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FACTORS INFLUENCING CONTRACEPTIVE USE AND UNPLANNED PREGNANCY IN A SOUTH AFRICAN POPULATION

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of

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DECLARATION

I, Thembelihle Nonstikelelo Sinqobile Bafana declare that this research report is my own work. It is being submitted for the degree of Master of Science in Medicine in the field of Epidemiology and Biostatistics in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

…….....

……day of ……..2010

DEDICATION

To God, through Him all things are possible and to three generations of strong women my grandmother Diana Phili, my mother Sellinah Gandari and my sister Gladys Thabani Tutisani.

ABSTRACT

Background*:* The knowledge of contraceptive use is high among men and women in South Africa. However, contraceptive prevalence rate is moderate and unplanned pregnancies are common. Understanding the determinants of contraceptive use and unplanned pregnancy will inform future interventions that aim to maintain consistent contraceptive use and reduce unplanned pregnancies. ***Aim****:* The study aims to describe factors associated with contraceptive use and unplanned pregnancy in the South African population. ***Methods***: A secondary data analysis was carried out on data collected in a cross–sectional survey conducted in Potchefstroom, South Africa between August 2007 and March 2008.***Results:*** Contraceptive prevalence was 69.5% and unplanned pregnancy was 59.7%. The risk factors for contraceptive use included woman's employment status at the last pregnancy, woman's partner employment status at the last pregnancy and number of miscarriages a woman had experienced.
The risk factors for unplanned pregnancy included race, woman's age , education level and employment status at last pregnancy, number of miscarriages, contraceptive use and partner's employment status at last pregnancy. ***Conclusion****:* If the prevalence of unplanned pregnancies is to be reduced, policies and programmes need to address economic factors which were associated with both contraceptive use and unplanned pregnancy. Further study needs to be carried out as to the reasons behind why a woman with a previous history of a miscarriage is less likely to have an unplanned pregnancy yet she is less likely to be on contraception.

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Thank you to the National Institute for Occupational Health, South Africa for allowing me to access their data.

To Sydney Alfred, my brother – thank you for opening up your house to me for all those years. Numbers 6v 24 – 26.

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TABLE OF CONTENTS

	Page
DECLARATION	i
DEDICATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENTS	v
LIST OF FIGURES	vii
LIST OF TABLES	viii
NOMENCLATURE	x
1.0 INTRODUCTION	1
1.1 PROBLEM STATEMENT	1
1.2 STUDY OBJECTIVES	2
1.2.1MAIN OBJECTIVES	2
1.2.2 SPECIFIC OBJECTIVES	2
2.0 LITERTURE REVIEW	3
2.1 CONTRACEPTION DEFINITION	3
2.2 TYPES OF CONTRACEPTIVES	3
2.2.1 MODERN CONTRACEPTIVES	3
2.2.2 TRADITIONAL/ NATURAL CONTRACEPTIVES	6
2.3 PREVALENCE OF CONTRACEPTIVE USE	7
2.4 RISK FACTORS FOR CONTRACEPTIVE USE	7
2.5 HEALTH SERVICES BARRIERS TO CONTRACEPTIVE USE	10
2.6 UNPLANNED PREGNANCY DEFINITION	11
2.7 PREVALENCE OF UNPLANNED PREGNANCY	11
2.8 RISK FACTORS FOR UNPLANNED PREGNANCY	12
2.9 TYPICAL USE OF CONTRACEPTIVE USE AND UNPLANNED PREGNANCY	13
3.0 METHODOLOGY	16
3.1 METHODOLOGY - PRIMARY STUDY	16
3.1.1 STUDY DESIGN	16
3.1.2 STUDY SETTING	16
3.1.3 STUDY POPULATION	16
3.1.4 SAMPLING METHODS	17
3.1.5 STUDY QUESTIONNAIRE	17
3.2 METHODOLOGY – SECONDARY STUDY	18
3.2.1 STUDY DESIGN	18
3.2.2 STUDY POPULATION	18
3.3 STUDY VARIABLES	18
3.3.1 OUTCOME VARIABLES	18
3.3.2 DESCRIPTION OF THE STUDY VARIABLES	18

3.3.3 EXPLANATORY VARIABLES 19
3.4 ETHICAL CONSIDERATIONS 20
3.5 DATA PROCESSING METHODS AND DATA ANALYSIS 20
3.5.1 DATA EXTRACTION METHODS AND CLEANING 20
3.5.2 DATA ANALYSIS 20
4.0 RESULT 22
4.1 DESCRIPTION OF THE STUDY PARTCIPANTS 22
4.2 VARIABLES (SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS) AT LAST PREGNANCY 22
4.3 REPRODUCTIVE HISTORY 23
4.4 CONTRACEPTIVE USE 25
4.4.1 PREVALENCE OF CONTRACEPTIVE USE 25
4.4.2 DISCONTINUATION OF CONTRACEPTIVE USE 25
4.4.3 UNIVARIATE ASSOCIATION BETWEEN DEMOGRAPHIC … 27
4.4.4 UNIVARIATE ASSOCIATION BETWEEN DEMOGRAPHIC…. 29
4.4.5 RISK FACTORS FOR CONTRACEPTIVE USE 30
4.5 UNPLANNED PREGNANCY 31
4.5.1 PREVALENCE OF UNPLANNED PREGNANCY 31
4.5.2 UNPLANNED PREGNANCIES WHILE USING CONTRACEPTIVES 31
4.5.3 UNIVARIATE ASSOCIATION BETWEEN DEMOGRAPHIC AND SOCIO- ECONOMIC CHARACTERISTICS AT LAST PREGNANCY AND UNPLANNED PREGNANCY 32
4.5.4 UNIVARIATE ASSOCIATION BETWEEN REPRODUCTIVE HISTORY AND UNPLANNED PREGNANCIES 34
4.5.5 PREDICTORS OF UNPLANNED PREGNANCIES: MULTIVARIATE LOGISTIC REGRESSION 35
5.0 DISCUSSION 37
5.1 CONTRACEPTIVE USE AND UNPLANNED PREGNANCY 37
5.1.1 PREVALENCE OF CONTRACEPTIVE USE 37
5.1.2 PREVALENCE OF UNPLANNED PREGNANCY 38
5.1.3 RISK FACTORS OF CONTRACEPTIVE USE & UNPLANNED PREGNANCY 38
5.2 REASONS FOR STOPPING CONTRACEPTIVES 41
6.0 STRENGTHS AND LIMITATIONS 42
7.0 RECOMMENDATIONS 43
8.0 CONCLUSION 44
9.0 REFERENCES 45

LIST OF FIGURES

Figure		Page
1	Types of contraceptives used by study participants	25
2	Reasons for stopping contraceptives	26
3	Discontinuation of contraceptives due to side effects by type	26

LIST OF TABLES

Table		Page
1	Percentage of women experiencing an unplanned pregnancy during the first year of typical use and the first year of perfect use for different contraceptive methods	14
2	Demographic and socio-economic characteristics at the last pregnancy	23
3	Reproductive history	24
4	Univariate analysis of demographic and socio-economic characteristics and contraceptive use at last pregnancy attempt	28
5	Univariate analysis of reproductive characteristics and contraceptive use	29
6	Logistic regression analyses of predictors of contraceptive use , Potchefstroom , South Africa , 2008	30
7	A comparison of documented typical use versus study results in women experiencing an unplanned pregnancy while using contraceptives	31

8	Univariate analysis of demographic and socio-economic characteristics at last pregnancy and unplanned pregnancy	33
9	Univariate analysis of reproductive history and unplanned pregnancy	34
10	Logistic regression analyses assessing associations between unplanned pregnancy and selected variables, Potchefstroom, South Africa 2008	36

NOMENCLATURE

ACRONYMS

COCs	Combined Oral Contraceptives
DHS	Demographic Health Survey
DMPA	Depo Medroxyprogesterone acetate
HIV	Human Immunodeficiency Virus
FP	Family Planning
NET	Norethisterone Enantate
NIOH	National Institute of Occupational Health
OCs	Oral Contraceptives
POP	Progestin Only Pill
SADHS	South African Demographic and Health Survey
STIs	Sexually Transmitted Infections
TFR	Total Fertility Rate
IUD	Intra-Uterine Device

DEFINITION OF TERMS

Basal temperature	Temperature of the body at rest
Typical use of contraception	How effective a method of contraception is during actual use including inconsistent and incorrect use [1]
Perfect use of contraception	How effective a method of contraception is when following directions for use [1]
Total fertility rate	This is the average number of children that would be born per woman according to a given set of age specific fertility rates pertaining to a particular year or time interval if all women lived to the end of their child bearing years [2].
Contraceptive prevalence	Percentage of women currently using a method of contraception among all women of reproductive age (15 to 49 years) [3].
Amenorrhoea	Absence of menstrual periods [4]

1.0 INTRODUCTION

The world population stood at 6.7 billion in 2008 [5]. This figure has been growing at an average rate of 1.2 % annually and is predicted to be 8.9 billion in 2050 [5].South Africa has a total population of 49.3 million people [2] and an average annual growth rate of 1% [5]. Women constitute 52% [2] of the South African population, with 57% falling into the reproductive age groups of 15 to 49 years [2].

Contraception is the prevention of pregnancy through temporary or permanent means [6]. It is a vital component of family planning. Without contraception a woman's total fertility rate (TFR) [2], would be 18 [4].
In South Africa, the TRF has been on a steady decline in the past decade. In 2003 it was 2.1 [9].This figure marked a decrease of 38 percent since 1998.The decline in TRF is partly due to an increase in contraceptive prevalence from 62 % in 1998 to 65 % in 2003 [3]. Other factors which could have contributed to the decline in TFR during this period are HIV/AIDS pandemic which has shortened the life expectancy of those in their reproductive years; it has decreased fertility intentions and fecundity, and has brought about an increased use of condoms [10]. Also, it has been noted that in countries where abortions are legal, low fertility is associated with a high combined prevalence of abortion [11].However, a sizeable proportion of reproductive age women in the population do not use contraceptives and many may discontinue use for various reasons. Contraceptive use is a strong determinant of unplanned pregnancy [4]. There appears to be an inverse relationship between contraceptive use and unplanned pregnancies. The higher the contraceptive use prevalence in a region the lower the number of unplanned pregnancies [3].

1.1 PROBLEM STATEMENT

The knowledge of contraceptive methods in South Africa is high. In 2003, 93.4% women and 96.4% men between the ages of 15-49 years knew about different contraceptive methods [9]. The contraceptive prevalence according to the 2003 DHS was 65% [9] and the prevalence of unplanned pregnancy in 2003 was 47% [9]. These results mean there is a somewhat "high" contraceptive knowledge but relatively lower use, and high unplanned pregnancy. Knowledge has not translated to use which may be due to a number of reasons including poor quality

information that is disseminated about contraception and poor access to contraception. Also the "high" contraception prevalence has not brought about a low rate of unplanned pregnancies this could be the result of inconsistent and incorrect use of contraception.

Unplanned pregnancy is associated with an increased risk of morbidity for women, and their unborn child due to unhealthy behaviours exhibited during pregnancy [12].There are an estimated 80 million women globally who have unplanned pregnancies annually, 45 million of these end in abortions and more than half a million women die from complications associated with pregnancy, childbirth and during the postpartum period [4] [2]. Sub-Saharan Africa produced a total of 7.9 million teenage pregnancies of these only 53% were planned with the rest ending in 16% miscarriages , 13% abortions and 18% unplanned births[13].

In South Africa in 2003, 47% of all pregnancies were unplanned [9]. Unplanned pregnancies have economic, social, psychological and physical implications for the mother and the unplanned child [14, 15,16]. Unplanned pregnancies, especially in teenagers, have been shown to lead to poverty as pregnant teenagers often leave school early [17]. Physical implications especially in those below the age of 19 years include hypertension, anaemia, obstructed labour and haemorrhages. There is therefore a need for public health interventions to prevent unplanned pregnancies in order to improve and save the lives of women and their unborn children.

1.2 STUDY OBJECTIVES

1.2.1 MAIN OBJECTIVE

The study aims to investigate the factors that influence contraceptive use and unplanned pregnancy in the Potchefstroom region.

1.2.2. SPECIFIC OBJECTIVES

1. To describe the prevalence of contraceptive use
2. To describe the types of contraceptives used by women in the Potchefstroom area
3. To determine the factors that influence contraceptive use
4. To describe the prevalence of unplanned pregnancy
5. To determine the factors that influence unplanned pregnancy

2.0 LITERTURE REVIEW

2.1 CONTRACEPTION DEFINITION

There are several definitions given for contraception – The Commission on Behavioural and Social Sciences and Education defines contraception as 'the expression of individual desires to space or limit births' [18]. The South African Department of Health's National Contraception Policy Guidelines – defines contraception as 'the prevention of pregnancy through temporary or permanent means' [6]. For the purposes of this study contraception will be defined as method/s used to prevent or postpone pregnancy.

2.2 TYPES OF CONTRACEPTIVES

Contraceptive methods can be classified as either modern or traditional. Modern contraception includes hormonal methods that are administered in different ways; these also include the intrauterine device, barrier methods such as condoms and sterilisation [12]. Traditional contraception also known as conventional or natural methods do not interfere with the reproductive system [12].

2.2.1 MODERN METHODS

Hormonal Methods - There are various delivery methods of hormonal contraception. Synthetic oestrogens and progestins combinations commonly used include the combined oral contraceptives (COCs) also known as the 'pill', the progesterone only pill (POP or 'minipill), the injectables -Depo Provera and Noristerat and contraceptive implants.

- Oral contraceptives (OCs) main mechanism of action is by preventing ovulation – the release of eggs from the ovaries [3, 12, 19, 20]. With perfect use the failure rate in the first year is 0.3% whilst that for typical use is 8% [1].

  The side effects of oestrogen in OCs include irregular bleeding, nausea, breast tenderness, changes in libido, bloating, fluid retention and increased blood pressure [3, 12, 19, 20]. Side effects, for example disturbances of appetite, weight gain and skin

disorders are specific to the progestin (including injectable progestins). Serious side effects are not common but may include blood clots, depression, stroke and gallstones [3, 12, 20].

Women have been known to fall pregnant after concurrently taking OCs and other medications, e.g. some antibiotics, some anti-fungals and certain anti-tuberculosis drugs. Clients should therefore be encouraged to use a barrier method in addition to the oral contraceptives OCs till the completion of the medication course [3, 12].

- Injectable contraceptives have the same mechanism of action as oral contraceptives but are longer acting. There are two commonly used types – Depo provera and norethisterone enantate [21, 22], the former is more popular [6].

  Depo offers protection immediately after each injection if given within the first five days of the period cycle and is reversible within 3 to 18 months. It provides protection for three months. Since Depo does not contain estrogens there are no increased risks of deep vein thrombosis, stroke or myocardial infarction. There are also less drug interactions as compared to other hormonal contraceptives as well as being suitable for lactating mothers [21, 22, 23, 24]. Depo may initially cause irregular menstrual bleeding [17, 21]; thereafter most women experience amenorrhea.

  The main advantages in using contraceptive injectables are convenience, offers privacy for the user [24] and since injectables work primarily by preventing ovulation, they have a low failure rate [22] of 0.3% for perfect use and 3% for typical use [1].

- Intrauterine devices - These are contraceptive devices which are inserted into the uterus [20]. The copper type is effective for five or more years and is used in women older than 35 years [3, 12, 19].

  The IUD works mainly by causing an inflammatory reaction to take place in the uterine area. This method has a low failure rate of 0.1-1.5% for perfect use and 0.1- 2.0% for typical use [1, 3, 20].

Pain and bleeding are the most common reasons for discontinuation of the method. Infections tend to occur in women who have pelvic inflammatory disease and those who have many sexual partners [12 ,19].

Barrier methods physically block the sperm's access to a woman's uterus [25]. These include the male and female condom, diaphragm and vaginal creams, gels and foams. Male and female sterilization will also be included as barrier method of contraception.

- Condom - is used to reduce both the likelihood of pregnancy and spreading of sexually transmitted diseases (STIs) —such as HIV. The male condom blocks semen from entering the body of a sexual partner [20, 22, 25].

  The advantages of use of this method, are that it is immediately reversible, this method is good for couples who have sex infrequently, it is free of charge/ inexpensive, protects against STIs, no medical or hormonal side effects and no clinic or doctor visits are required. The use of condoms as a method of contraception can enable men to take responsibility for preventing pregnancy and disease [12, 20, 22, 25].

  The main disadvantage that couples have highlighted is the interruption of sexual intercourse. The male condom has 2% failure rate for perfect use and 15% for typical use [1, 22, 25].

- Diaphragm – is a rubber cup fitted over the cervix and prevents sperm from entering the uterus. The advantages of this method are the same as that of the condom plus it can re-used for between one to three years which makes it a cheap method [22 ,24 ,26].The diaphragm does however have a high failure rate of 6% for perfect use and 16 % for typical use [1].
- Vaginal creams, gels and foams – these are placed in the vagina prior to sexual intercourse. They provide a physical barrier to sperm but also contain a spermicide. Like other barrier methods they are immediately reversible, have no medical side effects and provide lubrication [23].

The disadvantages of this method are its unreliability , it can be "messy", it has the highest cost over long term use , of all the barrier methods it has the highest failure rate – 8% for perfect use and 29% for typical use for spermicidal foams[1 , 25] .

- Sterilization – surgical sterilization is available for women and men. Female sterilization involves the tying of the fallopian tubes and for men, the cutting of the tubes [12]. Sterilization should be considered permanent. This method has a low failure rate of 0.5% for both typical and perfect use. The cons of using this method are the possible operative and post-operative complications and irreversibility [12, 19, 20, 23].

2.2.2 TRADITIONAL /NATURAL METHODS

Traditional /natural methods of contraception include fertility awareness methods.

Fertility awareness methods include the rhythm (calendar), mucous and basal body temperature methods which are used to identify the woman's fertile periods

- Coitus interuptus also known as the withdrawal method is the practice of ending sexual intercourse before ejaculation [12]. The failure rate of this method ranges from ten pregnancies per 100 women per year to 23 pregnancies per 100 women per year among actual users [24].

Rhythm method involves the abstinence from sexual intercourse during the period of the menstrual cycle when the woman is most fertile. The different methods make use of the three primary fertility signs which are:

- Basal body temperature method. Failure rates are high at 0.3% in perfect use and 3.1% in typical use [1].
- Calendar rhythm method. This method has high failure rates of 9% for perfect use and 25% for typical use [1, 20, 23].

- Mucus method. This method has a high failure rate of 5% for perfect use [1].

2.3 PREVALENCE OF CONTRACEPTIVE USE

Global contraceptive prevalence was estimated to be 63% in the year 2000, with higher levels of use in developed countries at 70% and 61% in less developed countries [27].
In the same year, the overall majority of women worldwide used modern contraceptives [27]. In developing countries, use of modern contraceptives accounted for nine out of ten users. This was higher than that in developed countries where eight out of ten users used modern contraceptives [27]. Worldwide the most popular of methods were female sterilization [19] at 21% followed by IUD at 14% and the pill with a prevalence rate of 7%.
These rates are however questionable, sterilization may in fact have the lowest contraceptive prevalence than other contraceptive method. Data on sterilization is easier and more accurate to collect as it does not necessarily seek information directly from a participant, but data may be collected from hospitals which offer the services.

In the year 2000, Africa had a contraceptive prevalence of 28%, the lowest world over [28].The two most popular methods were the pill and IUD which together accounted for 45%. This figure did not however give a picture of the different regions as evidenced by higher figures for Southern Africa [28].

The overall contraceptive prevalence in South Africa as reported by the 2003 Demographic Health Survey (DHS) was 65% [9]. The survey found that of the 65% women on contraception 64.6% were using a modern contraceptive method and almost zero percent were on a traditional method. The most common modern method of contraception was consistently the injectable; 32.8% of all users were using injectables [7].The prevalence of oral contraceptive pill use was 12.2% and that for female sterilization at 10.1% [9]. Methods with less than one percent of use included all traditional methods – periodic abstinence and withdrawal, male sterilisation, IUD and the diaphragm /foam/jelly [9].

2.4 RISK FACTORS FOR CONTRACEPTIVE USE

Studies done in other African countries have revealed a range of different determinants of contraceptive use. Fertility and contraceptive use in Africa has been shown to be linked to economic development. These economic factors include educational attainment (adult literacy),

child and infant mortality, levels of urbanisation, income per capita and access to family planning and health services [18]. High use of contraception in Zimbabwe and Botswana is associated with high levels of education [29]. One study shows that the more educated a woman is the greater the likelihood of adoption of contraception [17]. Different explanations have been put forward for this. One study suggested that education, in the African context, means exposure to and subsequently the adoption of western cultures. This westernization influences what is deemed acceptable child rearing practices [18]; including placing greater value on the time a mother spends with her child compared to cultural acceptances of grandparents and relatives or child minders rearing children.

Education has been shown to give the woman some power in decision making with her partner, which may include negotiating on issues like contraceptive use and child spacing [18]. Some studies show that women who were employed were more likely to be in the population that are using contraceptives than their unemployed counterparts [30, 31].

Marital status neither appears to influence the use of contraceptives nor the types of contraceptive used [9]. Data from unmarried women especially teenagers is more limited than that from married women due to the difficulty in questioning unmarried women especially, unmarried teenagers about contraceptive use, as this may imply they are sexually active [32].However the SADHS of 2003 shows contraceptive prevalence in unmarried sexually active women (65%) to be slightly higher than that in married women at 60% [9].

Both age and race are associated with contraceptive use – with an increase in age there is an increased prevalence of contraception [31, 32]. Adolescent first time mothers however were shown to be more likely to start a contraceptive method after delivery of their first child than any other age group [14]. In non-adolescents, however, the proportion of women who use contraception before the birth of their first child has been shown to be low [14]. Racial differences exist in contraceptive use. The 2003 DHS reported the proportion of current use of all contraceptives was 81% for White women, 75% for Asian women, 70% for Coloured women and 62% for Black women [9].

Religions vary widely in their views of contraceptive use. A religion may advocate one thing but it is always up to the individual to make the decision of whether or not to use contraception. In Hinduism there is no prohibition against contraception. In Christianity, however due to the diversity of denominations there are differing views from disallowing use to being very lenient. The Roman Catholic Church sanctions only abstinence and natural family planning as suitable methods of contraception. One study showed that women from the Roman Catholic denomination were the predominant users of contraception [33]. A study carried out in Tanzania found that religion showed statistical significance as a determinant in contraceptive use [33].

Low use of contraceptives in certain areas in a country may be due to high male migrant labour from that population. Two studies show that many women who had migrant partners or whose partners were absent for long periods of time opted not to use contraception because of infrequent sexual intercourse [34, 35]

Previous reproductive experience also affects contraceptive use. Women who had previously been pregnant were more likely to be using contraceptives, [30] especially if they delivered in a hospital or clinic because of easier access to contraceptive advice, counselling and the actual contraceptive supplies [14].

Some of studies show that men are the key decision makers [31, 36]. Findings in South Africa show that two thirds of women reported that there was joint decision making regarding contraceptive use and family planning [9].This report contradicted another study done in South Africa, which found that women believed that men disapprove of contraceptive use [6]. Results from a study carried out in Mali reveal that fewer than 20% of the men surveyed approved of family planning compared to 70% among their spouses [36]. Reasons given by men (husbands) for this opinion is that contraceptive use encourages infidelity, causes them to lose control over their wife and reduces the number of children they want [37].

Covert use defined as the use of contraception without the knowledge of one’s partner or spouse, surfaced as women considered the ability not to be discovered by their partner as an important determinant of the type of contraception to use [37, 38, 39].

Other studies, however shown that family, friends and peers greatly influence contraceptive use [43, 44], yet some say that a parent-in-law's approval is important [42].

2.5 HEALTH SERVICE BARRIERS TO CONTRACEPTIVE USE

In South Africa the major contributor of contraceptive services is the public health sector, which provides family planning services and contraception, free of charge [6]. Over the years there has been a significant reduction in family planning donor funding but an increase in STDs/HIV/AIDS funding [43]. In the year 2000 family planning and HIV/AIDS funding were at par, but in 2004 funding for the former had decreased [43].A decrease in funding as brought about:

- Lack of choice of contraception. There is a limited range of contraceptive methods available in the public sector, with most government clinics providing mainly injectables and the pill [6].

- Inaccessibility pertaining to distance or location to a health facility has sometimes been cited as a barrier to contraceptive use. In South Africa there are a range of contraceptive delivery points which include clinics, community health centres, district hospitals, referral and tertiary hospitals as well as mobile clinics [6]. Inaccessibility therefore may be due to a lack of transport money for clinic visits especially for women taking oral contraceptives and therefore only receive a month's supply at a time. Adolescents are not keen on visiting nearby health facilities (especially community clinics) citing the possibility of their parents finding out from the clinic staff [44].

- Service provider barriers to contraceptive use include shortages of staff at clinics which has led to limited follow-up [44] , long waiting queues [45], shorter opening hours which cause congestion and a lack of privacy [6 , 13 , 44]. Nurses have also been reported to be rude and unapproachable [44].Adolescents seeking family planning from public health facilities reported feeling stigmatised by the nurses [13] some were informed that they were too young to be on contraception , too young to be in a sexual relationship or should

return with their “boyfriend” before they could be given contraception [44].Staff knowledge at public health care clinics has been cited as being limited and inadequate [11], this means the information available to clients is also limited and inadequate.

2.6 UNPLANNED PREGNANCY DEFINITION

Santelli *et al* defines unplanned pregnancy as one that occurs when a woman or a couple use contraception or when a woman or couple do not desire to become pregnant but do not use contraception [46]. The South African Department of Health defines a “planned pregnancy as one which was wanted at that time” [47] of conception - meaning that an unplanned pregnancy is one which was not wanted at the time it happened. A “mistimed” pregnancy is one which was wanted later and the third option is a pregnancy which was not wanted at all, termed an unwanted pregnancy [47].

Unintended pregnancies are pregnancies that are reported to have been either unwanted (i.e., they occurred when no children, or no more children, were desired) or mistimed (i.e., they occurred earlier than desired) at the time of conception [46, 48]. On the other hand, pregnancies described as intended are those that are reported to have happened at the right time or later than desired (because of infertility or difficulties in conceiving) [46]. For the purposes of this study unplanned pregnancies will encompass unintended, unexpected and mistimed pregnancies. Any pregnancy which a woman or couple did not plan for will be classified as unplanned pregnancy.

2.7 PREVALENCE OF UNPLANNED PREGNANCY

Research and studies investigating unplanned pregnancies especially the prevalence of unplanned pregnancy in South Africa and other developing countries appears limited.

In South Africa, between 1998 and 2003 there were an average of 220 430 unplanned pregnancies per annum [9]. This figure represented 47% of all pregnancies that occurred in the time period [9]. However, two recent studies show the prevalence of unplanned pregnancy to be as high as 61% [7, 8].

2.8 RISK FACTORS FOR UNPLANNED PREGNANCY

Age has been shown to be a strong predictor of unplanned pregnancy [33, 34]. Women of various ages may have unplanned pregnancies, but certain age groups, such as adolescents, women aged 15 to 19 years, are at a higher risk [24] as they are more likely to be sexually active [25 , 34]. Various studies show that age is inversely associated with unplanned pregnancy [15, 16, 48]. Annual adolescent unplanned pregnancy rates are as high as 82% in the United States [49] and 65% in certain African countries [1]. A woman's ability to conceive children decreases with age; it is said to decline with both age and marital duration. This puts younger women at risk of an unplanned pregnancy than older women [1].

Sporadic use of contraceptives was associated with unplanned or unexpected sex [43, 51] resulting in unplanned pregnancies. This may be especially true in partners of migrant labourers, more so in South Africa because of apartheid's labour laws. Partners are often absent for long periods of time and therefore the women have opted to use contraception when required [38]. Unplanned pregnancy rates also differed among different demographic groups. It has been found that single women – especially separated, divorced and widowed women have higher unplanned pregnancies, as high as 26%, than those who were married [52]. Another study found different results; single women who had never been married had high rates of unplanned pregnancies than previously married single women [16]. Single women who cohabit have been found to be at a high risk of unplanned pregnancy [16].

Race group was another significant determinant of unplanned pregnancy. Studies done in some first world countries show that black women have higher failure rates than their white counterparts [15, 16]. The same results are echoed in South Africa where black women have higher prevalence of unplanned pregnancies than any of the other races [9].

Women of a lower income bracket also defined as poor and less educated have been found to be at a higher risk of having an unplanned pregnancy than those of a higher income bracket [15, 16, 52]. In South Africa; rural women have been found to have significantly higher unplanned pregnancies (66%) than urban women (50%).

The results on education levels were conflicting. Some studies found that as the level of education increased the likelihood of unplanned pregnancy decreased [15, 16]. On the opposite end, women with a college diploma were found to be at a greater risk of having an unplanned pregnancy than women with less education [34].

Other factors which determine unplanned pregnancy are a previous history of an unplanned pregnancy [15], smoking, alcohol, employment [6], high parity [53, 54], multiple partnership [15] and frequency of intercourse [52].

2.9 TYPICAL USE OF CONTRACEPTION AND UNPLANNED PREGNANCY

In a study carried out in 42 Sub Saharan African countries it was found that the main reasons for the annual 14 million unplanned pregnancies were early discontinuation, incorrect use and contraceptive failure [55]. A study done in China found that 25% of women who experienced an unplanned pregnancy reported being on a contraceptive method at the time when conception occurred [50].

Behaviour and demographic characteristics of the user has a major role to play in inconsistent contraceptive use [56]. Contraceptive failure due to an inherent failure of the method alone is almost always confounded by an individual's use of the method [55, 57].

Modern contraceptive methods are very effective if used exactly as directed (perfect use), this effectiveness declines when the methods are not used exactly as directed (typical use).
Typical use is defined as the effectiveness of a method when actual use includes inconsistent and incorrect use [1]. Typical use looks at user characteristics. Perfect use is defined as the effectiveness of a method when following directions for use [1]. It looks at the inherent efficacy of a method. Some women have cited discomfort or difficulty with use of condoms for example and as a result discontinue using these contraceptives [58].
Table 1 summarises the percentage of women who experience an unplanned pregnancy whilst using the different contraceptive methods

Table 1 Percentage of women experiencing an unplanned pregnancy during the first year of typical use and the first year of perfect use for different contraceptive methods [16].

METHOD	PERFECT USE %	TYPICAL USE %
No method	85	85
Coitus interuptus	4	27
Condom (male)	2	15
Condom (female)	5	21
Diaphragm	6	16
IUD	0.1-1.5	0.1-2.0
Oral contraceptives	0.3	8
I.M. Long –acting progestin	0.3	3
Rhythm	9	25
Spermicidal foam	8	29
Norplant	0.05	0.05
Sterilization (female)	0.5	0.5

One study found that 61% of unintended pregnancies that occur were due to discontinuation of COCs, 20% of these women did not immediately change to another method and 33 % of those stopping the COCs chose a less reliable method [59]. Less than 50% did not use another method after this and some chose another method but used it inconsistently [55]. It has been suggested that between 15-20% of married users in some developing countries and 6% of unmarried users in the United States may become pregnant mainly because of the incorrect use of the pill [60]. It has been shown that women's failure to use oral contraceptives properly may contribute to increased side effects, discontinuation and unplanned pregnancy [61].

In South Africa, a study showed that of the 83% on injectables, 75% said it was the method chosen by the provider [59]. This suggests that women do not have full control over contraceptive choice and may not have been fully counselled on the possible side-effects when the health care provider dispensed the injectable.

One of the common reasons for discontinuing contraceptive use was the occurrence of side effects such as spotting**.** This was particularly true among covert users who feared being discovered [40]. Fear of the consequences of long-term contraceptive use was another reason for discontinuing contraceptives. In particular, women feared increased risk of cancer and infertility and therefore discontinued contraceptives [58] and as a result ended up pregnant [51, 58, 59].

3.0 METHODOLOGY

3.1METHODOLOGY - PRIMARY STUDY

3.1.1 STUDY DESIGN

The primary study was a cross–sectional retrospective survey conducted among women of reproductive age (18-49) in Potchefstroom, South Africa between August 2007 and March 2008. The main aim of the primary study was to investigate the adverse outcomes of pregnancy by occupation, social class, urbanisation, maternal risk factors and pesticide exposure.

3.1.2 STUDY SETTING

The primary study was carried out by the National Institute of Occupational Health (NIOH), South Africa. It was conducted in the Potchefstroom municipality in the North West Province of South Africa. Potchefstroom is a small urban town with a population of about 128 000 people. It is predominantly a university town but is also home to industries such as engineering, construction, mining and agriculture.

3.1.3 STUDY POPULATION

The inclusion criteria were: women of reproductive age, residing in Potchefstroom and having been pregnant or tried to fall pregnant.

3.1.4 SAMPLING METHODS

The calculated sample size was 1079 women based on estimates from a pilot study carried out in the community in 2006 [8]. The numbers of these minorities were included in ratios which were representative of their numbers in the total Potchefstroom population The sample size was increased to allow for minority subgroups – White and Asian women to be represented. Important interviews were increased for Indian and African women of high economic status. The final sample size was exceeded and in the end, data on a total number of 1121 women was collected. The response rate was 95 percent for Black and Coloured women and 90 percent for White and Asian women.

The sampling frame used was the 2001 South African census which gave information on population distribution by gender, age, race and voting wards in the area. The sample was designed to be representative of the South African population in terms of age distribution, race and voting wards. All 21 wards were visited in Potchefstroom and because each ward had a different population size, the number of women chosen from each ward was in proportion to the ward's size.

The sampling unit for the study were housing units. Information on the total number of housing units in each ward was available. A systematic sample of the households was taken from an initial random starting point within each ward. On average there was one woman who was eligible per housing unit, however, if there were was more than one eligible woman per household all the women in that house were selected.

3.1.5 STUDY QUESTIONNAIRE

The study questionnaire was translated and back translated from English into Setswana, the main language used in the Potchefstroom community. Information on demographic variables, social variables, use of contraceptives, planned pregnancies, fertility and birth outcomes including miscarriage and abortions was sought. Experienced community interviewers were trained to enable to them carry out the interviews. They visited the selected households and collected data

from eligible women using face to face interviews. Written informed consent was obtained from participants. The questionnaire can be found in Appendix 1.

3.2 METHODOLOGY – SECONDARY STUDY

3.2.1 STUDY DESIGN

The main aim of the secondary study was to investigate the factors that influence contraceptive use and unplanned pregnancy in the study population.

3.2.2 STUDY POPULATION

Out of the 1121 women in the study population, only those who had been pregnant (n=1018) were included in the study. Those who had never been pregnant were excluded.

3.3 STUDY VARIABLES

3.3.1 OUTCOME VARIABLES

There were two outcome variables: contraceptive use and unplanned pregnancy.

Contraceptive use

Contraceptive use was defined as the use of contraceptive methods prior to the last (most recent) pregnancy. The variable was dichotomous: Yes/No.

Unplanned pregnancy

Unplanned pregnancy was defined as having a pregnancy that was unplanned/unexpected .The outcome variable, unplanned pregnancy was derived from the following question: “Was this last pregnancy expected (planned) * i.e. not a surprise”. The options to the question were either “yes” or “no”.

3.3.2 DESCRIPTION OF THE STUDY PARTICIPANTS

Study participants were briefly described in the report using characteristics at the time of survey. These characteristics were not used as explanatory variables.

3.3.3 EXPLANATORY VARIABLES

All explanatory variables used in the analysis were time-specific variables defined at the time of last pregnancy i.e. characteristics at the time of the last pregnancy. For example participants were asked “How old were you at the time of your last pregnancy?” This was to as much as possible ensure temporality.

Contraceptive use

The following explanatory variables were used:

1. Woman’s characteristics were age at last pregnancy.
2. Socio-economic variables including highest level of education attained before last pregnancy, total monthly household income at last pregnancy and employment status at last pregnancy.
3. Reproductive history included number of pregnancies, number of miscarriages, number of abortions, number of stillbirths and number of live births.
4. Partner characteristics included partner’s age at last pregnancy and employment status at last pregnancy.

Unplanned pregnancy

The following explanatory variables were used:

1. Woman’s characteristics were age at last pregnancy.
2. Socio-economic variables by looking at age at last pregnancy, highest level of education attained prior to last pregnancy, total monthly household income at last pregnancy and employment status at last pregnancy.
3. Reproductive history included number of pregnancies, number of miscarriages, number of abortions, number of stillbirths and number of live births and contraceptive use.
4. Partner characteristics included partner’s age at last pregnancy and employment status at last pregnancy.

3.4 ETHICAL CONSIDERATIONS

Ethics for the secondary data analysis was approved by the University of the Witwatersrand, Human Research Ethics Committee. Ethical clearance for the original study was approved by the University of the Witwatersrand, Human Research Ethics Committee (HREC), The North West University Ethics Committee and the Department of Health. Data used in the secondary data analysis was de-identified. The clearance certificate, number M090459 can be found in Appendix 2.

3.5 DATA PROCESSING METHODS AND DATA ANALYSIS

3.5.1 DATA EXTRACTION AND CLEANING

Data was received into STATA 9 where all data cleaning, management and analysis were performed.

The primary study data had a total of 220 variables and 1121 observations. Variables that were irrelevant for the study were dropped for example all variables on environmental factors, use of recreational drugs and alcohol before and during pregnancy, variables pertaining to outcome of pregnancy and treatment received after delivery of baby.

Simple descriptive statistics was performed so as to become familiar with the data and therefore enable data cleaning – the detection of missing and inconsistent values and validity of responses. Missing values were checked by examining the data to ensure that they did not indicate “0” for example if a woman was asked how many miscarriages she had experienced a missing value should have been a “0”. All data coded as either “99=not answered” or “9=don’t know” was set as missing.

3.5.2 DATA ANALYSIS

Mean, median (used where there were extreme data values) and ranges were used to describe continuous variables. The continuous variables in the study were woman’s age at last pregnancy,

partner's age at last pregnancy, number of live births, number of stillbirths, number of pregnancies, number of abortions and number of miscarriages. These variables were then recoded into categories and further analysed as categorical variables.

For the descriptive analysis of categorical variables, frequency distributions and percentages were found. The categorical variables for the study were race, religion, total monthly income at last pregnancy, education level at last pregnancy, women's employment status at last pregnancy and partner's employments status at last pregnancy. Pearson's chi square test was conducted on each categorical variable in relationship to the outcome variables – contraceptive use and unplanned pregnancy. This was carried out to measure the statistical association between each explanatory variable and the outcome variables. All hypothesis testing was carried out using a confidence level of 95%.

Explanatory variables assessed from bivariate analysis with a p value of 0.05 or less were included in the multivariate model. All qualifying explanatory variables were recoded to dichotomous variables and univariate logistic simple linear regression was carried out to obtain crude odds ratios. Explanatory variables with $p<0.10$ or less were considered for inclusion in the multivariate model. This was done to identify which of the explanatory variables, after adjusting for confounders, were related to the outcome variables. Multiple logistic regression was then carried out to on all the qualifying explanatory variables ($p>0.05$) and an adjusted odds ratios obtained. Through backwards elimination, the non significant explanatory variables were removed until a final model was obtained with significant explanatory variable ($p<0.05$). This was done to identify which of the explanatory variables, after adjusting for confounders, were related to the outcome variable. Through backwards elimination, the non significant explanatory variables were removed until a final model was obtained.

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4.0 RESULTS

4.1 DESCRIPTION OF THE STUDY PARTICIPANTS

There were 1018 number of participants 659 were Black, 197 White, 132 Coloured and 28 Asian. The mean age of the participants was 33.6 years with a standard deviation of 8.15. 97.12% were Christian and 2.78% Muslims. The majority (78.59%) had some high school education whilst 2.75% had no schooling and 6.29% completed primary school. Only 36.22% were working for pay which contributed to the 63.32% total household monthly income of less than R2500. Over 50% of the participants lived in formal brick houses and 38.42% living in informal houses.

4.2 EXPOSURE VARIABLES (SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS) AT LAST PREGNANCY

Table 2 shows the demographic, socio-economic characteristics at last pregnancy, including reproductive history at last pregnancy. The majority of the respondents had an average age of 26.9 years and these ages ranged from 14 to 46. Partners' age at the last pregnancy was slightly higher with an average age of 30.6 years and a range of between 16 and 53 years of age. Two thirds (66.6%) of households were earning less than R2500 per month at the time of last pregnancy. There were twice more women whose partners worked compared to women themselves.

Table 2 Demographic and socio-economic characteristics at the time of last pregnancy

Variable	Total number N, (%) , mean , range
Race	1016(100%)
Black	659 (64.86%)
White	197 (19.39%)
Coloured	132 (12.99%)
Asian	28 (2.76%)
Religion	1007(100%)
Christian	978 (97.12%)
Muslim	28 (2.78%)
Hindu	1 (0.10%)
Age at last pregnancy	1016(100%) , 26.9 , 14 – 46
=<22	267 (26.28%)
23-27	289 (28.44%)
28-31	211 (20.77%)
>=32	249 (24.51%)
Age of partner at last pregnancy	980(100%) , 30.6, 16 – 53
=<26	286 (29.18%)
27-30	233 (23.78%)
31-35	229 (23.37%)
>=36	232 (23.67%)
Income before pregnancy	991(100%)
<R2500	660 (66.60%)
R2500-R4999	130 (13.12%)
R5000-R10000	109 (11.00%)
R10001- R19999	56 (5.65%)
R20000-R30000	22 (2.22%)
>R30000	14 (1.41%)
Education before pregnancy	1018(100%)
No school	28 (2.75%)
Some primary school	126 (12.38%)
Complete primary	64 (6.29%)
Some high school	385 (37.82%)
Matric	235 (23.08%)
Tertiary	180 (17.68%)
Employment status before pregnancy	990(100%)
Employed	437 (44.14%)
Unemployed	553 (55.86%)
Partner Employment Status	1016(100%)
Employed	857 (84.35%)
Unemployed	159 (15.65%)

4.3 REPRODUCTIVE HISTORY

Results show that there were an average of two pregnancies per woman and a range of between 1 and 9 pregnancies. Most women had two or less pregnancies, 95% of the women reported having live births 16% miscarriages, 4% stillbirths and 0.3% abortions. The number of women who fell pregnant but did not have a live birth (n=43) reported having a still birth (n=45).

Table 3 Reproductive history

Variable	**Total number** n, (%) ,mean/ median , range
Number of pregnancies	1017(100%) 2.0, 1-9
1	322(31.66%)
2	345(33.92%)
3	210(20.65%)
>=4	140(13.77%)
Number of live births	1017(100%) 1.9 , 0-7
0	43(4.23)
1	368(36.18)
2	335(32.94)
3	189(18.58)
>=4	82(8.06)
Women reporting ever having a miscarriage: 163/1017 = 16.03%	
Number of miscarriages	1017(100%) 0, 0-5
0	854 (83.97%)
>=1	163 (16.03%)
Women reporting ever having a stillbirth: 45/1014 = 4.43%	
Number of stillbirths	1014(100%) 0, 0-3
0	969 (95.56%)
1	41 (4.04%)
>=2	4 (0.40%)
Women reporting ever having an abortion : 3/1017= 0.29%	
Number of abortions	1017(100%) 0 , 0-2
0	1014 (99.71%)
>=1	3 (0.30%)

4.4 CONTACEPTIVE USE

4.4.1 PREVALENCE OF CONTRACEPTIVE USE

More than two thirds of women in the survey were using some method of contraception. Table 1 shows that of the 69.5% who used contraceptives prior to their last pregnancy, the most common method was injectables 58.27% followed by oral contraceptives/the pill 29.99%. Less than one percent (n=2/707) were using other methods contraception.

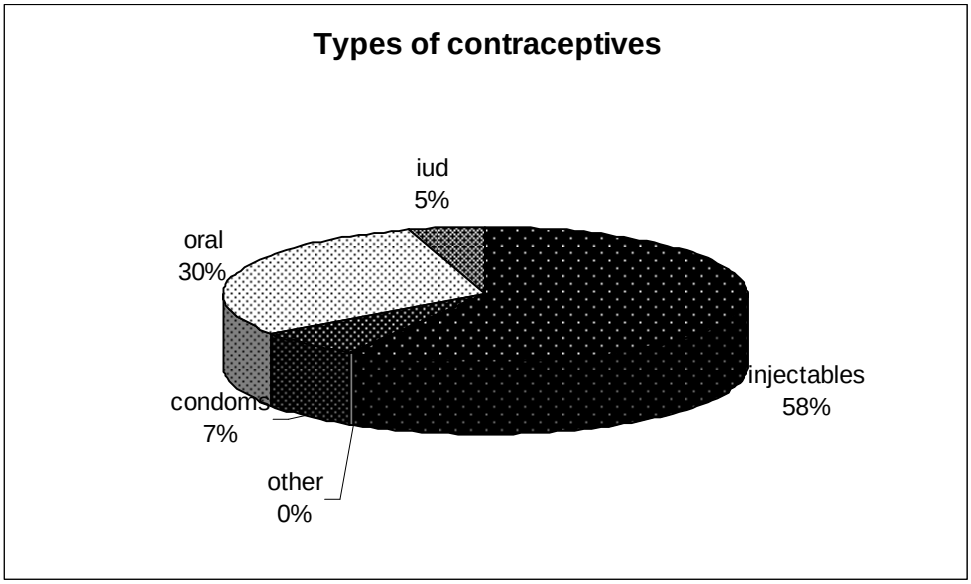

Figure 1: Types of contraceptives used by women in study

4.4.2 DISCONTINUATION OF CONTRACEPTIVE USE

There were a total number of 616 women in the study who discontinued contraception. A sizeable proportion of women (n=299/616) stopped contraception, for reasons other than falling pregnant. The main reasons for stopping contraception was due to side effects 33.12%. . Unfortunately 13.31% fell into a group labelled as 'other', which was not fully explained. Two percent said that cost and access was the reason for stopping contraception.

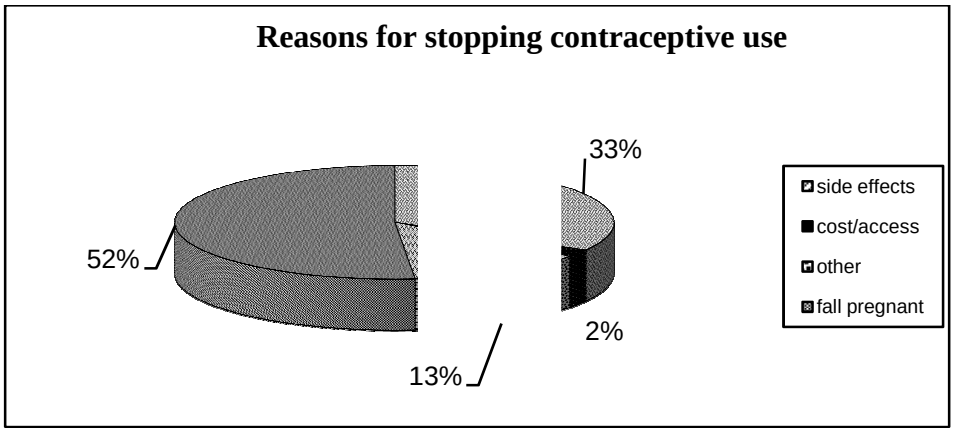

Figure 2: Reasons for stopping contraceptives

Those who stopped taking contraceptives because of side effects were on the following types of contraception:

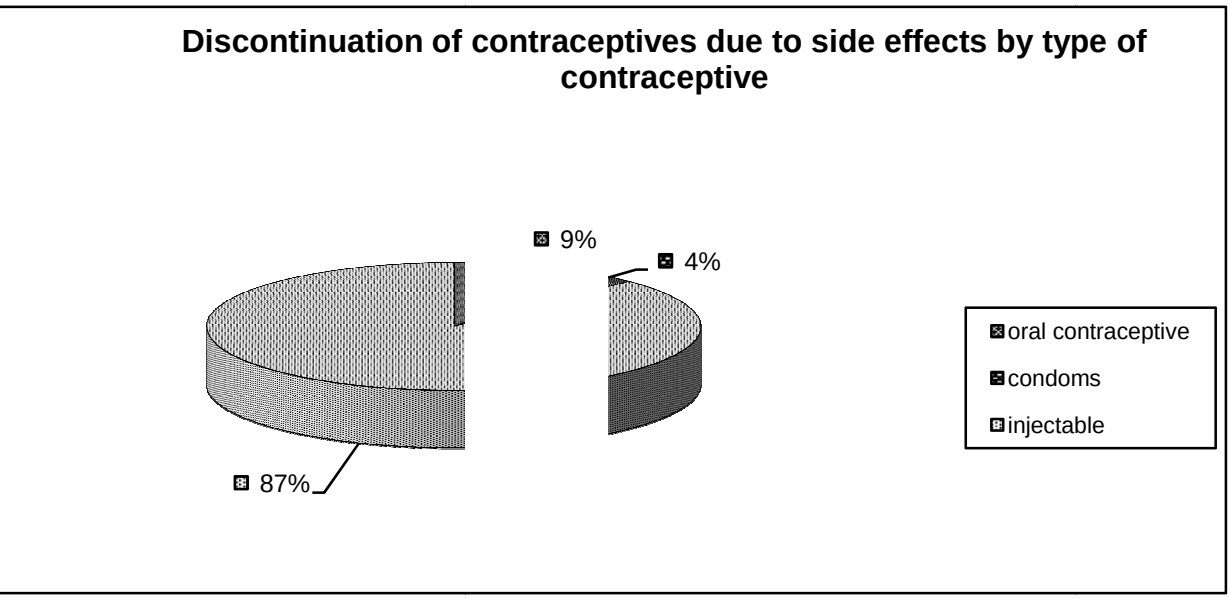

Figure 3: Discontinuation of contraceptives due to side effects by type

The largest proportion of women who discontinued contraception were using injectables (87%) and the second largest group were oral contraceptive users (9%) and then condoms users (4%).

4.4.3UNIVARIATE ASSOCIATION BETWEEN DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS AT LAST PREGNANCY AND CONTRACEPTIVE USE

All the demographic and socio-economic characteristics at last pregnancy were significantly associated with contraceptive use.

Age was significantly associated with contraceptive use (see Table 4). The prevalence of contraceptive use increased with age and then dropped slightly. The age group with the highest proportion of users were those aged 28 to 31 years at 79.62% followed by women 23 to 27 years at 74.39%. Generally women who were 22 years or younger at the time of pregnancy had lower contraceptive prevalence rates than the older women.

There was a parabolic relationship between partner's age and contraceptive use. The lowest percentage of contraceptive use (58.04%) were found in women, whose partner was 26 years or younger. The highest percentage of contraceptive use came from women whose partner was between the ages of 31 and 35 years at 79.04%. The second highest prevalence was 72.53% for women whose partner was between the ages of 27 and 30 years.

Those in the less than R2500 category had the lowest percentage of contraceptive use (66.62%) while those earning between R20 000 and R30 000 had the highest prevalence (77.27%).

Education also had a positive correlation with contraceptive use; with a good dose-response relationship. As education level increased, contraceptive use generally increased. However those who had completed primary school had the highest contraceptive use (77.05%).Generally women who had some primary education or less had lower contraceptive prevalence rate (50% and 56.52 %) than those who had a more than primary school education. Contraceptive use and non-use was the same for women who had no schooling at their last pregnancy.

The proportion of women who were employed at the time of pregnancy and on contraception was significantly higher than that of unemployed women. Women who were employed were more likely to use contraceptives (76.2%) than those who were not employed (65.1%). Again the relationship between partner's work status and contraceptive use mirrors the relationship observed between women's employment status and contraceptive use. Women whose husbands

were working at the time of pregnancy were more likely to use contraceptives (72.11%) than those whose partners were not (54.72%).

Table 4 Univariate analysis of demographic and socio-economic characteristics and contraceptive use at last pregnancy.

Variable	Non use of contraceptives	Contraceptive use	P- value
Age at last pregnancy (n)	%	%	
=<22(267)	47.57	52.43	0.000
23-27(289)	25.61	74.39	
28-31(211)	20.38	79.62	
>=32(249)	26.91	73.09	
Age of partner at last pregnancy (n)	%	%	
=<26(286)	41.96	58.04	0.000
27-30(233)	27.47	72.53	
31-35(229)	20.96	79.04	
>=36(232)	31.47	68.53	
Income at last pregnancy (n)	%	%	
<R2500(653)	33.38	66.62	0.03
R2500-R4999(130)	27.69	72.31	
R5000-R10000(109)	25.69	74.31	
R10001- R19999(56)	26.79	73.21	
R20000-R30000(22)	22.73	77.27	
>R30000(14)	28.57	71.43	
Education at last pregnancy (n)	%	%	
No school(26)	50.00	50.00	0.039
Some primary school(138)	43.48	56.52	
Complete primary(61)	22.95	77.05	
Some high school((403)	29.78	70.22	
Matric(214)	28.04	71.96	
Tertiary(174)	25.29	74.71	
Employment Status at last pregnancy (n)	%	%	0.000
Yes(437)	23.80	76.20	
No(553)	34.90	65.10	
Partner employments status at last pregnancy (n)	%	%	
Yes(857)	27.89	72.11	0.000
No(159)	45.28	54.72	
Race(n)	%	%	
Black(659)	29.14	70.86	0.184
White (197)	29.95	70.05	
Coloured (132)	40.91	59.09	
Asian (28)	17.86	82.14	

4.4.4 UNIVARIATE ASSOCIATION BETWEEN REPRODUCTIVE HISTORY CHARACTERISTICS AND CONTRACEPTIVE USE

The number of pregnancies, miscarriages and live births were significantly associated with contraceptive use. See Table 5.

There was an increase in contraceptive use as the number of live births increased. There was however a decrease in contraceptive use after the third live birth.
Fewer women (62%) were using contraceptives if they had a history of a miscarriage than women with no history of a miscarriage (73%).
There was an increase in contraceptive use as the number of pregnancies increased. There was however a decrease in contraceptive use after the third pregnancy.

Table 5 Univariate analysis of reproductive characteristics and contraceptive use

Variable	**Non use of contraceptives**	**Contraceptive use**	**P- value**
Number of live births (n)	(%)	(%)	
0(43)	44.19	55.81	0.048
1(368)	42.12	57.88	
2(335)	22.99	77.01	
3(189)	19.58	80.42	
>=4(82)	28.05	71.95	
Number of miscarriages (n)	(%)	(%)	
0(854)	28.92	71.08	0.009
>=1(163)	39.26	60.74	
Number of stillbirths (n)	(%)	(%)	
0(969)	30.13	69.87	0.16
1(41)	36.59	63.41	
>=2(4)	75.00	25.00	
Number of abortions (n)	(%)	(%)	*
0 (1014)	30.57	69.43	
>=1(3)	33.33	66.67	

Number of pregnancies (n)	(%)	(%)	
1(322)	40.68	59.32	0.044
2(348)	25.22	74.78	
3(210)	24.76	75.24	
>=4 (140)	29.29	70.71	

* Chi square test not performed for the abortion data because of the small sample and because all the data falls within the same category.

4.4.5 RISK FACTORS FOR CONTRACEPTIVE USE

Table 6 shows the results of the multivariate analysis. The significant predictors of contraceptive use were employment status at last pregnancy, partner employment status at last pregnancy and woman's age at last pregnancy and having experienced a miscarriage.

Women whose partner was employed at her last pregnancy were 1.70 times more likely to use contraceptives (aOR=1.70, 95% CI=1.16 -2.50) compared to women who whose partner was not employed at the last pregnancy. Women who were working prior to their last pregnancy were more likely to use contraceptives than those who were unemployed (aOR=1.45, 95% CI=1.06 – 1.98). Women who had experienced at least one miscarriage were less likely to be on a contraceptive (aOR=0.53, 95% CI= 0.36 – 0.76) than women who had never had a miscarriage. Women who were older (>=27 years) were more likely to have used contraception before their last pregnancy.

Table 6 Logistic regression analyses of predictors of contraceptive use, Potchefstroom, South Africa 2008

Variable	**n/N**	**%**	**Crude OR***	**95% CI*****	**aOR****	**95% CI**
Miscarriages						
>= 1	163/1017	16.03	0.63	**0.44-0.89**	0.53	**0.36-0.76**
0	854/1017	83.97	1.00		1.00	
Employment status last pregnancy						
Not employed	553/990	55.86	0.95	**0.88-1.02**	1.45	**1.06-1.98**
Employed	437/990	44.14	1.00		1.00	
Partner employment status last						

pregnancy						
Employed	857/1016	84.35	2.13	**1.51-3.02**	1.70	**1.16-2.50**
Not employed	159/1016	15.65	1.00		1.00	
Woman's age at last pregnancy						
<27	488/1016	48.03	1.00	**1.57-2.70**	1.00	**1.26-2.31**
>=27	528/1016	51.96	2.06		1.71	

* Crude odds ratio: calculated from a univariate logistic regression
** Adjusted odds ratio: calculated multivariate logistic regression
*** Confidence interval

4.5 UNPLANNED PREGNANCY

4.5.1 PREVALENCE OF UNPLANNED PREGNANCY

The prevalence of unplanned pregnancy in the study was 59.7% percent.

4.5.2 UNPLANNED PREGNANCIES WHILE USING CONTRACEPTIVES

Unplanned pregnancies were reported by some women who were using contraception. Table 7 shows a comparison between typical use of contraception versus the study results, the latter are markedly higher. 16% of the women in the study reported that they became pregnant whilst on a contraception. Our results show that of, the women who experienced an unplanned pregnancy while using contraceptives, 37.6% were using injectables closely followed by those on oral contraceptives (36.8%), 18% reported using condoms, 6.8% reported using IUDs and 0.9% used other methods.

Table7, A comparison of documented typical use versus study results in women experiencing an unplanned pregnancy while using contraceptives

METHOD	**TYPICAL USE %**	**STUDY RESULTS %**
I.M. Long –acting progestin	3	37.61
Oral contraceptives	8	36.75
Condom (male)	15	17.95
IUD	0.1-2.0	6.84
Other		0.85

Of the women who experienced an unplanned pregnancy while using contraceptives, the highest numbers had some high school education followed by those who had matric and the least had some tertiary education.

4.5.3. UNIVARIATE ASSOCIATION BETWEEN DEMOGRAPHIC AND SOCIOECONOMIC CHARACTERISTICS AT LAST PREGNANCY AND UNPLANNED PREGNANCY

Six variables were significantly associated with unplanned pregnancy in unadjusted analysis. See Table 8.

The proportion of unplanned pregnancies was highest in those below the age of 22 years (79%). This proportion decreased steadily but rose again for women above 35 years. These differences were statistically significant as the p-value was less than 0.05.

In women whose partner was below the age of 26 years, there were three times more unplanned than planned pregnancies. There were more planned pregnancies than unplanned pregnancies in the two age groups, 26 to 30 years and 30 to 35 years. Women above the age of 35 had more unplanned pregnancy than planned pregnancies.

Women whose households had a total monthly income of less than R4999, had more unplanned than planned pregnancies. Women who fell into the higher income groups had less unplanned pregnancies than planned pregnancies. The income group R10 001 and R19 999 had three times more planned pregnancies than unplanned pregnancies; this was the largest difference of all the groups.

Those women who had attained a tertiary level had the lowest proportion of unplanned pregnancies (33.3%).Women who had completed some high school or who had completed primary school had the highest proportion of unplanned pregnancies (71% and 69%). Women who had no school and matriculants had similar results; with an average of 53.9% and 54.2% respectively.

Women who were employed had fewer unplanned pregnancies (47.14%) than those who were unemployed.

Women whose partner was unemployed were much more likely to have an unplanned pregnancy (76.1%) compared to women whose partner was employed (56.8%).

Table 8 Univariate analysis of demographic and socio-economic characteristics at last pregnancy and unplanned pregnancy

Variable	Unplanned pregnancy	Planned pregnancy	P - value
Race (n)	%	%	
Black(659)	67.68	32.32	0.000
White(197)	33.50	66.50	
Coloured(132)	59.09	40.91	
Asian(28)	60.71	39.29	
Age at last pregnancy (n)	%	%	
=<22(267)	79.03	20.97	0.000
23-27(289)	52.94	47.06	
28-31(211)	47.87	52.13	
>=32(249)	57.03	42.97	
Age of partner at last pregnancy (n)	%	%	
=<26(286)	77.27	22.73	0.015
27-30(233)	46.35	53.65	
31-35(229)	44.10	55.90	
>=36(232)	62.07	37.93	
Income at last pregnancy (n)	%	%	
<R2500(653)	68.45	31.55	0.000
R2500-R4999(130)	56.92	43.08	
R5000-R10000 (109)	42.20	57.80	
R10001- R19999 (56)	25.00	75.00	
R20000-R30000 (22)	31.82	68.18	
>R30000 (14)	28.57	71.43	
Education at last pregnancy (n)	%	%	
No school (26)	53.85	46.15	0.000
Some primary school(138)	65.94	34.06	
Complete primary(61)	68.85	31.15	
Some high school(403)	70.97	29.03	
Matric(214)	54.21	45.79	
Tertiary(174)	33.33	66.67	
Employment status at last pregnancy (n)	%	%	
Yes(437)	47.14	52.86	0.000
No(553)	69.98	30.02	
Partner employment status at last pregnancy (n)	%	%	
No(159)	76.10	23.90	0.000
Yes (857)	56.83	43.17	

4.5.4 UNIVARIATE ASSOCIATION BETWEEN REPRODUCTIVE HISTORY AND UNPLANNED PREGNANCIES

There were no significant differences found between unplanned pregnancies and planned pregnancies for number of live births , number of still births and number of pregnancies. The two variables significantly associated with unplanned pregnancy were miscarriages and contraceptive use. See Table 9.

The proportion of unplanned pregnancies was higher amongst women who had never had a miscarriage (62.3%), than amongst women who had had at least one miscarriage (46.63%). The difference was statistically significant.

Women who used contraceptives prior to their most recent pregnancy were more likely to have unplanned pregnancies (66.24%) than those who did (56.86%) and the differences were statistically significant as the p-value was less than 0.05.

Table 9 Univariate analysis of reproductive history and unplanned pregnancy

Variable	Unplanned pregnancy	Planned pregnancy	P - value
Number of miscarriages (n)	%	%	
0(854)	62.30	37.70	0.000
>=1(163)	46.63	53.37	
Number of live births (n)	%	%	
0 (43)	65.12	34.88	0.06
1(368)	66.03	33.97	
2(335)	48.36	51.64	
3(189)	59.26	40.74	
>=4(82)	76.83	23.17	
Number of stillbirths (n)	%	%	
0(969)	59.44	40.56	0.334
1(41)	68.29	31.71	
>=2(4)	50.00	50.00	
Number of abortions (n)	%	%	
0 (1014)	59.96	40.04	*
>=1(3)	0.00	100.00	
Number of pregnancies (n)	%	%	
1(322)	70.50	29.50	0.919
2(345)	49.57	50.43	
3(211)	58.57	41.43	
>=4(140)	62.14	37.86	

Contraceptive use (n)	%	%	
No(311)	66.24	33.76	0.005
Yes(707)	56.86	43.14	

* Chi square test not performed for the abortion data because of the small sample and because all the data falls within the same category.

4.5.5 PREDICTORS OF UNPLANNED PREGNANCIES: MULTIVARIATE LOGISTIC REGRESSION

The multivariate analysis identified the following independent predictors of unplanned pregnancies: woman's age at last pregnancy, woman's employment status at last pregnancy, educational level at last pregnancy, race, number of miscarriages, partners' employment status at last pregnancy and contraceptive use before last pregnancy.

Participants below the age of 27 were 1.4 times as likely to have an unplanned pregnancy as those who were equal or older than 27 years of age. The group comprising of non-Black (White, Coloured and Asian) women were found to be less likely to have an unplanned pregnancy in comparison to their Black counterparts (aOR=0.65, 95% CI= 0.47-0.91). Women who were employed at the last pregnancy were less likely to have an unplanned pregnancy. Women whose partner was unemployed at the last pregnancy were more likely to have an unplanned pregnancy than women whose partner was employed (aOR= 1.82, 95% CI=1.16-2.84). Those who had never experienced a miscarriage were 1.75 times more likely to have an unplanned pregnancy than those who had had at least one miscarriage (aOR=1.75 95% CI = 1.20-2.54). Women who did not use contraception were about 1.5 times more likely to experience an unplanned pregnancy (aOR=1.48 95% CI=1.07-2.03).Women who had an education level of matric or higher were less likely to experience unplanned pregnancy than women who had an education level less than matric (aOR=1.64 95% 1.18–2.29).

Table 10 Logistic regression analyses assessing associations between unplanned pregnancy and selected variables, Potchefstroom, South Africa 2008

Variable	n/N	%	Crude OR*	95% CI***	aOR**	95% CI
Age at last pregnancy						
>= 27.0	528/1016	51.97	1.99	**1.54-2.57**	1.41	**1.05-1.89**
< 27.0	488/1016	48.03	1.00		1.00	
Race						
White , Asian , Coloured	359/1018	35.27	0.39	**0.30-0.51**	0.65	**0.47-0.91**
Black	659/1018	64.73	1.00		1.00	
Woman's employment status at last pregnancy						
Not employed	553/990	55.86	2.61	**2.01-3.40**	1.43	**1.04 – 1.96**
Employed	437/990	44.14	1.00		1.00	
Partner employment status last pregnancy						
Not employed	857/1016	84.35	2.42	**1.64-3.57**	1.82	**1.16-2.84**
Employed	159/1016	15.65	1.00		1.00	
Miscarriages						
Nil	854/1017	83.97	1.89	**1.35-2.65**	1.75	**1.20 – 2.54**
>=1	163/1017	16.03	1.00		1.00	
Contraceptive use						
No	311/1018	30.55	1.00	**1.13-1.97**	1.00	**1.07-2.03**
Yes	707/1018	69.45	1.49		1.48	
Education level at last pregnancy						
< matric	628/1016	61.81	2.73	**2.10–3.55**	1.64	**1.18-2.29**
>= matric	388/1016	38.19	1.00		1.00	

* Crude odds ratio: calculated from a univariate logistic regression
** Adjusted odds ratio: calculated multivariate logistic regression
*** Confidence interval

5.0 DISCUSSION

5.1 CONTRACEPTIVE USE AND UNPLANNED PREGNANCY

5.1.1 PREVALENCE OF CONTRACEPTIVE USE

The DHS survey conducted in 2003 showed the contraceptive prevalence rate for South Africa to be 65% [3]. This study results had a very similar finding although slightly higher results of 69.5% contraceptive prevalence rate. The slightly higher contraceptive prevalence in this study could indicate that headway has been made in promoting the use of condoms to reduce the spread of HIV. Another reason for the high prevalence in Potchefstroom is that it is a predominantly urban area and studies have shown that urban areas have higher prevalence rates of contraceptive use than rural areas [9].

Although 69.5% is fairly high, higher prevalence of contraceptive use is desirable. The National Contraception Policy guidelines recommend that all health facilities maintain adequate stocks of three main types of contraception - male condoms, oral contraceptives and progestogen-only injectables [6]. The remaining contraceptive types – IUD, male and female sterilisation, female condom and natural family planning may require clients to be referred to another facility. The time and cost of being referred to another facility may act as a deterrent to clients accessing these contraceptive methods. It is therefore not surprising that SADHS results show that the most common contraceptives used in the country in 2003, were the injectable, used by 50% of women [9]. This study found even higher use of injectable contraceptives at 58.2%. One of the reasons for high injectable use is that it is an ‘invisible’ method [9] of contraception and can be used secretly without ones partner finding out. This emanates from unequal power dynamics between men and women in South Africa [6]. Women can use injectables without having to negotiate contraceptive use with their male partners.

There was a higher prevalence of use of oral contraceptive pills compared to DHS results (12% versus 30.1%). Traditional methods have been shown to be on the decrease with the DHS results showing that one percent of contraceptive users were using this class of contraception [9]. Our findings show that 0.01% were using traditional methods of contraception.

5.1.2 PREVALENCE OF UNPLANNED PREGNANCY

The prevalence of unplanned pregnancy in the study of 59.7% is quite high when compared to what was reported for South Africa in 2003 of 47% [9].Although contraceptive use prior to pregnancy is fairly high (69.5%), the proportion of unplanned pregnancy is high. Although one would have expected that once on contraceptive, the major reason for stopping then would be to fall pregnant, a common reason indicated for stopping contraceptives was side effects. An earlier South African study also reported a high prevalence of contraceptive use, but a low proportion of unplanned pregnancies in rural South Africa [62].The same study also noted that the proportion of planned pregnancies can be low even in populations where contraceptive use is high.
Although the proportions of unplanned pregnancies in western countries are usually low, high proportions of unplanned pregnancy have been reported for some European countries: 62% in Poland [63] and 59% in East Germany [64].
Despite the high levels of unplanned pregnancy in the study, few (0.3%) of these were reported to have ended in an abortion. In fact the abortion rate in this study was below the provincial rate of 1.3% in 1998 [9]. This could be due to under-reporting, in an effort to appear moral, since most of the women in the study said they were Christian (97.12%), who believe that abortion is a sin. On the other hand, abortion prevalence could be low because Christian women believe that abortion is a sin and therefore did not consider it an option. Low levels of abortion could be due to service provider – related issues for example a lack of services where they are needed most, lack of knowledge about the legality of abortion and poor attitudes from service providers.

5.1.3 RISK FACTORS OF CONTRACEPTIVE USE AND UNPLANNED PREGNANCY

Contraceptive use has been shown to be a risk factor for unplanned pregnancy and because of this result the two will be discussed concurrently.

The significant predictors of unplanned pregnancy were race, age of woman at last pregnancy, employment status at last pregnancy, number of miscarriages, contraceptive use, education level attained at last pregnancy and employment status of partner at last pregnancy. Employment status of the woman, woman's education level and partner employment status are closely related. Firstly, employed women usually have higher level of education and have greater awareness of contraceptives and their benefits. Being employed means there is a steady household income and therefore a better chance of a woman being able to access contraceptives.

Transport costs to and from the clinic can be paid for, especially in covert users. In the event that there are no supplies at the usual health facility, alternative sources may be visited. In the event that a woman experiences side effects she is better financially equipped to seek and pay for advice. Also, a working woman has more negotiating power than one who is unemployed when it comes to decision making with her partner on issues like contraceptive use and child spacing [18].

Most studies on contraceptive use and unplanned pregnancy are mainly women focused. Those that have investigated male-related factors seem to highlight gender imbalances and power differences that exist when it comes to making decisions about family planning [6, 18, 41, 42]. This study shows the role partner characteristics, like employment status can have on a woman's contraceptive uptake.

On investigating the determinants of contraceptive use and unplanned pregnancy, miscarriage seems not to be a focus of investigation and as a result there seems to be limited data. Having experienced a miscarriage decreases the likelihood of using contraceptives; it however increased chances of not having an unplanned pregnancy. These results warrant further investigation because one would expect that women who have experienced a miscarriage would have contact with health services where they were counselled on the proper use contraceptives by health care providers. Many women who have early miscarriages are unaware that they are pregnant; it is therefore possible that these women could have miscarried at a later gestational stage and this would have necessitated a visit to a health facility.

White, Asian and Coloured women were less likely than Black women to have unplanned pregnancies. These results are similar to others studies conducted in South Africa and some developed countries [9, 15, 16]. In other words being White, Asian or Coloured was protective against unplanned pregnancies. Race was a risk factor in a model that included economic factors. This implies that race is not merely a proxy for education levels, employment status and household income. The reason for this difference could reflect different cultural norms about pregnancy planning.

The results from this study show the association between a woman's age and contraceptive use as well as a woman's age and unplanned pregnancy. The older a woman is the more likely she is to use contraception and the less likely she is to have unplanned pregnancy. Conversely the younger a woman is the less likely she is to use contraception and the more likely the chances of her have an unplanned pregnancy.

The results from the study are similar to that found in other studies which show that there is an increased prevalence of contraceptive use [34 , 35] with age .Adolescents and young adults, especially if not married reportedly experience stigmatisation [65] by health care providers due to poor attitudes of health care providers [14, 29]. Another health systems issue that was identified was lack of availability of contraception relevant for adolescents [6]. Several studies have found age to be a strong predictor of unplanned pregnancy [1, 16, 33, 34]. For example, a study that focused on adolescents showed that young women aged 15 to 19 years, from developed countries have high unplanned pregnancies [16]. Annual adolescent unplanned pregnancy rates as high as 82% have been reported in the United States [49]. Certain African countries reveal findings of up to 65% unplanned pregnancies in the 15 to 24 age group [1] with women less than 20 years of age being three times more likely to have an unplanned pregnancy [15]. Young age may affect pregnancy planning through knowledge and reproductive experience. On the other hand a woman's ability to conceive children decreases with age. This puts younger women at risk of an unplanned pregnancy than older women [1].

Contraception as expected was protective against unplanned pregnancies. Sexual intercourse without contraception in fecund women inevitably led to pregnancy for about 70% of women [1]. A study carried out in 42 Sub Saharan African countries found that the main reasons for the annual 14 million unplanned pregnancies were early discontinuation, incorrect use and failure of

contraception [55]. Although modern contraceptive methods are very effective if used exactly as directed (perfect use), this effectiveness declines when the methods are not used exactly as directed (typical use) [12].

5.2 REASONS FOR STOPPING CONTRACEPTION

In South Africa contraceptives are available free of charge in the public sector [6].
One of the major reasons for stopping contraception was due to side effects; this finding is similar to several other studies done [58, 59, 66]. This could be an indication of poor health care. It is likely that women were not adequately counselled by health care providers about side effects and they may not have been given adequate contraceptive choice. Poor access and cost were mentioned by respondents as reasons for stopping contraception. With at least 64% of women being unemployed, cost may have been important factor in interrupting contraceptive use resulting in an unplanned pregnancy. Poor accessibility could include the cost of transport to the health facility, short opening hours at the health facility and long queues. There could also be an opportunity cost of time spent away from work or ones source of income. Some men do not approve of the use of contraception as already highlighted [6, 40, 41, 42]; this would make it even more difficult for women to ask their partner for transport money to collect contraception.

One study found that there were some women who fall pregnant after stopping a contraceptive because they do not immediately switch to another method or they selected a less reliable method [59].

6.0 STRENGTHS AND LIMITATIONS

Bias due to poor recall of information could have arisen because the individuals may not have remembered the details of their contraceptive use at last pregnancy. This is more likely for the exposure information which were time-specific for the last pregnancy. However, it is unlikely that any such misclassification would be differential across exposure groups. Social desirability bias could have been a limitation as women may think that certain outcomes are socially sanctioned. For example, abortion may have been under-reported; this may be the case in this study because the DHS has reported abortion rates to be as high as 1.3 % for North West province of which Potchefstroom is a part of [9]. Women may have also over-reported contraceptive use.

The pilot study did not pick up that the majority (63%) of the participants earned less R2500 and as a result a person earning R100 and someone else earning R2000 were placed in the same category, which meant it was possible to further disaggregate low socioeconomic status.

Use of the option 'other' limits effective analysis of determinants. For example 25% of the respondents who were asked about reasons for contraception discontinuation, chose 'other' therefore limited the analysis and interpretation of the results.

There was a contradiction in one of the findings related to women who experienced an unplanned pregnancy but were said to have stopped contraception in order to fall pregnant. This could have been due to the way the question was asked or data capturing problems, amongst a number of possibilities.

7.0 RECOMMENDATIONS

Policy related – Most of the determinants of contraceptive use and unplanned pregnancy were economic factors. Development of programmes which emphasize job creation especially for women may give them a better chance of employment and increase their income.

Family planning programmes should aim to incorporate men so as to enhance joint family planning decision making. It is important to improve the health care system. Implementing convenient opening times at clinics and reducing waiting periods could increase access to contraceptive services, especially in rural areas. Policy needs to acknowledge that adolescents are at a greater risk of unplanned pregnancies and should be targeted separately in programmes.

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Service provider related – Provision of wider contraceptive choices for women in the public sector should be encouraged. Methods which are effective, safe for the user, and fit the individual's lifestyle could increase correct and consistent contraceptive use. Health care provider attitudes towards adolescents seeking contraceptive services and counselling of women about side effects of contraception should be addressed. Provision of adequate information to all contraceptive users about the different contraceptives methods in the form of verbal communication, posters, adverts or pamphlets should be encouraged.

It is important that service providers disseminate the right information about the legality of abortion in South Africa. Services need to be made available in areas where they are required most and continuous and proper training is important for staff.

Client related –The individual should make the final decision about which contraceptive method to use and take into consideration his or her partner's feelings and attitudes.

8.0 CONCLUSION

The prevalence of contraceptive use in the population was high but the prevalence of unplanned pregnancies for the population was also considerable.

Contraceptive use and unplanned pregnancy were closely associated with user characteristics. Contraceptive use and unplanned pregnancy were associated with a woman's socioeconomic status and woman's age amongst other factors.

Economic factors including income and employment were the most important factors that influence contraceptive use and unplanned pregnancy. It is therefore imperative that the first millennium development goal – to reduce poverty is addressed. This study shows that younger women are at risk of unplanned pregnancies. They should be targeted separately in programmes that aim to prevent unplanned pregnancies and increase contraceptive use. Partner characteristics were also found to be predictors of unplanned pregnancies. It is therefore recommended that policy and programmes seek ways to include men in contraceptive decision- making .Further study of women who have experienced miscarriages is warranted to understand why this group of women are less likely to experience unplanned pregnancies but more likely to report non-contraceptive use.

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Ward _____ **Study Number:**
No. visits 1 / 2 **Date** _____
Selected or replacement S/R **Interviewer** _____

If R why? 1. Not home after 2 visits 2. Refused to participate 3. Not eligible 4 Other

QUESTIONNAIRE FOR INVESTIGATING PREGNANCY EXPERIENCE IN WOMEN FROM POTCHEFSTROOM

DIPOTSO TSA TSHEKA-TSHEKO

1. A o tlile wa ima? ☐ ***Ee*** ☐

Nnyaa

Have you ever been pregnant?

*SIMOLOLA KA SECTION A**, FA E LE EE***

IF **YES,** PLEASE. START WITH SECTION A

*IF **NO**, PLEASE CONTINUE TO QUESTION 2*

FA E LE NNYA,KA KOPO TSWELELA KA POTSO 2.

2A o tlile wa leka go ima? **Ee**

Nnyaa

Have you ever tried to fall pregnant?

*SIMOLOLA KA SECTION A**, FA E LE EE***

*IF **YES,** PLEASE START WITH SECTION A*

A. PERSONAL INFORMATION

A1. letsatsi la gago la matsalo _____ **(dd/mm/yyyy)**
Date of Birth

A2. o mokae (for statistical purposes only):

Race (for statistical purposes only):

montsho	**mosweu**	**morwa**	**mo-china**
Black	White	Coloured	Asian

A3 Go bapisana le basadi ba bangwe a o:
Compared to other women are you?

Mokhutswane	**Magareng**	**Motelele**	N/A
Short	Medium	Tall	

A4. O bua puo e feng?
What is your home language? _____

A5. Tumelo ya gago ke efe?
What is your religion _____

A6 A otlile wa goga motsoko?
Have you ever smoked cigarettes?

Ee	**Nnya**

A8 A otlile wa sunyetsa seneife?
Have you ever used snuff

Ee	**Nnya**

B. SOCIOECONOMIC STATUS

B1 O fitlheletse ka seema se feng mo dithuto tsa gago?
What is the highest level of education that you finished?

Ga ke a tsena sekolo No school	**Ga ke a fetsa Sekolo se se potlana** Some Primary school	**Ke feditse fela Sekolo se se potlana** Completed Primary School
Ga ke a fetsa Sekolong se segolo Some High School no Matric	**Ke feditse Materiki (10 yrs)** Matric (10 yrs)	
Ke ile dikolong tse dikgolo eg. Unibesisiti High School with Tertiary eg. University		

B2 A o dira tiro e e duelwang?
Do you work for payment

Ee	**Nnya**

B 3. Kgobokanyo ya letseno lotlhe legaeng la gago ke bokae morago ga kgogo ya lekgetho?
What is your total household monthly income after tax

< R2500	**R2500 - 4999**	**R5000 – 10 000**
R10 000 – 19 999	**R20 000 - R30 000**	**> R30 000**

* including partner, government grant, pension, etc * go a karetsa le la mong kago, madi a bagolo, dikatso tsa mmusong

C. ENVIRONMENTAL FACTORS

C1. Le dula le le bakae ka palo mo ntlong?
How many people live in your house including yourself? [ ]

C2. Le dula ntlong e ntseng jang?
What type of dwelling is your house?

Ntlo ya ditena Formal house (brick)	**ntlo ya dikgong** Formal house (wood)
mokhukhu Informal house or shack	**Folete** Flat
Hosetele Hostel	**mofuta o mongwe** Other _____

C3. Diphaposi tsa borobalo di kae montlong ya gago?
How many bedrooms in your house?

C4 Metse o aga kae?
Where do you get water from?

Pompo ya ntlo Tap in your house	**Pompong ya motse** Communal tap	**Sedibeng** Well	**Molatswaneng** River/stream

C5 A o nale motlakase mo ntlong ya gago? **Ee** **Nnyaa**
Do you have electricity in your house?

C5.1 O dirisa mokgwa o fe wa go apaya?
What source of energy do you use for cooking?

Motlakase Electricity	**Gase** Gas
Parafene Paraffin	**Dikgong** Wood
Mokgwa o mongwe Other _____	

C 6 A o na le go dira motshimong?
Do you have a garden or work in a garden/field? **Ee** **Nnyaa**

Fa e le Ee *araba dipotso tse dileng lebokosong* ***fa e le Nyaa*** *tlolela go C7*
If yes answer questions in the box ***If no*** goto C7

C6.1 A o dirisa dibolaya ditshenekegi motshimong ya gago **Ee** **Nyaa**
Are pesticides or insecticides used in your garden/field

C6.2 A ke wena ka sebele yo o tshelang dibolaya ditshenekegi mo tshimong ya gago
Do you personally apply pesticides in the garden? **Ee** **Nnyaa**

C6.3 O dirisa dibolaya-ditshenekegi ga kae?
How often do you use pesticides or insecticides in the garden/field?

Kgapetsa (4x ka beke) Usually (4x a week)	**Gantsi (1x** ka beke) Occasionally (1x a week)
Motlhamongwe (1x ka kgwedi) Sometimes (1x a month)	**Ga nke ke di dirisa** Never

C6.4 Leina la sebolaya ditshenekegi se o se dirisang ga ntsi ke mang?
What is the name of pesticide or insecticide you use most often in the garden?
*Ask to be shown the pesticide or insecticide container. Note name and active ingredient

_____

C6.5 Fa ele gore ga o dirise dibolaya ditshenekegi o dirisa eng go ntsha ditshenekegi mo tshingwaneneg ya gago?
If you do not use pesticides, what do you use on your garden or vegetables to remove the pests?

_____

C7. A o dirisa diboloya ditshenekegi mo ntlong ya gago? | **Ee** | **Nnyaa** | **DK**
Are pesticides or insecticides used in house?

Fa e le Ee araba dipotso tse dilatelang Fa e le Nyaa tlolela go C8
If Yes answer the questions in the box ***If no*** goto C8

C7.1 A ke wena ka sebele yo o tshelang dibolaya ditshenekegi mo ntlong ya gago
Do you personally apply pesticides/insecticdes in the house? | **Ee** | **Nnyaa** |

C7.2 O dirisa dibolaya ditshenekegi ga kae?
How often do you use insecticides in the house?

Kgapetsa (4 x ka beke) Usually (4 x a week)	**Gantsi** (1x kgwedi) Occasionally (1x a week)
E seng gantsi (1 x ka kgwedi) Sometimes (1 x a month)	**Motlhamongwe** (1-3 ka ngwana) Seldom (1-3 times a year

C7.3 O dirisa eng montlong ya gago go bolaya ditshenekegi?
What do you use in your house for the insects?
_____

C8. A o na le diruiwa tsa se legae? | **Ee** | **Nnyaa**
Do you keep any domestic animals?

C8.1 O na le diruiwa tsa mofuta o feng?
What animals do you keep? _____

C8.2 A o na le go tshela, kgotsa go thusa go tshela di bolaya ditshenekegi mo diruiweng tsa gago (jaaka go tipa le go spereiya) | **Ee** | **Nnyaa**
Do you ever apply, or help to apply pesticides to animals?
(dipping or spraying, applying)

Fa e le Ee araba dipotso tse dilatelang Fa e le Nyaa tlolela go Kgaolo D
If Yes answer the questions in the box ***If no*** goto section D

C8.3 Fa e le Ee, o dira seno ga kae?

If yes, how often do you apply pesticides?

Kgapetsa (4 x ka beke) Usually (4 x a week)	**gantsi** (1x kgwedi) Occasionally (1x a week)
E seng gantsi (1 x ka kgwedi) Sometimes (1 x a month)	**Motlhamongwe** (1-3 ka ngwana) Seldom (1-3 times a year

C8.5 O dirisa eng tshimong ya gago kgotsa merogong kgotsa maungong a gago go bolaya ditshenekegi?
What do you use on your animals to remove the pests?

_____

D Summary of Reproductive history
D Tshobokanyo ya pelegi

D1**. A o tlile wa ima**
Have you ever been pregnant? **Ee** | **Nnyaa** |

Fa e le Ee araba dipotso tse dilatelang Fa e le Nyaa tlolela go Section F
If *Yes* answer following questons **If *no*** go to Section F

D1.2 O imile ga kae?
How many **pregnancies** have you had?
* please count all pregancies including miscarriages, abortions, stillbirths and livebirths

D1.3 O fetetswe ga kae?
How many **miscarriages** have you had?

D1.4 A o tlile wa ntsha mpa ka mabaka a rileng? * Jaaka go tlhoka madi
Did you for any reason have an elective abortion? e.g. lack of money

D1.5 O new a tshola bana ba ba tshelang ba ba kae?
How many **live births (babies)** have you had?

D1.6 O tshotse bana ba ba tlhokafetseng ba ba kae?
How many **still births** have you had?

D2 Kwala dipelegi tshotlhe tsa bana ba ba tshotsweng batshela kgotsa ba tlhokafetse
Please list all live births and stillbirths you have had

No.	**Letlha le matsalo** Date of birth dd/mm/yyyy	**Boima jwa matsalo** Birth weight (kg)	Ngwana yo o tshelang kgotsa yo o tlhokofetseng Live birth Still birth L / S	**O belegisitswe ke mang** Birth assistance	Bong (M/F) Gender	Mawelana Twins	A ngwana o ntse a tshela le jaanong? Still alive today?
1							
2							
3							
4							
5							
6							
7							

D3 Kwala go re o fetetswe ke dimpa tse kae?
Please list all your misscarriages

Pheto ya ngwana	**Letlha (mm/yy)** date	**Lebaka la phetelo** Reason
1		
2		
3		

D4 Ka kopo Kwala dimpa tsotlhe tse o ne wa dintsha. Please List all Abortions

Boimana	**Letlha (mm/yyyy)**	**Lebaka** reason
1		
2		
3		

E Last Pregnancy
Boimana jwa bofelo

DETAILED REPRODUCTIVE HISTORY – most recent pregnancy
Tshekatsheko ee tseneletseng ya pelegi ya bofelo

Please answer these questionas about your last pregnancy, even if it ended in a miscarriage, still birth or a baby. Ka kopo, araba dipotso tse di latelang ka boimana jwa gago jwa bofelo, le fa bo ne jwa felela ka pheto ya ngwana kgotsa ngwana yo o tsetsweng a tlhokafetse

E1. A one o solofela go ima? *e se boimana jwa tshoganyetso
Was this last pregnancy expected (planned) *not a surprise?

Ee	Nnyaa	don't know

E1.2 Go go tseile lobaka lo lo kae go ima? (Ngwaga/Kgwedi)
How long did it take you to fall pregnant? (years/months) ____/____

* Dipotso tse di latelang ke tse mabapi le nakonyana pele ga o ima
The following groups of questions are about **just before you fell pregnant*

E2 A o itlile wa dirisa dithibela pelegi pele ga o ima mpa ya bofelo ya gago.
Did you use contraceptives before you fell pregnant with this last pregnancy?

Ee	Nnyaa

Fa karabo e le Ee, araba dipotso tse di latelang, fa e le nyaa tlolela go E3
If Yes answer the questions in the box ***If no*** *goto E3*

E2.1 Fa e le Ee, Ka kopo tshwaya gore o dirisitse tse fe: * Name
If yes, please specify which of the following you were using

Lupu **Intra-uterine device (coil, loop)**	**Dipilisi** _____ **Oral contraceptive (pill)**
Natural (Rhythm and withdrawal)	**Dikhondomo** **Condoms**
Lemao le le tlhabiwang morago ga dikgwedi tse 2/3 **Injectable 2/3 month**	**Thibelo e sele** **(Other specify)**

E2.2 O thibetse pelegi lwa bofelo ka eng?
What was the last contraceptive you used?

_____

E2.3 O thibetse pelegi sebaka se se kae? (Ngwaga/Kgwedi) ____/____
For how long did you use it? (years/months)

E2.4 A o imile ontse o thibela pelegi? (Ee/ Nyaa)
Did you you fall pregnant while using contrceptives? **Yes** / **No**

E2.5 O tlogeletse eng go thibela pelegi?
Why did you stop your contraceptive?

Go ima To fall pregnant	Di sa go tshware sentle Side effects	Tshelete/madi Cost/ Access	Lebaka lengwe. Other _____

E2.6 A go ne ga nna le nako e o e feditseng magareng a go tlogela go thibela pelegi le go ima?
Was there time between your stopping contraceptives and starting to try to fall pregnant?

Yes / No

E2.7 Fa karabo Dikgwedi tse kae? (Ngwaga/Kgwedi)
If Yes How many months? (Years/Months)

E3 Fa e le gore o ne o sa dirise dithibela pelegi lebaka e ne le eng?
If you were not using contraceptives what was your reason?

_____

_____

E4 O ne o le dingwaga tse kae fa o ne o ima?
How old were you when you fell pregnant?

E5 Molekane wa gago o ne a nale dingwaga tse kae?
How old was your partner when you fell pregnant?

E6 O ne o ya thobalanong ga kae?
How often did you have sex before you fell pregnant?

Kgapetsa (4x ka beke) (4 times a week)	**2-3 ka beke (2 – 3 times a week)**	**E seng gantsi (1x ka beke) (Once a week)**
otlhamongwe (1x ka kgwedi) seldom Once a month)	**Ga ke itse Don't know**	

E7 A o ne o ela tlhoko gore o robalana ka nako e erileng ya matsatsi a kgwedi ya sesadi sa gago?
In order to fall pregnant, were you having sex at particular periods of a woman's cycle?

Ee	**Nnyaa**

E8 Go bapisana le basadi ba bangwe a o..:

mosesane	**magareng**	**mokima**	**N/A**

Compared to other women were you before you fell pregnant? Thin Medium fat N/A

E9 Fa o ne o leka go ima a o ne o goga motsoko?
Before you fell pregnant were you a tobacco smoker

Ee	**Nnyaa**

E9.1 Fa ele Ee o ne o goga e ng?
If Yes what did you use

Cigarettes	**Cigars**	**Pipe**	**Snuff**	**Other** _____

E9.2 Fa e le Ee, O ne o goga motsoko ga kae ka letsatsi?
If yes, how much did you use per day?

Go feta 20	**11-20**	**5-10**	**1-5**

E10 A molekane wa gago a ne a dirisa motsoko fa o ne o leka go ima
Did your partner use tobacco while you were trying to fall pregnant

Ee	**Nnyaa**

E10.1 Fa e le Ee one a dirisa eng
If Yes what did he use

Cigarettes	**Cigars**	**Pipe**	**Snuff**	**Other** _____

E11 A go na le mongwe yo o gogang motsoko ntlong e o dulang mo go yona?

Ee	Nnyaa

Did anyone besides your husband in your house use tobacco just before you fell pregnant?

E11.1 Fa e le Ee o ne a dirisa eng?
If Yes what did they use?

Cigarettes	Cigars	Pipe	Snuff	Other _____

E12 O ne o nwa bojalwa ga kae?
How often did you drink alcohol while trying to fall pregnant? (* days)

(>=5 days week)	ga nnyane (1/2 days week)	(3-4 days week)
	motlhamonngwe (1-2 days month)	ga kea nwa gotlhelele (never)

E12.1 O ne o nwa bojalwa jo bo kae ka letsatsi?
How much alcohol on average do you drink per day?

(>5drinks)	(3-4 drinks)	(1-2 drinks)

* one drink = one bottle, glass or tot. * Seno se le se nngwe = botloko e le nngwe, galase kgotsa Tot.

E13 Molekane wa gago o ne o nwa bojalwa ga kae?
How often did your partner drink alcohol while trying to fall pregnant? (* days)

(>=5 days week)	ga nnyane (1/2 days week)	(3-4 days week)
	motlhamonngwe (1-2 days month)	ga kea nwa gotlhelele (never)

E13.1 Molekane wa gago o ne a nwa bojalwa jo bo kae ka letsatsi
How much alcohol on average did he drink per day?

(>5drinks)	(3-4 drinks)	(1-2 drinks)

* one drink = one bottle, glass or tot. * Seno se le sengwe= botloko e le nngwe, galase kgotsa Tot

E14 A o ne o na le bolwetse bongwe jo bo sa alafegeng fa o ne o leka go ima?
(* o nwa dipilisi matsatsi hotel, o bona ngaka sekai (Shukiri, High Blood, thyroid, HIV)
Did you have any chronic disease while you were trying to fall pregnant?
(*do you take pills regularly, see doctor e.g. (Diabetes (sugar), High blood, Thyroid, HIV)

Ee	Nnyaa

E14.1 F a e le Ee, Ke bolwetse bo fe?
If yes, what was the condition? _____

E15. Fa o ne o simolola go batla go ima o ne o dira eng?
Before you fell pregnant what were you doing?

O dira mme o duelwa (Having a paying job)	O le sekolong se se potlana (at Primary School)	Sekolong se segolo (At High School)
kholeje kgotsa Unibesiti (in Unvirsty /college)	O ne o sa dire gape o sa tsene sekolo (was not working & not studying)	O ne o dira gape o tsena sekolo ka nako e le nngwe (both working & studying at the same time)

E15.1 Lefelo la tiro ya gago ……
Your working place

E15.2 O ne o dira tiro e fe ……
Your Job title

E16 A molekane wa gago o ne a dira fa o ne o ima? | **Ee** | **Nnyaa** |
Was your husband working while you were trying to fall pregnant?

E16.1 Lefelo la tiro ya gagwe
Your husband's working place _____

E16.2 Mofuta wa tiro ya gagwe
His Job title _____

E17 O fitlheletse ka seema se feng mo dithuto tsa gago?
What was the highest level of education that you achieved before your pregnancy?

Ga ke a tsena sekolo No school	**Ga ke a fetsa Sekolo se se potlana** Some Primary school	**Ke feditse fela Sekolo se se a potlan** Completed Primary School
Ga ke a fetsa Sekolong se segolo Some High School no Matric	**Ke feditse Materiki (10 yrs)** Matric (10 yrs)	**N/A**
Ke ile dikolong tse dikgolo eg. Unibesisiti High School with Tertiary eg. University		

E18. Kgobokanyo ya letseno la ntlo ya gago fa o ne o leka go ima?

Was your household monthy income while you were trying?

< R2500	**R2500 - 4999**	**R5000 – 10 000**
R10 000 – 19 999	**R20 000 - R30 000**	**> R30 000**

E19 A o ne oa neelwa thuso nngwe go re o kgone go ima? | **Ee** | **Nnyaa** |
Did you receive any assistance to fall pregnant?

Fae le **Ee** araba dipotso tse dileng lebokosong, fa e le **Nyaa** tlotlela go E20
IF yes please complete questions in the box **if no** please go to E20

E19.1 O ne wa leka go ima nako e kae pele ga o kopa thuso?(Dikgwedi) **months**
How long after you started trying did you seek help?

E19.2 O new a kopa thuso ko go mang
Who did you see _____

E19.3 O ne oa thusiwa ke eng?_____
What treatment did you use?
Interviewer eg. fertility pills from the doctor, muti from sangoma, herbs from grandmother.

** O ne wa ima ka kgwedi e fe, dipotso tse dilatelan ke tsa nako e o ne o imaile ka yone.*
The following questions are about the time when you were pregnant

E21. A o ne o dira nakong e o ne o imile ka yona? | **Ee** | **Nyaa** |
Did you work during your pregnancy?

If *yes* answer following questions **if *no*** *goto E22*

E21.1 Ka beke o ne o dira di ura tse kae fa o ne o imile la bofelo? ____
How many hours a week did you work?

E21.2 A o ne o dira dishifiti ka nako ya goima ga gago ga bofelo? | **Ee** | **Nnyaa** |
Did you work in shifts during your last pregnancy?

E21.3 O feleleditse go dira kgweding e feng ya goima ga gago? ____ | **Ga ke itse** |
In which month of your pregnancy did you stop working?

E21.4 O ne o dira kae ka nako ya goima ga gago ga bofelo?
Which company did you work at during your last pregnancy?
_____ same as before

E21.5 O ne o bereka go dira eng ko o?
What was your job description at this company?
_____ same as before

E21.6 How long have you worked in this job? | **Years** | **Months** |

E22 A o tile oa dirisa diboloya ditshenekegi kgotsa diboloya mofero (jaaka diboloya ditampane kgotsa di nta tsa diruiwa, kgotsa mofero) mo ntlong ya gago fa o ne o imile la bofelo Did you use insecticides or herbicides (bug or weed killers, flea and tick sprays) in your household during your last pregnancy? | **Ee** | **Nnyaa** |

E22.1 Fa e le Ee, ka kopo tlhalosa gore o ne o dirisa eng:
If yes, please specify what kind of chemicals
_____

E22.2 O dirisitse dilo tse ga kae fa o ne o imile la bofelo?
How often did you use these?

Ka metlha (4 x ka beke) Often 4x week	**E seng gantsi (1 x ka kgwedi)** Regular 1x week
Motlhamongwe (1-3 x ka ngwaga) Sometimes 1-3 x month	**(seldom (1 time in 2 months)**

E23 A go na le sengwe se se ne sa go fuduwa maikutlo ka nako ya boimana jwa gago
Did you experience extreem stress during your pregnancy? (Death, Loss of partner, or Job)

| **Ee** | **Nnyaa** |

E24. A o ne o goga motsoko fa o ne o imile ga bofelo? | **Ee** | **Nnyaa** |
Did you smoke during your last pregnancy?

E25 Fa e le Ee, o ne o dirisa eng
If Yes what did you use

Cigarettes	**Cigars**	**Pipe**	**Snuff**	**Other** _____

E26 Fa e le Ee, O ne o goga motsoko ga kae ka letsatsi?
If yes, how much did you smoke per day?

Go feta 20	**11-20**	**5-10**	**1-5**

E27 A go ne go nale monngwe yo a neng a goga motsoko ko gae fa o ne o imile la bofelo?
Did anyone smoke at home during your last pregnancy

Ee	**Nnyaa**	**N/A**

E27.1 Fa ele Ee o ne o goga ga kae ka letsatsi?
If yes, how much did they smoke per day?

Go feta 20	**11-20**	**5-10**	**1-5**

E28 O ne o nwa bojalwa ga kae?
How often did you drink alcohol during your last pregnancy? (* days)

(>=5 days week)	ga nnyane (1/2 days week)	(3-4 days week)
	motlhamonngwe (1-2 days month)	ga kea nwa gotlhelele (never)

E28.1 O ne o nwa bojalwa jo bo kae ka letsatsi
How much alcohol on average do you drink per day?

(>5drinks)	(3-4 drinks)	(1-2 drinks)

* one drink = one bottle, glass or tot.

E29 A o ne o nale bolwetse bo ngwe jo bo sa alafegeng?
Did you have any chronic disease at the time of your pregnancy?
(Diabetes, High blood, Thyroid)

Ee	**Nnyaa**	

E29.1 O ne o tshwerwe ke eng?
What did you have? _____

E29.2 O ne o phekolwa ka eng?
What treatment did you recieve?_____

E30 A o ne o lwala bolwetse bongwe fa o ne o imile?
Go tshwarwa ke ditsebs, malaria, mofikela, sefuba, thibano ya dinko

Ee	**Nnyaa**	

Did you have any illness during your pregnancy
e.g Ear infection, malaria, flu, cough, simus

E30.1 Fa e le Ee , o ne o tshwerwe kw eng?
If yes what? _____

E30.2. O new a phekolwa ka eng?

What treatment did you

recieve?_____

E 30.3 A o ne wa ya ngakeng ka lebaka la bolwetse jo.
Did you see a doctor about this illness?

Ee	**Nnyaa**	

E31 Mo dikgweding tsa befelo tsa boimana jwa gago, a o ne o tsamaya ditlhatlhobo ko bookelong
Did you receive any antenatal care during your last pregnancy

Ee	**Nnyaa**	

* Not antenatal *classes*

E31.1 Fa e le ee, Tlhatlobo ya gago e ne ya simolola ka kgwedi e fe ya boimana, ka boimana jwa gago jwa bofelo?
In which month of your last pregnancy did the antenatal care start?

E32. Mabapi le nako e ngwana o ne a tshwanetse go tlhaga ka yone, tlhalosa se se latelang:
With respect to the due date of the baby, which of the following applies?

Ngwana o tlhagile pele ga nako Early	**Ngwana o tlhagile ka nako** Ontime
Ngwana o tlhagile morago ga nako Late	**Ga ke itse** I don't remmeber

E33 O ne o imile lobaka lwa dibeke tse kae ka boimana jwa gago jwa bofelo?
How many weeks were you pregnant for in your last pregnancy?
* Length of gestation

E34 Ditlamorago tsa go ima ga gago?
What was the outcome of your last pregnancy/ how did your pregnancy end?

ngwana yo o tshelang Live Birth	**Ngwana yo o tsetsweng a tlhokafetse** Still Birth
o ne wa fetelwa Miscarriage	**o ne oa ntsha mpa (ko ntle ga pateletso)** Abortion
Setlamorago se sele (tlhalosa: _____) Other	

E35 A go ne go nale phekolo nngwe e o ne wa e neelwa ka nako ya fa o ne o belega?
Did you recieve any treatment to go into labour?

E35.1 O amogetse phekolo efe?
What treatment did you receive?

E35.2 Ke mang a go phekotseng?
Who gave you the treatment?

E36. Lefelo la botsalo (ko bookelo bo fe):
Place of Birth (which medical facility _____

E37. Porofense ya matsalo:
Province of birth : _____

E38. A ngwana o ne a tlhaga a na le bogole bongwe (deformity/abnormality)? **Ee** **Nnyaa**
Was the baby born with any malformations (deformity/abnormality)

E39. Ke bogolo bofe?
What kind of malformation _____

E40 A o new a belega ka sekere (oporaishene)? **Ee** **Nnyaa**
Did you have a ceasar?

E41 Lebaka la pelego ya sekere e ne e le eng?
What was the reason for the ceasar?_____

E42 Morago ga boimana jo jwa bofelo, a o lekile sebaka se se fetang ngwaga gore o ime? **Ee** **Nnyaa**

After this last pregnancy, have you tried for longer than 1 year to fall pregnant?

F REPRODUCTIVE HISTORY For Never pregnant women

*Dipotso tse ke tsa batho ba ba lekileng go ima mme ba tlholega. Ela tlhoko go re boimana ga bo felele ka tsalo ya ngwana ka nako tsotlhe (bo ka felela ka pheto ya mpa kgotsa go ntshiwa ga mpa).

F1 How long have you been trying to fall pregnant? (Years/Months)
O lekile go ima lobaka lo lo kae? (Ngwaga/dikgwedi)

Years	Months

F2 A o tlile wa thibela pelegi?
Have you ever used contraceptives?

Ee	Nnyaa

Fa e le Ee araba di osto tse di latelang, fa ele nyaa tlolela go F3
If Yes answer the questions in the box ***If no*** *goto F3*

F2.1 Fa e le Ee, Ka kopo tshwaya gore o dirisitse tse fe: * Name
If yes, please specify which of the following you were using

Lupu **Intra-uterine device (coil, loop)**	**Dipilisi** _____ **Oral contraceptive (pill)**
Natural rythym	**Dikhondomo** **Condoms**
Lemao le le tlhabiwang morago ga dikgwedi tse 2/3 Injectable 2/3 month	**Thibelo e sele** (Tlhaloso gore e fe:_____) sk.

F2.2 O thibetse pelegi ka eng la bofelo?
What was the last contraceptive you used?

_____

F2.3 O thibetse pelegi loboka lo lo kae? (Dingwaga/Dikgwedi)
For how long did you use it? (years/months)

	/	

F2.4 A o ne o thibela pelegi fa o ne o leka go ima?
Did you use contraceptives while you were trying for a baby?

Yes	No

F2.5 O emiseditseng go thibela pelegi?
Why did you stop your contraceptive?

Gore o ime pregnant	Go nne di sa go tshware sentle Side effects	tlhwatlhwa ya tsone cost	lebaka le lengwe _____ Other

F2.6 O emisitse lobaka lo lo kae pele ga o leka go ima? (Dingwaga/Dikgwedi)

How long before you started trying to fall pregnant did you stop? (Years/Months)

Years	Months

F3 If you have never used contraceptives what is your reason?

Fa e le gore ga o ise wa dirisi dithibela pelegi lebaka e ne e le eng?

_____

F4 O ne o le bogolo jo bokae fa o ne o simolola gobatla pelegi? ☐
How old were you when you started trying to fall pregnant

F5 Molekane wa gago o ne a le bogolo jo bokae fa o ne o simolola go batla go ima? ☐
How old was your spouse/partner when you started trying to fall pregnant

F6 O ne o ya thobalanong ga kae?
How often do you have sex

Kgapetsa (4x ka beke) (4 times a week)	**E seng gantsi (1x ka beke)** (Once a week)	**motlhamongwe (1x ka kgwedi)** (seldom Once a month)
Ga ke itse (don't Know**)**		

F7. A o ne o ela tlhoko gore o robalana ka nako e erileng ya matsatsi a kgwedi ya sesadi sa gago?
In order to fall pregnant, are you having sex at particular periods of a woman's cycle?

Ee	**Nnyaa**	N/A

F8 Go bapisana le basadi ba bangwe a o..: | **mosesane** | **magareng** | **mokima** |
Compared to other women, were you, before you fell pregnant? thin medium fat

F9 Fa o ne o leka go ima a o ne o goga motsoko? | **Ee** | **Nnyaa** |
While you were trying to fall pregnant were you a tobacco smoker?

F9.1 Fa ele Ee o ne o dirisa eng
If Yes what did you use | **Cigarettes** | **Cigars** | **Pipe** | **Snuff** | **Other** _____ |

F9.2 Fa e le Ee, O ne o goga motsoko ga kae ka letsatsi?
How much did you use per day?

Go feta 20	**11-20**	**5-10**	**1-5**

F10. A molekane wa gago o ne a goga motsoko fa o ne o leka go ima | **Ee** | **Nnyaa** |
Did your partner use tobacco while you were trying to fall pregnant

F10.1 Fa e le Ee o ne a dirisa eng
If Yes what did he use | **Cigarettes** | **Cigars** | **Pipe** | **Snuff** | **Other** _____ |

F11. A go na le mongwe yo o gogang motsoko ntlong e o dulang mo go yona?
Did anyone in your house, beside your husband, use tobacco while you were trying to fall pregnant?

F11.1 Fa e le Ee motho/batho ba o ba ne badirisa eng
If Yes what did they use?

Cigarettes	**Cigars**	**Pipe**	**Snuff**	**Other** _____

F12 O ne o nwa bojalwa ga kae?
How often did you drink alcohol while trying to fall pregnant? (* days)

(>=5 days week)	ga nnyane (1/2 days week)	(3-4 days week)
	motlhamonngwe (1-2 days month)	ga kea nwa gotlhelele (never)

F12.1 O ne o nwa bojalwa jo bo kae ka letsatsi?
How much alcohol on average did you drink per day?

(>5drinks)	(3-4 drinks)	(1-2 drinks)

* one drink = one bottle, glass or tot.

F13 O ne o nwa bojalwa ga kae?
How often did your partner drink alcohol while trying to fall pregnant? (* days)

(>=5 days week)	ga nnyane (1/2 days week)	(3-4 days week)
	motlhamonngwe (1-2 days month)	ga kea nwa gotlhelele (never)

F13.1 Molekane wa gago o ne a nwa bojalwa jo bo kae ka letsatsi
How much alcohol on average did he drink per day?

(>5drinks)	(3-4 drinks)	(1-2 drinks)

* one drink = one bottle, glass or tot.

F14. A o ne otshwerwe ke bolwetse bongwe jo bo sa alafegeng fa o ne o leka go ima? (Shukiri, High Blood, Thyroid)
Did you have any chronic disease while you were trying to fall pregnant? **Ee** | **Nnyaa**
(Diabetes, High blood,Thyroid)

F14.1 Fa e le Ee, ke bolwetse bo fe?
If yes, what was the condition? _____

F15. Fa o ne o simolola go batla go ima o ne o dira eng?
While you were trying what were you doing?

O dira mme o duelwa working	O le sekolong se se potlana primary s	Sekolong se segolo High school
. kholeje kgotsa Unibesiti University	O ne o sa dire gape o sa tsene sekolo Nothing	O ne o dira gape o tsena sekolo ka nako e le nngwe Both

F15.1 Lefelo la tiro le gago ……
Your working place

F15.2 O ne o dira tiro e fe ……
Your Job title

F16 A molekane wa gago o ne a dira fa o ne o ima? **Ee** | **Nnyaa**
Was your husband working while you were trying to fall pregnant?

F16.1 Lefelo la tiro ya gagwe ……
Your husband's working place

F16.2 Mofuta wa tiro ya gagwe
His Job title _____

F17. O fitlheletse ka seema se feng mo dithuto tsa gago?
What was the highest level of education that you finished while you were trying?

Ga ke a tsena sekolo No school	**Ga ke a fetsa Sekolo se se potlana** Some Primary school	**Ke feditse fela Sekolo se se potlana** Completed Primary School
Ga ke a fetsa Sekolong se segolo Some High School no Matric	**Ke feditse Materiki (10 yrs)** Matric (10 yrs)	**N/A**
Ke ile dikolong tse dikgolo eg. Unibesisiti High School with Tertiary eg. University		

F18.Kopano ya letseno la ntlo fa o ne o leka go ima?
Was your household monthy income while you were trying?

< R2500	**R2500 - 4999**	**R5000 – 10 000**
R10 000 – 19 999	**R20 000 - R30 000**	**> R30 000**

F19. A o ne oa neelwa thusa nngwe go re o kgone go ima?
Did you receive any assistance to try to fall pregnant?

Ee	**Nnyaa**

IF yes please complete questions in the box if no please go to E14

F19. 1 O thusitswe leng? Years Months
How long after you started trying did you look for assistance?

F19. 2 O bone mang
Who did you see? _____

F19. 3 O ne oa thusiwa ke eng?_____
What treatment did you use?
Interviewer eg. fertility pills from the doctor, muti from sangoma, herbs from grandmother

PERSONAL DETAILS

Lekwalo le la dipotso ga le go batle leina, letlha la matsalo, dinomoro tsa ID tsa gago, aterese kgotsa tshedimosetso ka medical aid ya gago. Ga re tlhoke tshedimosetso eo mo lekwalong lwa dipotso go re re kgone go dira go re o nne fitlhegile.Ke ka moo re kopa tshedimosetso e e latelang e sa kopana le lekwalo lwa dipotso le o le arabileng. Mme, ke baookamedi ba bagolo ba patlisiso e fela ba ba tla bonang tshedimose e, gape ke maikarabelo a bone gore tshedimosetso e dule e fitlhegile.

Khoutu ya sephiri (go tswa baokameding ba patlisiso)

Leina le Sefane _____

Nomore ya pase
Aterese ya bodulo jwa gago
Seterata
_____

Nomore ya ntlo

Nomore ya folete
Toropo
_____

Khoutu ya poso

PERSONAL DETAILS

The questionnaire does not ask for your name, date of birth, ID number, address, and your medical aid details. We do need this information and we want to keep it strictly confidential. The following questions that will be kept separately from the rest of the questionnaire. Therefore, only the principal investigators of this research will keep this information secret.

Personal code (given by the study investigators)

Name and surname
_____

ID number
Contact address
Street
_____

House number

Flat number
Town _____

Postal code

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Miss Thembelihle Bafana

CLEARANCE CERTIFICATE	**M090459**
PROJECT	Factors Influencing Contraceptive Use and Unintended Pregnancy in a South African Population
INVESTIGATORS	Miss Thembelihle Bafana.
DEPARTMENT	School of Public Health
DATE CONSIDERED	09.04.29
DECISION OF THE COMMITTEE*	Approved un conditionally

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 09.04.29 **CHAIRPERSON** .....
(Professor P E Cleaton Jones)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : Dr N Christofides

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES...

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