UNIVERSITY OF CAPE TOWN

FACULTY OF HEALTH SCIENCES

PREGNANCY INTENDEDNESS IN A HIGH-RISK OBSTETRIC POPULATION IN A REGIONAL HOSPITAL.

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A dissertation submitted in partial fulfillment of the requirements for the Master of Medicine degree (MMed) in Obstetrics and Gynaecology.

TABLE OF CONTENTS **PAGE**

DECLARATION BY CANDIDATE

I, Akanimo Effiong Akpakan, hereby declare that the work on which this dissertation/thesis is based is my original work (except where acknowledgments indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or another university.

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DECLARATION BY SUPERVISORS

Professor ZM van der Spuy, Dr. K. Kadwa, and Professor G. Petro supervised this research project undertaken by Akanimo Effiong Akpakan and the presentation of this dissertation. The late Dr. Carl Firmin supervised the recruitment of participants at George Regional Hospital.

We are satisfied that this is Akanimo Effiong Akpakan's original work, unless otherwise stated, and this dissertation should be submitted in partial fulfillment of the requirements for the degree MMed in Obstetrics and Gynaecology.

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LIST OF TABLES **PAGE**

LIST OF FIGURES **PAGE**

ABBREVIATIONS

ANC	Antenatal Clinic
ARV	Anti-Retro Viral
BMI	Body Mass Index
COC	Combined Oral Contraceptive
EC	Emergency Contraception
DHS	Demographic and Health Survey
DMPA	Depot Medroxyprogesterone Acetate
FAS	Fetal Alcohol Syndrome
FGR	Fetal Growth Restriction
FSW	Female Sex Worker
GA	Gestational Age
HIV	Human Immunodeficiency Virus
HREC	Human Research Ethics Committee
IUCD	Intrauterine Contraceptive Device
LARC	Long-Acting Reversible Contraceptives
LMUP	London Measure of Unplanned Pregnancy
LNMP	Last Normal Menstrual Period
LNG-IUS	Levonorgestrel Intrauterine System

NVD	Normal Vaginal Delivery
PMHS	Perinatal Mental Health Score
POP	Progesterone-only Pill
TOP	Termination of Pregnancy
UIP	Unintended Pregnancy
UNO	United Nations Organization
UNFPA	United Nations Population Fund
USA	United States of America

ABSTRACT

Unintended pregnancies (UIP) are those that are mistimed, unplanned, or unwanted at the time of conception. It is estimated that, worldwide, 40% of pregnancies were unplanned in 2012 and this carries increased risks for both mothers and babies. This study was designed to utilise the London Measure of Unplanned Pregnancy (LMUP) to assess pregnancy intendedness in a high-risk obstetric population of women who were accessing care at a large regional hospital.

Methods: This was a cross-sectional descriptive study. Women attending the High-Risk clinics or admitted with medical problems were recruited at George Regional Hospital. Once they consented to the study, the LMUP was administered by a single research team member.

The LMUP is a psychometrically validated measure of pregnancy intention for a current or recent pregnancy. Questions enquire about the intention and timing of pregnancy, preconception behaviour, contraception usage, and partner's input and a score is obtained which indicates intendedness. It has been validated in our department in the 3 local languages.

Results: A total of 200 women were recruited for the study. No potential participant declined to be interviewed. The mean age was 30.4+/- 6.3 years and the majority of participants were of mixed ancestry (n=135). HIV status was positive for 23 participants and unknown for 29. All participants completed the Perinatal Mental Health Score and 4 required referrals for supportive assistance.

The LMUP indicated that 76 women had unintended pregnancies, 58 were ambivalent about their pregnancies and 66 had an intended pregnancy. Pre-pregnancy discussion and preparation were lacking for most of the participants despite pre-existing risk factors.

Pregnancy intendedness was affected by several factors. Age (P = 0.02), relationship status (P = 0.001) and financial support (P = 0.005) were associated with intendedness. Employment, parity, language group, educational level, booking gestation, HIV status, and multiple comorbidities did not affect pregnancy intendedness. Other factors that had no influence were Perinatal Mental Health Score, preconceptual counselling/health improvement, and habits. Poor partner communication was common. Women at extremes of reproductive life had more unplanned pregnancies (P = 0.02).

There was good unprompted contraceptive knowledge but poor information about emergency contraception.

Conclusion: In this high-risk group of obstetric patients, there was little preconception discussion or preparation and inadequate use of contraception among women who did not plan a pregnancy.

CHAPTER 1: INTRODUCTION AND LITERATURE REVIEW

Unintended pregnancies are those that are mistimed, unplanned, or unwanted at the time of conception.[1] Whereas mistimed pregnancies occur earlier than desired, unplanned pregnancies occur when a woman uses a contraception method or when she does not desire to become pregnant but does not use any method.[2]

Worldwide, 40% of pregnancies in 2012 were estimated to be unintended.[3] The estimation of global unintended pregnancies remained static from 4 years earlier in 2008 which reported that of the 208 million pregnancies in that year, 41% were unintended.[4] This means that in 2008, there were 86 million unintended pregnancies worldwide. The highest unintended pregnancy rates globally were reported in Eastern and Central Africa, and the lowest were reported for Southern and Western Europe and Eastern Asia.[5]

Unintended pregnancy rates differ from country to country due to differences in urbanization, social and economic development.[3] In Kenya, an East African country, over half of the population growth in 1996 was from unintended pregnancies.[5] In surveys carried out since 2000 in 25 Sub-Saharan African countries, about a quarter of women of reproductive age stated that they did not want any more children, while a third wanted to wait for at least two years before becoming pregnant.[6] The rate of unintended pregnancies in some developed countries, especially those with high socioeconomic inequalities was not any better. For example, in 2011, of the 6.1 million pregnancies in the United States, 45% were unintended but this was an improvement from 51% unintended pregnancies in 2008.[7]

According to the South African Demographic and Health Survey (DHS) of 2016, 46% of pregnancies were intended at the time of conception, 34% were mistimed, and 20% were unwanted.[8] The 2008-2009 Kenyan Demographic Health Survey of unintended pregnancies showed that 43% of married women in Kenya stated that their current pregnancy was unintended and that among young women of school-going age it was the major contributing factor to school dropout rates.[9] Despite efforts at achieving universal access to sexual and reproductive health including family planning, comprehensive sexual education, and maternal health services, global estimate of unintended pregnancy rate appear to have worsened to almost 50% in 2022.[10,11]

Unintended pregnancy may result from contraceptive failures, ignorance, unavailability and improper use of contraceptive methods, lack of sex education, poor socio-economic circumstances, poor communication between partners, sexual assault, marital and employment status, or poor health.[12,13] Other reasons for pregnancy unintendedness include cultural preferences and stigma attached to unmarried mothers, competing demands for women's time, and poor understanding of the risk of pregnancy.[14,15,16] Poor access to family

planning services and unexpected changes in life circumstances such as separation, divorce, and unemployment are also contributory factors to unintended pregnancies.[16,17,18]

Unintended pregnancy can also be attributed to the influence of male partners.[4] In 30% of births, women reported non-concordant intention from that of their partners.[4,5] Partners' disagreement about pregnancy intention can lead to instability in the women's view of pregnancy intendedness as well as a possibility that they engage in activities that are detrimental to their unborn babies such as alcohol intake, substance abuse, cigarette smoking, and caffeine consumption.[4] The partner's influence may also have an effect on contraceptive use and the method used.[4,5.]

Other factors that impact the use and effectiveness of contraception include a negative attitude towards methods offered and poor communication between partners.[4]

In a study done in South Africa in 2012, a lack of sexual education played a key role in unintended pregnancies with as many as 74.1% of respondents pointing to a lack of knowledge as a primary factor in their pregnancy unintendedness.[18] Furthermore, 55% claimed they had no idea when coitus could result in pregnancy and 71% claimed no knowledge of how pregnancy happens.[18] Studies conducted in Barcelona, Spain in 2007 and in two sites in southern Botswana in 2016, reported that women with less than 12 years of education were found to be more likely to have an unintended pregnancy compared to women who were better educated and that those with planned pregnancies were more often married.[19,20]

Unintended pregnancies are more common among teenagers and older multiparous women above 40 years of age.[12,21,22] Increasing parity was reported to be associated with unintended pregnancy in Ghana and Ethiopia in 2019 and 2020 respectively.[23,23,25] A further study conducted in South-West Nigeria in 2020 reported that women with 4 or more children have the highest prevalence of unintended pregnancies while those with 1 - 3 children had fewer unintended pregnancies.[26] A study in California, USA in 2004 reported more than 75% of teenage pregnancies are considered unintended and almost 35% end up being terminated.[21] A 2020 study in the United States by Kantorova reported that worldwide, in the period between 2015 and 2019, abortions increased from 55 million to 73 million.[27]

According to the South African Demographic and Health Survey of 2016, the Province of the Western Cape had an adolescent (population aged 10-19 years) pregnancy rate of 9.6%, a third of which ended in termination of pregnancy (TOP).[28] Country-wide, the adolescent pregnancy rate declined from 16.4% in 1998 to 12.4% in 2016.[28]

For older women, poverty, competing demands for their time (schooling and work), completion of family size, and poor understanding of the risk of future pregnancy are important factors that contribute to pregnancy unintendedness.[5,29,30]

Sub-Saharan Africa has the highest HIV infection acquisition rate in the world.[31] In 2005, there were an estimated 25 million people in Sub-Saharan Africa living with HIV, most of whom were of reproductive age.[29] A cohort study of HIV-infected patients from Abidjan, Cote d'Ivoire done in 2005, showed that despite having a population with a high HIV prevalence rate, HIV positivity did not discourage unintended pregnancies.[29]

In a study of HIV-infected women in South Africa in 2012, almost 220,000 participants were reported to have had an unintended pregnancy, adding cost to the fiscus in providing antiretroviral medication to prevent vertical transmission of the virus to babies.[22] HIV-infected women were less likely to want more children compared to HIV-negative women.[20] Unintended pregnancy may be a prevalent and persistent predictor of poor ARV outcomes among women initiating anti-retroviral therapy during pregnancy.[31] Compared to women with intended pregnancies, elevated viral loads were more common among women with unintended pregnancies.[31]

Accurate measurement of pregnancy intention is important in understanding fecundity-related behaviours, fertility prediction, and unmet contraceptive needs.[2] It is vital to understand the health impact on both the mothers and children, by designing family planning programmes, and evaluating the effectiveness of community-based interventions to prevent unintended pregnancy.[2] Information concerning unintended pregnancy can be used to highlight the gap in knowledge and use of contraception as well as to estimate the cost and benefits of investing in family planning programmes.[16] In a study conducted in 2012 in the United States, women and girls who had free access to and used highly effective methods of contraception such as the IUCD had a much lower rate of unintended pregnancy than those who elected other commonly used methods such as oral contraceptive pills.[7]

To achieve the United Nations Organisation's (UNO) sustainable development goal of reducing both maternal and child morbidity and mortality by the year 2030, the incidence of unintended pregnancy and its consequences must be dramatically reduced.[32]

CONSEQUENCES OF UNINTENDED PREGNANCY

1. Maternal Consequences

Unintended pregnancy can result in health risks for the mother, especially in teenagers and women of advanced maternal age, and when the births are too closely spaced or when the mother assesses that she already has too

many children or is ill-prepared to care for a child.[4,16] In 1995, the Committee on Unintended Pregnancy of the Institute of Medicine (National Academy of Science, United States) at a conference held in the United States concluded that "…consequences of unintended pregnancies are serious, imposing appreciable burdens on children, women, men and families".[30]

With each pregnancy, especially high-risk pregnancies, there is a higher maternal mortality rate that may result in death arising from a situation that the woman has not adequately understood.[30] Women at the extremes of reproductive age are more likely to have high-risk pregnancies as well as unintended pregnancies.[4]

Sub-Saharan Africa and Asia account for 86% of maternal mortality worldwide.[33] Pregnancy is described as the most dangerous health event in Sub-Saharan Africa with a lifetime risk of death of 1 in 16 pregnancies.[6]

The Saving Mothers Triennial Report of 2017-2019 on maternal deaths in South Africa reports the Institutional Maternal Mortality ratio dropped from 125.89/100 000 in 2017 to 98.82/100 000 live births in 2019.[33] This drop was largely due to the reduction of maternal deaths from complications of HIV infection.[33]

A significantly greater proportion of women in the United States who seek antenatal care have intended pregnancy (73% compared to 29% for those with an unintended pregnancy).[2] Initiation of breastfeeding improves with decreasing unintendedness (39% for those with unintended pregnancy and 61% for those with intended pregnancy).[2,34,35]

Women with unintended pregnancies are reported to have fewer total and more irregular antenatal visits,[12,13] This means they are not being screened for factors that highlight risks in that particular pregnancy and this exposes them and their unborn babies to increased morbidity and mortality.[12,13,15] Unintended pregnancies were associated with a 35-39% reduction in the use of antenatal, delivery, and postnatal health services.[36] These pregnancies may end in terminations, especially unsafe ones, which is an important cause of maternal morbidity and mortality in South Africa.[37] In comparison to those with an intended pregnancy, women with unintended pregnancies consume less than the recommended preconception folic acid dosage, smoke prenatally and in the postpartum period, report more postpartum depression, and are more likely to have pre-eclampsia and anaemia in pregnancy.[31,38,39,40,41]

Unintended pregnancies were more likely to be delivered by caesarean section, to gain weight inappropriately, and to suffer from physical abuse during pregnancy.[4,30,42] In a 2008 study done in Peru, the prevalence and severity of physical abuse during pregnancy were found to be greater among women with unintended pregnancy than those with intended pregnancy.[43] This study demonstrated that abused women have a 1.63-fold increased risk of having an unintended pregnancy and a 3.31-fold higher risk of experiencing both physical and sexual abuse.[43] The twelve-month period prior to conception reported in a study from Baltimore, United States, may

be characterised by household dysfunction, exposure to psychological abuse, and risky maternal behaviour; particularly alcohol and drug use, cigarette smoking, and caffeine intake.[1,2,35]

Many unintended pregnancies end in unsafe abortions in countries where termination of pregnancy is illegal and this is a major contributor to maternal morbidity and mortality.[2] It is estimated that unsafe abortions resulted in 400,000 of the 700,000 deaths resulting from unintended pregnancy worldwide between January 1995 and December 2000.[44] Half of abortions globally are still considered unsafe.[4] The unsafe abortion rate has unfortunately seen little decline between 1993 and 2008.[4] Unsafe abortions are the cause of 1 in 7 maternal deaths and are estimated to result in approximately 15 million women being hospitalised annually in the developing world.[4] In addition, an estimated 5 million person-years of reproductive life are lost due to ill health following unsafe abortion. [30]

Morbidity from unsafe abortions is far more common than mortality, both in the short and long term.[30] An estimated 20-30% of unsafe abortions resulted in reproductive tract infections.[30] The upper reproductive tract is affected in 20-30% of these cases, risking future fertility.[30]

In South Africa, termination of pregnancy accounted for 4.9% of maternal deaths in 2007.[32] In Sub-Saharan Africa, the abortion rate is calculated at 33 per 1000 women.[6] Sub-Saharan African countries might have as many as 5.6 million unintended pregnancies per year or 28 million over a 5-year period.[6] Miscarriages are more frequent in women with unintended pregnancies and this may lead to inaccurate estimation of pregnancy intendedness.[2,13]

In South Africa, it was estimated in 1994 that 49,653 women were hospitalised due to complications arising from unsafe terminations of pregnancy.[37] Second-trimester miscarriages were more likely to have been induced and this caused an increased risk of complications.[37]

Unintended pregnancy may also result in women developing depression and having decreased energy levels, impacting their ability to care for their other children.[16,30,35,38]

White women with an unintended pregnancy compared to black women, were more likely to have preconception binge drinking (five or more alcoholic beverages on one occasion) as reported in a study conducted in Atlanta, Georgia, USA between 1996 and 1999.[45] These women had a significantly higher incidence of depression, anxiety, and a decline in psychological wellbeing.[4,30,45] They are also more likely to abuse their children physically and to spend less leisure time with them.[4,36,45] Interestingly, the experience of unintended pregnancy did not change women's contraception use patterns, which indicates the risk of repeat unintended pregnancy and associated adverse consequences.[46]

2. Consequences for Fetuses, Neonates and Young Children

Pregnancy diagnosis is significantly more likely to be delayed in women with unintended pregnancies.[14] This deprives the mother of the health benefits of preconception counselling and screening for pre-existing medical conditions with potentially harmful effects on the unborn baby.[14] Studies in the USA and Europe found an increased risk of congenital abnormalities, spontaneous abortion, premature birth, and low birth weight infants in women whose pregnancies were unintended.[21,30,47] These mothers are more likely to binge drink, exposing their babies to the risks of the Fetal Alcohol Syndrome (FAS).[48] First described in 1973, FAS is linked to permanent brain damage, congenital abnormalities, prenatal and postnatal growth restriction, and characteristic dysmorphic facial features.[48] It is also associated with cognitive, behavioural, emotional, and adaptive function deficits.[48] The prevalence of alcohol use during pregnancy globally is estimated to be 9.80% and the prevalence of FAS in the general population is 14.6/10 000, hence 1 in 67 women who consume alcohol during pregnancy will have a child with FAS.[48]

In studies done in Lima, Peru in 1999 and Atlanta, Georgia in 2008, children from unintended pregnancies were found to be more likely to suffer from physical and emotional abuse.[30,45]

Compared to women with intended pregnancies, those with an unintended pregnancy fail to receive preconception folic acid thus predisposing the fetus to neural tube defects and they more often smoke prenatally, also predisposing the fetus to Fetal Growth Restriction (FGR), preterm delivery, spontaneous early pregnancy loss, and abruptio placentae. [30,49]

Unintended pregnancies are terminated more than wanted pregnancies and approximately 35% of teenage pregnancies end in an abortion.[2,21] As reported in a 2019 study among Female Sex Workers (FSW) in Dar es Salaam, Tanzania, there was a high number of unintended pregnancies ending in termination, which highlights a major unmet need for contraception.[50] FSWs reported that sex work impedes good contraception behaviour because they felt unable to negotiate condom use, avoided health services due to stigma, missed monthly contraceptive supplies due to inconvenient clinic operating hours, or stopped contraceptive pills when intoxicated with alcohol.[50] They also perceived pregnancy to be a burden and terminated because of fear of loss of income during pregnancy.[50] This highlights the need to integrate contraception services with HIV programmes serving FSWs.[50]

Unintended pregnancy is significantly and inversely linked to the likelihood of prolonged breastfeeding (i.e., beyond the first year of life).[30,35,49] A 2006 study analysing Demographic and Health Survey data from 18 countries reported that women with unintended pregnancies were 10% less likely to continue breastfeeding their infants beyond their first year of life.[51] This relationship, however, is modified to an increased chance of prolonged breastfeeding as the maternal parity increases.[49] Primiparous women with planned pregnancies have

a significantly higher median period of breastfeeding than their counterparts whose pregnancies were unintended, and breastfeeding for more than 8 weeks was more prevalent among women with intended pregnancies.[35,49] Among multiparous women, however, median breastfeeding periods were not dissimilar.[45,49]

In a five-country (Peru, Philippines, Kenya, Egypt, and Bolivia) Demographic and Health Survey analysis, Marston and Cleland found significantly higher rates of incomplete child vaccination by one year of age among unintended births.[52] These children were more likely to contract diseases and less likely to receive treatment.[30] In societies with a strong preference for sons, such as reported in a 2008 study conducted in Punjab, India, and some South Asian countries, female infants are worse off as they are selectively aborted, abandoned, and neglected through differential allocation of food and care.[30]

Malnutrition is more prevalent in children from unintended pregnancies resulting in growth stunting and chronic diseases.[30,35,49] These children had increased odds of a diagnosis of developmental delay.[53] A study using data from the 1998 Bolivian Demographic and Health Survey found that among children aged 12 - 35 months considered to be born from unintended pregnancies, up to 30% were more likely to be stunted in growth compared to children from planned pregnancies.[30] They also experience less favourable parenting.[30] There is a lower likelihood of mother-to-child bonding and attachment in cases of unintended pregnancies which may adversely affect the child's psychological well-being and social development.[30]

MEASUREMENT OF UNINTENDED PREGNANCY

Estimates of the global incidence of unintended pregnancies and pregnancy outcomes were developed for the first time in the United States in 1995.[34] This information has been used recently for two primary purposes. Firstly, the data were used in the determination of the unmet need for family planning and assessment of insights into women's health behaviours such as whether they seek prenatal care, and secondly, to assess pregnancy outcomes such as birth weight.[2,33,34]

Accurate measurement of pregnancy intendedness is important in understanding the unmet needs for contraception, assessing the impact of unintended pregnancy on maternal and child health, designing family planning programmes, and evaluation of community-based programmes that aim to prevent unintended pregnancies.[2]

A 2019 analysis by the Guttmacher Institute and the United Nations Population Fund (UNFPA) reported that satisfying the unmet need for contraceptive services in developing countries would avert the 111 million unintended pregnancies that occur worldwide each year, which, in turn, would reduce unintended pregnancies by 68%, unsafe termination of pregnancies by 72%, and maternal mortality by 62%.[54] This would have resulted in enormous financial savings and more importantly, in improving fetal, infant, and maternal health outcomes.[55]

Information about levels of unintended pregnancies allows assessment of the access and use of contraception by women.[2] Public-supported family planning programmes have prevented 1.3 million unintended pregnancies in the United States and sterilisation drives for older women have significantly decreased their pregnancy rate and thus induced abortions and births.[2]

THE LONDON MEASURE OF UNPLANNED PREGNANCY (LMUP)

In 2012, The London Summit on Family Planning in seeking to manage the high rates of unintended pregnancy and its fetal, infant, maternal, and societal implications identified the need for improved surveillance of unintended pregnancies.[13]

The London Measure of Unplanned Pregnancy (LMUP) is a psychometrically validated measure of pregnancy intention for a current or recent pregnancy developed in the United Kingdom.[56,57] It is a six-question, multiple-choice questionnaire with answers scored from 0-2 **(Appendix 1A-C).**[56]

These questions enquire about contraceptive usage, intention and timing of pregnancy, desire for a baby, preconception behaviour, and partner's input.[56,57] This results in a total score of 12.[57] A higher score reflects increased levels of pregnancy intendedness and a lower one, pregnancy unintendedness or ambiguity about the pregnancy.[56]

The recommended interpretation of scores is as follows: 0-3 indicates unintended pregnancy, 4-9 indicates ambivalence and 10-12 is reflective of an intended pregnancy.[56,57] It was eventually redesigned for use in developing countries with high illiteracy rates and is ideal for large surveys.[57,58]

THE LONDON MEASURE OF UNPLANNED PREGNANCY QUESTIONNAIRE

Question 1: **In the month you became pregnant**

(i) I/we were not using birth control.
(ii) I/we were using birth control but not on every occasion.
(iii) 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.
(iv) I/we always used birth control.

Question 2: In terms of becoming a mother (first time or again), I feel like my pregnancy happened at the ….

(i) Right time.
(ii) OK, but not quite the right time.
(iii) Wrong time

Question 3: Just before I became pregnant

(i) I intended to get pregnant.
(ii) My intentions kept changing.
(iii) I did not intend to get pregnant.

Question 4: Just before I became pregnant

(i) I wanted to have a baby.
(ii) I had mixed feelings about having a baby.
(iii) I did not want to have a baby.

Question 5: 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.

Before I became pregnant

(i) My partner and I had agreed that we would like me to be pregnant.
(ii) My partner and I had discussed having children together but had not agreed for me to get pregnant.
(iii) We never discussed having children together.

Question 6: Before you became pregnant, did you do anything to improve your health in preparation for pregnancy?

(i) Took folic acid.
(ii) Stopped or cut down on smoking.
(iii) Stopped or cut down on drinking alcohol.
(iv) Ate more healthily.
(v) Sought medical/health advice.
(vi) Took some other actions, please describe.
(vii) I did not do any of the above before my pregnancy.

The advantage of the LMUP is that it is highly consistent.[57] It makes no assumptions about the participants' relationships, does not require them to have formed family plans, does not assume an ideal family size, and is suitable for pregnancies with any outcome.[56,57] Furthermore, it does not assume that the participant's actions are rational or in concord with their intentions, thus providing a detailed and realistic reflection of women's fertility behaviour.[57,58]

Women are also allowed to express ambivalence as pregnancy cannot simply be categorised strictly as planned or unplanned. [57,58,59,60] The LMUP provides a better understanding of pregnancy intendedness and this can be exploited to meet the requirements of women with unmet need for contraception.[56,57,58] It can also be applied cross-culturally, thus making comparison of unintended pregnancy possible internationally.[61] It is a tool that can be used in antenatal care to identify women with unintended pregnancies who require improved access to care.[62]

VALIDATION OF THE LONDON MEASURE OF UNPLANNED PREGNANCY

The LMUP was developed in the United Kingdom and has been validated in many countries around the world including Australia, Malawi, Iran, Ethiopia, Sierra Leone, India, and Mozambique.[30,57,58,59,60,63,64] The London Measure of Unplanned Pregnancy was first validated for low-income countries for use in Malawi.[59] It was recently validated in South Africa in the MMed project of Dr. Rendani Tshikosi of the University of Cape Town for use in three languages: Afrikaans, English, and IsiXhosa.[65]

GEORGE, WESTERN CAPE, SOUTH AFRICA.

George Regional Hospital is in the city of George. It is located in the Garden Route district of the Western Cape which has the second most populated of the six Western Cape districts. The district has a population of 627,917 people with Gini coefficient of 0.63%, indicating a high income inequality.[66]

Garden Route district has the fourth highest population growth since 2001 and the third-largest average population growth rate among the six Western Cape districts. [66] The unemployment rate in the district in 2020 was reported as 15.4%.[66] The district had a maternal mortality ratio of 121.5 per 100, 000 live births, a Neonatal Mortality Rate of 16.1 per 1000 live births, and a Low Birth rate (10 to 20 births per 1000) of 16.4% in 2020.[66] A total of 26, 996 people were receiving ARVs in the district in 2020, an increase of 508 patients from the previous year .[66]

George Regional Hospital is a Level 2 referral hospital for the entire region encompassing both the Garden Route and Karoo district municipalities: from the Slang River and Heidelberg in the west to Plettenberg Bay in the east and Beaufort West and Murraysburg in the north.

The Department of Obstetrics and Gynaecology is staffed by 3 specialists, one registrar, 5 medical officers, and 5 interns. Due to the distance from its referral hospital - Groote Schuur Hospital in Cape Town- more than 400km away, the majority of patients with high risk and tertiary level obstetric needs are managed at George Regional Hospital, a secondary level hospital.

The hospital manages 280-300 deliveries per month with a caesarean section rate of 30%. There are weekly High-Risk Antenatal Care Clinics and in addition, outreach programmes are provided for Level-one hospitals in Knysna, Oudtshoorn, Mossel Bay, and Thembalethu. There are presently no available data on the prevalence of unintended pregnancy and contraception rates in the district.

AIM OF STUDY

The aim of this study was to apply the LMUP to high-risk obstetric patients at George Regional Hospital (at the high-risk clinic and those admitted to the Antenatal ward) to assess pregnancy planning within this subgroup. Additional data and information about each participant's knowledge of, access to, and use of contraception was obtained.

It was hoped that by using the LMUP, knowledge of the pregnancy intention and the unmet need for contraception in the district would be obtained.

STUDY OBJECTIVES

1. **Primary Objective:** The primary objective was to assess pregnancy intention using the London Measure of Unplanned Pregnancy (LMUP) in high-risk obstetrics patients accessing George Regional Hospital.

2. **Secondary Objective:** The secondary objective was to assess the knowledge of, access to, and the use of contraception among these patients and the demographics of these women.

CHAPTER 2: METHODS

Study Design

The study was a cross-sectional descriptive study that assessed pregnancy intention in high-risk obstetric patients in George Regional Hospital using the LMUP which had been validated in our population in Afrikaans, English and IsiXhosa. It also reviewed their knowledge of, access to, and use of contraception.

Target Population

Patients were recruited from the High-Risk Antenatal Care Clinic at George Regional Hospital which runs every Tuesday with an average attendance of 50 patients per week and from the Antenatal ward. High-risk pregnancies are pregnancies with de novo or pre-existing medical or surgical conditions that may adversely affect the woman, her unborn baby, or both of them. They are referred from basic Antenatal Care Clinics or from District Hospitals that refer patients to George Regional Hospital. In addition, women who develop complications in pregnancy may be referred to this clinic.

Recruitment And Enrolment

This commenced after obtaining approval for the study from both the George Regional Hospital Ethics Committee **(Appendix 2)** and the Human Research Ethics Committee of the University of Cape Town **(Appendix 3).** The recruitment was completed over a period of 7 weeks.

Women attending the High-Risk Antenatal Care Clinic are usually seated in a waiting area separate from other outpatient clinics. The investigator, Dr A. Akpakan reviewed each folder and then individually approached each patient who met the inclusion criteria. A fifteen-minute information session was presented by Dr. A. Akpakan to the group of patients who met the inclusion criteria. It was ensured that this action in no way compromised or disrupted the delivery of services by the hospital staff. To avoid bias, these sessions occurred when the investigator was post-call and the recruitments from the Ante-Natal Wards happened after hours, when the investigator was on leave, and on weekends when he was off-duty.

Women who agreed to participate in the study were counselled individually and privately, and signed an informed consent form **(Appendix 4A-C)** before they were required to answer the questionnaire including the validated LMUP questionnaire.

The questionnaires were provided in three languages: Afrikaans, English and IsiXhosa and were administered by Dr. A. E. Akpakan in a private consulting room.

To avoid duplication, files of patients already interviewed were marked after the completion of the interview. We had previously been advised by the statistician who assisted us with the validation of the London Measure of Unplanned Pregnancy in South Africa that 200 participants are a suitable number for a descriptive study.

Participants were also provided with the study's Information Leaflet **(Appendix 5A-C)** before consenting to the study. The Information Leaflet provided all relevant information about the study, including the telephone number of the investigator and that of the uninvolved consultant staff in case participants wanted to opt out or ask for further clarification about the study.

Inclusion Criteria:

i Women who were willing to participate and had given written informed consent;
ii Women who attended the High-Risk Antenatal Care Clinic or were admitted to the antenatal wards in George Regional Hospital, George;
iii Women aged 18 years and older;
iv Women who understood one of the three languages - English, IsiXhosa, and Afrikaans.

Exclusion Criteria:

i Women under 18 years of age;
ii Women who declined to participate in the study;
iii Women who did not understand any of the languages for which the LMUP was validated for use in South Africa i.e. English, IsiXhosa, or Afrikaans;
iv Women who chose to withdraw from the study at any time.

Patients who agreed to participate in the study were interviewed individually in a private room and signed the informed consent form before the questionnaire which included the LMUP and Perinatal Mental Health Screening (PMHS) was administered. Each patient's data were recorded in an individual survey form by the interviewer.

Demographic and personal data such as age, marital status, and use of substances (alcohol, cigarette, illicit drugs) were recorded. Relevant clinical information was also obtained such as the medical and surgical history, obstetric and gynaecological history, last normal menstrual period (LMNP), gestational age at booking, knowledge/use, and access to contraception.

The Perinatal Maternal Health Screening (PMHS) questionnaire **(Appendix 6)** was administered to each patient and those with psychosocial issues such as anxiety, depression, or with a history suggestive of abuse were referred to Options. Options is a non-governmental organisation that works in conjunction with the Social Services Department at George Regional Hospital and provides counselling to such patients.

Data collected did not include patient identifying features. Data were collected over a period of three months. Total time per interview was around twenty minutes including time allowed afterwards for discussion and questions. The questionnaires and the collected data were managed by Dr. A. Akpakan thus ensuring its integrity. These were stored in a secure and safe place. Data were transported to the Reproductive Medicine Research office in the Department of Obstetrics and Gynaecology of the University of Cape Town in Observatory, Cape Town. The data were password protected and access was limited to the research team.

Data Analysis

All data collected from the study was uploaded onto a Microsoft Excel Spreadsheet independently by two members of the research team, and Excel Compare was used to detect errors in data collection which were then corrected. All descriptive data were categorised numerically to facilitate statistical computations. 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.

Descriptive Data was categorised numerically to facilitate statistical computations, for example, Relationship Status was categorised as shown below:

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

Participants who were married and single, but cohabiting were grouped together for analysis. Also, divorced, separated, and widowed participants were grouped for analysis.

Numerical Data was also grouped into categories, for instance, age was categorised as follows:

1. 18 to 24 years
2. 25 to 34 years
3. 35 years and older

The scoring for the LMUP is shown in the table on the next page:

Table 2.1: Table of the LMUP Scoring System.

LMUP question	Response	Score
In the month you became pregnant	Not using any form of contraception	2
	Occasional use of contraception	1
	Always, but knew the method failed	1
	Always used contraception	0
Did you feel the pregnancy happened	At the right time	2
	Ok, but not quite the right time	1
	Wrong time	0
Just before you became pregnant	I intended to get pregnant	2
	My intention kept changing	1
	No intention to get pregnant	0
Just before you became pregnant	I wanted a baby	2
	I had mixed feelings about having a baby	1
	I did not want to have a baby	0
Discussion with partner about having a baby	We agreed to have a baby	2
	We discussed having, but agreed to have a baby	1
	No discussion about having children	0
Any pre-pregnancy health improvement	Two or more actions	2
(Folic acid, cessation of smoking or drinking alcohol, or medical advice)	One action	1
	No action	0

The scores were then summed up and grouped into three categories of pregnancy intention as shown in the table below:

Table 2.2: Categorisation of Pregnancy Intention Using the LMUP Score.

Total LMUP Score	LMUP Category
0 – 3	Unintended Pregnancy
4 – 9	Ambivalence
10 – 12	Intended Pregnancy

Perinatal Mental Health Screening (PMHS)

The PMHS was developed in Edinburgh, United Kingdom in 1987.[67] It is a screening tool used to assess depressive symptoms during the perinatal period.[67] Pregnancy provides an opportunity for education, detection, and management of women with psychosocial disorders. Significant scores (2 or more) are an indication for referral to Options.[67]

Table 2.3: PMHS Questions and Scoring System.

PMHS Question	Response	Score
Is your partner or someone at home sometimes violent towards you?	Yes	1
	No	0
Is your partner supportive?	Yes	1
	No	0
Are you pleased about this pregnancy?	Yes	1
	No	0
Have you had some difficult things happen in the past year?	Yes	1
	No	0
Have you had problems with things like depression, anxiety, or panic attacks?	Yes	1
	No	0

Risks and Benefits

Participants were informed that there was no personal and immediate benefit from participation in this study. Instead, the information derived from the study would help in planning for the Garden Route and Karoo district population in terms of counselling and contraceptive programmes. This will be beneficial to women accessing the service in the future.

We anticipated that we may identify a need for establishing contraceptive counselling services for women within the medical clinics they attend. Participants who needed counselling because of personal stress factors were referred to Options as previously explained.

Informed Consent

An individual session conducted in English (all participants requested to be interviewed in English) was carried out in private in the High-Risk Antenatal Care Clinic's consultation room and the antenatal ward. Participants were informed that none of their identifying information would be recorded and that participation or non-participation would in no way affect their clinical care. Subsequently, willing participants were interviewed privately after signing the Informed Consent Form, a copy of which was included in the patient's folder.

Ethics Committee Approval

The study only commenced after the research protocol had been approved by the Human Research Ethics Committee of the University of Cape Town and approval obtained from the Garden Route District and George Regional Hospital Ethics Committees.

The study met the requirements of Good Clinical Practice and conformed to the recommendations of the Declaration of Helsinki (2013).

Prior to administering the questionnaire, signed informed consent was obtained from participants and all completed questionnaires with collected data were stored in a safe and secure environment that could only be accessed by members of the research team.

Dissemination of Findings

This study will form part of the MMed of Dr. Akanimo Akpakan and will be made available to local health authorities and published in an appropriate journal.

CHAPTER 3: RESULTS

A total of 200 women were recruited and interviewed for this study and no potential participant declined to participate in the study. The LMUP and PMHS questionnaires were completed by all the participants and they all indicated that they wished to be interviewed in English, regardless of their home language.

Participants were recruited at the High-risk antenatal clinic/ward of George Regional Hospital and High-risk antenatal clinics at Knysna and Oudtshoorn hospitals in the Western Cape. The recruitment was done in the pre-Covid period and took 2 months.

PARTICIPANTS' PROFILE:

Age

The age range of participants was 18-45 years (mean age 30.36, SD 6.27). There were 44 (22.0%) participants aged between 18-24 years, 95 (47.5%) were aged between 25-34 years, and 61 (30.5%) were 35 years and older.

Table 3.1: Age Range of Participants.

Age Range	Percentage (%)	Number of Participants
18-24	22.0%	44
25-34	47.5%	95
35 and above	30.5%	61
Total	**100.0%**	**200**

Population Group

Most of the participants were mixed ancestry South Africans {n=135 (67.5%)}, followed by black South Africans {n=55 (27.5%)}, white South Africans {n=6 (3.0%)} and other groups {n=4 (2.0%)}.

Table 3.2: Population Group of Participants.

Group	Percentage (%)	Frequency
Black South Africans	27.5%	55
Mixed Ancestry	67.5%	135
Others	2.0%	4
White South Africans	3.0%	6
Total	**100.0%**	**200**

Home Language

The majority of the participants in our study were Afrikaans speaking {n = 141 (70.5%)}, followed by isiXhosa speakers {n = 53 (26.5%)} and only 6 (3.0%) of them spoke other languages - Chichewa and Shona.

Religion

All our participants were Christians of Protestant denominations.

Obstetric History

1. ***Gravidity***: The gravidity of participants ranged from 1-6 (mean 2.9, SD 1.2). Most were gravida 1-4; {n = 177 (88.5%)} and 23 (11.5%) were gravida 5 and above.

Table 3.3: Gravidity of Participants.

Gravidity	Frequency	Percentage (%)
1	26	13.0%
2	52	26.0%
3	65	32.5%
4	34	17.0%
5	20	10.0%
6	3	1.50%
Total	**200**	**100.0%**

2. *Parity*

The parity of participants ranged from 0 - 4 (mean 1.5, SD 1.02). Most of the participants were para 1-4; {n = 166 (83.0%)} and 34 (17.0%) were para 0. There were no grand multiparous women recruited for the study. See Table 3:4.

Table 3.4: Parity of Participants.

Parity	Number of Participants	Percentage (%)
0	34	17.0%
1	72	36.0%
2	61	30.5%
3	26	13.0%
4	7	3.5%
Total	**200**	**100.0%**

3. *Previous Pregnancy Outcomes*

The outcome of previous pregnancies as reported by our participants showed that they had had a total of 384 previous pregnancies. The majority of their first pregnancies {n = 142 (81.6%)} resulted in live babies, only 3 (1.7%) ended in stillbirths. The outcome of the rest of our participants' pregnancies is summarized in Table 3.5.

Table 3.5: Summary of Outcomes of Previous Pregnancies.

Outcome: Previous Pregnancy	First N(%)	Second N(%)	Third N(%)	Fourth N(%)	Fifth N(%)	Total
Miscarriage	16(8.0%)	26(13.0%)	15(7.5%)	11(5.5%)	1(0.5%)	**69**
Ectopic	1(0.5%)	1(0.5%)	0(0.0%)	0(0.0%)	0(0.0%)	**2**
Alive	142(71.0%)	85(42.5%)	33(16.5%)	8(4.0%)	2(1.0%)	**270**
Stillbirth	3(1.5%)	10(5.0%)	5(2.5%)	1(0.5%)	0(0.0%)	**19**
Neonatal death	7(3.5%)	0(0.0%)	2(1.0%)	2(1.0%)	0(0.0%)	**11**
TOP	5(2.5%)	1(0.5%)	2(1.0%)	0(0.0%)	0(0.0%)	**8**

4. *Mode Of Delivery Of Previous Pregnancies*

A total of 389 previous births were reported by our participants and most {n = 268 (68.9%)} were delivered by normal vaginal delivery (NVD) and almost a third {}n=120 (30.8%) by caesarean section. There was only one operative vaginal delivery (vacuum) reported. The majority of the vaginal deliveries {n = 150 (55.9%)} and caesarean sections {n = 82 (68.3%)} happened in the first pregnancy. The mode of delivery of previous pregnancies of our participants is summarized in Table 3:6.

Table 3.6: Summary of Mode of Delivery of Previous Pregnancies.

Mode of Delivery	First N(%)	Second N(%)	Third N(%)	Fourth N(%)	Fifth N(%)	Total
NVD	150 (75.0%)	68 (34.0%)	30 (15.0%)	8 (4.0%)	2 (1.0%)	**258**
Caesarean section	82 (41.0%)	27 (13.5%)	10 (5.0%)	1 (0.5%)	0 (0.0%)	**120**
Forceps	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	**0**
Vacuum	1 (0.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	**1**

5. *Previous Complicated Pregnancies*

Previous complicated pregnancies are those associated with serious medical or obstetric problems in the antenatal, delivery, or postnatal periods. There were only 6 previous complicated pregnancies among our participants.

6. Gestational Age At The Time Of Interview

The gestational age at the time of the interview had a wide range from 8 to 42 weeks (mean 32.7, SD 6.4). The majority of the participants were interviewed in the third trimester. Table 3.7 shows the gestational age of participants at the time of the interview.

Table 3.7: Gestational Age at the Time of the Interview.

GA at the Time of Interview	Percentage (%)	Number of Participants
First Trimester	1.5%	3
Second Trimester	17.0%	34
Third Trimester	81.5%	163
Total	**100.0%**	**200**

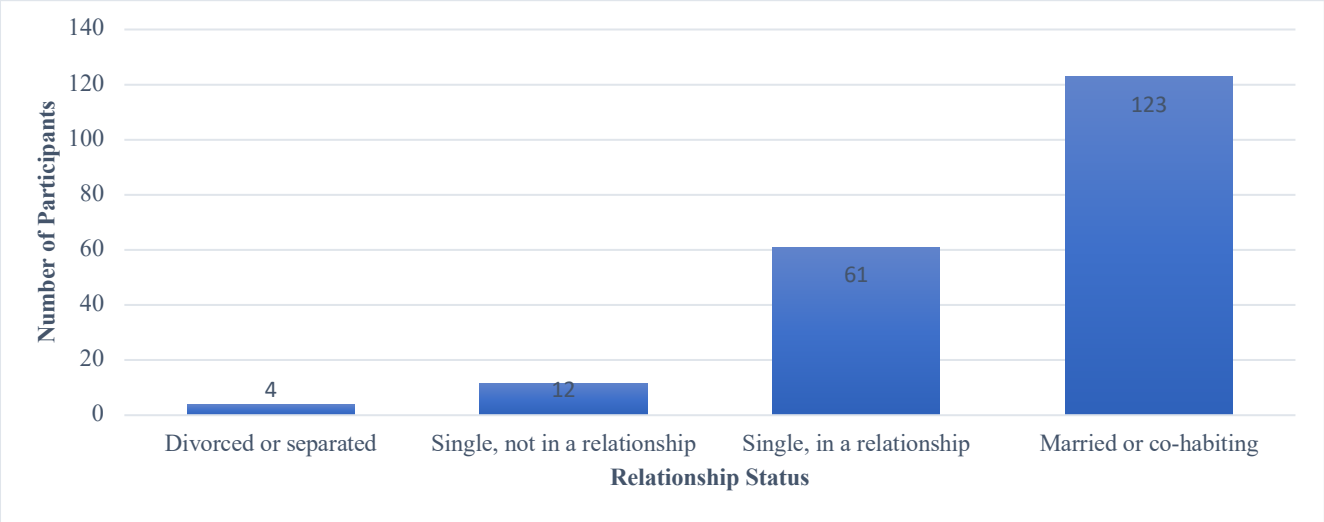
7. Booking Gestational Age

The booking gestational age also had a wide range from 6-33 weeks (mean 14.0, SD 6.4). More than half {n = 111 (55.5%)} of the participants booked in the first trimester, 77 (38.5%) booked in the second trimester, and 12 (6.0%) booked in the third trimester.

Relationship Status

Most of the participants {n = 123 (61.5%)} were married or cohabiting. Figure 3.1 illustrates the relationship status of the participants.

Figure 3.1: Relationship Status of Participants.



EDUCATIONAL LEVEL

All our participants had some form of formal education with just 16 (8.0%) having only primary school education. The majority of participants had secondary level education {n = 169 (84.5%)} and 15 (7.6%) had tertiary education. This is illustrated in Table 3:8.

Table 3.8: Educational Status of Participants.

Educational Level	Percentage (%)	Number of Participants
Grade 1-7	8.0%	16
Grade 8-12	84.5%	169
Tertiary	7.5%	15
Total	**100.0%**	**200**

EMPLOYMENT STATUS

Ninety-eight (49.0%) of the participants were unemployed. The employment status of the participants is summarised in Table 3:9.

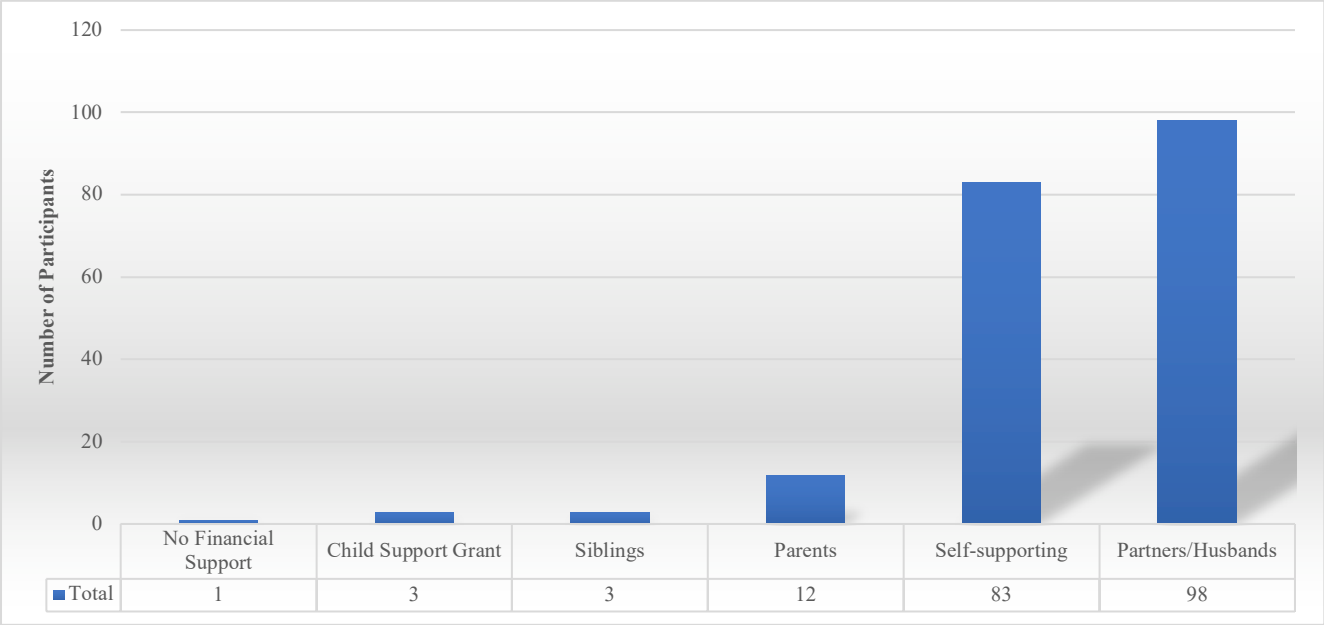
Table 3.9: Employment Status of Participants.

Employment Status	Frequency	Percentage (%)
Unemployed	98	49.0%
Employed	97	48.5%
Student	4	2.0%
Housewife	1	0.5%
Total	**200**	**100.0%**

FINANCIAL SUPPORT

Almost half of the participants depended on their partners or husbands for financial support {n = 98 (49.0%)} while 83 (41.5%) were self-supporting. Twelve, (6.0%) depended on their parents for financial support and 3 (1.5%) depended on their siblings. Only 3 (1.5%) depended on social grants. There was one participant with no source of income.

Figure 3.2: Financial Support of Participants.



FINANCIAL DECISIONS

Participants were asked who was responsible for most of the financial decisions in their homes. This is summarised in Table 3.10. Eighty-nine of the participants said they made the decisions in their homes.

Table 3.10: Financial Decisions of Participants.

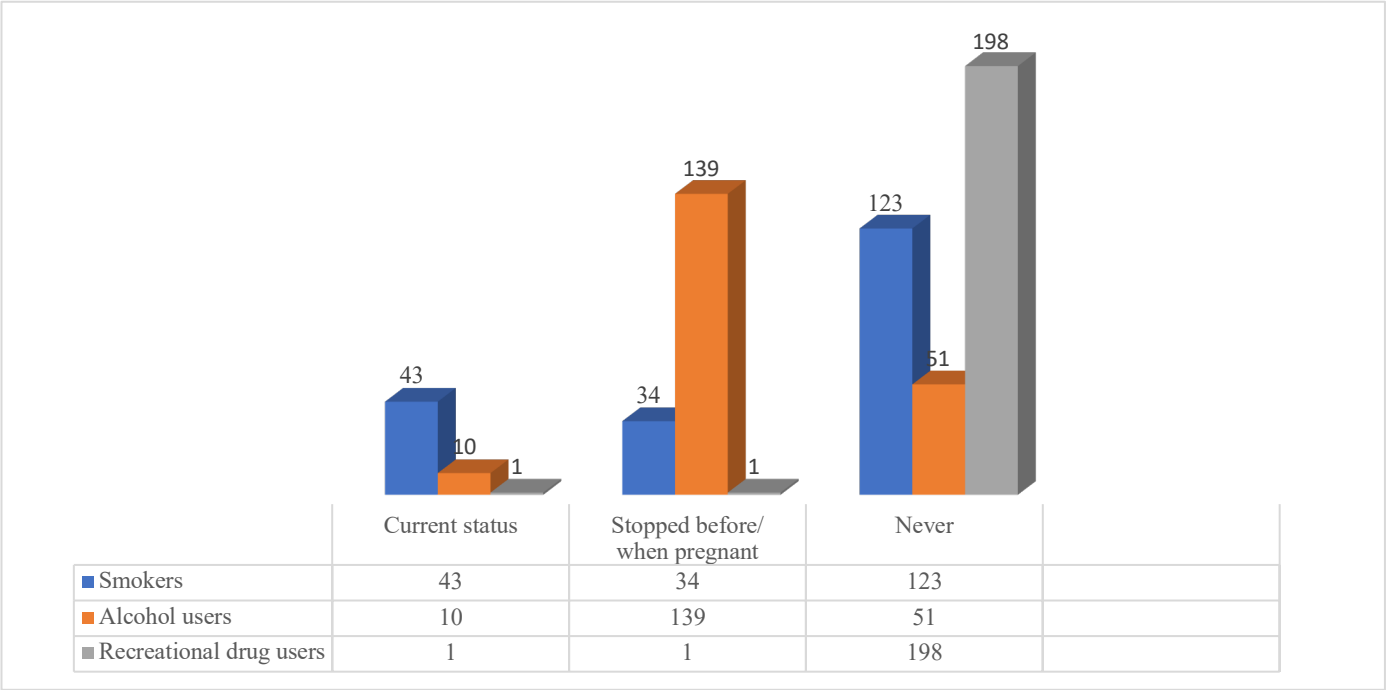
Responsible for Financial Decisions	Number of Participants	Percentage
Self	89	44.5%
Partner/Husband	86	43.0%
Parents	24	12.0%
Siblings	1	0.5%
Total	**200**	**100.0%**

HABITS

Participants were asked about their habits. The majority of the participants had never indulged in habits deleterious to their or their unborn children's health. Close to a quarter of participants {n = 47 (23.5%)} said they were still smoking during pregnancy, 10 (5.0%) were still drinking alcohol and one participant was still using recreational drugs while pregnant.

Most of the participants who previously consumed alcohol stopped before or when they found out they were pregnant {n = 139 (69.5%)}, while of the participants who smoked, 34 (53.0%) stopped before or when they found out they were pregnant.

Figure 3.3: Habits of Participants



	Current status	Stopped before/ when pregnant	Never
Smokers	43	34	123
Alcohol users	10	139	51
Recreational drug users	1	1	198

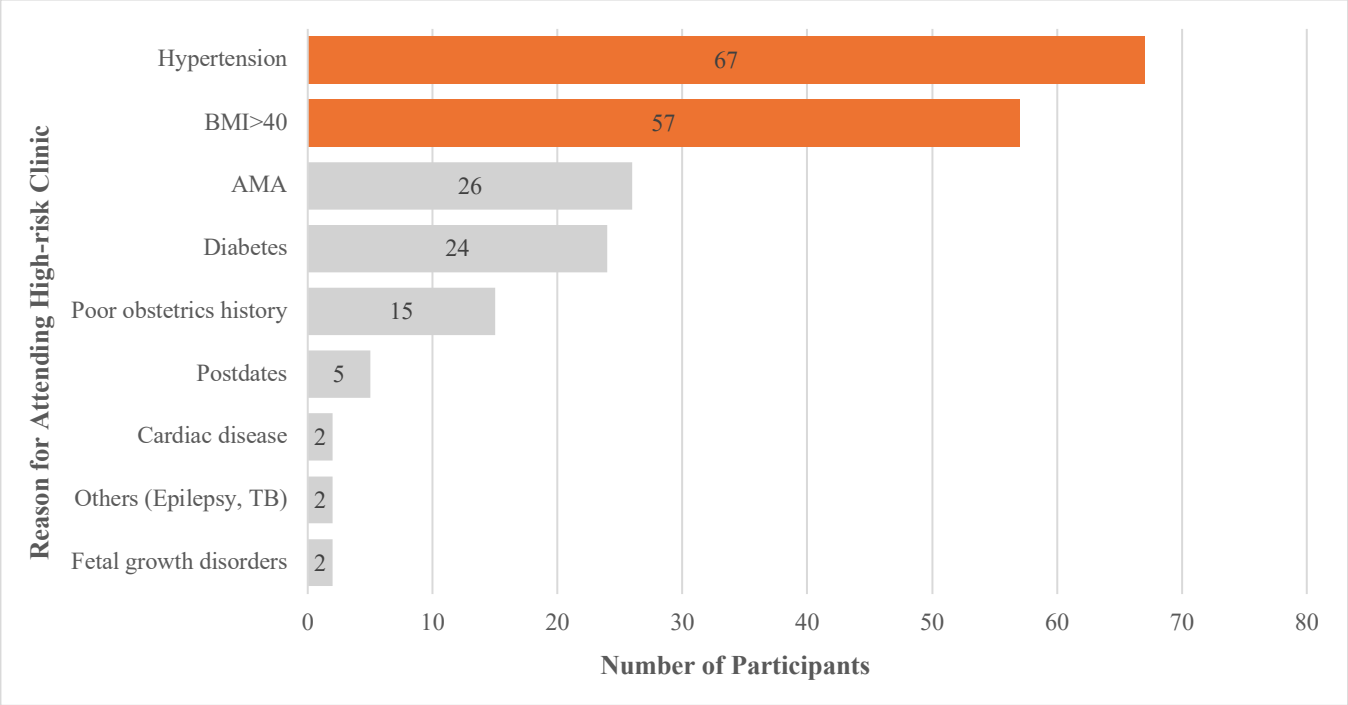
Table 3.11: Summary of Demographic Data of Participants

Demographic Data	Number	Percentage (%)
Age		
18-24	44	50.0%
25-34	95	47.5%
35 and older	61	30.5%
Population Group		
Mixed Ancestry South African	135	67.5%
Black South African	55	27.5%
White South African	6	3.0%
Others	4	2.0%
Home Language		
Afrikaans	141	70.5%
IsiXhosa	53	26.5%
Others	6	3.0%
Religion		
Protestant	200	100.0%
Roman Catholic	0	0.0%
Muslim	0	0.0%
Gravidity		
1	26	13.0%
2	52	26.0%
3	65	32.5%
4	34	17.0%
5	20	10.0%
6	3	1.5%
Parity		
0	34	17.0%
1	72	36.0%
2	61	30.5%
3	26	13.0%
4	7	3.5%
Relationship Status		
Single – not in a relationship	12	6.0%
Single – in a relationship	61	30.5%
Married or cohabiting	123	61.5%
Divorced or separated	2	2.0%
Educational Level		
No formal education	0	0.0%
Grade 1-7	16	8.0%
Grade 8-12	169	84.5%
Tertiary	15	7.5%
Employment Status		
Unemployed	98	49.0%
Employed	97	48.5%
Student	4	2.0%
Housewife	1	0.5%
Financial Support		
Self-supporting	83	41.5%
Partner/Husband	98	49.0%
Parent/s	12	6.0%
Sibling/s	3	1.5%
Child Support Grant	3	1.5%
No Financial Support	1	0.5%

REASON FOR ANC ATTENDANCE HIGH-RISK CLINIC

The main reason for ANC attendance in the high-risk clinic was for hypertensive disorders followed by high Body Mass Index (BMI) >40kg/m^2. The indications for attendance at the High-risk clinic are summarized in Figure 3:4.

Figure 3.4: Reason for ANC Attendance.



Hypertension and BMI>40 have noticeably higher number of participants.

MEDICAL HISTORY

Prior to becoming pregnant, 56 (28.0%) of the participants in our study knew they had a pre-existing high-risk medical conditions. There was no history of tuberculosis among them. The information supplied is as shown below:

Table 3.12: Pre-pregnancy Medical Conditions.

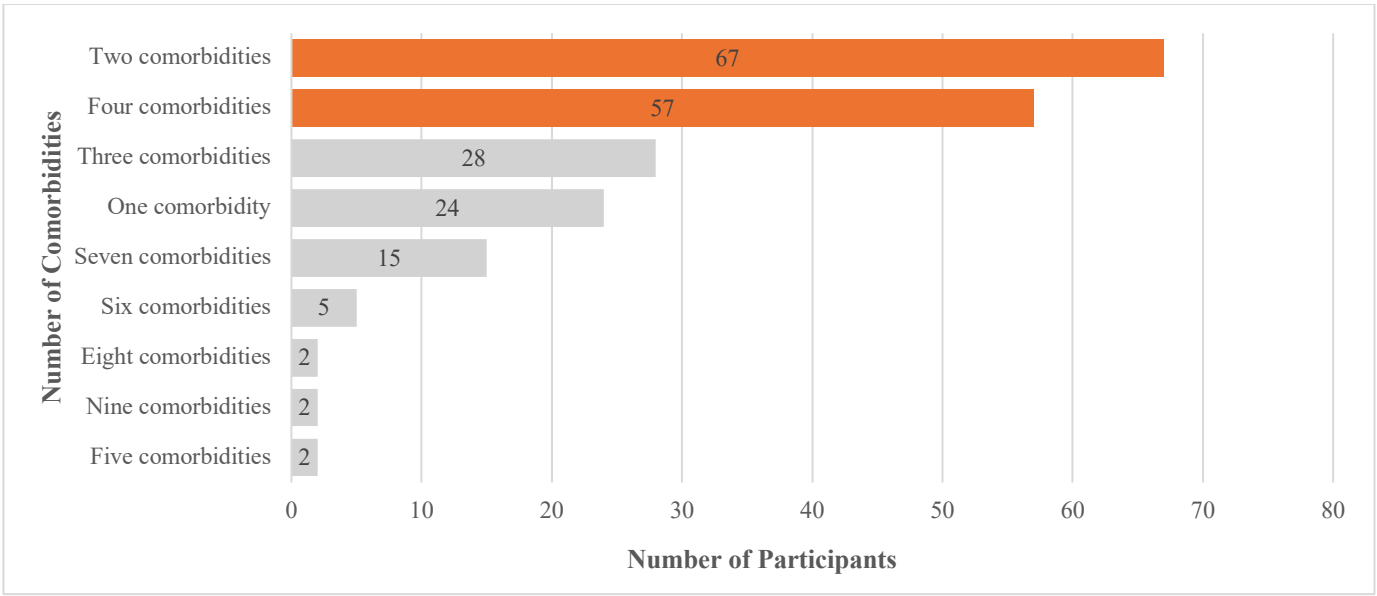
Pre-existing Medical Condition	Frequency	Percentage (%)
Hypertension	37	18.5%
Epilepsy	3	1.5%
Diabetes mellitus	14	7.0%
Cardiac disease	2	2.0%
Total	**56**	**29**

MULTIPLE COMORBIDITIES

The majority of the participants in our study {n =178 (89.0%)} had more than one comorbidity, 67 (33.5%) had 2 comorbidities, 28 (14.0%) had 3 comorbidities and 57 (28.5%) had 4 comorbidities.

Twenty-six participants (13.0%) had 5 or more comorbidities.

Figure 3.5: Participants with Multiple Comorbidities.

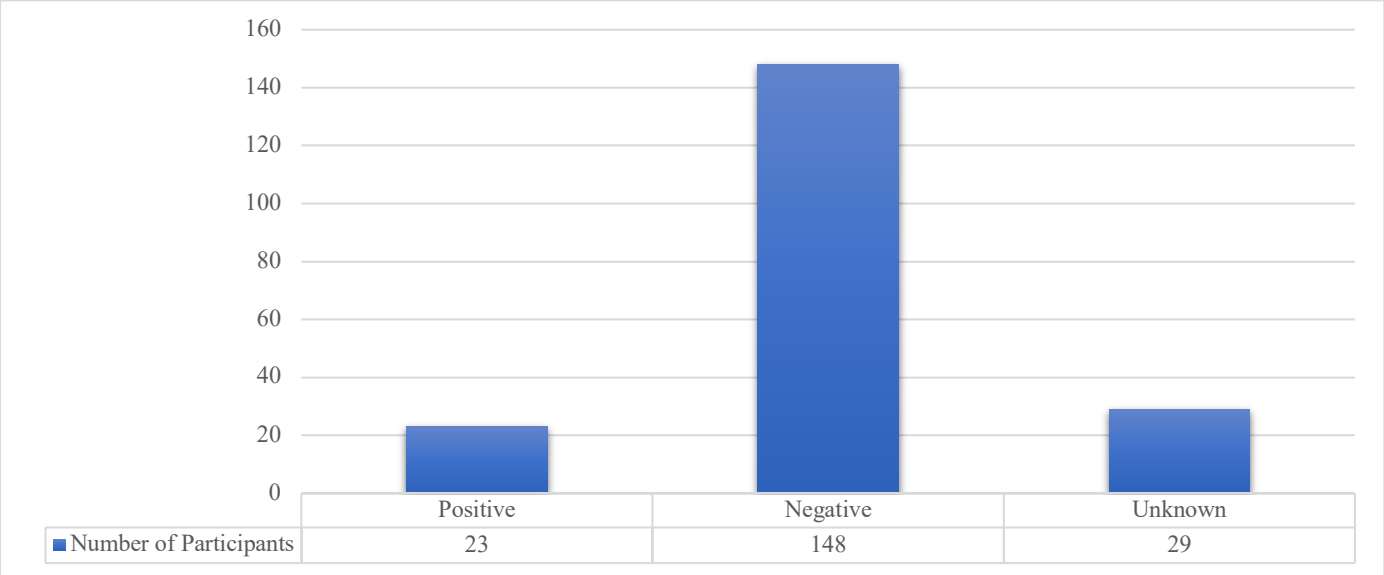


The number of participants with two and four comorbidities are noticeably higher.

HIV STATUS

One hundred and forty-eight participants (74.0%) were HIV negative and 29 (14.5%) of them did not know their HIV status pre-pregnancy. Only 23 participants (11.5%) were HIV positive.

Figure 3.6: HIV Status of Participants.



HIV status was not a reason for referral to the High-Risk Antenatal clinic because the protocol for the management of HIV is available at all healthcare levels.

PERINATAL MENTAL HEALTH SCREENING (PMHS)

The table below shows the PMHS questions and the responses of our participants. A score of 2 or more is an indication of referral to the psychosocial team.

Table 3.13: Perinatal Mental Health Screening Questions and Answers.

Perinatal Mental Health Questions	Yes N (%)	No N (%)
Is **your** partner or someone at home sometimes violent	3 (1.5%)	197 (98.5%)
Is your partner supportive?	193 (96.5%)	7 (3.5%)
Are you pleased about this pregnancy?	197 (98.5%)	3 (1.5%)
Have you had some very difficult things in the past year?	1.0%	198 (99.0%)
Have you had problems with depression, anxiety, or panic attacks before?	1.0%	199 (99.5%)

Table 3.14: Breakdown of Result of the Perinatal Mental Health Screening Score.

Perinatal Mental Health Score	Frequency	Percentage (%)
0	192	96.0%
1	4	2.0%
2	2	1.0%
3	1	0.5%
4	1	0.5%

Out of the 200 participants in the study, only 4 (0.02%) had significant scores of 2 or more and were referred for ongoing supportive treatment.

SELF-ASSESSMENT OF HEALTH STATUS

Asked whether they thought they were healthy when they became pregnant, 197 of our participants (98.5%) responded that they thought they were. Only three of them (1.5%) thought they had health problems when they fell pregnant.

CIRCUMSTANCES OF PREGNANCY: LMUP

The London Measure of Unplanned Pregnancy uses a six-question, multiple-choice questionnaire with answers scored from 0-2. The questions enquire about contraceptive usage, intention and timing of pregnancy, desire for baby, preconception behaviours, and partner's input. This results in a possible total score of 12 with higher scores reflecting increasing levels of pregnancy intendedness. The answers we received are shown below:

Question 1: Use of Contraception:

- Not using any form of contraception in the month of pregnancy: 181 (90.5%)
- Occasional usage: 1 (0.5%)
- Used contraception but knew the method failed: 14 (7.0%)
- Always used: 4 (2.0%)

Question 2: **Did pregnancy happen at the right time?**

- Right time: 71 (35.5%)
- OK, but not the right time: 84 (42.0%)
- Wrong time: 45 (22.5%)

Question 3: **Before conception:**

- Intended to fall pregnant: 72 (36.0%)
- Intention kept changing: 6 (3.0%)
- Did not want pregnancy: 122 (61.0%)

Question 4: **Just before becoming pregnant**:

- Wanted to have a baby: 72 (32.0%)
- Mixed feelings: 8 (4.0%)
- Did not want a baby: 120 (60.0%)

Question 5: **Partner discussion:**

- Agreed: 68 (34.0%)
- Discussed about pregnancy but did not agree: 76 (38.0%)
- Never discussed: 56 (28.0%)

Question 6: **Pregnancy preparation:**

- Folic acid 3 (1.5%)
- Other preparations 0 (0.0%).

Table 3.15: Summary of Circumstances of LMUP and Score.

LMUP Question	Response	Number	Percentage (%)	LMUP Score
In the month you fell pregnant, were you on any form of contraception?	Not on contraception	181	90.5%	2
	Occasional use	1	0.5%	1
	Always, but knew it failed	14	7.0%	
	Always used	4	2.0%	0
Did the pregnancy happen at the right time?	Right time	71	35.0%	2
	OK, but not quite the right time	81	42.0%	1
	Wrong time	45	22.5%	0
Just before becoming pregnant?	Intended to fall pregnant	72	36.0%	2
	Intention kept changing	6	3.0%	1
	Did not intend to fall pregnant	122	61.0%	0
Just before you became pregnant?	Wanted to have a baby	72	36.0%	2
	Mixed feelings about having a baby	8	4.0%	1
	Did not want to have a baby	120	60.0%	0
Partner input	Both agreed to have a baby	68	34.0%	2
	There was discussion but no agreement	76	38.0%	1
	Never discussed having a baby	56	28.0%	0
Pre-pregnancy health improvement	Two or more action	3	1.5%	2
	One action	0	0.0%	1
	No action	0	0.0%	0

PREGNANCY INTENDEDNESS

With the application of the London Measure of Unplanned Pregnancy in this study, there were 76 (38%) women with unintended pregnancies among our participants.

There were 58 (29%) women who were ambivalent about their pregnancies and only 66 (33%) of the pregnancies were intended.

Table 3.16: Pregnancy Intention of Participants.

Pregnancy Intention	Percentage	Score	Sum of Number of Participants
Ambivalent	29.0%	4-9	58
Planned	33.0%	10-12	66
Unintended	38.0%	0-3	76
Total	**100.0%**		**200**

CONTRACEPTIVE KNOWLEDGE

Participants provided generally good unprompted contraceptive information. However, 181 (90.5%) of our participants did not use any form of contraception in the month they became pregnant despite 120 (60.0%) of them not wanting to have a baby or intending to fall pregnant {n =122 (61.0%)}.

A few of them {n =14 (7.0%)} reported that although they always used contraception, they knew the method failed because the condom came off, moved, or came out, or they had not taken pills at least once.

The majority of participants knew of hormonal contraception with depot medroxyprogesterone acetate (DMPA) which was known by 193 (96.5%), followed by the Implant which was cited by 154 (77.0%) of them. Combined oral contraceptive pill (COC) was the third most common method known by our participants. Less than half of them knew of other contraceptive methods such as the Intrauterine Contraceptive Device (IUCD) {n = 92 (46.0%)} or the Intrauterine System (Mirena) {n = 1(0.5%)}. No participant mentioned the progesterone-only pill (POP).

The male condom was the best-known of the barrier contraceptive methods and was mentioned by 66 (33.0%). Only 6 (3.0%) of the participants knew about the female condom, and only one participant mentioned the diaphragm (0.5%). Of the permanent methods of contraception, 37 (18.5%) knew about female sterilization and only four participants (2.0%) mentioned male sterilization as a method of limiting family size.

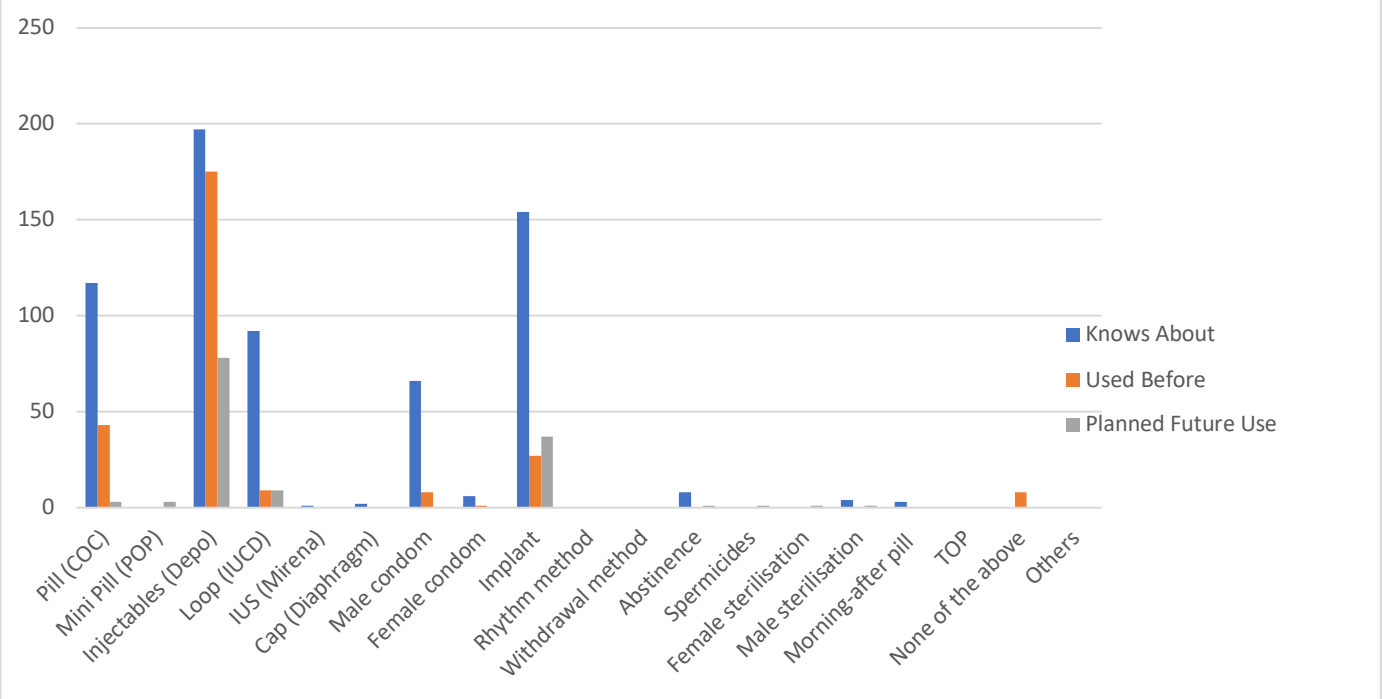
Of the other methods, none of our participants mentioned rhythm, withdrawal, termination of pregnancy, emergency contraception, or abstinence as a method of family planning. Only 8(4.0%) mentioned spermicides and one mentioned breastfeeding as a contraceptive method.

Table 3.17: Previously Used and Planned Future Contraception.

Method	Used Before N(%)	Planned Future Use N(%)
Pill (COC)	43 (21.5%)	3 (1.5%)
Mini pill (POP)	0 (0.0%)	3 (1.5%)
Injectable (Depo)	175 (87.5%)	78 (39.0%)
Loop (IUCD)	9 (4.5%)	9 (4.5%)
IUS (Mirena)	0 (0.0%)	0 (0.0%)
Cap (Diaphragm)	0 (0.0%)	0 (0.0%)
Male condom	8 (4.0%)	0 (0.0%)
Female condom	1 (0.5%)	0 (0.0%)
The Implant	27 (13.5%)	37 (18.5)
Rhythm method	0 (0.0%)	0 (0.0%)
Withdrawal method	0 (0.0%)	0 (0.0%)
Abstinence	0 (0.0%)	1 (0.5%)
Spermicides	0 (0.0%)	1 (0.5%)
Female sterilization	0 (0.0%)	60 (30.0%)
Male sterilization	0 (0.0%)	1 (0.5%)
Morning-after pill	0 (0.0%)	0 (0.0%)
TOP	0 (0.0%)	0 (0.0%)
None of the above	8 (4.0%)	0 (0.0%)
Others	0 (0.0%)	0 (0.0%)

Figure 3.7: Knowledge, Previously Used and Planned Future Contraception.

Almost all the participants had plans for future contraception 198 (99.0%).



EMERGENCY CONTRACEPTION (EC)

A total of 103 (51.5%) participants had correct knowledge of emergency contraception while the rest either had incorrect knowledge 11 (5.0%) or had no knowledge of emergency contraception 86 (43.0%).

Only three of them, on direct questioning, knew about the "morning-after pill" and none of the participants had used emergency contraception to prevent the current pregnancy. When asked directly if they had used emergency contraception to prevent the current pregnancy, almost a third of our participants {n=60 (30.0%)} said they had never heard about emergency contraception. Only 7 (14.0%) of them said they did not use emergency contraception because they wanted the pregnancy.

Table 3.18: Knowledge of Emergency Contraception.

Column1	Column2	Column3
Column1	Column2	Column3
Column1	Column2	Column3

ACCESS TO EMERGENCY CONTRACEPTION

When asked where they could access emergency contraception, 106 participants (53.0%) said that it could be obtained from either a general practitioner, pharmacy, Family Planning Clinic, or the hospital.

In contrast, 94 (47.0%) of our participants did not know where to access emergency contraception.

Table 3.19: Summary of Where Emergency Contraception can be Accessed.

Column1	Column2	Column3
Column1	Column2	Column3
Column1	Column2	Column3

FACTORS AFFECTING PREGNANCY INTENDEDNESS:

Age

Participants at either end of reproductive life had more unintended pregnancies, **Pearson chi^2 = 11.5923**. **P value = 0.02**. Half of the participants between the ages of 18–24 years had 44 unintended pregnancies (50.0%). Ninety participants aged between 25-34 years had unintended pregnancies, (28.4%) while participants who were 35 years and older had 27 unintended pregnancies (44.3%).

Table 3.20: Age and Pregnancy Intendedness.

Age	Unintended N (%)	Ambivalence N (%)	Intended N (%)
18–24	22 (50.0%)	15 (34.1%)	7 (15.9%)
25–34	27 (28.4%)	29 (30.5%)	39 (41.0%)
35 and older	27 (44.3%)	14 (22.6%)	20 (32.8%)

Relationship Status

Marriage and cohabitation were significantly associated with intended pregnancy. **Pearson chi^2 = 23.4316**. **P value = 0.001**.

Of our participants who were either married or cohabitating with their husbands and partners, 27 (44.7%) had intended pregnancies compared to single participants (17.5%). Pearson chi^2 = 23.4316. P value = 0.001.

Unplanned (Unintended and ambivalent) pregnancies were significantly higher among participants who were single, either in a relationship {n = 50 (81.9%)} or not {n = 12 (100.0%)} while married and co-habiting participants had 68 (55.3%) unplanned pregnancies. None of the pregnancies of our 4 divorced or widowed participants were intended.

Table 3.21: Relationship Status and Pregnancy Intendedness

Relationship Status	Unintended N (%)	Ambivalence N (%)	Intended N (%)
Single, not in a relationship	8 (66.7%)	4 (33.3%)	0 (0.0%)
Single, in a relationship	27 (44.3%)	23 (37.7%)	11 (18.0%)
Married or co-habiting	38 (30.9%)	30 (24.4%)	55 (44.7%)
Divorced or widowed	3 (75.0%)	1(25.0%)	0 (0.0%)

Language Groups

There was no association between language group and pregnancy intendedness. **Pearson chi^2 = 3.4579**. **P value = 0.484**.

The difference between the pregnancy intention of Afrikaans speakers {n = 46 (32.6%) was slightly more compared to the pregnancy intention of IsiXhosa speakers {n = 16 (30.2%). Only 6 of our participants were foreign-born and 66.7% of their pregnancies were intended.

Educational Level

There was no association between our participant's educational level and pregnancy intendedness. **Pearson chi^2 = 7.0488**. **P value = 0.133**.

Of our participants with only 7 years of formal education, 6 (37.5%) of their pregnancies were unintended while 66 (35.5%) of participants with 12 years of formal education had unintended pregnancies. There were 15 participants with tertiary level education and 10 of them had unintended pregnancies.

Table 3.22: Educational Level of Participants and Pregnancy Intendedness.

Educational Level	Unintended N (%)	Ambivalence N (%)	Intended N (%)
Grade 1-7	6 (37.5%)	3 (18.6%)	7 (43.8%)
Grade 8-12	60 (35.5%)	52 (30.8%)	57 (33.7%)
Tertiary	10 (66.7%)	3 (20.0%)	2 (13.3%)

Employment Status

There was no association between our participants' employment status with pregnancy intendedness. **Pearson chi^2 = 4.6310**. **P value = 0.592**.

There was not much difference between the pregnancy unintendedness of our employed {n = 35 (36.1%)} and unemployed participants {n = 39 (39.8%)}. Half of the pregnancies of the four students among our participants were unintended and the pregnancy of the only housewife in our study was intended.

Table 3.23: Employment Status of Participants and Pregnancy Intendedness.

Column1	Column2	Column3	Column4
Column1	Column2	Column3	Column4
Column1	Column2	Column3	Column4

Financial Support

The source of financial support; whether self-supporting, from partners or parents was associated with pregnancy intention. **Pearson chi^2 = 23.4871**. **P value = 0.005**.

Of the self-supporting participants, 35 (42.2%) of their pregnancies were unintended. The participants with the most intended pregnancies were those who relied on their partners or husbands for financial support. The few participants who depended on their parents and siblings had 66.7% unintended pregnancies each, while the only participant in our study with no financial support was ambivalent about her pregnancy. Only three of the participants received Child Support Grants and all their pregnancies were unintended.

Table 3.24: Financial Support and Pregnancy Intendedness.

Financial Support	Unintended N (%)	Ambivalence N (%)	Intended N (%)
Self	35 (42.2%)	28 (33.7%)	20 (24.1%)
Partner/Husband	30 (30.6%)	23 (23.5%)	45 (45.9%)
Parent/s	8 (66.7%)	4 (33.3%)	0 (0.0%)
Sibling/s	2 (66.7%)	0 (0.0%)	1 (33.3%)
Child Grant Support	1 (33.3%)	2 (66.7%)	0 (0.0%)
None	0 (0.0%)	1 (100.0%)	0 (0.0%)

Parity

The parity of our participants had no association with pregnancy intendedness. **Pearson chi^2 = 2.8753**. **P value = 0.257**.

There were more unintended pregnancies among our nulliparous participants {n = 15 (44.1%) compared to our multiparous participants {n = 61 (36.8%)}.

Table 3.25: Parity and Pregnancy Intendedness.

Parity	Unintended N (%)	Ambivalence N (%)	Intended N (%)
Para 0	15 (44.1%)	12 (35.3%)	7 (20.6%)
Para 1 – 4	61 (36.8%)	46 (27.7%)	59 (35.5%)

Booking Gestational Age

There was no statistical relationship between gestational age at booking and pregnancy intendedness. **Pearson chi^2 = 9.2271**. **P value = 0.056**.

However, participants in our study who booked in the first trimester of their pregnancies had more intended pregnancies {n = 42 (37.84%)} compared to the pregnancy intention of those who booked in the second {n = 23 (29.9%)} and third trimesters {n = 1 (8.33%)}.

Table 3.26: Booking Gestational Age and Pregnancy Intendedness.

Booking Gestational Age	Unintended N (%)	Ambivalence N (%)	Intended N (%)
First trimester	39 (35.1%)	30 (27.0%)	42 (37.8%)
Second trimester	28 (36.4%)	26 (33.8%)	23 (29.9%)
Third trimester	9 (75.0%)	2 (16.7%)	1 (8.3%)

HIV Status

There was no statistically significant association between the participant's HIV status and pregnancy intendedness. **Pearson chi^2 = 4.6049**. **P value = 0.330**.

Participants who knew that they were HIV-negative pre-pregnancy had more unintended pregnancies {n = 55 (37.2%) compared to those who knew that they were HIV-positive prior to becoming pregnant {n =7 (30.4%)}.

Only 19 participants in our study did not know their HIV status when they became pregnant, and nearly half of their pregnancies were unintended {n = 14 (48.28%)}.

Table 3.27: HIV Status and Pregnancy Intendedness.

HIV Status	Unintended N (%)	Ambivalence N (%)	Intended N (%)
Positive	7 (30.4)	10 (43.5%)	5 (26.1%)
Negative	55 (37.2%)	43 (29.1%)	50 (33.8%)
Unknown	14 (48.3%)	5 (17.2%)	10 (34.5%)

Multiple Comorbidities

In our study, having multiple comorbidities (more than 2) had no association with pregnancy intendedness. **Pearson chi^2 = 13.2848**. **P value = 0.652**.

The majority of participants in our study 176 (88.0%) had more than one comorbidity. Participants with a single comorbidity had fewer unintended pregnancies (33.3%) compared to those with 2 or more comorbidities

as shown in the table below. Of the 2 participants with five comorbidities, one had an unintended pregnancy, and the other participant's pregnancy was intended. None of the pregnancies of the few participants with eight and nine comorbidities were intended.

Table 3.28: Multiple Comorbidities and Pregnancy Intendedness.

Comorbidity	Unintended N (%)	Ambivalence N (%)	Intended N (%)
One	8 (33.3%)	8 (33.3%)	8 (33.3%)
Two	29 (43.3%)	18 (26.9%)	20 (29.9%)
Three	10 (38.5%)	(30.8%)	8 (30.8%)
Four	22 (38.6%)	18 (31.6%)	17 (29.8%)
Five	1 (50.0%)	0 (0.0%)	1 (50.0%)
Six	3 (60.0%)	2 (40.0%)	0 (0.0%)
Seven	6 (40.0%)	4 (26.7%)	5 (33.3%)
Eight	2 (100.0%)	0 (0.0%)	0 (0.0%)
Nine	2 (100.0%)	0 (0.0%)	0 (0.0%)

Perinatal Mental Health Screening (PMHS)

A significant PMHS score (2 or more) had no association with pregnancy intention. **Pearson chi^2 = 2.1223**. **P value = 0.346**.

In our study, only 4 participants had significant PMHS scores and 2 of them had intended pregnancies while the other 2 were ambivalent about their pregnancies. The majority of participants had insignificant PMHS scores and only a third of their pregnancies were intended.

Table 3.29: PMHS Score and Pregnancy Intendedness.

PMHS score	Unintended N (%)	Ambivalence N (%)	Intended N (%)
0–1	74 (37.8%)	56 (28.6%)	66 (33.7%)
2 or more	2 (50.0%)	2 (50.0%)	0 (0.0%)

Preconceptual Counselling and Health Improvement

There was no association between preconceptual counselling and health improvement with pregnancy intention. **Pearson chi^2 = 3.1328**. **P value = 0.209**.

There was very little pre-pregnancy preparation among our participants. Of those who did the little preparation (mostly taking preconception folic acid), they had 13 (41.9%) intended pregnancies compared with those who made no preparation {n = 53 (31.4%)}.

Table 3.30: Preconceptual Counselling/Health Improvement and Pregnancy Intendedness.

Preconceptual Counselling and Health Improvement	Unintended N (%)	Ambivalence N (%)	Intended N (%)
Yes	13 (41.9%)	5 (16.1%)	13 (41.9%)
No	63 (37.3%)	53 (31.4%)	53 (31.4%)

Habits:

These had no impact on pregnancy intendedness. Smoking **Pearson chi^2 = 7.9887**, **P value = 0.239**. Alcohol Pearson **chi^2 = 6.0217. P value = 0.421** and for recreational drugs; **Pearson chi^2 = 4.9693. P value = 0.548**.

Smoking

The majority of participants in our study had never smoked {n = 119 (59.5%)}. Of the 81 smokers, 47 (23.5%) continued smoking while pregnant, only 12 of them stopped smoking when they became pregnant (6.0%). Twenty-two (11.0%) of the participants stopped smoking pre-pregnancy.

Participants who never smoked had more intended pregnancies (37.8%) compared to those who smoked while pregnant (29.8%). There were more intended pregnancies among the 12 participants who stopped smoking when they became pregnant (25.0%) compared to the 22 participants who stopped smoking pre-pregnancy (18.2%).

Table 3.31: Smoking and Pregnancy Intendedness.

Smoking	Unintended N (%)	Ambivalence N (%)	Intended N (%)
Yes	23 (48.9%)	10 (21.3%)	14 (29.9%)
Never	38 (31.9%)	36 (30.3%)	45 (37.8%)
Stopped pre-pregnancy	9 (40.91%)	9 (40.9%)	4 (18.2%)
Stopped when pregnant	6 (50.0%)	3 (25.0) %	3 (25.0%)

Alcohol

Compared to smoking, more of our participants were pre-pregnancy alcohol consumers, with only 51 (25.5%) of them saying they had never drunk alcohol. There was continuous alcohol use during pregnancy by 10 (5.0%) of them. Alcohol consumption was discontinued by 60 (30.0%) of the participants in the study pre-pregnancy, and 79 (39.5%) of them stopped when they found out they were pregnant.

Participants who stopped drinking alcohol when they became pregnant had more intended pregnancies (39.2%) compared to those who had never consumed alcohol (37.3%). The pregnancy intention of participants who stopped drinking alcohol pre-pregnancy was 25.0%, while only 1 of 10 pregnancies of those who still drank alcohol during pregnancy was intended.

Table 3.32: Alcohol Use and Pregnancy Intendedness.

Column1	Column2	Column3	Column4
Column1	Column2	Column3	Column4
Column1	Column2	Column3	Column4

Recreational drugs

A total of 197 (98.5%) of the participants had never used recreational substances. Of the three that had used recreational substances, one stopped pre-pregnancy, the other stopped when she found out she was pregnant and one continued to use the substance during pregnancy. About a third of the pregnancies of non-recreational drug users were intended, while none of the pregnancies of the three who had used recreational drugs were intended.

Table 3.33: Recreational Drug Use and Pregnancy Intendedness.

Column1	Column2	Column3	Column4
Column1	Column2	Column3	Column4
Column1	Column2	Column3	Column4

Table 3.34: Statistical Relationship Between Variables in this Study and Pregnancy Intendedness.

Variables	Statistical Significance	
Age	**$X^2(4, N = 200) = 11.5923$**	**P = 0.02**
Relationship status	**$X^2(6, N = 200) = 23.4316$**	**P = 0.001**
Language group	$X^2(4, N = 200) = 3.4679$	P = 0.484
Educational level	$X^2(4, N = 200) = 7.0488$	P = 0.133
Employment status	$X^2(6, N = 200) = 4.6310$	P = 0.592
Financial support	**$X^2(8, N = 200) = 21.7595$**	P = 0.005
Parity	$X^2(2, N = 200) = 2.8753$	P = 0.257
Booking gestation	$X^2(4. N = 200) = 9.2271$	P = 0.056
HIV status	$X^2(4, N = 200) = 4.6049$	P = 0.330
Multiple comorbidities	$X^2(16, N = 200) = 13.2848$	P = 0.652
PMHS	$X^2(2, N = 200) = 2.1223$	P = 0.346
Preconceptual counselling	$X^2(2, N = 200) = 3.1328$	P = 0.209
Habits – Smokers	$X^2(6, N = 200) = 7.9887$	P = 0.239
Alcohol users	$X^2(6, N = 200) = 6.0217$	P = 0.421
Recreational drug users	$X^2(6, N = 200) = 4.9693$	P = 0.548

****The shaded variables are statistically significant.***

SUMMARY OF RESULTS

There were 200 participants in our study, and all requested to be interviewed in English. Most were aged between 25 -34 (47.5%) and multiparous (83.0%). Most of them were either married or cohabiting with their partners (61.5%) and 67.5% were of mixed ancestry. Half were unemployed (49.0%) and depended on their partners or husbands financially. The majority of our participants had multiple serious comorbidities but thought they were healthy enough to withstand the rigours of pregnancy.

We found that 38.0% of our participants' pregnancies were unintended, 58.0% were ambivalent about their pregnancies and only 33.0% of the pregnancies were intended.

Age, relationship status, and financial support had a significant effect on pregnancy intention while education, employment, parity, language group, booking gestation, HIV status, and multiple comorbidities did not influence pregnancy intention. Other factors that had no influence on pregnancy intention in our study include Perinatal Mental Health Screening score, preconceptual counselling/health improvement measures, and participant's habits.

There was very poor communication between partners as regards pregnancy intention and contraception use.

There was generally good unprompted knowledge of contraception and where this can be accessed but poor contraceptive usage. Nearly half of our participants had no knowledge of emergency contraception or where to access them.

CHAPTER 4: DISCUSSION

Our study aimed to use the London Measure of Unplanned Pregnancy (LMUP) for high-risk obstetric patients at George Regional Hospital to determine their pregnancy intendedness. We also wanted to assess the knowledge of, access to, and use of contraception within this subgroup of patients. We hypothesised that, because of their risk factors they would have high levels of intended pregnancies and contraceptive usage. The LMUP has been validated for use in South Africa in Afrikaans, English, and IsiXhosa.[65] It has numerous advantages including identification of patients with unintended pregnancies in order to prioritise their care and has been recommended as the gold standard in the measurement of unintended pregnancies.[65,68,69]

PREGNANCY INTENDEDNESS

Our study found that 38.0% of pregnancies among our participants were unintended. The data indicate that there were low levels of pregnancy planning in this cohort of participants suggesting that they were unaware of the risks of pregnancy to their health and that of their unborn children. Despite generally good unprompted contraceptive knowledge and not wanting a pregnancy, our participants neither used contraception to prevent pregnancy or emergency contraception post-coitus nor did they consider the safe termination of their pregnancy. The few that used and recognized the failure of their contraceptive methods, did not take any further action to prevent pregnancy.

Although, globally, the unintended pregnancy rate is estimated at 40.0%, our data at first glance may suggest that unintended pregnancy of 38.0% is consistent with the global rate.[3] Those studies did not differentiate between high-risk and low-risk obstetric patients, making our finding of unplanned pregnancies extremely high for a group that had substantial risks. A recent Cape Town study of 2022 among patients with similar risk factors reported results consistent with our findings.[70] This study reported an unintended pregnancy rate of 39.0%.[70] This shows the validity of the LMUP as a highly consistent tool for measuring pregnancy intention.[57,68,69] This high level of unintended pregnancy among these patients highlights the unmet need for contraception and poor reproductive health counselling services in the district. It also speaks to inadequate counselling of women with medical problems in the clinics they attend.

In the month they fell pregnant, the majority of our participants (90.5%) did not use any form of contraception, 60% of them did not want a baby and 61.0% of them did not intend to become pregnant. With an additional 29.0% of them being ambivalent towards their pregnancy, this means that 63.0% of pregnancies were unplanned. In addition, 22.0% of our participants stated that their pregnancy happened at the wrong time, indicating the unintendedness of these pregnancies. Close to half of them at the time of the interview had come

to terms with their pregnancy (responds to the LMUP question: "Did the pre-pregnancy happen at the right time?") a common occurrence in women with unintended pregnancies factored in by the LMUP.[17]

There was very poor communication between the participants and their husbands or partners about pregnancy intention. More than a quarter of our participants did not discuss having a baby with their partners and of the 38.0% of them that did, there was no agreement to have a baby. This is consistent with findings of studies done in Kwa-Zulu Natal, South Africa in 2012 and Oromia, Ethiopia in 2020.[22,25]

RELATIONSHIP BETWEEN VARIABLES AND PREGNANCY INTENTION IN THE STUDY:

Age and Pregnancy Intention

Consistent with most other studies, the age of the participants in our study significantly affected pregnancy intention. Participants in our study at either end of reproductive life had more unintended pregnancies. Half of our participants aged between 18–24 years {n = 44 (50.0%)} had unintended pregnancies and the pregnancy intention of those participants 35 years and older {n = 27 (44.2%)} was 44.0%. The participants with the lowest unintended pregnancies {n = 95 (28.4%)} were aged between 25–34 years with 28.4% unplanned pregnancies.

This is in keeping with the findings of most other studies where unintended pregnancies were more likely in women at the extremes of reproductive life. Studies done in the USA in 2004 found that more than 75.0% of teenage pregnancies were unintended and a 2019 Ghanaian study found similar rates in teenagers (71.7%) and unintended pregnancy rate of 50.2% among older women.[21,24] Similarly, a 2013 study conducted in Kenya reported pregnancy unintendedness of 68.0% among 15–19-year-olds.[9] Younger women are often not as exposed to contraception counselling as their older counterparts and are less consistent users of contraception. Other factors that affect unintended pregnancy in younger women include ignorance, cost of contraception, unfavourable Family Planning Clinic opening hours, fear of side effects of contraception, embarrassment, and judgemental healthcare providers. High levels of unintended pregnancies are however still reported despite contraceptive use.[71] Inconsistent with our findings, the 2013 Kenya study found the lowest number of unintended pregnancies with 19.7% unplanned pregnancies among 35–49 year olds.[9]

For older women, poverty, competing demands for their time (study and work), and poor understanding of the risk pregnancy poses to their health are major contributors to unintended pregnancies. Older women are also more likely to already have their planned number of children.[24]

The 2022 Cape Town study among participants with similar high-risk antenatal participants had findings consistent with our study.[70] It also found unintended pregnancies to be more common among women at extremes of reproductive age; 25.0% among participants aged between 18–24 years and 20.8% among those older than 34 years, while participants aged between 25–34 years had 13.2% unintended pregnancies.[70]

Relationship Status and Pregnancy Intention

Marriage and stable cohabitation with partners were significantly associated with intended pregnancy in our study. Participants who were married or cohabiting had the least unintended pregnancies of 38 (30.9%) and those who were single and in a relationship had 27 (44.3%) unintended pregnancies. There were 8 unintended pregnancies among our participants who were single but not in a relationship.

Three of the four participants who were divorced or widowed had the highest number of unintended pregnancies. This is consistent with most other studies such as the 2013 study conducted in Kenya, the 2014 Malawian study, and a recent 2023 Ghanaian study which all reported high levels of unintended pregnancies among divorced or widowed women of 26.0%, 71.1%, and 48.2% respectively.[9,12,24] It was also consistent with the Groote Schuur Hospital study involving patients with the same obstetric risk factors. The study reported no intended pregnancy among its divorced or separated participants.[70]

Single relationship status was found to be associated with increased pregnancy unintendedness in studies conducted in Kenya in 2013 which reported 62.0% unintended pregnancies among single participants, and a 2018 study conducted in Malawi which found more unintended pregnancies among singles (LMUP score 5) compared to married participants with LMUP score of 7.[9,72] Additionally, another 2014 Malawian study reported 60.3% unintended pregnancies among its single participants and a study conducted in South Africa in 2021 reported a 76.0% rate of unintended pregnancies among its single participants.[12,73] These data indicate that long-term stable relationships reduce unintended pregnancies and their consequences.

Language Group and Pregnancy Intention

In our study, there was no statistical relationship between language groups and pregnancy intendedness. Pregnancy unintendedness was similar between Afrikaans speakers {n = 55 (39.0%)} and IsiXhosa speakers, {n = 20 (37.7%)}. Pregnancy intention was highest among the six participants whose home language was Shona and Chichewa (66.7%) which may be influenced by the small number of non-South African black participants in the study.

A 2019 study in Ghana found differences in pregnancy intention between the Ewe (60.0%) and Akan-speaking people (43.1%) and a 2020 Nigerian study conducted in South-West Nigeria found significant differences between pregnancy intendedness of Yoruba (39.0%) and Igbo speakers (20.0%).[24,26] The former may be due to the higher educational attainment of the Akan people compared to the Ewe people and the latter because South-West Nigeria is Yorubaland with a relatively small population of Igbos whose homeland is in the South-East of that country.

Educational Level and Pregnancy Intention

All our participants had at least 7 years of formal education. Participants with only primary school education made up 8.0% of our study population while 169 (84.5%) completed secondary education and only 15 (7.5%) of them had tertiary-level education. Participants with tertiary education had the highest unintended pregnancy rate of 66.7%. Among those with high school education, 60 (35.5%) of the pregnancies were unintended while those with only primary school education had 6 (37.5%) unintended pregnancies.

Unlike most other studies, our study found no statistically significant association between the participants' educational level and pregnancy intendedness. Studies in Spain (2007), Botswana (2007), South Africa (2012), Ghana (2023), and Nigeria in 2020 all found that women with less than 12 years of formal education were more likely to have unintended pregnancies.[19,20,22,24,26]

The inconsistent relationship between our study and others may be due to the relatively small number of participants at both ends of the categorised educational levels. For the 7 in 10 unintended pregnancies among our participants with tertiary level education, they may have felt adequately equipped with information to know where and when to seek medical help and the resources to cover the expense that may be involved. The study involving patients with similar high-risk profiles at Groote Schuur Hospital also found no association between education and pregnancy intention.[70]

Employment Status and Pregnancy Intention

In contrast with other studies, our study found no association between employment status and pregnancy intention. Almost half of the participants {n = 98 (49.0%)} in our study were unemployed at the time of the interview. Of our participants who were employed, 35 (36.1%) of them had unintended pregnancies while the unemployed participants had 39 (39.8%) unintended pregnancies. Of our 4 student participants, 2 of them had unintended pregnancies. A 2013 study in Ghana found that 90.0% of pregnancies were unintended among

students.[15] The difference may be due to the small number of students among our participants. Our data suggest a trend towards decreased unintended pregnancy with employment.

Our finding is inconsistent with a 2014 study conducted in Malawi which reported a higher prevalence of unintended pregnancy among its employed participants (54.4%) compared to the unemployed participants (52.2%).[12] It was also inconsistent with a 2015 Botswanan study which reported an unintended pregnancy rate of 40.0% among its employed participants and 32.0% among its unemployed participants.[20] Our finding was however consistent with a study conducted in Ghana in 2019 which reported a higher prevalence of unintended pregnancies among its unemployed participants (47.7%) compared to its employed participants (37.4%).[24]

The finding of no statistically significant relationship between employment status and pregnancy intention in our study may be due to the high unemployment rate in South Africa and participants deciding to have children rather than wait to be employed. Additionally, the availability of a Child Support Grant may also be contributory as it offers some financial support. This is yet another validation for the use of the LMUP as a tool for measuring pregnancy intention as it does assume the rationality of participants' decisions.

Financial Support and Pregnancy Intention

Irrespective of employment status, our participants' financial support was significantly associated with pregnancy intention. Participants with financial support; either self-supporting or supported financially by their husbands/partners had more intended pregnancies, 20 (24.1%) and 45 (45.9%) respectively.

Ten participants received financial support from their parents and siblings and only one of them had an intended pregnancy. One participant had no financial support whatsoever and she was referred to the social services (Options) for help.

These data suggest, as expected, that pregnancy intention is more likely in women who have some financial support, regardless of the source.

Obstetric History and Pregnancy Intention

There was no statistically significant relationship between parity and pregnancy intention found in our study. The data show that nulliparous women in our study had more unintended pregnancies {n = 15 (44.1%)}than the 61 unintended pregnancies among our multiparous participants (36.8%).

Our finding is inconsistent with most other studies such as those conducted in Ghana (2014), Ghana (2019), and Nigeria (2020) which reported increasing parity to be associated with a higher likelihood of unintended pregnancy.[15,24,26] The 2014 Ghanaian study reported higher odds of carrying an unintended pregnancy among high parity women with 5 or more children compared to those with 1 or 2 children (AOR 6.06, 95% CI (3.24-11.38) vs (AOR 1.48, CI 1.14-1.93) while a 2020 study conducted in Nigeria found 40.8% unintended pregnancies among its primiparous participants compared to 32.3% unintended pregnancies among multiparous participants of the study.[26]

Our data were consistent with the findings from studies done in Kenya (2013) which reported that nulliparous women had the highest prevalence of unintended pregnancy (30.0%) compared to women who were of parity 1-2 (27.0%) and parity 3 and above (20.0).[9] Additionally, a 2019 study conducted in Ghana reported that women who had 4 or more children had 87.0% lower odds of having an unintended pregnancy.[24]

This may be due to multiparous women being more exposed to contraception during their previous pregnancies, and our cohort of patients being unaware of the potential risks that pregnancy poses to them and their unborn babies because of their medical condition.

Booking Gestational Age and Pregnancy Intention

The gestational age at booking for antenatal care of our participants had no statistically significant association with pregnancy intention. Women in our study who booked in the first trimester were more likely to have an intended pregnancy {n = 42 (37.8%)}compared to those who booked in the second {n = 23 (29.9%)}. Therefore, our data suggest increasing pregnancy intention with early booking. Similar findings were reported in two studies done in the United States in 2000 and 2009. The former reported that among women who booked in the first trimester, 73.0% of their pregnancies were intended while the latter reported an 86.1% intended pregnancy rate among women who booked in the first trimester.[34,35]

More than half of the participants in our study booked in the first trimester {n = 111 (55.50%)}, the rest {n = 98 (44.50%)} booked late (second and third trimester) meaning that 89 participants missed the opportunity to have their pre-existing conditions optimised, teratogenic medication stopped, and folic acid commenced to prevent neural tube defects in their babies. In addition, the participants who booked late in the second and third trimesters did not have the benefit of fetal abnormality scans.

HIV Status and Pregnancy Intention

The HIV status of our participants had no statistically significant impact on pregnancy intention. Participants who knew that they were HIV positive pre-pregnancy (n = 22) had fewer unintended pregnancies (30.4%) compared to participants who knew they were HIV negative {n = 55 (37.2%)}. The highest unintended pregnancy was among participants {n = 14 (48.3%)} who did not know their HIV status pre-pregnancy.

This finding indicates that our participants who knew that they were HIV negative or who did not know their HIV status pre-pregnancy were more likely to have an unintended pregnancy compared to women who knew they were HIV positive. The reason for fewer unintended pregnancies in the women who were HIV positive status was possibly because they had more exposure to contraception due to their frequent visits to health facilities for follow-up. On the other hand, those who were not aware of their status may not have had such an opportunity and therefore were not tested for HIV infection, missed contraception counselling, and potentially exposed their babies to vertical transmission of the virus.

The finding in our study that participants who knew their HIV-positive status pre-pregnancy were less likely to have an unintended pregnancy is consistent with findings of studies done in Botswana (2015) and South Africa (2021). The former reported that women who did not know their HIV sero-status pre-pregnancy were 1.7 times more likely to have an unintended pregnancy compared to women in the study who knew that they were HIV uninfected and the latter, a 2021 South African study reported that women who did not know their HIV status pre-pregnancy also had a higher prevalence of unintended pregnancies (54.6%) compared to those who knew that they were HIV uninfected (51.4%).[20,73]

Inconsistent with our data is a study is a conducted in South Africa in 2018 which reported significantly higher levels of unintended pregnancy among women who were HIV-infected pre-pregnancy (50.0%) compared to women who were HIV uninfected pre-pregnancy (33.0%).[71]

With a total of 26,996 people on ARVs in 2020, an increase of 508 patients from the previous year, this is an additional cost to the fiscus of the Garden Route District Municipality.[66] This highlights the necessity of intensification of HIV screening programs in the municipality including encouraging compliance in pregnant women to improve antiretroviral outcomes. The 2012 South African study conducted in Kwa-Zulu Natal, Mpumalanga, the Eastern Cape, and Gauteng found increased HIV viral loads in women with unintended pregnancies, thus putting the fetuses at increased risk of vertical transmission.[22]

Multiple Comorbidities and Pregnancy Intention

In our study, there was no significant association between multiple comorbidities and pregnancy intention. Participants with more than one comorbidity (88.0%) had more unintended pregnancies compared with those with a single comorbidity. These may be due to participants becoming pregnant despite their number of comorbidities because the majority of them (98.5%) stated that they felt healthy when they became pregnant. This is consistent with the findings of the Cape Town 2022 study that reported that 91.90% of participants felt they were healthy at the time they became pregnant.[70] A clear relationship between pregnancy intention and self-rated health was reported by a study conducted in Malawi (2018).[72]

Perinatal Mental Health Screening (PMHS) and Pregnancy Intention

There was no significant relationship between our participants' PMHS score and pregnancy intendedness in our study. Four of our participants had significant scores that warranted referral to Options, an NGO that provides care to referred patients in collaboration with the Social Services Department of George Regional Hospital. This number is not enough to comment on meaningfully. However, they had more unintended pregnancies (50%) compared to those with insignificant scores (37.8%).

To the PMHS question, whether they had experienced any form of physical violence either by their partner or anyone else at home, almost all of our participants reported no such events, four of them said their partners were not supportive, one participant reported experiencing stressful events in the last year, and one participant reported a history of mental disorder. This finding is inconsistent with a study conducted in Peru in 2008 that reported a higher prevalence of intimate partner violence and psychological problems in women with unintended pregnancies.[43]

The small number of participants with significant scores may be due to the participants being uncomfortable divulging such private information to the interviewer because of the risk of family disruptions which is likely if such information inadvertently leaks to their partner or the police.

When asked whether they were pleased about the current pregnancy, all but two said they were pleased with their pregnancies which is significantly higher than the pregnancy intendedness of this cohort of participants. This difference may be explained by the small number of significant scores, acceptance, and coming to terms with the pregnancy as it progressed because of the LMUP question: Did the pregnancy happen at the right time? More than two-thirds of participants said they were "OK, but it did not happen at the right time or happened at the wrong time." The acceptability of pregnancy as it progressed was also found in a 2015 study carried out in Pittsburgh, USA.[17]

Preconceptual Counselling and Health Improvement and Pregnancy Intention

There was very little pre-pregnancy preparation among the participants in our study and this had no statistically significant impact on pregnancy intendedness. Only three of them took pre-conceptual folic acid and thirty-one had pre-conceptual discussions with a physician. This may be due to the fact all of them except for three participants considered themselves healthy at the time of falling pregnant. Of those who had preconception counselling, 13 (41.9%) of them had intended pregnancies compared to the intended pregnancy rate of 31.4% among participants who had no pre-conceptual counselling and health improvement. These findings are consistent with a 2009 United States study that reported a 41.5% pregnancy intention rate among women who had pre-conceptual counselling and health improvement.[35]

These data may indicate a lack of knowledge of the importance of pre-pregnancy health improvement and an inefficient reproductive health service in the district. It highlights the need for effective counselling and education of women about the importance of pre-pregnancy medical consultation and preparation especially for those with high-risk factors for complicated pregnancies.

Habits and Pregnancy Intention

In our study, habits that are potentially harmful to the participants and their unborn children such as smoking cigarettes, drinking alcoholic beverages, and the use of recreational drugs had no significant association with pregnancy intention. Most of our participants had never smoked cigarettes {n = 119 (59.5%)} or indulged in recreational drug use {n = 197 (98.5%)}. Just above a quarter of our participants {n = 51 (25.5%)} had never consumed alcohol. Of those who had, the majority of them {n = 139 (69.50%)} stopped drinking alcohol before or when they found out they were pregnant.

Among our participants who smoked, more than half of them {n = 34 (53.0%)} stopped smoking before or when they found out they were pregnant, while the other smokers continued smoking during pregnancy {n = 43 (55.8%)}. Of the two who used illicit substances, one quit the habit after she found out she was pregnant but the other continued use during pregnancy.

***Smoking and Pregnancy Intention*:** Participants who discontinued smoking when they became pregnant had 6 unintended pregnancies compared to the 23 who continued to smoke during pregnancy, and 9 of them stopped smoking pre-pregnancy. Participants who had never smoked had the least unintended pregnancies {n= 38 (31.9%)}.

***Alcohol Consumption and Unintended Pregnancy*:** Participants who continued consuming alcohol during pregnancy had the most unintended pregnancies {n = 5 (50.0%)} followed by those who stopped drinking alcohol pre-pregnancy {n = 25 (41.7%)}. The pregnancy intention of participants who had never drunk alcohol and those who ceased when they found out they were pregnant was similar, {n = 18 (35.3%)} and {n = 28 (35.4%)} respectively.

***Recreational Drug Use and Pregnancy Intention*:** Unintended pregnancy was lowest among participants who had never used recreational drugs {n = 73 (37.1%)}. Of the remaining three, none of their pregnancies were intended. This number is too small to comment on meaningfully.

Our data are consistent with studies conducted in the United States in 2003 which found that women with unintended pregnancies were more likely to report preconception alcohol use (16.3%) compared to those with intended pregnancies (11.9%) and a recent 2022 study conducted in the Netherlands reported an unintended pregnancy rate of 20.4% among women who smoked during pregnancy.[34,45] Similarly, a further study conducted in the United States in 2009 reported that women who smoked cigarettes and drank alcohol during pregnancy were twice more likely to have unintended pregnancies than those who did not.[34]

The consumption of these substances poses potentially serious risks to the fetus such as early pregnancy loss, Fetal Growth Restriction (FGR), preterm delivery, abruptio placentae, intrauterine fetal death, and Fetal Alcoholic Syndrome (FAS).[7,30,48,49] FAS is a major problem in many communities in the Western Cape.

Our findings highlight the need for vigorous and consistent public health campaigns to encourage the cessation of these habits. After identification of patients at risk, there is a need for more frequent surveillance which may ensure early detection of complications to women and their unborn babies. The global incidence of alcohol consumption during pregnancy is reported to be 9.80% which means that 1 in 67 pregnancies of women who drink alcohol during pregnancy are at risk of the baby developing FAS as reviewed by Popova et al.[48]

Our participants who continued with these habits were referred to the Social Services Department of George Regional Hospital for help in that regard.

KNOWLEDGE OF CONTRACEPTION

Participants in our study had generally good unprompted contraceptive knowledge. Most of them knew about Long-acting Reversible Contraceptives (LARC). The majority of our participants {n = 193 (96.5%)} mentioned progesterone-only injectable contraceptives, 154 (77.0%) were aware of the Implant, 117 (58.5%) mentioned

the COC and 92 (46.0%) knew of the IUCD. None of them mentioned the mini-pill (progesterone-only pill) and only one participant mentioned Levonorgestrel-releasing Intra-uterine System (LNG-IUS or Mirena).

Only 74 (37.0%) of our participants had unprompted knowledge of barrier contraception. The male condom was mentioned by a third of them {n = 66 (33.00%)}, the female condom was known by 6 participants, only 2 of them mentioned the cervical diaphragm and none planned to use a barrier method of contraception post-delivery. None of our participants suggested spermicides as a form of contraception. This may be due to accessibility issues such as lack of privacy when acquiring them, embarrassment, judgemental dispensers, and distance to clinics to access them.[75] Very few of our participants mentioned male condom use as a method of contraception which may imply that they viewed acquisition of condoms as a male responsibility and associated condoms with HIV/STI prevention rather than contraception.

The majority of the women in our study had no knowledge of non-hormonal methods of contraception and only eight of them mentioned abstinence. One mentioned breastfeeding, and none knew about the rhythm or withdrawal methods. None of them suggested termination of pregnancy as a method of limiting family size.

Knowledge of permanent methods of contraception was also apparently low among our participants. Female sterilization was known by 37 (18.5%) of our participants and only 4 (0.02%) knew about male sterilization but possibly, they did not regard these methods as contraception.

Our data are inconsistent with the 2016 SADHS data and the 2015 South African study that reported better knowledge of most contraception methods among its participants compared to ours.[8,76] The latter study reported that the male condom was known by 62.2%, the female condom by 20.1%, TOP by 1.6%, and abstinence by 7.0% of its participants.[76] The 2016 SADHS data reported that 99% of women aged 15 -45 knew of at least one modern method of contraception.[8] On the other hand, our participants had more awareness of the IUCD (46.0%) compared to only 7.0% in that study.[76] This inconsistency may be due to the better access to and information about contraception in Cape Town, a large metropole compared to George, a relatively small town. However, consistent with our data was the knowledge of COC (59.6% vs 58.7%).[76] Also consistent with our data is the 2022 Cape Town study among participants with similar high-risk profiles which reported that progesterone-only injectable was the best known by 76.1% of participants and there was little knowledge of non-hormonal contraception.[70]

The majority of our participants had used some form of contraception over time. Only 8 (4.0%) had never used any method of contraception, a finding inconsistent with the above-mentioned South African study which reported that 40.1% of its participants had never used any form of contraception.[76] This inconsistency may be attributed to the fact that participants in that study were teenagers (16-19 year-olds) while most of our participants were 24 years and older.

Most had used progesterone-only injectable contraceptives {n = 175 (87.5%)}. Other forms of contraceptives that they had previously used include, the COC by 43 (21.5%) of our participants, Implant by 27 (13.5%), IUCD by 9 (4.5%), male condom by 8 (4.0%), and only one participant had used the female condom. This is inconsistent with data reported in a 2008 study conducted among women in 42 Sub-Saharan countries which showed that Short Term Hormonal contraceptives are the most popular and most commonly used form of modern methods of birth control in the region.[6]

This inconsistency may be attributed to easier access to healthcare and free contraception services in South Africa. Also inconsistent with our findings is a 2012 South African study which reported more use of barrier and non-hormonal methods of contraception among its participants compared to ours (The male condom (59.4% vs 4.0%), the female condom (49.0% vs 0.45), and rhythm method (8.3% vs 0.0%).[18] The reason for this inconsistency is unclear.

Almost all the participants in our study planned to be on contraception post-delivery {n = 193 (96.50%)}. Of the available methods of contraception, progesterone-only injectable contraceptive was preferred by 78 (39.0%) of participants, followed by female sterilization which was chosen by 60 (30.0%) of them. The progestogen Implant was the method of choice for 37 (18.5%) of them and only 9 (4.5%) wanted an IUCD. Only one participant said her partner had agreed to be sterilized. The high uptake of female sterilisation among our participants may be due to the efficient counselling they received.

Oral contraceptive pills were the choice of only 3.0% of the participants postpartum. One participant chose abstinence, and another chose spermicides. Seven participants declined any method of contraception despite adequate counselling. They were mostly low-parity participants who wanted more children. Our findings are dissimilar to that reported by the 2022 Cape Town study which showed lower post-partum planned use of DMPA (29.7% vs39.0%), Implant (13.1% vs 18.5%), and female sterilization (23.0% vs 30.%).[70] The contrast may indicate a difference in counselling strategy and effectiveness.

While hormonal LARC was known and previously used by most of our participants, the planned future use was reduced drastically. For instance, the progesterone-only injectable was known by 193 (96.5%) of participants. It was previously used by 175 (87.5%) of them, and only 78 (39.0%) planned to use it post-delivery. Oral contraceptive pills were known by 117 (58.5%) of our participants and 43 (21.5%) had used them before but only 6 (3.0%) planned to use them in the future. IUCD was known by 92 (46.0%) of our participants, and used previously by 9 (4.5%) of them. The same number of participants planned to use it in the future while Implant was known by 60 (77.0%) and used previously by 27 (13.5%) of them, there was an insignificant increase in its planned future use to 18.5% by 37 participants.

This reduction in the use of hormonal contraceptives may be due to 30% of our participants opting for female sterilization, and fears that they are associated with weight gain and misconceptions about contraceptives.[74,75] Other barriers to contraceptive use which have been reported were health system barriers and negative attitudes of healthcare providers, rumours, myths, misconceptions, prohibitive socio-cultural norms, running out of pills, side effects, and forgetting to take them.[74,75]

Despite having reasonable knowledge of, and access to contraception, 181 (90.5%) of our participants did not use any form of contraception in the month they fell pregnant in contrast to findings reported in a 2011 United States study which showed that access to contraception resulted in reduction in unintended pregnancy rates.[7] Also inconsistent with findings in our study, is the 2022 Bangladeshi study which reported that unintended pregnancy did not change women's views of contraception.[46] In our study they did change views with the majority of our participants {n = 193 (96.50%)} electing to be on contraception post-delivery.

Our data indicate a major unmet need for contraception in the Garden Route district municipality and as such there is a need to design programmes to increase contraceptive knowledge, particularly the importance of dual protection and integrating family planning services with both HIV and TOP services as well as medical clinics.

To this end, outreach programs to schools, churches, and at other social events will go a long way in increasing contraceptive uptake and therefore reduce unintended pregnancies in the district. There is an outreach programme that aims to increase contraceptive use among adolescent girls and young women currently piloted in 15 districts in Kwa-Zulu Natal and Gauteng provinces in South Africa, 'She Conquers and DREAMS'.[73] It is an initiative to intensify efforts to enable girls and young women to reach their potential and maximise their contribution towards a democratic South Africa.[73]

The programme also aims to increase the retention of girls and young women in school, decrease teenage pregnancy rates, decrease new HIV infections, and decrease sexual and gender-based violence among adolescent girls and young women.[73] If it indicates increased contraceptive use on review, it should be adopted for use in the Garden Route District and nationwide.

ACCESS TO EMERGENCY CONTRACEPTION

More than half of our participants {n = 106 (53.0%)} knew where to acquire emergency contraception and they listed Family Planning Clinics, Pharmacies, Hospitals, and the General Practitioner as places they could be accessed. This finding is inconsistent with the 2015 South African study which reported that just above a third of participants (34.1%) knew where to access emergency contraception.[76] The age difference of participants in both studies may explain the inconsistency in the findings.

The rest of our participants, 94 (47.00%), did not know where to access emergency contraception. The participants who had correct knowledge of {n = 103 (51.5%)}, and those who knew where to acquire emergency contraception {n = 106 (53.0%)} is not significantly different, indicating that other accessibility factors such as long distance to access them and lack of privacy when acquiring them may be responsible for its poor uptake.

STRENGTHS OF THE STUDY

The strength of this study is its reproducibility, replicability, and transparency. The number of participants recruited for the study gives it adequate statistical power hence a reliability of the pregnancy intention among this subgroup of obstetric patients. Additionally, a wide range of data was collected including past medical, and past obstetric history, and detailed contraceptive information.

LIMITATIONS OF THE STUDY

The study was limited to women 18 years and older. Most studies show that women younger than 18 years of age have more unintended pregnancies compared to older women. More than 75% of teenage pregnancies are considered unintended and almost 35% of them are aborted therefore, this important demographic was not studied.[21] A 2016 study conducted among teenagers (16–19-year-olds) in the Cape Town Metropolitan Area to assess contraception use and timing of pregnancy did not include teenagers younger than 16 years of age due to ethical and legal constraints.[76] It reported that only 12.1% of participants used contraception at the time of conception despite the majority of them stating that their pregnancies did not occur at the right time with 61.1% of them reporting easy access to contraception.[76]

Women whose pregnancies ended in miscarriages or were ectopic were not included in this study. Additionally, only women accessing public health facilities were recruited, excluding private health facility attendees. This means that women of higher socio-economic status were inadvertently excluded. Also, the interviews were conducted in English as elected by all the participants, it is unclear whether being interviewed in their second language would have significantly affected our findings. Finally, participants may have been uncomfortable divulging personal information to the male interviewer.

CHAPTER 5: RECOMMENDATIONS AND CONCLUSION

RECOMMENDATIONS

Multidisciplinary input is needed at every medical contact by all healthcare providers with women of childbearing age accessing both obstetric and non-obstetric care, especially with regard to contraception, future fertility plans, the importance of partner communication, and early booking.

At these contacts, women should be informed of all available contraceptive methods, where and how to acquire them including information about emergency contraception. Also vital is information on what to do when they miss taking their pill or miss an appointment for a method and when there is failure of a particular contraceptive method.

Women should also be made aware of the consequences of unintended pregnancy. Therefore, healthcare practitioners should be encouraged to keep abreast of developments in contraception, and contraceptive methods available in the region they practice, their side effects, costs, and where they can be accessed.

The Garden Route District Municipality should design more effective public awareness campaign methods to increase contraceptive use. The results of the She Conquers and DREAMS initiative should be followed up and adopted if found to be effective at increasing contraceptive uptake.

Investment in education is needed, especially for the girl child as most studies show the more educated a woman is, the more her socio-economic prospects improve and the less likelihood of her having an unintended pregnancy. Healthcare workers also need re-training to ensure a more positive interaction with their clients.

The LMUP and the PMHS questionnaires should be incorporated into antenatal services to identify patients at risk for increased surveillance. Midwives in Australia supported the use of the LMUP questionnaire and felt its use was within their scope of practice.[68]

Intensive contraception counselling for all and, especially, high-risk obstetric patients emphasizing the risks associated with short inter-pregnancy intervals and unintended pregnancy and permanent methods of contraception should be offered if appropriate. This counselling should also involve their partners or husbands and an information pamphlet issued on discharge. This brings to the fore the need for contraceptive counsellors in both the Antenatal clinics and the Post-natal wards of hospitals.

Furthermore, the State health services should prioritize the provision of more healthcare facilities with contraception services to improve accessibility. There should be an integration of contraceptive services with HIV prevention, Smoking/Alcohol cessation, and TOP programmes in medical clinics in the district.

Finally, the State, in collaboration with the private sector, should encourage and fund research on male contraception with the aim of increasing the contraceptive options available to men to ensure that the responsibility of family planning is borne by both men and women.

FUTURE RESEARCH SUGGESTIONS

Research into ways and means to improve uptake of contraception among all women of childbearing age especially those with high-risk medical conditions taking into account the impediments outlined in this work.

Additionally, research to improve the involvement of men in contraception and the development of more methods available to them.

Development and research for a validated post-delivery contraception pamphlet to be issued to patients and their partners on discharge.

CONCLUSION

Our study utilised the London Measure of Unplanned Pregnancy, a psychometrically validated measure of unplanned pregnancy to assess pregnancy intendedness in a high-risk obstetric population of women who were accessing antenatal care at a large regional hospital.

Our data indicates that the pregnancy intention among this subgroup of high-risk obstetric patients was 38.0% which is low, bearing in mind the potential risk of pregnancy to their health and that of the unborn children.

Our participants' age, relationship status, and financial support significantly affected pregnancy intention. In contrast with other studies, the educational level of our participants had no impact on pregnancy intention. Other factors that had no impact on pregnancy intention include language group, parity, booking gestation, HIV status, multiple comorbidities, prenatal mental health score, and habits.

The participants had little preconception preparation. Also, there was poor communication with their partners and a significant number of our participants booked late depriving them of the needed medical screening, support, and care.

Only 66 (33.0%) of our participants had intended pregnancies despite generally good contraceptive knowledge. This highlights a major unmet contraceptive need among participants in our study.

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APPENDIX 1A: LMUP QUESTIONNAIRE (AFRIKAANS)

SWANGERSKAP BEDOELINGS IN 'N HOE RISIKO VERLOSKUNDIGE BEVOLKING IN 'N STREEKHOSPITAAL

VRAELYS **HREC REF: 707/2019**

Pasiënt Naam en Nommer: _____

Studie Nommer : _____

Datum van onderhoud: _____

Onderhoudvoerder: _____

Voorgeboorte kliniek ☐

Voorgeboorte saal. ☐ **26/08/2019**

AGTERGROND INLIGTING

PLEK VAN ONDERHOUD: GEORGE STREEKHOSPITAAL 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

7. Marital Status Huwelikstatus (1) Single, not in a relationship Enkellopend, nie in 'n verhouding nie (2) Single in a stable relationship but not cohabiting, Enkellopend, in 'n stabiele verhouding, maar woon nie saam nie (3) Single and cohabiting Enkellopend en woon saam (4) Married Getroud (5) Divorced Geskei (6) Separated Vervreemd (7) Widowed Weduwee	
8. From whom do you receive **financial support**? (Mark all that apply) Van wie ontvang jy finansiële ondersteuning? (Merk alles wat van toepassing is) (1) Self Self (2) Partner/ Husband vennoot / man (3) Parent/s Ouer / s (4) Sibling/s broer/suster/s (5) Grandparents Grootouers (6) Other Relative/s (please specify) ander familielede (spesifiseer asseblief)_____ (7) Friend/s vriend/e (8) Disability Grant ongeskiktheidstoelaag (9) Child Support Grant kindertoelaag (10) No Financial Support Geen finansiële ondersteuning	

(11) I don't know Ek weet nie (12) Other(please specify) Ander (spesifiseer)_____	
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 (1) Self Self (2) Partner/Husband vennoot / man (3) Parent/s Ouer/s (4) Sibling/s broer/suster/s (5) Grandparents Grootouers (6) Other Relative/s (please specify)ander familielede (spesifiseer asseblief))_____ (7) Friend/s Vriend/e (8) I don't know Ek weet nie (9) Other (please specify)ander (spesifiseer asseblief)_____	

Socio-Economic Status Sosio-ekonomiese status

10. Highest Level of Education Hoogste vlak van opluiding

(1) No formal schooling

Geen formele skoolopleiding

(2) Grade 1 Graad 1

(3) Grade 2

(4) Grade 3

(5) Grade 4

(6) Grade 5

(7) Grade 6

(8) Grade 7

(9) Grade 8

(10) Grade 9

(11) Grade 10

(12) Grade 11

(13) Grade 12

(14) Tertiary (incomplete) Tersiêre (onvolledig)

(15) Tertiary (complete) Tersiêre (volledig)

(16) Unknown Onbekend

11. Employment Status Werkstatus

(1) Unemployed Werklose

(2) Self Employed Eie Onderneming

(3) Employed (Casual) Onderneming (Informeel)

(4) Employed (Formal) Onderneming (Formele)

(5) Student/Scholar Student /leerling

(6) Housewife Huisvrou

(7) Disability or Other Grant) Gestremdheid of ander toelaag

(8) Other (please specify) Ander (spesifiseer asseblief)_____

12. What is your job? What is jou werk ?

(1) N/A – unemployed n.v.t- werkloos

(2) Housewife Huisvrou

(3) Domestic Worker Huishulp

(4) Labourer Arbeider

(5) Factory Worker fabriekswerker

(6) Office Worker) kantoor werker

(7) Professional Professionele

(8) Other (please specify) Ander (spesifiseer asseblief)

_____

_____

(9) Student/Scholar Student /leerling

HABITS GEWOONTES

13. Do you smoke cigarettes? Rook jy sigarette? (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	
14. If ***YES*** how many cigarettes a day? Indien ja, hoevel sigarette per dag? (1) 0 -5 (2) 5-10 (3) 10-20 (4) >20 (5) Other (please specify) ander, spesifiseer _____ (6) N/A N.V.T	
15. Do you consume alcohol? Gebruik jy alcohol? (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	

16. Do you use any recreational drugs? Gebruik jy enige dwelmmiddels? (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	

Obstetric History Verloskundige geskiedenis

17. Gravidity 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. Gesta-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 George Hospital (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	
35. Diabetes Diabeet (1) Yes JA (2) No Nee (3) Don't know weet nie	
36. Cardiac kardiale (1) Yes JA (2) No Nee (3) Don't know weet nie	
37. TB (1) Yes JA (2) No Nee (3) Don' know weet nie	

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

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 temaak.

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 tekry.	
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 toekomste grebruik**
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 asseblief)			
(t) uncertain onseker			

OMSTANDIGHEDE VAN SWANGERSKAP: LONDON MAATREEL VAN ONBEPLANDE SWANGERSKAP

Afdeling A : Jou swangerskap

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

51. In the month you became pregnant In die maand toe jy swanger geword het **(Merk asseblief die stelling wat die mees toespaslik is op jou):** (1) I/we were not using birth control Ek/Ons het nie beboorte beheer gebruik nie (2) I/we were using birth control but not on every occasion Ek/Ons was geboortebeperking gebruik, maar nie by elke geleentheid (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 geboortebeperking, maar het geweet dat die metode het misluk (d.i gebreek het, geskuif, afgeval het, uitgekom, nie gewerk het, nie geneem) ten minste een keer (4) I/we always used birth control Ek/Ons gebruik altyd geboorte beheer		**SCORE**
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 toespaslik is op jou):** (1) Right time Op die regte tyd (2) Ok, but not quite right time Oukei,maar nie heeltemal die regte tyd nie. (3) Wrong time Verkeerde tyd.		

53. Just before I became pregnant net voor ek swanger geraak het

(Merk asseblief die stelling wat die mees toespaslik is op jou):

(1) I intended to get pregnant Ek wou swanger raak

(2) My intentions kept changing My voorneme het heeltyd verander

(3) I did not intend to get pregnant Ek het nie beplan om swanger te raak nie

54 Just before I became pregnant net voor ek swanger geraak het

(Please tick the statement which most applies to you)

(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

SCORE

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.

(Please tick the statement which most applies to you)

Before I became pregnant Voor ek swanger geraak het

(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.

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 jou gesondheid te verbeter in voorbereiding vir jou swangerskap?

(Please tick all that apply)

(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 **TOTAL**		

SECTION B: EMERGENCY CONTRACEPTION

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? (1) Combined oral contraceptive pill Gekombineerde orale kontraseptiewe pil (2) Mini-pill (progesterone only) Mini pil (slegs progesteroon) (3) Contraceptive injection(depoprovera/nur esterate) Kontraseptiewe inspuiting (depoprovera/nur esterate) (4) Implant (implanon or norplant) Inplanting (implanon of norplant) (5) Coil (IUD or IUS)***** (6) Condom Kondoom (7) Cap/diaphragm Diafragma (8) Withdrawal Onttrekking (9) Natural Family Planning/ safe time of the month Natuurlike familie Beplanning / veilige tyd van die maand (10) Sterilization/vasectomy Sterilisasie/Vasectomy (11) Breastfeeding Borsvoed (12) Other (specify) Ander (Spesifiseer) _____ (13) N/A – was not using n.v.t – was nie gebruik nie	
58. What is emergency contraception and explain. Wat is noodgeval voorbehoedmiddels en verduidelik. (1) Correct Reg (2) Incorrect Verkeerd (3) Don't know Weet nie	

59. Did you use emergency contraception to try and prevent this pregnancy?

Wat is noodgeval voorbehoedmiddels en verduidelik.

(1) Yes Ja

(2) No (planned pregnancy) Nee (beplande swangerskap)

(3) No never heard of it Nee nog nooit daarvan gehoor nie

(4) No nee

60. Where do you get emergency contraception? Waar kry jy noodgeval voorbehoedmiddels?

(1) The general practitioner Die algemene praktisyn

(2) The Family Planning clinic/ Student health centre Die familie Beplanning kliniek/ Student gesondheid sentreer

(3) The Hospital Die Hospitaal

(4) A shop n Winkel

(5) A friend n Vriendin

(6) The Pharmacy Die Apteek

(7) Other – (Specify) Ander (spesifeer)

(8) N/A (never heard of it)

(9) Don't know weet nie

APPENDIX 1B: LMUP QUESTIONNAIRE (ENGLISH)

PREGNANCY INTENDEDNESS IN A HIGH-RISK OBSTETRIC POPULATION IN A REGIONAL HOSPITAL

QUESTIONNAIRE **HREC Ref: 707/2019**

Patient Name & Number: _____

Study Number: _____

Date of Interview: _____

Interviewer: _____

Antenatal clinic ☐

Antenatal ward ☐

26.08.2019

BACKGROUND INFORMATION:

PLACE OF INTERVIEW: GEORGE REGIONAL 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

7. Marital Status (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	
8. From whom do you receive **financial support**? (**Mark all that apply**) (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) _____	
9. Who is responsible for most of the financial decision-making in your home? **(Mark all that apply)** (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

10. Highest Level of Education (1) No formal schooling (2) Grade 1 (3) Grade 2 (4) Grade 3 (5) Grade 4 (6) Grade 5 (7) Grade 6 (8) Grade 7 (9) Grade 8 (10) Grade 9 (11) Grade 10 (12) Grade 11 (13) Grade 12 (14) Tertiary (incomplete) (15) Tertiary (complete) (16) Unknown	
11. Employment Status (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) _____	
12. What is your job? (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	

HABITS

13. Do you smoke cigarettes? (1) YES (2) NO, never (3) STOPPED before I fell pregnant (4) STOPPED when I found out I was pregnant	
14. If ***YES*** how many cigarettes a day? (1) 0 -5 (2) 5-10 (3) 10-20 (4) >20 (5) Other (please specify) _____ (6) N/A	
15. Do you consume alcohol? (1) YES (2) NO, never (3) STOPPED before I fell pregnant (4) STOPPED when I found out I was pregnant	
16. Do you use any recreational drugs? (1) YES (2) NO, never (3) STOPPED before I fell pregnant (4) STOPPED when I found out I was pregnant	

Obstetric History

17. Gravidity	
18. Parity	
19. Miscarriages	
20. Ectopic	
21. TOPs	

Outcome of Each Pregnancy (please enter numbers)

22. Year	**23. Gestation**	**24. Outcome of Pregnancy** 1.Miscarriage 2.Ectopic 3.Alive 4.SB 5.NND 6.TOP	**25. Baby weight** 1. weight 2. unknown 3. N/A	**26. Mode of Delivery** 1.NVD 2.Forceps 3.Vacuum 4. C/S 5. N/A	**27. Complications** 1.YES 2.NO 3.Can't remember
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

PRESENT OBSTETRIC HISTORY

28. EDD:	
29. Gestational age at present	
30. Present Estimated Gestational Age (1) LNMP (2) Early Ultrasound (3) Late Ultrasound (4) Booking palpation (5) Other (specify)_____	
31. Gestational Age at booking for ANC: (1) Gestational age (2) Don't know (3) N/A	
32. Reason for attending George Hospital: (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: _____	

Medical History (Prior to patient falling pregnant)

33. Hypertension (1) Yes (2) No (3) Don't know	
34. Epilepsy (1) Yes (2) No (3) Don't know	

35. Diabetes (1) Yes (2) No (3) Don't know	
36. Cardiac (1) Yes (2) No (3) Don't know	
37. TB (1) Yes (2) No (3) Don' know	
38. Other (Specify)_____ (1) Yes (2) No (3) Don't know	
39. Do you think you were healthy when you fell pregnant? (1) Yes (2) No (3) Don't know	
40. HIV Status (prior to falling pregnant) (1) Positive (2) Negative (3) Don't know	
41. HIV status (after falling pregnant) (1) Positive (2) Negative (3) Don't know (4) N/A	
42. Did you discuss planning a pregnancy with the doctor managing the condition that you were referred to George Hospital for? (1) Yes (2) No (2) Developed in pregnancy	

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

43.	Is your partner or someone at home sometimes violent towards you? 0=no, 1=yes	
44.	Is your partner supportive? 0=yes, 1=no	
45.	Are you pleased about this pregnancy? 0=yes, 1=no	
46.	Have you had some very difficult things happen in the last year? 0=no, 1=yes	
47.	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 43 – 47 to give a score out of five.	

48. Please list all the methods of family planning which you ***KNOW ABOUT***? [SPONTANEOUS INPUT]

49. I will now ask you to list all methods you have ever ***USED.*** [SPONTANEOUS INPUT]

50. Which method are you ***PLANNING ON USING AFTER THIS PREGNANCY***? [SPONTANEOUS INPUT]

METHOD	**48. KNOW ABOUT**	**49.USED BEFORE**	**50.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 RELEVNT TO YOU RELATING TO THE CURRENT OR RECENT PREGANCY

51. In the month you became pregnant **(Please tick the statement which most applies to you):** (4) I/we were not using birth control (5) I/we were using birth control but not on every occasion (6) 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 (7) I/we always used birth control		**SCORE**
52. 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)** (4) Right time (5) Ok, but not quite right time (6) Wrong time		

53. Just before I became pregnant **(Please tick the statement which most applies to you)** (1) I intended to get pregnant (2) My intentions kept changing (3) I did not intend to get pregnant		
54. Just before I became pregnant **(Please tick the statement which most applies to you)** (2) I wanted to have a baby (3) I had mixed feelings about having a baby (4) I did not want to have a baby		
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. **(Please tick the statement which most applies to you)** Before I became pregnant (1) My partner and I had agreed that we would like me to be pregnant (2) My partner and I had discussed having children together, but had not agreed for me to get pregnant (3) We never discussed having children together		**SCORE**
56. Before you became pregnant, did you do anything to improve your health in preparation for pregnancy? **(Please tick all that apply)** (2) Took folic acid (3) Stopped or cut down smoking (4) Stopped or cut down drinking alcohol (5) Ate more healthily (6) Sought medical/health advice (7) Took some other action, please describe _____ (8) I did not do any of the above before my pregnancy.		

TOTAL		

Section B: Emergency Contraception

57. If you were using contraception in the month that you became pregnant, which method or methods were you using? **(Tick all that apply)** (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	
58. What is emergency contraception and explain. (3) Correct (4) Incorrect (5) Don't know	

59. Did you use emergency contraception to try and prevent this pregnancy? (3) Yes (4) No (planned pregnancy) (5) No never heard of it (6) No	
60. Where do you get emergency contraception? (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 1C: LMUP QUESTIONNAIRE (ISIXHOSA)

INTENDEDNESS IN A HIGH RISK OBSTETRIC POPULATION IN A REGIONAL HOSPITAL

QUESTIONNAIRE isiXhosa **HREC REF: 707/2019**

Patient Name & Number: _____

Study Number: _____

Date of Interview: _____

Interviewer: _____

Antenatal clinic ☐

Antenatal ward ☐

26/08/2019

BACKGROUND INFORMATION / IMBHALI NGENGCOMBHOLO:

PLACE OF INTERVIEW: GEORGE REGIONAL HOSPITAL ANTENATAL CLINIC/WARD

9. Date of Birth **Umhla wokuzalwa**	
10. Age (in years and months) **Iminyaka nenyanga**	
11. Population Group / **Uluhlu lwambemi** (8) Black South African / **Ummi omnyama wase Mzantsi-Afrika** (9) Coloured / **Owebala** (10) White / **Omhlope** (11) Asian / **I-India (ophuma eAsia)** (12) Foreign African (please specify)/ **Ummi base Afrika (cacisa)** (13) Foreign Non- African (please specify) / **Ummi ongengewase Afrika** (14) Other (please specify) / **Abanye**_____	
12. Home Language / **Ulwimi lwasekhaya** (5) English / **IsiNgesi** (6) Afrikaans / **IsiBhulu** (7) Xhosa / **IsiXhosa** (8) Other (please specify)_____ **Abanye (cacisa)**	
13. Language of Interview / **Ulwimi lodliwanondlebe** (4) English / **IsiNgesi** (5) Afrikaans / **IsiBhulu** (6) Xhosa / **IsiXhosa**	
14. Religion / **Inkolo** (8) Muslim / **IsiSilamsi** (9) Protestant / **IsiProtestanti** (10) Roman Catholic / **Inkolo yama Roma angamaKatolika** (11) Christian Other (please specify) / **AmaKristu angamanye (cacisa)**_____ (12) Hindu / **Amahindu** (13) Jewish / **AmaJuda** (14) Other (please specify) / **Ezinye Unkolo**_____	

RELATIONSHIP STATUS AND SUPPORT / UBOMI BOTHANDO NENKXASO

15. Marital Status / **Imo ngezomtshato** (8) Single, not in a relationship / **Awuntshatanga yaye awunagabane** (9) Single in a stable relationship but not cohabiting **Awutshatanga kodwa uneqabane nangona ungahlali kunye nje** (10) Single and cohabiting / **Awutshatanga kodwa nihlala kunye** (11) Married / **Utshatile** (12) Divorced / **Uphumile emtshatweni** (13) Separated / **Nehlukene** (14) Widowed / **Umhlolokazi**	
16. From whom do you receive financial support? (Mark all that apply) **Uyifumana kubani/phi inkxaso ngezezimali? (chapazela okulungeleyo)** (13) Self / **Uyazizamela** (14) Partner/ Husband / **Kwiqabane/Kumyeni** (15) Parent/s / **Kubazali** (16) Sibling/s / **Kubantakwenu okanyekoodade** (17) Grandparents / **KooMakhulu okanye KooTatomkhulu** (18) Other Relative/s (please specify)/ **Kwezinye izizalwane (cacisa)**_____ (19) Friend/s / **Kwizihlobo** (20) Disability Grant / **Kwisibonelelo sikaRhumlumente** (21) Child Support Grant / **Kwisibonelelo sika Rhumlumente sabantwana** (22) No Financial Support / **Akukho kwankxaso/nkxaso** (23) I don't know / **Andazi** (24) Other (please specify) / **Ezinye unkolo (cacisa)**_____	
17. Who is responsible for most of the financial decision-making in your home? **(Mark all that apply)** **Ngubani onezigqibo zolawulo lwezezi mali ekhayeni (chaphazela okulungeleyo)** **(10)** Self / **Uyazizamela** (11) Partner/ Husband / **Kwiqabane/Kumyeni** **(12)** Parent/s / **Kubazali** (13) Sibling/s / **Kubantakwenu okanyekoodade** (14) Grandparents / **KooMakhulu okanye KooTatomkhulu** **(15)** Other Relative/s (please specify)/ **Kwezinye izizalwane (cacisa)_____** (16) Friend/s / **Kwizihlobo** (17) I don't know / **Andazi** (18) Other (please specify)/ **Ezinye unkolo (cacisa)**_____	

Socio-Economic Status / Imo kwezoQoqosho Nokuhlala

11. Highest Level of Education / **Elona Banga/Bakala liphezulu kwezemfundo** (9) No formal schooling / **Zange ndayaesikolweni** (10) Grade 1 / **Bakala lokuqala** (11) Grade 2 / **Bakala lesinin** (12) Grade 3 / **Bakala lesithathu** (13) Grade 4 / **Bakala lesine** (14) Grade 5 / **Bakala lesihlanu** (15) Grade 6 / **Bakala lesitandathu** (16) Grade 7 / **Bakala lesixhenxe** (17) Grade 8 / **Bakala lesibhozo** (18) Grade 9 / **Bakala lethoba** (19) Grade 10 / **Bakala leshumi** (20) Grade 11 / **Bakala leshumi elinanye** (21) Grade 12 / **Bakala leshumi elinambini** (22) Tertiary (incomplete) / **Dyunivesithi/kholeji (andagqiba)** (23) Tertiary (complete) / **Dyunivesithi/kholeji (agqiba)** (24) Unknown / **Andazi**	
22. Employment Status / **Imo Kwezemphangelo** (9) Unemployed / **Andiphangeli** (10) Self Employed / **Ndiziqashile** (11) Employed (Casual) / **Ndiqashiwe kodwa ayisosigxina** (12) Employed (Formal) / **Ndiqashiwe ngokupheleleyo** (13) Student/Scholar / **Ndingumfundi** (14) Housewife / **Ndingumfazi osekhayeni** (15) Disability or Other Grant / **Ndifumana isiBonelelo kuRhulamente** Other (please specify) / **Ezinye imeko (cacise)** _____	
23. What is your job? / **Yintoni umsebenzi wakho?** (10) N/A – unemployed / **Andinawo/Andiqashwanga** (11) Housewife / **Ndiyinkosikazi esekhayeni** (12) Domestic Worker / **Ndisebenza nzima ngezandla** (13) Labourer / **Ndisebenza nzima ngezandla** (14) Factory Worker / **Kwimizi-mvesliso** (15) Office Worker / **Ezi Ofisini**	

(16) Professional / **Ngokoknqeqeshwa kwam** (17) Other (please specify) / **Ezinye imeko (cacisa)**_____ (18) Student/Scholar / **Ndingumfundi**	

HABITS IMIKHWA/IMIKHUBA ONAYO

24. Do you smoke cigarettes? / **Uyatshaya?** (5) YES / **Ewe** (6) NO, never / **Hayi, zange** (7) STOPPED before I fell pregnant / **Ndayeka phambi kokukhulelwa** (8) STOPPED when I found out I was pregnant / **Ndayeka ukuziqaphela kwam ndikhulelwe**	
25. If ***YES*** how many cigarettes a day? / **Ukuba uyatshaya, kangakanami ngemini?** (7) 0 -5 (8) 5-10 (9) 10-20 (10) >20 (11) Other (please specify) / **Omnye umlinganiselo**_____ (12) N/A / **Nakanye**	
26. Do you consume alcohol? / **Ingaba uyabusela ubutywala?** (5) YES / **Ewe** (6) NO, never / **Hayi, zange** (7) STOPPED before I fell pregnant / **Ndayeka phambi kokukhulelwa** (8) STOPPED when I found out I was pregnant / **Ndayeka ukuziqaphela kwam ndikhulelwe**	
27. Do you use any recreational drugs? / **Ingaba uyasebenzisa iziyobisi?** (1) YES / **Ewe** (2) NO, never / **Hayi, zange** (3) STOPPED before I fell pregnant / **Ndayeka phambi kokukhulelwa** (4) STOPPED when I found out I was pregnant / **Ndayeka ukuziqaphela kwam ndikhulelwe**	

Obstetric History / Imbhali ngezokhulwelo

28. Gravidity / **Ukhulelwe bangaphi**	
29. Parity / **Ubeleke abantwana abangaphi**	
30. Miscarriages / **Uphunyelwe sisisu kangaphi**	
31. Ectopic / **Ukhululelwe emibhobheni**	
32. TOPs / **Ukukhupa isisu**	

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

22. Year / Unyaka	**23. Gestation / Ubukhulelwe ixesha elingakananai**	**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** 2. unknown **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 **Andikhkhumbuli**

1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

PRESENT OBSTETRIC HISTORY / Imbhali yakutsha nje ngo okhulelwa

28. EDD / **usuka olulindeleke ngalo usana**:	
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 ukuphononononya 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 (ukuhlukuhla)** (5) Other (specify) / **Ezinye imeko (cacisa)**_____	
31. Gestational Age at booking for ANC / **Ixesha olikhulelweyo ukuqala ukuya kwakho esibhedlele/ekliniki** (4) Gestational age / **Ixesha olikhulelweyo** (5) Don't know / **andazi** (6) N/A / **Alikho**	
32. Reason for attending the George Hospital: (include all that apply) / **Kutheni apha e-GRH** (1) Diabetes/IGT / **Iswekile** (2) Hypertension / **Uxinzelelo lwegazi (igazi elinyukileyo)**	

(3) AMA / **Yobudala bomama** (4) BMI / **Ubukhulu bam buphezulu** (5) Growth disorders (IUGR/macrosomia) / U**mntwana wam usemkhulu okanye omncinane** (6) Post-dates / N**dikhulelwe 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)** (2) Yes / **Ewe** (3) No / **Hayi** (4) Don't know / **Andazi**	
34. Epilepsy / **Isithuthwane (ukuxhuzula)** (2) Yes / **Ewe** (3) No / **Hayi** (4) Don't know / **Andazi**	
35. Diabetes / **Iswekile** (2) Yes / **Ewe** (3) No / **Hayi** (4) Don't know / **Andazi**	
36. Cardiac / **Intliziyo** (2) Yes / **Ewe** (3) No / **Hayi** (4) Don't know / **Andazi**	
37. TB / **Isifosephepha** (2) Yes / **Ewe** (3) No / **Hayi** (4) Don' know / **Andazi**	
38. Other (Specify) / **Ezinye izigulo (cacisa)** (2) Yes / **Ewe** (3) No / **Hayi** (4) Don't know / **Andazi**	
39. Do you think you were healthy when you fell pregnant / **Ingaba ucinga ukuba uphilile xa ukhulelwa**	

(2) Yes / **Ewe** (3) No / **Hayi**	
40. HIV status (prior to falling pregnant) / **Isimo se-HIV (ngaphambi kokuba ukhulelwe)** (1) Positive / **Ndinayo** (2) Negative / **Andinayo** (3) Don't know / **Andazi**	
41. HIV status (after falling pregnant) / **Isimo se-HIV (emva kokukhulelwa)** (1) Positive / **Ndinayo** (2) Negative / **Andinayo** (3) Don't know / **Andazi** (4) N/A / **Ayingeni**	
42. Did you discuss planning a pregnancy with the doctor managing the condition that you were referred to George Hospital for? / **Ingaba uxoxe ngezicwangciso zokukhulelwa kunye nogqirha owayethunyelwe eGeorge Hospital?** (3) Yes / **Ewe** (4) No / **Hayi** (5) Developed in pregnancy / **Izigula zaqala ngokukhulelwa**	

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.	Is your partner or someone at home sometimes violent towards you? 0=no, 1=yes **Ingaba iqabene lakho libandlongondlongo kuwe ngamanye amaxesha? 1 = ewe, 0 = hayi**	
42.	Is your partner supportive? 0=yes, 1=no **Ingaba iqabana lakho linenxaso? 0 = ewe, 1 = hayi**	
43.	Are you pleased about this pregnancy? 0=yes, 1=no **Ingaba ukholiwe lolukhulwelo? 0 = ewe, 1 = hayi**	

44.	Have you had some very difficult things happen in the last year? 0=no, 1=yes **Ingaba kukho inzima okhe wazifuanakulo nyaka ugqithileyo? 1 = ewe, 0 = hayi**	
45.	Have you had problems with things like depression, anxiety or panic attacks before? 0=no, 1=yes **Ingaba ukhe wakwimeko ezinje ngonxunguphalo, ukudandatheka njalo ngaphambili?**	
	Interviewer to please add the scores for questions 39 - 43 to give a score out of five. **Umdliwano ndlebe makancede aqokelele amanqaku alemibuzo ingentla abe phantsi kwesi xa esingu 5**	

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 RELEVENT TO YOU RELATING TO THE CURRENT OR RECENT PREGANCY

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):** (8) I/we were not using birth control **Mna/besingalu sebenzisi icwangciso** (9) I/we were using birth control but not on every occasion **Mna/besilusebenzisa ucwangcisa, kodwa hayi lonke ixesha** (10) 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.** (11) I/we always used birth control **Mna/besilusebenzisa rhoqo ucwangciso.**		**SCORE**
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** (7) Right time / **Lixesha elilungileyo** (8) Ok, but not quite right time / **Ok, kodwa ayilo xesha elulingileyo** (9) Wrong time / **Lixesha elingalunganga**		**SCORE**
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** (4) I intended to get pregnant / **Bendizimisela ukumitha** (5) My intentions kept changing / **Lingcinge zam bezintshentsho** (6) I did not intend to get pregnant / **Bendingazimisele ukumitha**		

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** (5) I wanted to have a baby / **Bendifuna ukuba nosana** (6) I had mixed feelings about having a baby / **Imizwa yam ibibethabethana ngokuba nosana** (7) I did not want to have a baby / **Bendingafuni ukuba nomtwana**		
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. **(Please tick the statement which most applies to you) / Nceda tikisha intetha engqamelene nawe kakhulu** Before I became pregnant / **Nje phambi kokuba ndimithe** (4) My partner and I had agreed that we would like me to be pregnant / **Iqabane lam, nam sivumelene ukuba ndimithe** (5) 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** (6) We never discussed having children together / **Asikhange sixoxe ngokuba nabantwana sobabini**		
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?** **Please tick all that apply) / Nceda tikisha intetha engqamelene nawe** (9) Took folic acid / **Nditye Ifolic Acid** (10) Stopped or cut down smoking / **Ndiyekile okanye ndabuyise unyawo ekutshayeni** (11) Stopped or cut down drinking alcohol / **Ndiyekile okanye ndabuyise unyawo ekuseleni** (12) Ate more healthily / **Ndiye ukutya okusempilweni** (13) Sought medical/health advice / **Ndiye ndafuna amacebisa empilo**		

(14) Took some other action, please describe / **Ndiye ndathethe amanje amanyathelo nceda chaze** _____ (15) I did not do any of the above before my pregnancy / **Akukho nenye endiyenzileyo kwezi zisentla pkambi ndimithe**		
TOTAL		

Section B: Emergency Contraception / Ucwangiso olungxamisekileyo

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 yokukhulelwa, yeyiphi indlela okanye iindlela obuyakuyisebenzisa kwezizilandelayo? (Sebenzisa oluphawo aphokufanelekileyo)** (1) Combined oral contraceptive pill / **Intlanganisela yeepilisi eziginywayo** (2) Mini-pill (progesterone only) / **Pilisi encinci** (3) Contraceptive injection(depoprovera/nur esterate) / **Isitofu** (4) Implant (implanon or norplant) / **I-implant** (5) Coil (IUD or IUS) / **Iloop** (6) Condom / **Ikhondomu** (7) Cap/diaphragm / **Isiqoshelisi** (8) Withdrawal / **Ukuyikhupha ungekachithi** (9) Natural Family Planning/ safe time of the month / **Ixesha elikhuselekileyo lokwabelana ngesondo** (10) Sterilization/vasectomy / **Ukubulana inzala** (11) Breastfeeding / **Ukuncancisa ngebele** (12) Other (specify) / **Ezinye indlela (cacisa)**_____ (13) N/A – was not using / **Akhonanye/Ndandingayisebenisi**	
56. What is emergency contraception and explain / **Yintoni uCwangciso olungxamisekuleyo?** (6) Correct / **Ilungile** (7) Incorrect / **Ayilunganga**	

(8) Don't know / **Andazi**	
57. Did you use emergency contraception to try and prevent this pregnancy? / **Nalusebenzisa ucwangciso olungxamisekileyo ukunqanda olumitho lwangoku?** (7) Yes / **Ewe** (8) No (planned pregnancy) / **Hayi (Ukhulwelo olucwangcisiweyo)** (9) No never heard of it / **Hayi (Zange ndive kwanto)** (10) No / **Hayi**	
58. Where do you get emergency contraception? / **Ulifumane phi ucwangciso olungxamisekuleyo?** (10) The general practitioner / **Kwa-qgirha** (11) The Family Planning clinic/ Student health centre / **Kwiziko lwe mpilo locwangciso** (12) The Hospital / **Esibedlele** (13) A shop / **Evenkileni** (14) A friend / **Kumhlobo** (15) The Pharmacy / **Kwivenkile ethengisa amayeza** (16) Other –(Specify) / **Kwezinye indawo (cacisa)**_____ (17) N/A (never heard of it) / **Nakanye (Hayi, zange ndive kwanto)** (18) Don't know / **Andazi**	

APPENDIX 2

GEORGE REGIONAL HOSPITAL ETHICS APPROVAL

Western Cape Government
Health

George Regional Hospital
Manager: Medical Services
Dr ZM North
Tel: (044) 802 4535
Email: Zilla.North@westerncape.gov.za

19 November 2019

TO WHOM IT MAY CONCERN

Dr Akan Akpakan, Obstetric registrar UCT/Groote Schuur Hospital, has requested approval to conduct interviews on high risk antenatal patients in the George Hospital obstetric clinic as part of his MMed dissertation.

The topic of the study is Pregnancy Intendedness in a High-Risk obstetric population in a Regional hospital and will evaluate the need for Family Planning and access to safe Termination of Pregnancy services.

The interviews are private and will in no way impact clinical service delivery.

The study has been discussed at the George Hospital ethics committee meeting on 6 November 2018.

Permission is hereby granted for said interviews to take place.

Yours sincerely,

Signed by candidate

Dr Zilla North
Medical Superintendent
George Regional Hospital

Davidson Road, George, 6529
tel: +27 44 802 4390 fax: +27 86 743 9530

Private Bag X6534, George, 6530
www.capegateway.gov.za

APPENDIX 3

HREC APPROVAL

UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee

Room E53-46 Old Main Building
Groote Schuur Hospital
Observatory 7925
Telephone [021] 406 6492
Email: sumayah.arlefdien@uct.ac.za
Website: www.health.uct.ac.za/fhs/research/humanethics/forms

25 November 2019

HREC REF:707/2019

Prof Z van der Spuy
Department of Obstetrics & Gynaecology
H-Floor, OMB

Dear Prof van der Spuy

PROJECT TITLE: PREGNANCY INTENDEDNESS IN A HIGH-RISK OBSTETRIC POPULATION IN A REGIONAL HOSPITAL (SUB-STUDY 597/2016 & 060/2019) (MMED DEGREE - DR A AKPAKAN)

Thank you for your response letter dated 22 November 2019, addressing the issues raised by the Human Research Ethics Committee (HREC).

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned study.

Approval is granted for one year until the 30 November 2020.

Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.
(Forms can be found on our website: www.health.uct.ac.za/fhs/research/humanethics/forms)

The HREC acknowledge that the student: Dr Akanimo Akpakan will also be involved in this study.

Please quote the HREC REF in all your correspondence.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please note that for all studies approved by the HREC, the principal investigator **must** obtain appropriate institutional approval, where necessary, before the research may occur.

Yours sincerely

Signed by candidate

PROFESSOR M BLOCKMAN
CHAIRPERSON, FHS HUMAN RESEARCH ETHICS COMMITTEE

Federal Wide Assurance Number: FWA00001637.
Institutional Review Board (IRB) number: IRB00001938
NHREC-registration number: REC-210208-007

HREC 707/2019

APPENDIX 4A: CONSENT FORM (ENGLISH)

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

CONSENT FORM **HREC REF: 707/2019**

I agree to participate in this study which is being conducted by the research team within the Reproductive Medicine Unit of 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 have 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 George Regional 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 to the University of Cape Town, as part requirement for a postgraduate degree.

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

My decision to take part in this study 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. Akan Akpakan, Dr Carl Firmin, or Prof Van der Spuy using the contact details listed in the Patient Information Leaflet.

Name of participant **Signature of participant**

Name of interviewer **Signature of interviewer**

Name of witness **Signature of witness**

Date: / / 26/08/2019

APPENDIX 4B: CONSENT FORM (AFRIKAANS)

Swangerskap Bedoelings in ‘n Hoë Risiko Verloskundige bevolking in ‘n Streekhospitaal

Toestemmings vorm **HREC REF: 707/2019**

Ek stem in om deel te neem in die studie, wat deur die navorsing span in die Reproduktiewe 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 George Streekhospitaal 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 beinvloed 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 Akan Akpakan, Dr Car Firmin of Prof Van der Spuy deur die besonderhede wat in die inligtingsblad verskyn.

Naam van Deelnemer: **Handtekening van Deelnemer:**

Naam van Onderhoudsvoeder: **Handtekening van Onderhoudsvoeder:**

Datum: /

APPENDIX 4C: CONSENT FORM (ISIXHOSA)

IFOMU YESIVUMELWANO **HREC REF: 707/2019**

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 saseGeorge.

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. Iinkcukacha 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 Akan Akpakan, uGhirha Carl Firmin okanye uNjingalwazi van der Spuy.

IGAMA NEFANI YAM: TYIKITYA:

IGAMA LOMNTU OBUZA IMIBUZO: TYIKITYA:

INGQINA: TYIKITYA:

UMHLA: / /

APPENDIX 5A: PATIENT INFORMATION LEAFLET (AFRIKAANS)

Swangerskap Bedoelings in ‘n Hoë Risiko Verloskundige bevolking in ‘n StreekHospitaal

Pasient Inligtings blaadjie **HREC REF: 707/2019**

Die Reproduktiewe 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 George Streekhospitaal. 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 sale in George streekhospitaal, 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 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 George Streekhospitaal 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 beinvloed 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. Geen deelnemer sal geïdentifiseer word in enige aanbieding nie.

As jy enige verdere vrae het kontak asseblief :

Ondersoeker **Dr. A. E. Akpakan**
George Streekhospitaal, Departement van Verloskunde en Ginekologie
akan_bishop@yahoo.com
0765026965

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

Dr Khatija Kadwa

Specialist in Verloskunde en Ginekologie by Groote Schuur Hospitaal

Epos: khatijak@gmail.com

Bel 021 404 6020 en los ‘n boodskap by Mev Koks en Dr Kadwa sal jou Kontak.

Dr Carl Firmin

Hoof van die Eenheid , George Streekhospitaal, Departement van Verloskunde en Ginekologie

Carl.firmin@westerncape.gov.za

0828594520

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

Professor Marc Blockman

Human Research Ethics Committee

UCT Faculty of Health Sciences

Tel: 0214066338

Epos: marc.blockman@uct.ac.za

Dr Vaughan Marshall

Specialist in Verloskunde en Ginekologie

George Streekhospitaal

Vaughan_marshall@yahoo.co.uk

0767107227

APPENDIX 5B: PATIENT INFORMATION LEAFLET (ENGLISH)

PREGNANCY INTENDEDNESS IN A HIGH-RISK OBSTETRIC POPULATION IN A REGIONAL HOSPITAL

PATIENT INFORMATION LEAFLET **HREC REF: 707/2019**

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 George Regional 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 George Regional 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, among which were 400 women. In addition, we will ask you some questions about yourself, your general health and your pregnancy.

Possible participants in the study:

- Women willing to be interviewed who are attending the George Regional Hospital Antenatal Clinic or admitted to the 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 management in the ward. We will take particular care to ensure 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.

Risks 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 to suitable counselling within our services.

Benefits

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 investigator 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 the completion of a postgraduate degree. No participant will be identified in any presentation.

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

Investigator: Dr A. E. Akpakan
Department of Obstetrics and Gynaecology, George Regional Hospital
akan_bishop@yahoo.com
076 502 6965

Supervisors:

Prof Z. M. van der Spuy
Department of Obstetrics and Gynaecology, Groote Schuur Hospital
Zephne.VanDerSpuy@uct.ac.za
021 406 6150
If necessary, leave a message and we will return your call

Prof Greg Petro
Department of Obstetrics and Gynaecology, New Somerset Hospital
Gregory.Petro@westerncape.gov.za
021 402 6324
Leave a message and I will call you back.

Dr Khatija Kadwa
Consultant, Department of Obstetrics and Gynaecology, Groote Schuur Hospital
khatijak@gmail.com
Phone 021 404 6020 and leave a message with Mrs Koks and Dr Kadwa will return your call

Dr Carl Firmin
Head of Unit, Department of Obstetrics and Gynaecology, George Regional Hospital
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082 859 4520

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

Professor Marc Blockman
Chairperson of the Human Research Ethics Committee
Faculty of Health Sciences
Marc.blockman@uct.ac.za
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26/08/2019

APPENDIX 5C: PATIENT INFORMATION LEAFLET (ISIXHOSA)

PREGNANCY INTENDEDNESS IN A HIGH-RISK OBSTETRIC POPULATION IN A REGIONAL HOSPITAL

UKUKHULELWA OKUJONGWA NJENGOMNGCIPHEKO OMKHULU WOKUTHINTELWA KWABANTU ESIBHEDLELE SESITHILI HREC REF: 707/2019

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 saseGeorge 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, yayebehlukuhlisa apha kwisibhedlele sase George
- 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, usinceda 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 beekhompyutha. Liqela loluvavanyo kuphela elinemvume yokuzisebenzisa, hayi omnye umntu.

UKWAZISA ULUNTU NGEZIPHUMO ZOLUVAVANYO

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

Ukuba unayo eminye imibuzo malunga noluvavanyo, tsalela ababantu balendelayo:

Umqulunqi woluvavanyo

uGqirha A. E. Akpakan
KwiDyunivesithi yaseKapa
Isibhedlele seNgingqi saseGeorge
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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.

uNjingalwazi Greg Petro KwiDyunivesithi yaseKapa
iCandelo lokuBelekisa nenzululwazi ngesi Gulo zabantu baseTyhini
imeyile: **Gregory.Petro@westerncape.gov.za**
inombolo: 021 402 6324Ungashiya nomyalezo xa kunyanzelekile, sizakunzam ukubuyel kuwe

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

Gqhirha Carl Firmin

Intloko yunithi, KwiDyunivesithi yaseKapa
Isibhedlele seNgingqi saseGeorge
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Ukuba unqwenela ukuqonda kumntu ongathathi nxaxheba koluvavanyo qhagamshelana no:

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Gqhirha Vaughan Marshall
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0767107227

APPENDIX 6

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

43.	Is your partner or someone at home sometimes violent towards you? 0=no, 1=yes	
44.	Is your partner supportive? 0=yes, 1=no	
45.	Are you pleased about this pregnancy? 0=yes, 1=no	
46.	Have you had some very difficult things happen in the last year? 0=no, 1=yes	
47.	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 43 - 47 to give a score out of five.	