4)	7 (15.9)	32 (72.7)	0.31
2	9 (10.0)	28 (31.1)	53 (58.9)	
3	3 (7.5)	6 (15.0)	31 (77.5)	
4	0 (0.0)	0 (0.0)	1 (100.0)	

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Age				
15-20	7 (18.4)	3 (7.9)	28 (73.7)	0.03
21-25	5 (11.1)	13 (28.9)	27 (60.0)	
26-30	3 (6.5)	14 (30.4)	29 (63.0)	
31-35	1 (3.7)	10 (37.0)	16 (59.3)	
36-44	1 (5.3)	1 (5.3)	17 (89.5)	

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As shown in Figure 4.1, there was a u-relationship between age and poor knowledge of implanon.



**Figure 4.1:** Age and poor knowledge of implanon

#### 4.5.2 PARTICIPANTS' PERCEPTION OF THEIR KNOWLEDGE AND ROLE OF SERVICE PROVIDER

Majority of the participants (77.8%) disagree that they have adequate knowledge of implanon and stated that health workers should explain contraceptive side effects to clients (Table 6). Also, most participants (94.9%) stated that health workers should be trained and competent in reproductive health.

**Table 6:** Participants' perception of their knowledge and role of service provider

Questions	Agree	Not sure	Disagree
I have adequate knowledge of implanon	6 (3.3)	34(18.9)	140(77.8)
Healthcare workers should explain contraceptive side effects	173(96.6)	6 (3.2)	0 (0)
Healthcare worker should be trained and competent in reproductive health	169(94.9)	5 (2.8)	4 (2.2)

#### 4.6 ATTITUDE TOWARDS IMPLANON USE

Generally, participants' attitude towards implanon was positive. Most participants (85.5%) disagree that their partners should decide their method of contraceptive (Table 7). Only, 19.1% participants adopted implanon because of an unintended pregnancy or abortion. Most participants disagree that implanon should only be used by married women.

**Table 7:** Attitude towards implanon use

Questions	Agree	Not sure	Disagree
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My partner should decide my contraceptive method to use	2 (1.1)	24(13.4)	153(85.5)
Implanon choice was because of an unintended pregnancy or abortion	34(19.1)	3 (1.7)	141(79.2)
Implanon should be used by married women	28(15.6)	21(11.7)	130(72.6)

#### 4.6.1 ACCESS TO IMPLANON USE

Majority of the participants (96.6%) opined that implanon is accessible as it does not cost much to insert. However, distance and inappropriate service hour were barriers to implanon utilisation in the study settings. Most participants (62%) considered the service hour for implanon insertion inappropriate and 42.5% considered that clinics to be too far.

**Table 8:** Accessibility to implanon

Questions	Agree	Not sure	Disagree
It is costly to insert implanon	3 (1.7)	3 (1.7)	173 (96.6)
The clinic is too far to get the service	76 (42.5)	1 (0.6)	102 (57.0)
The service hours are inappropriate for me	111 (62.0)	2 (1.1)	66 (36.9)

#### 4.7 PERCEPTION OF IMPLANON SIDE EFFECTS

Perception of implanon side-effects might be informed by personal experience and friend's or relative's experience. Even though the study objectively measures the side

effects of implanon and how it influenced implanon discontinuation, perception of implanon side effects is an important determinant of use of implanon. Only few women opined that implanon can cause abdominal cramps and pain (7.3%) and vaginal symptoms (15.7%) such as odour and dryness. Most participants opined that implanon use is associated with heavy bleeding (60.7), irregular frequent bleeding (84.3%), and weight gain (67%). Two-fifth participants stated that implanon use is associated with headache and acne. Also, 20.1% of the participants agree that implanon insertion is associated with arm pain, while most of them are not sure if pain is associated with implanon (Table 8).

**Table 8:** Perception of implanon side effects

Questions	Agree	Not sure	Disagree
Implanon causes pain and abdominal cramps	13 (7.3)	58 (32.6)	107 (60.1)
It causes irregular frequent bleeding	150 (84.3)	18 (10.1)	10 (5.6)
Implanon causes heavy bleeding	108 (60.7)	20 (11.2)	50 (28.1)
Headache is always experienced with implanon	72 (40.7)	32 (18.1)	73 (41.2)
I have acne due to Implanon	72 (40.7)	32 (18.1)	73 (41.2)

Vaginal symptoms (dryness and odour) is always experiences with implanon	28 (15.7)	47 (26.4)	103 (57.9)
Weight gain is associated with implanon	120 (67.0)	30 (16.8)	29 (16.2)
Arm pain is always associated with implanon insertion	36 (20.1)	114 (63.7)	29 (16.2)

#### 4.8 REASONS FOR IMPLANON DISCONTINUATION

The study probed the reasons for the discontinuation of implanon among the participants. Most participants discontinued implanon as a result of implanon's side effects (71.3 %) (Table 9). Other reasons for discontinuation of implanon are poor or wrong positioning (3.2%), want to become pregnant (4.3%). Some participants discontinued implanon because they were on treatment; 24 participants on ARV drug, one on antipsychotic drugs, and one on TB drugs.

Ten participants (5.3%) got pregnant despite using implanon and decided to remove it. Only two participants removed implanon because it was due for removal.

**Table 9:** Reasons for implanon removal

Reasons for implanon removal	Frequency	Percentage
Experience of side-effects	134	71.3
On treatment	24	12.8
Wrong positioning	6	3.2
Want to get pregnant	8	4.3

Already pregnant	10	5.3
Tired or no reason	4	2.1
Due for removal	2	1.1

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As shown in Table 10, experience of heavy bleeding (39.9%) was the most stated reason for implanon discontinuation. 18 (9.6%) participants experienced arm pain and 12 (6.4%) severe headache. Other reported side-effects of implanon are falling hair (1.6%), body pain (5.9%), back pain (1.6%), rashes (3.2%), nausea and vomiting (0.5%), dizziness (0.5%), abdominal pain (0.5%), fits (1.6%), no sex drive (1.1%), weight gain (4.8%) and weight loss (3.2%).

**Table 10:** Reasons for implanon discontinuation

Variables	Frequency	Percentage
Heavy bleeding	75	39.9
Painful arm	18	9.6
Falling hair	3	1.6
Severe headache	12	6.4
Body Pain	11	5.9
Back pain	3	1.6
Weight gain	9	4.8

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Weight loss	6	3.2
Reaction like rashes	6	3.2
No sex drive	2	1.1
Nausea and vomiting	1	0.5
Dizziness	1	0.5
Fits	3	1.6
Abdominal pain	1	0.5

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## CHAPTER 5

### SUMMARY, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

#### 5.1 INTRODUCTION

In this chapter, the summary of the key findings of the study are presented. Also, the conclusion, limitations and recommendations of the study are presented.

#### 5.2 SUMMARY

It has been noted with great concern that a considerable number of women in South Africa are removing the Implanon, having accepted it before, barely a year after the Long-acting Reversible Contraceptive (LARC) was introduced. It was expected that the introduction of Implanon would reduce the high rate of teenage pregnancy and its related problems. Despite the benefits of Implanon, the rate of discontinuity of this newly introduced contraceptive method among the reproductive-aged women at Buffalo City Municipality is worrisome. Therefore, the study examines the knowledge, attitudes and reasons for the discontinuation of Implanon among women attending health clinics in Buffalo City Municipality, Eastern Cape Province.

The following research questions were formulated in this study:

- What is the level of knowledge of women attending Buffalo City Municipality Clinics about implanon?
- What is the attitude and behaviour towards implanon use by women attending Buffalo City Municipality Clinics?
- How do women attending Buffalo City Municipality Clinics perceived implanon side effects?
- What are the reasons for implanon discontinuation among women attending Buffalo City Municipality Clinics?

The main aim of the study was to assess women's knowledge of and attitudes towards implanon and reasons for discontinuation of Implanon in Buffalo City Municipality. Specifically, the study examines the following objectives:

- To examine the knowledge of women concerning Implanon use in Buffalo City Municipality Clinics.
- To determine the attitudes and behaviour of women toward Implanon use in Buffalo City Municipality Clinics.
- To examine the women's perception about implanon side effects women attending Buffalo City Municipality Clinics about implanon?
- To examine the reasons for discontinuation of implanon among women in Buffalo City Municipality Clinics.

The study was conducted in the Eastern Cape, at the Buffalo City Municipality. The Buffalo City Municipality is a metropolitan municipality situated on the east coast of the Eastern Cape Province in South Africa. It was conducted at two reproductive health centres, one regional (Cecilia Makiwane Hospital) and the other a community health centre (Nontyatyambo Community Health Centre).

Patients with mobile phone contacts were invited to participate in the study. A piloted questionnaire was administered to the participants that gave consent to participate in the study. Women of child-bearing age between the ages 15 and 42 years who attend the family planning clinic and have accepted Implanon as a form of contraception at Buffalo City Municipality, Amatole district were selected to participate in the study. Only women that had removed the implanon in the two selected centres, regardless of where the implanon was inserted, were eligible to participate in the study. A total of 189 women of the 249 eligible participants took part in the study. A self-designed questionnaire consisting of participants' demographic information, knowledge about Implanon, attitudes towards use and discontinuation of Implanon, perceived barriers to Implanon use, was administered to eligible participants. Data of interest included age, parity, level of education, marital status, religion, number of children alive, source of information about Implanon, side effects experienced, number that discontinued and the reasons for discontinuation, taking into account the duration of implant use at the

clinic. A pilot study was conducted with 10 women to test their understanding of the questionnaire and their feedback was used to correct the questionnaire. Descriptive statistics (frequency, mean and standard deviation) was used to analyse the data. Also, chi-square was used to examine relationship between categorical variables with p-value less than 0.05 considered statistically significant. Statistical Package for the Social Sciences (SPSS version 22.0) was used to analyse the data.

### 5.2.1 Major findings of the study

The key findings of this study are as follows:

- The average duration for implanon use among the sample was 11.2 months.
- Most participants had poor knowledge of implanon, which was associated with age.
- Attitude to implanon was positive and participants reported that they have access to implanon. However, distance and inappropriate clinic working hours are barriers to implanon use in the study settings.
- Most participants opined that implanon use is associated with heavy bleeding (60.7), irregular frequent bleeding (84.3%), and weight gain (67%).
- Most participants discontinued implanon as a result of implanon's side effects (71.3 %) (Table 9). Other reasons for discontinuation of implanon are poor or wrong positioning (3.2%), want to become pregnant (4.3%). Some participants discontinued implanon because they were on treatment; 24 participants on ARV drug, one on antipsychotic drugs, and one on TB drugs.
- Experience of heavy bleeding (39.9%) was the most cited reason for implanon discontinuation. 18 (9.6%) participants experienced arm pain and 12 (6.4%) severe headache. Other reported side-effects of implanon are falling hair (1.6%), body pain (5.9%), back pain (1.6%), rashes (3.2%), nausea and vomiting (0.5%), dizziness (0.5%), abdominal pain (0.5%), fits (1.6%), no sex drive (1.1%), weight gain (4.8%) and weight loss (3.2%).



### **5.3 LIMITATIONS OF STUDY**

The self-reporting of reasons for removal of implanon, especially those that reported heavy bleeding, was not confirmed through haemoglobin testing. Also, the retrospective study of client's record was challenging and due to incomplete client's records, especially phone numbers. In addition, few women who came to remove implanon in the two facilities did not insert in those facilities and some women might have removed implanon inserted in these two facilities in other facilities. As a result of this, the researcher could not estimate accurately the prevalence of implanon discontinuation. Besides, given that the study was conducted in two reproductive clinics, the sample size is not large enough to generalise the findings. The small sample size was attributed to the fact that some of the participants could not be contacted from the telephone numbers given during registration at the clinic. Most of the calls made were either not answered or the numbers simply could not connect; possibly because the number was no longer in use or other reasons. Another compounding factor is that some of the clients that came into the clinic to remove the implant were refused that service by the nurses so that these were lost to follow up. The researcher acknowledges that surveying a larger sample could provide more substantial information. Using a larger sample size, which would include women from various urban and rural settings throughout the country, could influence the results of this study and provide broader information regarding knowledge and attitudes about Implanon discontinuation. Future study should estimate the true prevalence of implanon discontinuation.

### **5.4 DISCUSSION**

The study examined women's knowledge of and attitude to implanon, their perception of implanon side effects, and reasons for discontinuation of implanon. The findings indicated that women have poor knowledge of implanon, positive attitude to implanon and discontinued implanon mainly due to their experiences of side effects.

The study found that women used implanon for a mean duration of 11.2 months. Higher mean duration of implanon use was reported by Burusie (2015) and lower mean duration was reported by Kalayu Birhane et al. (2015) both in Ethiopia.

Generally, in trial studies, higher duration of implanon use is reported. An average duration of use of implanon of 27 months in Nigeria (Pam, Mutahir, Karshima, Kahansim & Daru, 2014). Variation in duration of implanon use has been attributed to quality of service. Scholars assert that prior counselling of women about side effects of implanon is linked to continuation of implanon. Perhaps variation in mean duration of implanon removal is due to ability to cope with the side effects.

The study also found that knowledge of implanon is poor in the study settings. This suggests that women are not adequately counselled about implanon side effects. Many participants corroborate this by stating that they do not have adequate knowledge about implanon and that providers should explain implanon side effects. In the study setting, implanon was introduced in 2013 with specific target to providers. Perhaps many women given implanon were not adequately counselled about its side effects. The poor knowledge about implanon might also explain the reason for early discontinuation of implanon reported in this study. Early discontinuation of implanon as found in this study is a public health concern as the consequences include unintended pregnancy and waste of scarce government resources. The findings of the study indicates that, there is a need for properly counselling of patients and to also educate women to improve their knowledge and encourage them to dispel their myths about modern conception, especially implanon.

The findings of the study concerning attitude to implanon and perception of implanon side-effects further indicate the need for proper counselling of women prior to initiation of implanon. Many participants erroneously associated implanon with permanent infertility. Even though only few women experienced weight gain, a majority of them associated implanon with weight gain.

The main reason for implanon discontinuation in this study is experience of side effects. This finding is not surprising considering that it has been reported by many studies in Ethiopia, Nigeria and Malaysia. Heavy bleeding was the main reason for implanon removal reported by 40% of our participants. Bursie (2015) reported heavy bleeding in 36% of women in Ethiopia. Higher proportion of women discontinued implanon because of heavy bleeding in Malaysia (Mastor, Si & Siti, 2011). In the United

Kingdom, 91% of women removed implanon due to unwanted side effect with 62% of the experiencing frequent bleeding (Fatim & Anna, 2006). Also, dissatisfaction with excess bleeding (56.2%) is reported in Australia (Harvey, Caroline; Seib, Charlotte & Lucke, 2009).

Only 4.3% of our participants removed implanon to become pregnant as compared to 36% reported in Nigeria (Pam et al., 2014). The finding that 10 women became pregnant despite the use of implanon is worrisome and suggests the need for further study. Implanon is regarded as a highly effective contraceptive method and many studies have indicated so. However, the finding of the study seems to suggest that many women have begun to doubt the efficacy of implanon based on the experience of other women. Most women stated that they were not sure if implanon can effectively prevent pregnancy. Perhaps the inefficacy of Implanon in those women is as a result of use of medication such as ARV and Antipsychotic medications. According to NICE clinical guideline; any drugs that induce liver enzymes and therefore aids the metabolism of steroid hormone has an effect on reducing the serum levels and in this case may lower the efficacy of Long-acting reversible contraception (National Collaborating Centre for Women's and Children's Health (UK), 2011). Nevertheless, health facilities in South Africa have stopped administering implanon to women on ARV medications and the study finding that few women (12%) who want to start ARV or on ARV removed implanon corroborates this finding.

## **5.5 CONCLUSIONS**

Based on the findings of the study, the following conclusions were drawn:

- The duration for Implanon use among the sample is relatively very short.
- Most participants had poor knowledge of implanon, which is associated with age. However, their attitude towards implanon use is positive, as they indicated having access to implanon.

- The finding of the study demonstrates that distance and inappropriate clinic working hours are barriers to implanon use among women.
- Heavy bleeding, irregular frequent bleeding, and weight gain were the side effects associated with implanon use among the participants.
- Most participants discontinued implanon because of poor or wrong positioning, need to become pregnant, and on various drugs treatment.

## **5.6 RECOMMENDATIONS**

Based on the findings of the study, the following recommendations are made:

- i. There is a need to create public awareness on implanon use, its associated side effects, and benefits at both the clinic and the community level. Reproductive health of women requires good quality service provisioning thus health workers should focus more on improving the knowledge of women and dispelling the myths about contraception. Such awareness information should take into consideration the cultural values of people and be disseminated across various media.
- ii. It will be quite important for healthcare practitioners to consider health education as an important issue at every clinic visit, especially regarding the importance of reproductive health. Information received about health from healthcare practitioners is often taken seriously by patients and thus this might play a crucial role in strengthening and sustaining the use of implanon among women in the setting.
- iii. Future studies on implanon use and discontinuation should endeavour to explore the association of implanon use with sex drive, weight gain and weight loss.

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## **APPENDIX A: LETTER TO THE UNIVERSITY OF FORT HARE ETHICS COMMITTEE**

The letter of application to the University of Fort Hare for permission to conduct a study

Department of Health Sciences

University of Fort Hare

East London

5201

The Chairperson

The Research Ethics Committee

University of Fort Hare

Alice

Dear Sir/Madam

### **REQUEST FOR APPROVAL TO CONDUCT A RESEARCH STUDY**

I, Dr KP Mrwebi, a registered student at the University of Fort Hare for Masters in Public Health, hereby request permission from your office to conduct a research study.

The title of study is:

Knowledge and attitudes about Implanon discontinuation at Buffalo City Municipality, Amatole District

Research Problem Statement:

It has been noted with great concern that a considerable number of women are removing the Implanon having accepted it before, barely a year after the LARC was introduced. It was the expectation that the introduction of Implanon would reduce the

high rate of teenage pregnancy and its related problems. The contraceptive implant may not be an appropriate option for women who desire short-term contraceptive protection; however, it is the only reversible method that requires minor surgery for insertion and removal, and while the procedure is simple and relatively risk-free, it nonetheless entails the invasiveness that goes with any surgical intervention, but its efficacy is close to sterilisation with 0 percent pregnancy (Ojule et al., 2012). Despite the benefits of Implanon, as earlier stated the rate of discontinuity of this newly introduced contraceptive method among reproductive aged women at Buffalo City Municipality is worrisome. It is therefore worthwhile to examine factors responsible for this upsurge in the discontinuation rate. Therefore this study is designed to investigate the reasons responsible for the discontinuation of Implanon.

Purpose of the study:

To assess the knowledge and attitudes about the discontinuation of Implanon.

#### SPECIFIC OBJECTIVES

- To determine perceived knowledge gaps about the advantages of Implanon.
- To examine the perceived barriers to Implanon insertion/acceptance.
- To assess the attitudes and behaviour of women towards Implanon.

Significance of the study:

The dual challenge of HIV/pregnancy prevention makes this research a priority to inform the National Contraception & Fertility Planning policy of government to

- improve access and use of contraceptives to reduce maternal and child mortality (MDGs 4&5)
- build community support for the provision of effective contraceptives for women and adolescents.

I hope my request will receive your favourable consideration.

Yours faithfully

Dr KP Mrwebi

## **APPENDIX B: LETTER TO THE DEPARTMENT OF HEALTH**

The letter of application for permission to conduct a study at the University of Fort Hare

Department of Health Sciences

University of Fort Hare

East London

5201

The Chairperson

Department of Health

Bisho

Eastern Cape

5605

Dear Sir/Madam

### **REQUEST FOR APPROVAL TO CONDUCT A RESEARCH STUDY**

I, Dr KP Mrwebi, a registered student at the University of Fort Hare for Masters in Public Health, hereby request permission from your office to conduct a study.

The title of the study is:

Knowledge and attitudes about Implanon discontinuation at Buffalo City Municipality, Amatole District in the Eastern Cape.

Research Problem Statement:

It has been noted with great concern that a considerable number of women are removing the Implanon having accepted it before, barely a year after the LARC was introduced. It was the expectation that the introduction of Implanon would reduce the high rate of teenage pregnancy and its related problems. The contraceptive implant may not be an appropriate option for women who desire short-term contraceptive protection; however, it is the only reversible method that requires minor surgery for insertion and removal, and while the procedure is simple and relatively risk-free, it nonetheless entails the invasiveness that goes with any surgical intervention but its efficacy is close to sterilisation with 0 percent pregnancy (Ojule et al., 2012). Despite the benefits of Implanon, as earlier stated the rate of discontinuity of this newly introduced contraceptive method among reproductive aged women at Buffalo City Municipality is worrisome. It is therefore worthwhile to examine factors responsible for this upsurge in the discontinuation rate. Therefore this study is designed to investigate the reasons responsible for the discontinuation of Implanon.

Purpose of the study:

To assess the knowledge and attitudes about the discontinuation of Implanon.

#### SPECIFIC OBJECTIVES

- To determine perceived knowledge gaps about the advantages of Implanon.
- To examine the perceived barriers to Implanon insertion/acceptance.
- To assess the attitudes and behaviour of women towards Implanon.

Significance of the study:

The dual challenge of HIV/pregnancy prevention makes this research a priority to inform the National Contraception & Fertility Planning policy of government to

- improve access and use of contraceptives to reduce maternal and child mortality (MDGs 4&5)
- build community support for the provision of effective contraceptives for women and adolescents.

I hope my request will receive your favourable consideration.

Yours faithfully

Dr KP Mrwebi

## **APPENDIX C: LETTER TO THE DISTRICT MANAGER, BUFFALO CITY MUNICIPALITY, AMATOLE DISTRICT**

Application for permission to conduct a study at the University of Fort Hare

Department of Health Sciences

University of Fort Hare

East London

5201

District Manager

Buffalo City Municipality

Amatole District

East London

5201

Dear Sir/Madam

### **REQUEST FOR APPROVAL TO CONDUCT A RESEARCH STUDY**

I, Dr KP Mrwebi, a registered student at the University of Fort Hare for a Master's degree in Public Health, hereby request permission from your office to conduct a study.

The title of the study is:

Knowledge and attitudes about Implanon discontinuation at Buffalo City Municipality, Amatole District in the Eastern Cape.

Research Problem Statement:



It has been noted with great concern that a considerable number of women are removing the Implanon having accepted it before, barely a year after the LARC was introduced. It was the expectation that the introduction of Implanon would reduce the high rate of teenage pregnancy and its related problems. The contraceptive implant may not be an appropriate option for women who desire short-term contraceptive protection; however, it is the only reversible method that requires minor surgery for insertion and removal, and while the procedure is simple and relatively risk-free, it nonetheless entails the invasiveness that goes with any surgical intervention but its efficacy is close to sterilisation with 0 percent pregnancy (Ojule et al., 2012). Despite the benefits of Implanon, as earlier stated the rate of discontinuity of this newly introduced contraceptive method among reproductive aged women at Buffalo City Municipality is worrisome. It is therefore worthwhile to examine factors responsible for this upsurge in the discontinuation rate. Therefore this study is designed to investigate the reasons responsible for the discontinuation of Implanon.

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The dual challenge of HIV/pregnancy prevention makes this research a priority to inform the National Contraception & Fertility Planning policy of government to

- improve access and use of contraceptives to reduce maternal and child mortality (MDGs 4&5)
- build community support for the provision of effective contraceptives for women and adolescents.

I hope my request will receive your favourable consideration.

Yours faithfully

Dr KP Mrwebi

## **APPENDIX D: LETTER TO THE OPERATIONAL MANAGER CLINIC**

Application for permission to conduct a study at the University of Fort Hare

Department of Health Sciences

University of Fort Hare

East London

5201

Operational Manager

Buffalo City Municipality Clinic

Amatole District

East London

5201

Dear Sir/Madam

### **REQUEST FOR APPROVAL TO CONDUCT A RESEARCH STUDY**

I, Dr KP Mrwebi, a registered student at the University of Fort Hare for a Master's degree in Public Health, hereby request permission from your office to conduct a study.

The title of the study is:

Knowledge and attitudes about Implanon discontinuation at Buffalo City Municipality, Amatole District in the Eastern Cape.

Research Problem Statement:

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introduced. It was the expectation that the introduction of Implanon would reduce the high rate of teenage pregnancy and its related problems. The contraceptive implant may not be an appropriate option for women who desire short-term contraceptive protection; however, it is the only reversible method that requires minor surgery for insertion and removal, and while the procedure is simple and relatively risk-free, it nonetheless entails the invasiveness that goes with any surgical intervention but its efficacy is close to sterilisation with 0 percent pregnancy (Ojule et al., 2012). Despite the benefits of Implanon, as earlier stated the rate of discontinuity of this newly introduced contraceptive method among reproductive aged women at Buffalo City Municipality is worrisome. It is therefore worthwhile to examine factors responsible for this upsurge in the discontinuation rate. Therefore this study is designed to investigate the reasons responsible for the discontinuation of Implanon.

Purpose of the study:

To assess the knowledge and attitudes about the discontinuation of Implanon.

#### SPECIFIC OBJECTIVES

- To determine perceived knowledge gaps about the advantages of Implanon.
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- To assess the attitudes and behaviour of women towards Implanon.

Significance of the study:

The dual challenge of HIV/pregnancy prevention makes this research a priority to inform the National Contraception & Fertility Planning policy of government to

- improve access and use of contraceptives to reduce maternal and child mortality (MDGs 4&5)
- build community support for the provision of effective contraceptives for women and adolescents.

I hope my request will receive your favourable consideration.

Yours faithfully

Dr KP Mrwebi

## **Appendix B: Consent Form - English**

We request permission from you to participate in a research study undertaken by Dr KP Mrwebi for her Master's degree in Public Health with the University of Fort Hare. The study is about the knowledge of and attitudes to the discontinuation of Implanon.

The names of the participants will not be mentioned when the study is discussed or published. All records will be held under lock and key; and only the people doing the research will know about the names of the patients.

Participation is voluntary, and refusal to participate will involve no penalty or loss of benefits to you. You may discontinue participation at any time without penalty or loss of benefits.

The researcher will give you a questionnaire to answer and through focus groups with other participants we will discuss the topic of knowledge and attitudes about the discontinuation of Implanon.

If there are any problems and queries regarding the research, do not hesitate to contact me, Dr KP Mrwebi on 076 581 7906 or the supervisor Prof. Daniel Goon.

\_\_\_\_\_  
**(Signed)**

\_\_\_\_\_  
**(Print Name)**

\_\_\_\_\_  
**(DATE)**

## **APPENDIX C: IPHEPHA-MVUME LESIXHOSA**

Sicela imvume yakho yokuba ubandakanywe kuphando olwenziwa ngu Dr KP Mrwebi, elenzela isidanga kwi Dyunivesi yase Fort Hare. Uphando lungolwazi nencukacha ngesithinteli mitho iImplanon . Uphando luquka ukuphendula imibuzo kumaphepha zimvo ngolwazi nencukacha nge Implanon, nokuxoxisana kwabathathi nxaxheba.

Ubandakanyo koluphando alunyanzelisi sisicelo. Uba umntu akathandi kubayinxalenye yoluphando akayikuphathwa ngokuhlukileyo uyakuncedwa ekliniki njengesiqhelo akasayikutshutshiswa okanye asolwe. Ifoani kaDr KP Mrwebi ngu 076 581 7906 ungamfonela malunga noluphando xa unengxaki. Xa lupapashwa oluphando amagama abantu akasayikubhalwa ukwenzela ukubakhusela

Uba uyavuma ukuba yinxalenye yoluphando sayina apha ngezantsi:

**Igama**.....

**Intsayino gama**.....

**Umhla**.....

## APPENDIX G: QUESTIONNAIRE

### SECTION A

Characteristics of reproductive-aged (15-49) female respondents at Buffalo City Municipality in Amatole district.

Variable	
Age	
15-19	
20-24	
25-29	
30-34	
35-49	
Religion	
Methodist	
Anglican	
Dutch Reformed	
Other	
Marital Status	
Single	
Married	
Divorced	



<p>Level of education</p> <p>Primary/Never attended</p> <p>Secondary</p> <p>Tertiary</p>	
<p>Number of children delivered</p> <p>0</p> <p>1-4</p> <p>4+</p>	
<p>Ever had an abortion</p> <p>Yes</p> <p>No</p>	
<p>Current use LARC</p> <p>Yes</p> <p>No</p>	

## SECTION B

### Knowledge of Implanon among women of reproductive age at Buffalo City Municipality

Variable	Agree	Disagree
Implanon discontinuation can easily restore fertility		
Implanon will not be effective after 3 years		
Implanon side effects last forever		
Implanon acts the same way as the injectables		
Implanon is for women with more than one baby		
You can become pregnant with Implanon inserted		

## SECTION C

Attitudes towards use/discontinuation of Implanon among respondents.

Items on attitude	Agree	Disagree
Implanon effectively prevents pregnancy		
Implanon should be used by married women		
Healthcare workers should explain contraceptive side effects		
Partner should decide your contraceptive method to use		
Implanon causes permanent infertility		
Foreign body in your body can cause irreversible damage		
Implanon is superior to other methods as it is does not reduce sexual pleasure		
Implanon choice was because of an unintended pregnancy/ abortion		

EXTRACTED: WHO



