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**Pregnancy Intendedness in a High-Risk
Obstetric Population in a Tertiary Hospital.**

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Professor Z M van der Spuy and Associate Professor Gregory Petro supervised the research undertaken by Douglas Brian Whistance and the presentation of this dissertation. We are satisfied that this is Douglas Brian Whistance's original work, unless stated otherwise and that this dissertation should be submitted in partial fulfilment of the requirements for the degree MMed (Obstetrics and Gynaecology).

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iii) Abstract

Study rationale

Recent surveys indicate that only about 41% of pregnancies in South Africa are intended. Unintended pregnancies place women and their unborn children at increased risk, especially in settings where there is already high maternal and neonatal mortality.

Objective

This study was conducted to assess pregnancy intendedness in an antenatal population of women with perceived high obstetric risk, and to assess contraceptive knowledge and use in this group of pregnant women.

Method

This cross-sectional descriptive study was designed to assess pregnancy intendedness in women, aged 18 years and older, recruited from patients attending for antenatal care at a tertiary hospital who had one or more past, existing, or new medical or surgical conditions that could adversely impact their pregnancy. Participants' medical, surgical, and obstetric history, high risk obstetric factors and gestational age at booking were recorded from their hospital folders. Participants were privately guided through a questionnaire that included questions measuring pregnancy intendedness according to the London Measure of Unplanned Pregnancy (LMUP) and questions about their knowledge, use and access to contraceptive methods. Stata/BE 17.0 was used to analyse the statistical relationship between the data collected and the LMUP intendedness scores.

Results

A total of 222 women agreed to participate in this study. The average age of the women was 31.34 years (SD=5.92). LMUP scores indicated that 17.6% of the women had unintended pregnancies, 40.5% were ambivalent about their pregnancy, while 41.9% of the pregnancies were intended. A total of 40.1% of the women had experienced complications in previous pregnancies with 35.1% of them having a history of miscarriage. A third (33.8%) had two serious health conditions while 16.2% had three or more serious health conditions. Intendedness was found to be significantly linked to relationship status, agreement with a partner to have a baby, and pre-pregnancy health improvements. The contraceptive methods that participants had most knowledge of were the depot-medroxyprogesterone acetate (DPMA) injectable, the combined oral contraceptive (COC) pill, the sub-dermal implant, and the loop intrauterine device with 76.1%, 26.1%, 13.5% and 4.5% of the women having used these respectively. Only 24 women (10.8%) had discussed planning a pregnancy with the clinicians managing their health condition/s for which they had originally been referred to the hospital.

Discussion

The study findings for intendedness are in line with other data for South Africa and globally, suggesting that intendedness in women at high risk for obstetric complications does not differ from women who are at low risk. Challenges to effective family planning are also well known, with cultural attitudes about fertility, beliefs about contraceptive safety and male partners' lack of support for contraceptive use clearly implicated.

Conclusion

This study highlights that against the backdrop of these challenges, women who are already medically at risk are placed in situations of even higher risk. There is an urgent need for the reorganization and scale up of family planning services so that they are not isolated from general and specialist practice, are gender-inclusive and become an integral part of the management of chronic disease.

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vii) Abbreviations

AGYW	Adolescent Girls and Young Women
AMA	Advanced maternal age
ANC	Antenatal care
BMI	Body mass index
C/Section	Caesarean section
COC	Combined oral contraceptive
COVID-19	Infectious disease caused by the SARS-CoV-2 coronavirus
CVA	Cerebrovascular accident
DPMA	Depot-medroxyprogesterone acetate
DVT	Deep vein thrombosis
GSH	Groote Schuur Hospital
HIV	Human immunodeficiency virus
HREC	Human Research Ethics Committee
iMMR	Institutional Maternal Mortality Ratio
LMUP	London Measure of Unplanned Pregnancy
MOD	Mode of delivery
NVD	Normal vaginal delivery
PET	Preeclampsia toxaemia
POH	Past obstetric history
POP	Progesterone-only pill
PTSD	Post-traumatic stress disorder
SADHS	South African Demographic and Health Survey
STI	Sexually transmitted infection
TB	Tuberculosis
TOP	Termination of pregnancy

viii) Dissertation

CHAPTER 1: INTRODUCTION AND LITERATURE REVIEW

Unintended pregnancies place a large burden on the women who have unplanned conceptions as well as the health care system that serves them. Understanding pregnancy intendedness is important for seeking ways of improving health care for women in South Africa. An unintended pregnancy is defined as a pregnancy that occurs when no further children are desired or when children are desired but not at the time of conception.¹

In 2012 there were approximately 213 million pregnancies globally with 190 million occurring in developing countries and 25% of all pregnancies occurring in Africa. It was estimated that 85 million of these pregnancies, 40% of all pregnancies worldwide, were considered unintended with the highest rate of unintended pregnancy occurring in Eastern and Middle Africa.² More recently estimates from 2015 to 2019 show that, globally, there were 121.1 million unintended pregnancies annually.³ Unintended pregnancy rates in Nigeria were found to be 35.9% in 2015 in a community-based study in South-Western Nigeria.⁴ Unintended pregnancy accounts for over half of Kenya's population growth.⁵

In a South African Demographic and Health Survey (SADHS) conducted in 1998 11,735 women were interviewed and asked if their pregnancy was wanted, unwanted or mistimed.⁶ The survey results reported 61% of first pregnancies and 46% of second pregnancies were unintended. The highest rates were found in KwaZulu Natal with 84% of pregnancies reported to be unintended.⁶ In the 2016 SADHS which covered 2011 to 2016, 20% of pregnancies were unwanted and 34% mistimed. The wanted fertility rate was found to be 2.0 children with the actual fertility rate found to be 2.6 showing that South African women

were having 0.6 more children on average than they wanted.⁷ The rates were found to be mostly unchanged when compared with the 1998 survey.

There are many factors influencing pregnancy intendedness. These factors may include the financial resources available to raise a child at that time, cultural preferences around timing of childbearing and the desired sex of the child, stigma against unmarried pregnant women, demands on a woman's time that may make pregnancy and child-rearing difficult, poor social support, and a patriarchal society dictating a woman's wants.^{8,9,10}

Unintended and unplanned pregnancy can result from contraceptive failure, non-consensual coitus, or the incorrect use, or lack of use, of contraceptive measures.^{1,11,12} Non-use or incorrect use of family planning methods may be due to poor access to contraception or poor education about contraception.^{1,8,9,13,14} Inadequate sexual education and misconceptions about fertility, pregnancy and contraception play an important role in unintended pregnancy. In addition, a lack of communication between partners around fertility desires and contraception also impacts the incidence of unplanned pregnancy.¹⁴ About 50% of unwanted pregnancies in the United States are reported as secondary to contraceptive failure.¹ In a 2016 survey of unintended pregnancies in 43 countries in Africa, Asia, Latin America, the Caribbean and Eastern Europe, 30% were found to be due to contraceptive failure.¹⁵

Lack of adequate sexual education was shown to play a significant role in a study of adolescent women with unintended pregnancies in four provinces in South Africa (Eastern Cape, Gauteng, KwaZulu-Natal and Mpumalanga). A total of 74.1% of participants claimed lack of sexual knowledge as the core reason that they had an unintended pregnancy. In

addition, 55% said they did not know coitus could result in pregnancy and 71% did not know how pregnancy happens or think about the risk of falling pregnant as a result of coitus.¹⁶

The highest percentage of reported unintended pregnancies per age category is in women below 19 years of age with the age of sexual debut occurring earlier.^{1,13,16-19} There is a second peak of unintended pregnancies among women with high parity or over 40 years of age.^{1,9,17,20} Women who do not complete 12 years of schooling, are unemployed, and single have been found to have higher levels of unintended pregnancy.^{1,9,13,14,16-20} In addition, women who engage in risky behaviours including smoking, alcohol use and illicit drug use more often have unintended pregnancies.^{14,18,19} Women suffering from intimate partner violence and depression are also at risk of an increased incidence of unintended pregnancy.^{14,19}

Low socioeconomic status is an important predictive factor for unintended pregnancies.^{1,9,11,16,20} This may in part explain why Africa carries the largest burden of unintended pregnancies worldwide as it also has some of the highest levels of poverty.

The teenage pregnancy rate in South Africa reported during the period of 1999-2001 was 13% and increased to 16% during 2011-2016.^{7,21} The Western Cape reported 8% during this period while the Northern Cape and North West Provinces had a rate estimated at 20%.⁷ In Sub-Saharan Africa 35% of pregnancies among 15-19 year old women were unintended and on further investigation their relationships with their partners were found to be unstable. Two thirds of the pregnancies ended in live birth while one third ended in, often unsafe, termination of pregnancy (TOP). In a sample of women in four provinces in South Africa (Eastern Cape, Gauteng, KwaZulu-Natal and Mpumalanga), 23% of women aged 13 to 16

years reported that their pregnancy ended in termination of pregnancy (TOP) while 14.9% of women aged 17 to 19 years reported having TOP.¹⁶

The high rate of unintended pregnancy in South Africa is a public health concern. In 1998 the South African Department of Health revealed that 35% of women had been pregnant by the age of 19 years of age and that since then this number has almost doubled.²² While teenage pregnancy statistics reveal a high proportion of unintended pregnancies, the highest volume of unplanned pregnancies worldwide occur in the 20- to 34-year-old age group.¹⁹ In a population-based survey on contraceptive use and associated factors among South African youth conducted in four provinces in South Africa (Eastern Cape, Gauteng, KwaZulu-Natal and Mpumalanga), among women aged 15-24, 65% of pregnancies were found to be unplanned.²²

In a 2012 survey of HIV positive women in South Africa, approximately 220,000 were reported as having unintended pregnancies per year which adds an additional burden to the antiretroviral service for prevention of mother to child transmission.²² In a sample of fecund women in Botswana, those who were HIV-infected were almost four times more likely to report not wanting more children compared to HIV-uninfected women.²⁰ Despite this, neither contraceptive use or unintended pregnancy were found to be associated with knowledge of HIV status. Sub-Saharan Africa has the highest rates of new HIV infection and unintended pregnancy.²⁰

Statistics reporting pregnancy intendedness are often difficult to access as a woman's feeling about the pregnancy may change during the antenatal period and after delivery. Because there is no pre-conception planning and preparation for a pregnancy, acceptability of a pregnancy may only occur after conception.¹¹ Unintended pregnancy can be used as a

measure to gauge the quality of women's reproductive health, their knowledge of contraceptive choices and the degree of autonomy they have in making their contraceptive choices.¹ A patriarchal society, along with other social, cultural and religious pressures, plays a part in coercing a woman to fall pregnant despite her own fertility preferences.^{1,8,9,14,18} In South Africa, cultural values, beliefs and partner attitudes negatively impact the contraceptive prevalence rate among women. Society, particularly in rural areas, is still largely male-dominated and women are sometimes put under pressure to prove their fertility.²³

1.1 Impact of Unintended Pregnancy

The impact of unintended pregnancy is considerable and varies across social and cultural settings and will differ according to the standard of living, the stage of demographic transition, what cultural and societal beliefs exist, and what governmental support structures are in place to assist families and children. Unintended pregnancies carry significant social and economic consequences that extend far beyond the delivery of the baby.^{2,8-11,19,24}

1.1.1 Maternal Impact

Every pregnancy exposes a woman to pregnancy-associated risks. In the case of an unintended pregnancy these risks are increased, especially in settings where there is already high maternal mortality. These are risks that the woman has not anticipated or chosen to undertake. The highest proportion of unintended pregnancy occur at the extremes of childbearing age with an inherent increased risk of mortality and morbidity which further compounds the negative effects of unintended pregnancy.^{8,16,22,24,25}

Globally, some 210 million women have life-threatening complications during their pregnancies and 500,000 die as a result of these.^{24,25} One in six women will die because of pregnancy or childbirth with more than 99% of these complications occurring in developing countries.²⁴⁻²⁶ The latest Saving Mothers triennial report indicated that maternal deaths in South Africa had dropped, with an Institutional Maternal Mortality Ratio (iMMR – the number of maternal deaths among 100,000 deliveries in health facilities or institutions) of 98.82/100,000 live births in 2019 compared to 125.89 in 2017.^{27,28} The Sub-Saharan Africa Maternal Mortality Ratio in 2013 was 533 per 100,000 live births which is many times higher than in industrialised countries. Global estimates indicated that there were 295,000 maternal deaths in 2017, 35% lower than the estimated 451,000 maternal deaths in 2000.²⁹ Sub-Saharan Africa and Southern Asia account for 86% of all maternal deaths worldwide.³⁰

Unintended pregnancies are associated with several negative health behaviours. Mothers with unintended pregnancies are more likely to delay their initial antenatal care visit.^{1,2,8,17} Information from Sub-Saharan Africa shows women with unintended pregnancies were more likely to delay antenatal care and have fewer total visits.²⁴ This greatly impacts the health of the pregnant woman as she is not screened for important warning signs that could result in avoidable or manageable morbidity and mortality both for her and the fetus.^{8,9,25,30} Early antenatal care allows for safe management of pregnancy-related conditions and pre-existing conditions that may be worsened by pregnancy. It also allows for the planning of a safe delivery in a facility best suited to the pregnancy if it is carried to term.³⁰ The delay in approaching health services may also have further negative consequences in the case of non-consensual coitus as the woman misses the opportunity to receive post-exposure

prophylaxis for sexually transmitted diseases as well as potentially the opportunity to terminate the pregnancy safely.⁸

Women with unintended pregnancies often have poor physical and psychological health and are at increased risk for postpartum depression, anxiety and general decline in psychological well-being leading to potentially life-threatening situations for both mother and child.^{2,9,10,17,24} There is also an associated increased incidence of substance abuse and utilisation of unsafe TOP services.^{1,8,17,25}

First time domestic violence is more common than hypertension or preeclampsia in women with unintended pregnancies.^{8,10,17,25} Violence is associated with poor pregnancy outcomes such as low birth weight, preterm labour, miscarriage and fetal injury.²⁵ Women with unintended pregnancies often have their education or careers disrupted and may suffer psychological abuse, rejection by their families and communities and forced marriages.^{8,10}

1.1.2 Termination of Pregnancy (TOP)

In developing countries 85 million women experienced an unintended pregnancy in 2012. About 40 million of these ended in TOP and 10 million ended in apparently spontaneous miscarriages.²⁶ While some studies have found an increased risk of miscarriage among unintended pregnancies, others have found mixed results or no association.²⁴

Unplanned pregnancy is a major reason for TOP.³¹ About 1 in 10 pregnancies end in unsafe TOP.^{10,32} Of the 45 million TOPs which are performed globally each year, it is estimated that 19 million are unsafe and that 97% of the unsafe TOPs occur in developing countries.²⁵ Forty percent of TOPs occur in women under the age of 25 and every year about 68,000 women die from unsafe TOPs.²⁵ In Africa 20-35% of maternal mortality is linked to unsafe TOP.³² The

World Health Organisation has identified the morbidity and mortality secondary to TOP to be a major problem globally, especially in the developing world.^{2,33}

In 1997, researchers using data from 56 public hospitals in nine provinces, estimated that 44,686 women in South Africa were admitted to hospital annually because of complications from unsafe TOPs.³² About 425 women die annually from these complications. This means that a total of 385 per 100,000 women presented to hospital with incomplete TOPs equating to 39 per 1,000 live births. This study also found that second trimester miscarriages were more likely to have been induced and carry an increased risk of complications.³²

In South Africa the Choice on Termination of Pregnancy Act was introduced in 1996, giving women the right and access to safe legal abortion.³⁴

There are no reports of recent studies providing estimates of unsafe TOPs occurring in South Africa, but in 2018 the Government News Agency reported that between 52% and 58% of the estimated 260,000 abortions that took place were thought to be illegal, despite the availability of TOP, often at no cost, in the public healthcare facilities.³⁵

In Africa 25% of unsafe TOPs are accessed by teenagers.²⁵ Unsafe TOP will often require a prolonged hospital stay and will sometimes require surgical management, blood transfusions, anaesthesia, and other medication.^{36,37} TOP was found to account for 20-48% of obstetric and gynaecological admissions with high rates of morbidity and mortality secondary to haemorrhage, sepsis and trauma.¹ In South Africa TOP accounted for 4.9% of maternal deaths in 2007.³⁸ According to the triennial report on maternal deaths in South Africa for 2017-2019, 3.1% of all cases of maternal deaths with avoidable factors were due to unsafe abortion.²⁷

TOP may have long-term consequences for women and is linked to infertility, preterm labour and placenta praevia in subsequent pregnancies, as well as psychological problems with an elevated rate of subsequent depression, anxiety, suicidal behaviour, and substance abuse.^{1,36,39-41}

The costs attributed to unintended pregnancy outcomes in South Africa were estimated in 2015 at R3.42 billion annually, largely attributable to the fact that in many instances unintended pregnancies may end with termination of pregnancy which may be legal or illegal and unsafe.⁴² There is a considerable financial burden associated with TOP with direct and indirect costs. There are medical costs to be covered at the time of the TOP as well as indirect costs for the physical and psychological sequelae suffered as well as a social cost to the family and society with an estimated 5 million person-years of life lost globally due to the morbidity and mortality sustained from unsafe TOPs per annum.^{24,36}

In South Africa unsafe TOPs place a financial burden on an already strained health system. In 1994 R18.7 million was spent on TOP services and R9.74 million was spent on treating the sequelae of unsafe TOPs.³⁶ A 2017 study in KwaZulu-Natal estimated that the cost of a TOP in a public health facility was about US\$70 or R1,000.⁴³ Using the 2017 figure of 73,072 TOPs in public sector facilities, it is estimated that more than R73 million is currently spent on TOP annually.³⁴

In addition to this, there is a drain on limited obstetric and gynaecological resources in facilities with some spending up to 60% of their obstetric and gynaecological resources on miscarriage and TOP related sequelae which impacts care to other patients. These sequelae result in financial cost to the families involved as well as the State.^{36,37}

1.1.3 Impact on the Fetus and Child

Unintended pregnancy has many consequences for the developing fetus. Most of these are secondary to the negative health behaviours of the mother, either because she was unaware of the pregnancy or because health behaviours of women with unintended pregnancies are shown to be negative.^{8,9} Women unaware of their pregnancy will continue to engage in the consumption of teratogenic substances such as tobacco, alcohol, prescription drugs, illicit substances, and caffeine.^{8,13,17,24}

The diagnosis of these pregnancies is often delayed.^{8,17} This means that valuable health promotion and screening opportunities are missed, and there is a delay in identifying and optimising pre-existing medical disorders which may make the pregnancy very high risk. This translates into higher fetal and maternal morbidity and mortality.^{8,13} Women with diagnosed unintended pregnancies often do not use the recommended folate and multivitamin supplementations.¹⁷

Women with unintended pregnancies are more likely to have preterm labour and to give birth to low birthweight children if they elect to continue the pregnancy.^{1,8,17,24} They are also less likely to breastfeed and more likely to suffer from postpartum depression which may place both the child and mother at risk.^{2,17,24}

Children born from unintended pregnancies may have from poor parenting styles, poor relationships with their parents, and more behavioural and cognitive difficulties.^{2,8,17,24} They are also more likely to die in their first year of life, suffer abuse or abandonment, and be stunted in their emotional, physical and psychological growth.^{1,8,13,24} This may be due to the lack of provision of resources for a child.¹³

1.1.4 The Need for Contraception and access to safe TOP services

Unintended pregnancy affects Africa and the need for access to healthcare and contraception is often not fulfilled. Worldwide, Sub-Saharan Africa has the highest levels of unmet contraceptive needs and maternal mortality.²⁶ A woman has an unmet need for contraception if she is fertile, sexually active, does not want a child in the next 2 years but is not using contraception.¹⁰

While a planned pregnancy empowers women to make more positive health decisions during their antenatal course and enables early antenatal care, contraception also allows women to plan their pregnancies in congruence with their other lifegoals.^{13,14} Preventing women from planning conception is seen as a violation of women's rights and exposes women to risks they did not intend to undertake.^{26,44} At the International Conference on Population Development held in Cairo in 1994 it was declared that ensuring women's ability to control their own fertility is a cornerstone of population and development related programs.¹

The effort women have put into family planning in the 21st century is often due to a desire for smaller families. This may be due to urbanisation and the economic development of countries.² The rate of unintended pregnancy has dropped by 20% from 1995 to 2008 with the drop most significant in the industrialised world.¹⁰ The reduction in unintended pregnancy is largely due to the availability and uptake of effective contraception in the early 1990s.¹⁰

Contraception is one of the main pillars identified for reducing maternal mortality in the South African Saving Mothers report of 2017-2019.²⁷ In 2015 12% of women worldwide, and 24% of women in a stable relationship, had an unmet need for contraception.³⁰

If the unintended pregnancies occurring yearly were to be prevented by effective contraception choices the negative consequences and costs could be avoided. This would relate in a reduction in TOPs of about 22 million, infant deaths of about 1.4 million, and 142,000 maternal deaths per annum worldwide.^{24,45} It is estimated that 79,000 of the deaths occurred in developing countries secondary to pregnancy related causes in 2012 may have been prevented by adequate contraception, therefore avoiding unintended pregnancies.²⁶ If a subsequent pregnancy is delayed by 24 months there is a reduction of the iMMR by 30% and perinatal deaths by 10%. Contraception should be integrated into all health contact sites, not only those involved with Women's Health.²⁸

At present some 222 million women worldwide are not using effective contraceptive methods, despite not wanting a child in the near future, resulting in an estimated 63 million unintended pregnancies each year.^{26,45} Africa, especially, is suffering a burden of high population growth and this is one of the main contributing factors to economic, environmental, social and political strain.²⁵ Education about family planning and access to contraception is the key to reduction in maternal mortality and positively impacting childbearing as well as improving the social structure of the country.²⁵

A study conducted in Botswana and published in 2016 found that there was a 25% unmet need for family planning for 15-49 year old women.²⁰ In South Africa, misconceptions regarding contraception lead to many unintended pregnancies.¹⁴ Developing countries have poor exposure to contraception and inadequate support for women and their reproductive

health rights.⁹ Effective education is important as women do not always understand that they have the possibility of reproductive control.¹¹ The variables among the women (i.e. level of education, health, age), however, weigh heavily in decision making around fertility and therefore highlight the importance of empowering women to be able to control their fertility.⁵ A study from Uganda showed that, although it is ideal to have partner support and involvement, many programmes do not adequately involve men.⁴⁶

In South Africa about half of women aged 15 to 24 years were not using contraception in 2007.²² Women from low socioeconomic status, as well as women who were HIV positive, had recent STI treatment, multiple concurrent sexual partners, and an early sexual debut, were also found to be less likely to use effective forms of contraception.^{13,22} Managing the unmet contraceptive need in South Africa will also alleviate the strain on the HIV clinics and reduce the need for prevention of mother to child transmission in pregnancy and labour.²⁰

TOP was legalised in most of the world in the 1960s. In South Africa new TOP legislation in 1996 empowered women to have the right to decide about the outcomes of their pregnancies.²¹ There are limited resources in South Africa to service the requests for TOP.^{8,10,21,47} There is still opposition to TOP in South Africa which contributes to the lack of service providers. There are also concerns that TOP may be viewed as an alternative to other contraceptive methods.⁴⁷

In European sub-regions 44-75% of unintended pregnancy ended in TOP compared to only 22-39% in African sub-regions in 2012.² This may be due to insufficient resources as one in four of the world's women live in a country that either bans TOPs or limits it to life-saving intervention only.^{8,10,21,24} It may also be due to differing cultural beliefs around pregnancy with a higher rate of unintended pregnancies ending in live birth in some populations.¹⁰ A

study conducted in Spain showed that young women with a higher level of education are more likely to utilise the TOP service.¹³

While TOP may solve the problem at hand it leads to other undesirable health problems and incurs a cost to the health system greater than that of effective contraception.¹³ Family planning and contraception programs have a direct effect on reducing unsafe TOP rates and the consequences thereof.²⁵

1.2 Quantifying the Need

Estimating the prevalence of unintended pregnancy and identifying risk factors is crucial to the design of effective interventions.¹⁸ The “levels of unintended pregnancy” is a widely used measure in health research and policy.⁴⁸ A measure of the proportion of unmet need for contraception is also vital and can help explain variations in levels of unintended pregnancy and provide direction to policy and programs to assist in effective antenatal care and contraception access.¹⁰

Fertility surveys have been conducted for decades but never focused on levels of intendedness or contraceptive knowledge as mortality and population growth were the focus at the time.^{5,44} Contraceptive Prevalence Surveys in the late 1970s looked at fertility desires and contraception but were too simple in design and did not yield enough information.⁴⁴

In 2012 the London Summit on Family Planning identified a need for improved surveillance of unintended pregnancy to manage the issue of high rates of unintended pregnancy and its sequelae better.² Quantifying the levels of pregnancy intendedness is difficult as the concept of pregnancy intention crosses many different social and cultural dimensions and a

USA evaluation study found that it was challenging for questionnaires to tap into the nuanced feelings around conception.^{45,49}

The need for a detailed understanding around women's pregnancy intention was required as current methods of investigation were insufficient and lacked detail.^{26,50} There was a need for a spectrum as women's understanding of the terms planned, unplanned, and unintended were inconsistent between interviewees.⁵⁰ This prompted the conception and development of the London Measure of Unplanned Pregnancy.

1.3 The London Measure of Unplanned Pregnancy

The London Measure of Unplanned Pregnancy (LMUP) is a psychometrically validated measure of pregnancy intendedness for a current or recent pregnancy.⁴⁵ It is a six question, multiple choice questionnaire with the answers scored from 0-2. The questions cover contraceptive use, timing of the pregnancy, intention of the pregnancy, desire for a baby, planning with a partner, and preconceptual behaviours. These are then summed up to give a score out of twelve. A higher score is related to an increased level of pregnancy intendedness and a lower score to ambiguity about conception or unplanned pregnancy.⁴⁹ The authors recommend a broad interpretation of scores of 0-3 as unplanned, 4-9 as ambivalent, and 10-12 as planned.^{48,49} The questionnaire was originally designed for patients to complete themselves but has been adapted for administration by interviewers due to low literacy rates in developing countries.²⁶ It is short and it is ideal for large surveys.⁴⁸ [See **Appendix 1**]

The LMUP is a good measure as it has been found to be highly consistent and stable. It makes no assumptions about the nature of the participant's relationships, it does not

require them to have formed family plans, it does not assume that there is an ideal family plan, it is suitable for pregnancies with any outcome, and it does not assume that the participant's actions are rational or congruent with their intentions.^{48,49} Women are allowed to express ambivalence as pregnancies are not just categorised into planned or unplanned.²⁶ This provides a detailed and realistic reflection of women's fertility behaviour.⁴⁸

A better understanding of pregnancy intention has been brought about by the LMUP and this understanding can be used to tailor contraceptive provision to women's needs.⁴⁵

1.3.1 Validation of LMUP at UCT

The London Measure of Unplanned Pregnancy was developed in the United Kingdom and has been validated and translated for use in many other countries. The tool must be translated and validated prior to its use outside of the context in which it was developed.²⁶ It has been validated in South Africa in the Department of Obstetrics and Gynaecology at the University of Cape Town for use in three languages – English, Afrikaans, and isiXhosa.⁵¹

1.4 Defining the Groote Schuur Hospital Population

Groote Schuur Hospital is a tertiary hospital in the Western Metropolitan sub-district of the City of Cape Town Metropole. According to the South African census of 2011, the Cape Town Metropole has a population of 3,740,026 people. An estimated 19.7% of people in the Cape Town Metropole were living in poverty in 2013 and there were 134,212 patients registered on antiretroviral therapy.⁵² The Cape Town Metropole has the highest recorded HIV prevalence in the province, up to 33% in certain Sub-Districts.⁵³ It also has the highest burden of tuberculosis.⁵² There are no available data on the rates of unintended pregnancy in the district.

In the calendar year of 2020, there were a total of 3,485 births at Groote Schuur Hospital, of which 3,304 (94.8%) were live births and 181 (5.2%) were still births. There were 19,254 obstetric outpatient visits to the hospital and 6,316 obstetric separations.⁵⁴ (Separations include discharges, transfers-out and deaths, and are used as a proxy for admissions.) In 2020, there were 219,733 patients in the Western Cape Province on antiretroviral treatment for HIV.⁵⁴

Within the Department of Obstetrics and Gynaecology at Groote Schuur Hospital, staff work closely with specialists from other departments in a joint multidisciplinary tertiary platform. These specialists include cardiologists, endocrinologists, infectious disease specialists and neonatologists.

1.5 Aims and Objectives

Because of the problem of unintended pregnancy, the LMUP was utilised in an antenatal population of women with perceived high obstetric risk attending the specialist-run antenatal clinics at Groote Schuur Hospital or admitted to the antenatal wards at this hospital.

The primary objective was to assess pregnancy intendedness in this obstetric population at Groote Schuur Hospital.

Secondary objectives were to assess contraceptive knowledge and use in the targeted obstetric population, to assess knowledge, understanding and use of emergency contraception, and to document the demographic characteristics of this high-risk group of pregnant women.

CHAPTER 2: METHODS

2.1 Study Design

This cross-sectional descriptive study assessed pregnancy planning in a group of women in the tertiary obstetric service at Groote Schuur Hospital. The study involved the use of a questionnaire which included the six questions used by the LMUP to assess pregnancy intendedness. The questionnaire also included questions designed to explore participants' knowledge of, use and access to contraceptive methods and the available services.

Demographic characteristics of the group of participants were documented through their responses to a set of additional questions and through access to the patient folder.

In addition, the questionnaire contained five questions from the Perinatal Mental Health Questionnaire validated by the Perinatal Mental Health Project in the Alan J. Flisher Centre for Public Mental Health at the University of Cape Town.⁵⁵ [See **Appendix 2**]. This test screened for mental health conditions such as depression and anxiety in pregnancy.

All sections of the questionnaire were translated from English into Afrikaans and isiXhosa.

The questionnaire was administered individually and in person by members of the research team who were not involved in the clinical management of the women recruited.

2.2 Characteristics of the Study Population

The pregnancy intendedness of the current pregnancy in a sample of antenatal women requiring tertiary maternity care at Groote Schuur Hospital was investigated utilising the LMUP. These women were recruited from the antenatal clinics and day units, as well as the antenatal wards at Groote Schuur Hospital.

Pregnant women who attend the Groote Schuur clinics and antenatal ward have a pre-existing or past medical or surgical condition that may affect their pregnancy, or a condition that has developed in their pregnancy that may impact their pregnancy. They are referred to Groote Schuur Hospital from their initial obstetric clinic which may be at primary or secondary level because they require interdisciplinary care due to their medical or surgical condition/s. Women who had been referred to Groote Schuur Hospital for fetal conditions in the absence of maternal illness were not recruited.

2.3 Recruitment and Enrolment

The research team identified eligible participants by sorting through the folders of women attending the Groote Schuur Antenatal Clinic and Day Units or admitted to the antenatal wards. Women were then approached individually and received counselling one-on-one, in the language of their choice (English, Afrikaans or isiXhosa). An information leaflet, available in English, Afrikaans or isiXhosa was given to them at the time of recruitment. [See

Appendices 3,4 and 5]

It was explained that no identifying data would be recorded, participation would not impact their clinical care and that their interviews would be private and anonymous. Each potential participant was approached individually and in private. Willing participants signed an informed consent form at the beginning of the interview process. The consent form was available in English, Afrikaans or isiXhosa. [See **Appendices 6,7 and 8]**

The research team consisted of the author and research nursing sisters from the Reproductive Medicine Unit in the Department of Obstetrics and Gynaecology. The research

team was not part of Groote Schuur Hospital's clinical team and therefore did not impact clinical services.

The LMUP questionnaire was administered to the participants in a private environment. In addition, a questionnaire accessing demographic information, contraceptive knowledge, and perinatal mental health indicators was also administered. The questionnaires were available in English, Afrikaans or isiXhosa. Folders of women that had already been interviewed were marked to prevent duplication.

2.3.1 Inclusion Criteria

- Women who attended the GSH antenatal clinic, day units or were admitted to the antenatal ward for maternal indications
- Women who were 18 years or older
- Women who consented to participate
- Women who could speak one of the three languages (English, Afrikaans, isiXhosa) in which the LMUP has been validated in South Africa

2.3.2 Exclusion Criteria

- Women who were less than 18 years old
- Women who could not consent to participate
- Women who withdrew their consent at any point during the study
- Women who did not understand the study
- Women who did not speak one of the three languages (English, Afrikaans, isiXhosa) in which the LMUP has been validated in South Africa
- Women whose medical condition was critical were not approached

- Women who attended the GSH Antenatal Clinic because of fetal problems

2.4 Data Collection Methods

Data for each participant were recorded by the interviewer on an individual questionnaire.

The interviewers were experienced in the use of this type of questionnaire. The

demographic data that were recorded included age, relationship status, highest level of education, employment and use of substances such as cigarettes, alcohol and illicit drug use.

[See **Appendices 9, 10 and 11**]

The clinical data recorded included the participant's medical and surgical history, obstetric history, high risk obstetric factors, date and gestation at booking, knowledge and use of contraception.

The Perinatal Mental Health Score questionnaire was also administered to participants.

Women suffering from domestic violence or depression were referred via an established referral pathway to the appropriate support and social services at Groote Schuur Hospital.

The interview took approximately 15 minutes per participant, but time was also allowed for discussion after completion of the questionnaire if the participant required further input.

No data that would enable personal identification of the subjects, such as name, date of birth, or hospital folder number, were recorded.

2.5 Data Analysis

Data were separately entered in Microsoft Excel spreadsheets by two members of the research team and Excel Compare was used to assess any errors in data collection which were then corrected.

All descriptive data were categorised numerically to facilitate statistical calculations, for example Relationship Status was categorised as follows:

- 1= Single not in a relationship
- 2= Single stable relationship not cohabitating
- 3= Single cohabitating
- 4= Married
- 5= Divorced
- 6= Separated
- 7= Widowed

Numerical data were grouped into categories, for example Age was categorised as follows:

- 1 = 18 to 24 years old
- 2 = 25 to 34 years old
- 3 => 34 years old

Education level was categorised as follows:

- 1 = no formal education
- 2 = primary education
- 3 = grade 8 - 12 education
- 4 = some form of tertiary education

The LMUP score was calculated using the scoring shown in **Table 2:1**. The numeric scores were grouped into the three categories:

- 1 = Unintended (total score 0 – 3)
- 2 = Ambivalent (total score 4 – 9)

- 3 = Intended (total score => 10)

Table 2:1. London Measure of Unplanned Pregnancies (LMUP) scale (Unintended 0-3; Ambivalent 4-9; Intended =>10)

Question	Answer	Score
In the month you fell pregnant	Not using contraception	2
	Inconsistently using contraception or always used contraception but there was a failure	1
	Always used contraception	0
The pregnancy happened	At the right time	2
	OK but not quite the right time	1
	At the wrong time	0
Just before you fell pregnant	I intended to fall pregnant	2
	My intentions kept changing	1
	I did not intend to fall pregnant	0
Just before you fell pregnant	I wanted to have a baby	2
	I had mixed feelings about having a baby	1
	I did not want to have a baby	0
Before you fell pregnant you and your partner	Agreed to the pregnancy	2
	Discussed having children but no agreement	1
	Never discussed having children	0
Health actions^a before falling pregnant	2 or more actions	2
	1 action	1
	No action	0

^a Health actions include cessation or reduction in use of teratogenic substances such as caffeine, nicotine, alcohol, and prescription or illicit drugs, taking folate and multivitamin supplementations, and seeking medical advice.

The Perinatal Mental Health score was categorised as follows:

- 1 = No potential perinatal mental health issues (score of 0 – 1)
- 2 = Potential perinatal mental health issues (score of 2 or more)

Frequency counts and percentages of the total counts were calculated for all categorised data.

For each categorised variable, the Chi-square test was used to test if there was a statistically significant relationship between the scores for the categories and the scores for the three LMUP categories of intendedness.

All statistical calculations were performed using Stata/BE 17.0 (Stata Basic Edition, Version 17). P values and confidence intervals are provided where applicable. A P value of less than 0.05 was accepted as indicative of a statistically significant relationship between variables.

2.6 Description of Risks and Benefits

Participants were reassured that their decision to participate would not impact their clinical care. The study was questionnaire based and, as the questions about unplanned pregnancy were subtle, there was no reason to anticipate that participation in the study would cause the women any distress. The LMUP has been administered to 360 women in Cape Town during the process of validation and there were no reports of distress caused by the questionnaire.⁵¹

It was determined that any patient identified as being distressed would be referred to the appropriate support service utilised by the Department of Obstetrics and Gynaecology. No reimbursement was offered to participants in this study, but it was explained that in the future women accessing the service were likely to benefit from the information and insights obtained with their assistance.

2.7 Privacy and Confidentiality

No data that could allow the identification of the participant were recorded on the form.

Data, once recorded on the spread sheet, were password protected. All paper questionnaires are kept in a secure environment with only the research team having access.

2.8 Ethical Considerations

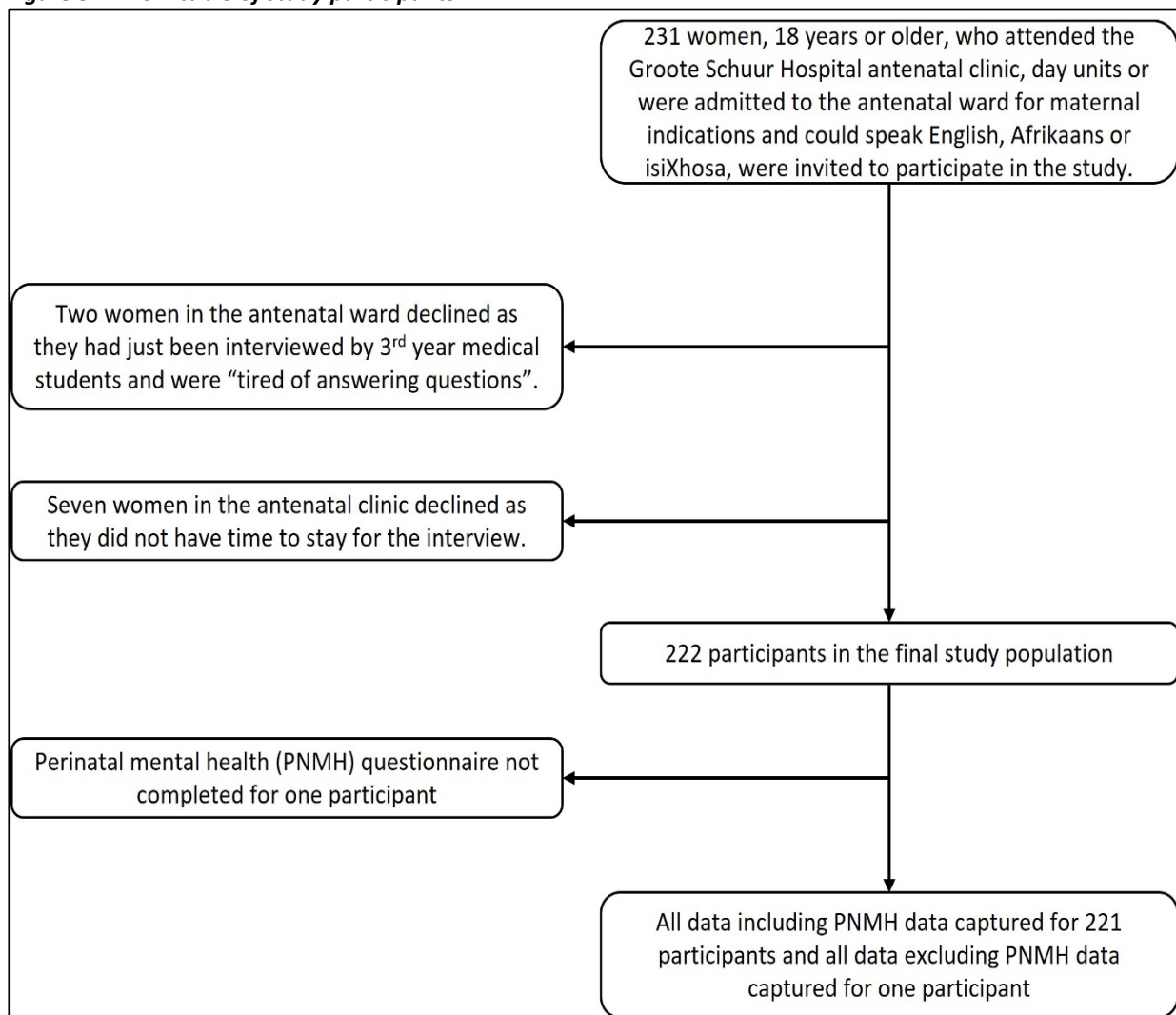
The study conformed to the requirements of Good Clinical Practice and follows the Declaration of Helsinki (2013). The University of Cape Town Human Research Ethics Committee (HREC) of the Faculty of Health Sciences reviewed and approved the research protocol before the commencement of this study. The HREC Reference Number is 597/2016. [See **Appendix 12**]

Permission to recruit patients was obtained from Groote Schuur Hospital management. [See **Appendix 13**]

CHAPTER 3: RESULTS

A total of 222 women were interviewed. Of these, 73 were interviewed in the antenatal clinic and 149 in the antenatal wards of Groote Schuur Hospital. The interviews were conducted between the period of 29 July 2019 and 12 January 2021, with a break in recruitment from 8 March 2020 to 20 August 2020 due to Covid-19 restrictions on research. Nine of the women who were invited to participate in the study declined. The flow table for participants is presented in **Figure 3:1**.

Figure 3:1. Flow table of study participants



3.1 Impact of Covid-19

During the recruitment process, the first wave of Covid-19 started in South Africa.

Recruitment for all clinical studies not involving therapy or researching Covid-19 was paused from 8 March 2020 to 20 August 2020 by the Human Research Ethics Committee (HREC).

Permission was then obtained from HREC to restart recruitment with all Covid-19 precautions in place. No participant was asked to attend the hospital specifically for the study and unnecessary extra visits were avoided.

3.2 Participant Profile

3.2.1 Gestational age at time of interview

Gestational age at the time of interview is summarised in **Table 3:1** Most participants were interviewed in the antenatal wards.

Table 3:1. Gestational age and location at time of interview

Gestational age at time of interview	Antenatal clinic		Antenatal ward		Total	% Of Total
	Number	%	Number	%		
<14 weeks	9	11,1%	1	0,7%	10	4,5%
14-28 weeks	34	42,0%	48	34,0%	82	36,9%
>28 weeks	38	46,9%	92	65,2%	130	58,6%
Total	81	100,0%	141	100,0%	222	100,0%

3.2.2 Socio-demographics

Socio-demographics for the participants are shown in **Table 3:2**.

Table 3:2. Socio-demographics for the participants

SOCIO-DEMOGRAPHICS	Number	%
Religion		
Protestant	172	77,5%
Muslim	40	18,0%
Roman Catholic	6	2,7%
Christian (other)	3	1,4%
Jewish	1	0,5%
Total (Religion)	222	100,0%
Population group		
Mixed Ancestry South African	110	49,5%
Black South African	84	37,8%
Foreign African	24	10,8%
White South African	3	1,4%
Foreign non-African	1	0,5%
Total (Population Group)	222	100,0%
Home language		
isiXhosa	80	36,0%
English	65	29,3%
Afrikaans	50	22,5%
Other	27	12,2%
Total (Home Language)	222	100,0%
Relationship status		
Single - not in relationship	6	2,7%
Single - in relationship but not cohabiting	58	26,1%
Cohabit with partner or married	154	69,4%
Divorced or separated	4	1,8%
Total (Relationship status)	222	100,0%
Financial status		
Supports self without assistance	28	12,6%
Shares expenses with other members of household	58	26,1%
Dependent on partner or family member	130	58,6%
Relies on government grant/s	6	2,7%
Total (Financial status)	222	100,0%
Education status		
No formal education	1	0,5%
Primary school only	4	1,8%
Grade 8 - Grade 11	79	35,6%
Matriculated (completed Grade 12)	86	38,7%
Tertiary - incomplete	27	12,2%
Tertiary - complete	25	11,3%
Total (Education status)	222	100,0%
Employment status		
Unemployed	117	52,7%
Employed	82	36,9%
Student	6	2,7%
Grant recipient	9	4,1%
Homemaker	8	3,6%
Total (Employment status)	222	100,0%

At the start of the interview women were offered a choice of being interviewed in English, Afrikaans, or isiXhosa. Despite their reported home language and the availability of research staff fluent in these, most of the women (218) chose to be interviewed in English and only four chose to be interviewed in Afrikaans. No participants were interviewed in isiXhosa despite the offer to do so.

3.2.3 Financial status and financial support

Although only 86 (38.7%) of the participants interviewed contributed to the household income, 176 (65.5%) made, or were involved in, the financial decisions for their household.

3.2.4 Substance use

One hundred and thirty-nine of the participants (62.6%) were non-smokers. Thirty-four (15.3%) women responded that they were smokers and had continued to smoke during their pregnancy. Thirty-six (16.2%) had stopped smoking before they fell pregnant, and 13 (5.8%) of the participants had stopped smoking when they became aware of their pregnancy.

One hundred and twenty-one respondents (54.5%) did not drink alcohol. Of the 101 (45.5%) who were drinking alcohol before they were aware of their pregnancy status, seven (3.2%) had continued to drink alcohol during the pregnancy.

Of the fifteen participants who used recreational drugs before they were aware of their pregnancy status, one woman responded that she had continued using recreational drugs during the pregnancy while the others had terminated this use.

3.2.5 Previous pregnancies

Of the 222 participants, 49 were nulliparous, 170 had given birth between one and four times while three had given birth five or more times.

Gravidity of the respondents is summarised in **Table 3:3**.

Table 3:3. Gravidity of participants

Gravidity	Number	%	Previous pregnancies
1	34	15,3%	0
2	39	17,6%	39
3	64	28,8%	128
4	46	20,7%	138
5	18	8,1%	72
6	12	5,4%	60
7	7	3,2%	42
8	0	0,0%	-
9	0	0,0%	-
10	2	0,9%	18
Total	222	100,0%	497

Table 3:4 summarises the outcomes for all previous pregnancies reported by the participants. For 188 (84.7%) of the participants, this was not their first pregnancy. In total, the women had had 497 previous pregnancies. When asked about the outcome of each pregnancy, the participants' responses showed that 141 (28.5%) had resulted in miscarriage, two were ectopic pregnancies while 11 (2.2%) were terminated.

Table 3:4. Pregnancy outcomes for all previous pregnancies

Outcome/ Pregnancy	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	Total
Miscarriage	35	38	32	19	9	4	1	2	1	141
Ectopic	0	1	1	0	0	0	0	0	0	2
Alive	132	98	42	18	11	5	1	0	1	308
Stillbirth	13	7	6	0	1	0	0	0	0	27
Neonatal death (NND)	2	2	2	2	0	0	0	0	0	8
TOP	6	3	2	0	0	0	0	0	0	11
Total	188	149	85	39	21	9	2	2	2	497

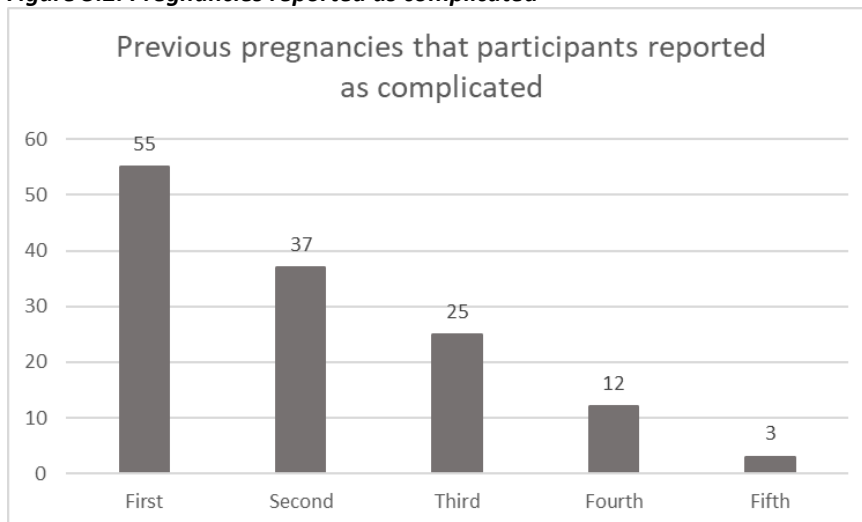
Of the 343 births reported, the women’s responses indicated that 249 (72.6%) had been delivered by normal vaginal delivery (NVD) while 90 (26.2%) had been delivered by Caesarean section. **Table 3:5** sums up the mode of delivery (MOD) for the previous pregnancies that resulted in birth.

Table 3:5. Mode of delivery for previous births

MOD/ Pregnancy	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	Total
NVD	112	75	35	14	7	4	1	0	1	249
C/Section	31	32	15	6	5	1	0	0	0	90
Forceps	2	0	0	0	0	0	0	0	0	2
Vacuum	2	0	0	0	0	0	0	0	0	2
Total deliveries	147	107	50	20	12	5	1	0	1	343

Participants reported on which previous pregnancies they had experienced as complicated. This is shown in **Figure 3:2**. Nine women had 3 or more pregnancies that were complicated.

Figure 3:2. Pregnancies reported as complicated



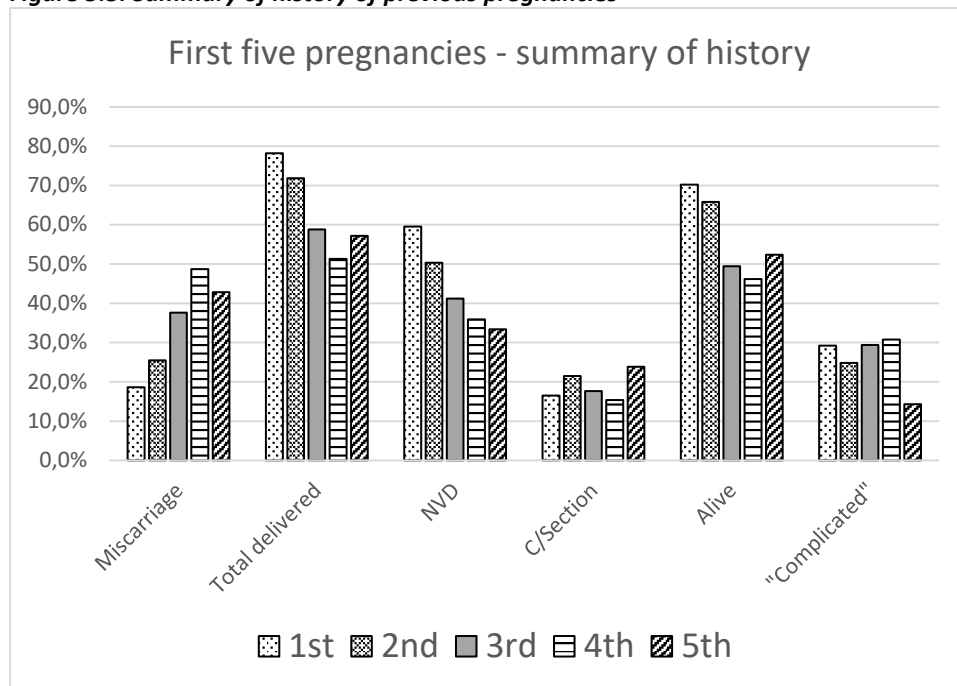
Data recorded regarding the first five pregnancies are summarised in **Table 3:6** and presented graphically in **Figure 3:3**. From these it is possible to compare outcomes across pregnancies, e.g. the percentage of miscarriage increases from first to fourth pregnancy, and the percentage of normal vaginal delivery (NVD) decreases from first to fifth pregnancy.

[As only 15 (3.0%) of all the previous pregnancies were between the sixth and the ninth incidence of pregnancy, these data were not included here.]

Table 3.6. Summary of history of previous pregnancies

History/Pregnancy	1st	2nd	3rd	4th	5th
Miscarriage	18,6%	25,5%	37,6%	48,7%	42,9%
Total delivered	78,2%	71,8%	58,8%	51,3%	57,1%
NVD	59,6%	50,3%	41,2%	35,9%	33,3%
C/Section	16,5%	21,5%	17,6%	15,4%	23,8%
Alive	70,2%	65,8%	49,4%	46,2%	52,4%
"Complicated"	29,3%	24,8%	29,4%	30,8%	14,3%

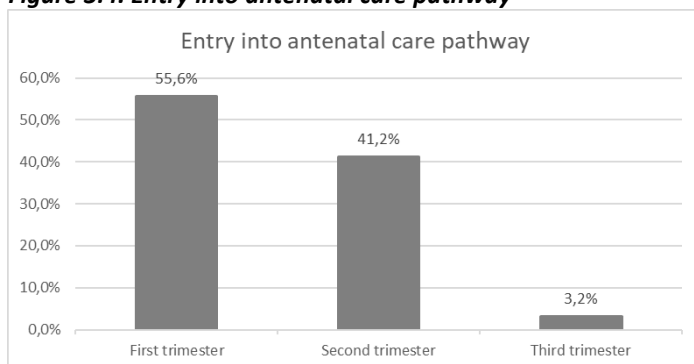
Figure 3.3. Summary of history of previous pregnancies



3.2.6 Entering the antenatal care (ANC) pathway

A hundred and twenty-three of the women (55.6%) who participated in the study booked before 14 weeks, 91 (41.2%) booked from 14 weeks to 28 weeks, while 7 (3.2%) booked or were admitted as an emergency after 28 weeks (see **Figure 3:4**).

Figure 3:4. Entry into antenatal care pathway



Eighty-two percent of the women (181) booked at or before 20 weeks, in time for a fetal anomaly scan.

3.2.7 Understanding of own health conditions

When questioned about whether they had hypertension, epilepsy, diabetes, TB, cardiac or other conditions, the participants responded as shown in **Table 3:7**. The shaded boxes indicate the numbers where this was the only condition where they answered affirmatively.

Table 3:7. Participants' knowledge of their health conditions

Comorbidity/morbidity	Hypertension	Epilepsy	Diabetes	Cardiac	TB	Other
Hypertension	31	2	10	1		9
Hypertension & Epilepsy						1
Hypertension & Diabetes						3
Hypertension & Other		1				
Epilepsy	2	6				1
Epilepsy & Other	1					
Diabetes	10		32			2
Diabetes & Other	3					
Cardiac	1			10		1
TB						1
Other	9	1	2	1	1	28
	57	10	44	12	1	46

The conditions that were volunteered as "Other" by the participants are summarised in

Table 3:8.

Table 3:8. "Other" conditions reported by participants

Other conditions reported	Number
Asthma	12
Albinism	1
Cervical Intra-epithelial Neoplasia	1
Depression and anxiety	1
Haemophilia Von Willebrands	1
Hemiparesis	1
keratoconus eczema	1
Kidney disease	4
Mastectomy	1
Paraganglioma	1
Polycystic ovary syndrome	2
Previous breast cancer	1
Previous CVA	1
Previous DVT	1
Prolactinaemia	1
Sarcoidosis	1
Sickle cell anaemia	1
Sickle cell carrier	1
Stoma	1
Stroke	1
Suspected liver tumour	1
Thyroid	10

The data taken from the participant's hospital folders regarding conditions and comorbidities are shown in the following section.

3.2.8 Reason for attending Groote Schuur Hospital maternity services

Of the participants interviewed, 87 and 94 were attending Groote Schuur Hospital outpatient clinics in the Department of Medicine for diabetes and hypertension respectively. Ten participants attended outpatient clinics at the hospital for epilepsy, 12 for cardiac disease, and 10 for thyroid disease. Fourteen of the participants had been referred to Groote Schuur Hospital for conditions that arose during the pregnancy.

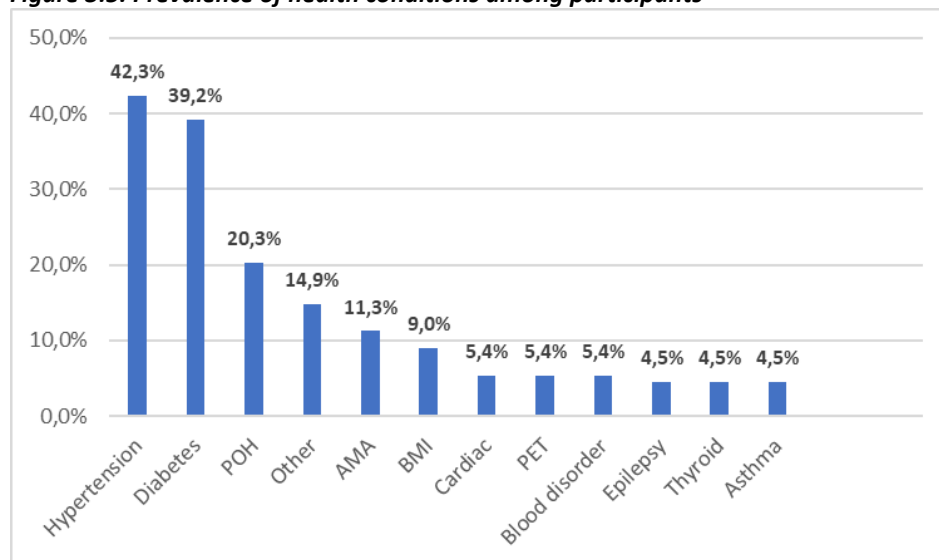
Of the women interviewed, 50% (111) had two or more reasons for attending Groote Schuur Hospital. Thirty-six women (16.2%) had three or more conditions that qualified them for the tertiary and quaternary level of antenatal care available at Groote Schuur Hospital.

Prevalence of health conditions is summarised in **Table 3:9** and **Figure 3:5**. Although “Reason 1” was the primary reason the participant was attending Groote Schuur Hospital, many participants had comorbidities that contributed second and third reasons for attending the hospital. Hypertension and diabetes were the most prevalent primary conditions.

Table 3:9. Prevalence of health conditions among participants

Reason/s for attending GSH	Reason 1	Reason 2	Reason 3	Reason 4	Total	%
Hypertension	64	29	1	0	94	42,3%
Diabetes	87	0	0	0	87	39,2%
Past obstetric history	17	24	4	0	45	20,3%
Other	13	13	7	0	33	14,9%
Advanced maternal age	5	14	6	0	25	11,3%
Obesity (BMI => 50)	6	7	5	2	20	9,0%
Cardiac	8	3	1	0	12	5,4%
Preeclampsia toxemia	2	7	3	0	12	5,4%
Blood disorders	6	3	3	0	12	5,4%
Epilepsy	7	2	1	0	10	4,5%
Thyroid	5	5	0	0	10	4,5%
Asthma	2	4	4	0	10	4,5%
Tuberculosis	0	0	0	0	0	0,0%
Post dates	0	0	0	0	0	0,0%
Totals	222	111	35	2		

Figure 3:5. Prevalence of health conditions among participants



*POH – Past Obstetric History

*AMA – Advanced Maternal Age

*BMI – Body Mass Index (=> 50kg/m²)

*PET – Preeclampsia toxemia diagnosed in index pregnancy

Conditions described as “Other” are summarised in **Table 3:10**. The unshaded areas indicate conditions that had been diagnosed before the participants fell pregnant. The shaded areas indicate conditions that were diagnosed after the participants fell pregnant but not, in all cases, related to the pregnancy, for example viral pneumonia.

Table 3:10. Summary of “Other” reasons for antenatal care at Groote Schuur Hospital

"Other" Reason 1	"Other" Reason 2	"Other" Reason 3
Cholecystitis	Substance abuse	Anxiety
Cervical intra-epithelial neoplasia	Antepartum haemorrhage	Polycystic ovary syndrome
Kidney disease	Bell's Palsy	Premature rupture of membranes
Membranous glomerulonephritis	Paraganglioma (2 cases)	Previous CVA
Obstetric cholestasis	Placenta praevia major	Sarcoidosis
Placenta praevia (2 cases)	Polycystic ovary syndrome	Twin pregnancy
Premature rupture of membranes	Premature rupture of membranes	
Previous breast cancer	Previous CVA (2 cases)	
Seizures	PTSD	
Suspected liver tumour	Renal transplant (2 cases)	
Viral pneumonia	Stoma due to anal abscess	

3.2.9 Attitude to their own health

Two hundred and four (91.9%) of the participants considered themselves healthy and 18 (8.1%) considered themselves unhealthy at the start of the pregnancy.

3.2.10 Pre-pregnancy physician input

Only 24 (10.8%) of the participants had discussed planning a pregnancy with the doctor/s managing the health condition/s for which they had originally been referred to Groote Schuur Hospital. Fifty-one (23.0%) had developed their health condition after falling pregnant.

Table 3:11 summarises the reasons that participants who had no problems pre-pregnancy, had required antenatal care services at Groote Schuur Hospital for conditions that arose after they fell pregnant.

Table 3:11. Conditions that were diagnosed after falling pregnant

After falling pregnant	Reason 1	Reason 2	Reason 3
Diabetes	21	0	0
Hypertension	19	4	2
Thyroid	1	0	0
Preeclampsia toxemia	1	2	1
Blood disorders	1	0	0
Other	8	12	1
Totals	51	18	4

3.2.11 HIV status

Twenty women (9.0%) were known with HIV pre-pregnancy and three (1.4%) were diagnosed with HIV during their pregnancies.

3.2.12 Mental Health

Questions from the Perinatal Mental Health questionnaire and the summary of responses are shown in **Table 3:12**.

Table 3:12. Responses to Perinatal Mental Health Questions

Perinatal Mental Health Questions	Yes N (%)	No N (%)
Is your partner or someone at home sometimes violent towards you?	5 (2.2)	216 (97.7)
Is your partner supportive?	213 (96.4)	8 (3.6)
Are you pleased about this pregnancy?	211 (95.5)	10 (4.5)
Have you had some very difficult things happen in the last year?	49 (22.2)	172 (77.8)
Have you had problems with depression, anxiety or panic attacks before?	27 (12.2)	194 (87.8)

*Responses to Perinatal Mental Health Questions only recorded for 221 participants

Women who scored 2 or more were referred for counselling and support via an established referral pathway to the appropriate support and social services at Groote Schuur Hospital.

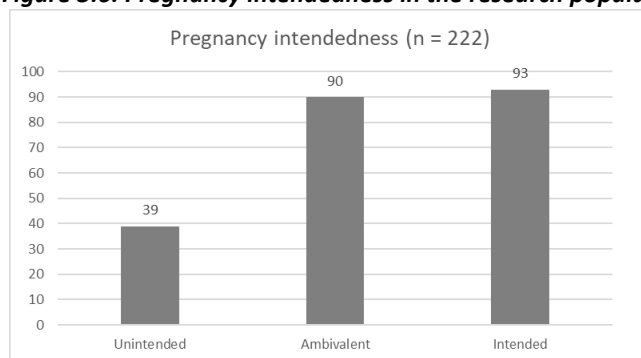
Twenty-one (9.5%) women had a perinatal mental health score of 2 or more and were referred.

3.3 Pregnancy intendedness

3.3.1 LMUP scores and pregnancy intendedness

Thirty-nine (17.6%) of the participants scored 3 or less on the LMUP indicating that their pregnancies were unintended. Ninety (40.5%) scored 4-9 showing that they were ambivalent about their pregnancy. Ninety-three (41.9%) scored 10 or more, demonstrating that their pregnancies were intended. These results are shown in **Figure 3:6**.

Figure 3:6. Pregnancy intendedness in the research population as scored on the LMUP



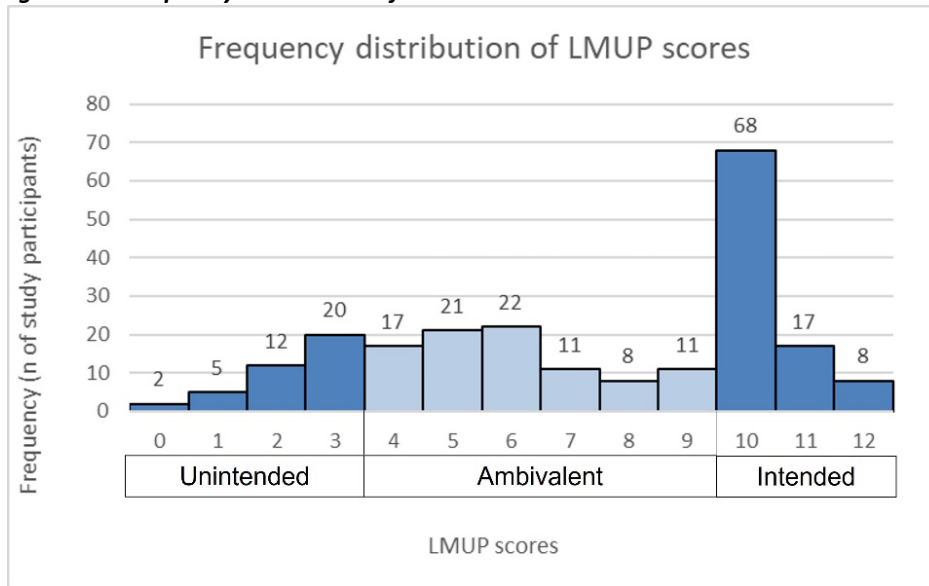
The breakdown of answers to each of the LMUP questions is shown in **Table 3:13**.

Table 3:13. Breakdown of responses to each LMUP question

Question	Answer	Number	Percentage	LMUP Score
In the month you fell pregnant	Not using contraception	192	86,5%	2
	Inconsistently using contraception	8	3,6%	1
	Always used contraception but there was a failure	14	6,3%	1
	Always used contraception	8	3,6%	0
The pregnancy happened	At the right time	107	48,2%	2
	OK but not quite the right time	90	40,5%	1
	At the wrong time	25	11,3%	0
Just before you fell pregnant	I intended to fall pregnant	103	46,4%	2
	My intentions kept changing	42	18,9%	1
	I did not intend to fall pregnant	77	34,7%	0
Just before you fell pregnant	I wanted to have a baby	113	50,9%	2
	I had mixed feelings about having a baby	58	26,1%	1
	I did not want to have a baby	51	23,0%	0
Before you fell pregnant you and your partner	Agreed to the pregnancy	109	49,1%	2
	Discussed having children but no agreement	79	35,6%	1
	Never discussed having children	34	15,3%	0
Health actions before falling pregnant	2 or more actions	14	6,3%	2
	1 action	30	13,5%	1
	No action	178	80,2%	0

The frequency distribution of LMUP scores is shown in **Figure 3:7**.

Figure 3:7. Frequency distribution of LMUP scores.



3.4 Contraception

3.4.1 Knowledge, use and planned use of contraception

When asked about contraceptive use in the month that they fell pregnant, 192 (86.5%) of the women were not using any contraception, eight (3.6%) had occasional contraceptive use, 14 (6.3%) always used contraception but were aware there had been a contraceptive failure, and eight (3.6%) always used contraception and weren't aware of any failure in their chosen method.

When asked to list all the methods of family planning they knew about, the participants volunteered little knowledge of contraceptive methods other than the depot-medroxyprogesterone acetate (DPMA) injectable, the combined oral contraceptive (COC) pill, the sub-dermal implant, and the intrauterine device ("loop") with 76.1%, 26.1%, 13.5% and 4.5% of the women having ever used these respectively. Only three women volunteered

the morning after pill as a form of contraception. No patients volunteered termination of pregnancy (TOP) as contraception.

Thirty-one women (14.0%) volunteered knowledge of the use of male condoms as a contraceptive method. Only one woman planned to rely on the use of male condoms as a contraceptive method after the pregnancy and only one woman gave male sterilisation as the family planning method after her pregnancy.

Thirty-three (33) women were unsure what contraceptive method they planned to use after their pregnancy while ten (10) women planned to use no contraception. Almost a quarter of the women (51) planned to opt for female sterilisation after the pregnancy.

These results are summarised in **Table 3:14**.

Table 3:14. Contraceptive methods that the participants volunteered knowledge of; had been used before by participants; and those they planned to use after the pregnancy

Contraceptive method	Knowledge of N (%)	Used before N (%)	Plan to use N (%)
DMPA injection	214 (96.4)	169 (76.1)	66 (29.7)
Implant	162 (73.0)	30 (13.5)	29 (13.1)
Combined oral contraceptive (COC) ("the pill")	143 (64.4)	58 (26.1)	19 (8.6)
Intrauterine device ("loop")	118 (53.1)	10 (4.5)	13 (5.9)
Female sterilization	46 (20.7)	0 (0.0)	51 (23.0)
Male condom	31 (14.0)	11 (5.0)	1 (0.4)
Male sterilization	17 (7.7)	0 (0.0)	1 (0.4)
Female condom	14 (6.3)	0 (0.0)	0 (0.0)
Abstinence	6 (2.7)	1 (0.4)	0 (0.0)
Mirena hormonal intrauterine system	5 (2.3)	1 (0.4)	2 (0.9)
Progesterone-only pill (POP) ("mini pill")	3 (1.3)	0 (0.0)	0 (0.0)
Morning after pill	3 (1.3)	0 (0.0)	0 (0.0)
Withdrawal method	3 (1.3)	1 (0.4)	0 (0.0)
Diaphragm	2 (0.9)	0 (0.0)	0 (0.0)
Rhythm method	2 (0.9)	0 (0.0)	0 (0.0)
Spermicide	0 (0.0)	0 (0.0)	0 (0.0)
Termination of pregnancy (TOP)	0 (0.0)	0 (0.0)	0 (0.0)
Other (e.g. breastfeeding)	4 (1.8)	1 (0.4)	0 (0.0)
Uncertain	0 (0.0)	1 (0.4)	33 (14.9)
None	1 (0.4)	23 (10.4)	10 (4.5)

3.4.2 Relationship between previous contraceptive use and planned use

Most women (214) had knowledge of the DPMA injection and 169 had used it before. Of the 66 women who planned to use it after the pregnancy, 11 had never used the method previously. The link between previous and planned use of the DPMA injection was not found to be statistically significant. (*Pearson $\chi^2(1)=2.6844$; Pr=0.101*)

There were 58 patients who had previously used the COC pill for contraception. Of these, only 13 planned to use the COC pill in the future. Six of 158 patients who never used the COC pill planned to use the COC pill in the future. The link between previous and planned use of the COC pill was found to be statistically significant and women who had not used this method before were not likely to use it in future. (*Pearson $\chi^2(1)=19.2584$; Pr=0.000*)

There were ten patients who had previously used the intra-uterine device (“loop”) for contraception. Of these, only two planned to use this method in the future. Eleven of 212 patients who had never used the intra-uterine device planned to use it in future. The link between previous and planned use was not found to be statistically significant. (*Pearson $\chi^2(1)=3.8000$; Pr=0.051*)

There were 30 patients who had previously used the implant for contraception. Of these, only 7 planned to use the implant in the future. Twenty-two of 192 patients who had never used the implant planned to use the implant in future. The link between previous and planned use of the implant was not found to be statistically significant. (*Pearson $\chi^2(1)=3.2217$; Pr=0.073*)

Among women who had used the COC pill, the intra-uterine device, and the implant previously, only about one-fifth, 22.4%, 20.0% and 23.3% respectively, planned to use these

methods in future. Of women who had used the DPMA injection previously, 32.5% planned to use this method in future.

3.4.3 Emergency Contraception

Although only three women volunteered knowledge of the “morning after” pill as a contraceptive method, when asked specifically about it 72 (32.4%) of the women knew what emergency contraception was and could describe it. The remaining 150 (67.6%) did not know what emergency contraception was. In response to questioning, four women said that they had used emergency contraception in their current pregnancy.

3.4.4 Relationship between contraceptive use and parity

There was no significant relationship found between parity and past use of the COC pill.

(Pearson $\chi^2(2)=3.4614$; $Pr=0.177$)

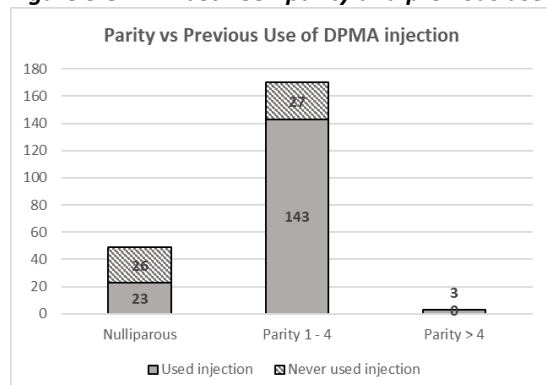
There was also no significant link found between parity and past use of the intra-uterine device (“loop”). *(Pearson $\chi^2(2)=1.0793$; $Pr=0.583$)*

No significant relationship was found between parity and past use of the implant. *(Pearson $\chi^2(2)=1.1347$; $Pr=0.567$)*

A significant link was, however, found between parity and past use of the DPMA injection, with 84.1% of women with parity between one and four having used the injection. *(Pearson $\chi^2(2)=29.8829$; $Pr=0.000$)*

Figure 3:8 illustrates the link between parity and previous use of the DPMA injection.

Figure 3:8. Link between parity and previous use of the DPMA injection



3.5 Relationship between pregnancy intendedness as scored with the LMUP and variables collected in the study

The relationship between pregnancy intendedness as scored by the LMUP and the variables collected is shown in Table 3:15. Significant links were found between the LMUP category (intended; ambivalent; unintended) and four variables: relationship status, gestational age at booking, pre-pregnancy health improvement actions, and pre-pregnancy discussion and agreement with partner about having a baby.

Table 3:15. Statistical relationship between pregnancy intendedness as scored with the LMUP and variables collected in the study

Variable	Statistical significance
Age	$\chi^2(4, N = 222) = 4.75, p = 0.314$
Population group	$\chi^2(8, N = 222) = 14.62, p = 0.067$
Relationship status	$\chi^2(6, N = 222) = 18.87, p = 0.004$
Employment status	$\chi^2(12, N = 222) = 17.93, p = 0.118$
Education level	$\chi^2(6, N = 222) = 4.20, p = 0.650$
Gestational age at interview	$\chi^2(4, N = 222) = 5.95, p = 0.203$
Gestational age at booking	$\chi^2(4, N = 221) = 11.94, p = 0.018$
Parity	$\chi^2(4, N = 222) = 3.81, p = 0.433$
Mental health score	$\chi^2(2, N = 222) = 2.85, p = 0.240$
Previous pregnancy complications	$\chi^2(2, N = 222) = 0.91, p = 0.634$
Pre-pregnancy health improvements	$\chi^2(2, N = 222) = 20.38, p = 0.000$
Pre-pregnancy discussed with doctor	$\chi^2(4, N = 222) = 3.37, p = 0.498$
Pre-pregnancy agreed with partner	$\chi^2(4, N = 222) = 191.51, p = 0.000$

Shaded entries indicate statistically significant relationships

3.5.1 Pregnancy intendedness and relationship status

Only six participants were not in a relationship and of these only one had an intended pregnancy. In the group of 58 who were in a relationship but not cohabiting with their partner, only 27.6% of the pregnancies were intended. Of the 154 participants who were either married or cohabiting with their partners, 49.3% had intended pregnancies.

Of the pregnancies that were intended, 81.7% were those of women who were married or cohabiting with their partner. There was found to be a significant link between relationship status and pregnancy intendedness. *Pearson $\chi^2(6) = 18.8669$; $Pr = 0.004$.*

Table 3:16 shows the breakdown for pregnancy intendedness and relationship status.

Table 3:16. Pregnancy intendedness and relationship status

Relationship status	Unintended N (%)	Ambivalent N (%)	Intended N (%)
Single	2 (5.1)	3 (3.3)	1 (1.1)
In relationship not cohabiting	18 (46.2)	24 (26.7)	16 (17.2)
Cohabiting	18 (46.2)	60 (66.7)	76 (81.7)
Divorced or separated	1 (2.5)	3 (3.3)	0 (0.0)
	39 (100.0)	90 (100.0)	93 (100.0)

3.5.2 Pregnancy intendedness and gestational age at booking ANC visit

A significant link between pregnancy intendedness and gestational age at the booking ANC visit was found. *Pearson $\chi^2(4) = 11.9418$; $Pr = 0.018$.* These results are shown in **Table 3:17**.

Table 3:17. Pregnancy intendedness and gestational age at first ANC visit

Gestational age first ANC visit (N=221)	Unintended N (%)	Ambivalent N (%)	Intended N (%)
0-13 weeks	18 (46.2)	45 (50.6)	60 (64.5)
14-28 weeks	17 (43.6)	42 (47.2)	32 (34.4)
> 28 weeks	4 (10.2)	2 (2.2)	1 (1.1)
	39 (100.0)	89 (100.0)	93 (100.0)

3.5.3 Pregnancy intendedness and pre-pregnancy health improvement

Most of the participants (80.2%) had made no pre-pregnancy preparation to improve their health, while 19.8% did at least one of the following – took folate, decreased smoking and alcohol intake, ate healthier food, sought medical advice, lost weight. The breakdown is shown in **Table 3:18**. There was a strong correlation between intendedness and pre-pregnancy health improvement. *Pearson $\chi^2(2) = 0.3772$; $Pr = 0.000$.*

Table 3:18. Relationship between intendedness and pre-pregnancy health improvement

Pre-pregnancy health improvement	Unintended	Ambivalent	Intended	Total
Engaged in pre-pregnancy health improvements	2,28%	27,27%	70,45%	100,00%
No pre-pregnancy health improvements	21,35%	43,82%	34,83%	100,00%

3.5.4 Pregnancy intendedness and agreement with partner to conceive

One hundred and nine (49.1%) of the participants said that before falling pregnant, they had agreed with their partners to conceive. Thirty-four (15.3%) had not discussed conception with their partners, and 79 (35.6%) had discussed conception with their partners, but it had not been agreed yet. There was a strong correlation between discussion and agreement with partner to conceive and intendedness. *Pearson $\chi^2(4) = 191.5142$; $Pr = 0.000$.*

This relationship is shown in **Table 3:19**.

Table 3:19. Relationship between intendedness and agreement to conceive

Agreement to conceive	Unintended	Ambivalent	Intended	Total
Discussed with partner and agreed	0,00%	16,51%	83,49%	100,0%
Discussed with partner but had not agreed yet	21,52%	75,95%	2,53%	100,0%
Had not discussed with partner	64,71%	35,29%	0,00%	100,0%

3.5.5 Pregnancy intendedness and HIV status

Of the twenty women who were HIV positive and knew their status at the time of falling pregnant, 4 (20%) had unintended pregnancies, 8 (40%) were ambivalent and 8 (40%) had intended pregnancies.

3.5.6 Relationship between pregnancy intendedness and socio-demographic variables

Age

Table 3:20. Pregnancy intendedness and age

Age group	Unintended	Ambivalent	Intended	Total
18 - 24 years old	25,00%	40,62%	34,38%	100,00%
25 - 34 years old	13,27%	38,94%	47,79%	100,00%
> 34 years old	20,78%	42,86%	36,36%	100,00%

Twenty-five percent of participants aged 18-24 had unintended pregnancies. Although this was more than the age groups 25-34 (13.27%) and greater than 34 years old (20.78%), no significant relationship between age and intendedness was found. $Pearson\ chi^2(4) = 4.7485$; $Pr = 0.314$.

Population Group

Table 3:21. Pregnancy intendedness and population group

Population group	Unintended	Ambivalent	Intended	Total
Black South African	17,86%	44,05%	38,09%	100,00%
Mixed ancestry South African	17,27%	43,64%	39,09%	100,00%
White South African	0,00%	0,00%	100,00%	100,00%
Foreign African	16,67%	20,83%	62,50%	100,00%
Foreign non-African	100,00%	0,00%	0,00%	100,00%

No statistically significant link was found between pregnancy intendedness and population group. $Pearson\ chi^2(8) = 14.6163$; $Pr = 0.067$.

Home Language

Table 3:22. Pregnancy intendedness and home language

Home language	Unintended	Ambivalent	Intended	Total
English	20,00%	41,54%	38,46%	100,00%
Afrikaans	12,00%	44,00%	44,00%	100,00%
isiXhosa	18,75%	43,75%	37,50%	100,00%
Other	18,52%	22,22%	59,26%	100,00%

No statistically significant link was found between home language and pregnancy intendedness. $Pearson\ chi^2(6) = 6.3284; Pr = 0.387$.

Education Level

Table 3:23. Pregnancy intendedness and education level

Education level	Unintended	Ambivalent	Intended	Total
No formal schooling	0,00%	0,00%	100,00%	100,00%
Grade 1 - 7	0,00%	25,00%	75,00%	100,00%
Grade 8 - 12	16,97%	40,61%	42,42%	100,00%
Some tertiary-level education	21,15%	42,31%	36,54%	100,00%

No statistically significant link between education category and intendedness was found.

$Pearson\ chi^2(6) = 4.1961; Pr = 0.650$.

Employment Status

Table 3:24. Pregnancy intendedness and employment status

Employment	Unintended	Ambivalent	Intended	Total
Unemployed	15,38%	40,17%	44,45%	100,00%
Self-employed	9,09%	72,73%	18,18%	100,00%
Employed - casual	37,50%	31,25%	31,25%	100,00%
Employed - formal	18,18%	32,73%	49,09%	100,00%
Student	33,33%	66,67%	0,00%	100,00%
Homemaker	25,00%	37,50%	37,50%	100,00%
Grant recipient	0,00%	55,56%	44,44%	100,00%

No statistically significant link between employment status and intendedness was found.

Pearson $\chi^2(12) = 17.9273$; $Pr = 0.118$.

3.5.7 Relationship between pregnancy intendedness and other health and pregnancy-related variables

Gestational age at the time of the interview

Seventy percent (70.0%) of the participants who were interviewed before 14 weeks had intended pregnancies, 46.3% of those interviewed between 14 to 28 weeks had intended pregnancies, and 36.9% who were interviewed after 28 weeks had intended pregnancies.

No significant link was found between gestational age at the time of the interview and pregnancy intendedness. *Pearson $\chi^2(4) = 5.9534$; $Pr = 0.203$.*

Parity

About a third (34.7%) of the participants who were nulliparous had intended pregnancies, 44.7% of those who had parity between one and four had intended pregnancies, and none of participants who had parity greater than four had intended pregnancies. No significant link was found between parity and pregnancy intendedness. *Pearson $\chi^2(4) = 3.8083$; $Pr = 0.433$.*

Mental Health

Of the participants who scored less than two on the Perinatal Mental Health questionnaire, 43.7% had intended pregnancies. Of those who scored two or more on the Perinatal Mental Health Questionnaire, 27.3% had intended pregnancies. No significant link was found between the Perinatal Mental Health score and pregnancy intendedness. *Pearson $\chi^2(2) = 2.8507$; $Pr = 0.240$.*

Previous pregnancy complications

Of the participants who had not experienced previous pregnancy complications, 40.6% had intended pregnancies. Of those who had experienced previous pregnancy complications, 43.8% had intended pregnancies. No significant link was found between the experience of previous pregnancy complications and pregnancy intendedness. *Pearson $\chi^2(2) = 0.9122$; $P = 0.634$.*

Discussed family planning with treating doctor

In the group of participants who had discussed family planning with the doctor who was treating them, 58.3% had intended pregnancies. Of those who had not discussed family planning with the doctor who was treating them, 40.1% had intended pregnancies. Of those who had developed their health condition after falling pregnant, 39.2% had intended pregnancies. No significant link was found between whether family planning had been discussed with the treating doctor and pregnancy intendedness. *Pearson $\chi^2(4) = 3.3682$; $P = 0.498$.*

3.6 Summary of results

Pregnancy intendedness and socio-demographic data for the 222 participants are summarised in **Table 3:25**.

Table 3:25. Summary of pregnancy intendedness and sociodemographic data for the sample population

Variable	Category	N	%
Location of interview	Antenatal clinic	73	32,9%
	Antenatal ward	149	67,1%
Pregnancy intendedness	Unintended (LMUP score 0 - 3)	39	17,6%
	Ambivalent (LMUP score 4 - 9)	90	40,5%
	Intended (LMUP score >10)	93	41,9%
Age	18 - 24 years old	32	14,4%
	25 - 34 years old	113	50,9%
	> 34 years old	77	34,7%
Population group	Mixed Ancestry South African	110	49,5%
	Black South African	84	37,8%
	Foreign African	24	10,8%
	White South African	3	1,4%
	Foreign non-African	1	0,5%
Home language	isiXhosa	80	36,0%
	English	65	29,3%
	Afrikaans	50	22,5%
	Other	27	12,2%
Religion	Protestant	172	77,5%
	Muslim	40	18,0%
	Other	10	4,5%
Relationship status	Cohabit with partner or married	154	69,4%
	Single - in relationship but not cohabiting	58	26,1%
	Single - not in relationship, divorced or separated	10	4,5%
Financial status	Dependent on partner or family member or grants	136	61,3%
	Shares expenses with other members of household	58	26,1%
	Supports self without assistance	28	12,6%
Education	Matriculated (completed Grade 12)	86	38,7%
	Grade 8 - Grade 11	79	35,6%
	Some tertiary education	52	23,4%
	Primary school only	4	1,8%
	No formal education	1	0,5%
Employment status	Unemployed, student, grant recipient or homemaker	140	63,1%
	Employed	82	36,9%

Data relating to health, wellness and obstetric history for the 222 participants are summarised in **Table 3:26**.

Table 3:26. Summary of health, wellness and obstetric history data for the sample population

Variable	Category	N	%
Gestational age at interview	< 28 weeks	79	35,6%
	>= 28 weeks	143	64,4%
Gestational age at booking	< = 20 weeks (in time for fetal anomaly scan)	176	79,3%
	> 20 weeks	40	18,0%
	Unknown	6	2,7%
Gravidity	< 4	139	62,6%
	>= 4	83	37,4%
Parity	<= 2	177	79,7%
	> 2	45	20,3%
Delivered alive (births excluding stillbirth and NND)	Of all first pregnancies (N = 188)	132	70,2%
	Of all second and third pregnancies (N = 234)	140	59,8%
	Of all fourth to ninth pregnancies (N = 75)	36	48,0%
NVD delivery (all births)	Of all first deliveries (N = 147)	112	76,2%
	Of all second and third deliveries (N = 157)	110	70,1%
	Of all fourth to ninth deliveries (N = 39)	27	69,2%
History of miscarriage	Yes	78	35,1%
	No	144	64,9%
Comorbidities	1 serious health condition	111	50,0%
	2 serious health conditions	75	33,8%
	>3 serious health conditions	36	16,2%
HIV status pre-pregnancy	Positive	20	9,0%
	Negative	201	90,5%
	Unknown	1	0,5%
Substance use - smoking	Non-smokers	139	62,6%
	Smokers who continued during pregnancy	34	15,3%
	Smokers who stopped during pregnancy	49	22,1%
Substance use - drinking alcohol	Did not drink alcohol	121	54,5%
	Drank alcohol and continued during pregnancy	7	3,2%
	Drank alcohol and stopped during pregnancy	94	42,3%
Perinatal Mental Health	Scored < 2	201	90,5%
	Scored 2 or more	21	9,5%

Table 3:27 summarises some of the key data collected regarding contraceptive use.

Table 3:27. Summary of key data regarding contraceptive use

Question	Response	N	%
In the month they fell pregnant	Not using contraception	192	86,5%
	Occasionally using contraception	8	3,6%
	Always used contraception but it failed	14	6,3%
	Always used contraception not aware of failure	8	3,6%
Contraceptive methods used before	DPMA injection	169	76,1%
	COC pill	58	26,1%
	Implant	30	13,5%
	Had not used contraception before	23	10,4%
	Male condom	11	5,0%
	IUD "loop"	10	4,5%
	Other methods	5	2,3%
Knowledge of emergency contraception	Participants who volunteered knowledge	3	1,4%
	Participants who knew about it when prompted	72	32,4%

Statistical analysis was done to determine if there was any significant relationship between participants' past use of a contraceptive method and their intention to use it in future.

The link between previous and planned use of the COC pill was found to be statistically significant and those participants who had not used this method before were not likely to use it in future. (*Pearson $\chi^2(1)=19.2584$; Pr=0.000*) No significant link was found between previous and planned use of the DPMA injection, the intrauterine device and the implant.

Among those who had used the COC pill, the intra-uterine device, and the implant previously, only about one-fifth, 22.4%, 20.0% and 23.3% respectively, planned to use these methods in future. Of women who had used the DPMA injection previously, 32.5% planned to use this method in future. A significant link was found between parity and past use of the DPMA injection, with 84.1% of women with parity between one and four having used the injection. (*Pearson $\chi^2(2)=29.8829$; Pr=0.000*)

Statistical analysis was done to determine if there was any significant relationship between pregnancy intendedness as scored on the LMUP and socio-demographic variables, variables relating to participants' health and past obstetric history. **Table 3:28** shows that there was a significant link between four variables and pregnancy intendedness.

Table 3:28. Significant link between variables and pregnancy intendedness

Variable	Statistical significance
Relationship status	$\chi^2 (6, N = 222) = 18.87, p = 0.004$
Gestational age at booking	$\chi^2 (4, N = 221) = 11.94, p = 0.018$
Pre-pregnancy health improvements	$\chi^2 (2, N = 222) = 20.38, p = 0.000$
Pre-pregnancy agreed with partner	$\chi^2 (4, N = 222) = 191.51, p = 0.000$

No significant link was found between pregnancy intendedness and age, population group, employment status, education level, gestational age at the time of the interview, parity, participants' perinatal mental health scores, previous pregnancy complications and whether

the participants had discussed pregnancy with the doctor/s treating them for the conditions which placed them at high risk.

CHAPTER 4: DISCUSSION

4.1 Pregnancy intendedness

Pregnancy intendedness was determined by using the six-item LMUP measure which scores intendedness by scoring in six thematic areas: expressed intentions; desire for motherhood; contraceptive use; pre-conceptual preparations; personal circumstances/timing; and partner influences.⁴⁸

When the LMUP measure was applied in our study to a population of women with recognised high obstetric risk, the LMUP scoring indicated that 41.9% had intended to fall pregnant. The remaining 58.1% were scored as not having intended to fall pregnant or being ambivalent.

The pregnancy intendedness rate of 41.9% found in our study is not consistent with the intendedness rate found in two recent studies applying the LMUP to determine pregnancy intendedness in pregnant women in Cape Town in 2018 and 2019.^{56,57} These studies found that 25% and 20% of pregnancies respectively were intended.

However, the rate of 41.9% is consistent with the intendedness rate of 43% found in a recent study in Malawi and it is also consistent with the intendedness rate of 41% found in a recently published survey of almost 35,000 pregnant women from 1,589 public health facilities selected from all health districts of South Africa.^{58,59}

The intendedness rate is also consistent with figures for the Southern Africa region from a global study which estimates that the percentage of pregnancies that were intended range from 35% to 37% for the period 1990 to 2019.³

While 41.9% of the pregnancies in our study were intended, the remaining 58.1% were either unintended or ambivalent, meaning that they were unplanned. This is close to the pregnancy statistics for South African women aged 15-24 that indicated that 65% of pregnancies were unplanned.²² Although the highest volume of unplanned pregnancies globally are reported to occur in the 20- to 34-year-old age group, our results suggest that the proportion of pregnancies in older women that are unintended may not differ substantially to the proportion of unintended pregnancies for younger women.¹⁹

4.1.1 Relationship between pregnancy intendedness and variables collected in the study

While several studies have indicated that pregnancy intendedness is linked to education status, employment status and relationship status, the only sociodemographic variable that pregnancy intendedness was found to be significantly linked to in our study was relationship status, where 81.7% of participants with a pregnancy that was intended, were married, or cohabiting with a partner.^{1,9,13,14,16-20}

The Malawian study referred to above also found that unplanned pregnancies were more common among unmarried women and suggested that this may be because, in many sub-Saharan African settings, this group may experience more difficulty accessing contraception.⁵⁸

Although it has been reported that there is a second peak of unintended pregnancies among women with high parity or over 40 years of age, our study found no significant link between parity and pregnancy intendedness, or between pregnancy intendedness and age category.^{1,9,17,20}

Pregnancy intendedness was significantly linked to gestational age at the first (“booking”) ANC visit with the majority (64.5%) of women with intended pregnancies having their booking visit in the first trimester. This was corroborated in the study of women in Cape Town cited above where those with lower levels of intendedness were more likely to have entered antenatal care at a later gestational age.⁵⁷

As pre-pregnancy health improvement actions are used to obtain the LMUP, it would be expected that pregnancy intendedness should be significantly linked to pre-pregnancy health improvement actions. Our study found that this was the case and that 70.5% of participants with intended pregnancies had engaged in health improvement actions before falling pregnant. In most cases, health improvement actions were limited to taking folate supplements.

Similarly, the fifth LMUP question regarding discussion and agreement with the partner to conceive, was found to be significantly linked to pregnancy intendedness, supporting the use of this variable as an important indicator.

The very similar finding of intendedness (41%) in the 2019 national antenatal survey of 35,000 pregnant women in South Africa referred to above⁵⁹ was based on answers to only two of the LMUP questions. These were question 3 (“Just before you fell pregnant: I intended to fall pregnant/My intentions kept changing/I did not intend to fall pregnant”), and question 5 (“Before you fell pregnant you and your partner: Agreed to the pregnancy/Discussed having children but no agreement/Never discussed having children”). This reinforces the important link between intendedness and discussion and agreement with the partner.

Pregnancy intendedness was not significantly linked to other variables related to the participants' health: gestational age at the time of interview, parity, the experience of previous pregnancy complications and whether the participant had discussed family planning with the doctor treating her for existing health conditions.

Although it has been found that women suffering from intimate partner violence and depression are more likely to have unintended pregnancies, our study did not find a significant link between pregnancy intendedness and the participant's score on the Perinatal Mental Health questionnaire.^{14,19}

Two-thirds (66.7%) of the participants had two or more serious health conditions (pre-existing or developed during the current pregnancy) that qualified them for the tertiary and quaternary level of antenatal care available at Groote Schuur Hospital, and although 40.1% had previously experienced serious pregnancy complications, no significant link was found between pregnancy intendedness and previous pregnancy complications.

In their response to the Perinatal Mental Health Questionnaire, 95.5% of the participants answered that they were "pleased about this pregnancy". This number is more than double the number of participants (41.9%) indicated by the LMUP as having intended to fall pregnant and, at first glance, may appear to contradict the outcome of the LMUP. However, while the LMUP is an accepted and reliable measure of pregnancy intendedness, it does not measure the degree to which women who had not intended to fall pregnant had come to terms with the pregnancy.

In answer to the second question of the LMUP about the timing of the pregnancy (covering the thematic area: "desire for motherhood"), only 11.3% of the participants responded that

it was at the wrong time.⁴⁸ The remaining 88.7% felt that it was at the right time or, although the timing was not “quite right”, they had accepted it. This number is close to the 95.5% who said they were “pleased about this pregnancy” and reinforces the validity of the LMUP as a tool that takes into account actions or attitudes that may be inconsistent or incongruent with pregnancy intentions and provides “a realistic portrayal of fertility behaviour”.⁴⁸

This is supported by a 2015 qualitative study exploring women's perspectives on pregnancy intention and planning conducted in the United States. The study found that in the case of unplanned pregnancies, women may decide on the acceptability of their pregnancy after they find out that they are pregnant.¹¹

4.2 Attitude to their own health

As stated above, experiencing serious health conditions and previous pregnancy complications did not significantly impact pregnancy intendedness. A study in Malawi found a clear relationship between pregnancy intendedness and self-rated health.⁵⁸ Despite the existing chronic health conditions experienced by a large proportion of our study population, 91.9% of the participants had considered themselves to be in good health when they fell pregnant, possibly as their health conditions were largely under control.

About two-fifths (41%) of the 83 participants who were smokers before they fell pregnant had not stopped smoking. By contrast, only 7% of the 101 women who had consumed alcohol before they fell pregnant continued to do so during the pregnancy and only one had continued using recreational drugs during the pregnancy.

The high percentage who continued smoking may be due to lack of knowledge about the extent to which smoking puts the health of the pregnant mother and that of the fetus at risk, as well as the challenges faced with smoking cessation. The challenges of overcoming high recidivism in smoking cessation is illustrated by a recent South African study involving pregnant women receiving antenatal care at a community clinic. The study showed that providing regular counselling and information on the adverse effects of smoking during pregnancy was not effective in reducing smoking in the population studied.⁶⁰

4.3 Pregnancy intendedness in women at high risk for obstetric complications

The study findings for intendedness are in line with other data for South Africa.⁵⁹ The findings are also in line with data for the Southern Africa region ranging over more than two decades.³ This suggests that intendedness in women at high risk for obstetric complications does not differ from intendedness in women who are at low risk.

A study of pregnant women with diabetes conducted in the United Kingdom in 2010 found that 70% had not been using contraception although 90% had knowledge of the risks of pregnancy and 41% had previous experience of poor pregnancy outcomes, e.g., miscarriage, malformation or stillbirth.⁶¹ The women did not seek pre-pregnancy counselling for various reasons, such as having fallen pregnant faster than anticipated, negative experiences with health professionals and the desire for a “normal” pregnancy.⁶¹

Two more recent studies in Australia and the United States found that while women with cardiac or autoinflammatory diseases were diligent about contraceptive use, the contraceptive patterns for women living with diabetes or asthma was no different to those of women without chronic disease.^{62,63}

These studies suggest that there is a difference in contraceptive use that may be linked to the severity of women's health condition/s. The findings from these studies support our results which suggest that women with pre-existing conditions or chronic diseases who are at high risk for obstetric complications may not seek pre-pregnancy counselling or use contraception any differently to women who are at low risk.

4.4 HIV Status

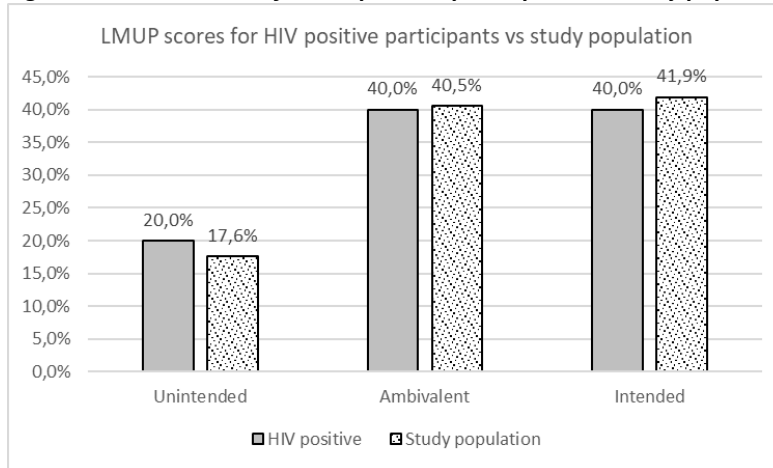
Although the Cape Town Metropole has the highest recorded HIV prevalence in the province with up to 33% in some Sub-Districts, only 9% of participants of our study had been diagnosed as HIV positive pre-pregnancy and 1.4% had been diagnosed during the pregnancy.⁵³

The Botswana study comparing pregnancy intendedness between women who were HIV positive and women who were HIV free, found that HIV infected women were four times more likely not to want children.²⁰ Studies conducted in Cape Town using the LMUP to measure pregnancy intendedness among HIV positive women have found that only about one in five pregnancies were planned and intended.^{56,57} Unplanned pregnancies were linked with elevated viral loads post-partum and poor antiretroviral treatment outcomes.^{56,57}

Although our study population originated from the Cape Town Metropole, it did not reflect the HIV status for the area. The LMUP intendedness scores for the 20 participants who were HIV positive and knew their status at the time of falling pregnant, very closely mirror the LMUP scores for the study population (see **Figure 4:9**). Although the HIV positive participants account for only 9% of the study population, reasons for this similarity to the

LMUP profile for the study population and for the disparity with the findings of the studies cited above could be a subject for further investigation.

Figure 4:1. LMUP scores for HIV positive participants vs study population



4.5 Contraception

Most of the participants had knowledge of modern contraceptive methods. The most well-known were the DPMA injectable, the COC pill, the sub-dermal implant, and the intrauterine device with 76.1%, 26.1%, 13.5% and 4.5% of the women having used these respectively.

Although around 650 million male condoms are dispensed annually through public health facilities in South Africa, only 5% of the participants reported ever using these as a contraceptive method.⁶⁴ The only other method actively involving the male partner is male sterilisation. Although about 8% of the participants knew about it, none of them had experienced it as a contraceptive method and only one was planning to choose it as a future contraceptive method. By contrast, almost a quarter of the participants (23%) said that they would opt for female sterilisation as a family planning method following the index pregnancy.

Unplanned pregnancy is a major reason for TOP and it is estimated that 10% of pregnancies end in unsafe TOP.^{10,31,32} Although the South African Choice on Termination of Pregnancy Act gives women the right and access to safe legal abortion, the triennial report on maternal deaths in South Africa for 2017-2019 indicates that 3.1% of all cases of maternal deaths with avoidable factors were due to unsafe abortion.^{21,27} There are concerns that TOP, especially unsafe TOP, may be viewed as an alternative to other contraceptive methods.⁴⁷ Although it would be expected that the participants in our study would be aware of TOP practices, whether safe and legal, or unsafe and illegal, none of the participants volunteered knowledge of TOP as a contraceptive method, had used it or planned to use it as a contraceptive method in future.⁴⁷

Knowledge about the availability and use of emergency contraception was found to be inconsistent. Initially only three participants volunteered knowledge of the “morning after” pill as a contraceptive method but when asked a direct question about it, 32.4% knew what it was, with four also adding that they had used it in their current pregnancy. It may be that there was some confusion between “the pill”, “the morning after pill” and “emergency contraception”.

A 2021 South African survey of Adolescent Girls and Young Women (AGYW) involving 515 girls and women (age 15 to 24 years) published after research for our study was conducted, provides important data about the knowledge and experience of contraceptive methods in this younger but overlapping age category.⁶⁵ This survey was conducted in six health districts in six provinces in South Africa, and although the women in our study were older than the AGYW survey sample with ages ranging from 17 to 45 years, a comparison of the

experience of four contraceptive methods between the women in this study and those in the AGYW survey provides some useful insights. This comparison is shown in **Table 4:1**.

Table 4:1. Comparison of contraceptive use between this study and the AGYW survey

	This study – have used	This study - will use in future	AGYW survey⁶⁵ - have used
DPMA injection	76%	30%	26%
COC pill	26%	6%	6%
Implant	14%	13%	5%
Male condom	5%	0%	25%

The percentages for contraceptives the participants of our study and the AGYW survey had used in the past are very different. The participants in our study had more experience of using the DPMA injection, the COC pill and the implant, whereas the participants of the AGYW survey had more experience of using male condoms.

In our study, while 76% of the participants had used the DPMA injection in the past, only 30% planned to use it in future. To some extent this reduction could be because 23% of the participants planned to use female sterilisation as their future contraceptive method.

The reduction in number of women wanting to use the DPMA injection after their pregnancy may also be linked to ambivalence and concerns about the DPMA injection highlighted in the AGYW survey. Although 70% of the AGYW survey respondents believed that the DPMA injection was an effective contraceptive method, only 58% believed that it was safe and 65% thought that it “changed the body in unpleasant ways”. The same survey found that only 48% and 22% respectively thought that the COC pill and implant were safe to use.⁶⁵

The AGYW survey provides useful insights into the contraceptive choices of younger women. Recent studies in South Africa and Uganda provide further confirmation that motivation to use contraception is hindered by rumours, misconceptions, and sociocultural norms, especially among younger women.^{66,67} A systematic review of qualitative studies to determine barriers and motivators for contraceptive use among younger women in Sub-Saharan Africa indicated that supportive social networks, accessibility, and affordability were important motivators, while social norms, myths and the negative attitude of health professionals were significant barriers.⁶⁸

The South African AGYW survey indicated that perceived negative attitudes of health workers were a barrier to contraceptive access along with embarrassment at being seen at a family planning clinic, inconvenient clinic hours and the feeling that their partner would not want them to get contraceptives.⁶⁵ The survey also identified not liking the side effects of contraceptives, forgetting to take them, running out of pills or injection identified as barriers to contraceptive use.⁶⁵

The age profile of participants in our study (average age 31.34 years) may have influenced their future choice of contraceptive method. For example, rather than rejecting DPMA because of the fears about safety and “body changes” expressed by younger women, older women may opt for alternatives to DPMA such as the Mirena hormonal intrauterine system, the intrauterine device, the implant, or bilateral tubal ligation, because they feel more comfortable with these methods than the younger women do.

A recent study of 433 women aged 18 to 49 years conducted in public healthcare facilities in Kwazulu-Natal found that the factors associated with contraceptive use differed significantly between young and older women.⁶⁹ This suggests that age and experience may influence

future choices of contraceptive methods. This study also found that women who had experienced one or more previous pregnancies (planned or unplanned) were more likely to use contraception.⁶⁹

While our study found no significant association between parity and past use of the COC pill, the loop or the implant, a significant link was found between parity and past use of the DPMA injection with over 84% of the participants with parity between one and four having used this method.

It is worth noting that while only 5% of the participants interviewed at Groote Schuur Hospital said that they had used the male condom as a contraceptive method, 25% of the AGYW respondents had used male condoms, suggesting that this contraceptive method may be used more often by younger, single women. The AGYW survey findings suggested that, were it not for barriers to access, male condom usage could be much higher with as many as 89.1% of the respondents saying they would use male condoms if they were freely available. Barriers to accessing male condoms included lack of privacy and confidentiality when getting them, negative attitudes of health workers, embarrassment, cost, having to travel far, and being worried that someone they knew would see them.⁶⁵

Low condom usage may also be due to condoms being associated with the prevention of HIV and STIs rather than with contraception. This is supported by the motivation for condom use given by 66.7% of the AGYW respondents that using a male condom “reduces an HIV-negative person’s risk of getting HIV by 70% or more when they have sex with someone who has HIV”. However, 15.2% said that their current or most recent partner would become angry when asked to use a condom.⁶⁵

Among participants in our study, 86.5% said that they were not using any contraception in the month that they fell pregnant. If 41.9% were intending to fall pregnant this means that the other 44.6% were not using contraception despite not wanting to fall pregnant.

The AGYW survey, conducted from 2019 to 2022, reported several reasons for not using or inconsistent use of contraceptives including not being able to get contraceptives because of Covid-19 and the lockdown with 22.5% of the respondents saying that they could not get the contraceptives they needed because of COVID-19 and the lockdown.⁶⁵

The interviews for our study were conducted between 29 July 2019 and 12 January 2021, with a break in recruitment from 8 March 2020 to 20 August 2020 due to Covid-19 restrictions on research. It is possible that participants interviewed between 20 August 2020 and 12 January 2021 who had not used contraceptives but had not intended to fall pregnant, may have faced the same or similar challenges, despite being older on average than the AGYW respondents.

It is also possible that participants in our study who had not used any contraception simply had not planned to use any contraception, despite not planning to fall pregnant. Although 96% of the respondents in the AGYW survey did not have plans to fall pregnant “now or in a few years”, 31% did not plan to use any contraception in the immediate future.⁶⁵

When asked whether they would use contraception after their current pregnancy, only 4.5% of the participants interviewed at Groote Schuur Hospital said that they would not be using any contraception after the pregnancy and only 14.9% were uncertain if they would.

The low number of participants in our study who said they would use no contraception in future (4.5%) compared to the relatively high number of respondents in the AGYW survey

who did not plan to use contraception (31%) may be because participants of our study were older and, after their current pregnancy, presumably would have greater parity on average than the younger women in the AGYW survey.

CHAPTER 5: CONCLUSION

The primary objective of this study was to utilise the LMUP in an antenatal population of women with perceived high obstetric risk attending the specialist run antenatal clinics at Groote Schuur Hospital, or admitted to the antenatal wards at this hospital, to determine pregnancy intendedness in this obstetric population.

The secondary objectives of this study were to assess contraceptive knowledge and use in the targeted obstetric population, to assess knowledge, understanding and use of emergency contraception, and to document the socio-demographic characteristics of this high-risk group of pregnant women.

The study findings for intendedness are in line with other data for South Africa. The findings are also in line with data for the Southern Africa region ranging over more than two decades³. This suggests that intendedness in women at high risk for obstetric complications does not differ from intendedness in women who are at low risk.

The study supports earlier validation of the use of the LMUP in a South African setting⁵¹ and demonstrates that the tool allows different positions to be represented, for example attitudes that may appear incongruent with pregnancy intentions.

Socio-demographic characteristics for this group were documented and, apart from relationship status, were not found to be significantly linked with pregnancy intendedness.

The study found that knowledge of contraceptive methods was predominantly limited to four methods: DPMA injectable, the COC pill, the sub-dermal implant, and the “loop” intrauterine device. Knowledge about emergency contraception appeared to be inconsistent. Only three women volunteered it as a contraceptive method but when

questioned specifically about it, a larger number of them said they knew about it and four said that they had used it in their current pregnancy.

Challenges to effective family planning in South Africa and the rest of Sub-Saharan Africa are well known, with cultural attitudes about fertility, beliefs about contraceptive safety and male partners' lack of support for contraceptive use clearly implicated.

What this study highlights is that against the backdrop of these challenges, women who are already medically at risk are placed in situations of even more severe risk.

There is a need for the reorganization and scale up family planning services so that they are not isolated from general and specialist practice, are gender-inclusive and become an integral part of the management of chronic disease.

Attention should be paid to finding ways of making it easier for women, especially unmarried women, or women without partners, to access suitable contraceptive methods, without shame or embarrassment, from healthcare workers who are respectful and supportive.

The results of our study indicate that there is a need for the promotion of knowledge and education of women, and their partners where women are in relationships, regarding:

1. The risks associated with pregnancy when the woman is living with chronic health conditions;
2. The risks associated with pregnancy when the woman has had previous pregnancy complications;
3. How to recognise a possible unplanned pregnancy so that the woman can enter the antenatal care pathway as early as possible;

4. How contraceptive methods work, their relative efficacy and side effects to counter popular beliefs about “unpleasant body changes”; and
5. How the emergency contraceptive method works and how to access it.

Clinical implications

Unintended pregnancies in women with existing health problems pose increased risk to this already high-risk population while also placing their unborn children at risk. Many of these pregnant women must be hospitalized for some part of their pregnancy, often requiring intensive care and/or surgical intervention.

Caring for women in high-risk pregnancies places a substantial burden on health systems in terms of resources required. For resource-constrained health services in developing countries, this may mean cutting costs for other essential services, resulting in further increases in the burden of disease.

Suggestions for Future Research

There are studies that suggest that the quality of contraceptive counselling received by women with medical comorbidities may be inadequate, that women’s contraceptive choice and use could be influenced by living with a chronic disease, and that women at high risk may be more likely to become pregnant unintentionally.^{61,62,63,70} However, the body of knowledge on these topics is limited and more research is needed to better understand family planning attitudes and choices among women at high risk. The outcomes of this research can then be used to inform policies and protocols for the improved ongoing care of these women.

Future research should compare contraceptive choices and use by women at high risk medically with those of women at low risk, examine the quality of pre-pregnancy and postpartum family planning counselling received by these women, as well as explore new ways to reorganise and scale up family planning services in a way that takes into account chronic illness and medical risk, and includes intimate partners in decision-making about contraception, wherever it is to the woman's benefit.

Strengths and Limitations

This small cross-sectional descriptive study has some limitations. It looked at a relatively small sample of women exclusively from the urban Cape Town area. There was an unavoidable break in the study for six months due to Covid-19 restrictions and after the break it may have been useful to ask if participants had not been able to access contraception because of the lockdown.

The strength of the study is in the wide range of data collected through the questionnaire, including the level of detail about contraceptive knowledge and use, past obstetric history and the perinatal mental health factors.

The study reinforces the need for multidisciplinary care in pregnancy.

REFERENCES

1. Palamuleni ME, Adebawale AS. Prevalence and Determinants of Unintended Pregnancies in Malawi. *African Population Studies* 2014; 28(1): 551-563.
2. Sedgh G, Singh S, Hussain R. Intended and Unintended Pregnancies Worldwide in 2012 and Recent Trends. *Studies in Family Planning* 2014; 45(3): 301-314.
3. Bearak J, Popinchalk A, Ganatra B, Moller A, Tunçalp O, Beavin C, et al. Unintended pregnancy and abortion by income, region, and the lethal status of abortion: estimates from a comprehensive model for 1990-2019. *The Lancet Global Health* 2020; 8(9): E1152-E1161.
4. Lamina MA. Prevalence and Determinants of Unintended Pregnancy Among Women in South-Western Nigeria. *Ghana Medical Journal* 2015; 49(3).
5. Omwago MO, Khasakhala AA. Factors influencing Couples' Unmet Need for Contraception in Kenya. *African Population Studies* 2006; 21(2).
<https://aps.journals.ac.za/pub/article/download/342/308> [Accessed 5 April 2022]
6. South Africa: Demographic and Health Survey 1998. Released April 2002.
<https://dhsprogram.com/publications/publication-fr131-dhs-final-reports.cfm>
[Accessed 1 July 2022]
7. South Africa: Demographic and Health Survey 2016. Released January 2019.
<https://dhsprogram.com/publications/publication-fr337-dhs-final-reports.cfm>
[Accessed 1 July 2022]
8. Chauke I. Unwanted pregnancy – a review of contraception. *Professional Nursing Today* 2007; 11(1): 10-14.
9. Eliason S, Baiden F, Yankey BA, Awusabo-Asare K. Determinants of unintended pregnancies in rural Ghana. *BioMed Central Pregnancy and Childbirth* 2014; 14(261).
<https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/1471-2393-14-261> [Accessed 5 April 2022]
10. Singh S, Sedgh G, Hussain R. Unintended Pregnancy: Worldwide Levels, Trends, and Outcomes. *Studies in Family Planning* 2010; 41(4): 241-250.
11. Borrero S, Nikolajski C, Steinberg JR, Freedman L, Akers AY, Ibrahim S, et al. "It just happens": A qualitative study exploring low-income women's perspectives on pregnancy intention and planning. *Contraception* 2015; 91(2): 150-156.

12. Lakha F, Glasier A. Unintended pregnancy and use of emergency contraception among a large cohort of women attending for antenatal care or TOP in Scotland. *Lancet* 2006; 368: 1782-1787.
13. Font-Ribera L, Perez G, Salvador J, Borrell C. Socioeconomic Inequalities in Unintended Pregnancy and TOP Decision. *Journal of Urban Health* 2007; 85(1): 125-135.
14. Haffejee F, O'Connor L, Govender N, Reddy P, Sibiyi MN, Ghuman S, et al. Factors associated with unintended pregnancy among women attending a public health facility in KwaZulu Natal, South Africa. *South African Family Practice* 2018; 60(3): 79-83.
15. Polis C, Bradley S, Bankole A, Onda T, Croft T, Singh S. Contraceptive Failure Rates in the Developing World: An Analysis of Demographic and Health Survey Data in 43 Countries. Guttmacher Institute March 2016 Report.
<https://www.guttmacher.org/report/contraceptive-failure-rates-in-developing-world#:~:text=In%20the%20developing%20world%2C%2074,proportion%20of%20all%20unintended%20pregnancies> [Accessed 8 May 2022]
16. Mchunu G, Peltzer K, Tutshana B, Seutlwadi L. Adolescent pregnancy and associated factors in South African youth. *African Health Sciences* 2012; 12(4): 426-434.
17. Cheng D, Schwarz EB, Douglas E, Horon I. Unintended pregnancy and associated maternal preconception, prenatal and postpartum behaviours. *Contraception* 2009; 79: 194-198.
18. Mannien J, Klomp T, Wiegers T, Pereboom M, Brug J, de Jongh A, et al. Evaluation of primary care midwifery in the Netherlands: design and rationale of a dynamic cohort study (DELIVER). *BioMed Central Health Services Research* 2012; 12: 69.
<https://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-12-69> [Accessed 5 April 2022]
19. Wellings K, Jones KG, Mercer CH, Tanton C, Clifton S, Datta J, et al . The prevalence of unplanned pregnancy and associated factors in Britain: findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *Lancet* 2013; 382: 1807-1816.
20. Mayondi GK, Kathleen W, Morroni C, Moyo S, Ajibola G, Diseko M, et al. Unintended pregnancy, contraceptive use, and childbearing desires among HIV-infected and HIV-uninfected women in Botswana: a cross-sectional study. *BioMed Central Public Health* 2016; 16: 44.
<https://bmcpublikealth.biomedcentral.com/articles/10.1186/s12889-015-2498-3> [Accessed 5 April 2022]

21. Buchmann EJ, Mensah K, Pillay P. Legal Termination of Pregnancy Among Teenagers and Older Women in Soweto. SAMJ 2002; 92(9): 729-731.
22. Seutlwadi L, Peltzer K, Mchunu G. Contraceptive use and associated factors among South African youth (18 – 24 years): A population-based survey. SAJOG 2012; 18(2): 43-47.
23. Peer N, Morojele N. Factors associated with contraceptive use in a rural area in Western Cape Province. SAMJ 2013; (103) 6: 406-412.
24. Gipson JD, Koenig MA, Hindin MJ. The Effects of Unintended Pregnancy on Infant, Child, and Parental Health: A Review of the Literature. Studies in Family Planning 2008; 39(1): 18-38.
25. Glasier A, Gulmezoglu AM, Schmid GP, Moreno CG, Van Look PFA. Sexual and reproductive health: a matter of life and death. Lancet 2006; 368(9547): 1595-1607.
26. Hall J, Barrett G, Mbwana N, Copas A, Malata A, Stephenson J. Understanding pregnancy planning in a low-income country setting: validation of the London measure of unplanned pregnancy in Malawi. BioMed Central Pregnancy and Childbirth 2013; 13:200.
<https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/1471-2393-13-200> [Accessed 1 July 2022]
27. Moodley J, Fawcus S, Pattinson, R. Saving Mothers 2017-2019: Seventh triennial report on confidential enquiries into maternal deaths in South Africa. [Received report directly from Professor Sue Fawcus]
28. South African Maternal, Perinatal, and Neonatal Health Policy. June 2021.
<https://www.knowledgehub.org.za/system/files/elibdownloads/2021-06/SA%20MPNH%20Policy%2023-6-2021%20signed%20Web%20View%20v2.pdf>
[Accessed 8 May 2022]
29. WHO, UNICEF, UNFPA and The World Bank, Trends in Maternal Mortality: 2000 to 2017 WHO, Geneva, 2019. <https://data.unicef.org/topic/maternal-health/maternal-mortality/> [Accessed 8 May 2022]
30. The Millennium Development Goals Report 2015.
http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20%28July%201%29.pdf [Accessed 5 April 2022]
31. World Health Organization. Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2008. 6th edition.
http://apps.who.int/iris/bitstream/handle/10665/44529/9789241501118_eng.pdf;js

[essionid=1E5EC12EF8DDD906AEA46AE680104A6C?sequence=1](#) [Accessed 5 April 2022]

32. Rees H, Katzenellenbogen J, Shabodien R, Jewkes R, Fawcus S, McIntyre J, et al. The epidemiology of incomplete abortion in South Africa. National Incomplete Abortion Reference Group. South African Medical Journal 1997 Apr; 87(4): 432-7.
33. Sedgh G, Henshaw S, Singh S, Ahman E, Shah IH. Induced TOP: estimated rates and trends worldwide. Lancet 2007; 370(9595): 1338-1345.
34. Choice on Termination of Pregnancy Act, 1996. Government Gazette No. 17602, Act No. 92, 1996.
https://www.parliament.gov.za/storage/app/media/ProjectsAndEvents/womens_month_2015/docs/Act92of1996.pdf/ [Accessed 5 April 2022]
35. South African Government News Agency. SA's illegal abortion rate alarmingly high. July 2018. <https://www.sanews.gov.za/south-africa/sas-illegal-abortion-rate-alarmingly-high> [Accessed 5 April 2022]
36. Kay BJ, Katzenellenbogen J, Fawcus S, Karim SA. An analysis of the cost of incomplete TOP to the public health sector in South Africa – 1994. SAMJ 1997; 87(4): 442-447.
37. Brown HC, Jewkes R, Levin J, Dickson-Tetteh, Rees H. Management of incomplete abortion in South African public hospitals. International Journal of Obstetrics and Gynaecology 2003; 110: 371–377.
38. Blaauw D, Penn-Kekana M. Maternal Health. In: Fonn S, Padarath A, editors. South African Health Review 2010. Durban: Health Systems Trust; 2010. 3-28.
<http://www.hst.org.za/publications/South%20African%20Health%20Reviews/SAHR2010.pdf> [Accessed 5 April 2022]
39. Qian X, Tang S, Garner P. Unintended pregnancy and induced TOP among unmarried women in China: a systematic review. BioMed Central Health Services Research 2004; 4: 1. <https://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-4-1> [Accessed 5 April 2022]
40. Thorp Jr JM, Hartmann KE, Shadigan E. Long-Term Physical and Psychological Health Consequences of Induced TOP: A Review of the Evidence. The Linacre Quarterly 2005; 72(1): 44-69.
41. Fergusson DM, Horwood LJ, Ridder EM. TOP in young women and subsequent mental health. Journal of Child Psychology and Psychiatry 2006; 47(1): 16-24
42. Le HH, Connolly MP, Yu J, Pinchevsky Y, Steyn PS. The public health and economic consequences of unintended pregnancies in South Africa. Healthcare in Low-resource Settings 2015; 3:5258: 24-30.

43. Lince-Deroche N, Fetters T, Sinanovic E, Devjee J, Moodley J, Blanchard K. The costs and cost effectiveness of providing first-trimester, medical and surgical safe abortion services in KwaZulu-Natal Province, South Africa. PLoS ONE 2017; 12(4): e0174615. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0174615> [Accessed 5 April 2022]
44. Bradley SEK, Casterline JB. Understanding Unmet Need: History, Theory, and Measurement. Studies in Family Planning 2014; 45(2): 123-150.
45. Hall JA, Barrett G, Copas A, Stephenson J. London Measure of Unplanned Pregnancy: guidance for its use as an outcome measure. Patient Related Outcome Measures 2017; 9: 43-56.
46. Kabagenyi A, Jennings L, Reid A, Nalwadda G, Ntozi J, Atuyambe L. Barriers to male involvement in contraceptive uptake and reproductive health services: a qualitative study of men and women's perceptions in two rural districts in Uganda. Reproductive Health 2014; 11:21. <http://www.reproductive-health-journal.com/content/11/1/21> [Accessed 8 May 2022]
47. Harries J. TOP services in South Africa: Challenges and barriers to safe TOP care: Health care providers' perspectives. Thesis for Degree of Doctor of Philosophy. <https://open.uct.ac.za/handle/11427/10623> [Accessed 5 April 2022]
48. Barrett G, Smith SC, Wellings K. Conceptualisation, development, and evaluation of a measure of unplanned pregnancy. Journal of Epidemiology and Community Health 2004; 58: 426-433.
49. Morof D, Steinauer J, Haider S, Liu S, Darney P, Barrett G. Evaluation of the London Measure of Unplanned Pregnancy in a United States Population of Women. PLoS ONE 2012; 7(4). <https://doi.org/10.1371/journal.pone.0035381> [Accessed 5 April 2022]
50. Barrett G, Wellings K. What is a 'planned' pregnancy? Empirical data from a British study. Social Science and Medicine 2002; 55: 545-557.
51. Tshikosi, R. Validation of the London Measure of Unplanned Pregnancy. University of Cape Town: Thesis for Master of Medicine (MMed) in Obstetrics and Gynaecology. 2018.
52. Western Cape Government. Regional Development Profile of the City of Cape Town 2013. https://www.westerncape.gov.za/assets/departments/treasury/Documents/Socio-economic-profiles/dc0_city_of_cape_town_ke_6_dec_2013.pdf [Accessed 5 April 2022]

53. Draper B, Pienaar D, Parker W, Rehle T. Recommendations for Policy in the Western Cape Province for the prevention of Major Infectious Diseases, including HIV/AIDS and Tuberculosis. Human Sciences Research Council 2007.
https://www.westerncape.gov.za/text/2007/6/cd_volume_3_major_infectious_diseases_hiv_t.doc [Accessed 5 April 2022]
54. Western Cape Department of Health: Provincial Health Data Centre.
55. McKenna A, Abrahams Z, Marsay C, Honikman S. Screening for Common Perinatal Mental Disorders in South Africa: The need, the research, the tool. Let's do it. Perinatal Mental Health Project, Alan J. Flisher Centre for Public Mental Health, University of Cape Town. November 2017 https://pmhp.za.org/wp-content/uploads/SouthAfricanScreeningAdvisory_PMHP.pdf [Accessed 1 July 2022]
56. Iyun V, Brittain K, Phillips TK, le Roux S, McIntyre JA, Zerbe A et al. Prevalence and determinants of unplanned pregnancy in HIV-positive and HIV-negative pregnant women in Cape Town, South Africa: a cross-sectional study. *BMJ Open* 2018; 8:e019979. <https://doi:10.1136/bmjopen-2017-019979>
57. Brittain K, Phillips TK, Zerbe A, Abrams EJ, Myer L. Long-term effects of unintended pregnancy on antiretroviral therapy outcomes among South African women living with HIV. *AIDS* 2019; Apr 1;33(5):885-893.
<https://doi:10.1097/QAD.0000000000002139>
58. Yeatman S, Smith-Greenaway E. Birth Planning and Women's and Men's Health in Malawi. *Stud Fam Plann* 2018; Jul 11:10.1111/sifp.12060.
<https://doi:10.1111/sifp.12060>
59. Woldesenbet S, Kufa T, Lombard C, Manda S, Morof D, Cheyip M, et al. The prevalence of unintended pregnancy and its association with HIV status among pregnant women in South Africa, a national antenatal survey, 2019. *Scientific Reports* 2021; 11:23740. <https://doi.org/10.1038/s41598-021-03096-z> [Access 1 July 2022]
60. Odendaal HJ, Brink LT, Nel DG, Carstens E, De Jager M, Potter M, et al. Smoking and drinking habits of women in subsequent pregnancies after specific advice about the dangers of these exposures during pregnancy. *South African Medical Journal* 2020; Oct 28;110(11):1100-1104. <https://doi:10.7196/SAMJ.2020.v110i11>
61. Murphy HR, Temple RC, Ball VE, Roland JM, Steel S, Zill-E-Huma R, et al. East Anglia Study group for Improving Pregnancy Outcomes in women with Diabetes (EASIPOD). Personal experiences of women with diabetes who do not attend pre-pregnancy care. *Diabet Med* 2010; Jan;27(1):92-100. <https://doi:10.1111/j.1464-5491.2009.02890.x>

62. Harris ML, Egan N, Forder PM, Bateson D, Sverdlow AL, Murphy VE, et al. Patterns of contraceptive use among young Australian women with chronic disease: findings from a prospective cohort study. *Reproductive Health* 2022; Dec;19(1):1-4.
63. M Phillips-Bell GS, Sappenfield W, Robbins CL, Hernandez L. Chronic Diseases and Use of Contraception Among Women at Risk of Unintended Pregnancy. *Journal Womens Health (Larchmt)* 2016; Dec;25(12):1262-1269.
<https://doi:10.1089/jwh.2015.5576>
64. Massyn N, Day C, Ndlovu N, Padayachee T, editors. *District Health Barometer 2019/20*. Durban: Health Systems Trust; December 2020.
<https://www.hst.org.za/publications/District%20Health%20Barometers/DHB%202019-20%20Complete%20Book.pdf> [Accessed 1 July 2022]
65. Jonas K, Bergh K, Mathews C, Duby Z, Govindasamy D, Fowler C, et al. HERStory 2 Study: Process evaluation of the combination HIV prevention intervention for adolescent girls and young women (AGYW), Global Fund grant period 2019 to 2022. Health Systems Research Unit, South African Medical Research Council.
<https://www.samrc.ac.za/sites/default/files/attachments/2021-07-27/HERStory%20Process%20evaluation%20Record%20Review.pdf> [Accessed 1 July 2022]
66. Jonas K, Duby Z, Maruping K, Harries J and Mathews C. Rumours, myths, and misperceptions as barriers to contraceptive use among adolescent girls and young women in South Africa. *Front. Reprod. Health* 2022; 4:960089.
<https://doi:10.3389/frph.2022.960089>
67. Potasse M A, Yaya S. Understanding perceived access barriers to contraception through an African feminist lens: a qualitative study in Uganda. *BMC Public Health* 2021; 21, 267. <https://doi.org/10.1186/s12889-021-10315-9>
68. Bain LE, Amu H, Tarkang E. Barriers and motivators of contraceptive use among young people in Sub-Saharan Africa: A systematic review of qualitative studies. *PLoS ONE* 2021; 16(6): e0252745. <https://doi.org/10.1371/journal.pone.0252745>
69. Hlongwa M, Kalinda C, Peltzer K, Hlongwana K. Factors associated with modern contraceptive use: a comparative analysis between younger and older women in Umlazi Township, KwaZulu-Natal, South Africa. *Women's Health (Lond)* 2021; Jan-Dec; 17:17455065211060641. <https://doi:10.1177/17455065211060641>
70. Jaruamornjit Y, Kaewrudee S, Sothornwit J. Differences in postpartum contraceptive choices and patterns following low- and high-risk pregnancy. *Contraception* 2022; Mar;107:52-57. <https://doi:10.1016/j.contraception.2021.10.012>

ix) Appendices

APPENDIX 1: The London Measure of Unplanned Pregnancies (LMUP)

The LMUP score was calculated using the scoring shown below. The numeric scores were grouped into the three categories:

- 1 = Unintended (total score 0 – 3)
- 2 = Ambivalent (total score 4 – 9)
- 3 = Intended (total score => 10)

London Measure of Unplanned Pregnancies (LMUP) scale (Unintended 0-3; Ambivalent 4-9; Intended =>10)

Question	Answer	Score
In the month you fell pregnant	Not using contraception	2
	Inconsistently using contraception or always used contraception but there was a failure	1
	Always used contraception	0
The pregnancy happened	At the right time	2
	OK but not quite the right time	1
	At the wrong time	0
Just before you fell pregnant	I intended to fall pregnant	2
	My intentions kept changing	1
	I did not intend to fall pregnant	0
Just before you fell pregnant	I wanted to have a baby	2
	I had mixed feelings about having a baby	1
	I did not want to have a baby	0
Before you fell pregnant you and your partner	Agreed to the pregnancy	2
	Discussed having children but no agreement	1
	Never discussed having children	0
Health actions ^a before falling pregnant	2 or more actions	2
	1 action	1
	No action	0

^a Health actions include cessation or reduction in use of teratogenic substances such as caffeine, nicotine, alcohol, and prescription or illicit drugs, taking folate and multivitamin supplementations, and seeking medical advice.

APPENDIX 2: Scoring for Perinatal Mental Health Questions

Perinatal Mental Health Questions	Score
Is your partner or someone at home sometimes violent towards you?	No = 0; Yes = 1
Is your partner supportive?	No = 1; Yes = 0
Are you pleased about this pregnancy?	No = 1; Yes = 0
Have you had some very difficult things happen in the last year?	No = 0; Yes = 1
Have you had problems with depression, anxiety or panic attacks before?	No = 0; Yes = 1

Each of the questions is scored 1 when the participant's response of "Yes" or "No" confirms the presence of the indicator, e.g. "No, my partner is not supportive" is scored 1.

Women who scored 2 or more were referred for counselling and support via an established referral pathway to the appropriate support and social services at Groote Schuur Hospital.

APPENDIX 3: Patient Information Leaflet (English)

Pregnancy Intendedness in a High Risk Obstetric Population in a Tertiary Hospital

HREC Ref: 597/2016

Patient Information Leaflet and Consent Form



The Reproductive Medicine Unit of the Department of Obstetrics and Gynaecology at the University of Cape Town is doing a study among women attending the antenatal clinic or admitted to the antenatal ward at Groote Schuur Hospital. We invite you to participate in this study.

Reasons for doing the study:

This research aims to understand the pregnancy preparation of women seen in the antenatal clinic and antenatal wards of Groote Schuur Hospital. We wish to get information of your knowledge and use of contraception, and to have a better understanding of how you manage planning for pregnancy and pregnancy itself.

We also want to know what you did to make certain that any existing medical conditions you may have are well managed.

We are using a questionnaire which was developed in London and has been used around the world as well as in Cape Town. In addition we will ask some questions about you, your general health and your pregnancy.

Possible Participants in the study:

- Women willing to be interviewed who are attending the Groote Schuur Hospital Antenatal Clinics or admitted to Antenatal wards
- Women aged 18 and older

Questionnaire:

You will be asked to complete a questionnaire with the help of our research team. This will include questions about your pregnancy and contraception. The team is not involved in your management at the hospital and your care will not be affected whether or not you participate in the study.

This study will be explained to you by one of our team members. If you are interested in taking part in the study you will be interviewed in private in English, Afrikaans or isiXhosa. The interview will last about 15 minutes and will not delay your clinic visit or care in the ward. We will take particular care that you are not inconvenienced in any way.

The decision to take part in the study is entirely voluntary and you may choose to withdraw at any stage.

Risk for participating:

We are aware that you may find some questions sensitive. If you experience any distress or any particular anxieties the interviewer will refer you for suitable counselling within our service.

Benefit:

While you will not benefit directly from the study your participation will help us to identify challenges experienced by women with medical problems in pregnancy and help us improve our service delivery.

Confidentiality:

All information will be entered into a password protected database which will only be accessed by the study team.

Distribution of Research Findings:

The investigators will present the research to the Department of Obstetrics and Gynaecology of the University of Cape Town and to the Department of Health in the Western Cape. The study will be submitted to the University of Cape Town for completion of a postgraduate degree.

If you have any further queries regarding this study please contact:

Investigator

Dr D. B. Whistance

University of Cape Town Department of Obstetrics and Gynaecology
dbwhistance@gmail.com
073 265 2063

Supervisor

Prof Z. Van der Spuy

University of Cape Town Department of Obstetrics and Gynaecology
Zephne.vanderspuy@uct.ac.za
021 406 6150
If necessary leave a message and we will return your call

If you wish to discuss this research with someone who is not involved in the study you may contact:

Dr Khatija Kadwa

Consultant in Obstetrics and Gynaecology at Groote Schuur Hospital
Phone 021 404 6020 and leave a message with Mrs Koks and Dr Kadwa will return your call
Email: khatijak@gmail.com

Professor Marc Blockman

Chairperson of the Human Research Ethics Committee
Faculty of Health Sciences
Phone: 0214066338
Email: marc.blockman@uct.ac.za

APPENDIX 4: Patient Information Leaflet (Afrikaans)

Swangerskap Bedoelings in 'n Hoë Risiko Verloskundige bevolking in 'n Tersiêre Hospitaal

Pasient Inligtings blaadjie

HREC Ref: 060/2019



Die Reproductiewe Medisyne Eenheid in die Departement van Verloskunde en Ginekologie aan die Universiteit van Kaapstad doen 'n studie onder vrouens wat die voorgeboorte kliniek bywoon of wat opgeneem is in die voorgeboorte saal by Groote Schuur Hospitaal. Ons nooi jou uit om deel te neem aan die studie.

Redes vir die studie:

Hierdie navorsing mik om swangerskap voorbereiding van vrouens, wat gesien word in die voorgeboorte kliniek en in die voorgeboorte saal in Groote Schuur Hospitaal, te verstaan. Ons hoop om inligting te kry oor jou kennis en gebruik van voorbehoedmiddels en om beter te verstaan hoe jy beplan het vir swangerskap en hoe jy nou die swangerskap bestuur.

Ons wil ook weet hoe jy seker gemaak het dat enige mediese toestande wat jy het goed beheer is.

Ons gebruik 'n vraelys wat in Londen ontwerp is en wat al wêreldwyd gebruik is, insluitend hier in Kaapstad. Daar is ook 'n paar vrae oor jouself, jou algemene gesondheid en jou swangerskap.

Moontlike Deelnemers in die studie:

- Vrouens wat bereid is om deel te neem in die onderhoud en wat die Groote Schuur Hospitaal Voorgeboorte Klinieke bywoon of wie opgeneem is in die Voorgeboorte saal
- Vrouens 18 jaar en ouer

Vraelys:

Jy sal gevra word om 'n vraelys te voltooi met die hulp van ons navorsingspan. Dit sal vrae insluit oor jou swangerskap en voorbehoedmiddels. Die span is nie betrokke by jou behandeling by die hospitaal nie en jou deelname in die studie sal nie jou mediese sorg beïnvloed nie.

Hierdie studie sal aan jou verduidelik word deur een van die span lede. As jy belangstel om deel te neem in die studie, sal 'n onderhoud in privaat gedoen word in Engels, Afrikaans of isiXhosa. Die onderhoud sal min of meer 15 minute duur en dit sal nie jou kliniek besoek of sorg in die saal vertraag nie. Ons sal seker maak dat jy op geen manier ongerief ervaar nie.

Die besluit om deel te neem in die studie is heeltemal vrywillig en jy mag kies om op enige stadium te onttrek.

Risiko van deelname:

Ons is bewus dat party vrae moontlik sensitief mag wees. As jy enige angs of spesifieke nood ervaar, sal jy verwys word vir geskikte beradings.

Voordele:

Terwyl jy nie direk sal baat vind by jou deelname in die studie nie, sal dit ons help om uitdagings te identifiseer wat vrouens met mediese probleme in swangerskap ervaar en ook om ons dienslewering te verbeter.

Vertroulikheid:

Alle inligting sal ingesit word in 'n wagwoord beskermde databasis. Net die navorsingspan het toegang tot die inligting.

Verspreiding van Navorsing Resultate:

Die ondersoekbeamptes sal die navorsing voordra aan die Departement van Verloskunde en Ginekologie aan die Universiteit van Kaapstad en aan die Departement van Gesondheid van die Weskaap. Die studie sal ingegee word aan die Universiteit van Kaapstad as deel van 'n nagraade graad.

As jy enige verdere vrae het kontak asseblief Dr Whistance

Ondersoeker

Dr D. B. Whistance

Universiteit van Kaapstad Departement van Verloskunde en Ginekologie
dbwhistance@gmail.com
073 265 2063

Toesighouer

Prof Z. Van der Spuy

Universiteit van Kaapstad Departement van Verloskunde en Ginekologie
Zephne.vanderspuy@uct.ac.za
021 406 6150
Indien nodig, los asseblief 'n boodskap en ons sal jou terug bel

As jy die navorsing wil bespreek met iemand wat nie betrokke is by die studie nie, kontak asseblief:

Dr Khatija Kadwa

Specialist in Verloskunde en Ginekologie by Grootte Schuur Hospitaal
Bel 021 404 6020 en los 'n boodskap by Mev Koks en Dr Kadwa sal jou kontak.
Epos: khatijak@gmail.com

Professor Marc Blockman

Human Research Ethics Committee
UCT Faculty of Health Sciences
Tel: 0214066338
Epos: marc.blockman@uct.ac.za

APPENDIX 5: Patient Information Leaflet (isiXhosa)

PREGNANCY INTENDEDNESS IN A HIGH RISK OBSTETRIC POPULATION IN A TERTIARY HOSPITAL

UVAVANYO MALUNGA NEZIZATHU ZOKUKHULELWA KOO MAMA ABASEBUNGICIPHEKWE NI NGENXA YEZIGULO ABANAZO.

*IPHETSHANA ELINENKCUKACHA NEFOMU YESIVUMELWANO SOKUTHATHA INXAXHEBA
KOLUVAVANYO*

Icandelo LezokuBelekisa nenzululwazi ngeziGulo zabaseThyini kwiDyunivesithi yaseKapa lenza uvavanyo malunga noo mama abakhulelweyo , ingakumbi abo bahlukuhlisa apha kwisibhedlele saseGroote Schuur nabo balaliswe khona bekhulelwe kwelicandelo. Siyakumema uthathe inxaxheba koluvavanyo.

ISIZATHU SOLUVAVANYO

Ngokwenza oluvavanyo , sizama ukuqonda malunga nokuba, ngawaphi amanyathelo oye uwathathe njengomntu okhulelweyo ukuzilungiselela usuku lokubeleka. Sinqwenela ukuqonda ngolwazi lwakho ngeendlela zokucwangcisa yaye sazi nokuba , uye uthathe manyathelo waphi na ukuqinisekisa ukuba wena nomtwana wakho nihlala nikhuselekile.

Sikwanqwenela nokwazi ukuba – njengomama okhulelweyo, nonazo ezinye izigulo ezinokufaka wena , nosana lwakho ebungciphekweni – ngawaphi amanyathelo owathathileyo ukuqinisekisa ukuba ezizigulo azikongameli njegokuba ukhulelwe.

Sizokusebenzisa iphetshana elinemibuzo . Lemibuzo iqulunqwe eNgilane kodwa isetyenziswa elizweni jikelele nalapha eKapa. Sizokucela nenkcukacha ngawe, impilo yakho, izigulo onazo nesimo sakho njengokuba ukhulelwe.

ABANTU ESIBADINGAYO KOLUVAVANYO

- OoMama abasinika imvume yokuvavanywa , yaye behlukuhlisa apha kwisibhedlele sase Groote Schuur
- OoMama abaneminyaka eli-18 nagaphezulu.

IMIBUZO

Sizakucela uphendule imibuzo embalwa . Le mibuzo iquka okulandelayo: Isimo sakho njegokuba ukhulelwe, iinkcukaena malunga neendlela zokucwangcisa oye uzisebenzise . Sifuna ukwazisa ukuba , ukuthatha inxaxheba koluvavanyo alunampembelelo kwindlela ozakuthi ophathwe ngayo njengesigulane kwelicandelo kwaphela. Siliqela elenza oluvavanyo asinagalelo limbi kwindlela ozakuphathwa ngayo esibhedlele, ungaxhalabi.

Iqela eliqhuba oluvavanyo luzakukucacisela ngokuphangaleleyo ngalo , liphendule nemibuzo onayo. Ukuba unomdla wokuthatha inxaxheba kulo, sizakubuza imibuzo ngesiNgesi, isiXhosa okanye nge Afrikaans – kuxhomekeka kulwimi olukhethayo. Le mibuzo izakubuzwa bucala. Ithata imizuzu eli-15. Sizakuqinisekisa ukuba awulibaziseki ekliniki ngokuthatha inxaxheba koluvavanyo. Isigqibo sokuthatha inxaxheba sixhomekeke kuwe yaye unalo nelungelo lokuyeka nanini na.

IINGXAKI ZOKUTHATHA INXAXHEBA KOLUVAVANYO

Siyayazi, eminye imibuzo ingafumaneka imasikizi, kodwa sizokuqinisekisa ukuba uye uthunyelwe kugqirha wezengqondo wokuziva udakumbile ngenxa yalemibuzo.

ONOKUZUZA NGOKUTHI UTHATHE INXAXHEBA

Eneneni, akukho ozakuzuza kodwa : Ngokuthatha inxaxheba , usanceda siqonde iinzima eziye zifunyanwe ngoomama abanezigulo bekhulelwe.Sitsho sikwazi ukunceda yaye siphuhlise izinga loncedo esibanika lona.

UKUQINISEKISA UKUBA IINKCUKACHA ZAKHO AZAZIWA NGABANYE ABANTU

Sizakuqinisekisa ukuba, iinkcukacha zakho zihlala zikhuselekile ngokuthi sisebenzise ubuxhakaxhaka beekhompuyutha .Liqela loluvavanyo kuphela elinemvume yokuzisebenzisa , hayi omnye umntu.

UKWAZISA ULUNTU NGEZIPHUMO ZOLUVAVANYO

Siliqela, siza kuqulunqa ixwebhu ngoluvavanyo esizakuthi silinike iCandelo lokuBelekisa nenzululwazi ngeziGulo zabantu baseTyhini kwiDyunivesithi yaseKapa nakwiCandelo lwezeMpilo eNtshona Koloni. Eli xwebhu sizakulingenisela njengo vavanyo kwizifundo zobugqi apha eDyunivesithi.

Ukuba unayo eminye imibuzo malunga noluvavanyo, tsalela ababantu balendelayo :

Umqulunqi woluvavanyo

uGqirha D.B Whistance

KwiDyunivesithi yaseKapa

iCandelo lokuBelekisa nezululwazingezi Gulo zabantu baseTyhini

imeyile: dbwhistance@gmail.com

uMhloli wakhe :

uNjingalwazi Z Van Der Spuy

KwiDyunivesithi yaseKapa

iCandelo lokuBelekisa nenzululwazi ngezi Gulo zabantu baseTyhini

imeyile: zephne.vanderspuy@uct.ac.za

inombolo: 021 406 6150

Ungashiya nomyalezo xa kunyanzelekile, sizakuzama ukubuyela kuwe.

Ukuba unqwenela ukuqonda kumntu ongathathi nxaxheba koluvavanyo qhagamshelana no:

Gqhirha Khatija Kadwa

Ingcali kwiCandelo lokuBelekisa nenzululwazingezi Gulo zabantu baseTyhini

Inombolo: **021 404 6020** ungawushiya nomyalezo kuNkosazana Koks, uGqirha Kadwa uzakuphendula.

Imeyile: khatijak@gmail.com

Njigalwazi Marc Blockman

uSihlalo we – Human Research Ethics Committee kwiCandelo lezeMpilo

inombolo: 021 5066 338

imeyile: marc.blockman@uct.ac.za

APPENDIX 6: Patient Consent Form (English)

Pregnancy Intendedness in a High Risk Obstetric Population in a Tertiary Hospital

HREC Ref:

Consent Form



I agree to participate in this study, which is being conducted by the research team within the Reproductive Medicine Unit in the Department of Obstetrics and Gynaecology.

The study has been fully explained to me by a member of the research team in a language of my choice and the study's risks, benefits and intent has been explained to me. I understand that this research aims to understand the needs of women who have medical problems during their pregnancy attending the antenatal clinic and wards of Groote Schuur Hospital.

I understand that I will complete a questionnaire which asks questions about my pregnancy, my general health, and my knowledge of contraception. I will give information about any medical conditions I may have and what I did to prepare myself for the pregnancy or manage these during the pregnancy.

The study will involve a private interview where a member of the research team will assist me in completing the questionnaire in English, Afrikaans or isiXhosa.

My identity will be kept anonymous and I have been informed that the results of the study will be submitted as part requirement for a postgraduate degree to the University of Cape Town.

I understand that the members of the research team are not directly involved in my clinical care. I further understand that deciding not to participate or choosing to withdraw from the study will not affect my medical care.

My decision to take part is entirely voluntary and I understand that I may withdraw at any time. There will be no payment to me for my participation in the study.

For questions please contact Dr Douglas Whistance, Prof van der Spuy or Dr Kadwa using the contact details listed earlier.

Name of Participant :

Signature of Participant:

Name of Interviewer:

Signature of Interviewer:

Name of Witness:

Signature of Witness:

Date: / /

APPENDIX 7: Patient Consent Form (Afrikaans)

Swangerskap Bedoelings in 'n Hoë Risiko Verloskundige bevolking in 'n Tersiêre Hospitaal

Toestemmings vorm

HREC Ref: 060/2019



Ek stem in om deel te neem in die studie, wat deur die navorsing span in die Reproductiewe Medisyne Eenheid in die Departement van Verloskunde en Ginekologie gedoen word.

Die studie is in vol aan my verduidelik deur 'n lid van die navorsingspan in 'n taal van my keuse. Die studie se risiko's, voordele en bedoeling is aan my verduidelik. Ek verstaan dat hierdie navorsing poog om die behoeftes te verstaan van vrouens wat mediese problem beleef gedurende hul swangerskap, en wie die Voorgeboortesorg kliniek en die sale van Groote Schuur Hospitaal bywoon.

Ek verstaan dat ek 'n vraelys sal voltooi. Dit behels vrae vra oor my swangerskap, my algemene gesondheid en my kennis oor voorbehoedmiddels. Ek sal inligting gee oor enige mediese toestand wat ek het, hoe ek myself voorberei het vir die swangerskap en hoe die mediese toestande behandel word.

Die studie bestaan uit 'n privaat onderhoud waar 'n lid van die navorsingspan my sal help om die vraelys in Engels, Afrikaans of isiXhosa te voltooi.

My identiteit sal anoniem bly en ek is ingelig dat die resultate van die navorsing sal ingegee word as 'n vereiste vir 'n nagraadse graad aan die Universiteit van Kaapstad.

Ek verstaan dat die lede van die navorsingspan nie direk betrokke is by my kliniese sorg nie. Ek verstaan ook dat as ek besluit om nie deel te neem nie of om te onttrek van die studie dat dit nie my mediese sorg sal beïnvloed nie.

My toestemming om deel te neem aan die studie is vrywillig en ek verstaan dat ek enige tyd mag onttrek.

Daar is geen betaling vir my deelname in die studie nie.

Vir enige vrae kontak Dr Douglas Whistance, Prof van der Spuy of Dr Kadwa deur die besonderhede hierbo gelys.

Naam van Deelnemer :

Handtekening van Deelnemer:

Naam van Onderhoudsvoeder :

Handtekening van Onderhoudsvoeder:

Naam van Getuie :

Handtekening van Getuie:

Datum: / /

APPENDIX 8: Patient Consent Form (isiXhosa)

IFOMU YESIVUMELWANO

Ndinika imvume yokuthatha inxaxheba koluvavanyo lwenziwa liqela kwiCandelo leZokubelekisa . Olovavanyo lucacisiwe kum ngumqulunqi ngolwimi lwam yaye ndicaciselwe ngeengxaki ,izinto endizakuthi ndizizuze, nesizathu soluvavanyo.Ndiyaqonda ukuba oluvavanyo luzama ukuqonda iinzima ezifunyanwa ngoomama abakhulelweyo benezinye izigulo apha kwisibhedlele saseGroote Schuur.

Ndiyaqonda ukuba ndizakube ndiphendula imibuzo emalunga nokukhulelwa kwam, impilo yam nolwazi lwam ngeendlela zokucwangcisa. Ndithembisa ukunixelela ngezigulo endinazo nendlela endizilungiselele ngayo ukuqinisekisa ukuba ndisempilweni njengomntu okhulelweyo.

Oluvavanyo luquka imibuzo ezakubuzwa bucala, ngomye weliqela yaye uzakundincedisa ndiyiphendule lemibuzo ngesiNgesi, isiXhosa okanye iAfrikaans .linkcukacha ngam zizokugcinwa zifihlakele yaye umqulunqi undixelele ukuba iziphumo zoluvavanyo zizakupapashwa kwixwebhu njengovavanyo kwizifundo zobugqi kwiDyunivesithi yaseKapa.

Ndiyaqonda ukuba iqela loluvavanyo aluzokuthatha nxaxheba ekulandeleleni nakunyango lwam njengomama okhulelweyo. Ndiyayazi nokuba –isigqibo sokuba ndingaqhubekeki ngoluvavanyo asinampembelelo kwimpatho yam njengesigulane kwaphela.

Ndiyayazi nokuba isigqibo sokuthatha inxaxheba koluvavanyo sisuka kum, ndingakhetha ukuyeka nanini na koluvavanyo. Ndiyaqonda nokuba akukho mvuzo ndizakuwufumana ngokuthatha inxaxheba kulo.

Ukuba unemibuzo, qhagamshelana noGqirha Douglas Whistance, uNjingalwazi van der Spuy okanye uGqirha Kadwa (sebenzisa iinombolo ezingentla)

IGAMA NEFANI YAM :

TYIKITYA :

IGAMA LOMNTU OBUZA IMIBUZO:

TYIKITYA :

INGQINA :

TYIKITYA :

UMHLA : / /

APPENDIX 9: Questionnaire (English)

**Pregnancy Intendedness in a High Risk Obstetric Population
in a Tertiary Hospital**

HREC Ref:

QUESTIONNAIRE



Patient Name & Number: _____

Study Number: _____

Date of Interview: _____

Interviewer: _____

Antenatal clinic

Antenatal ward

17/12/2018

BACKGROUND INFORMATION:

PLACE OF INTERVIEW: GROOTE SCHUUR HOSPITAL ANTENATAL CLINIC/WARD

1. Date of Birth	
2. Age (in years and months)	
3. Population Group (1) Black South African (2) Coloured (3) White (4) Asian (5) Foreign African (please specify) _____ (6) Foreign Non- African (please specify) _____ (7) Other (please specify) _____	
4. Home Language (1) English (2) Afrikaans (3) Xhosa (4) Other (please specify) _____	
5. Language of Interview (1) English (2) Afrikaans (3) Xhosa	
6. Religion (1) Muslim (2) Protestant (3) Roman Catholic (4) Christian Other (please specify) _____ (5) Hindu (6) Jewish (7) Other (please specify) _____	

RELATIONSHIP STATUS AND SUPPORT

<p>7. Marital Status</p> <ul style="list-style-type: none"> (1) Single, not in a relationship (2) Single in a stable relationship but not cohabiting (3) Single and cohabiting (4) Married (5) Divorced (6) Separated (7) Widowed 	
<p>8. From whom do you receive financial support? (Mark all that apply)</p> <ul style="list-style-type: none"> (1) Self (2) Partner/ Husband (3) Parent/s (4) Sibling/s (5) Grandparents (6) Other Relative/s (please specify) _____ (7) Friend/s (8) Disability Grant (9) Child Support Grant (10) No Financial Support (11) I don't know (12) Other (please specify) _____ 	
<p>9. Who is responsible for most of the financial decision-making in your home? (Mark all that apply)</p> <ul style="list-style-type: none"> (1) Self (2) Partner/Husband (3) Parent/s (4) Sibling/s (5) Grandparents (6) Other Relative/s (please specify)_____ (7) Friend/s (8) I don't know (9) Other (please specify)_____ 	

Socio-Economic Status

<p>10. Highest Level of Education</p> <p>(1) No formal schooling (9) Grade 8 (2) Grade 1 (10) Grade 9 (3) Grade 2 (11) Grade 10 (4) Grade 3 (12) Grade 11 (5) Grade 4 (13) Grade 12 (6) Grade 5 (14) Tertiary (incomplete) (7) Grade 6 (15) Tertiary (complete) (8) Grade 7 (16) Unknown</p>	
<p>11. Employment Status</p> <p>(1) Unemployed (2) Self Employed (3) Employed (Casual) (4) Employed (Formal) (5) Student/Scholar (6) Housewife (7) Disability or Other Grant (8) Other (please specify) _____</p>	
<p>12. What is your job?</p> <p>(1) N/A – unemployed (2) Housewife (3) Domestic Worker (4) Labourer (5) Factory Worker (6) Office Worker (7) Professional (8) Other (please specify) _____ (9) Student/Scholar</p>	

HABITS

<p>13. Do you smoke cigarettes?</p> <ul style="list-style-type: none">(1) YES(2) NO, never(3) STOPPED before I fell pregnant(4) STOPPED when I found out I was pregnant	
<p>14. If YES how many cigarettes a day?</p> <ul style="list-style-type: none">(1) 0 -5(2) 5-10(3) 10-20(4) >20(5) Other (please specify) _____(6) N/A	
<p>15. Do you consume alcohol?</p> <ul style="list-style-type: none">(1) YES(2) NO, never(3) STOPPED before I fell pregnant(4) STOPPED when I found out I was pregnant	
<p>16. Do you use any recreational drugs?</p> <ul style="list-style-type: none">(1) YES(2) NO, never(3) STOPPED before I fell pregnant(4) STOPPED when I found out I was pregnant	

Obstetric History

17. Gravity					
18. Parity					
19. Miscarriages					
20. Ectopic					
21. TOPs					
Outcome of Each Pregnancy (please enter numbers)					
21. Year	22. Gestation	23. Outcome of Pregnancy 1.Miscarriage 2.Ectopic 3.Alive 4.SB 5.NND 6.TOP	24. Baby weight 1. weight 2. unknown 3. N/A	25. Mode of Delivery 1.NVD 2.Forceps 3.Vacuum 4. C/S 5. N/A	26. Complications 1.YES 2.NO 3.Can't remember
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

PRESENT OBSTETRIC HISTORY

27. EDD:	
28. Gestational age at present	
29. Present Estimated Gestational Age (1) LNMP (2) Early Ultrasound (3) Late Ultrasound (4) Booking palpation (5) Other (specify) _____	

<p>30. Gestational Age at booking for ANC:</p> <p>(1) Gestational age (2) Don't know (3) N/A</p>	
<p>31. Reason for attending the GRH HRANC:</p> <p>(1) Diabetes/IGT (2) Hypertension (3) AMA (4) BMI (5) Growth disorders (IUGR/macrosomia) (6) Post dates (7) Poor obstetric history (8) Other: _____</p>	

Medical History

<p>32. Hypertension</p> <p>(1) Yes (2) No (3) Don't know</p>	
<p>33. Epilepsy</p> <p>(1) Yes (2) No (3) Don't know</p>	
<p>34. Diabetes</p> <p>(1) Yes (2) No (3) Don't know</p>	
<p>35. Cardiac</p> <p>(1) Yes (2) No (3) Don't know</p>	
<p>36. TB</p> <p>(1) Yes (2) No (3) Don' know</p>	

<p>37. Healthy</p> <p>(1) Yes</p> <p>(2) No</p>	
<p>38. Other (Specify) _____</p> <p>(1) Yes</p> <p>(2) No</p> <p>(3) Don't know</p>	
<p>39. Did you discuss planning a pregnancy with the doctor managing the condition that you were referred to Groote Schuur for?</p> <p>(1) Yes</p> <p>(2) No</p> <p>(3) Developed in pregnancy</p>	

PERINATAL MENTAL HEALTH SCORE

Please fill in the codes 0 or 1 for each of the following 5 questions to make a total score out of 5

40.	Is your partner or someone at home sometimes violent towards you? 0=no, 1=yes	
41.	Is your partner supportive? 0=yes, 1=no	
42.	Are you pleased about this pregnancy? 0=yes, 1=no	
43.	Have you had some very difficult things happen in the last year? 0=no, 1=yes	
44.	Have you had problems with things like depression, anxiety or panic attacks before? 0=no, 1=yes	
	Interviewer to please add the scores for questions 39 - 43 to give a score out of five.	

45. Please list all the methods of family planning which you KNOW ABOUT? [SPONTANEOUS INPUT]			
46. I will now ask you to list all methods you have ever USED. [SPONTANEOUS INPUT]			
47. Which method are you PLANNING ON USING AFTER THIS PREGNANCY? [SPONTANEOUS INPUT]			
METHOD	45. KNOW ABOUT	46. USED BEFORE	47. PLANNED FUTURE USE
a] Pill (COC)			
b] Mini pill (POP)			
c] Injection (Depo)			
d] Loop (IUCD)			
e] IUS (Mirena)			
f] Cap/Diaphragm			
g] Male condom			
h] Female Condom			
i] Long term implants			
j] "Rhythm" method			
k] Withdrawal method			
l] Abstinence			
m] Spermicides			
n] Female sterilisation			
o] Male sterilisation			
p] Morning after pill			
q] Termination/abortion			
r] none of the above			
s] other (please specify)			
t] uncertain			

CIRCUMSTANCES OF PREGNANCY : LONDON MEASURE OF UNPLANNED PREGNANCY (LMUP)

Section A : Your Pregnancy

PLEASE SELECT THE MOST RELEVANT TO YOU RELATING TO THE CURRENT OR RECENT PREGNANCY

		SCORE
<p>48. In the month you became pregnant (Please tick the statement which most applies to you):</p> <p>(1) I/we were not using birth control</p> <p>(2) I/we were using birth control but not on every occasion</p> <p>(3) I/we always used birth control but knew that the method had failed (i.e broke, moved, came off, came out, not worked, not taken) at least once</p> <p>(4) I/we always used birth control</p>		
<p>49. In terms of becoming a mother (first time or again), I feel that my pregnancy happened at the... (Please tick the statement, which most applies you)</p> <p>(1) Right time</p> <p>(2) Ok, but not quite right time</p> <p>(3) Wrong time</p>		
<p>50. Just before I became pregnant (Please tick the statement which most applies to you)</p> <p>(1) I intended to get pregnant</p> <p>(2) My intentions kept changing</p> <p>(3) I did not intend to get pregnant</p>		SCORE
<p>51. Just before I became pregnant (Please tick the statement which most applies to you)</p> <p>(1) I wanted to have a baby</p> <p>(2) I had mixed feelings about having a baby</p> <p>(3) I did not want to have a baby</p>		

<p>52. In the next question, we ask about your partner – this might be (or have been) your husband, a partner you live with, a boyfriend, or someone you’ve had sex with once or twice. (Please tick the statement which most applies to you)</p> <p>Before I became pregnant</p> <p>(1) My partner and I had agreed that we would like me to be pregnant</p> <p>(2) My partner and I had discussed having children together, but had not agreed for me to get pregnant</p> <p>(3) We never discussed having children together</p>		
<p>53. Before you became pregnant, did you do anything to improve your health in preparation for pregnancy? (Please tick all that apply)</p> <p>(1) Took folic acid</p> <p>(2) Stopped or cut down smoking</p> <p>(3) Stopped or cut down drinking alcohol</p> <p>(4) Ate more healthily</p> <p>(5) Sought medical/health advice</p> <p>(6) Took some other action, please describe</p> <p>_____</p> <p>(7) I did not do any of the above before my pregnancy.</p>		
TOTAL		

Section B: Emergency Contraception

<p>54. If you were using contraception in the month that you became pregnant, which method or methods were you using? (Tick all that apply)</p> <ul style="list-style-type: none"> (1) Combined oral contraceptive pill (2) Mini-pill (progesterone only) (3) Contraceptive injection(depoprovera/nur esterate) (4) Implant (implanon or norplant) (5) Coil (IUD or IUS) (6) Condom (7) Cap/diaphragm (8) Withdrawal (9) Natural Family Planning/ safe time of the month (10) Sterilization/vasectomy (11) Breastfeeding (12) Other (specify) _____ (13) N/A – was not using 	
<p>55. What is emergency contraception and explain.</p> <ul style="list-style-type: none"> (1) Correct (2) Incorrect (3) Don't know 	
<p>56. Did you use emergency contraception to try and prevent this pregnancy?</p> <ul style="list-style-type: none"> (1) Yes (2) No (planned pregnancy) (3) No never heard of it 	
<p>57. Where do you get emergency contraception?</p> <ul style="list-style-type: none"> (1) The general practitioner (2) The Family Planning clinic/ Student health centre (3) The Hospital (4) A shop (5) A friend (6) The Pharmacy (7) Other –(Specify) _____ (8) N/A (never heard of it) (9) Don't know 	

APPENDIX 10: Questionnaire (Afrikaans)

**SWANGERSKAP BEDOELINGS IN 'N HOE RISIKO
VERLOSKUNDIGE BEVOLKING IN 'N TERSIERE HOSPITAAL**

HREC REF: 060/2019

VRAELYS



Pasiënt Naam en Nommer: _____

Studie Nommer : _____

Datum van onderhoud: _____

Onderhoudvoerder: _____

Vorgeboorte kliniek

Vorgeboorte saal

04/07/2019

AGTERGROND INLIGTING

PLEK VAN ONDERHOUD: GROOTE SCHUUR VOORGEBOORTE KLINIEK/SAAL

1. Date of Birth geboortedatum	
2. Age (in years and months) ouderdom (in jare en maande)	
3. Population Group bevolkingsgroep (1) Black South African swart Suid-Afrikaanse (2) Coloured kleurling (3) White wit (4) Asian Asiatiese (5) Foreign African (please specify)) buitelandse Afrikaanse (Spesifiseer asseblief) _____ (6) Foreign Non- African (please specify) buitelandse nie - Afrikaanse (Spesifiseer asseblief) _____ (7) Other (specify) ander (Spesifiseer) _____	
4. Home Language Huistaal (1) English Engels (2) Afrikaans Afrikaans (3) Xhosa Xhosa (4) Other (please specify) __ Ander (spesifiseer asseblief) _____	
5. Language of Interview taal van onderhoud (1) English Engels (2) Afrikaans Afrikaans (3) Xhosa Xhosa	
6. Religion Geloof (1) Muslim Moslem (2) Protestant Protestantse (3) Roman Catholic Rooms-Katolieke (4) Christian Other (specify) Christen Ander (spesifiseer) _____ (5) Hindu Hindoe (6) Jewish Joodse (7) Other (please specify) Ander (spesifiseer) _____	

RELATIONSHIP STATUS AND SUPPORT **Verhouding Status en ondersteuning**

<p>7. Marital Status Huwelikstatus</p> <p>(1) Single, not in a relationship Enkellopend, nie in 'n verhouding nie</p> <p>(2) Single in a stable relationship but not cohabiting, Enkellopend, in 'n stabiele verhouding, maar woon nie saam nie</p> <p>(3) Single and cohabiting Enkellopend en woon saam</p> <p>(4) Married Getroud</p> <p>(5) Divorced Geskei</p> <p>(6) Separated Vervreemd</p> <p>(7) Widowed Weduwee</p>	
<p>8. From whom do you receive financial support? (Mark all that apply) Van wie ontvang jy finansiële ondersteuning? (Merk alles wat van toepassing is)</p> <p>(1) Self Self</p> <p>(2) Partner/ Husband vennoot / man</p> <p>(3) Parent/s Ouer / s</p> <p>(4) Sibling/s broer/suster/s</p> <p>(5) Grandparents Grootouers</p> <p>(6) Other Relative/s (please specify) ander familieledede (spesifiseer asseblief) _____</p> <p>(7) Friend/s vriend/e</p> <p>(8) Disability Grant ongeskiktheidstoelaag</p> <p>(9) Child Support Grant kindertoelaag</p> <p>(10) No Financial Support Geen finansiële ondersteuning</p> <p>(11) I don't know Ek weet nie</p> <p>(12) Other(please specify) Ander (spesifiseer) _____</p>	
<p>9. Who is responsible for most of the financial decision-making in your home? (Mark all that apply) Wie is verantwoordelik vir die grootste deel van die finansiële besluitneming in jou huis? Merk alles wat van toepassing is</p> <p>(1) Self Self</p> <p>(2) Partner/Husband vennoot / man</p> <p>(3) Parent/s Ouer/s</p> <p>(4) Sibling/s broer/suster/s</p> <p>(5) Grandparents Grootouers</p> <p>(6) Other Relative/s (please specify) ander familieledede (spesifiseer asseblief) _____</p> <p>(7) Friend/s Vriend/e</p> <p>(8) I don't know Ek weet nie</p> <p>(9) Other (please specify) ander (spesifiseer asseblief) _____</p>	

Socio-Economic Status Sosio-ekonomiese status

<p>10. Highest Level of Education Hoogste vlak van opleiding</p> <p>(1) No formal schooling Geen formele skoolopleiding</p> <p>(2) Grade 1 Graad 1</p> <p>(3) Grade 2</p> <p>(4) Grade 3</p> <p>(5) Grade 4</p> <p>(6) Grade 5 (onvolledig)</p> <p>(7) Grade 6</p> <p>(8) Grade 7</p> <p>(9) Grade 8</p> <p>(10) Grade 9</p> <p>(11) Grade 10</p> <p>(12) Grade 11</p> <p>(13) Grade 12</p> <p>(14) Tertiary (incomplete) Tersiêre</p> <p>(15) Tertiary (complete) Tersiêre (volledig)</p> <p>(16) Unknown Onbekend</p>	
<p>11. Employment Status Werkstatus</p> <p>(1) Unemployed Werklose</p> <p>(2) Self Employed Eie Onderneming</p> <p>(3) Employed (Casual) Onderneming (Informeel)</p> <p>(4) Employed (Formal) Onderneming (Formele)</p> <p>(5) Student/Scholar Student /leerling</p> <p>(6) Housewife Huisvrou</p> <p>(7) Disability or Other Grant) Gestremdheid of ander toelaag</p> <p>(8) Other (please specify) Ander (spesifiseer asseblief) _____</p>	
<p>12. What is your job? What is jou werk ?</p> <p>(1) N/A – unemployed n.v.t- werkloos</p> <p>(2) Housewife Huisvrou</p> <p>(3) Domestic Worker Huishulp</p> <p>(4) Labourer Arbeider</p> <p>(5) Factory Worker fabriekswerker</p> <p>(6) Office Worker) kantoor werker</p> <p>(7) Professional Professionele</p> <p>(8) Other (please specify) Ander (spesifiseer asseblief) _____ _____</p> <p>(9) Student/Scholar Student /leerling</p>	

HABITS GEWOONTES

<p>13. Do you smoke cigarettes? Rook jy sigarette?</p> <p>(1) YES JA (2) NO, never NEE, nooit (3) STOPPED before I fell pregnant Gestop voordat ek swanger geraak het. (4) STOPPED when I found out I was pregnant GESTOP toe ek uitvind ek was swanger</p>	
<p>14. If YES how many cigarettes a day? Indien ja, hoewel sigarette per dag?</p> <p>(1) 0 -5 (2) 5-10 (3) 10-20 (4) >20 (5) Other (please specify) ander, spesifiseer _____ (6) N/A N.V.T</p>	
<p>15. Do you consume alcohol? Gebruik jy alkohol?</p> <p>(1) YES JA (2) NO, never NEE, nooit (3) STOPPED before I fell pregnant Gestop voordat ek swanger geraak het. (4) STOPPED when I found out I was pregnant GESTOP toe ek uitvind ek was swanger</p>	
<p>16. Do you use any recreational drugs? Gebruik jy enige dwelmmiddels?</p> <p>(1) YES JA (2) NO, never NEE, nooit (3) STOPPED before I fell pregnant Gestop voordat ek swanger geraak het (4) STOPPED when I found out I was pregnant GESTOP toe ek uitvind ek was swanger</p>	

Obstetric History **Verloskundige geskiedenis**

17. Gravity Graviditeit	
18. Parity Pariteit	
19. Miscarriages Miskrame	
20. Ectopic Ektopiese	
21. TOPs beëindiging van swangerskap	

Outcome of Each Pregnancy (please enter numbers)
Uitkoms van elke swangerskap (Vul syfers in asseblief)

22. Year jaar	23. Gest- tion	24. Outcome of Pregnancy Uitkoms van swangerskap 1.Miscarriage miskraam 2.Ectopic ektopiese swangerskap 3.Alive lewendig 4.SB 5.NND 6.TOP	25. Baby weight Baba gewig 1. weight gewig 2. unknown onbekende 3. N/A N.V.T	26. Mode of Delivery 1.NVD 2.Forceps tang 3.Vacuum vakuum 4. C/S keisersnee 5. N/A N.V.T	27. Complications komplikasies 1.YES JA 2.NO NEE 3.Can't remember Kan nie onthou nie
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

PRESENT OBSTETRIC HISTORY HUIDIGE VERLOSKUNDIGE GESKIEDENIS

28. EDD:	
29. Gestational age at present Gestasie ouderdom op die oomblik	
30. Present Estimated Gestational Age (1) LNMP (2) Early Ultrasound vroeë ultraklank (3) Late Ultrasound laat ultraklank (4) Booking palpation (5) Other (specify) ander, spesifiseer _____	
31. Gestational Age at booking for ANC: (1) Gestational age swangerskapduur (2) Don't know weet nie (3) N/A N.V.T	
32. Reason for attending GSH (include all that apply) (1) Diabetes/IGT (2) Hypertension (3) AMA (4) BMI (5) Growth disorders (IUGR/macrosomia) (6) Post dates (7) Poor obstetric history (8) Other (specify) ander, spesifiseer _____	

Medical History Mediese geskiedenis (Voordat jy swanger geraak het)

33. Hypertension Hipertensie (1) Yes Ja (2) No NEE (3) Don't know weet nie	
34. Epilepsy Epilepsie (1) Yes Ja (2) No Nee (3) Don't know weet nie	

<p>35. Diabetes Diabeet</p> <p>(1) Yes JA</p> <p>(2) No Nee</p> <p>(3) Don't know weet nie</p>	
<p>36. Cardiac kardiale</p> <p>(1) Yes JA</p> <p>(2) No Nee</p> <p>(3) Don't know weet nie</p>	
<p>37. TB</p> <p>(1) Yes JA</p> <p>(2) No Nee</p> <p>(3) Don't know weet nie</p>	
<p>38. Other (Specify) ander (Spesifiseer)</p> <p>(1) Yes JA</p> <p>(2) No Nee</p> <p>(3) Don't know weet nie</p>	
<p>39. Do you think you were healthy when you fell pregnant? Dink jy jy was gesond toe jy swanger geword het?</p> <p>(1) Yes JA</p> <p>(2) No Nee</p> <p>(3) Don't know weet nie</p>	
<p>40. HIV status (Voordat jy swanger geraak het)</p> <p>(1) Positive</p> <p>(2) Negative</p> <p>(3) Don't know (weet nie)</p>	
<p>41. HIV status (nadat jy swanger geraak het)</p> <p>(1) Positive</p> <p>(2) Negative</p> <p>(3) Don't know weet nie</p> <p>(4) N/A N.V.T</p>	
<p>42. Did you discuss planning a pregnancy with the doctor managing the condition that you were referred to Groote Schuur for? Het jy gepraat oor die beplanning van 'n swangerskap met die dokter wat die toestand waarna u na GSH verwys is, bestuur?</p> <p>(1) Yes Ja</p> <p>(2) No Nee</p> <p>(3) Developed in pregnancy in swangerskap ontwikkel</p>	

PERINATAL MENTAL HEALTH SCORE PERINATALE GEESTESGESONDHEID TELLING

Please fill in the codes 0 or 1 for each of the following 5 questions to make a total score out of 5

Vul asseblief die kodes 0 of 1 vir elkeen van die volgende 5 vrae in om n totale telling uit 5 te maak.

43.	Is your partner or someone at home sometimes violent towards you? 0=no, 1=yes Word jou metgesel of iemand by die huis soms gewelddadig teenoor jou? 0 = Nee 1 = ja	
44.	Is your partner supportive? 0=yes, 1=no Is jou metgesel ondersteunend? 0 = Ja, 1 = nee	
45.	Are you pleased about this pregnancy? 0=yes, 1=no Is jy gelukkig oor hierdie swangerskap? 0 = Ja, 1 = nee	
46.	Have you had some very difficult things happen in the last year? 0=no, 1=yes Het 'n paar baie moeilike dinge met jou in die laaste jaar gebeur? 0 = Nee 1 = Ja	
47.	Have you had problems with things like depression, anxiety or panic attacks before? 0=no, 1=yes Het jy al voorheen probleme met depressie, angs of paniek aanvalle gehad? 0 = Nee 1 = Ja	
	Interviewer to please add the scores for questions 43 - 47 to give a score out of five. Onderhoudvoerder tel asseblief die tellings van vrae 43-47 op, om 'n telling uit vyf te kry.	

48. Please list all the methods of family planning which you **KNOW ABOUT?** [SPONTANEOUS INPUT] **Noem asseblief 'n lys van al die metodes van Familie Beplanning waarvan jy weet.** [SPONTANE INSETTE]

49. I will now ask you to list all methods you have ever **USED.** [SPONTANEOUS INPUT] **Ek vra dat jy nou 'n lys van alle metodes wat jy al ooit GEBRUIK het sal noem .** [SPONTANE INSETTE]

50. Which method are you **PLANNING ON USING AFTER THIS PREGNANCY?** [SPONTANEOUS INPUT] **Watter metode beplan jy om NA HIERDIE SWANGERSKAP TE GEBRUIK?** [SPONTANE INSETTE]

METHOD Metode	48. KNOW ABOUT Weet van	49. USED BEFORE Voorheen gebruik	50. PLANNED FUTURE Beplande toekomstige gebruik
a] Pill (COC) Pil			
b] Mini pill (POP) mini pil			
c] Injection (Depo) inspuiting			
d] Loop (IUCD) intra-uteriene toestel			
e] IUS (Mirena)			
f] Cap/Diaphragm diafragma			
g] Male condom Manlike kondoom			
h] Female Condom vrouekondoom			

i] Long term implants Langtermyn inplantings			
j] "Rhythm" method "Rhythm" metode			
k] Withdrawal method Onttrekking metode			
l] Abstinence Onthouding			
m] Spermicides Spermdoders			
n] Female sterilization Vroulike sterilisasie			
o] Male sterilisation Manlike sterilisasie			
p] Morning after pill			
q] Termination/abortion Beëindiging / aborsie			
r] none of the above geen van die opsies			
s] other (please specify) Ander (spesifiseer			
(t) uncertain onseker			

OMSTANDIGHEDE VAN SWANGERSKAP: LONDON MAATREEL VAN ONBEPLANDE SWANGERSKAP

Afdeling A : Jou swangerskap

PLEASE SELECT THE MOST RELEVANT TO YOU RELATING TO THE CURRENT OR RECENT PREGNANCY
KIES ASSEBLIEF DIE MEES RELEVANTE ANTWOORD MET BETREKKING TOT DIE HUIDIGE OF ONLANGSE
SWANGERSKAP

	SCORE
<p>51. In the month you became pregnant In die maand toe jy swanger geword het (Merk asseblief die stelling wat die mees toepaslik is op jou):</p> <p>(1) I/we were not using birth control Ek/Ons het nie beboorte beheer gebruik nie</p> <p>(2) I/we were using birth control but not on every occasion Ek/Ons was geboortebepanking gebruik, maar nie by elke geleentheid</p> <p>(3) I/we always used birth control but knew that the method had failed (i.e broke, moved, came off, came out, not worked, not taken) at least once Ek/Ons altyd gebruik geboortebepanking, maar het geweet dat die metode het misluk (d.i gebreek het, geskuif, afgeval het, uitgekóm, nie gewerk het, nie geneem) ten minste een keer</p> <p>(4) I/we always used birth control Ek/Ons gebruik altyd geboorte beheer</p>	
<p>52. In terms of becoming a mother (first time or again), I feel that my pregnancy happened at the... In terme van ma word (eerste keer of weereens), voel ek die tydsberekening van my swangerskap was: (Merk asseblief die stelling wat die mees toepaslik is op jou):</p> <p>(1) Right time Op die regte tyd</p> <p>(2) Ok, but not quite right time Oukei, maar nie heeltemal die regte tyd nie.</p> <p>(3) Wrong time Verkeerde tyd.</p>	
<p>53. Just before I became pregnant net voor ek swanger geraak het (Merk asseblief die stelling wat die mees toepaslik is op jou):</p> <p>(1) I intended to get pregnant Ek wou swanger raak</p> <p>(2) My intentions kept changing My voorneme het heeltyd verander</p> <p>(3) I did not intend to get pregnant Ek het nie beplan om swanger te raak nie</p>	

		SCORE
<p>54. Just before I became pregnant net voor ek swanger geraak het (Please tick the statement which most applies to you)</p> <p>(1) I wanted to have a baby Ek wou 'n baba hê (2) I had mixed feelings about having a baby Ek het gemengde gevoelens gehad om nog 'n baba te hê (3) I did not want to have a baby Ek wou nie 'n baba gehad het nie</p> <hr/> <p>55. In the next question, we ask about your partner – this might be (or have been) your husband, a partner you live with, a boyfriend, or someone you’ve had sex with once or twice. In die volgende vraag, vra ons oor jou metgesel – dit is dalk (of was) jou man, 'n metgesel saam wie jy bly, 'n kêrel, of iemand met wie jy een of twee keer seks gehad het.</p> <p>(Please tick the statement which most applies to you) Before I became pregnant Voor ek swanger geraak het</p> <p>(1) My partner and I had agreed that we would like me to be pregnant Ek en my metgesel het saamgestem dat ons graag wil hê ek moet swanger raak. (2) My partner and I had discussed having children together, but had not agreed for me to get pregnant Ek en my metgesel het bespreek om saam kinders te hê, maar het nie ingestem dat ek swanger word nie. (3) We never discussed having children together Ons het nog nooit bespreek om kinders saam te hê nie.</p>		
<p>56. Before you became pregnant, did you do anything to improve your health in preparation for pregnancy? Voor jy swanger geraak het, het jy enige iets gedoen om jpu gesondheid te verbeter in voorbereiding vir jou swangerskap?</p> <p>(Please tick all that apply)</p> <p>(1) Took folic acid Folic acid geneem (2) Stopped or cut down smoking Gestop of minder gerook (3) Stopped or cut down drinking alcohol Gestop of minder alkohol gedrink (4) Ate more healthily Gesonder geëet (5) Sought medical/health advice Gevra vir mediese of gesondheids advies (6) Took some other action, please describe Ander aksie geneem, verduidelik asseblief _____ (7) I did not do any of the above before my pregnancy. Ek het geen van die bogenoemde gedoen voor my swangerskap nie</p>		
TOTAL		

SECTION B: EMERGENCY CONTRACEPTION

<p>57. If you were using contraception in the month that you became pregnant, which method or methods were you using? (Tick all that apply) Indien jy kontrasepsie gebruik het in die maand wat jy swanger geword het, watter metode of metodes het jy gebruik?</p> <p>(1) Combined oral contraceptive pill Gekombineerde orale kontraseptiewe pil</p> <p>(2) Mini-pill (progesterone only) Mini pil (slegs progesteron)</p> <p>(3) Contraceptive injection (depoprovera/nur esterate) Kontraseptiewe inspuiting (depoprovera/nur esterate)</p> <p>(4) Implant (implanon or norplant) Inplanting (implanon of norplant)</p> <p>(5) Coil (IUD or IUS)*****</p> <p>(6) Condom Kondoom</p> <p>(7) Cap/diaphragm Diafragma</p> <p>(8) Withdrawal Onttrekking</p> <p>(9) Natural Family Planning/ safe time of the month Natuurlike familie Beplanning / veilige tyd van die maand</p> <p>(10) Sterilization/vasectomy Sterilisasie/Vasectomy</p> <p>(11) Breastfeeding Borsvoed</p> <p>(12) Other (specify) Ander (Spesifiseer) _____</p> <p>(13) N/A – was not using n.v.t – was nie gebruik nie</p>	
<p>58. What is emergency contraception and explain. Wat is noodgeval voorbehoedmiddels en verduidelik.</p> <p>(1) Correct Reg</p> <p>(2) Incorrect Verkeerd</p> <p>(3) Don't know Weet nie</p>	
<p>59. Did you use emergency contraception to try and prevent this pregnancy? Wat is noodgeval voorbehoedmiddels en verduidelik.</p> <p>(1) Yes Ja</p> <p>(2) No (planned pregnancy) Nee (beplande swangerskap)</p> <p>(3) No never heard of it Nee nog nooit daarvan gehoor nie</p> <p>(4) No nee</p>	
<p>60. Where do you get emergency contraception? Waar kry jy noodgeval voorbehoedmiddels?</p> <p>(1) The general practitioner Die algemene praktisyn</p> <p>(2) The Family Planning clinic/ Student health centre Die familie Beplanning kliniek/ Student gesondheid sentreer</p> <p>(3) The Hospital Die Hospitaal</p> <p>(4) A shop n Winkel</p> <p>(5) A friend n Vriendin</p> <p>(6) The Pharmacy Die Apteek</p> <p>(7) Other – (Specify) Ander (spesifiseer)</p> <p>(8) N/A (never heard of it)</p> <p>(9) Don't know weet nie</p>	



APPENDIX 11: Questionnaire (isiXhosa)

**Pregnancy Intendedness in a High Risk Obstetric Population
in a Tertiary Hospital**

HREC Ref: 060/2019

QUESTIONNAIRE isiXhosa



Patient Name & Number: _____

Study Number: _____

Date of Interview: _____

Interviewer: _____

Antenatal clinic

Antenatal ward

03/07/2019

BACKGROUND INFORMATION / IMBHALI NGENGCOMBHOLO:

PLACE OF INTERVIEW: GROOTE SCHUUR HOSPITAL ANTENATAL CLINIC/WARD

<p>1. Date of Birth Umhla wokuzalwa</p>	
<p>2. Age (in years and months) Iminyaka nenyanga</p>	
<p>3. Population Group / Uluhlu lwambemi (1) Black South African / Ummi omnyama wase Mzantsi-Afrika (2) Coloured / Owebala (3) White / Omhlope (4) Asian / I-India (ophuma eAsia) (5) Foreign African (please specify)/ Ummi base Afrika (cacisa) _____ (6) Foreign Non- African (please specify) / Ummi ongengewase Afrika _____ (7) Other (please specify) / Abanye _____</p>	
<p>4. Home Language / Ulwimi lwasekhaya (1) English / IsiNgesi (2) Afrikaans / IsiBhulu (3) Xhosa / IsiXhosa (4) Other (please specify) _____ Abanye (cacisa)</p>	
<p>5. Language of Interview / Ulwimi lodliwanondlebe (1) English / IsiNgesi (2) Afrikaans / IsiBhulu (3) Xhosa / IsiXhosa</p>	
<p>6. Religion / Inkolo (1) Muslim / IsiSilamsi (2) Protestant / IsiProtestanti (3) Roman Catholic / Inkolo yama Roma angamaKatolika (4) Christian Other (please specify) / AmaKristu angamanye (cacisa) _____ (5) Hindu / Amahindu (6) Jewish / AmaJuda (7) Other (please specify) / Ezinye Unkolo _____</p>	

RELATIONSHIP STATUS AND SUPPORT / UBOMI BOTHANDO NENKXASO

<p>7. Marital Status / Imo ngezomtshato</p> <p>(1) Single, not in a relationship / Awuntshatanga yaye awunagabane</p> <p>(2) Single in a stable relationship but not cohabiting Awutshatanga kodwa uneqabane nangona unghlali kunye nje</p> <p>(3) Single and cohabiting / Awutshatanga kodwa nihlala kunye</p> <p>(4) Married / Utshatile</p> <p>(5) Divorced / Uphumile emtshatweni</p> <p>(6) Separated / Nehlukene</p> <p>(7) Widowed / Umdlolokazi</p>	
<p>8. From whom do you receive financial support? (Mark all that apply) Uyifumana kubani/phi inkxaso ngezezimali? (chapazela okulungeleyo)</p> <p>(1) Self / Uyazizamela</p> <p>(2) Partner/ Husband / Kwiqabane/Kumyeni</p> <p>(3) Parent/s / Kubazali</p> <p>(4) Sibling/s / Kubantakwenu okanyekoodade</p> <p>(5) Grandparents / KooMakhulu okanye KooTatomkhulu</p> <p>(6) Other Relative/s (please specify)/ Kwezinye izizalwane (cacisa)_____</p> <p>(7) Friend/s / Kwizihlobo</p> <p>(8) Disability Grant / Kwisibonelelo sikaRhumlumente</p> <p>(9) Child Support Grant / Kwisibonelelo sika Rhumlumente sabantwana</p> <p>(10) No Financial Support / Akukho kwankxaso/nkxaso</p> <p>(11) I don't know / Andazi</p> <p>(12) Other (please specify) / Ezinye unkolo (cacisa)_____</p>	
<p>9. Who is responsible for most of the financial decision-making in your home? (Mark all that apply)</p> <p>Ngubani onezigqibo zolawulo lwezezi mali ekhayeni (chaphazela okulungeleyo)</p> <p>(1) Self / Uyazizamela</p> <p>(2) Partner/ Husband / Kwiqabane/Kumyeni</p> <p>(3) Parent/s / Kubazali</p> <p>(4) Sibling/s / Kubantakwenu okanyekoodade</p> <p>(5) Grandparents / KooMakhulu okanye KooTatomkhulu</p> <p>(6) Other Relative/s (please specify)/ Kwezinye izizalwane (cacisa)_____</p> <p>(7) Friend/s / Kwizihlobo</p> <p>(8) I don't know / Andazi</p> <p>(9) Other (please specify)/ Ezinye unkolo (cacisa)_____</p>	

Socio-Economic Status / Imo kwezoQoqosho Nokuhlala

<p>10. Highest Level of Education / Elona Banga/Bakala liphezulu kwezemfundo</p> <p>(1) No formal schooling / Zange ndayaesikolweni</p> <p>(2) Grade 1 / Bakala lokuqala</p> <p>(3) Grade 2 / Bakala lesinin</p> <p>(4) Grade 3 / Bakala lesithathu</p> <p>(5) Grade 4 / Bakala lesine</p> <p>(6) Grade 5 / Bakala lesihlanu</p> <p>(7) Grade 6 / Bakala lesitandathu</p> <p>(8) Grade 7 / Bakala lesixhenxe</p> <p>(9) Grade 8 / Bakala lesibhozo</p> <p>(10) Grade 9 / Bakala lethoba</p> <p>(11) Grade 10 / Bakala leshumi</p> <p>(12) Grade 11 / Bakala leshumi elinanye</p> <p>(13) Grade 12 / Bakala leshumi elinambini</p> <p>(14) Tertiary (incomplete) / Dyunivesithi/kholeji (andagqiba)</p> <p>(15) Tertiary (complete) / Dyunivesithi/kholeji (agqiba)</p> <p>(16) Unknown / Andazi</p>	
<p>11. Employment Status / Imo Kwezemphangelo</p> <p>(1) Unemployed / Andiphangeli</p> <p>(2) Self Employed / Ndiziqashile</p> <p>(3) Employed (Casual) / Ndiqashiwe kodwa ayisosigxina</p> <p>(4) Employed (Formal) / Ndiqashiwe ngokupheleleyo</p> <p>(5) Student/Scholar / Ndingumfundi</p> <p>(6) Housewife / Ndingumfazi osekhayeni</p> <p>(7) Disability or Other Grant / Ndifumana isiBonelelo kuRhulamente</p> <p>(8) Other (please specify) / Ezinye imeko (cacise) _____</p>	
<p>12. What is your job? / Yintoni umsebenzi wakho?</p> <p>(1) N/A – unemployed / Andinawo/Andiqashwanga</p> <p>(2) Housewife / Ndiyinkosikazi esekhayeni</p> <p>(3) Domestic Worker / Ndisebenza nzima ngezandla</p> <p>(4) Labourer / Ndisebenza nzima ngezandla</p> <p>(5) Factory Worker / Kwimizi-mvesliso</p> <p>(6) Office Worker / Ezi Ofisini</p> <p>(7) Professional / Ngokoknqeqeshwa kwam</p> <p>(8) Other (please specify) / Ezinye imeko (cacisa) _____</p> <p>(9) Student/Scholar / Ndingumfundi</p>	

HABITS IMIKHWA/IMIKHUBA ONAYO

<p>13. Do you smoke cigarettes? / Uyatshaya?</p> <p>(1) YES / Ewe</p> <p>(2) NO, never / Hayi, zange</p> <p>(3) STOPPED before I fell pregnant / Ndayeka phambi kokukhulelwa</p> <p>(4) STOPPED when I found out I was pregnant / Ndayeka ukuziqaphela kwam ndikhulelwe</p>	
<p>14. If YES how many cigarettes a day? / Ukuba uyatshaya, kangakanami ngemini?</p> <p>(1) 0 -5</p> <p>(2) 5-10</p> <p>(3) 10-20</p> <p>(4) >20</p> <p>(5) Other (please specify) / Omnye umlinganiselo _____</p> <p>(6) N/A / Nakanye</p>	
<p>15. Do you consume alcohol? / Ingaba uyabusela ubutywala?</p> <p>(1) YES / Ewe</p> <p>(2) NO, never / Hayi, zange</p> <p>(3) STOPPED before I fell pregnant / Ndayeka phambi kokukhulelwa</p> <p>(4) STOPPED when I found out I was pregnant / Ndayeka ukuziqaphela kwam ndikhulelwe</p>	
<p>16. Do you use any recreational drugs? / Ingaba uyasebenzisa iziyobisi?</p> <p>(1) YES / Ewe</p> <p>(2) NO, never / Hayi, zange</p> <p>(3) STOPPED before I fell pregnant / Ndayeka phambi kokukhulelwa</p> <p>(4) STOPPED when I found out I was pregnant / Ndayeka ukuziqaphela kwam ndikhulelwe</p>	

Obstetric History / Imbhali ngezokhulwelo

17. Gravidity / Ukhulelwe bangaphi	
18. Parity / Ubeleke abantwana abangaphi	
19. Miscarriages / Uphunyelwe sisisu kangaphi	
20. Ectopic / Ukhululelwe emibhobheni	
21. TOPs / Ukukhupa isisu	

Outcome of Each Pregnancy (please enter numbers) / Imiphumela kukhulelo ngalunga

22. Year / Unyaka	23. Gestation / Ubukhulwe ixesha elingakani	24. Outcome of Pregnancy / Iziqhamo zokhulelwa 1.Miscarriage Ukuphuncuka kwesisu 2. Ectopic Ukhulelwe emibhobheni 3.Alive Umntwana uyaphila 4.SB Uzalwa engasaphili 5.NND Usweleke esandozalwa 6.TOP Isisu sakhutshwa	25. Baby weight Ubunzima bomntwana 1. weight Ubunzima Abaziwa 3. N/A Abukho	26. Mode of Delivery Indlela obeleka ngayo 1.NVD uzibelekele 2.Forceps Warholelwa wancediswa 3. Vacuum Watsalwa ngomtshini 4. C/S Wasikwa 5. N/A Zange	27. Complications Lingaxaka ngxakana (lingxaki) 1.YES Ewe 2.NO Hayi 3.Can't remember Andikhhumbuli
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

PRESENT OBSTETRIC HISTORY / Imbhali yakutsha nje ngo okhulelwa

28. EDD / usuka olulindeleke ngalo usana:	
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29. Gestational age at present / Ukhulelwe ixesha elingakanani ngoku	
30. Present Estimated Gestational Age / Uqikelelo lwexesha lokhulwelo (1) LNMP / Ixesha lokugqibela ukuya exesheni (2) Early Ultrasound / Kusese zantsi kakhulu ukuphonononya imo yasana esiswini ngeomatchini (iscan sokuqala) (3) Late Ultrasound / Kulithuba elihle lokupopola usana ngomatshini (iscan sokugqibela) (4) Booking palpation / Ukufaka isicelo sohlolo, ukucofacofa ngosuku lokuqala (ukuhlukhla) (5) Other (specify) / Ezinye imeko (cacisa) _____	
31. Gestational Age at booking for ANC / Ixesha olikhulelweyo ukuqala ukuya kwakho esibhedlele/ekliniki (1) Gestational age / Ixesha olikhulelweyo (2) Don't know / andazi (3) N/A / Alikho	
32. Reason for attending the GSH HRANC: (include all that apply) / Kutheni apha e-GSH (1) Diabetes/IGT / Iswekile (2) Hypertension / Uxinzelelo lwegazi (igazi elinyukileyo) (3) AMA / Yobudala bomama (4) BMI / Ubukhulu bam buphezulu (5) Growth disorders (IUGR/macrosomia) / Umntwana wam usemkhulu okanye omncinane (6) Post dates / Ndikhulelwe ixesha elide (7) Poor obstetric history / Ukukhulelwa kwam kwangaphambili kwakuneengxaki (8) Other / Ezinye imeko (cacisa) _____	

Medical History / Imbhali Ngezonyangonempilo

33. Hypertension / Uxinzelelo lwegazi (igazi elinyukileyo) (1) Yes / Ewe (2) No / Hayi (3) Don't know / Andazi	
34. Epilepsy / Isithuthwane (ukuxhuzula) (1) Yes / Ewe (2) No / Hayi (3) Don't know / Andazi	

<p>35. Diabetes / Iswekile</p> <p>(1) Yes / Ewe (2) No / Hayi (3) Don't know / Andazi</p>	
<p>36. Cardiac / Intliziyo</p> <p>(1) Yes / Ewe (2) No / Hayi (3) Don't know / Andazi</p>	
<p>37. TB / Isifosephepha</p> <p>(1) Yes / Ewe (2) No / Hayi (3) Don' know / Andazi</p>	
<p>38. Other (Specify) / Ezinye izigulo (cacisa)</p> <p>(1) Yes / Ewe (2) No / Hayi (3) Don't know / Andazi</p>	
<p>39. Do you think you were healthy when you fell pregnant / Ingaba ucinga ukuba uphilile xa ukhulelwa</p> <p>(1) Yes / Ewe (2) No / Hayi</p>	
<p>40. HIV status (prior to falling pregnant) / Isimo se-HIV (ngaphambi kokuba ukhulelwe)</p> <p>(1) Positive / Ndinayo (2) Negative / Andinayo (3) Don't know / Andazi</p>	
<p>41. HIV status (after falling pregnant) / Isimo se-HIV (emva kokukhulelwa)</p> <p>(1) Positive / Ndinayo (2) Negative / Andinayo (3) Don't know / Andazi (4) N/A / Ayingeni</p>	
<p>42. Did you discuss planning a pregnancy with the doctor managing the condition that you were referred to Groote Schuur for? / Ingaba</p>	

<p>uxoxe ngezicwangciso zokukhulelwa kunye nogqirha owayethunyelwe eGroote Schuur?</p> <p>(1) Yes / Ewe (2) No / Hayi (3) Developed in pregnancy / Izigula zaqala ngokukhulelwa</p>	
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PERINATAL MENTAL HEALTH SCORE / Imo yengqondondo phambi kokuba phambi kokuba ubeleka

Please fill in the codes 0 or 1 for each of the following 5 questions to make a total score out of 5 /
Uyakhuti usebenzise u 0 ukuthi ewe okanye 1 ukuthi hayi ukuphendula lemibuzo ilandelayo kwimibuzo emihlanu elandelayo ukudibanisa izibalo kumanqaku amahlanu

41.	<p>Is your partner or someone at home sometimes violent towards you? 0=no, 1=yes</p> <p>Ingaba iqabene lakho libandlongondlongo kuwe ngamanye amaxesha? 1 = ewe, 0 = hayi</p>	
42.	<p>Is your partner supportive? 0=yes, 1=no</p> <p>Ingaba iqabana lakho linenxaso? 0 = ewe, 1 = hayi</p>	
43.	<p>Are you pleased about this pregnancy? 0=yes, 1=no</p> <p>Ingaba ukholiwe lolukhulwelo? 0 = ewe, 1 = hayi</p>	
44.	<p>Have you had some very difficult things happen in the last year? 0=no, 1=yes</p> <p>Ingaba kukho inzima okhe wazifuanakulo nyaka ugqithileyo? 1 = ewe, 0 = hayi</p>	
45.	<p>Have you had problems with things like depression, anxiety or panic attacks before? 0=no, 1=yes</p> <p>Ingaba ukhe wakwimeko ezinje ngonxunguphalo, ukudandatheka njalo ngaphambili?</p>	
	<p>Interviewer to please add the scores for questions 39 - 43 to give a score out of five.</p> <p>Umdlwano ndlebe makancede aqokelele amanqaku alemibuzo ingentla abe phantsi kwesi xa esingu 5</p>	

46. Please list all the methods of family planning which you KNOW ABOUT? [SPONTANEOUS INPUT] / Nceda udwelise zonke intlobo-ntlobo zokucwangacisa ozaziyo (Linda impendulo yesigulana)			
47. I will now ask you to list all methods you have ever USED. [SPONTANEOUS INPUT] / Ngoku ndizakubuza ngokhe wazisebenzisa			
48. Which method are you PLANNING ON USING AFTER THIS PREGNANCY? [SPONTANEOUS INPUT] / Loluphi uhlobo ocinga ukulisebenzisa emveni kokuba ubelekile			
METHOD / Uhlobo	46. KNOW ABOUT / Olwaziwayo	47. USED BEFORE / Okhe walusebenzisa	48. PLANNED FUTURE USE / Uhlobo ozimisele ukulisebenzisa ngaphambili
a) Pill (COC) / Pilisi			
b) Mini pill (POP) / Pilisi encinci			
c) Injection (Depo) / Stofu			
d) Loop (IUCD) / Iluphu			
e) IUS (Mirena) / iloop			
f) Cap/Diaphragm / Isiqoshelisi			
g) Male condom / Khondomu yotata			
h) Female Condom / Khondomu yomama			
i) Long term implants / I-implant			
j) "Rhythm" method / Uqikelelo			
k) Withdrawal method / Khupa ungekachithi			
l) Abstinence / Ungabelani ngesondo			
m) Spermicides / Ichiza lokubulala isperm			
n) Female sterilisation / Uvalo nzalakoomama			
o) Male sterilisation / Uvalo nzalakootata			

p] Morning after pill / Pilisi oyisela emva kwesondo			
q] Termination/abortion / Ukuqhomfa (ukukhupha isisu)			
r] none of the above / Akhukho nanye			
s] other (please specify) / Ezinye (cacisa)			
t] uncertain / Andiqinisekanga			

CIRCUMSTANCES OF PREGNANCY : LONDON MEASURE OF UNPLANNED PREGNANCY (LMUP)

Section A : Your Pregnancy

Ngezantsi kunemibuzo ebuza ngemeko kunye nezimvo zakho ngeli xesha umithe. Nceda cinga ngolu mitho lwangoku xa uphendula lemibuzo ingezantsi.

PLEASE SELECT THE MOST RELEVANT TO YOU RELATING TO THE CURRENT OR RECENT PREGNANCY

		SCORE
<p>49. In the month you became pregnant / Knwinyanga umithe ngayo (Please tick the statement which most applies to you) / (Nceda tikisha intetha engqamelene nawe kakhulu):</p> <p>(1) I/we were not using birth control Mna/besingalu sebenzisi icwangciso</p> <p>(2) I/we were using birth control but not on every occasion Mna/besilusebenzisa ucwangciso, kodwa hayi lonke ixesha</p> <p>(3) I/we always used birth control but knew that the method had failed (i.e broke, moved, came off, came out, not worked, not taken) at least once Mna/besilusebenzisa rhoqo ucwangciso, kodwa sisazi ukuba uhlobo alusebenzi (igqabhukile, ishenxile, iphumile, iphumile ngaphandle, ayisebenzi) kwankanje nje.</p> <p>(4) I/we always used birth control Mna/besilusebenzisa rhoqo ucwangciso.</p>		
<p>50. In terms of becoming a mother (first time or again), I feel that my pregnancy happened at the... Kwindima yokuba ngumama (okokuqala, okanye ndiphinde) ndiziva ukuba umitho lwenzeke. (Please tick the statement, which most applies you) / Nceda tikisha intetha engqamelene nawe kakhulu</p> <p>(1) Right time / Lixesha elilungileyo</p>		

		SCORE
<p>(2) Ok, but not quite right time / Ok, kodwa ayilo xesha elulingileyo</p> <p>(3) Wrong time / Lixesha elingalunganga</p> <p>51. Just before I became pregnant / Nje phambi kokuba ndimithe (Please tick the statement which most applies to you) / Nceda tikisha intetha engqamelene nawe kakhulu</p> <p>(1) I intended to get pregnant / Bendizimisela ukumitha</p> <p>(2) My intentions kept changing / Lingcinge zam bezintshentsho</p> <p>(3) I did not intend to get pregnant / Bendingazimisele ukumitha</p>		
<p>52. Just before I became pregnant / Nje phambi kokuba ndimithe (Please tick the statement which most applies to you) / Nceda tikisha intetha engqamelene nawe kakhulu</p> <p>(1) I wanted to have a baby / Bendifuna ukuba nosana</p> <p>(2) I had mixed feelings about having a baby / Imizwa yam ibibethabethana ngokuba nosana</p> <p>(3) I did not want to have a baby / Bendingafuni ukuba nomtwana</p>		
<p>53. In the next question, we ask about your partner – this might be (or have been) your husband, a partner you live with, a boyfriend, or someone you’ve had sex with once or twice.</p> <p>(Please tick the statement which most applies to you) / Nceda tikisha intetha engqamelene nawe kakhulu</p> <p>Before I became pregnant / Nje phambi kokuba ndimithe</p> <p>(1) My partner and I had agreed that we would like me to be pregnant / Iqabane lam, nam sivumelene ukuba ndimithe</p> <p>(2) My partner and I had discussed having children together, but had not agreed for me to get pregnant / Iqabane lam, nam sixotile ukuba sibenabantwana sobabini kodwa asavumelana ukuba mna ndimithe</p> <p>(3) We never discussed having children together / Asikhange sixoxe ngokuba nabantwana sobabini</p>		
<p>54. Before you became pregnant, did you do anything to improve your health in preparation for pregnancy? / Phambi kokuba imithe, ikho into oyenzileyo ukuphucula impilo yakho ulungiselela umitho?</p>		

<p>(Please tick all that apply) / Nceda tikisha intetha engqamelene nawe</p> <p>(1) Took folic acid / Nditye Ifolic Acid</p> <p>(2) Stopped or cut down smoking / Ndiyekile okanye ndabuyise unyawo ekutshayeni</p> <p>(3) Stopped or cut down drinking alcohol / Ndiyekile okanye ndabuyise unyawo ekuseleni</p> <p>(4) Ate more healthily / Ndiye ukutya okusempilweni</p> <p>(5) Sought medical/health advice / Ndiye ndafuna amcebisa empilo</p> <p>(6) Took some other action, please describe / Ndiye ndathethe amanje amanyathelo nceda chaze</p> <p>_____</p> <p>(7) I did not do any of the above before my pregnancy / Akukho nenye endiyenzileyo kwezi zisentla pkambi ndimithe</p>		
TOTAL		

Section B: Emergency Contraception / Ucwangiso olungxamisekileyo

<p>55. If you were using contraception in the month that you became pregnant, which method or methods were you using? (Tick all that apply) / Ukuba ubusebenzisa indlela okanye iindlela zokucwangisa kwinyangayakho yokuhlelwa, yeyiphi indlela okanye iindlela obuyakuyisebenzisa kwezizilandelayo? (Sebenzisa oluphawo aphokufanelekileyo)</p> <p>(1) Combined oral contraceptive pill / Intlanganisela yeepilisi eziginywayo</p> <p>(2) Mini-pill (progesterone only) / Pilisi encinci</p> <p>(3) Contraceptive injection(depoprovera/nur esterate) / Isitofu</p> <p>(4) Implant (implanon or norplant) / I-implant</p> <p>(5) Coil (IUD or IUS) / Iloop</p> <p>(6) Condom / Ikhondomu</p> <p>(7) Cap/diaphragm / Isiqoshelisi</p> <p>(8) Withdrawal / Ukuyikhupha ungekachithi</p> <p>(9) Natural Family Planning/ safe time of the month / Ixesha elikhuselekileyo lokwabelana ngesondo</p> <p>(10) Sterilization/vasectomy / Ukubulana inzala</p> <p>(11) Breastfeeding / Ukuncancisa ngebele</p> <p>(12) Other (specify) / Ezinye indlela (cacisa) _____</p> <p>(13) N/A – was not using / Akhonanye/Ndandingayisebenisi</p>	
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<p>56. What is emergency contraception and explain / Yintoni uCwangciso olungxamisekuleyo?</p> <p>(1) Correct / Ilungile</p> <p>(2) Incorrect / Ayilunganga</p> <p>(3) Don't know / Andazi</p>	
<p>57. Did you use emergency contraception to try and prevent this pregnancy? / Nalusebenzisa ucwangciso olungxamisekileyo ukunqanda olumitho lwangoku?</p> <p>(1) Yes / Ewe</p> <p>(2) No (planned pregnancy) / Hayi (Ukhulwelo olucwangcisiweyo)</p> <p>(3) No never heard of it / Hayi (Zange ndive kwanto)</p> <p>(4) No / Hayi</p>	
<p>58. Where do you get emergency contraception? / Ulifumane phi ucwangciso olungxamisekuleyo?</p> <p>(1) The general practitioner / Kwa-qgirha</p> <p>(2) The Family Planning clinic/ Student health centre / Kwiziko lwe mpilo locwangciso</p> <p>(3) The Hospital / Esibedlele</p> <p>(4) A shop / Evenkileni</p> <p>(5) A friend / Kumhlobo</p> <p>(6) The Pharmacy / Kwivenkile ethengisa amayeza</p> <p>(7) Other –(Specify) / Kwezinye indawo (cacisa)_____</p> <p>(8) N/A (never heard of it) / Nakanye (Hayi, zange ndive kwanto)</p> <p>(9) Don't know / Andazi</p>	



APPENDIX 12: Ethics Approval



Form FHS013: New protocol application form – Section A

Instructions

- **Researchers must ensure that they use the current version of the application form on [UCT Administrative Forms web page](#).**
- Applicants wishing to register **databases, registries or repositories** should only fill out form [FHS020](#).

1. Protocol information

Protocol title	Pregnancy Intendedness in a High Risk Obstetric Population in a Tertiary Hospital		
Protocol number (if applicable)			
Is this a sub-study or an extension study linked to an existing/main study previously approved by this Committee? (e.g. a sub-study, follow-up study, earlier phase trial) (tick ✓)	<input checked="" type="checkbox"/> * Yes		<input type="checkbox"/> No
If yes above, please provide the following with regards to the existing/main study:	HREC ref. no.	597/2016	Expiry approval date of existing/main study 30/12/2017
* Please comment briefly on safety and efficacy findings of the existing/main study that may have relevance to this application. (Please also add a brief description in new study synopsis)			
We are expanding the use of the London Measure of Unplanned pregnancy to a broader obstetric community. We hope we will generate data which is relevant to all sectors participating in the study.			

2. Investigator(s) profile

Note:			
<ul style="list-style-type: none"> • For all postgraduate student research the main supervisor must be listed as PI on this form. • For all undergraduate student research please only complete the FHS021 form and not this form. • The PI or Co-PI must be a UCT affiliated person. 			
2.1 UCT's principal investigator (PI)			
Title, first name, surname	Professor Zephne van der Spuy		
Department/Division	Obstetrics and Gynaecology		
Phone	021 650 4987 / 082 658 3779		
Email address	Zephne.vanderspuy@uct.ac.za		
Department /Office Internal Mail Address for Correspondence	Obstetrics and Gynaecology, H Floor, Old Main Building, Groote Schuur Hospital, Observatory		
Registration with HPCSA (tick ✓)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Registration # MP 0137995
Is the PI covered by professional liability insurance? (tick ✓)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
If yes above, please provide the liability insurance number.	MPS SA 4231		



Note: If a non-medically trained PI is overseeing research that involves medical procedures, the application must include a medical doctor registered with the HPCSA as a co-investigator.

2.2 Co-investigator(s) Note: Staff and students involved in the research must be listed as co-investigators		
Title, first name, surname	Department/Division	Email
Dr Douglas Whistance	Obstetrics and Gynaecology	dbwhistance@gmail.com
Dr Rendani Tshikosi	Obstetrics and Gynaecology	tshikosi@hotmail.com
Sister Anne Hoffman	Obstetrics and Gynaecology	Anne.hoffman@uct.ac.za
Sister Lynne Keck	Obstetrics and Gynaecology	Lynne.keck@uct.ac.za

2.3 Is this protocol for degree purposes? (tick ✓)	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
If yes, please specify:	
Type of degree	Master of Medicine in the specialty of Obstetrics and Gynaecology
Student's title, first name, surname	Dr Douglas Whistance
Student's email	dbwhistance@gmail.com

2.4 Supervisor(s)		
Title, first name, surname	Department and University	Email
Professor Zephne van der Spuy	Obstetrics and Gynaecology at the University of Cape Town	zephne.vanderspuy@uct.ac.za

2.5 How many of the following does the PI or supervisor currently oversee? (Total number for all research projects)			
Open research studies	8	Sites (excluding this application)	-
Co-investigators	10	Number of participants	1100

2.6 What is the PI's role in authoring this protocol? (tick ✓ all relevant)	
Primary author	
Collaborator	
Supervisor	✓
None (developed by sponsors)	



2.7 Are there any publication restrictions on the research?	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If yes, please describe and justify:	

2.8 Does the protocol comply with UCT's intellectual property rights policy ? (tick ✓)	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
If no, please justify:	

3. Protocol profile

3.1 Has this protocol been submitted to another Human Research Ethics Committee? (tick ✓)		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
If yes, please complete:	Name of Institution	Outcome

3.2 To your knowledge, has this protocol been rejected by another HREC? (tick ✓)		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Don't know
If yes, please provide the reasons:		

3.3 Is there any vulnerability associated with the proposed participant groups?		
Note: Group vulnerability refers to any potential vulnerabilities relating to pre-existing physiological or health conditions; cognitive or emotional factors; and socio-economic or legal status.		
<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High
Please explain the group vulnerability and justify the need for research in this group of participants.		
<p>The proposed participant group is the women attending the Groote Schuur Antenatal Clinics, Day Units and Antenatal Wards. All these potential participants are being managed at GSH because of medical problems requiring multidisciplinary care. The study is questionnaire based and the questions about unplanned pregnancy are subtle. We do not anticipate the questions to cause any distress. Any patient identified as being distressed will be referred to our supportive social work services.</p>		



3.4 Please specify the level of risk associated with the proposed research.

Note: Research risk refers to the probability and magnitude of harms participants may experience as a result of the proposed research methods and/or type of data to be collected. Examples include research procedures or collection of data relating to clinical diagnoses or side effects; cognitive or emotional factors such as stress or anxiety during data collection; and socio-economic or legal consequences of research such as stigma, loss of employment, deportation, or criminal investigation.

<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High
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Please explain the research risk and justify the need for the proposed research.

The study is questionnaire based and the questions about unplanned pregnancy are subtle. Interviews will be private and data will be kept securely. This research will provide more information about an at risk subgroup attending the high risk antenatal clinic in the Groote Schuur Hospital Tertiary Service. It is hoped it will ultimately improve the women's health service.

3.5 Is this study suitable for an expedited review? I.e. is the research considered to be minimal risk? (tick ✓)

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
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If yes, please provide a motivation for expedited review:

The London Measure of Unplanned Pregnancy has already been validated for use in South Africa by the University of Cape Town. The questionnaire that will be used is largely similar to the one which was utilized in the original study that has been completed by 373 women. No problems were encountered with the use of the questionnaire.

Note: AT THE DISCRETION OF THE HREC CHAIRPERSON OR DESIGNATE, STUDIES REQUESTING EXPEDITED REVIEW MAY NEED TO BE CONSIDERED AT A FULL COMMITTEE MEETING

3.6 Are there additional requirements by a funder or sponsor that require the study to undergo Full Committee review? (tick ✓)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
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Comments

3.7 Does this protocol comply with all the principles of the [Helsinki Declaration of 2013](#), including care after research, if applicable? (tick ✓)

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
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If no, please explain with full justification:

3.8 Is this a protocol for which insurance for research-related bodily injury would be appropriate?



(tick✓)	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No (If 'no', please complete 3.8.4 below)
3.8.1 If 'yes', please indicate the type of insurance cover:	
<input type="checkbox"/> ABPI-compliant sponsor's insurance policy	<input checked="" type="checkbox"/> UCT No-Fault insurance policy
Insurer's name	
Policy no	
Coverage period	

Note: Please use the approved HREC Insurance Clause in your Consent Form as per the [HREC SOP](#).

3.8.2 If UCT No-Fault insurance is required, please indicate if the study involves any of the following:		
<input checked="" type="checkbox"/> Pregnant women	<input type="checkbox"/> Minors	<input type="checkbox"/> Participants outside South African borders
If UCT No-fault insurance is required for participants outside South African borders, please specify the countries below:		
Not applicable		
3.8.3 If the research will involve participants outside South African borders and these participants are <u>not</u> insured by a sponsor or local mechanism in that country, please specify the study site(s):		
Not applicable		
3.8.4 If no insurance for research-related bodily injury is required, please justify by indicating the type/nature of the proposed research:		
<input type="checkbox"/> Qualitative research study <input type="checkbox"/> Purely observational study <input type="checkbox"/> Patient folder or document review only <input checked="" type="checkbox"/> Questionnaires/Interviews only <input type="checkbox"/> Study involves secondary data analysis only <input type="checkbox"/> No human participants involved in the research study <input type="checkbox"/> Other		
If other, please specify:		



4. Funding and grant information (Required)

Note: A summary budget **must** be attached in the appendices

4.1 Funding source	(tick ✓ at least one)	Ethics Review Levy – cost including vat
UCT (e.g. departmental funding / student research)	✓	R0
Grant Funding Organizations (e.g. MRC, NRF, CANSA,)		R0
Federally funded / Foundation sponsored / Private Institutions (BELOW R1m)		R6 099
Federally funded / Foundation sponsored / Private Institutions (ABOVE R1m)		R12 198
Pharmaceutical / Industry Driven company sponsors an investigator to conduct a new research project into Traditional or Complementary Medicine or Nutraceuticals		R12 198
Pharmaceutical / Industry Driven company sponsors an investigator to conduct a new research project		R24 396
Pharmaceutical / Industry Driven Additional Clinical Site / Extension study		R12 198
No funding/sponsor		→ skip to Q. 5

Note: The HREC does not have the authority to waive the ethics review levy. If a waiver is required, please contact Mr Salie Nassiep, the Research Management Accountant in the Faculty of Health Sciences (021 406 6409) email: salie.nassiep@uct.ac.za

4.2 What is the total sponsorship/funding for this protocol?	R5,000.00
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4.3 Into what entity will the funding be paid?	435926
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4.4 Ethics review levy (Clinical & Industry-sponsored research only)	
For invoicing purposes, please provide:	
Sponsor's name	Not applicable
Contact person	
Address	
Telephone number	
Email Address	

4.5 Where applicable, has the PI negotiated an agreement with the hospital or other health or laboratory services to cover the costs of interventions/ procedures/ investigations performed solely for research purposes? (e.g. extra MRIs, CT scans, diagnostic tests, prolonged hospitalisation, use of non-research staff to collect research-related data or perform research-related procedures) (tick ✓)		
<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If no, please explain how research costs will be recovered		



5. Characteristics of the protocol

5.1 Category of research	
Please select an appropriate category for your protocol. If the protocol falls in more than one category please designate a primary and secondary category by entering a '1' and a '2'.	
Medical intervention/ clinical trial (e.g. medicines, traditional or complementary medicines, nutraceuticals, devices or innovations)	
Behavioural/ psychosocial interventions (e.g. comparison of counselling programmes)	
Epidemiology/ observational study (e.g. survey, prevalence, case control, cohort studies)	✓
Quality improvement	
Testing new technologies	
Medical record review, audit	
Establishment of a specimen repository, medical data base/ registry	
Clinical laboratory studies	
Clinical laboratory studies (DNA related)	
Qualitative research (e.g. focus groups, in-depth interviewing, ethnography)	
Pilot study	
Other. Please describe:	

5.2 BIOHAZARD STATEMENT		
<p>Important: All researchers must be aware of and familiar with the MDSS Safety Sheets for each of the compounds/organisms used in this study.</p> <p>Note: Faculty Biosafety Committee approval is required for all projects involving biohazardous material that poses a real or potential risk to human health and/or the environment.</p> <p>Examples include transfer of rDNA, DNA, or RNA into whole animals or plants; use of human or animal pathogens (BSL2 and higher); use of genes encoding toxins that are lethal for vertebrates; and release of GMOs into the environment.</p>		
<p>Will this application require approval by the Faculty Biosafety Committee?</p> <p>If yes, please note that you are required to submit an application for approval to the Faculty Biosafety Committee / GMO committee. Please consult the Faculty Research webpage at: http://www.health.uct.ac.za/fhs/research/faculty-biosafety-committee</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>5.3 Does the study involve innovative therapy?</p> <p>Innovative therapy is a newly introduced or modified therapy with unproven effect or side effect, and is being delivered in the best interest of the patient. While there are clear distinctions in the aims of research and care, innovative therapy is experimental in nature and may involve data collection, similar to that for research. The HREC needs to determine whether the planned intervention can be classed as research.</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Please describe the innovative therapy.</p>		



5.4 Category of participants	<input checked="" type="checkbox"/> Adults	<input type="checkbox"/> Minors (<18 years)
	Please specify age range: _____	

5.5 If conducting research with minors, please provide the justification for the proposed inclusion of minors in the study. (Required)

5.5.1 Is the research considered ‘non-therapeutic’ i.e. does not have a likelihood of direct benefit to the minor participants?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
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For “Non-therapeutic” health research with minors, as part of the statutory requirements, [Form A](#) (NHREC Operational Guidelines for Ministerial Consent: v19 Feb 2015) must be completed and must accompany the FHS013 form.

Non-therapeutic research is classified as research that includes interventions that do not hold the prospect of direct health-related benefit to the participant but may produce results that contribute to generalisable knowledge. (Please see [SOP](#))

5.6 Estimated number of participants to be enrolled at the local site.	Number of Adults:	200	Number of Minors:	0
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5.7 Estimated duration of the study.	1 year
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5.8 Location(s) of the study: (Please supply name of the Research Unit / Site and/or Hospital/Institution and particular department – if applicable)

Groote Schuur Hospital Tertiary Obstetric services.

5.9 Which authority will be approached for institutional approval?
Note: Institutional approval/permission must be obtained before study commencement and must be obtained from the institution where the research data is being collected e.g. Hospital, School, Clinic, Department of Education, Provincial Department etc. prior to starting the project.

Groote Schuur Hospital
Provincial Department of Health of the Western Cape

5.10 Please describe where and how recruitment will take place; and who will be recruited?

Women 18 years or older, attending the Groote Schuur Hospital Antenatal Clinic and Wards, who consent to participate and can speak one of the 3 languages (English, Afrikaans, isiXhosa) in which the London Measure of Unplanned Pregnancy has been validated will be recruited. A one-on-one information session will be held in the waiting room of the Antenatal Clinic or the Antenatal Ward. Written consent will be obtained in the interview. Participants will be reassured that enrolment will not impact their clinical care and that they can exit the study at any time.



5.11 Who will be responsible for recruiting participants in this study?

Note: If the clinician involved in standard of care will be involved in this study and the recruitment of participants, please explain how the potential for therapeutic misconception will be minimized or avoided.

Dr Douglas Whistance, Registrar in Obstetrics and Gynaecology and the study team.

Women will be recruited by members of staff who are not involved in their clinical care.

Note:

- **If including UCT staff:** Please obtain permission from Ms. Miriam Hoosain, the Executive Director of Human Resources, when including UCT staff as research participants. (This is a University-wide requirement): Use forms [HR194](#) and [HR190](#).
- **If including UCT students:** Please obtain permission from Dr Moonira Khan, the Executive Director, Department of Student Affairs when including students as research participants. (This is a University-wide requirement): Use form [DSA 100](#)

5.12 Will non-English speaking/non-English fluent participants be enrolled in the study? (tick ✓)

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
If Yes, please tick ✓ what measures will be used to promote participants' and families' understanding:			
Written translation of consent/assent forms into a local language?	<input checked="" type="checkbox"/> Afrikaans	<input checked="" type="checkbox"/> IsiXhosa	<input type="checkbox"/> Other (specify):
Use of trained translator(s)/ interpreter(s)	The research team will include members fluent in Afrikaans and isiXhosa		
Other. Please specify below and describe how the investigators intend to explain the study to potential participants and ensure their understanding:			
The study will be explained in English, Afrikaans and isiXhosa using the patient information leaflet as a guide.			
This questionnaire has been validated in English, Afrikaans and isiXhosa in our clinical population.			

5.13 Will human tissue samples be collected for research purposes?

Yes

No

5.13.1 Type of samples to be collected:

Blood

Tissue

Genetic material

Other (please specify in field below)

5.14 Will data and/or samples be stored for future use?

Yes

No



5.14.1 If yes, please attach a SOP for the governance and storage of samples for future use with the protocol submission.

5.15 Will data and/or samples obtained in this study be shared with other researchers and/or institutions?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
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5.15.1 If yes, please specify who will have access to data and/or samples from this study.

5.15.2 If yes, has a Material Transfer Agreement been approved by the Research Contracts & Innovation (RC&I) office?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
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Note: All Material Transfer Agreements (MTA's) for incoming and outgoing data and/or samples should be approved by the Research Contracts & Innovation (RC&I) office and submitted to the HREC office for acknowledgment.

5.16 What measures will be taken to protect individual privacy and the confidentiality of data?
Please see related SOPs for guidance: [Privacy and Confidentiality](#) and [Collection and Storage of Data or Biological Specimens for Research Purposes](#)

Women attending the Groote Schuur Hospital Antenatal Clinics and admitted to the Antenatal Wards will receive information about the study. They will be approached individually and in private to ascertain whether or not they understand and would like to participate. Participants will be interviewed in private and will provide written consent at the beginning of the interview process.

A record of participants will be kept using folder numbers to prevent duplication of data during the data collection phase of the study. When the interviews are completed the folder numbers will be removed and participants will be numbered anonymously and at random to protect privacy and confidentiality.

There will be no information kept from the initial screening interview where women are asked if they understand and would like to participate.

Members of the research team will not share research information with anyone other than the named members of the research team.

Questionnaires will be stored in a locked filing cabinet in a secure environment. Electronic data will be kept on a password protected computer that is not linked to a network. This will only be accessed by members of the research team and the Research Ethics Committee.



6. Clinical trials

Is this protocol a clinical trial (tick ✓):

Yes No (If no, please go to Q.7)

This section must be completed **only** if the research involves a clinical trial of drugs/ medicines, herbal, complementary indigenous therapies; or a substance testing a clinical outcome, therapeutic devices; an innovative therapy or intervention; off-label use or a departure from standard treatment or care.

The SA GCP Guidelines (2006) define a clinical trial as any investigation in human participants intended to discover or verify the clinical, pharmacological and/or other pharmacodynamic effects of an investigational product(s), and/or to identify any adverse reactions to an investigational product(s) and/or to study absorption, distribution, metabolism and excretion of an investigational product(s) with the objective of ascertaining its safety and/or efficacy.

WHO: 'a clinical trial is any research study that prospectively assigns human participants or groups of humans to one or more health-related interventions to evaluate the effects on health outcomes.

Interventions include but are not restricted to drugs, cells and other biological products, surgical procedures, radiological procedures, devices, behavioural treatments, process-of-care changes, preventive care, etc.'

6.1 Is the product registered with the South African Health Products Regulatory Authority (SAHPRA)? (tick ✓)		<input type="checkbox"/> Yes	<input type="checkbox"/> No
If yes, please provide the registration number			
If no, is the SAHPRA's approval letter for use of an unregistered medicine attached?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Note: HREC approval must be obtained prior to study commencement.		<input type="checkbox"/> Application submitted	
If registered, will the product be studied for an indication different to that in the latest approved SA package insert?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
If registered, will the product be studied using a dose different to that in the latest approved SA package insert?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
If registered, will the product be studied using a formulation different to that in the latest approved SA package insert?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
If registered, will the product be studied using a route of administration different to that in the latest approved SA package insert?		<input type="checkbox"/> Yes	<input type="checkbox"/> No

Note: If yes to any of the above, SAHPRA approval is required.

6.2 Does the study involve an FDA-monitored product (drug, device or biological)? (tick ✓)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
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6.3 Is this trial registered with the South African Clinical Trial Register?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If yes, please provide the registration number		
If no, application submitted?		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	
If no application submitted, please justify.		

6.4 Is this trial registered with the Pan African Clinical Trials Registry? (See: www.pactr.org)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If yes, please provide the registration number		
If no, application submitted		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	
6.5 Does this trial comply with the Guidelines for Good Practice in the Conduct of Clinical Trials with Human Participants in South Africa, 2nd Edition, 2006? (tick ✓)	<input type="checkbox"/> Yes	<input type="checkbox"/> No



If no, please justify	
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6.6 Note: The Helsinki Declaration states: 'The benefits, risks, burdens and effectiveness of a new intervention must be tested against those of the best proven intervention.' Please describe the local and international standards of care. If appropriate, please provide a strong justification for including an intervention in this study that is different from the recognized standard of care.

6.7 Care after research

Please provide information about the provision of appropriate care or benefits after the study has been completed.

Note: In accordance with the Helsinki Declaration of 2013, this must include provision of the investigational product once the study has been completed, for participants that benefit, or a justification as to why investigational product will not be provided.

Where relevant, consent forms should include specific information clarifying what post-trial care will be provided at the end of the study, including access to any investigational products used. If none will be provided, this should also be explicitly indicated in the consent forms.

7. Statement of conflict of interest

The PI is expected to declare any existing or potential conflict of interest that may affect the scientific integrity and ethical conduct of this research. For purposes of this section, 'immediate family' means the PI's spouse or domestic partner and dependent children. **Please tick ✓ all that apply.**

7.1 No conflict of interest declared:

I, or any member of my immediate family, do not have any interest related to this research (e.g. financial interest in the sponsor of the research or intervention being tested.)	✓
I, or any member of my immediate family, do not have a proprietary interest in the product being tested in this research (e.g. patent, trademark, copyright, licensing agreement).	✓
I, or any member of my immediate family, do not have any relationships related to this research (e.g. board membership, consultative, executive, employment) or any entity with an ownership interest in the research other than the relationship of sponsor-investigator.	✓
I, or any member of my family or business partnerships, will not receive any payment for enrolling participants in this study.	✓

7.2 Conflict of interest declared:

As Principal Investigator of this research **I am aware of a potential conflict of interest.** Please describe and provide a plan to manage the conflict of interest in the space below:



8. Declarations and Signatures

This application will not be processed unless all the required declarations and signatures are completed according to the Committee's Standard Operating Procedures. (see: [SOP](#))

8.1 Head of Department or Division

My signature confirms that:

- i. The researcher(s)/student(s)/supervisor(s) have the skills, training (including research ethics training), experience and time to undertake this research.
- ii. There are adequate resources (e.g. equipment, space, support services) to perform this research.

Signature of Head		Date	
Print name	Professor Lynette Denny		

Note: Where the PI is also Head of Department, confirmation must be obtained from an authorised designee. PIs may not approve their own research.

8.2 Chairperson of the Departmental Research Committee (DRC)

My signature confirms that:

- i. This research protocol has undergone peer review by a person(s) experienced in the field of study.
- ii. This research is well-designed and scientifically sound.
- iii. Where relevant, all methodological issues have been resolved to the satisfaction of the peer reviewer(s).
- iv. If conducted according to the protocol, this research is expected to yield valid and useful findings.

Signature of Chairperson		Date	
Print name	Professor Mushi Matjila		

Note: Where the PI is also the Chairperson of the DRC, confirmation must be obtained from an authorised designee. PIs may not approve their own research.

8.3 Principal Investigator

My signature confirms that:

- i. Information in this application is true and accurate.
- ii. I will begin the research only after written HREC approval is obtained.
- iii. I accept full responsibility for the conduct of this research and the protection of participants' rights and welfare.
- iv. I will conduct the research according to all ethical, regulatory and legal requirements stipulated in the HREC's Standard Operating Procedures.
- v. I will provide progress reports to the HREC as requested, including a final closing report at the end of the research.
- vi. I will notify the HREC in writing if any change to the research is proposed and await approval before proceeding with the proposed change except when urgently necessary to protect participants' safety.
- vii. I will notify the HREC in writing immediately if any adverse event or unanticipated problem occurs during the research.
- viii. I will allow an audit of my research if requested by the HREC.
- ix. I have the time, training, experience and resources to oversee this research.
- x. I will endeavour to publish and disseminate the findings of the study.

Signature of Principal Investigator		Date	
Print name	Professor Zephne M van der Spuy		



8.4 Student supervisor (if research is for a degree)

My signature confirms that:

- i. The student researcher has adequate training and resources to complete the research in the allocated timeframe.
- ii. The research has scholarly merit.
- iii. The level of risk inherent in the study is commensurate with the student researcher's experience and the extent of oversight that I will provide.
- iv. I have time, training, experience and resources to oversee this research.
- v. I will meet the student on a regular basis to monitor progress and address any problems that may arise during the study.
- vi. I will ensure that the research undergoes continuing review as required by the HREC, including annual progress reports, protocol amendments and a final closing report at the end of the research.
- vii. If applicable, I will ensure that I report unanticipated problems or serious adverse events to the HREC.
- viii. I will arrange for an alternative faculty supervisor to take responsibility for this research during periods of absence such as sabbatical or annual leave.

Signature of Supervisor		Date	
Print name:	Professor Zephne M van der Spuy		

Note: The supervisor and student researcher are jointly responsible for the ethical conduct of this research from inception to dissemination of findings.

8.5 Student (if research is for a degree)

My signature confirms that:

- i. Information in this application is true and accurate.
- ii. I will begin the research only after written HREC approval is obtained.
- iii. I accept full responsibility for the conduct of this research and the protection of participants' rights and welfare.
- iv. I will conduct the research according to all ethical, regulatory and legal requirements as stipulated in the HREC's Standard Operating Procedures.

Signature of Student	 Dr D. B. Whistance MP 0784001 MBChB (UCT)	Date	1/11/18
Print name	Dr Douglas Brian Whistance		



New protocol submission checklist

Please ensure that all the applicable sections are fully completed and included in the submission. Missing information will delay the review process as the application will be returned to the PI. Sections A-C must be included. Instructions for submission of new applications are posted on the HREC website.

Note: There are two categories for submissions of studies – those that are reviewed by the full HREC committee and those that are expedited i.e. are reviewed outside the full HREC meeting. Upon receipt of the protocol application, an assessment of the likely risks to participants will be undertaken and a decision will be made by the HREC EXCO as to whether a protocol may be expedited. All expedited protocols are still subject to full review; and are not subject to any timeline advantage

Category 1: For Pharmaceutical / Grant / Donor Sponsored Clinical Trials involving Drugs / Devices

Instruction for full committee review:

- Please submit 3 hard copies of your submission pack for full committee approval.
- Please prepare your submission pack in the order specified below.
- Please separately add **10** copies of the PI Generated Synopsis & Sponsor's Synopsis (all copies to be stapled)
- Please separately add **10** copies of the Informed Consent Forms (all copies to be stapled)
- Please email the Synopsis and consent forms for full committee to Shuretta.thomas@uct.ac.za

Category 2: For Expedited Studies

Protocols may be potentially reviewed using an expedited review process if they meet the following criteria [45 CFR 46.110(b)(1)]:

- a. Research poses no more than minimal risk to subjects; AND
- b. Research for which each of the procedures falls within one of the following expedited review categories outlined by the Office for Human Research Protections (OHRP) [45 CFR 46.110] and the Food and Drug Administration (FDA) [21 CFR 56.110]: [Eligibility for Expedited Review of US Federally-funded Research – Pointers for Researchers](#). Also see 'eligibility for expedited review' in the HREC SOP for the [Protocol Review Process](#).

Instruction for expedited review:

- Please submit 2 hard copies of your submission pack for review. (Please email a copy to hrec-enquiries@uct.ac.za)
- Please prepare your submission pack in the order specified below.
- Please motivate fully for an expedited review using the eligibility criteria above
- Please note that after receiving your submission, the HREC Chairperson or designee might determine that your study falls in more than minimal risk to subjects and does require full committee review; the HREC Office will request additional copies of the documents for circulation among Committee members before the next HREC meeting.

Note: For our scanning purposes we request that you please refrain from binding the documents. Please don't use binder files where holes are punched in the documents. Please use binder clips or staples to secure documents. Please avoid using ring binders.



Please pack 3 copies for category 1 and 2 copies for category 2 in the order specified below:

Note: Submissions will be sent back when insufficient copies are provided.

For Full Committee Review (3 copies) Category 1	For Expedited Review (2 copies) Category 2
1. Completed Protocol Application Form	1. Completed Protocol Application Form
2. Cover letter listing all submitted docs with version numbers and version dates	2. Cover letter listing all submitted docs with version numbers and version dates
3. PI Generated Synopsis (see FHS014) (Required)	3. PI Generated Synopsis (see FHS014) (Required)
4. Sponsor's Synopsis (if applicable)	4. Motivation for Expedited Review
5. Research Protocol (see FHS015hlp)	5. Research Protocol (see FHS015hlp)
Appendices (as applicable)	Appendices (as applicable)
6. Consent and assent forms (English versions)	6. Consent and assent forms (English versions)
7. Sponsor's Protocol	7. NIH or other US federal grant application (if PI is primary awardee)
8. NIH or other US federal grant application (if PI is primary awardee)	8. Surveys, questionnaires, interview schedules
9. If an application has been submitted to the SAHPRA, a copy of (Ethical Issues) extracted from the CTF1 application form	9. Recruitment materials: advertisements, flyers, posters
10. Surveys, questionnaires, interview schedules	10. Materials for participants: diaries, patient identification cards
11. Recruitment materials: advertisements, flyers, posters	11. Letters of authorisation from institutions such as hospitals, clinics and schools
12. Materials for participants: diaries, patient identification cards	12. Insurance Certificate (where applicable)
13. Letters of authorisation from institutions such as hospitals, clinics and schools	13. Budget summary
14. Post-trial care/Care after research justification	14. Other relevant documentation
15. A summary of Phase III efficacy and safety data if this is an application for an open label or extension study	15. Post-trial care/Care after research justification
16. Insurance Certificate	16. If Minors are involved, please attach FORM A found on the website
17. Budget summary	17. SOP for governance and storage of samples; and MTA's (where applicable)
18. SAHPRA letter of approval, if available	
19. Investigator's brochure and package inserts	
20. In the case of clinical trials, PI's declaration, CVs and GCP certificates for PI and co-investigators	
21. If Minors are involved, please attach FORM A found on the website	
22. SOP for governance and storage of samples; and MTA's (where applicable)	
23. Other relevant documentation	

Note:

- Clearly list all documents with version numbers and dates on the cover letter.
- For our scanning purposes we request that you please refrain from binding the documents. Please don't use binder files where holes are punched in the documents. Please use binder clips, paper clips and staples. Please avoid using ring binders.



<p>Please submit the completed form together with the supporting documents by hand delivery or registered mail to</p>	<p>FHS Human Research Ethics Admin Office c/o the secretary – HREC Office Address: Human Research Ethics Committee E 53, Room 46, Old Main Building, Groote Schuur Hospital, Observatory Office Contacts: 021 406 6492; 021 404 7682; 021 406 6626</p> <p>Electronic copy of your submission to be emailed to: hrec-enquiries@uct.ac.za</p> <p>Administrators: shuretta.thomas@uct.ac.za & nosi.tsama@uct.ac.za</p> <ul style="list-style-type: none">• Invoice queries: Senior Secretary: sumayah.ariefdien@uct.ac.za <p>Website: http://www.health.uct.ac.za/fhs/research/humanethics/forms/</p>
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APPENDIX 13: Approval letter from Groote Schuur Hospital management

GROOTE SCHUUR HOSPITAL

Enquiries: Dr Bernadette Eick

E-mail : Bernadette.Eick@westerncape.gov.za

Professor Z. van der Spuy
OBSTETRICS & GYNAECOLOGY

E-mail: Zephne.vanderspuy@uct.ac.za / dbwhistance@gmail.com

Dear Professor v. d. Spuy,

RESEARCH PROJECT: Pregnancy Intendedness In a high-rsik obstetric population in a tertiary hospital (Dr Douglas Whistance)

Your recent letter to the hospital refers.

You are granted permission to proceed with your research, which is valid until **28 February 2020**.

Please note the following:

- a) Your research may not interfere with normal patient care.
- b) Hospital staff may not be asked to assist with the research.
- c) No additional costs to the hospital should be incurred i.e. Lab, consumables or stationary.
- d) **No patient folders may be removed from the premises or be inaccessible.**
- e) Please provide the research assistant/field worker with a copy of this letter as verification of approval.
- f) Confidentiality must be maintained at all times.
- g) **Should you at any time require photographs of your subjects, please obtain the necessary indemnity forms from our Public Relations Office (E45 OMB or ext. 2187/2188).**
- h) Should you require additional research time beyond the stipulated expiry date, please apply for an extension.
- i) Please discuss the study with the HOD before commencing.
- j) Please introduce yourself to the person in charge of an area before commencing.
- k) On completion of your research, please forward any recommendations/findings that can be beneficial to use to take further action that may inform redevelopment of future policy / review guidelines.
- l) **Kindly submit a copy of the publication or report to this office on completion of the research.**

I would like to wish you every success with the project.

Yours sincerely



DR BERNADETTE EICK
CHIEF OPERATIONAL OFFICER

Date: 18 March 2019

C.C. Mr. L. Naidoo
Dr T. Numanoglu
Professor L. Denny