

**FINAL THESIS**

**FACTORS INFLUENCING CONTRACEPTIVE USE AND SEXUAL  
BEHAVIOUR AMONG WOMEN OF REPRODUCTIVE AGE IN  
UMLAZI TOWNSHIP, KWAZULU-NATAL PROVINCE, SOUTH  
AFRICA.**

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A thesis by manuscripts submitted to the Discipline of Public Health Medicine, College of Health Science, University of KwaZulu-Natal, in fulfilment of the academic requirements for the Doctor of Philosophy (PhD) Degree in Public Health.

This is to attest that the contents outlined in this dissertation are the original research work done and reported by the author (Mbuzeleni Hlongwa). The research work detailed in this dissertation has not been previously submitted to any tertiary institution for award of a degree or diploma. The use of other researchers' or scientists' work in the text has been acknowledged accordingly.

As the candidate's supervisor, I have approved this dissertation for submission.

Supervisor: Dr Khumbulani Hlongwana


Signature: 

Date: 26 June 2021

## **Preface**

The study described in this thesis was carried out in the Discipline of Public Health Medicine, School of Nursing and Public Health, College of health Sciences, University of KwaZulu-Natal (UKZN) between January 2018 and May 2021. The study described in this thesis is an original work done and reported by the author. The study has not been used in any way, by any person or submitted to any tertiary institution for award of a degree or a diploma. In line with the thesis guidelines of UKZN, some of the work reported in this thesis has either been fully published in accredited peer-reviewed journals, or undergoing peer review. Due acknowledgements have been accorded where other people's work has been used in the text.

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Signature: 

Date: 28 June 2021

## **Declaration One: Plagiarism**

I, Mbuzeleni Hlongwa, declare that:

- The research work reported in this thesis, except where otherwise indicated, is my original work.
- This thesis has not been submitted for any other degree or examination at any other tertiary institution.
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## Declaration Two: Publications

The publications (Published, or In Review) that constitute this thesis, and the contribution I made to each of the manuscripts, are presented hereunder:

#	Publication Outputs	Status
1.	Hlongwa M, Mashamba-Thompson T, Hlongwana K. Evidence on factors influencing contraceptive use and sexual behavior in South Africa: a systematic scoping review protocol. <i>Medicine</i> . 2018 Dec; 97(52).	Published
2.	Hlongwa M, Mashamba-Thompson T, Makhunga S, Hlongwana K. Evidence on factors influencing contraceptive use and sexual behavior among women in South Africa: a scoping review. <i>Medicine</i> . 2020 Mar; 99(12).	Published
3.	Hlongwa, M., Kalinda C., Peltzer K. and Hlongwana, K. (2021) Factors associated with modern contraceptive use: a comparative analysis between young and older women in Umlazi Township, KwaZulu-Natal, South Africa. <i>Women's Health</i> . 2021 Nov; 17: 1-9	Published
4.	Hlongwa M, Peltzer K, Hlongwana K. Risky sexual behaviours among women of reproductive age in a high HIV burdened township in KwaZulu-Natal, South Africa. <i>BMC Infectious Diseases</i> . 2020 Dec; 20(1):1-9.	Published
5.	Hlongwa M, Tlou B, Hlongwana K. Healthcare providers' knowledge and perceptions regarding the use of modern contraceptives among adolescent girls in Umlazi Township, KwaZulu-Natal province, South Africa. <i>The Pan African Medical Journal</i> . 2021 Feb 4; 38(124).	Published
6.	Hlongwa M, Mutambo C, Hlongwana K. "In fact, that's when I stopped using contraception" A qualitative study of the experiences of contraceptive use among sexually active women in KwaZulu-Natal, South Africa. <i>PLOS One</i> .	In-review

Dr Hlongwana and I conceptualised the above-mentioned publications. I led the data collection, data management, data analysis and drafted the first paper. All co-authors critically reviewed and edited the papers and made further contributions.

Candidate: Mbuzeleni Hlongwa

Signed: 

Date: 28 June 2021

## **Dedication**

This research report is dedicated to the Almighty God and my family.

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I would like to acknowledge and thank the following:

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## Acronyms and Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
AOR	adjusted odds ratios
ART	Antiretroviral therapy
BREC	Biomedical Research Ethical Committee
CI	Confidence Interval
CPR	Contraceptive Prevalence Rate
DPMA	Depot Medroxyprogesterone Acetate
GP	Gauteng Province
HIV	Human Immunodeficiency Virus
HSRC	Human Sciences Research Council
IUCD	Copper Intrauterine Contraceptive Device
KZN	KwaZulu-Natal
LMICs	low and middle-income countries
MDG	Millennium Development Goal
MMR	Maternal Mortality Rate
NDP	National Development Plan
NET-EN	norethisterone enanthate
NHRD	The National Health Research Database
OR	Odds Ratio
PI	Principal Investigator
PPS	Probability proportionate to size
SA	South Africa
SSA	Sub-Saharan Africa
SDGs	Sustainable Development Goals
Stats SA	Statistics South Africa
STDs	Sexually Transmitted Diseases
UKZN	University of KwaZulu-Natal
WHO	World Health Organization
X <sup>2</sup>	Chi Square

## Definition of Concepts

- **Maternal mortality rate (MMR):** refers to the annual number of female deaths per 100,000 live births, from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes).
- **Contraceptive prevalence rate (CPR):** refers to the percentage of women of reproductive age who are currently using, or whose sexual partner is currently using, at least one contraceptive method, regardless of the method used. It is reported for women aged 15 to 49 who are married or in a union.
- **Family planning:** refers to the practice of controlling the number of children one has and the intervals between their births, particularly by means of contraception or voluntary sterilization.
- **Termination of pregnancy/abortion:** refers to the deliberate termination of a human pregnancy.
- **HIV and AIDS:** Acquired immunodeficiency syndrome (AIDS) is a chronic, potentially life-threatening condition caused by the human immunodeficiency virus (HIV). By damaging your immune system, HIV interferes with the body's ability to fight the organisms that cause disease, and it is a sexually transmitted infection (STI).

# **Abstract**

## **Background**

Access to safe and effective contraceptive methods is one of the cornerstones of reproductive health, worldwide. However, the degree to which women manage various aspects of their sexual lives, including the prevention of unplanned or unwanted pregnancies, infant and maternal mortality, and exposure to HIV and AIDS, continues to raise questions relating to health promotion concerns. Despite the implementation of various government interventions, unplanned pregnancies, termination of pregnancies, and maternal mortality remain relatively high in South Africa. While HIV infection has been well documented in South Africa, the risky sexual behaviour of South Africans remains a concern. The aim of this study was to examine the factors that influence contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, KwaZulu-Natal Province, South Africa. The specific research objectives were as follows:

1. To map evidence on factors influencing contraceptive use and sexual behaviour in South Africa through a systematic scoping review.
2. To determine the proportion of women of reproductive age using contraceptives in Umlazi Township, KwaZulu-Natal, South Africa.
3. To examine women's knowledge of different contraceptive methods in Umlazi Township, KwaZulu-Natal province, South Africa.
4. To determine contraceptive methods used by women in Umlazi Township, KwaZulu-Natal province, South Africa.
5. To identify factors influencing contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, both from a user and provider perspective.
6. To explore the experiences of women of reproductive age regarding contraceptive use and risky sexual behaviours in Umlazi Township, South Africa.

## **Methods**

The was a mixed-methods study, which utilised primary level data to answer objectives two to six. A systematic scoping review was conducted to address the first study objective. The study was conducted in a clinic-based setting among women of reproductive age in Umlazi Township under eThekweni Municipality in KwaZulu-Natal. The healthcare providers from the selected clinics and women of reproductive age attending the selected facilities, participated in the study. For quantitative study, data were collected through a structured questionnaire, coded and

entered into Epi data manager (version 4.6). Stata version 15 was used to conduct quantitative data analysis. Multivariable logistic regression model was used to assess the level of the association between the predictor and outcome variables and the  $p$ -value  $< 0.05$  was considered statistically significant. For qualitative study, women from four primary health care facilities were recruited through a combination of convenience and criterion-based sampling techniques. Using NVivo version 11, two skilled researchers independently conducted thematic data analysis, as a mechanism for quality assurance, before the results were collated and reconciled.

## Results

Overall, 471 eligible women and 35 healthcare workers participated in the quantitative study. Fifteen women participated in the qualitative study. The quantitative study found that more than half (51.8%) of the women were aged 18–24 years, and only a handful (18.3%) had a tertiary qualification. The majority were single (89.0%) and unemployed participants accounted for 54.0% of the total sample. This study found that women who had talked about condoms with their partner/s in the past 12 months were more likely ( $p < 0.0001$ ) to have used condoms during their last sexual intercourse. Older women (aged 35–49 years) were more likely ( $p = 0.035$ ) to have used a condom during their last sexual encounter, compared to their younger counterparts. However, women who were exposed to physical partner violence (hitting and/or slapping), those who had been diagnosed with HIV and those whose sexual partners were diagnosed with HIV, did not show a significant association with condom use at last sex. This study showed a high proportion (84.1%) of women using contraception in the sample. This study further indicated that women with a secondary level of education ( $p = 0.053$ ) or a tertiary level of education ( $p = 0.040$ ), were more likely to use contraceptive methods compared to women with a lower education status. Older women aged 25–49 years who experienced pregnancy, whether planned ( $p = 0.038$ ) or unplanned ( $p = 0.001$ ), were more likely to use a contraceptive method. Furthermore, more than a third of healthcare providers (37.1%) were unsure whether modern contraceptives cause users to become promiscuous, and more than half (57%) had negative attitudes toward adolescent girls exploring contraceptive methods. Poor working conditions, long queues, and contraceptive stock-outs were cited by health care providers as deterrents to providing quality sexual behaviour counselling and modern contraceptive education to users. The qualitative study found that women were concerned about unpleasant contraceptive side effects such as prolonged or irregular menstrual periods, bleeding, weight gain, and/or severe pains. Some women stopped using their preferred contraceptive method or opted for a different contraceptive method due to undesirable side

effects and/or contraceptive stock outs. Women also raised concerns that they were not adequately counselled or informed on the use or potential negative effects of various contraceptive methods available at health care facilities. Furthermore, perceived negative attitudes towards young women by health care providers, long waiting times and concerns over contraceptive efficacy, contributed to reduced contraceptive uptake.

## **Conclusion**

This study adds to our knowledge of women's concerns and issues related to contraception access and use in Umlazi Township, KwaZulu-Natal. This study found that numerous factors influence contraceptive use and sexual behaviour. The amount to which women engage in unprotected sexual activities highlights the urgent need for a comprehensive, integrative, and adaptive educational approach to altering women's sexual behaviours. It is vital to make concerted educational efforts to eliminate existing hurdles that prevent young women from using contraception. Family planning strategies tailored to the needs of different groups of women should be targeted, including prioritising education opportunities, given the many benefits associated with these. The availability of comprehensive counselling services to support women who are experiencing short-term side effects is critical in order to ensure that they are able to cope with side effects or switch to a different method rather than completely discontinuing contraceptive use in order to avoid unintended pregnancy.

## **Keywords**

Contraceptive use, family planning, sexual behaviour, pregnancy, termination of pregnancy, STD/STI, HIV and AIDS, maternal mortality.

# **Chapter One: Introduction**

## **Background**

Preventing unplanned pregnancy remains an important part of the agenda towards improving reproductive health outcomes among women, globally. There is an increasing number of sexually active women who desire to regulate or limit their number of births, with the use of contraception being one of the important tools at their disposal (1, 2). Sexually active women can achieve their childbearing preferences by limiting or spacing the number of children, through using effective contraceptive methods to prevent unplanned pregnancies (1). In recent years, the international community has doubled its efforts to provide contraception information and services to millions of women and adolescent girls who require them (3, 4). Furthermore, global policymakers and activists have placed a particular emphasis on increasing universal access to contraceptive use among sexually active women, including adolescent girls and young women. Empirical data suggests that a large proportion of sexually active women are at risk of experiencing unplanned pregnancy, due to a lack or inconsistent contraceptive use (5, 6).

Notably, there are marked differences between an unplanned and an unwanted pregnancy, with these two types of pregnancies likely to have different outcomes. An unplanned pregnancy is one that is not desired at that specific time (it may have occurred earlier than desired), and it is usually referred to as a mistimed pregnancy, whereas unwanted pregnancy can be defined as one which is not desired at all (7). In South Africa, only 46% of births occurring within a five-year period preceding the SADHS 2016, were wanted at the conception time, while 34% and 20%, respectively, were mistimed and unwanted (8). Domestic and sexual violence have been reported as amongst the key risk factors for unwanted pregnancy (9-11), whereas both mistimed and unwanted pregnancies have reportedly been associated with being young (under the age of 20 years) and being single (12). Ordinarily, unwanted pregnancies are more likely to have negative repercussions, given their high likelihood of ending in termination of pregnancy (ToP) (13). Nevertheless, unplanned pregnancy, whether mistimed or unwanted, has been linked to negative consequences, especially among young women, including school dropouts and economic difficulties (14-16).

The consistent and correct use of contraceptives is pivotal, and provides numerous advantages for women of reproductive age and for society, including: preventing unplanned pregnancies, empowering women to make fertility decisions, economic advancement, reduced mother and infant morbidity and mortality, reducing the number of HIV-infected babies, improving health outcomes of young women, and reducing social and economic costs related to early pregnancy (17-22). Investing in family planning services and improving universal access to contraceptive use, enables women to control their reproductive health (23). Delaying childbearing is important for ensuring that women's chances of improving educational opportunities are attained, which in turn, improves the prospects for better work opportunities, financial independence, empowerment through independent decision-making, as well as lowering the risks related to experiencing early pregnancy (20, 24).

Unplanned pregnancies are a global health concern, with over 12 million girls aged 15-19 years becoming pregnant each year in developing countries, with an estimated 777 000 girls under 15 years giving birth (25, 26). Adolescent girls account for more than 10 million unplanned pregnancies in developing countries (25). At least 842 million women of reproductive age (15-49) use contraception, globally, and a further 270 million have an unmet need for contraception (27, 28). The injectables contraceptive use is predominantly the most used method of contraception in many settings in the Sub-Saharan African (SSA) region (29, 30). However, the unmet need for contraceptive use remains high among women of reproductive age in Africa (31).

While the global adolescent birth rate fell from 65 births per 1000 women in 1990 to 47 births per 1000 women in 2015, the global adolescent population is rapidly growing and the number pregnancies in this age group is also projected to rise by 2030, with the African region seeing the largest increases (32). In low-income settings, approximately half of pregnancies occurring among adolescent girls aged 15-19 years are unplanned, with more than half of these being terminated, most of which being illegally terminated (25). Among adolescent girls (15-19 years), four million out of 5.6 million terminations of pregnancy occurring each year, are unsafe, contributing to morbidity, maternal mortality, and long-term health challenges (25). In low and middle-income countries (LMICs), pregnancy and childbirth are the major causes of deaths among young girls aged 15-19 years (33). Preventing unplanned pregnancies by

increasing contraceptive use is key to reducing maternal mortality among women (34, 35). In fact, reproductive and sexual health issues account for a significant percentage of the global burden of disease, globally (36).

Contraceptive use among women in Sub-Saharan Africa, including South Africa, has risen in accordance with worldwide trends since the 1980s (3, 4). In 2001, the South African government published the National Contraception Policy Guidelines, emphasizing the right of women to choose and use a contraceptive method of choice, and the need for high-quality family planning services (8). In 2012, the National Contraception and Fertility Planning Policy and Service Delivery Guidelines, as well as the National Contraceptive Clinical Guidelines, were updated as part of the National Contraception and Fertility Planning Policy and Service Delivery Guidelines (37). The amended guidelines put emphasis on the need for providing a variety of contraceptive methods, in conjunction with other relevant sexual and reproductive health services in the public health sector. These guidelines also asserted that women seeking contraception should have access to accurate and unbiased information about all available contraceptive methods, in order to help them make informed decisions about the contraceptive methods of choice (37). The implementation of these guidelines paved the way for any woman aged 12 years and older to use a contraceptive method of choice. Anyone over the age of 12 years has the legal right to access and use contraception without the approval of their parents, in South Africa (38). However, providing contraception in schools requires the specific authorization of individual school governing bodies (39), some of which may not be amenable to an idea of this age group being granted contraceptive freedom.

A number of contraceptive methods in South Africa are expected to be freely available for use by clients seeking contraception at public health care facilities, as stipulated in national guidelines: female sterilisation (tubal ligation), male sterilisation (vasectomy), levonorgestrel releasing intrauterine system (LNG-IUS), copper intrauterine contraceptive device (IUCD), progestogen-only injectables (Depo - 3-month and 2-month), low-dose combined-oral contraceptive pills, progestogen-only pills, emergency contraceptive pills, male condoms, female condoms, and depot medroxyprogesterone acetate (DMPA), and since 2014, subdermal implants (8, 40). Adoption of implants in South Africa began on a promising note, but has since slowed down after its debut in 2014, with concerns about potential side effects and a lack of

health-care provider training, cited as important contributing factors to providers' and communities' negative attitudes toward implants (41-43).

In South Africa, family planning programs have done well in improving awareness of family planning methods among potential users: nearly every woman and man between the ages of 15 and 49 years has heard of at least one form of contraception (8). Similarly, the results of the study conducted by Maharaj and Cleland in KwaZulu-Natal, found that almost all men and women participating in their study could identify at least one contraceptive method (44); this trend was consistent with the findings of the 1998 South African Demographic and Health Survey (45). The male condom (known by 98% of women and 99% of men), injectables (96% of women and 79% of men), contraceptive pills (94% of women and 79% of men), and the female condom (93% of women and 85% of men), are the most popular methods of contraception among women and men, with 84% and 50% of women and men, respectively, reporting to have heard about implants (8, 44). All these contraceptive methods, if used correctly and consistently, are effective in preventing unplanned pregnancies. The long-acting reversible contraception (LARC) methods and intrauterine devices (IUD), are also effective, although knowledge about these contraceptive methods remains relatively low, even among health care providers (46).

Despite the high levels of knowledge of contraceptive methods, the rate at which these contraceptive methods are used is not commensurate with that knowledge (47). In South Africa, the contraceptive prevalence rate (CPR) among sexually active women is 60%, whereas the CPR among married women is 55% (8). Among sexually active women, the CPR has remained stable when comparing 1998 (59%) and 2016 (60%), despite them being widely and freely available in public health care facilities (8). The 2016 South African Demographic and Health Survey (SA DHS) Report showed a CPR of 65% among sexually active women in KwaZulu-Natal (KZN) (8). South African CPR appeared to be far lower than its other upper-middle-income country counterparts, such as Mexico (72%), Russia (79%), and Brazil (80%) (48). Modern contraceptive methods are the most widely used ones, accounting for 99% among women using contraception, with 80% of all users obtaining their methods from public health care facilities (8, 44). The injectables account for the most commonly used contraceptive

methods in South Africa (8, 49, 50), followed by male condoms and contraceptive pills, largely due to convenience (8, 49).

Studies have shown that at least 29% of contraceptive users, discontinue using contraception within a year of starting to use one of these methods (8, 51). There has also been some reports of injectable contraceptive methods discontinuation and inconsistent use, among some users (52, 53). The discontinuation rate among women using DMPA and those using implants is also high, and this could also be related to health concerns, including side effects (52). Some women discontinue using contraceptives or switch to a different method, due to a lack of quality services provided or stock-outs of preferred methods in public health care facilities (40, 51). Furthermore, a substantial number of women have cited side effects (28%) as the primary reason for discontinuation of contraceptive use, followed by the intention to become pregnant (19%), and opting for a better and more effective method (11%) (8). Missed clinic visit appointments are common in public health care facilities in South Africa, with more than half of women using injectable contraceptives reported to have missed their appointments for re-injection, resulting in inconsistent use, given the temporal period of contraceptive non-use (49).

The demand for contraception among women is relatively high in South Africa. Among women aged 15-49 years who are in union, the desire for contraceptive use to space or limit births is 70%, while the demand for contraception is 78% among sexually active women (8). In KwaZulu-Natal, the demand for contraception is 69% among in-union women and 86% among sexually active women (8). However, at least 15% of women who are in union have an unmet need for contraception to prevent unplanned pregnancy, while the unmet need is 19% for sexually active women (8). In KwaZulu-Natal, the unmet need for contraception among in-union and sexually active women is 18% and 21%, respectively (8). A woman has an unmet need for contraception when she is of reproductive age, sexually active (regardless of the marital status), fertile and is not taking contraception, but does not desire to have a child (54). Among women of reproductive age not using contraception, 59% among those in-union were not planning to use contraception in the near future (71% of these had no children), compared to 36% who were intending to use contraception, and 6% were not sure (8).

Emergency contraceptives (EC) are common in South Africa. Emergency contraception is the only form of hormonal contraception that can prevent getting pregnant, after unprotected sexual intercourse has occurred, as it delays or inhibits ovulation and interferes with corpus luteum maturation (55). EC is effective in preventing unplanned pregnancy by 75-99% if taken within set timelines of sexual intercourse, which is usually within five days (56). Therefore, if used correctly, EC would contribute to reducing unplanned pregnancies, as well as the number of both legal and illegal termination of pregnancies (57). The time spent on counselling is low for women accessing EC, making it unique and appealing to women engaging in unprotected sexual intercourse, and assisting them to fulfil their reproductive intentions (58). However, the effectiveness of the EC depends on one's awareness, knowledge, and correct use, given some women have reported side effects, including nausea and vomiting (59, 60).

The awareness of EC is reportedly low in some rural settings in South Africa, with as low as 17% of women reporting knowledge of this contraceptive method (57, 61-64). However, a study conducted in Western Cape province showed high levels of EC knowledge among women with a high level of education (61), suggesting that urban settings and high education levels may be predictors of high EC knowledge. While EC is freely available in public health care facilities in South Africa (57), most women who use EC would purchase it from private facilities, including pharmacies (61). This implies a lack of knowledge about the availability of EC at public health care clinics, or the many existing barriers deterring women from accessing reproductive health care services, including stigma and negative attitudes from health care providers (61, 65). Some health care providers expressed concerns that EC might discourage the use and compliance of long-term contraception, and that using EC may promote promiscuity, repeat use, and an increased chance of getting infected with HIV and other sexually transmitted infections (60, 66, 67).

In a context of high rates of HIV prevalence, there has been concerns about hormonal contraceptive use and the possibility for increased risk of HIV acquisition. According to several research investigating the impact of contraceptive use on HIV infection in women, injectable contraception, particularly DMPA, is connected to an increased risk of HIV infection in women (68-72). As a result, the WHO recommends that women who are at high risk of contracting HIV and use progestogen-only injectables use condoms and other prevention measures at all

times (73). However, research on the relationship between HIV infection and the use of hormonal contraception has produced inconsistent results (74-78), and others have significant methodological flaws. Women who used DMPA had a twice-as-high risk of contracting HIV, according to studies conducted in various contexts (76, 79), as well as among young women (71). Another study reported that women who used injectable hormonal contraceptives had a slightly higher risk of contracting HIV, however, this link was not statistically significant (80). The Evidence for Contraceptive Options and HIV Outcomes (ECHO) Trial, a large multicenter, randomized trial comparing HIV incidence between users of DMPA, copper IUD (Cu-IUD), and a levonorgesterel implant, was conducted in Eswatini, Kenya, South Africa, and Zambia, designed to address whether there is an increased risk of HIV acquisition when comparing women using DMPA with Cu-IUD, DMPA with levonorgestrel implant, and Cu-IUD with levonorgesterel implant. The findings of this trial indicated that no significant difference in HIV risk was identified between the treatments evaluated (DMPA-IM every three months, a copper IUD, or an LNG implant), with all contraceptive methods shown to be safe and highly effective (78). The findings justify the use of these contraceptive methods in areas where HIV is prevalent. Even among HIV-positive women on antiretroviral medication, hormonal contraceptives have been shown to be helpful in avoiding unintended pregnancies (81).

## **Problem Statement**

Ensuring that women of reproductive age have universal access to all contraceptive methods, is empowering and enhances their decision-making abilities with respect to their personal reproductive choices. It is also critical to the fulfilment of their sexual and reproductive health rights towards promoting gender equality. The global Agenda for Sustainable Development prioritizes universal access to sexual and reproductive health services and rights, including family planning, by 2030, with a view to ensure excellent health and promote wellbeing at all ages, in order to achieve gender equality and empower all women and girls (82). South Africa and the KwaZulu-Natal province continue to experience a high incidence of teenage pregnancy, despite the intervention strategies that have been put in place.

The 2016 South African Demographic and Health Survey revealed that the country has been stagnant with regards to improving the contraceptive prevalence rate (in 2016, 60% sexually active women vs 61% sexually active women in 1998), despite the continuous demand for

contraception (8). These rates also remain substantially lower than the set target for the financial year 2021/2022 (74%) (83). Despite the many complications, risks, and harmful outcomes for both new-borns and their mothers related to childbearing at a young age, 16% of young women aged 15-19 years, experience teenage pregnancy in South Africa. Complications and risks involved include higher rates of neonatal mortality, preterm birth, low birth weight, and maternal mortality (8). Risky sexual behaviours and early sexual debut among women, have been a concern for many years in South Africa, generally, and in KZN in particular. Risky sexual behaviours among women of reproductive age, including having sexual intercourse under the influence of alcohol or drugs, inconsistent condom use, and having multiple sexual partners, are common and contribute to unplanned pregnancy, as well sexually transmitted diseases (84). Importantly, the proportion of young women who have begun child bearing at age 15-19 years has not changed, with 16% in 2016, compared to 1998 (8). South Africa reported 536 pregnancy-related deaths per 100 000 live births during the 7-year period before the SADHS 2016 (8). Similarly, the unmet need for contraceptive use among sexually active women is as high as 19% and 21% in South Africa and KwaZulu-Natal, respectively (8). This is suggestive of the need for concerted efforts to examine and address the factors deterring women from accessing and consistently using contraceptive methods.

In the financial year 2016/2017, more than 100 000 cases of terminations of pregnancy were reported in designated facilities in South Africa, with the KwaZulu-Natal province alone recording more than 15 000 cases (85). South Africa and the KZN province have seen a growing trend in the recorded number of terminations of pregnancy in designated facilities, from 2014/2015 (SA: 88 807, KZN: 9 564), to 2016/2017 (SA: 105 358, KZN: 15 714) (85). However, due to high unplanned and unwanted pregnancy levels, and the continuous barriers and stigma associated with accessing legal terminations of pregnancy in designated facilities, more women turn to unsafe and illegal termination of pregnancies, neglecting the risks associated with such activities (86, 87). Illegal terminations of pregnancy contribute to the high maternal morbidity and mortality rates in South Africa (88).

The South African government spent ZAR 1.64 billion on contraception in 2018 (89), which is testament to governments efforts to improving contraceptive use and promoting sexual behaviour in the country; hence the study investigating factors influencing contraceptive use and sexual behaviour in KwaZulu-Natal, is both timely and appropriate.

## **Rationale**

Understanding the factors that influence contraceptive use and sexual behaviour among women of reproductive age, is critical to improving contraceptive use, ensuring effective family planning interventions, and influencing sexual behaviour, especially in light of the high rates of unplanned pregnancy, termination of pregnancy and other risks. These risks are mainly associated with stigma, high morbidity and mortality, as well as sexually transmitted infections. Not only does unplanned pregnancy pose a health risk among pregnant women and their babies, it also has many negative consequences, especially among young women; these include the risks of school dropouts, unemployment, negative economic consequences, and subsequently, poverty (15, 16, 90). Therefore, it is important to investigate these influential factors from the contraceptive users' and providers' perspectives, to recommend targeted interventions towards improving health outcomes among women. Universal contraception and improved sexual behaviour have become a key priority for the South African government. Furthermore, much of the research on contraceptive use has been generalized to all women, or among younger women, with little comparative analysis between younger and older women, to account for the role of age in contraceptive use. This is crucial for tailoring the interventions in South Africa. Therefore, the results of this study make an important contribution in the field of contraception.

## **Research Aim**

The aim of this study was to examine the factors that influence contraceptive use and sexual behaviour, among women of reproductive age in Umlazi Township, KwaZulu-Natal province, South Africa.

## **Research Question**

What are the factors influencing contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, KwaZulu-Natal province?

## **Research Objectives**

1. To map evidence on factors influencing contraceptive use and sexual behaviour in South Africa through a systematic scoping review.

2. To determine the proportion of women of reproductive age using contraceptives in Umlazi Township, KwaZulu-Natal, South Africa.
3. To examine women's knowledge of different contraceptive methods in Umlazi Township, KwaZulu-Natal province, South Africa.
4. To determine contraceptive methods used by women in Umlazi Township, KwaZulu-Natal province, South Africa.
5. To identify factors influencing contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, both from a user and provider perspective.
6. To explore the experiences of women of reproductive age regarding contraceptive use and risky sexual behaviours in Umlazi Township, South Africa.

## **Significance of the Study**

Conducting this study was important to better understand risky sexual behaviours and exposures, as well as the factors enabling and deterring women from accessing and using contraceptive methods in Umlazi Township, KwaZulu-Natal province, South Africa. The results of this study are useful, and highlight important gaps for reproductive and sexual health programmes designed for women of reproductive age in the province. This study makes an important contribution to the field of contraception, especially given the contradictory findings reported in various studies conducted elsewhere in the world.

## **Thesis Outline**

**Chapter One:** Introduction. This chapter provides background information pertaining to contraceptive use and sexual behaviour among women of reproductive age. The chapter also discusses the rationale and the significance of this study, as well as describing the research aim and objectives.

**Chapter Two:** Literature review. This chapter includes searching, evaluating and narrating available literature on contraceptive use and sexual behaviour, among women of reproductive age in South Africa and similar settings. This chapter also provides detailed information on the theoretical framework guiding this study.

**Chapter Three:** Systematic scoping review. This chapter builds on the narrative literature review presented in Chapter Two, and reports on the scoping review of existing evidence on this topic. This review aims to create a better understanding of the existing research evidence on the factors influencing contraceptive use and sexual behaviours, among women of reproductive age in South Africa. This chapter addresses objective one of the overall study. The systematic scoping review protocol, and the actual systematic scoping review manuscript constituting this chapter, were both published in Medicine journal, as follows:

- **Hlongwa M**, Mashamba-Thompson T, Makhunga S & Hlongwana K. Evidence on factors influencing contraceptive use and sexual behavior among women in South Africa: A scoping review. *Medicine*. 2020. 99(12): e19490. <https://doi:10.1097/MD.00000000000019490>
- **Hlongwa M**, Mashamba-Thompson T, Hlongwana K. Evidence on factors influencing contraceptive use and sexual behavior in South Africa: A systematic scoping review protocol. *Medicine*. 2018;97(52). <https://doi:10.1097/MD.00000000000013774>

**Chapter Four:** Overall methodology. This chapter provides detailed information on the study setting, design, population, as well as the sample size, including the description of the study variables. The chapter further elaborates on techniques used to manage and analyse the data. The last section of the chapter highlights ethical considerations that underpin the study.

**Chapter Five:** First primary manuscript. This chapter investigates factors associated with modern contraceptive use, with a focus on whether these factors differed by age group; however, all the women were within the reproductive age band and were attending public health clinics in Umlazi Township, KwaZulu-Natal province, South Africa. This study also determines the proportion of women using contraception, as well as the knowledge and use of contraception by method type, among women of reproductive age in the study setting. The manuscript has since been published by the Women's Health journal. This chapter addresses objectives two, three and four.

- **Hlongwa M**, Chester Kalinda, Karl Peltzer, Khumbulani Hlongwana. Factors associated with modern contraceptive use: a comparative analysis between younger and older women in Umlazi Township, KwaZulu-Natal, South Africa. *Women's Health*. 2021; 17(1-9). [https://doi: 10.1177/17455065211060641](https://doi.org/10.1177/17455065211060641)

**Chapter Six:** Second primary manuscript. This chapter investigates the predictors of risky sexual behaviours among women of reproductive age in a highly HIV-burdened township in KwaZulu-Natal, South Africa. This study has been peer-reviewed and published in the *BMC Infectious Diseases* journal. This chapter addresses the first part of objective five.

- **Hlongwa M**, Peltzer K, Hlongwana K. Risky sexual behaviours among women of reproductive age in a high HIV burdened township in KwaZulu-Natal, South Africa. *BMC Infectious Diseases*. 2020 Dec;20(1):1-9. <https://doi.org/10.1186/s12879-020-05302-1>

**Chapter Seven:** Third primary manuscript. This chapter assesses the knowledge and perceptions of health care providers, regarding the use of modern contraceptives among adolescent girls in Umlazi Township, KwaZulu-Natal province, South Africa. This study has been peer reviewed and published in *The Pan African Medical Journal*. This chapter addresses the second part of objective five.

- **Hlongwa M**, Tlou B, Hlongwana K. Healthcare providers' knowledge and perceptions regarding the use of modern contraceptives among adolescent girls in Umlazi Township, KwaZulu-Natal province, South Africa. *The Pan African Medical Journal*. 2021;38. <https://doi.org/10.11604/pamj.2021.38.124.20771>

**Chapter Eight:** Fourth primary manuscript. This chapter explores the experiences of women of reproductive age regarding contraceptive use and risky sexual behaviours in Umlazi Township, South Africa. This manuscript was undergoing peer-review by an international academic journal at the time of submission of this thesis. This chapter addresses objective six.

**Chapter Nine:** Integrative synthesis. This chapter synthesizes the main findings from a set of different research outputs, aimed at addressing this study's overall objectives. This chapter also discusses the implications of this study's findings for practice and future research.

## References

1. Darroch JE, Singh S. Trends in contraceptive need and use in developing countries in 2003, 2008, and 2012: an analysis of national surveys. *The Lancet*. 2013;381(9879):1756-62.
2. Haub C. Trends in adolescent fertility a mixed picture. Population Reference Bureau Washington, DC USA. 2013.
3. Chandra-Mouli V, McCarraher DR, Phillips SJ, Williamson NE, Hainsworth G. Contraception for adolescents in low and middle income countries: needs, barriers, and access. *Reproductive health*. 2014;11(1):1-8.
4. Radovich E, Dennis ML, Wong KL, Ali M, Lynch CA, Cleland J, et al. Who meets the contraceptive needs of young women in sub-Saharan Africa? *Journal of Adolescent Health*. 2018;62(3):273-80.
5. Blackstone SR, Nwaozuru U, Iwelunmor J. Factors influencing contraceptive use in sub-Saharan Africa: a systematic review. *International quarterly of community health education*. 2017;37(2):79-91.
6. Doyle AM, Mavedzenge SN, Plummer ML, Ross DA. The sexual behaviour of adolescents in sub-Saharan Africa: patterns and trends from national surveys. *Tropical Medicine & International Health*. 2012;17(7):796-807.
7. Henshaw SK. Unintended pregnancy in the United States. *Family planning perspectives*. 1998;24-46.
8. NDoH, Stats SA, SAMRC, ICF. South Africa Demographic and Health Survey 2016. Pretoria, South Africa, and Rockville, Maryland, USA: : National Department of Health (NDoH), Statistics South Africa (Stats SA), South African Medical Research Council (SAMRC), ICF. ; 2019.
9. Izugbara CO, Ochako R, Izugbara C. Gender scripts and unwanted pregnancy among urban Kenyan women. *Culture, health & sexuality*. 2011;13(9):1031-45.
10. Crosby RA, DiClemente RJ, Wingood GM, Rose E, Lang D. Correlates of unplanned and unwanted pregnancy among African-American female teens. *American journal of preventive medicine*. 2003;25(3):255-8.
11. Kaye DK, Mirembe FM, Bantebya G, Johansson A, Ekstrom AM. Domestic violence as risk factor for unwanted pregnancy and induced abortion in Mulago Hospital, Kampala, Uganda. *Tropical Medicine & International Health*. 2006;11(1):90-101.
12. Exavery A, Kanté AM, Njozi M, Tani K, Doctor HV, Hingora A, et al. Predictors of mistimed, and unwanted pregnancies among women of childbearing age in Rufiji, Kilombero, and Ulanga districts of Tanzania. *Reproductive health*. 2014;11(1):1-9.
13. D'Angelo DV, Gilbert BC, Rochat RW, Santelli JS, Herold JM. Differences between mistimed and unwanted pregnancies among women who have live births. *Perspectives on sexual and reproductive health*. 2004;36(5):192-7.
14. Wood K, Jewkes R. Blood blockages and scolding nurses: barriers to adolescent contraceptive use in South Africa. *Reproductive health matters*. 2006;14(27):109-18.
15. Stoner MC, Rucinski KB, Edwards JK, Selin A, Hughes JP, Wang J, et al. The relationship between school dropout and pregnancy among adolescent girls and young women in South Africa: A HPTN 068 analysis. *Health Education & Behavior*. 2019;46(4):559-68.
16. Yakubu I, Salisu WJ. Determinants of adolescent pregnancy in sub-Saharan Africa: a systematic review. *Reproductive health*. 2018;15(1):1-11.
17. Feucht UD, Meyer A, Kruger M. Missing HIV prevention opportunities in South African children—a 7-year review. *BMC Public Health*. 2014;14(1):1-8.
18. Michalow J, Chola L, McGee S, Tugendhaft A, Pattinson R, Kerber K, et al. Triple return on investment: the cost and impact of 13 interventions that could prevent stillbirths and save the lives of mothers and babies in South Africa. . *BMC Pregnancy and Childbirth* 2015;15(1):1-13.
19. Adongo PB, Tabong PT-N, Azongo TB, Phillips JF, Sheff MC, Stone AE, et al. A comparative qualitative study of misconceptions associated with contraceptive use in southern and northern Ghana. *Frontiers in public health*. 2014;2:137.

20. Chandra-Mouli V, Parameshwar PS, Parry M, Lane C, Hainsworth G, Wong S, et al. A never-before opportunity to strengthen investment and action on adolescent contraception, and what we must do to make full use of it. *Reproductive health*. 2017;14(1):1-13.
21. Ahmed S, Li Q, Liu L, Tsui AO. Maternal deaths averted by contraceptive use: an analysis of 172 countries. *The Lancet*. 2012;380(9837):111-25.
22. Singh S, Darroch JE, Ashford LS, Vlassoff M. Adding It Up: The costs and Benefits of Investing in family Planning and maternal and new born health. Guttmacher Institute; 2009.
23. MacPhail C, Pettifor AE, Pascoe S, Rees HV. Contraceptive use and pregnancy among 15-24 year old South African women: a nationally representative cross-sectional survey. *BMC Medicine*. 2007;5(31):1-8.
24. Coll CVN, Ewerling F, Hellwig F, De Barros AJD. Contraception in adolescence: the influence of parity and marital status on contraceptive use in 73 low-and middle-income countries. *Reproductive health*. 2019;16(1):1-12.
25. Darroch JE, Woog V, Bankole A, Ashford LS. Adding it up: costs and benefits of meeting the contraceptive needs of adolescents. 2016.
26. UNFPA. *Girlhood, not motherhood: Preventing adolescent pregnancy*. . New York: : UNFPA; 2015.
27. Kantorová V, Wheldon MC, Ueffing P, Dasgupta AN. Estimating progress towards meeting women's contraceptive needs in 185 countries: A Bayesian hierarchical modelling study. *PLoS medicine*. 2020;17(2):e1003026.
28. Nations U. *Family Planning and the 2030 Agenda for Sustainable Development*. . New York: United Nations, Department of Economic and Social Affairs, Population Division.; 2019.
29. Tsui AO, Brown W, Li Q. Contraceptive practice in sub-Saharan Africa. *Population and development review*. 2017;43(Suppl Suppl 1):166.
30. United Nations. *Contraceptive use by method 2019*. New York: United Nations Department of Economic and Social Affairs New York; 2019.
31. Darroch JE, Sully E, Biddlecom A. Adding it up: investing in contraception and maternal and newborn health, 2017—supplementary tables. New York, NY: The Guttmacher Institute. 2017.
32. World Health Organization. *Adolescent pregnancy*. Geneva: World Health Organization; 2020.
33. World Health Organization. *Global accelerated action for the health of adolescents ( AA-HA!): guidance to support country implementation*. 2017.
34. Moronkola O, Ojadiran M, Amosu A. Reproductive health knowledge, beliefs and determinants of contraceptives use among women attending family planning clinics in Ibadan, Nigeria. *African Health Sciences*. 2006;6(3):155-9.
35. Chola L, McGee S, Tugendhaft A, Buchmann E, Hofman K. Scaling up family planning to reduce maternal and child mortality: the potential costs and benefits of modern contraceptive use in South Africa. *PloS one*. 2015;10(6):e0130077.
36. Black RE, Allen LH, Bhutta ZA, Caulfield LE, De Onis M, Ezzati M, et al. Maternal and child undernutrition: global and regional exposures and health consequences. *The lancet*. 2008;371(9608):243-60.
37. Department of Health. *National Contraception and Fertility Planning Policy and Service Delivery Guidelines*. . Pretoria: National Department of Health; 2013.
38. Republic of South Africa. *Children's Act, No. 38 of 2005*. *Government Gazette*. 2005;492(28944).
39. Shung-King M, Orgill M, Slemming W. School health in South Africa: Reflections on the past and prospects for the future. *South African health review*. 2013;2013(1):59-71.
40. Lince-Deroche N, Pleaner M, Morroni C, Mullick S, Firnhaber C, Harries J, et al. Achieving universal access to sexual and reproductive health services: the potential and pitfalls for contraceptive services in South Africa. *South African Health Review*. 2016;2016(1):95-108.
41. Pleaner M, Morroni C, Smit J, Lince-Deroche N, Chersich M, Mullick S, et al. Lessons learnt from the introduction of the contraceptive implant in South Africa. *South African Medical Journal*. 2017;107(11):933-8.
42. Adeagbo O, Mullick S, Pillay D, Chersich M, Morroni C, Naidoo N, et al. Uptake and early removals of Implanon NXT in South Africa: Perceptions and attitudes of healthcare workers. *South African Medical Journal*. 2017;107(10).

43. Pillay D, Chersich M, Morroni C, Pleaner M, Adeagbo O, Naidoo N, et al. User perspectives on Implanon NXT in South Africa: a survey of 12 public-sector facilities. *South African Medical Journal*. 2017;107(10):815-21.
44. Maharaj P, Cleland J. Women on top: the relative influence of wives and husbands on contraceptive use in KwaZulu-Natal. *Women & Health*. 2005;41(2):31-41.
45. Department of Health. South Africa demographic and health survey 1998. Pretoria: Department of Health Pretoria; 1998.
46. Blanchard K, Chipato T, Ramjee G, Nhemachena T, Harper CC. Clinicians' perceptions and provision of hormonal contraceptives for HIV-positive and at-risk women in Southern Africa: an original research article. *Contraception*. 2014;90(4):391-8.
47. Osuafor GN, Maputle SM, Ayiga N. Factors related to married or cohabiting women's decision to use modern contraceptive methods in Mahikeng, South Africa. *African Journal of Primary Health Care and Family Medicine*. 2018;10(1):1-7.
48. Alkema L, Kantorova V, Menozzi C, Biddlecom A. National, regional, and global rates and trends in contraceptive prevalence and unmet need for family planning between 1990 and 2015: a systematic and comprehensive analysis. *Lancet*. 2013;11(381):1642-52.
49. Baumgartner JN, Morroni C, Mlobeli RD, Otterness C, Myer L, Janowitz B, et al. Timeliness of contraceptive reinjections in South Africa and its relation to unintentional discontinuation. *International family planning perspectives*. 2007;66-74.
50. Chersich MF, Wabiri N, Risher K, Shisana O, Celentano D, Rehle T, et al. Contraception coverage and methods used among women in South Africa: A national household survey. *South African Medical Journal* 2017;107(4):307-14
51. Blanc AK, Curtis SL, Croft TN. Monitoring contraceptive continuation: links to fertility outcomes and quality of care. *Studies in family planning*. 2002;33(2):127-40.
52. Smit JA, Beksinska ME. Hormonal contraceptive continuation and switching in South Africa: Implications for evaluating the association of injectable hormonal contraceptive use and HIV. *Journal of Acquired Immune Deficiency Syndromes*. 2013;62(3):363-5.
53. Bertrand JT, Sullivan TM, Knowles EA, Zeeshan MF, Shelton JD. Contraceptive method skew and shifts in method mix in low-and middle-income countries. *International perspectives on sexual and reproductive health*. 2014;40(3):144-53.
54. Sedgh G, Ashford LS, Hussain R. Unmet need for contraception in developing countries: examining women's reasons for not using a method. 2016.
55. Feijo A. Emergency contraception: A safe and effective contraception option for teens. Washington DC: Advocates for Youth. 2005.
56. Croxatto HB, Brache V, Pavez M, Cochon L, Forcelledo M, Alvarez F, et al. Pituitary-ovarian function following the standard levonorgestrel emergency contraceptive dose or a single 0.75-mg dose given on the days preceding ovulation. *Contraception*. 2004;70(6):442-50.
57. Smit J, McFadyen L, Beksinska M, De Pinho H, Morroni C, Mqhayi M, et al. Emergency contraception in South Africa: knowledge, attitudes, and use among public sector primary healthcare clients. *Contraception*. 2001;64(6):333-7.
58. Coeytaux F. Bringing emergency contraception to American women: the history and remaining challenges. *Women's Health Issues*. 2001;11(2):80-6.
59. Maharaj P, Rogan M. Emergency contraception in South Africa: a literature review. *The European Journal of Contraception & Reproductive Health Care*. 2008;13(4):351-61.
60. Blanchard K, Harrison T, Sello M. Pharmacists' knowledge and perceptions of emergency contraceptive pills in Soweto and the Johannesburg Central Business District, South Africa. *International family planning perspectives*. 2005:172-8.
61. Myer L, Mlobeli R, Cooper D, Smit J, Morroni C. Knowledge and use of emergency contraception among women in the Western Cape province of South Africa: a cross-sectional study. *BMC women's health*. 2007;7(1):1-7.
62. Mqhayi MM, Smit JA, McFadyen ML, Beksinska M, Connolly C, Zuma K, et al. Missed opportunities: emergency contraception utilisation by young South African women. *African journal of reproductive health*. 2004:137-44.

63. Kongnyuy EJ, Ngassa P, Fomulu N, Wiysonge CS, Kouam L, Doh AS. A survey of knowledge, attitudes and practice of emergency contraception among university students in Cameroon. *BMC Emergency medicine*. 2007;7(1):1-7.
64. Hoque ME, Ghuman S. Knowledge, practices, and attitudes of emergency contraception among female university students in KwaZulu-Natal, South Africa. 2012.
65. Hlongwa M, Tlou B, Hlongwana K. Healthcare providers' knowledge and perceptions regarding the use of modern contraceptives among adolescent girls in Umlazi Township, KwaZulu-Natal province, South Africa. *The Pan African Medical Journal*. 2021;38.
66. McFadyen L, Smit J, Mqhayi M, de Pinho H, Beksinska M. Expanding Contraceptive Choice: An African Study of Emergency Contraception. A multi-centre situational analysis of emergency contraception provision and utilization at public sector clinics Durban: Reproductive Health Research Unit. 2003.
67. Hariparsad N. Attitudes and practices of pharmacists towards emergency contraception in Durban, South Africa. *The European Journal of Contraception & Reproductive Health Care*. 2001;6(2):87-92.
68. Morrison CS, Turner AN, Jones LB. Highly effective contraception and acquisition of HIV and other sexually transmitted infections. Best practice & research Clinical obstetrics & gynaecology. 2009;23(2):263-84.
69. Morrison CS, Nanda K. Hormonal contraception and HIV: an unanswered question. *The Lancet Infectious diseases*. 2011;12(1):2-3.
70. Polis CB, Phillips SJ, Curtis KM, Westreich DJ, Steyn PS, Raymond E, et al. Hormonal contraceptive methods and risk of HIV acquisition in women: a systematic review of epidemiological evidence. *Contraception*. 2014;90(4):360-90.
71. Morrison CS, Pai-Lien C, Cynthia K, Richardson BA, Chipato T, Mugerwa R, et al. Hormonal contraception and HIV acquisition: reanalysis using marginal structural modeling. *AIDS (London, England)*. 2010;24(11):1778.
72. Polis CB, Curtis KM. Use of hormonal contraceptives and HIV acquisition in women: a systematic review of the epidemiological evidence. *The Lancet infectious diseases*. 2013;13(9):797-808.
73. World Health Organization. Hormonal contraception and HIV: technical statement. Hormonal contraception and HIV: technical statement 2012.
74. Hofmeyr GJ, Singata M, Sneden J. Hormonal contraception for women exposed to HIV infection. *Cochrane Database of Systematic Reviews*. 2014(5).
75. Polis CB, Curtis KM, Hannaford PC, Phillips SJ, Chipato T, Kiarie JN, et al. An updated systematic review of epidemiological evidence on hormonal contraceptive methods and HIV acquisition in women. *AIDS (London, England)*. 2016;30(17):2665.
76. Morrison CS, Chen P-L, Kwok C, Baeten JM, Brown J, Crook AM, et al. Hormonal contraception and the risk of HIV acquisition: an individual participant data meta-analysis. *PLoS medicine*. 2015;12(1):e1001778.
77. Kleinschmidt I, Rees H, Delany S, Smith D, Dinat N, Nkala B, et al. Injectable progestin contraceptive use and risk of HIV infection in a South African family planning cohort. *Contraception*. 2007;75(6):461-7.
78. Ahmed K, Baeten JM, Beksinska M, Bekker L-G, Bukusi EA, Donnell D, et al. HIV incidence among women using intramuscular depot medroxyprogesterone acetate, a copper intrauterine device, or a levonorgestrel implant for contraception: a randomised, multicentre, open-label trial. *The Lancet*. 2019;394(10195):303-13.
79. Noguchi LM, Richardson BA, Baeten JM, Hillier SL, Balkus JE, Chirenje ZM, et al. Risk of HIV-1 acquisition among women who use different types of injectable progestin contraception in South Africa: a prospective cohort study. *The lancet HIV*. 2015;2(7):e279-e87.
80. Balkus JE, Brown ER, Hillier SL, Coletti A, Ramjee G, Mgodini N, et al. Oral and injectable contraceptive use and HIV acquisition risk among women in four African countries: a secondary analysis of data from a microbicide trial. *Contraception*. 2016;93(1):25-31.
81. Pyra M, Heffron R, Mugo NR, Nanda K, Thomas KK, Celum C, et al. Effectiveness of hormonal contraception in HIV-infected women using antiretroviral therapy: a prospective study. *AIDS (London, England)*. 2015;29(17):2353.

82. United Nations. Transforming our world: the 2030 Agenda for Sustainable Development. New York: United Nations; 2015.
83. SANAC. South Africa's national strategic plan for HIV, TB and STIs 2017-2022. South African National AIDS Council Pretoria; 2017.
84. Hlongwa M, Peltzer K, Hlongwana K. Risky sexual behaviours among women of reproductive age in a high HIV burdened township in KwaZulu-Natal, South Africa. *BMC Infectious Diseases*. 2020;20(1):1-9.
85. Department of Health. Pregnancy terminations in designated South African facilities. Pretoria: SA National Department of Health; 2017.
86. Hodes R. The culture of illegal abortion in South Africa. *Journal of Southern African Studies*. 2016;42(1):79-93.
87. Seidu A-A, Ahinkorah BO, Agbemavi W, Amu H, Bonsu F. Reproductive health decision-making capacity and pregnancy termination among Ghanaian women: Analysis of the 2014 Ghana demographic and health survey. *Journal of Public Health*. 2021;29(1):85-94.
88. World Health Organization. Health worker role in providing safe abortion care and post abortion contraception: World Health Organization; 2015.
89. Chola L, MacQuilkan K, Winch A, Rapiti R, Edoka I, Kohli-Lynch C, et al. Projecting the fiscal impact of South Africa's contraceptive needs: Scaling up family planning post 2020. *South African Medical Journal*. 2019;109(10):756-60.
90. Matjene BP, Mokgatle MM. Unplanned pregnancy and motherhood among adolescents-reports by adolescent mothers in a peri-urban area of Tshwane District, Gauteng province, South Africa. *PULA: Botswana Journal of African Studies*. 2017;31(2).

## **Chapter Two: Literature Review**

### **Introduction**

Despite decades of concerted efforts to assure contraception availability globally and locally, women in South Africa, particularly in KwaZulu-Natal, continue to face barriers to receiving their contraceptive methods of choice. The socio-ecological model (SEM), is best placed to help understand the challenges pertaining to contraceptive use at individual, interpersonal, community, and healthcare system levels, including intricate factors affecting women's sexual behaviour and contraceptive use (1). This chapter examines how age, education level, marital status, male dominance, and place of residence influence contraceptive use and sexual behaviour in women.

### **The global context of unplanned pregnancy**

Globally, about 16 million girls aged 15-19 years give birth annually, with the majority of these births occurring in low and middle-income countries (LMICs) (2). The rates of unplanned pregnancy remain high in Sub-Saharan Africa (SSA), and South Africa (SA) alike; this is despite millions of sexually active women wanting to delay childbearing or plan the spacing of their pregnancies, in order to create time for focusing on education or employment opportunities (3). Adolescent girls and young women remain the most vulnerable to high-unplanned pregnancy, as experienced in Sub-Saharan Africa, where an estimated 45% of pregnancies among adolescent girls aged 15–19 years are reportedly unplanned (4). In South Africa, despite contraception being made freely available in public healthcare facilities, it is estimated that more than two-thirds of all pregnancies are unplanned, with adolescent girls and young women accounting for the highest proportion of unplanned pregnancies (5-9), compared to older women (10). Unplanned pregnancies are most common among young and unmarried women in South Africa, and KwaZulu-Natal in particular, with HIV diagnosis at the time of booking being reportedly significantly associated with unplanned pregnancy among women (9-11). In 2012, a prospective cohort study conducted in South Africa showed that 62% of women living with HIV experienced an unplanned pregnancy, with half of these pregnancies ending in termination (12).

A number of factors deter women from accessing contraceptive methods, thereby making them vulnerable to unplanned pregnancy. The rate of unprotected sexual encounters, early sexual

debut, as well as inconsistent or incorrect condom use among young women, is high in Sub-Saharan Africa, and in South Africa, despite the high HIV prevalence rates (9, 13, 14). Furthermore, the high rates of unplanned pregnancy among young women occur from unstable relationships, with many young women being vulnerable to sexual assault, as well as engaging in risky sexual behaviours, including intergenerational sex (6, 15-18). Some older men often use financial resources to attract or influence young and unemployed women for transactional sex (16). Young women are susceptible to discontinuation of contraception, contraceptive failure, irregular use of contraception, unavailability of preferred contraception, and lack of knowledge or inconsistent use of emergency contraception, which have been reported to be among the reasons exposing women to high rates of unplanned pregnancy (12-14, 19). There has also been reports of misconceptions regarding the immediate and long-term side effects affecting health and future prospects for childbearing, resulting from using contraception (3, 20).

### **The interplay between unplanned pregnancy and termination of pregnancy**

Women who experience an unplanned pregnancy are more likely to terminate the pregnancy due to stigma and economic difficulties, some of whom rely on unsafe or illegal termination of pregnancy (TOP) services (21, 22). Termination of pregnancy remains a common practice among women who have experienced an unplanned pregnancy, despite the stigma, negative perceptions and judgements associated with it (23). In South Africa, the Choice of Termination of Pregnancy Act (CTOPA) was made public in 1996, and amended in 2008 (24), with a view to recognise the reproductive health rights of women. The aim of the act is to reduce maternal mortality from illegal termination of pregnancies, and permits pregnant women to terminate their pregnancy legally (24).

Following the CTOPA, the number of TOP among pregnant women has sharply increased, however, the rates of illegal TOP remain high (22). Despite the high rates of unplanned pregnancies and the increasing demand for legal TOP services, pregnant women are unable to readily access these services (25). Many women continue to face barriers deterring them from accessing legal termination of pregnancy services in public health care clinics, including resistance to providing TOP from health care providers, stigma, and lack of resources, particularly in limited-resource settings (23, 26-28). The stigma associated with TOP is even worse among pregnant women diagnosed with HIV (29). Due to fear and stigma associated

with TOP, these women often do not seek TOP-related health care services early enough to circumvent complication, for fear of being judged; this phenomenon attributes to the increased risks of morbidity and mortality rates (23, 30, 31).

### **Mortality rates among pregnant women**

Maternal mortality remains unacceptably high in South Africa, and in KwaZulu-Natal. In South Africa, the mortality ratio related to pregnancy was 536 pregnancy-related deaths per 100 000 live births, during the 7-year period prior to the SADHS 2016 (32). For every 1 000 live births, about five women died during pregnancy, or within two months after childbirth (32). However, the National Development Plan aims to reduce the maternal mortality ratio to less than 100 per 100 000 live births by 2030 (33). It is important, however, to note that maternal mortality rate/ratio is not the same as the pregnancy-related mortality ratio. The maternal mortality rate refers to the number of maternal deaths per 1,000 women aged 15-49 years; the maternal mortality ratio refers to the number of maternal deaths per 100,000 live births, whereas the pregnancy-related mortality ratio refers to the number of pregnancy-related deaths per 100,000 live births (33). In South Africa, institutional maternal mortality has decreased steadily over the last three triennia (2010-2019), from 320 per 100,000 live births to 120 per 100,000 live births, according to the Saving Mothers Report 2017/19.

There has been progress made towards reducing maternal mortality, including an increase in deliveries in health care facilities from 83% in 1998 to 97% in 2016; despite that, the rates at which pregnant women continue to die from maternal-related complications, including unsafe and illegal TOP services, is high (32, 34). According to the World Health Organization (WHO), more than 20 million unsafe TOPs occur annually worldwide and many of these contribute to the high maternal morbidity and mortality rates (35). About three out of four TOPs occurring in Africa are unsafe (36). The Sustainable Development Goals (SDGs) introduced in 2016 were designed to build on the progress made in Goal 5 of the Millennium Development Goals (MDGs), which aimed to decrease the maternal mortality ratio by 75% from 1990 to 2015 (37). The SDGs emphasize the importance of universal access to sexual and reproductive health care services among women, to reduce the high rates of maternal deaths (38).

Globally, more than 30% of maternal deaths associated with unsafe TOP could be prevented by improving access to TOP services, responding to unmet family planning needs, and addressing the factors deterring women from accessing contraception (39, 40). In South Africa, women seeking TOP services in public health care clinics face various barriers, including community stigma, negative attitudes by health care providers, shortages of health care providers and resources, and lack of programmes aimed at supporting health care providers; these factors deter them from accessing safe TOP (41, 42). Factors affecting contraceptive use and sexual behaviour in South Africa are multifaceted and multi-layered, and can be best understood through the Socio-Ecological Model (SEM). SEM asserts that circumstances at intrapersonal, interpersonal, community, and societal levels have impact on human behaviour.

### **The importance of age on contraceptive use**

Age is an important factor of contraceptive use in South Africa, and KwaZulu-Natal province is no exception. Despite contraceptive methods being widely available in South Africa, adolescent girls and young women continue to face several barriers to accessing and using them. The unmet need for contraception among young women aged 15-19 years and 20-24 years is high, consisting of 31% and 28%, respectively, compared to that of older women, which ranges from 14-18% (32). Due to their risky sexual and reproductive health behaviours, young women aged 15–24 years have an increased risk of negative health and socioeconomic outcomes (43). However, restrictions on access and provision of contemporary contraceptives based on age, are another major issue for sexually active young women who want to postpone their first pregnancy (44).

Furthermore, teenage girls who are still attending school, face several additional barriers to accessing contraception, including unfavourable clinic operating times and negative attitudes from health care providers, when they seek contraceptives in clinics (45). Some health care providers are often hesitant to give contraceptives to adolescent girls, assuming that making contraceptives easily available to young women, encourages them to engage in sexual activities (46, 47). Therefore, to avoid consequences of early pregnancy, including school dropouts and poverty, access to contraceptives among young women are limited (46).

Stigma and negative attitudes towards young women accessing contraceptives, are common in South Africa and in KwaZulu-Natal (48). There is sufficient evidence suggesting that inconsistent contraceptive use among women with an early sexual debut, is linked to inadequate knowledge of available contraceptives, and stigma associated with accessing contraceptives at a young age (48, 49). Furthermore, early sexual debut (14 years and younger) has been reported as a strong predictor for inconsistent contraceptive use among women, even at later stages of sexual life in South Africa (50, 51).

### **The importance of education on contraceptive use**

Education plays an important role in ensuring that individuals make decisions informed by relevant information. Empowering women through education is widely recognised as vital toward improving contraceptive use among them (52, 53). Women who are educationally empowered are more likely to be economically active, and have access to healthcare and reproductive health information; these enable them to shape their decisions, have easier access to health care services, exercise autonomy in decision-making, plan their pregnancies, and want fewer babies (52, 53). An increased level of education has also been reported to help individuals develop sentiments of self-confidence and self-worth, which are critical for improving health behaviours and health-seeking behaviours for the first time (54). The inverse is rather true among women who have no formal education, given that many are economically disadvantaged, and are less likely to make informed contraception decisions, which in turn, negatively influences their reproductive health goals (52).

A high level of education is associated with improved chances of employment as well as socioeconomic status, compared to those who have a lower education level. Similarly, employed women are more likely to be associated with contraceptive use (52, 55). Women with a higher socioeconomic status are better able to manage their sexual and reproductive health than those with a lower socioeconomic status (56). Contraceptive use is high among young women residing in wealthier communities compared to those from poor settings (56, 57). The higher odds of contraceptive use among women with high socioeconomic status, is linked to better access to sexual and reproductive health information, and autonomy in decision-making regarding contraception (52, 53).

In a study in South Africa, the use of modern contraceptive methods among sexually active women, increased with an increase in the level of education, from 44% among women with no education, to 62% among women with a secondary level of education (32). Other studies also showed a high likelihood of contraceptive use among women who had obtained higher levels of education, compared to those whose level of education was low (56, 57). The likelihood of contraceptive use among adolescent girls with a secondary level of education was three times higher than those with no education, clearly demonstrating the pivotal role played by educating a girl child in order to promote decision-making capacity and contraceptive use, even in resource-limited settings (56).

### **The influence of marital status on contraceptive use**

Marriage among young women is common in SSA (58). Evidence suggests that marital status largely influences the differences in reproductive health behaviours and the uptake of contraception among women (59, 60). In most traditional settings, marital status plays a major role in guiding women's sexual behaviours and contraceptive use. Unplanned pregnancy was reportedly four times more likely among single women than for their married counterparts, a phenomenon that was not surprising given that discussions regarding pregnancy are more likely to occur among married couples (9).

Furthermore, a study conducted in 73 low and middle-income countries, including South Africa, found that contraceptive prevalence among young women who were married with no children was low, compared to married women with children (59). Young women who are cohabitating are also more likely to use contraceptives compared to young women who are married (56). However, married women often have low decision-making powers and subdue themselves to social norms, resulting in low or inconsistent contraceptive use among them, thereby negating their desire to delay or intentionally space pregnancy (59). Married young women are frequently pressured by their husbands, in-laws and/or community, to have a child shortly after getting married, thereby disempowering them from making their own decisions on whether or not to use contraceptives to delay pregnancy (59, 61, 62).

### **Male dominance over women and its impact on contraceptive use**

Male dominance in sexual and reproductive decision-making has been reported in several studies in South Africa and elsewhere in the world (63-68). Owing its origins to a patriarchal system, men in South Africa continue to wield a great deal of control over women, even though communication is often viewed as crucial to collaborative decision-making, especially on matters of safer and better sexual practices (66, 69). As such, an intimate male partner plays an important role in influencing contraceptive use among women (70-72). However, women's disempowerment is fuelled by patriarchal cultural norms, which have a detrimental impact on women's sexual behaviour, fertility desires, and family planning needs (67, 73-75). Patriarchal cultural norms give more power to men to make decisions, not only for themselves, but also for their loved ones; this includes decisions relating to family planning, encompassing macro-level economical, as well as micro-level everyday factors, thus disempowering women from making their own decisions regarding contraceptive use and sexual behaviours (71, 76, 77).

Male partners' personal beliefs, limited understanding of contraception, myths, misconceptions, marital status, preference for larger families or physical abuse, can have a detrimental impact on family planning, resulting in the discontinuation of contraceptive use, and/or exposing women to unplanned pregnancy (67, 74, 78, 79). However, when male partners are part of the decision not to have any more children, the likelihood of women taking contraceptive becomes three-fold higher (80). Clearly, male partners can also positively influence contraceptive use and sexual behaviours, by sharing the responsibility for correct and consistent contraceptive use, and giving social support to their sexual partners (78). Currently, contraceptive use is the responsibility of women, with women who have the capacity to make their own sexual and reproductive health decisions being more likely to use contraceptives, compared to those who are disempowered (56, 66, 81).

### **Place of residence and contraceptive use**

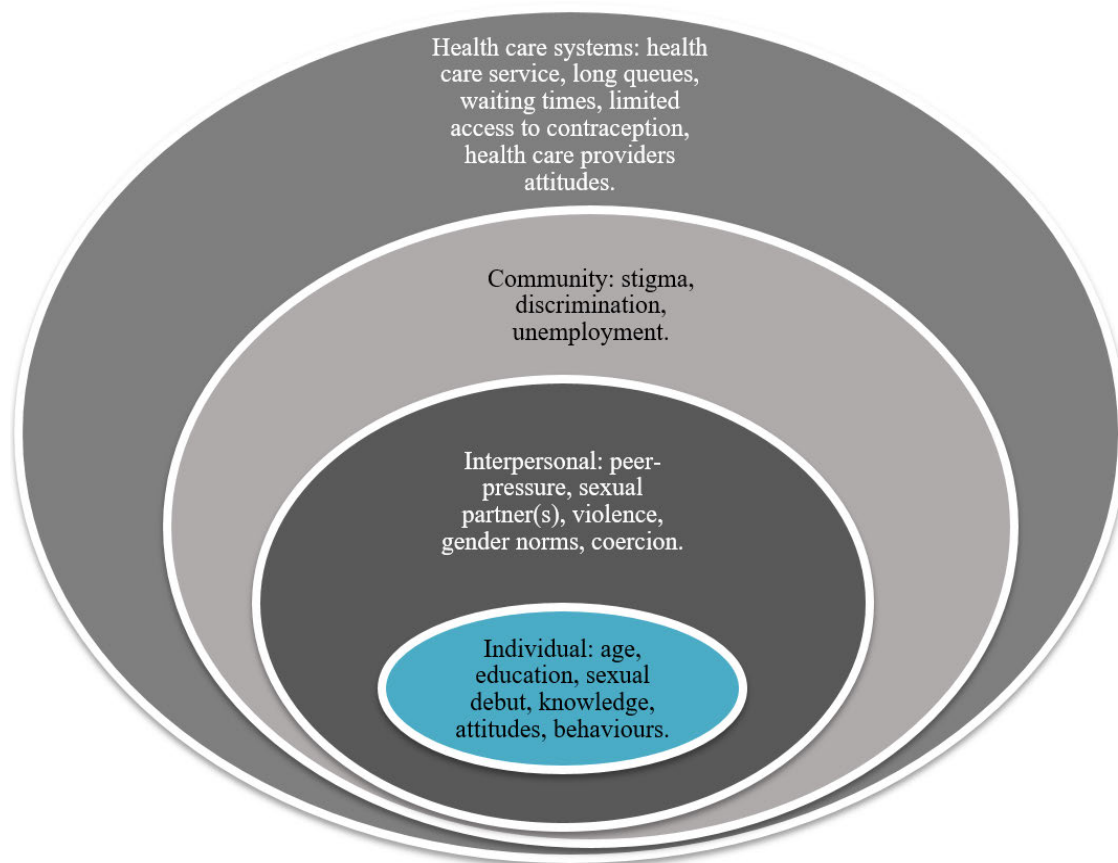
Place of residence has been shown to be an important variable influencing contraceptive use in South Africa and in KwaZulu-Natal (16, 74). Women residing in rural areas are less likely to use contraceptive methods compared to their urban dweller counterparts (16). Women residing in rural areas with no formal education, are likely to lack important knowledge on accessibility

and awareness, regarding the availability and use of contraceptive methods from their local clinics (16). In a study including data from 32 countries, involving South Africa, the authors found that adolescent girls residing in urban areas were significantly more likely to use contraceptive methods compared to their counterparts residing in rural areas (56).

Limited access to health care services in rural areas, as well as socio-economic and cultural disparities between these settings, may provide a plausible explanation for the differences in contraceptive use between women residing in urban areas versus those residing in rural areas (82). In SSA, people living in urban areas have better access to reproductive health care information, health care services, and resources aimed at improving quality of services provided to individuals (83). Urban-rural inequalities regarding the provision of health care services, including family planning, continue to be reported in SSA (56).

## **Theoretical Framework**

This study is underpinned by the Socio-Ecological Model (SEM) (Figure 2.1), which recognizes that human behaviour is influenced by a variety of circumstances at intrapersonal, interpersonal, community, and societal levels (1). At an intrapersonal level, the SEM framework asserts that age, education, income, and personal knowledge influence individual behaviour. The second level indicates that interpersonal relationships such as peers, partners, and family members influence an individual's behaviour and contribute to one's experience. The third level indicates that community-level factors such as neighbourhoods, workplaces, and schools embody likely sources of influence. The fourth level indicates that organizational systems, social and cultural norms, rules, guidelines, and policies compel individual to behave in a certain way. The SEM was used in this study to gain a holistic understanding of factors influencing contraceptive use and sexual behaviours among women of reproductive age in Umlazi Township. The model was adapted to demonstrate health care services related factors specific to this study. The SEM is well established in public health and has been used in several similar studies in SSA and globally (84-88).



Source: Centers for Disease Control and Prevention (2013)

**Figure 2.1: Adapted Socio-Ecological Model: Framework for Disease Prevention.**

## Conclusion

Although contraceptive use and sexual behaviour are not new concepts, they are as relevant as they were a few decades ago, especially since challenges related to reproductive health remain pervasive, not only in South Africa, but throughout the SSA region as well. The level of contraceptive use among women of reproductive health remains low, resulting in numerous detrimental consequences, especially because the rate of young women who terminate pregnancy using illegal providers remains relatively high. Therefore, it is important that women are educated and supported, including through addressing structural and personal barriers deterring them from accessing and using contraceptive methods, and improving sexual behaviour.

## References

1. Centers for Disease Control and Prevention. The social-ecological model: A framework for violence prevention. Atlanta, GA: Centers for Disease Control and Prevention; 2013.
2. Chandra-Mouli V, Camacho AV, Michaud P-A. WHO guidelines on preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries. *Journal of adolescent health*. 2013;52(5):517-22.
3. Chandra-Mouli V, McCarraher DR, Phillips SJ, Williamson NE, Hainsworth G. Contraception for adolescents in low and middle income countries: needs, barriers, and access. *Reproductive health*. 2014;11(1):1-8.
4. Darroch JE, Woog V, Bankole A, Ashford LS. Adding it up: costs and benefits of meeting the contraceptive needs of adolescents. 2016.
5. Morroni C, Moodley J. The role of urine pregnancy testing in facilitating access to antenatal care and abortion services in South Africa: a cross-sectional study. *BMC Pregnancy and Childbirth*. 2006;6(1):1-7.
6. Jewkes R, Abrahams N. The epidemiology of rape and sexual coercion in South Africa: an overview. *Social science & medicine*. 2002;55(7):1231-44.
7. Chersich M, Wabiri N, Risher K, Shisana O, Celentano D, Rehle T, et al. Contraception coverage and methods used among women in South Africa: A national household survey. *South African Medical Journal*. 2017;107(4):307-14.
8. Scorgie F, Blaauw D, Dooms T, Coovadia A, Black V, Chersich M. "I get hungry all the time": experiences of poverty and pregnancy in an urban healthcare setting in South Africa. *Globalization and health*. 2015;11(1):1-12.
9. Adeniyi OV, Ajayi AI, Moyaki MG, Ter Goon D, Avramovic G, Lambert J. High rate of unplanned pregnancy in the context of integrated family planning and HIV care services in South Africa. *BMC health services research*. 2018;18(1):1-8.
10. Woldesenbet S, Jackson D, Lombard C, Dinh T-H, Puren A, Sherman G, et al. Missed opportunities along the prevention of mother-to-child transmission services cascade in South Africa: uptake, determinants, and attributable risk (the SAPMTCCTE). *PloS one*. 2015;10(7):e0132425.
11. Haffejee F, Govender N, Reddy P, Sibiyi MN, Ghuman S, Ngxongo T, et al. Factors associated with unintended pregnancy among women attending a public health facility in KwaZulu-Natal, South Africa. *South African Family Practice*. 2018;60(3):79-83.
12. Schwartz SR, Rees H, Mehta S, Venter WDF, Taha TE, Black V. High incidence of unplanned pregnancy after antiretroviral therapy initiation: findings from a prospective cohort study in South Africa. *PloS one*. 2012;7(4):e36039.
13. Ajayi AI, Nwokocha EE, Adeniyi OV, Ter Goon D, Akpan W. Unplanned pregnancy-risks and use of emergency contraception: a survey of two Nigerian Universities. *BMC health services research*. 2017;17(1):1-8.
14. Calvert C, Baisley K, Doyle AM, Maganja K, Changalucha J, Watson-Jones D, et al. Risk factors for unplanned pregnancy among young women in Tanzania. *Journal of Family Planning and Reproductive Health Care*. 2013;39(4):e2-e.
15. Hoque ME, Ghuman S. Knowledge, practices, and attitudes of emergency contraception among female university students in KwaZulu-Natal, South Africa. 2012.
16. Christofides NJ, Jewkes RK, Dunkle KL, Nduna M, Shai NJ, Sterk C. Early adolescent pregnancy increases risk of incident HIV infection in the Eastern Cape, South Africa: a longitudinal study. *Journal of the International AIDS Society*. 2014;17(1):18585.
17. Jewkes R, Morrell R. Sexuality and the limits of agency among South African teenage women: Theorising femininities and their connections to HIV risk practises. *Social science & medicine*. 2012;74(11):1729-37.
18. Jewkes R, Morrell R, Sikweyiya Y, Dunkle K, Penn-Kekana L. Transactional relationships and sex with a woman in prostitution: prevalence and patterns in a representative sample of South African men. *BMC public health*. 2012;12(1):1-10.
19. Matthews LT, Moore L, Crankshaw TL, Milford C, Mosery FN, Greener R, et al. South Africans with recent pregnancy rarely know partner's HIV serostatus: implications for serodiscordant couples interventions. *BMC public health*. 2014;14(1):1-6.

20. Blackstone SR, Nwaozuru U, Iwelunmor J. Factors influencing contraceptive use in sub-Saharan Africa: a systematic review. *International quarterly of community health education*. 2017;37(2):79-91.
21. Hoggart L, Phillips J. Teenage pregnancies that end in abortion: what can they tell us about contraceptive risk-taking? *BMJ Sexual & Reproductive Health*. 2011;37(2):97-102.
22. Hodes R. The culture of illegal abortion in South Africa. *Journal of Southern African Studies*. 2016;42(1):79-93.
23. Mokgethi N, Ehlers VJ, Van der Merwe M. Professional nurses' attitudes towards providing termination of pregnancy services in a tertiary hospital in the North West province of South Africa. *Curationis*. 2006;29(1):32-9.
24. Republic of South Africa. Choice on Termination of Pregnancy Act (No. 92 of 1996). *Government Gazette*. 1996;377(17602).
25. Kaufman CE, De Wet T, Stadler J. Adolescent pregnancy and parenthood in South Africa. *Studies in family planning*. 2001;32(2):147-60.
26. Harrison A, Montgomery ET, Lurie M, Wilkinson D. Barriers to implementing South Africa's termination of pregnancy act in rural KwaZulu/Natal. *Health policy and planning*. 2000;15(4):424-31.
27. Varga CA. Pregnancy termination among South African adolescents. *Studies in family planning*. 2002;33(4):283-98.
28. Ehlers VJ. Adolescent mothers' utilization of contraceptive services in South Africa. *International nursing review*. 2003;50(4):229-41.
29. Orner P, De Bruyn M, Harries J, Cooper D. A qualitative exploration of HIV-positive pregnant women's decision-making regarding abortion in Cape Town, South Africa. *SAHARA-J: Journal of Social Aspects of HIV/AIDS*. 2010;7(2).
30. Constant D, Kluge J, Harries J, Grossman D. An analysis of delays among women accessing second-trimester abortion in the public sector in South Africa. *Contraception*. 2019;100(3):209-13.
31. Haddad LB, Nour NM. Unsafe abortion: unnecessary maternal mortality. *Reviews in obstetrics and gynecology*. 2009;2(2):122.
32. NDoH, SSA, SAMRC, ICF. South Africa Demographic and Health Survey 2016. Pretoria, South Africa, and Rockville, Maryland, USA: National Department of Health (NDoH), Statistics South Africa (Stats SA), South African Medical Research Council (SAMRC), ICF. ; 2019.
33. South African Government. National Development Plan Vision 2030. Pretoria: Government Printer; 2011.
34. World Health Organization. Maternal mortality fact sheet No. 348. Geneva: World Health Organization; 2015.
35. World Health Organization. Health worker role in providing safe abortion care and post abortion contraception: World Health Organization; 2015.
36. Ganatra B, Gerdtz C, Rossier C, Johnson Jr BR, Tunçalp Ö, Assifi A, et al. Global, regional, and subregional classification of abortions by safety, 2010–14: estimates from a Bayesian hierarchical model. *The Lancet*. 2017;390(10110):2372-81.
37. United Nations. The Millennium Development Goals Report. New York, USA: United Nations; 2008.
38. United Nations. United Nations: Transforming our world: The 2030 agenda for sustainable development. New York, USA: United Nations; 2015.
39. World Health Organization. Unsafe Abortion: Global and Regional Estimates of the Incidence of Unsafe Abortion and Associated Mortality in 2008. Geneva, Switzerland: World Health Organization. 2011.
40. Silal SP, Penn-Kekana L, Harris B, Birch S, McIntyre D. Exploring inequalities in access to and use of maternal health services in South Africa. *BMC health services research*. 2012;12(1):1-12.
41. Wheeler SB, Zullig LL, Reeve BB, Buga GA, Morroni C. Attitudes and intentions regarding abortion provision among medical school students in South Africa. *International perspectives on sexual and reproductive health*. 2012;38(3):154.
42. Harries J, Lince N, Constant D, Hargey A, Grossman D. The challenges of offering public second trimester abortion services in South Africa: health care provider perspectives. *Journal of biosocial science*. 2012;44(2):197-208.

43. Singh S, Bankole A, Darroch JE. The impact of contraceptive use and abortion on fertility in sub-Saharan Africa: estimates for 2003–2014. *Population and development review*. 2017;43(Suppl 1):141.
44. Sedekia Y, Jones C, Nathan R, Schellenberg J, Marchant T. Using contraceptives to delay first birth: a qualitative study of individual, community and health provider perceptions in southern Tanzania. *BMC Public Health*. 2017;17(1):1-13.
45. Peer N, London L, Morojele N. Factors associated with contraceptive use in a rural area in Western Cape Province. *South African Medical Journal*. 2013;103(6):406-12.
46. Wood K, Jewkes R. Blood blockages and scolding nurses: barriers to adolescent contraceptive use in South Africa. *Reproductive health matters*. 2006;14(27):109-18.
47. Finer LB, Philbin JM. Sexual initiation, contraceptive use, and pregnancy among young adolescents. *Pediatrics*. 2013;131(5):886-91.
48. Hlongwa M, Tlou B, Hlongwana K. Healthcare providers' knowledge and perceptions regarding the use of modern contraceptives among adolescent girls in Umlazi Township, KwaZulu-Natal province, South Africa. *The Pan African Medical Journal*. 2021;38.
49. Makola L, Mlangeni L, Mabaso M, Chibi B, Sokhela Z, Silimfe Z, et al. Predictors of contraceptive use among adolescent girls and young women (AGYW) aged 15 to 24 years in South Africa: results from the 2012 national population-based household survey. *BMC women's health*. 2019;19(1):1-7.
50. Jacobs P, Makaudze E. Understanding rural livelihoods in the West Coast district, South Africa. *Development Southern Africa*. 2012;29(4):574-87.
51. Toska E, Cluver LD, Boyes M, Pantelic M, Kuo C. From ‘sugar daddies’ to ‘sugar babies’: exploring a pathway among age-disparate sexual relationships, condom use and adolescent pregnancy in South Africa. *Sexual health*. 2015;12(1):59-66.
52. Osuafor GN, Maputle SM, Ayiga N. Factors related to married or cohabiting women’s decision to use modern contraceptive methods in Mahikeng, South Africa. *African Journal of Primary Health Care and Family Medicine*. 2018;10(1):1-7.
53. Apanga PA, Adam MA. Factors influencing the uptake of family planning services in the Talensi District, Ghana. *Pan African Medical Journal*. 2015;20(1).
54. Singh K, Bloom S, Brodish P. Gender equality as a means to improve maternal and child health in Africa. *Health care for women international*. 2015;36(1):57-69.
55. Iyayi F, Igbinomwanhia RO, Bardi A, Iyayi OO. The control of Nigerian women over their sexuality in an era of HIV/AIDS: A study of women in Edo State in Nigeria. *International NGO Journal*. 2012;6(5):113-21.
56. Ahinkorah BO, Hagan Jr JE, Seidu A-A, Sambah F, Adoboi F, Schack T, et al. Female adolescents’ reproductive health decision-making capacity and contraceptive use in sub-Saharan Africa: What does the future hold? *PloS one*. 2020;15(7):e0235601.
57. Stephenson R, Beke A, Tshibangu D. Community and health facility influences on contraceptive method choice in the Eastern Cape, South Africa. *International family planning perspectives*. 2008;62-70.
58. UNFPA. The Status Report on Adolescents and Young People in SubSaharan Africa: opportunities and challenges. New York: UNFPA; 2012.
59. Coll CdVN, Ewerling F, Hellwig F, De Barros AJD. Contraception in adolescence: the influence of parity and marital status on contraceptive use in 73 low-and middle-income countries. *Reproductive health*. 2019;16(1):1-12.
60. Ngome E, Odimegwu C. The social context of adolescent women’s use of modern contraceptives in Zimbabwe: a multilevel analysis. *Reproductive health*. 2014;11(1):1-14.
61. UNFPA. Marrying too young. End child marriage. New York: United Nations Population Fund 2012.
62. Corroon M, Speizer IS, Fotso J-C, Akiode A, Saad A, Calhoun L, et al. The role of gender empowerment on reproductive health outcomes in urban Nigeria. *Maternal and child health journal*. 2014;18(1):307-15.

63. Osuafor GN, Ayiga N. Risky sexual behaviour among married and cohabiting women and its implication for sexually transmitted infections in Mahikeng, South Africa. *Sexuality & Culture*. 2016;20(4):805-23.
64. Hlongwa M, Peltzer K, Hlongwana K. Risky sexual behaviours among women of reproductive age in a high HIV burdened township in KwaZulu-Natal, South Africa. *BMC Infectious Diseases*. 2020;20(1):1-9.
65. Tolhurst R, Amekudzi YP, Nyongator FK, Squire SB, Theobald S. "He will ask why the child gets sick so often": The gendered dynamics of intra-household bargaining over healthcare for children with fever in the Volta Region of Ghana. *Social science & medicine*. 2008;66(5):1106-17.
66. Maharaj P, Cleland J. Women on top: the relative influence of wives and husbands on contraceptive use in KwaZulu-Natal. *Women & Health*. 2005;41(2):31-41.
67. Ezeh AC. The influence of spouses over each other's contraceptive attitudes in Ghana. *Studies in family planning*. 1993:163-74.
68. Gage AJ. Sexual activity and contraceptive use: the components of the decisionmaking process. *Studies in family planning*. 1998:154-66.
69. Morrell R, Jewkes R, Lindegger G. Hegemonic masculinity/masculinities in South Africa: Culture, power, and gender politics. *Men and masculinities*. 2012;15(1):11-30.
70. Maharaj P. Male attitudes to family planning in the era of HIV/AIDS: evidence from KwaZulu-Natal, South Africa. *Journal of Southern African Studies*. 2001;27(2):245-57.
71. Cleland J, Harbison S, Shah IH. Unmet need for contraception: issues and challenges. *Studies in family planning*. 2014;45(2):105-22.
72. Maharaj P. Stalling contraception? Perspectives and experiences of sexually active women and men. *Agenda*. 2012;26(2):100-10.
73. Dynes M, Stephenson R, Rubardt M, Bartel D. The influence of perceptions of community norms on current contraceptive use among men and women in Ethiopia and Kenya. *Health & place*. 2012;18(4):766-73.
74. Ndinda C, Ndhlovu T, Khalema NE. Conceptions of contraceptive use in rural KwaZulu-Natal, South Africa: lessons for programming. *International journal of environmental research and public health*. 2017;14(4):353.
75. Raju S. Negotiating with patriarchy: addressing men in reproductive and child health. *Economic and Political Weekly*. 2001:4589-92.
76. Haider TL, Sharma M. Barriers to family planning and contraception uptake in sub-Saharan Africa: a systematic review. *International quarterly of community health education*. 2013;33(4):403-13.
77. Bankole A, Singh S. Couples' fertility and contraceptive decision-making in developing countries: hearing the man's voice. *International family planning perspectives*. 1998:15-24.
78. Kriel Y, Milford C, Cordero J, Suleman F, Beksinska M, Steyn P, et al. Male partner influence on family planning and contraceptive use: perspectives from community members and healthcare providers in KwaZulu-Natal, South Africa. *Reproductive health*. 2019;16(1):1-15.
79. Ochako R, Mbondo M, Aloo S, Kaimenyi S, Thompson R, Temmerman M, et al. Barriers to modern contraceptive methods uptake among young women in Kenya: a qualitative study. *BMC public health*. 2015;15(1):1-9.
80. Dodoo FN-A. Men matter: additive and interactive gendered preferences and reproductive behavior in Kenya. *Demography*. 1998;35(2):229-42.
81. Seidu A-A, Ahinkorah BO, Agbemavi W, Amu H, Bonsu F. Reproductive health decision-making capacity and pregnancy termination among Ghanaian women: Analysis of the 2014 Ghana demographic and health survey. *Journal of Public Health*. 2021;29(1):85-94.
82. Muanda M, Ndongo PG, Taub LD, Bertrand JT. Barriers to modern contraceptive use in Kinshasa, DRC. *PloS one*. 2016;11(12).
83. Yaya S, Bishwajit G, Gunawardena N. Socioeconomic factors associated with choice of delivery place among mothers: a population-based cross-sectional study in Guinea-Bissau. *BMJ global health*. 2019;4(2):e001341.
84. Ezenwaka U, Mbachu C, Ezumah N, Eze I, Agu C, Agu I, et al. Exploring factors constraining utilization of contraceptive services among adolescents in Southeast Nigeria: an application of the socio-ecological model. *BMC public health*. 2020;20(1):1-11.

85. Jonas K, Duby Z, Maruping K, Dietrich J, Slingers N, Harries J, et al. Perceptions of contraception services among recipients of a combination HIV-prevention interventions for adolescent girls and young women in South Africa: a qualitative study. *Reproductive Health*. 2020;17(1):1-14.
86. Gray C, Crawford G, Maycock B, Lobo R. Socioecological Factors Influencing Sexual Health Experiences and Health Outcomes of Migrant Asian Women Living in ‘Western’ High-Income Countries: A Systematic Review. *International journal of environmental research and public health*. 2021;18(5):2469.
87. Ngwenya N, Nkosi B, Mchunu LS, Ferguson J, Seeley J, Doyle AM. Behavioural and socio-ecological factors that influence access and utilisation of health services by young people living in rural KwaZulu-Natal, South Africa: Implications for intervention. *PloS one*. 2020;15(4):e0231080.
88. White K, Ocampo M, Scarinci IC. A socio-ecological approach for examining factors related to contraceptive use among recent Latina immigrants in an emerging Latino state. *Women & Health*. 2017;57(7):872-89.

## **Chapter Three: Systematic Scoping Review**

This Chapter builds on the narrative literature review presented in Chapter Two and reports on the scoping review of existing evidence on this topic. This review aimed to create a better understanding of the existing research evidence on the factors influencing contraceptive use and sexual behaviours among women of reproductive age in South Africa. We firstly published a scoping review protocol, which served as a roadmap for conducting the actual scoping review. Both the scoping review protocol and the actual scoping review were published in peer-reviewed international academic journals. Chapter three addressed Objective one of the overall study.

### **Evidence on Factors Influencing Contraceptive Use and Sexual Behaviour in South Africa: a Systematic Scoping Review protocol**

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# Evidence on factors influencing contraceptive use and sexual behavior in South Africa

## A systematic scoping review protocol

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### Abstract

**Background:** Contraceptive use and sexual health behavior remain a prominent public health concern in South Africa. Despite many government interventions, unplanned pregnancies, number of abortions, and maternal mortality remain relatively high. Due to high pregnancy levels and the stigma associated with termination of pregnancy, more women turn to unsafe and illegal abortions despite the risks involved. Risky sexual behavior pose a serious risk of contracting HIV/AIDS. The main objective of this study is to map evidence on factors influencing contraceptive use and sexual behavior in South Africa.

**Methods:** We will conduct a scoping review guided by framework by Arksey and O'Malley. This study will search for eligible literature from peer-reviewed articles and grey literature. Databases such as PubMed/MEDLINE, American Doctoral Dissertations via EBSCO host, Union Catalogue of Theses and Dissertations (UCTD) and SA ePublications via SABINET Online and World Cat Dissertations, Theses via OCLC, and Google Scholar will be searched. Websites such as the World Health Organization (WHO) and governmental websites and statistics institutions will be explored for policies and guidelines on contraceptive use and sexual behavior. The review will be conducted on studies that were published from January 1990 to 2018. The PCC framework will be employed in this study to determine the eligibility of research question. The PRISMA chart will be utilized to report the screening of results. The MMAT Tool version 11 will be used to determine the quality of the included primary studies.

**Results:** We anticipate finding a considerable number of published articles presenting evidence on contraceptive use and sexual health behavior in South Africa. Findings of this scoping review will be disseminated electronically, in print, and through peer presentation, conferences, and congresses.

**Abbreviations:** AACODS = Authority, Accuracy, Coverage, Objectivity, Date, Significance, MeSH = Medical Subject Headings, MMAT = Mixed Method Appraisal Tool, NDP = National Development Plan, PCC = Population, Concept and Context, PRISMA = Preferred Reporting Items for Systematic Reviews and Meta-Analysis, SDG = Sustainable Development Goals, STI = sexually transmitted infections, UCTD = Union Catalogue of Theses and Dissertations, WHO = World Health Organization.

**Keywords:** abortions, contraceptive use, HIV/AIDS, pregnancy, sexual behavior, South Africa

### 1. Introduction

Contraceptive use, sexual health behavior, and HIV/AIDS education remain prominent in demographic and health literature because of their several health benefits to women

and families, such as preventing unplanned pregnancies, reducing maternal mortality, and the risk of HIV infection, particularly in the African region.<sup>[1]</sup> The sub-Saharan African region experiences more than 14 million unplanned pregnancies each year, with almost half of these pregnancies happening among women aged 15 to 24 years.<sup>[2]</sup> More than 13% of these pregnancies end in abortions and 16% in miscarriages.<sup>[1]</sup> As a result of maternal-related complications, 1 in 26 women of reproductive age die in Africa, compared with 1 in 9400 in Europe.<sup>[3]</sup> In 2003, the prevalence of unplanned pregnancy and contraceptive use in South Africa were 47% and 62%, respectively. In 2013 alone, the teenage and adolescents' unplanned pregnancies exceeded 99,000 pregnancies in South Africa.

Maternal factors such as pregnancy and childbirth complications are the leading cause of death among 15 to 19-year-old girls worldwide. Almost all of the deaths affecting the low and middle-income countries account for 99% of maternal mortality among women aged 15 to 49 years, globally.<sup>[4]</sup> In response to this reproductive health challenge, the South African government has adopted the Sustainable Development Goals (SDGs) commitments, which aim to ensure universal access to sexual and reproductive health for all women by 2030. Some of the main objectives of the department of health in South Africa is to reduce the maternal mortality in facility ratio to 100 (or less) per 100,000 live births and increase the contraceptive use rate to

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*Reviewer comments* will be used to amend the protocol.

*This study does not include any animal or human participants. Ethics approval and consent to participate is not applicable.*

*The authors have no competing interest to declare.*

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**Table 1****PCC framework.**

Criteria	Determinants
Population	Women of childbearing age (15–49 y)
Concept	Contraceptive use and sexual behavior
Context	Sexual health

75% by 2020. In addition to the above strategic goals, this study will further contribute to Chapter 10 (Promoting Health) of the National Development Plan (NDP) vision 2030, which aims to significantly reduce the sexually transmitted infections (STIs) and the burden of HIV/AIDS. This study will further address Goal 3 of the NDP vision 2030, which aims to reduce maternal mortality rates in South Africa.

Despite the improved contraception uptake in South Africa, there remains high termination of pregnancy due to the high numbers of undesirable and unintended pregnancies, posing a serious concern for public health. The situation is exacerbated by a relatively high HIV/AIDS infection rate, particularly among adolescents. Due to such high pregnancy levels and the stigma associated with termination of pregnancy, more women turn to unsafe and illegal abortions negating the risks associated with such activities. The main objective of this study is to map evidence on factors influencing contraceptive use and sexual behavior in South Africa over a period spanning from 1990 to 2018.

## 2. Methodology

### 2.1. Systematic scoping review

This study protocol is registered under the following URL: <https://nhrd.lst.org.za/Proposal/Details/43106> (registration no.: KZ\_201809\_013). This study will be conducted using a scoping review of published peer-reviewed and grey literature on the factors influencing contraceptive use and sexual behavior in South Africa. The framework by Arksey and O'Malley<sup>[5]</sup> on scoping review will guide this study. The following stages are specified by the framework:

- (1) Identifying the research question;
- (2) Identifying relevant studies;
- (3) Study selection;
- (4) Charting the data;
- (5) Collating, summarizing, and reporting the results.

This review will also include the quality appraisal of included primary studies, which was recommended by Levac et al<sup>[6]</sup> for scoping review projects.

**Table 2****Pilot database search results.**

Keyword search	Date of search	Search engine used	Number of publications retrieved
(("contraceptive agents"[Pharmacological Action] OR "contraceptive devices"[MeSH Terms] OR ("contraceptive"[All Fields] AND "devices"[All Fields]) OR "contraceptive devices"[All Fields] OR "contraceptive"[All Fields] OR "contraceptive agents"[MeSH Terms] OR ("contraceptive"[All Fields] AND "agents"[All Fields]) OR "contraceptive agents"[All Fields] AND ("sexual behavior"[MeSH Terms] OR ("sexual"[All Fields] AND "behavior"[All Fields]) OR "sexual behavior"[All Fields] OR ("sexual"[All Fields] AND "behaviour"[All Fields]) OR "sexual behaviour"[All Fields]) AND ("HIV/AIDS Res Treat"[Journal] OR "HIV AIDS (Auckl)"[Journal] OR "hiv/aids"[All Fields])	July 16, 2018	PubMed	1260

### 2.2. Identifying the research question

What are the factors that influence contraceptive use and sexual behavior in women of child-bearing age (15–49 years) in South Africa?

### 2.3. Eligibility of research question

The Population, Concept, and Context (PCC) framework has been employed in this study to determine the eligibility of research question as illustrated in Table 1.

### 2.4. Identifying relevant studies

This study will utilize evidence published by primary studies and grey literature, which have shown significant results using clear and strong methodologies in quantitative, qualitative, and mixed-method approaches. These studies will be obtained from the published peer-reviewed journals. The article searches will be inclusive of databases such as PubMed/MEDLINE, American Doctoral Dissertations via EBSCO host, Union Catalogue of Theses and Dissertations (UCTD) and SA ePublications via SABINET Online and World Cat Dissertations, Theses via OCLC, and Google Scholar. Publications by MRC and HSRC will also be reviewed. Websites such as the World Health Organization (WHO) and governmental websites and statistics institutions will be searched for policies and guidelines on contraceptive use and sexual behavior. The literature will be conducted on studies that were published from January 1990 to 2018. All study designs will be included. The citations from the selected studies will also be screened, and the relevant articles from the reference lists will be searched. The search key words will include contraceptive use, family planning, sexual behavior, HIV/AIDS, South Africa, pregnancy, abortions, maternal mortality. The Boolean terms such as "AND" and "OR" will be used to combine or concentrate keywords in an advanced search and this helps eliminate inappropriate articles while focusing results to the area of research interest. The Medical Subject Headings (MeSH) terms will be used for control, indexing, and description of article records. A pilot database search was conducted to determine the feasibility using the scoping review method to answer our research question (Table 2).

### 2.5. Study selection

The eligibility criteria were designed to limit the study to focus only on the articles that address issues described in the research question: what are the factors influencing contraceptive use and sexual behavior in South Africa?

## 2.6. Inclusion criteria

The following principles will be used to determine the studies that meet the criteria:

- (1) Studies that present evidence that was published between 1990 and 2018.
- (2) Studies that present evidence that was published in South Africa.
- (3) Studies that present evidence on women aged 15–49 years.
- (4) Studies that present evidence on contraceptive use.
- (5) Studies that present evidence on sexual behavior.
- (6) Studies that present evidence on HIV/AIDS.

## 2.7. Exclusion criteria

Studies with the following characteristics will be excluded.

- (1) Studies published before 1990
- (2) Studies with no evidence on contraceptive use or sexual behavior

Eligible articles from title screening will be exported to Endnote version 7 library, which will be created for the purpose of this scoping review. A comprehensive screening of study titles from the databases listed above will be conducted by the principal

investigator. Although all studies meeting the inclusion criteria will be exported to Endnote, all studies will be checked for duplications and duplicate studies will be removed. This process will happen before the abstract screening is conducted. Following full article screening, we will conduct abstract screening. Two reviewers will screen abstracts as well as full articles. Each reviewer will work independently from each other and the screening will be guided by the above eligibility criteria. We will work closely with the University of KwaZulu-Natal library services during database searching and retrieval of articles. Studies that could not be retrieved from databases will be obtained by contacting authors. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) chart (Fig. 1) will be employed to report the screening of results.

## 2.8. Charting of data

The Data Charting table (Table 3) will be utilized as a guide to extract the background information that will be used for each study to be employed. Data charting form will be continually updated with the latest information and it will include the highlighting of the key aspects, which will be designed and piloted. Updating of the data charting form will be conducted continuously. NVivo version 12 will be used to seek out emerging themes from the included articles.

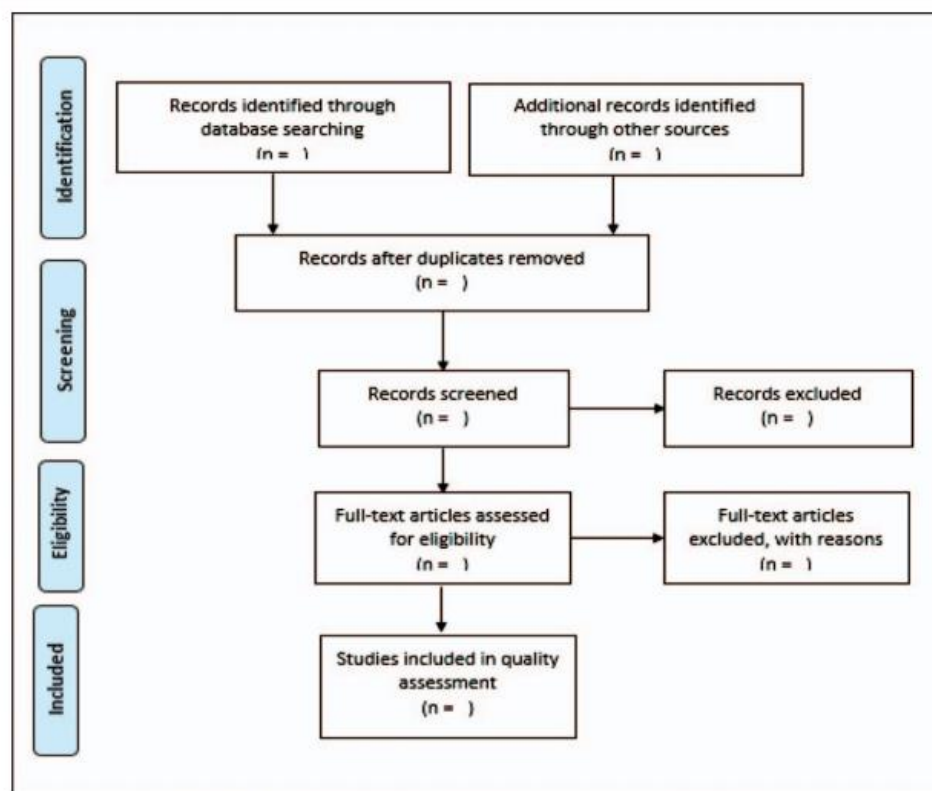


Figure 1. PRISMA flow chart demonstrating literature search and selection of studies.

**Table 3****Data charting table form.**

Author and date
Journal full reference
Aims or research questions
Study population
Age
Gender
Percentage of women
Percentage of men
Geographic setting (Rural/Urban/Semi-urban)
Study design
Intervention
Type of contraceptive
Manufacturer of contraceptive
Intervention outcomes
Most relevant finding
Most significant finding
Conclusions

**2.9. Collating, summarizing, and reporting the results**

For coding and analyzing of data from the selected articles, content analysis of the extracted data will be conducted. The extent, nature, and distribution of the selected studies will be reviewed. To understand the context, content, population, geographical location, and research methods of the selected studies, a template with tables and charts mapping will be developed. This template with a table summarizing basic characteristics of all the selected studies will be designed in which reviewers will make comments or notes on the following headings: interventions; sample sizes; participants; research methods; evidence relating to effectiveness; economic aspects and gaps in the research.<sup>[5]</sup> This consistent approach will help us make comparisons across intervention types; identify contradictory evidence regarding specific interventions; and identify research gaps.

**2.10. Quality appraisal**

To determine the quality of the selected studies, a Mixed Method Appraisal Tool (MMAT) version 2011 will be adopted and piloted by 2 people (principal investigator and coscreener). This tool was most appropriate for this study because it highlights the key aspects. Only primary studies will be assessed by the MMAT tool. This study will evaluate section 2, which focuses on randomized controlled studies, section 3 for nonrandomized controlled studies, and section 4, which measures descriptive statistics. Section 1 examines mixed methods studies for the qualitative component. This section will also be evaluated. The MMAT tool will be utilized to scrutinize the relevance of aim of study, adequacy and methodology, study design, data collection, study selection, data analysis, presentation of findings, author's discussions, and conclusions. The grey literature articles will be appraised using the Authority, Accuracy, Coverage, Objectivity, Date, Significance (AACODS) checklist form, which is designed to enable evaluation and critical appraisal of grey literature.<sup>[7]</sup>

The results from examination of the aspects indicated above will regulate quality of resultant article. Each study will be assigned an overall grade of high, moderate, or low risk of bias based on the assessment of the 6 sections indicated above. The following criteria will be followed: for qualitative and

quantitative studies, the score will be a number of criteria met by each study divided by 4, with 25% indicating that at least 1 criterion was met by the study, while 100% indicates that all criteria were met.<sup>[8]</sup> For the mixed methods studies, the score will be 25% when 1 criterion is met, 50% when 2 criteria are met for a domain, 75% when 3 criteria are met for a domain, and 100% when all criteria are met for all domains.<sup>[8]</sup> Domains comprise of qualitative, quantitative, and mixed methods components.

**3. Discussion**

Most of the published systematic review articles mainly focus on adolescents and their choices of modern contraceptive use in sub-Saharan Africa.<sup>[9–11]</sup> There are limited systematic reviews or scoping reviews conducted with a specific focus on contraceptive use and sexual behavior in general population and with a specific focus on South Africa. Universal contraception and improved sexual behavior has become a key priority for the South African government. The NDP and SDGs strategic plans specifically stress the importance of improving universal access to family planning services and educating the population on sexual behavior and HIV/AIDS.<sup>[12]</sup> There is also a need to conduct more systematic reviews on contraceptive use and sexual behavior particularly among key populations, such as men who have sex with other men (MSM), sex workers, truck drivers, prisoners, and miners. In addition, there is very little sex or contraceptive education from parents, health care providers, or elsewhere in South Africa.

This systematic scoping review focuses on contraceptive use and sexual behavior in South Africa. It includes all studies published between the years 1990 and 2018 because studies published before 1990 are unlikely to reflect the key aspects and changes pertaining to modern contraceptive use and sexual health behavior. More studies were conducted after 1990 after many interventions were implemented to address these public health challenges in the era of HIV/AIDS.

We hope that the results of this scoping review will contribute to literature and policy guidelines on contraceptive use and sexual behavior of population aged 15 years and older, with a specific focus on HIV/AIDS in South Africa and other high HIV-pandemic countries. Findings of this scoping review will be disseminated electronically, in print, and through peer presentation, conferences, and congresses.

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**Author contributions**

MH conceptualized, designed the study, and prepared the initial draft of the study under the supervision of KH and TPM-T. Both KH and TPM-T assisted with the manuscript preparation. All the authors reviewed the draft and approved the final version of the manuscript.

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**Supervision:** Tivani Mashamba-Thompson, Khumbulani Hlongwana.

**Validation:** Mbuzeleni Hlongwa.

**Visualization:** Mbuzeleni Hlongwa, Khumbulani Hlongwana.

**Writing – original draft:** Mbuzeleni Hlongwa.

**Writing – review & editing:** Mbuzeleni Hlongwa, Tivani Mashamba-Thompson, Khumbulani Hlongwana.

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## References

- [1] Cates W. Family planning: the essential link to achieving all eight Millennium Development Goals. *Contraception* 2010;81:460–1.
- [2] HSRCHIV and AIDS related knowledge, attitudes and behaviours of students and staff at South African Technical and Vocational Education and Training colleges in South Africa 2014.
- [3] Stover J, Ross J. How increased contraceptive use has reduced maternal mortality. *Matern Child Health J* 2010;14:687–95.
- [4] WHO. Global health estimates 2015: deaths by cause, age, sex, by country and by region, 2000–2015. Geneva; WHO; 2016.
- [5] Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol* 2005;8:19–32.
- [6] Levac D, Colquhoun H, KK OB. Scoping studies: advancing the methodology. *Implement Sci* 2010;5:69.
- [7] Burls A. What is critical appraisal? Bandolier 2009.
- [8] Pluye P, Robert E, Cargo M, et al. Proposal: a mixed methods appraisal tool for systematic mixed studies reviews 2011.
- [9] Fearon E, Wiggins RD, Pettifor AE, et al. Is the sexual behaviour of young people in sub-Saharan Africa influenced by their peers? A systematic review. *Soc Sci Med* 2015;146:62–74.
- [10] Toska E, Pantelic M, Meinc F, et al. Sex in the shadow of HIV: a systematic review of prevalence, risk factors, and interventions to reduce sexual risk-taking among HIV-positive adolescents and youth in sub-Saharan Africa. *PLoS One* 2017;12:e0178106.
- [11] Williamson LM, Parkes A, Wight D, et al. Limits to modern contraceptive use among young women in developing countries: a systematic review of qualitative research. *Reprod Health* 2009;6:3.
- [12] Africa SS. National Development Plan Vision 20302015. Available at: <http://www.statssa.gov.za/wp-content/uploads/2013/07/NDP-2030-Our-future-make-it-work.pdf>.

# **Evidence on factors influencing contraceptive use and sexual behaviour among women in South Africa: a scoping review**

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# Evidence on factors influencing contraceptive use and sexual behavior among women in South Africa

## A scoping review

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### Abstract

**Introduction:** Contraceptive use and sexual health behavior remain a prominent public health concern in South Africa (SA). Despite many government interventions, unintended pregnancies and termination of pregnancies remain relatively high. This review aimed to map evidence on factors influencing contraceptive use and sexual behavior in SA.

**Methods:** We conducted a scoping review guided by Arksey and O'Malley's framework. We searched for articles from the following databases: PubMed/MEDLINE, American Doctoral Dissertations via EBSCO host, Union Catalogue of Theses and Dissertations (UCTD) and SA ePublications via SABINET Online and World Cat Dissertations, Theses via OCLC and Google Scholar. Studies published from January 1990 to March 2018 were included. We used the Population, Concept, and Context (PCC) framework and the PRISMA chart to report the screening of results. The Mixed Method Appraisal Tool (MMAT) version 11 and ACCODS tools were used to determine the quality of the included studies.

**Results:** A total of 2030 articles were identified by our search criteria for title screening. Only 21 studies met our inclusion criteria and were included in quality assessment stage. We found that knowledge of a contraceptive method, length of a relationship, sexual debut, age difference between partners availability of a contraceptive method, long waiting hours, and nurse's attitudes toward human immunodeficiency virus (HIV) positive or younger clients predict whether or not women use a contraceptive method or improve sexual behavior.

**Conclusion:** There remains a necessity for improving educational programs aimed at transferring knowledge on contraceptives and sexual behavior to both women and their male counterparts, alongside the public health systems' improvements.

**Abbreviations:** AACODS = Authority, Accuracy, Coverage, Objectivity, Date, Significance, AIDS = acquired immunodeficiency syndrome, DMPA = depot medroxyprogesterone acetate, HIV = human immunodeficiency virus, HSRC = Human Sciences Research Council, IUCD = intrauterine contraceptive device, LMIC = low and middle-income countries, LNG-IUS = levonorgestrel releasing intrauterine system, MeSH = Medical Subject Headings, MMAT = Mixed Method Appraisal Tool, MRC = Medical Research Council, PCC = Population, Concept, and Context, SA = South Africa, SDGs = Sustainable Development Goals, SSA = Sub-Saharan Africa, STI = sexually transmitted infections, UCTD = Union Catalogue of Theses and Dissertations, WHO = World Health Organization.

**Keywords:** abortion, contraceptive use, family planning, maternal mortality, pregnancy, sexual behavior, South Africa

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This study does not include any animal or human participants. Ethics approval and consent to participate are not applicable.

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All the data analyzed and reported in this paper was from published literature, which is already in the public domain.

The datasets generated during and/or analyzed during the current study are publicly available.

The authors have no conflicts of interest to disclose.

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## 1. Introduction

Access to safe and effective contraceptive methods is one of the cornerstones of reproductive health.<sup>[1]</sup> However, the degree to which women manage various aspects of their sexual and reproductive health, including the prevention of unintended pregnancies, maternal mortality, and exposure to human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS), raises questions of health promotion concern.<sup>[2]</sup> The sub-Saharan African (SSA) region experiences more than 14 million abortions each year.<sup>[3]</sup> Almost half of the pregnancies are happening among women aged 15 to 24 years.<sup>[4]</sup> More than 13% and 16% of these pregnancies end in abortions and miscarriages, respectively.<sup>[5]</sup> As a result of maternal-related complications, one in 26 women of reproductive age die in Africa, compared to one in 9400 in European counterparts.<sup>[6]</sup>

Almost all of the deaths affecting the low and middle-income countries (LMIC) account for 99% of maternal mortality among women aged 15 to 49 years, globally.<sup>[7]</sup> In response to this reproductive health challenge, the South African (SA) government joined the global community in adopting the Sustainable Development Goals (SDGs), which aim to ensure universal access to sexual and reproductive health for all women by the year 2030.<sup>[8]</sup> Some of the main objectives of the department of health in SA is to reduce the maternal mortality in facility ratio to 100 (or less) per 100,000 live births and increase the rate of contraceptive use to 75% by 2030.<sup>[8]</sup>

Many plans and policies have been introduced by the SA government towards improving contraceptive use, including

- (a) the National Health Act (61 of 2003);
- (b) the new National Adolescent Sexual and Reproductive Health and Rights Framework Strategy (2014–2019);
- (c) the Strategic Plan for Maternal, Newborn, Child, and Women's Health and Nutrition in South Africa (2012–2016);
- (d) the 2012 National Contraception and Fertility Planning Policy;
- (e) the Strategic Plan for Maternal, Newborn, Child, and Women's Health; and
- (f) the Campaign for Accelerated Reduction of Maternal and Child Mortality.<sup>[9–12]</sup>

The National Health Act (61 of 2003) acknowledges the health needs of vulnerable groups, such as women, and makes provisions for free health care for pregnant women, including women undergoing termination of pregnancy.<sup>[11]</sup>

All these plans and policies acknowledge the importance of improving contraception and sexual behavior and they are largely supportive of women's rights and access to health care services.<sup>[12]</sup> However, unintended pregnancies are persistently high. While the contraceptive rate among sexually active women had a marginal decline from 68% to 64% between 1998 and 2016, there remains high termination of pregnancy due to the high numbers of undesirable and unintended pregnancies. This is a serious public health concern, especially in the context of high HIV/AIDS infection rates.<sup>[13]</sup>

The following contraceptive methods should be available for use by the South African general public at public health facilities based on national guidelines: female sterilization (tubal ligation), male sterilization (vasectomy), levonorgestrel releasing intrauterine system (LNG-IUS), copper intrauterine contraceptive device (IUCD), subdermal implants (Implanon), low-dose combined-oral contraceptive pills, progestogen-only injectables, progestogen-only pills, emergency contraceptive pills, male condoms,

female condoms, and depot medroxyprogesterone acetate (DMPA/Depo) and Net-EN – norethisterone enanthate.<sup>[14]</sup>

Despite the growing number of HIV positive populations in SA, people continue to engage in unsafe sexual behavior. The 2016 South African Demographic and Health survey revealed that little progress had been made by the country with regards to improving contraceptive prevalence rate.<sup>[13]</sup> Although more than 97% of sexually active SA women had knowledge of at least one contraceptive method in 2003, only half of the SA youth were using contraceptives in 2007.<sup>[15]</sup>

Even HIV positive women seem to have poor sexual behavior in South Africa, resulting in 220,000 unintended pregnancies in 2010.<sup>[16]</sup> While studies have been conducted on contraceptive use and sexual behavior, there seem to be changes to what is generally known regarding sexual behavior patterns of South African citizens. Despite the country's implementation of various intervention programs, there remains the unmet need for contraceptive use in South Africa, given the high number of unintended pregnancies.<sup>[17]</sup> For instance, there is less likelihood of contraceptive use among HIV positive women, those with multiple sexual partners, as well as those who were diagnosed with sexually transmitted infections (STI) in the past 12 months.<sup>[17]</sup> Issues related to poor access for HIV positive women have also been found to act as barriers to contraceptive use, leading to high unintended pregnancies.<sup>[18]</sup> This controversy is testament to the challenges faced by government efforts to improving contraceptive use and promoting responsible sexual behavior in South Africa, hence the study investigating factors influencing contraceptive use and sexual behavior in South Africa, is both timely and appropriate.

Most of the published systematic review articles mainly focus on adolescents and their choices of contraceptive use in SSA.<sup>[19–21]</sup> There is limited scoping reviews conducted with a specific focus on contraceptive use and sexual behavior in general population and with specific focus to SA. The main objective of this review was to map evidence on factors influencing contraceptive use and sexual behavior in SA over a period spanning from 1990 to 2018.

## 2. Methods

### 2.1. Design

We conducted a scoping review of published peer-reviewed and gray literature articles on the factors influencing contraceptive use and sexual behavior in SA. The protocol for this review was published apriori.<sup>[22]</sup> Scoping review studies allow researchers to review existing evidence of published, peer-reviewed journal articles and gray literature related to a specific research phenomenon to understand the current status of the knowledge related to a topic of interest. This scoping review included studies published between the years 1990 and 2018 because studies published prior to 1990 are unlikely to reflect the key aspects and changes pertaining to contraceptive use and sexual health behavior. More studies were conducted after 1990 after many interventions were implemented to address these public health challenges in the era of HIV/AIDS. These years were critical components of South African response to HIV/AIDS epidemic, contraception as well as sexual behavior. This study was guided by Arksey and O'Malley's (2005) scoping review framework.<sup>[23]</sup> We also followed the PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation.<sup>[24]</sup> This review also

**Table 1**  
**Framework for determining the eligibility of the research questions (PCC).**

Criteria	Determinants
Population	Women of childbearing age (15–49yr)
Concept	Contraceptive use and sexual behavior
Context	Sexual health

included the quality appraisal of included studies, which was recommended by Levac et al (2010) for scoping review projects.<sup>[25]</sup> The Population, Concept, and Context (PCC) framework was employed in this review to determine the eligibility of research question (Table 1). Studies were eligible if they reported evidence on one of the primary outcomes: knowledge and availability, relationship status, sexual debut, age difference, waiting hours, and nurse's attitudes measured at individual, partner's, household, community, and healthcare levels. Secondary outcomes were also extracted when they were reported in the included studies: pregnancy (unintended pregnancy), termination of pregnancy, sexually transmitted diseases, or infections.

## 2.2. Identification of the research question

Research question: what are the factors that influence contraceptive use and sexual behavior among women of reproductive age in SA?

## 2.3. Search strategy

This review utilized articles published as primary studies and gray literature presenting evidence on factors that influence contraceptive use and sexual behavior in women of reproductive age in SA. We searched for articles from the following databases: PubMed, American Doctoral Dissertations via EBSCO host, Union Catalogue of Theses and Dissertations (UCTD) and SA ePublications via SABINET Online and World Cat Dissertations, Theses via OCLC and Google Scholar. We also searched the Medical Research Council (MRC) and Human Sciences Research Council (HSRC) databases. We searched the World Health Organization (WHO) and governmental websites and statistics institutions for policies and guidelines on contraceptive use and sexual behavior. We included studies published from January 1990 to March 2018. We searched for eligible literature from the citations of the selected studies. We conducted databases search using the following keywords: contraceptive use, family planning, sexual behavior, HIV/AIDS, South Africa, pregnancy, abortions, maternal mortality. We used Boolean terms, such as "AND" and "OR" to separate keywords. We included the Medical Subject Headings (MeSH) terms in the keyword search. We conducted title screening from the databases and exported eligible articles to the Endnote library. The eligibility criteria for abstracts and full articles screening were conducted by the two independent reviewers (MH and SM).

## 2.4. Eligibility criteria

**2.4.1. Inclusion criteria.** These principles were used to determine the studies presenting evidence of the following criteria:

- Studies presenting evidence published between January 1990 and March 2018.
- Studies presenting evidence that were published in SA.

- Studies presenting evidence on women aged 15 to 49 years.
- Studies presenting evidence on contraceptive use.
- Studies presenting evidence on sexual behavior.

**2.4.2. Exclusion criteria.** Studies with the following characteristics were excluded.

- Studies published before 1990.
- Studies with no evidence on contraceptive use or sexual behavior.

## 2.5. Quality of evidence

To determine the quality of the selected studies, a Mixed Method Appraisal Tool (MMAT) version 2011, was adopted and piloted by the two independent reviewers (MH and SM). The MMAT tool was utilized to scrutinize the relevance of study aim, adequacy and methodology, study design, data collection, study selection, data analysis, presentation of findings, author's discussions, and conclusions. Each study was assigned an overall grade of high, moderate, or low risk of bias. The following criteria were followed: for qualitative and quantitative studies the score was a number of criteria met by each study divided by 4, with 25% indicating that at least one criterion was met by the study while 100% indicates that all criteria were met.<sup>[26]</sup> For the mixed methods studies, the score was 25% when one criterion was met, 50% when two criteria were met for a domain, 75% when three criteria were met for a domain, and 100% when all criteria were met for all domains.<sup>[26]</sup> Domains comprise of qualitative, quantitative, and mixed methods components. The gray literature articles were appraised using the Authority, Accuracy, Coverage, Objectivity, Date, Significance (AACODS) checklist form which is designed to enable evaluation and critical appraisal of gray literature.<sup>[27]</sup> An overall quality percentage score for each of the included studies was calculated and scores interpreted as low quality ( $\leq 50\%$ ), average quality (51–75%), and high-quality (76–100%).

## 2.6. Charting the data

In this review, we sorted the information of the selected studies according to the following categories: author and date, journal full reference, aims or research questions, study population, age, gender, percentage of women (i.e., participants), percentage of men (i.e., participants), geographic setting (i.e., rural/urban/semi-urban), study design (i.e., survey type), data analysis (i.e., methodological approach used in data analysis) and intervention, type of contraceptive. Information obtained from studies were further summarized as

- (a) most relevant finding (i.e., benefits of contraceptive use or better sexual behavior versus perceived risks),
- (b) most significant finding (i.e., reasons or factors for contraceptive use or vice versa), and
- (c) conclusions pertaining to the study.

All extracted information was mapped in data charting forms by the first author. Study types, such as quantitative, qualitative, mixed methods, and prospective studies were reflected in the charting form. Data charting form was continually updated with the latest information and it included the highlighting of the key aspects which were designed and piloted. Updating of the data charting form was conducted continuously.

### 2.7. Collating and summarizing the findings

For coding and analyzing of data from the selected articles, content analysis of the extracted data was conducted. We first compared across all quantitative studies how frequently different explanatory variables for contraceptive use and sexual behavior were used and how often these variables were found to represent a significant determinant. Qualitative information was organized in the form of the main themes identified and explored across the selected qualitative studies. The pathways framework suggested by Shaikh et al (2010) to differentiate between different levels to predictor variables was adopted for reporting findings.<sup>[28]</sup> This framework looks at levels, such as individual level (i.e., woman as a user), partner level, couple level, household and community level, and healthcare service level.<sup>[28]</sup>

### 2.8. Patient and public involvement

No patients and/or animal participants were involved in this review. Ethics approval and consent to participate was not applicable.

## 3. Results

As shown in Figure 1, a total of 2030 articles were identified by our search criteria for title screening. After the title screening exercise, 52 articles were exported to Endnote library for further screening, while five articles were retrieved from other sources. This left us with 57 articles in our Endnote library. As many as 1979 articles were removed at title screening stage because they formed part of our exclusion criteria (i.e., those with no evidence on contraceptive use or sexual behavior, those published before 1990 and those conducted outside of SA). After removing duplicates, 51 articles remained and these articles were screened for abstracts, while 24 were excluded. Of the remaining 27 articles, six were excluded for the following reasons: three studies were conducted outside of SA, one study was an opinion paper, and another study was conducted only among male participants. The last excluded study was conducted among the minors below the age of 15 years. Only 21 studies met our inclusion criteria and were included in content analyses and quality assessment stage.

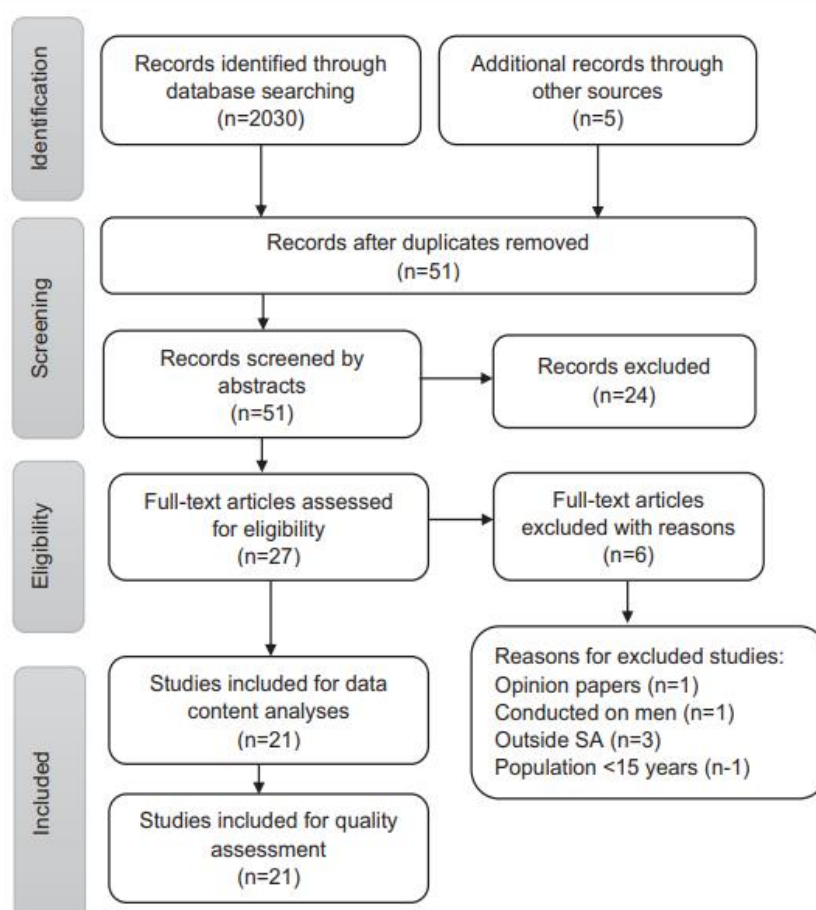


Figure 1. PRISMA flow diagram of the study selection process.

### 3.1. Characteristics of included studies

The PCC framework is presented in Table 1. The detailed characteristics of the included studies are shown in Table 2. All the eligible studies were published between the year January 1990 and March 2018. Fourteen studies were quantitative,<sup>[14,29–41]</sup> four were qualitative,<sup>[42–45]</sup> two were mixed methods,<sup>[46,47]</sup> and only one was a prospective study<sup>[48]</sup> (Fig. 2). At least eight provinces of SA had one or more studies conducted in each, with KwaZulu-Natal having the highest number (n=6) of studies. The other provinces comprised of Western Cape (n=2), Eastern Cape (n=2), Gauteng (n=2), and nationally representative studies (n=5). Provinces such as Limpopo, North West, Mpumalanga, and Free State had one each study. The total sample size from the included studies was 38,073 participants. The female participants were dominant (N=35,641) as compared to male (N=2432) participants. The majority of studies (81%) were published from 2010 onwards. Regarding geographical distribution, eight

studies were conducted in rural areas, five in urban areas, and the remainder (n=8) in mixed settings.

### 3.2. Quality of evidence from included studies

Of the 21 included studies which underwent methodological quality assessment, 13 scored the highest quality score of 100%.<sup>[29,30,33–35,37–41,45–47]</sup> Four studies scored a quality score of between 83% and 94%.<sup>[14,32,43,44]</sup> The remaining 4 studies scored a quality score between 67% and 71%.<sup>[31,36,42,48]</sup> The overall evidence was considered to have minimal risk of bias.

### 3.3. Study findings

The following sections report on the combined evidence gathered from the included studies, in a pathways framework to differentiate along with the following levels: individual woman level (user), partner's involvement, household and community involvement, and healthcare involvement level.

**Table 2**  
Characteristics of included studies.

Author and year	Study aim	Setting	Population	Sample size	Age group	Research method	Quality score
Buga et al (1996)	To investigate the baseline patterns of sexual maturation, sexual behavior, contraceptive practice, and reproductive health among adolescents.	Rural	Female and male	1072 female and 903 male	13–20 yr (extracted 15–20 yr)	Quantitative	100%
Chersich et al (2017)	To assess contraception coverage in South Africa (SA) and identify underserved populations and aspects of programming that require strengthening.	Rural and urban	Female	6296	15–49 yr	Quantitative	100%
Crosby (2006)	To determine the effect of family structure on the sexual behavior choices of female adolescents in South Africa.	Semi-urban	Female	2373	15–19 yr	Quantitative	71%
De Klerk (2011)	To identify the factors that influence the use of contraceptive methods among 16 yr old adolescents attending high schools in George, South Africa.	Rural	Female and male	103 female and 81 male	16 yr	Quantitative	94%
Dubbink et al (2016)	To describe sexual behavior reported by women living in rural South Africa in relation to age, ethnicity, and HIV status.	Rural	Female	570	18–49 yr	Quantitative	100%
Hoque et al (2012)	To determine the knowledge and patterns of contraceptive usage among university students at Mangosuthu University of Technology (MUT), KwaZulu-Natal, South Africa.	Urban	Female and male	391 female and 361 male	18 yr and older	Quantitative	100%
Kalda et al (2010)	To investigate whether the prevalence of contraceptive use and method preferences varied by HIV status and receipt of highly active antiretroviral therapy (HAART) among women in Soweto, South Africa.	Semi-urban	Female	563	18–44 yr	Quantitative	100%
Kistnasamy et al (2009)	To assess the knowledge and use of emergency contraception (EC) against the background of current sexual practices among a multi-racial student population at the Durban University of Technology (DUT) in the	Urban	Female and male	162	21–25 yr	Mixed methods	100%

(continued)

**Table 2**  
(continued).

Author and year	Study aim	Setting	Population	Sample size	Age group	Research method	Quality score
Kunene (2013)	province of KwaZulu-Natal, South Africa. To investigate factors influencing the use of emergency contraceptive among young people attending a university in Durban, South Africa.	Urban	Female	20	18–25 yr	Qualitative	71%
Marlow et al (2015)	To examine contraceptive use and dual protection in the post-partum period in a Prevention of Mother to Child Transmission (PMTCT) population in Durban, South Africa and whether it varied by HIV status.	Urban	Female	821	15–49 yr	Prospective study	67%
Marlow (2012)	To examine whether knowledge of HIV status affects women's modern contraceptive use post-partum.	Semi-urban	Female	846	18–49 yr	Quantitative	71%
Lince-Deroche et al (2013)	To describe the potential and pitfalls for contraceptive services in South Africa.	Urban and rural	Female and male	n/a	15–49 yr	Quantitative	83%
Ndinda et al (2017)	To understand the dynamics surrounding access to and use of family planning services in peri-urban and rural areas of KwaZulu-Natal.	Rural	Female and male	91 female and 46 male	15–49 yr	Mixed methods	100%
Osuafor et al (2017)	To examine the pattern of method use among women in steady relationships.	Rural	Female	568	15–49 yr	Qualitative	83%
Peltzer et al (2013)	To assess sexual HIV risk behavior and its associated factors among pregnant women in Mpumalanga, South Africa.	Rural	Female	1502	18–47 yr	Quantitative	100%
Seutlwadi et al (2012)	To investigate contraceptive use and associated factors among South African youth aged 18 to 24 yr who reported having had sexual intercourse.	Rural and urban	Female and male	3123	18–24 yr	Quantitative	100%
Smit et al (2002)	To determine the extent to which condoms are used, reasons for contraceptive method choice, and unmet contraceptive need.	Rural	Female	848	15–49 yr	Quantitative	83%
Stephenson et al (2008)	To examine community and health facility influences on the method choices of women aged 15 to 49 who lived in the Eastern Cape.	Rural	Female	1165	15–49 yr	Quantitative	100%
Titus (2017)	To identify socio-cultural factors that influence condom use intentions and behaviors among migrant youth in the Western Cape, South Africa.	Urban and rural	Female and male	10 female and 10 male	20–25 yr	Qualitative	100%
Van der Westhuizen et al (2016)	To determine the knowledge, in terms of quantity and quality, about the IUCD as a method of contraception among pregnant patients attending the High Risk Obstetric Clinic at Pelonomi Tertiary Hospital in Bloemfontein, SA.	Urban/semi-urban	Female	193	18–49 yr	Quantitative	100%
Worku (2014)	To identify and quantify key factors that affect adverse pregnancy outcomes and the utilization of modern contraceptives.	Urban	Female	8497	15–49 yr	Quantitative	100%

n/a=not applicable.



Figure 2. Study designs of included studies (N=21).

**3.3.1. Individual woman level.** Age of the woman was explored in five studies.<sup>[28,31,40,44,48]</sup> Two of these studies were conducted in rural settings, one in an urban setting and another two in both rural and urban settings. Four of these studies were quantitative, while one was qualitative. Some studies revealed age as a strong determinant of contraceptive use and sexual behavior. Some studies showed low levels of knowledge of modern contraceptive method among adolescents.<sup>[29,49]</sup> Only half of the adolescent girls surveyed could list at least one modern contraceptive.<sup>[29]</sup> The sexual debut for the majority of adolescent women has been found to be at 15 years, with the average ages of pregnancy being 19 years in other studies.<sup>[32,41]</sup> The majority of the migrant youth, however, debut at age 18 years due to higher educational aspirations.<sup>[45]</sup> Only about a quarter (24%) of sexually experienced women in the adolescent age group had ever used contraceptives, while just half had ever heard of emergency contraception.<sup>[29]</sup> Buga's (1996) article further revealed that, despite the poor knowledge of modern contraceptive methods among adolescent women in SA, the fear of attending family clinic services and disapproval by male partners also contribute to this age group's poor contraceptive use.<sup>[29]</sup> In general, more adolescents heard about contraception for the first time at school rather than at home.<sup>[32]</sup>

Knowledge of a contraceptive method was explored in six studies.<sup>[31,33,39,43,45,47]</sup> Two each of these studies were conducted in rural, urban, and mixed settings. Four of these studies were quantitative, one each was mixed methods, and a prospective study. These studies revealed knowledge of a contraceptive method as a strong determinant of contraceptive use. Despite the lack of adequate knowledge of all contraceptive method among adolescent girls, women in general, have high knowledge of at least one contraceptive method available in SA. The injectable contraceptive method and the condom appeared to be the most used form of contraception. At least six studies found injectable contraceptives to be the most commonly used method of contraception.<sup>[32,36,40,44,48,50]</sup> As high as 95%, 88%, and 76% of respondents knew condoms, the contraceptive pills and the injectable contraceptives, respectively.<sup>[32]</sup> However, injectable contraceptive method was reported to have side effects by some women, including spotting or heavy bleeding.<sup>[36]</sup>

Despite the high knowledge of a contraceptive method among women of reproductive age in SA a study by De Klerk (2015) revealed that there remains poor knowledge of intrauterine contraceptive device (IUD) and the emergency contraceptive pill.<sup>[32]</sup> A study conducted at the KwaZulu-Natal tertiary institution also revealed that the majority of students were not

familiar with the most effective time-frames for taking emergency contraceptive pills nor with the side effects associated with its use.<sup>[46]</sup>

**3.3.2. Partner's involvement.** The partner's contribution to contraceptive use and sexual behavior was examined in eight studies.<sup>[27,32,33,35–37,44,46]</sup> Four of these studies were conducted in rural settings, two in urban settings, and two in mixed settings. Five of these studies were quantitative, one qualitative, one mixed methods, and one was a prospective study. In terms of sexual health behavior among women of reproductive age, condom use peaks at the beginning of relationships or with casual multiple partners; however, this trend decreases with an increase in relationships duration.<sup>[45]</sup> Women who do not use condoms are usually in a long term relationship.<sup>[45]</sup> This study further indicated that inconsistent use of condoms was highlighted by most participants and was based on relationship status, pregnancy prevention, and trust dynamics in the partnership.<sup>[45]</sup>

However, the use of condoms at first sexual debut was very low among adolescents due to being inexperienced and unplanned moments of sexual intercourse.<sup>[45]</sup> The decision-making process in the first sexual activity is largely made by the male partner.<sup>[45]</sup> This was supported by two quantitative, one qualitative, and one mixed method studies, of which two were conducted in mixed settings (i.e., both rural and urban) and one in each setting.<sup>[34,36,45,47]</sup> These studies revealed that partners are often opposed to condom use and this can negatively impact on a woman's ability to negotiate sex and condom use because it is assumed to lessen the pleasure of sex, intimacy, and trust.<sup>[34,36,45,47]</sup>

Male partners are usually reported as perpetrators of physical partner violence, psychological distress, and having concurrent partners, which in turn is associated with sexual risk behavior.<sup>[27]</sup> The age difference as a determinant for both sexual behavior and non-contraceptive use was also revealed in a quantitative study conducted in a rural setting.<sup>[33]</sup> This study revealed that women who had sex with a partner whose age difference was at least 10 years or more, were less likely to use a condom.<sup>[33]</sup> Alcohol use was found to be associated with multiple sexual partners in another rural-based quantitative study.<sup>[37]</sup> The situation becomes worse because not knowing partner's HIV status remained associated with significantly lower odds of condom use at last sex.<sup>[38]</sup>

Further findings from Seutlwadi et al (2012) indicated that having talked with the partner about condoms in the past 12 months were strong determinants of contraceptive use, while not having been pregnant, being HIV negative, not having had an STI in the past 12 months and not having had early sexual debut (below 15 years of age) were associated with current contraceptive use.<sup>[38]</sup> Timely notification of HIV status coupled with prevention messages can contribute to reductions in sexual risk behaviors. This study further revealed that although 79.1% of females reported having had unintended pregnancies, they were not motivated to use contraceptives. Contrary to what is generally known, being HIV positive, having been diagnosed with an STI in the past 12 months, having concurrent sexual partners and early sexual debut have been strongly associated with low contraceptive use.<sup>[38]</sup>

**3.3.3. Household and community involvement.** Determinants grouped at a household or community level such as education and employment were examined in five studies.<sup>[32,38,39,43,46]</sup>

Three of these studies were conducted in rural areas, one in an urban setting, and another one was conducted in mixed settings (i.e., both urban and rural areas). Three of these studies were conducted using a quantitative research method, while one each was qualitative and a mixed method, respectively. These studies found level of education and employment status to be significant predictors of contraceptive use.<sup>[32,38,39,43,46]</sup> A study by Osafor et al (2017) revealed that employed women were three times more likely to report dual contraceptive methods use compared to those who were unemployed.<sup>[43]</sup> Poor socioeconomic status limits women's access to family planning services (e.g., transport costs). Due to poor socioeconomic status, some women end up depending on their partners for financial support. This, combined with other aspects of gender inequality weakens women's bargaining power when it comes to negotiating condom use.<sup>[47]</sup> However, women who worked outside the home were more likely than those who were not employed to be using the pill instead of the injection, while women living in wealthier households were less likely than those in poorer households to be using a more permanent method in lieu of the injection.<sup>[39]</sup>

Educated women are known to possess better bargaining powers as far as contraceptive use is concerned. The level of education and employment status have been shown to influence contraceptive use.<sup>[46]</sup> Peer pressure and living away from family support structures may also contribute to increased sexual activity, especially among younger women.<sup>[46]</sup>

**3.3.4. Healthcare involvement.** Determinants grouped at a *healthcare level* such as availability of contraceptives, long waiting hours, and nurses' attitudes were examined in five studies.<sup>[14,34,36,42,49]</sup> Three of these studies were conducted in urban areas, one in urban, and another one was conducted in both urban and a rural area.<sup>[14,34,36,42,49]</sup> Three of these studies were conducted using a quantitative research method and one each was qualitative, and mixed methods. Some of these studies found non-availability of contraceptives, long waiting hours, and nurses' attitudes at clinics to be negatively associated with contraceptive use.<sup>[42,49]</sup> A study by Hoque et al (2012) found that more than 60% of women reported the unavailability of contraceptives as the reason for poor usage of contraception.<sup>[34]</sup> The SA public health clinics are known for being understaffed and overloaded with patients. This was evident in another study which revealed that due to overcrowding and long queues in clinics, patients are forced to wait for long periods of time (hours) and this sometimes lead to women being afraid to ask the nurses family planning-related questions due to many patients needing services.<sup>[36]</sup> Nonetheless, when women do find a rare opportunity of asking questions related to family planning, nurses usually promote hormonal contraceptives for family planning and condoms for STI prevention.<sup>[36]</sup>

Nurses can also influence method choice and/or continuation of methods – intentionally or otherwise – through sub-standard or biased counseling.<sup>[14]</sup> Another quantitative study conducted in both urban and rural settings found that counseling is often limited to few contraceptive methods (usually one or two), instead of the entire methods available at the facility.<sup>[14]</sup> This may also be due to the limited available contraceptive methods or nurses pushing the queue, hence limiting the time spent with each patient. At least two studies from both urban and rural settings (one qualitative and another one conducted using the quantitative method) reiterated that women generally encounter negative attitudes from nurses.<sup>[14,42]</sup> Such discrimination by healthcare

providers is usually targeted to patients that are either younger (i.e., adolescents) or those that are infected with HIV.<sup>[14]</sup>

#### 4. Discussion

This study aimed at mapping evidence on the factors affecting contraceptive use and sexual behavior among women of reproductive age in SA, over a period spanning from 1990 to 2018. Free access to contraception and safe sexual behavior has become a key priority for the SA government.

This review showed that healthcare workers' negative attitude creates a barrier to adolescent girls accessing contraceptive services.<sup>[51]</sup> Younger women may likely be discouraged from seeking family planning services in public health clinics, for fear of being judged and/or discouraged from receiving their preferred contraceptive services. Similar findings were also shown in other settings where healthcare providers were found to be advising adolescents to abstain from sex in studies conducted in South Africa, Kenya, and Zambia.<sup>[52,53]</sup>

As found in this review, health systems challenges, such as poor working conditions and contraceptives stock-outs may compromise the provision of quality healthcare services. It is known in South Africa, that public health clinics are understaffed and overloaded with patients, thereby leading to long queues. These challenges may likely discourage women from seeking detailed family planning-related information as well limiting healthcare workers from communicating effectively with their patients.<sup>[54]</sup> While this is the case, lack of training among some nurses in public health clinics remain an obvious barrier to the provision of quality family planning services.<sup>[55,56]</sup>

Many women largely depend on their male partners for financial support due to poor socioeconomic status in SA. Such dependency is connected to weakened women's bargaining power for using condoms during sexual intercourse. The situation becomes even worse when women are less educated, unemployed, and residing in traditional rural areas. This also exposes women to new HIV infections given the poor HIV testing uptake among men.<sup>[57,58]</sup>

The findings of this study are consistent with the findings of other studies conducted elsewhere in Africa.<sup>[59,60]</sup> Similar findings indicated that demographic and socioeconomic factors, such as age, race, employment status, education, and geographical location are associated with contraceptive use.<sup>[39,61]</sup> The dominance of men over their women partners remain a strong predictor of contraceptive use.<sup>[62]</sup> While this is the case, the situation becomes even worse when women are uneducated, unemployed, and come from traditional rural settings. This is precisely because they possess very little bargaining power when it comes to negotiating safe sex with their partners and very few have control over their partner's sexual behavior.<sup>[63]</sup>

The knowledge of a contraceptive method is high among women in general. This review showed that the injectable contraceptive method was mostly used by women of reproductive age. There also remains a gap in knowledge particularly with regards to appreciating the benefits against the side effects.<sup>[46]</sup> Further studies have shown that the main reasons for implant removal were side effects, such as intolerable bleeding for two-thirds of removers as well as headaches in almost a half,<sup>[64]</sup> while nurses' low confidence in providing implant services effectively,<sup>[65]</sup> may also act as a barrier toward women accessing this contraceptive method. It has also been revealed that a condom usually lessens the pleasure of sex, intimacy, and trust, while

concerns over the pains resulting from using a condom during sexual intercourse were also raised.<sup>[66]</sup>

#### 4.1. Strengths

We maintained quality measures by conducting quality appraisals of the peer-reviewed journal articles and gray literature. We further applied the eligibility criteria rigorously as part of extracting only the relevant information. The quality of the included studies was conducted for both peer-reviewed and gray articles. All included studies underwent quality appraisal using an approved tool, the MMAT,<sup>[67]</sup> and the ACCODS tool for gray literature studies to assess for bias.<sup>[27]</sup> Our full article screening tool was piloted to ensure the reliability of included studies.

#### 4.2. Limitations

There is a likelihood that this scoping review did not identify all relevant studies despite all the efforts to do so. Despite the generally relevant keywords/terms used while searching for relevant articles in different databases, other terms may also exist as a reference to contraceptive use and sexual behavior. As such, those may have been missed. Although our title screening included a wide range of databases, the overall search strategy may have been biased toward public health and social sciences. Searching other bibliographic databases may have yielded additional published scoping reviews. While our review included any article published in any language, our search was conducted using only English terms. Despite these limitations, we believe that our search strategy was comprehensive in reviewing the public health and social sciences literature on contraceptive use and sexual behavior in SA. Furthermore, we believe that we managed to address the study aim, which was to determine factors that influence contraceptive use and sexual behavior among women of reproductive age in SA.

#### 4.3. Recommendations for future research

More primary studies are necessary to further investigate factors related to contraceptive use and sexual behavior, particularly among key populations, mainly due to high HIV infection rates. With the possible introduction of male contraceptive pills, it would be important to determine the levels of male contraceptive users while investigating the effects on users as well as factors contributing to continuity or lack thereof. The question also remains whether or not the sexual behavior of South Africans is becoming riskier over time.

#### 4.4. Implications for practice

Integrating family planning services with the delivery of other general services within a clinic would play a positive role in reducing the stigma experienced by younger women and those who are HIV positive, as well as reducing long queues. Government interventions aimed at educating youth about the benefits of contraceptive use and the risks involved when one is exposed to unprotected sexual activities should be integrated with school-health programs to improve knowledge and uptake of contraception among school-going sexually active women. School-based programs should be designed not only to be driven by teachers but also by parents as well. Peer educators should also

be used as pioneers to promote reproductive health education among adolescents and school-going children.

#### 5. Conclusion

This review revealed a gap which affects the uptake of contraceptive methods in SA. The factors associated with poor contraceptive use and sexual behavior and the reasons provided by women to explain their challenges regarding contraceptive use and sexual behavior appear to be largely similar across different settings and provinces in SA. Therefore, there is a need for improving educational programs aimed at transferring knowledge to both women and their male counterparts, while improving public health systems. We, therefore, conclude that contraceptive use and sexual health behavior leave room for improvement in SA. Programs aimed at improving contraceptive use and sexual behavior should mainly focus on adolescents, uneducated women, those who reside in rural areas, as well as those who are unemployed. This review further revealed that partners can either support or hamper women's decisions on sexual activity and contraceptive use, hence they also need to be included in the interventions.

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#### Author contributions

MH conceptualized and designed the study, as well as prepared the initial draft. KH and TPM-T reviewed the study. SM contributed to the abstract and full article screening. All the authors reviewed the draft and approved the final version of the manuscript.

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#### References

- [1] Balkus JE, Brown ER, Hillier SL, et al. Oral and injectable contraceptive use and HIV acquisition risk among women in four African countries: a secondary analysis of data from a microbicide trial. *Contraception* 2016;93:25–31.
- [2] Ackermann L, Klerk GWd. Social factors that make South African women vulnerable to HIV infection. *Health Care Women Int* 2002;23:163–72.
- [3] World Health Organization . Unsafe Abortion Incidence and Mortality Global and Regional Levels in 2008 and Trends During 1990–2008, Information Sheet. Geneva: World Health Organization; 2012.
- [4] Mbelle N, Serswe G, Sifunda S, et al. HIV and AIDS related knowledge, attitudes and behaviours of students and staff at South Africa's technical and vocational education and training colleges. *HEAIDS* 2014.
- [5] Cates W. Family planning: the essential link to achieving all eight millennium development goals. *PubMed* 2010;81:460–1.
- [6] Stover J, Ross J. How increased contraceptive use has reduced maternal mortality. *Matern Child Health J* 2010;14:687–95.
- [7] WHO . Global Health Estimates 2015: Deaths by Cause, Age, Sex, By Country and By Region, 2000–2015. Geneva. 2016.
- [8] UNDP . Sustainable Development Goals. 2015.
- [9] Africa SS. Millennium Development Goals 2013 Country Report. 2013.
- [10] Development SAdoS . National Adolescent Sexual and Reproductive Health and Rights Framework Strategy 2014–2019, Pretoria. 2015.
- [11] Health SANDo . Strategic Plan for Maternal, Newborn, Child and Women's Health (MNCWH) and Nutrition in South Africa 2012–2016. 2012.
- [12] National Health Act, 61 of 2003; 2004.

- [13] Massyn N, Padarath A, Peer N, et al. District Health Barometer 2016/17. Durban: Health Systems Trust; 2017.
- [14] Lince-Deroche N, Pleaner M, Morroni C, et al. Achieving universal access to sexual and reproductive health services: The potential and pitfalls for contraceptive services in South Africa. *S Afr Health Rev* 2016;2016:95–108.
- [15] Health Do . South Africa's National Strategic Plan for HIV, TB and STIs 2017–2022. 2017.
- [16] Panday S, Makiwane M, Ranchod C, et al. Teenage pregnancy in South Africa - with a specific focus on school-going learners. Child, Youth, Family and Social Development, Human Sciences Research Council. Pretoria: Department of Basic Education; 2009.
- [17] Seutlwadi L, Peltzer K, Mchunu G, et al. Contraceptive use and associated factors among South African youth (18–24 years): a population-based survey. *S Afr J Obstet Gynaecol* 2012;18.
- [18] Schwartz SR, Rees H, Mehta S, et al. High incidence of unplanned pregnancy after antiretroviral therapy initiation: findings from a prospective cohort study in South Africa. *PLoS One* 2012;7:e36039.
- [19] Fearon E, Wiggins RD, Pettifor AE, et al. Is the sexual behaviour of young people in sub-Saharan Africa influenced by their peers? A systematic review. *Soc Sci Med* 2015;146:62–74.
- [20] Toska E, Pantelic M, Meinck F, et al. Sex in the shadow of HIV: a systematic review of prevalence, risk factors, and interventions to reduce sexual risk-taking among HIV-positive adolescents and youth in sub-Saharan Africa. *PLoS One* 2017;12.
- [21] Williamson LM, Parkes A, Wight D, et al. Limits to modern contraceptive use among young women in developing countries: a systematic review of qualitative research. *Reprod Health* 2009;6.
- [22] Hlongwa M, Mashamba-Thompson T, Hlongwana K. Evidence on factors influencing contraceptive use and sexual behavior in South Africa: a systematic scoping review protocol. *Medicine* 2018;97:1–5.
- [23] Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol* 2005;8:19–32.
- [24] Tricco AC, Lillie E, Zarin W, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann Intern Med* 2018;169:467–73.
- [25] Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. *Implement Sci* 2010;5:69.
- [26] Pluye P, Robert E, Cargo M, et al. Proposal: A Mixed Methods Appraisal Tool for Systematic Mixed Studies Reviews. 2011.
- [27] Burls A. What is critical appraisal? Bandyolier. 2009.
- [28] Shaikh BT. Unmet need for family planning in Pakistan. *PDHS* 2006–2007. It's time to re-examine a Déjà Vu. *Open Access J Contracept* 2010;113.
- [29] Buga GAB, Amoko DHA, Ncayiyana DJ. Sexual behaviour, contraceptive practice and reproductive health among school adolescents in rural Transkei. *S Afr Med J* 1996;86:523–7.
- [30] Chersich M, Wabiri N, Risher K, et al. Contraception coverage and methods used among women in South Africa: a national household survey. *S Afr Med J* 2017;107:307–14.
- [31] Crosby LA. The Effect of Family Structure on Sexual Behaviour Choices of Female Adolescents in South Africa. Gauteng: Wits University; 2006.
- [32] De Klerk E. Factors Influencing the Use of Contraceptive Methods Amongst Adolescents in George, South Africa. Western Cape: University of Stellenbosch; 2011.
- [33] Dubbink JH, van der Eem L, McIntyre JA, et al. Sexual behaviour of women in rural South Africa: a descriptive study. *BMC Public Health* 2016;16.
- [34] Hoque M, Ghuman S. Contraceptive practices in the era of HIV/AIDS among university students in KwaZulu-Natal, South Africa. *SAHARA J: Journal of Social Aspects of HIV/AIDS Research Alliance* 2012;9:15–9.
- [35] Kaida A, Laher F, Strathdee SA, et al. Contraceptive use and method preference among women in Soweto, South Africa: the influence of expanding access to HIV care and treatment services. *PLoS One* 2010;5.
- [36] Marlow HM. Unwanted Fertility Experience, HIV Status and Postpartum Contraceptive Use in a PMTCT Population in Durban, South Africa. Durban: University of North Carolina; 2012.
- [37] Peltzer K, Mlambo G. Sexual HIV risk behaviour and associated factors among pregnant women in Mpumalanga, South Africa. *BMC Pregnancy Childbirth* 2013;13.
- [38] Seutlwadi L, Peltzer K, Mchunu G. Contraceptive use and associated factors among South African youth (18–24 years): a population-based survey. *S Afr J Obstet Gynaecol* 2012;8:43–7.
- [39] Stephenson R, Beke A, Tshibangu D. Community and health facility influences on contraceptive method choice in the Eastern Cape, South Africa. *Int Fam Plan Perspect* 2008;34:62–70.
- [40] Van der Westhuizen N, Hanekom G. Patient knowledge about and intention to use the intrauterine contraceptive device (IUCD) at a tertiary-level hospital. *S Afr J Obstet Gynaecol* 2016;22:42–6.
- [41] Worku Z. Differential factors of contraceptive use and adverse outcomes of pregnancy in women with ages 15 to 49 in Pretoria, South Africa. *J Data Anal Inf Process* 2014;2:19–31.
- [42] Kunene HS. Factors Influencing Emergency Contraceptive Use: Perspectives of Students in Durban, South Africa. Durban: University of KwaZulu-Natal; 2013.
- [43] Osafor GN, Maputle S. Dual protection and contraceptive method use among women in heterosexual relationships in Mahikeng, South Africa. *S Afr J Rep Health* 2017;21:64.
- [44] Smit J, McFadyen L, Harrison A, et al. Where is the condom? Contraceptive practice in a rural district of South Africa. *Afr J Rep Health* 2002;6:71–8.
- [45] Titus RR. An Exploration of the Socio-cultural Factors Influencing Condom Use Intentions and Behaviours of Migrant Youth in South Africa. Western Cape: University of Cape Town; 2017.
- [46] Kistnasamy EJ, Reddy P, Jordaan J. An evaluation of the knowledge, attitude and practices of South African university students regarding the use of emergency contraception and of art as an advocacy tool, South African Family Practice. *S Afr Fam Pract* 2009;51:423–6.
- [47] Ndinda C, Ndhlovu T, Khalema N. Conceptions of contraceptive use in rural KwaZulu-Natal, South Africa: lessons for programming. *Int J Environ Res Public Health* 2017;14.
- [48] Marlow HM, Maman S, Moodley D, et al. HIV status and post-partum contraceptive use in an antenatal population in Durban, South Africa. *Contraception* 2015;91:39–43.
- [49] Chersich MF, Wabiri N, Risher K, et al. Contraception coverage and methods used among women in South Africa: a national household survey. *S Afr Med J* 2017;107:307–14.
- [50] Hognert H, Skjeldestad FE, Gemzell-Danielsson K, et al. High birth rates despite easy access to contraception and abortion: a cross-sectional study. *AOGS Acta Obstet Gynecol Scand* 2017;96:1414–22.
- [51] Schwandt HM, Speizer IS, M.C. Contraceptive service provider imposed restrictions to contraceptive access in urban Nigeria. *BMC Health Serv Res* 2017;17:1–9.
- [52] Wood K, Jewkes R. Blood blockages and scolding nurses: barriers to adolescent contraceptive use in South Africa. *Reprod Health Matters* 2006;14:109–18.
- [53] Wardenius LU, Fazelid EA, Chishimba PN, et al. Nurse-midwives' attitudes towards adolescent sexual and reproductive health needs in Kenya and Zambia. *Reprod Health Matters* 2006;14.
- [54] H.M.M. HIV status and post-partum contraceptive use in an antenatal population in Durban, South Africa. *Contraception* 2015;91:39–43.
- [55] Mugisha JF, H.R. Provider perspectives on barriers to family planning quality in Uganda: a qualitative study. *J Fam Plann Reprod Health Care* 2008;34:37–41.
- [56] Nalwadda G, Mirembe F, Tumwesigye NM, et al. Constraints and prospects for contraceptive service provision to young people in Uganda: providers' perspectives. *BMC Health Serv Res* 2011;11.
- [57] Hlongwa M, Mashamba-Thompson T, Makhunga S, et al. Mapping evidence of intervention strategies to improving men's uptake to HIV testing services in sub-Saharan Africa: a systematic scoping review. *BMC Infect Dis* 2019;19:1–3.
- [58] Hlongwa M, Mashamba-Thompson T, Makhunga S, et al. Men's perspectives on HIV self-testing in sub-Saharan Africa: a systematic review and meta-synthesis. *BMC Public Health* 2020;20:66.
- [59] Blackstone SR, Nwaozuru U, Iwelunmor J. Factors influencing contraceptive use in sub-Saharan Africa: a systematic review. *Int Q Commun Health Educ* 2017;37:79–91.
- [60] Somba MJ, Mbonile M, Obure J, et al. Sexual behaviour, contraceptive knowledge and use among female undergraduates' students of Muhimbili and Dar es Salaam Universities, Tanzania: a cross-sectional study. *BMC Women's Health* 2014;14:94.
- [61] Bureau USC . Contraceptive Use and Fertility. 2010.
- [62] Peer N, Morojele N. Factors associated with contraceptive use in a rural area in Western Cape Province. *S Afr Med J* 2013;103.
- [63] Ackermann L, de K. Social factors that make South African women vulnerable to HIV infection. *Health Care Women Int* 2002;23:163–72.

- [64] Pillay D, Chersich M, Morroni C, et al. User perspectives on Implanon NXT in South Africa: a survey of 12 public-sector facilities. *S Afr Med J* 2017;107:1–7.
- [65] Adeagbo O, Mullick S, Pillay D, et al. Uptake and early removals of Implanon NXT in South Africa: perceptions and attitudes of healthcare workers. *S Afr Med J* 2017;107:1–5.
- [66] Okpokumoku SE, Nwajei SD, Nwose EU. Sexual behaviour, knowledge and use of contraceptives among undergraduate students. *J Health Sci Res* 2017;2:10–7.
- [67] Pluye P, Robert E, Cargo M, et al. *Proposal: A Mixed Methods Appraisal Tool for Systematic Mixed Studies Reviews*. Montréal: McGill University; 2011. 1–8.

## **Chapter Four: Overall Methodology**

This chapter begins by reiterating the aim, objectives, and the research hypothesis, and subsequently provides detailed information on the study setting, study design, study population, as well as the sample size and description of the study variables. The chapter further elaborates on techniques used to manage and analyse the data. The last section of the chapter highlights ethical issues pertaining to the study.

Firstly, the aim of the study was to examine the factors that influence contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, KwaZulu-Natal province, South Africa, both from a user (women of reproductive age visiting selected healthcare facilities for any services during data collection period) and provider perspectives (nurses working in the selected health facilities). To achieve this aim, the study set the following objectives:

1. To map evidence on factors influencing contraceptive use and sexual behaviour in South Africa through a systematic scoping review.
2. To determine the proportion of women of reproductive age using contraceptives in Umlazi Township, KwaZulu-Natal, South Africa.
3. To examine women's knowledge of different contraceptive methods in Umlazi Township, KwaZulu-Natal province, South Africa.
4. To determine contraceptive methods used by women in Umlazi Township, KwaZulu-Natal province, South Africa.
5. To identify factors influencing contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, both from a user and provider perspective.
6. To explore the experiences of women of reproductive age regarding contraceptive use and risky sexual behaviours in Umlazi Township, South Africa.

### **Research Hypothesis**

Using the adapted Socio-Ecological Model (SEM), this study hypothesised that multilevel factors at intrapersonal, interpersonal, community and societal levels (1), are influencing factors linked to contraceptive use and sexual behaviour, among women of reproductive in Umlazi Township, KwaZulu-Natal, South Africa.

## **Study Setting**

The study was conducted in Umlazi Township, which is the second most populated township in South Africa, with an estimated population of more than half a million (1). The township falls under the eThekweni Metro, which has the highest HIV prevalence in South Africa (2). Umlazi Township is located in the south-west of the city of Durban, on the east coast of KwaZulu-Natal province. The Umlazi Township is the most densely populated part of the South Service Area, with the township being the second most densely populated township in the country, where 16% of the eThekweni Municipality's population resides (2). The township has only one hospital (Prince Mshiyeni Memorial Hospital), and ten primary health facilities, with no community health centre or district hospital. The KwaZulu-Natal province is located in the south-eastern part of South Africa. KwaZulu-Natal is the second most populated province in South Africa, with 10.27 million people, and contributes to more than 19% of the country's population (3). The province has a higher illiteracy rate (21.8%) than the national rate (19.1%) for persons aged 15 years and older (1). The population is predominantly poor, utilising public health services, with an unemployment rate of over 30% in the last quarter of 2020 (4).

## **Study Design**

A mixed methods approach was used to conduct this study, which included data collection through quantitative and qualitative methods. Quantitative data was collected from November 2018 to April 2019, with a qualitative component conducted in October 2021. Objectives two to five were addressed through quantitative research methods, employing an analytic cross-sectional design. In this design, standardised questionnaires were distributed to participants. Objective six was addressed through the use of an exploratory qualitative design, in which in-depth interviews were conducted with the participants. The qualitative study sought to elicit rich data in order to gain an in-depth understanding of women's experiences of contraceptive use.

## **Study population**

The population for this study included women of reproductive age (18-49 years) residing in Umlazi Township, which is part of eThekweni Metro in KwaZulu-Natal province. Women who participated in the study were identified using the following inclusion and exclusion criteria:

### **Inclusion criteria**

- Sexually active women of reproductive age (18-49 years) attending Primary Healthcare Centres (i.e. clinics).
- Women residing in Umlazi Township and visiting the health care facilities for any services rendered, at the time of data collection.
- Healthcare providers (i.e. nurses) in the respective clinics.

### **Exclusion criteria**

- Women aged younger than 18 years at the time of data collection.
- Women aged 50 years and older at the time of data collection.
- Pregnant women at the time of data collection.
- Sexually inactive women.
- Men of all age groups.
- Women residing outside Umlazi Township.

### **Recruitment strategy**

Study participants were enrolled into the study by the two research assistants. The research assistants were recruited and trained by the principal investigator. Part of the training package involved thorough focus on improving research assistants' knowledge and skills, to ensure a professional approach towards study participants and an informed consent process. The training ran for the duration of two days. Upon entering the facility's premises, the research assistants introduced themselves to the facility management and staff, who all had been informed about the study by the principal investigator. They also re-iterated the purpose of the study and its procedures. The research assistants then stationed themselves next to the facility's exit point to approach and enrol eligible participants to the study, after the services had been rendered by the facility. These participants were recruited at the public health clinics regardless of the service they presented themselves for at the facility.

## **Sampling**

Umlazi has ten public clinics and one public hospital. All ten public health clinics in Umlazi participated in the study. The overall sample size was 471 for women of reproductive age (patients). A sample size of 300 was required to estimate the proportion of women using contraception in Umlazi Township to within 8%, with a probability of 95%, and assuming 50% prevalence. To adjust for the clustering effect of a clinic, a design effect of 1.25 was included. The minimum final sample required for this study was therefore 375 for women respondents. However, 471 women participated in the overall study, from the 530 women who were approached, resulting in a 89% response rate. The sample proportional to size (SPS) was used to ensure that sample sizes varied, and was reflective of patient volume for each health facility. A convenience sampling technique was used to enrol women attending the clinic on each day of the week during the data collection period, for example, family planning, HIV related consultation, child health services, or any other.

With regards to the sampling of healthcare workers, 35 nurses working in the ten clinics were included in the study. All healthcare providers (i.e. professional nurses and enrolled nurses) were approached for participation, irrespective of their rank. The study participants were only approached for participation, after services had been rendered by the clinic for the day. Nurses were only approached when the clinics were quieter in the afternoons. This study was conducted during the normal clinic operating hours, between Monday and Friday. The criterion-based sampling technique was used to identify participants for the qualitative study component, which explored their experiences of contraceptive use and sexual behaviour.

## **Data Collection Instruments**

### **Questionnaire design**

Consultations with academics were conducted by the principal investigator to ensure the data collection tools (questionnaires) were well designed, easily understood, and collected relevant information on contraceptive use and sexual behaviour. While the four quality dimensions such as accuracy, relevance, interpretability, and coherence were employed to determine the questionnaire development, questionnaires were also translated into local language and questions were conducted in both English and IsiZulu, the languages commonly spoken by local people residing in Umlazi. Questionnaires collected data on the following variables.

## Study variables

Table 4.1 shows the list of independent variables used in this study, as well as the categories used and how they were coded.

**Table 4.1 Description of independent variables, coding and measurement**

Variable code	Variable name	Method of coding in this study	Measurement
<b>Socio-demographic variables</b>			
Age_group	Age in years	18-24 years (1) 25-49 (2)	Continuous
Pop_group	Race	Black/African (1) Coloured (2) White (3) Asian/Indian (4) Other (Please specify) (5)	Nominal
Marital_st	Marital status	Legally married (1) Traditionally married (2) Living with man in union (3) Never married/Single (4) Divorced (5) Married but separated (6) Widowed (7) Not answered (8)	Nominal
Employ_status	Employment status	Unemployed (1) Employed part-time (2) Employed full-time (3) Self-employed (4) Studying (5) Not answered (6)	Nominal
Edu_level	Level of education	No formal education (1) Grade 1 (2) Grade 2 (3) Grade 3 (4) Grade 4 (5) Grade 5 (6) Grade 6 (7) Grade 7 (8) Grade 8 (9) Grade 9 (10) Grade 10 (11) Grade 11 (12) Grade 12 (13) Diploma/ Degree – incomplete (14) Diploma/ Degree – complete (15) Diploma/ Degree graduate (16)	Ordinal

Variable code	Variable name	Method of coding in this study	Measurement
		Postgraduate Diploma/ Degree (17)	
<b>Contraceptive use variables</b>			
Contraceptive_familiar	Contraceptive method familiar with	Pill (1) IUD (2) Injections (3) Diaphragm/foam/jelly (4) Condom (5) Female sterilisation (6) Male sterilisation (7) Calendar/rhythm (8) Withdrawal (9) Traditional herbs/remedies (10) Abstinence (11) Other (Please specify) (12) None (98)	Nominal
Contraceptive_use_current	Contraceptive method currently using	Pill (1) IUD (2) Injections (3) Diaphragm/foam/jelly (4) Condom (5) Female sterilisation (6) Male sterilisation (7) Calendar/rhythm (8) Withdrawal (9) Traditional herbs/remedies (10) Abstinence (11) Other (Please specify) (12) None (98)	Nominal
<b>Sexual behaviour variables</b>			
Age_first_sex	Age at first sex	Years Not applicable (99)	Continuous
Diagnosed_STI_12mths	Diagnosed with STI past 12 months	No (1) Yes (2) Not answered (3)	Nominal
Sex_Alc_Influence_3mths	Sex under influence of alcohol past 3 months	Never (0) 1-3 times (1) 4-6 times (2) 7-9 times (3)	Continuous

Variable code	Variable name	Method of coding in this study	Measurement
		10-12 times (4) More than 12 times (5) Not applicable (99)	
Condom_talk_Partner_12mths	Talked about condom with partner in past 12 months	No (0) Yes (1) Not applicable (99)	Nominal
Condom_use_last_Sex	Condom used in last sex	Yes (1) No (2) Not applicable (3) Not answered (4)	Nominal
Ever_pregnant	Ever been pregnant	No (1) Yes (2) Not answered (3)	Nominal
Pregnancy_intentional	Planned pregnancy	No (0) Yes (1) Not applicable (99)	Nominal
Terminated_pregnancy	Ever terminated pregnancy	No (1) Yes (2) Not applicable (3) Not answered (4)	Nominal
<b>Male partner variables</b>			
No.sexual_partners	Number of male sexual partners		Continuous
Employment_partner	Employment of sexual partner	No (0) Yes (1) Self-employed (2)	Nominal
HIV_status_partner	HIV status of sexual partner	HIV negative (1) HIV positive (2) I don't know (3) Not answered (4) Not applicable (5)	Nominal
Diagnosed_HIV	Diagnosed with HIV	No (1) Yes (2) Not answered (3)	Nominal
Hitting_partner	Experienced hitting/slapping by partner	Strongly agree (1) Moderately agree (2) Neither agree nor disagree (3) Moderately disagree (4) Strongly disagree (5)	Nominal
Partner_control_sex	Partner has control over sex	Strongly agree (1) Moderately agree (2)	Nominal

Variable code	Variable name	Method of coding in this study	Measurement
		Neither agree nor disagree (3) Moderately disagree (4) Strongly disagree (5)	
Partner_control_condom	Partner has control over condom use	Strongly agree (1) Moderately agree (2) Neither agree nor disagree (3) Moderately disagree (4) Strongly disagree (5)	Nominal

### **Socio-demographic variables**

#### **a. Age group**

This variable refers to the age group of participants. This variable has two categories and was coded as 1=18-24 years and 2=25-49 years. Participants from age-group 18-24 years were used as the reference category.

#### **b. Race**

This variable refers to the population group of the participants. Five categories were assigned to this variable and were coded as: 1=Black African; 2=Coloured; 3=White and 4=Indian.

#### **c. Marital status**

This variable refers to the marital status of the participants. Three categories were assigned to this variable and were coded as: 1=married; 2=single; 3=separated. Married participants were used as the reference category.

#### **d. Employment status**

This variable refers to the employment status of participants. Three categories were assigned to this variable and were coded as: 1=unemployed; 2=employed; 3=studying. Unemployed participants were used as the reference category.

#### **e. Level of education**

This variable aimed to determine the level of education attained by the participants. Three categories were assigned to this variable and were coded as: 1=primary; 2=secondary; 3=tertiary. Primary was used as the reference category.

### **Contraceptive use variables**

#### **a. Contraceptive method mostly familiar with**

This variable aimed to determine which contraceptive method the participants were mostly familiar with. Thirteen categories were assigned to this variable and were coded as: 1= Pill; 2=IUD; 3=Injectable; 4=diaphragm/foam/jelly; 5=condom; 6=female sterilisation; 7=male sterilisation; 8=calendar/rhythm; 9=withdrawal; 10=traditional herbs/remedies; 11=abstinence; 12=Other (specify); 13=None.

#### **b. Contraceptive method currently using**

This variable aimed to determine the contraceptive method currently being used by the participants. Thirteen categories were assigned to this variable and were coded as: 1= Pill; 2=IUD; 3=Injectable; 4=diaphragm/foam/jelly; 5=condom; 6=female sterilisation; 7=male sterilisation; 8=calendar/rhythm; 9=withdrawal; 10=traditional herbs/remedies; 11=abstinence; 12=Other (specify); 13=None.

### **Sexual behaviour variables**

#### **a. Age at first sex**

This variable aimed to determine the age at which the participant started to have sexual intercourse. Two categories were assigned to this variable and were coded as: 1=12-17 years; 2=18-24 years. Age group 12-17 years was used as the reference category.

#### **b. Diagnosed with STI in the 12 months**

This variable aimed to determine whether participants were diagnosed with an STI within a 12 month period prior to the study. Two categories were assigned to this variable and coded as: 1=no; 2=yes. Category 'no' was used as the reference category.

#### **c. Sex under the influence of alcohol**

This variable aimed to determine whether participants had sexual intercourse under the influence of alcohol within the three months preceding the study. Two categories were assigned to this variable and coded as: 1=never; 2=once or more. Category ‘once or more’ was used as the reference category.

**d. Talked about condom with partner in the past 12 months**

This variable aimed to determine whether participants talked about condoms with their partner/s in the 12 months preceding this study. Two categories were assigned to this variable and coded as: 1=no; 2=yes. Category ‘no’ was used as the reference category.

**e. Condom use in last sex**

This variable aimed to determine whether participants used a condom with their sexual partner during their last sexual intercourse. Two categories were assigned to this variable and coded as: 1=no; 2=yes. Category ‘no’ was used as the reference category.

**f. Ever been pregnant**

This variable aimed to determine whether participants had ever been pregnant prior to this study. Two categories were assigned to this variable and coded as: 1=no, 2=yes. Category ‘no’ was used as the reference category.

**g. Ever terminated pregnancy**

This variable aimed to determine whether any participants had terminated a pregnancy prior to this study. Two categories were assigned to this variable and coded as: 1=no; 2=yes. Category ‘no’ was used as the reference category.

**Male partner variables**

**a. Number of sexual partners**

This variable aimed to determine the number of sexual partners participants had had within three months preceding this study. Three categories were assigned to this variable and coded as: 0=none; 1=one; 2=more than one. Category ‘none’ was used as the reference category.

**b. Employment status of partner**

This variable aimed to determine the employment status of the participant's partner. Two categories were assigned to this variable and coded as: 1=no; 2=yes. Category 'no' was used as the reference category.

**c. HIV status of sexual partner**

This variable aimed to determine the HIV status of the participant's sexual partner. Three categories were assigned to this variable and coded as: 1=negative; 2=positive; 3=do not know. Category 'do not know' was used as a reference category.

**d. Diagnosed with HIV**

This variable aimed to determine the HIV status of the participants. Two categories were assigned to this variable and coded as: 1=no; 2=yes. Category 'no' was used as the reference category.

**e. Experienced hitting/slapping by partner**

This variable aimed to determine whether the participants experienced hitting or slapping by their partner. Three categories were assigned to this variable and coded as: 1=agree; 2=neutral; 3=disagree. 'Neutral' was used as the reference category.

**f. Partner has control over sex**

This variable aimed to determine whether the participant's partner has control over sexual intercourse. Three categories were assigned to this variable and coded as: 1=agree; 2=neutral; 3=disagree. 'Neutral' was used as the reference category.

**g. Partner has control over condom use**

This variable aimed to determine whether the participant's partner has control over condom use. Three categories were assigned to this variable and coded as: 1=agree; 2=neutral; 3=disagree. 'Neutral' was used as a reference category.

### **Data quality**

A series of quality assurance processes were implemented to ensure that data quality was not compromised, but preserved. These quality assurance processes were inclusive of data validation, data cleaning, and questionnaire verification, as well as ensuring that questionnaires were tested for consistency and edited where necessary. Daily administered questionnaires were checked by the principal investigator to ensure quality assurance of collected data and completeness of questionnaires. Inconsistencies and errors with questionnaires were flagged at regular quality control meetings with research assistants, and were corrected accordingly. In terms of the exploratory qualitative design, all interviews were audio-recorded (with participants' permission), and hand-written field notes were taken during the interviews. Interviews were conducted in a local language, transcribed and translated from verbatim transcripts into the English language. Participants' quotes were directly retrieved from the audio recordings and triangulated between the two researchers. To minimise any bias and inconsistencies during the data collection period, data collection instruments were pretested with at least five (qualitative) and ten (quantitative) participants who were not part of the actual sample. Regular meetings were held with research assistants to discuss any challenges arising during fieldwork, lessons learned, and to ensure that the whole research process was well understood and followed.

### **Data analysis**

Data was analysed with the support of the University of KwaZulu-Natal's experienced biostatistician. The collected data was entered into Epi Info database and exported to Stata for analysis. Data cleaning was conducted before analysis was carried out to minimise discrepancies. Stata version 15 was used for the analysis of both dependent and independent variables of this study's objectives two to five. The analysis was carried out in three phases, namely: univariate, bivariate, and multivariate.

The univariate analysis was the first level of analysis we performed. This was conducted in the form of descriptive statistics of the dependent variable and each independent variable. While in this phase, a description of the background characteristics of this study's participants was carried out in the form of summaries, in which patterns between variables were discussed. The frequency distribution and cross tabulations of each independent and dependent variable, was also carried out for categorical data. Frequency distributions of continuous variables was tested for normality using the Shapiro-Wilks test. Means (SD) or medians (IQR) were used as appropriate.

The second phase comprised of bivariate analysis, in which a binary logistic regression model was applied. In this model, the probability of the association between the dependent variable and each independent variable was estimated. To verify and confirm the level of significance between each independent variable and a dependent variable, a Pearson Chi square ( $X^2$ ) test was employed. Factors associated with contraceptive use were identified a priori and by using Chi square tests. A stratified, cluster analysis was used for statistical testing.

The third and final phase comprised of a multivariate analysis, in which a multivariable logistic regression model was applied. Before performing the full logistic regression model, a pairwise correlation test was conducted to test for correlations between independent variables in the collected data. The pairwise correlation test is used to assess whether correlations between independent variables are high or low. When or if the correlations between the independent variables are high, multicollinearity is said to occur and this affects the interpretation of results. Therefore, it is recommended to conduct such a test before a full logistic regression model is applied. Although minor multicollinearity may be accepted, severe multicollinearity is likely to make estimates sensitive, even to moderate variations in the model, due to the increase in the variance of coefficient estimates, which results in coefficients being unstable and difficult to interpret (5).

The formula we used in the logistic regression model was as follows (6):

$$L_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki}$$

The above formula can be explained as follows, where:

- $L_i$  = dependent variable
- $\alpha$  = constant
- $\beta_k$  = regression coefficients
- $X$  = independent variables

Source: Freedman (2009)

The benefit of using the logistic regression model is that it does not assume a linear relationship between predictor and outcome variables, while it overcomes the limitations of a linear regression model, when the dependent variable is dichotomous (7).

The odds ratios (OR) were used to interpret the probability of the associations between the variables tested in this study and the  $p$ -value  $< 0.05$ , which was considered statistically significant. The adjusted and un-adjusted odds ratios were used to explain the probability of contraceptive use and sexual behaviour in KwaZulu-Natal province. These were displayed on the models alongside  $p$ -values to show the level of significance among variables. Data was analysed twice, excluding missing data, and then again including missing data. However, there were no differences in significant factors, but only minor differences in the  $p$ -values. Missing values differed by question and varied by around 10-13%.

Qualitative data was analysed by initially transcribing and translating data from IsiZulu to English. Two independent researchers (the principal investigator and a research assistant) conducted data translation and transcription to ensure rigor was achieved. Using NVivo version 11, two independent researchers conducted iterative thematic data analysis, as a means to achieve analyst triangulation, an important criterion for ensuring quality in qualitative research. The analysis was guided by Ritchie and Spencer's framework (8). The framework outlines the following stages for conducting qualitative data analysis: (a) familiarisation with the data through reading all the transcripts and listening to the audio recordings; (b) generating initial codes using an open coding method, where each segment of data relevant to this study's research objective, was coded; (c) development of a thematic framework extracting key themes from the coded data; (d) application of the thematic framework to all the data; (e) charting of the data, enabling systematic comparisons between data sets; (f) analysis of the charts for patterns and associations between and within each unit of analysis. The outcome of coding was

verified, cross-checked, and discussed between the principal investigator and the research assistant. This process involved thorough discussions on the coding outcome and whether the research question was answered.

## **Dissemination**

Findings of the scoping review and articles arising from primary study have been disseminated through oral and poster presentations at conferences. Articles have been published in peer-reviewed journal platforms. This thesis will also be accessible on the University of KwaZulu-Natal's online library. A feedback report (in the form of summary of results) will be submitted to the participating facilities, the directorate which approved the study, and also the district under which the study was conducted.

## **Study limitations**

This study has important limitations to note, including the fact that it was not able to establish a cause-effect relationship due to the cross-sectional nature of its design. Some study participants may have been biased while responding to the questions, if they perceived the research assistant to be a healthcare provider, who may either influence the service or judge them based on their responses. The study was confined to the limited number of clinics, which may have resulted in the findings not being generalizable to the general population of the province of KwaZulu-Natal specifically, and the country generally. The high proportion of women using contraception in the sample could suggest that more women were enrolled during the family planning days. This may have resulted in an overestimation of the proportion of women using contraceptives. Given that this study focused on women attending public health care facilities, women who do not frequently use public health care clinics may have been excluded, hence their insights would be missing.

## **Measures to reduce bias**

To reduce participants' selection bias, research assistants were stationed by the gate, to ensure that women from different clinic settings were approached and recruited into the study. Data was collected during the official operating hours for participating health care facilities. Study participants were enrolled into the study, guided by the inclusion criteria. For qualitative study,

the COREQ checklist was used to ensure that the study adhered to quality standards for reporting qualitative study findings (9).

### **Ethical considerations**

Ethical approval to conduct this study was obtained from the Biomedical Research Ethical Committee at the University of KwaZulu-Natal. The EThekweni District's Ethical Review Committee and the National Health Research Database also provided ethics approvals and permission to conduct the study. The study was only conducted upon receipt of such ethical approval. To ensure confidentiality of respondents, no personal identifiers were captured in the questionnaires. Likewise, a written informed consent was obtained from the study participants prior to their enrolment. The principal investigator and research assistants went through the informed consent with the participants in their language of choice. The study adhered to sound ethical standards, including confidentiality, voluntariness of participation, and full disclosure of the research process. The collected data is stored in a safe and secure place by the University of KwaZulu-Natal and will be destroyed five years post the completion of the study. All the above-mentioned ethical considerations were explained to the study participant by the trained research assistants.

Objective one was achieved through a systematic scoping review.

A scoping review guided by Arksey and O'Malley's framework was conducted in 2019. Potential articles were searched for from the following databases: PubMed/MEDLINE, American Doctoral Dissertations via EBSCO host, Union Catalogue of Theses and Dissertations (UCTD) and SA ePublications via SABINET Online and World Cat Dissertations, Theses via OCLC and Google Scholar. Studies published from January 1990 to March 2018 were included. The Population, Concept, and Context (PCC) framework and the PRISMA chart were used to report the screening of results. The Mixed Method Appraisal Tool (MMAT) version 11 and ACCODS tools were adopted to determine the quality of the included studies. Guidelines from the PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation were also followed.

### **Inclusion criteria**

- Studies presenting evidence published between January 1990 and March 2018.

- Studies presenting evidence that were published in SA.
- Studies presenting evidence on women aged 15 to 49 years.
- Studies presenting evidence on contraceptive use.
- Studies presenting evidence on sexual behaviour.

### **Exclusion criteria**

- Studies published before 1990.
- Studies with no evidence on contraceptive use or sexual behaviour.

### **Data synthesis**

Content analysis of the extracted data was conducted from the included articles. The review initially compared explanatory variables for contraceptive use and sexual behaviour across all included quantitative studies, and how often these variables were found to represent a significant determinant. Qualitative data was arranged in the form of the main themes identified and explored across the included qualitative studies. For reporting results, the pathways paradigm proposed by Shaikh et al (2010) was used to distinguish between different levels of predictor variables (10). Individual level (i.e., woman as a user), partner level, couple level, household and community level, and healthcare service level are all examined in this paradigm. The Mixed Method Appraisal Tool (MMAT) version 11 and ACCODS tools were used to determine the quality of the included studies (11, 12).

## References

1. Centers for Disease Control and Prevention. The social-ecological model: A framework for violence prevention. Atlanta, GA: Centers for Disease Control and Prevention; 2013.
2. KwaZulu-Natal Department of Health. EThekweni District Health Plan 2015/2016 In: Health, editor. 2016.
3. Statistics South Africa. Census 2011. 2012.
4. Statistics South Africa. Quarterly Labour Force Survey, Quarter 4: 2016. 2016.
5. Frost J. What Are the Effects of Multicollinearity and When Can I Ignore Them? ; 2013.
6. Freedman DA. Statistical Models: Theory and Practice. London: Cambridge University Press; 2009.
7. Salkind NJ. Statistics for people who think they hate statistics. London SAGE Publications, Inc.; 2011.
8. Ritchie J, Spencer L. Qualitative data analysis for applied policy research. Analyzing qualitative data: Routledge; 2002. p. 187-208.
9. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. International journal for quality in health care. 2007;19(6):349-57.
10. Shaikh BT. Unmet need for family planning in Pakistan–PDHS 2006–2007: it’s time to re-examine déjà vu. Open Access J Contracept. 2010;1:113-8.
11. Pluye P, Robert E, Cargo M, Bartlett G, O’cathain A, Griffiths F, et al. Proposal: A mixed methods appraisal tool for systematic mixed studies reviews. Montréal: McGill University. 2011;2:1-8.
12. Tyndall J. AACODS Checklist. Flinders University. 2010.

## **Chapter Five: First Primary Manuscript**

This chapter addressed three objectives, namely: two, three and four. This chapter investigated factors associated with modern contraceptive use among women of reproductive age, with a focus on whether these factors differ by age-group among younger and older women of reproductive age attending public health clinics in Umlazi Township, KwaZulu-Natal province, South Africa. This study also determined the proportion of women of reproductive age using contraceptives and knowledge and use of different contraceptive methods among women of reproductive age in Umlazi Township, KwaZulu-Natal, South Africa. This study has been peer-reviewed and published in an international academic journal.

### **Factors associated with modern contraceptive use: a comparative analysis between younger and older women in Umlazi Township, KwaZulu-Natal, South Africa**

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# Factors associated with modern contraceptive use: a comparative analysis between younger and older women in Umlazi Township, KwaZulu-Natal, South Africa

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## Abstract

**Introduction:** Unplanned pregnancy continues to be a global reproductive and public health concern among women. This study aimed to investigate whether factors associated with modern contraceptive use differ by age-group among young and older women of reproductive age.

**Methods:** This was a cross-sectional study conducted among 433 women of reproductive age, with the median age of 25 years (interquartile range: 21–28), and aged between 18 and 49. Data were collected from 10 public health care clinics in Umlazi Township, KwaZulu-Natal, using a structured questionnaire. Data were coded, entered into Epi Data Manager and exported to Stata for analysis. A Pearson's chi-square test and logistic regression models were employed to assess the level of the association between the predictor and outcome variables, and the p-value of 0.05 or lower was considered statistically significant.

**Results:** Most women in the sample (n = 351, 81%) had obtained a secondary level of education, while 53% (n = 230) were unemployed and 89% (n = 387) were single. We found that women with secondary level of education (AOR: 2.89, 95% CI: 0.99–5.38) or a tertiary level of education (AOR 3.80, 95% CI: 1.07–3.53) were more likely to use contraceptive methods compared to women with lower education. Women who experienced unplanned pregnancy (AOR 0.51, 95% CI: 0.22–3.79) were more likely to use contraceptives. Women aged 25–49 years who experienced pregnancy, whether planned (AOR 3.87, 95% CI: 1.08–3.89) or unplanned (AOR 3.60, 95% CI: 2.15–4.19), were more likely to use a contraceptive method. Results showed that the level of education (p = 0.942) and whether one experienced unplanned pregnancy (p = 0.913) were not significant predictors of contraceptive use among women aged 18–24 years.

**Conclusion:** Concerted educational efforts to addressing existing barriers deterring women from accessing contraception among young women are necessary. Different groups of women should be targeted with family planning interventions specific to their needs.

## Keywords

contraceptive use, KwaZulu-Natal, South Africa, termination of pregnancy, unplanned pregnancy, women of reproductive age

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## Introduction

Unplanned pregnancy continues to be a global reproductive and public health concern among women, despite the policies and strategies implemented to improving contraceptive use, globally, as well as in sub-Saharan Africa (SSA).<sup>1</sup> In South Africa, the percentage of sexually active women using modern contraceptive methods has slightly dropped, from 64% in 2003 to 60% in 2016.<sup>2,3</sup> Despite the widely available contraceptive methods in public health facilities, the prevalence of contraceptive use by young women remains low,<sup>4</sup> leading to increased numbers of unplanned pregnancies, sometimes resulting to termination of pregnancies in South Africa.<sup>5</sup> This may, in part, suggest that accessing family planning services remains a challenge or that negative attitudes towards contraceptive use persist.<sup>6</sup> The high incidence of unplanned pregnancy is an indication of the unmet needs for contraceptive use in South Africa.<sup>7</sup> This is worsened by the unprotected sexual activity and early sexual debut among adolescents (15 years and below), who may either be unaware of the available family planning services or simply lack courage to access them for fear of possible moral judgements or even compromised confidentiality in health care clinics.<sup>6,8,9</sup>

Plans and policies aimed at improving contraceptive use have been introduced by the South African government,<sup>10,11</sup> with emphasis on improving contraceptive use and access to long-acting reversible contraception (LARC) methods receiving support from different policy makers and advocates.<sup>12</sup> The use of contraceptive methods, such as injectable progestins depot-medroxyprogesterone acetate (DMPA) and norethisterone enanthate (NET-EN), has continued to rise in sub-Saharan Africa region as well as in South Africa.<sup>13</sup> The injectable contraceptives are largely popular among women and healthcare providers as they are considered to be the most convenient methods in South Africa.<sup>14,15</sup> However, discontinuation has also been reported with this method due to side effects and costs.<sup>16,17</sup> About 31% and 28% discontinuation rates have been reported for 3-month injectables and 2-month injectables, respectively.<sup>18</sup> In South Africa, among all women who use contraception use a modern method, accounting for 24% injectables, 9% male condom and 8% each for contraceptive pills and female sterilization among women in union.<sup>18</sup>

Modern contraceptive use among young women is inconsistent, irrespective of their marital status.<sup>19</sup> When the use of contraceptives is inconsistent, for one reason or the other, the likelihood of unplanned pregnancies would also increase. Much of the research literature about contraceptive use has been generalized among all women, with limited comparative analysis to consider the contribution of age in the use of contraceptives. Therefore, understanding the key factors associated with contraceptive use among women of different age-groups is important to the development of effective age-sensitive family planning programmes and devising effective policies in South Africa.

As such, this study aimed to investigate factors associated with contraceptive use among women of reproductive age in Umlazi Township, KZN province, South Africa. Data were further stratified by age categories, 18–24 years and 25–49 years.

## Methods

### Study setting

Umlazi Township, which is located in the province of KZN, is the second largest populated township in South Africa, with an estimated population of more than half a million people.<sup>20</sup> The township is part of the eThekweni Metro, which has the largest number of people on lifelong antiretroviral therapy (ART) in the province.<sup>21</sup> Umlazi has 10 public health care clinics and one public health hospital. All 10 public health care clinics in Umlazi participated in the study. On average, these clinics combined serve more than 50,000 clients per month.

### Study design, participants and sampling

An analytical cross-sectional study was conducted between November 2018 and April 2019. All potentially eligible women who accessed general health care services at the time of data collection were approached, introduced to the study and invited to participate. A total of 433 women aged between 18 and 49 years, who were sexually active, residents of Umlazi Township and accessing health care services at any of the 10 Umlazi Township clinics, were recruited for the study. A sample size of 300 was required to estimate the proportion of women using contraception in Umlazi Township to within 8% with a probability of 95% and assuming 50% prevalence. To adjust for the clustering effect of clinic, a design effect of 1.25 was included. The minimum final sample required for this study was therefore 375 for women respondents. The sample proportional to size (SPS) was used to ensure that sample sizes varied and was reflective of patient volume per each health facility. Due to time limitation, a convenience sampling technique was used to enroll women attending clinic on each day of the week during data collection period. The study participants were only approached for participation after services had been rendered by the clinic.

### Study instrument and data collection

A structured questionnaire was designed in English and translated into IsiZulu (local) language. Two experienced research assistants (RAs) were recruited and trained on the consent process and questionnaire administration. These two RAs were competent in both English and IsiZulu languages. The training and language competency enabled them to properly introduce the study to individual potential participants and secure the consent prior to administering

the questionnaires. The instrument was pre-tested on 10 participants who did not form part of the study, prior to data collection. The study instrument (a structured questionnaire) was administered by research assistants during clinic operating times. The questionnaire asked for information containing the demographic and socioeconomic characteristics of the study participants, awareness of contraceptive methods, the use of contraceptives and information related to sexual behaviour. A series of quality assurance processes were implemented to ensure that data quality was not compromised but preserved, including data validation, data cleaning, questionnaire verification, as well as ensuring that questionnaires were tested for consistency. Administered questionnaires were checked by the principal investigator to ensure quality assurance of collected data and completeness of questionnaires. The inclusion criteria were (a) women of reproductive age (18–49 years) who visited the health care facilities for any services at any day of the week during data collection, and (b) women residing in Umlazi Township. Women who were either under the age of 18 years, pregnant, or sexually inactive were excluded from the study. We also excluded women who were not able or willing to sign informed consent.

### Ethics

Ethical approval to conduct this study was obtained from the Biomedical Research Ethical Committee (BREC) at the University of KwaZulu-Natal (Ref No: BE424/18). The National Health Research Database (NHRD) from the KZN Provincial Department of Health (Ref No: KZ\_2018009\_013), and The eThekweni District's Ethical Review Committee also approved the study. Gatekeeper permissions were obtained from the participating individual facilities prior to data collection. To ensure the privacy and confidentiality of respondents, no personal identifiers were captured in the questionnaires. Likewise, a written informed consent was obtained from the study participants prior to their enrolment. The research assistants went through the informed consent with the potential participants in a language preferred by the participants. The study adhered to sound ethical standards including confidentiality, voluntariness of participation, option to terminate participation and full disclosure of the research process.

### Data analysis

Data were coded, entered into Epi Data Manager (version 4.6)<sup>22</sup> and exported to Stata version 15<sup>23</sup> for cleaning and analysis. The dependent dichotomous variable was the use of any contraceptive method currently. The use of contraceptive methods as well as other socio-demographic characteristics was summarized using descriptive statistics. In estimating the influence of socio-demographic characteristics on the use of contraceptives, we stratified participants

by age categories, 18–24 years and 25–49 years. A Pearson's chi-square test was used to determine the association between socio-demographic characteristics and the use of contraceptives. Statistically significant variables in the bivariate analysis were used as predictors in the multivariate logistic regression. The results were expressed as odds ratio (OR) with their 95% confidence interval (CI) and statistical significance level of  $p < 0.05$ .

## Results

### Background characteristics of study participants

The study included 433 female participants (Table 1). The median age of respondents was 25 years (interquartile range (IQR): 21–28), and their ages ranged between 18 and 49 years. Most women in the sample ( $n=351$ , 81%) had obtained a secondary level of education, accounting for 80% ( $n=181$ ) among women aged 18–24 years and 83% ( $n=170$ ) among 25–49 years age-group. Among women aged 18–25 years, 44% ( $n=100$ ) were unemployed and 46% ( $n=105$ ) were studying; 63% ( $n=130$ ) of women aged 25–49 years were unemployed. Most women in the sample ( $n=387$ , 89%) were single, accounting for 94% ( $n=214$ ) among women aged 18–24 years and 84% ( $n=173$ ) among women aged 25–49 years. Almost all women in the sample were Black African ( $n=427$ , 99%).

### Knowledge and current use of contraception by method type

Among all women in the sample, 87% of those aged 18–24 years and 93% of those aged 25–49 years had some form of knowledge about injectable contraceptive method (Table 2). About 52% and 49% of women aged 18–24 years and 25–49 years were reportedly using injectable contraceptives, respectively. Approximately 74% and 76% of women aged 18–24 years and 25–49 years, respectively, had some knowledge about condoms, while 52% and 49% of women aged 18–24 years and 25–49 years, respectively, were using condoms as contraception at the time of data collection. Half (50%) of women aged 18–24 years and 56% of women aged 25–49 years had some knowledge about a pill contraceptive method, while 3% and 4% were using it at the time of the study, respectively.

Of the 433 respondents who participated in the study, 84% ( $n=364$ ) were using a contraceptive method (Table 3). Among women who had obtained secondary level of education, contraceptive users accounted for 44% ( $n=153$ ) and 41% ( $n=144$ ) among those aged 18–24 years and 25–49 years, respectively. Contraceptive users accounted for 47% ( $n=180$ ) and 37% ( $n=144$ ) among single women aged 18–24 years and 25–49 years, respectively. Approximately 14% ( $n=16$ ) of women aged 18–24 years who were studying were not using a contraceptive method. Among women

**Table 1.** Background characteristics of study participants by age group, Umlazi Township, KwaZulu-Natal, 2019.

Characteristics	Age group		Total (18–49 years) n = 433
	18–24 years n = 227	25–49 years n = 206	
Age (years)			
Median (IQR)	21 (19–23)	31 (26–33)	25 (21–28)
Level of education, n (%)			
Primary	1 (0.4)	8 (4)	9 (2)
Secondary	181 (80)	170 (83)	351 (81)
Tertiary	44 (19)	27 (13)	71 (16)
Employment status, n (%)			
Unemployed	100 (44)	130 (63)	230 (53)
Employed	22 (10)	60 (29)	82 (19)
Studying	105 (46)	12 (6)	117 (27)
Marital status, n (%)			
Married/living with partner	7 (3)	30 (15)	37 (9)
Single	214 (94)	173 (84)	387 (89)
Separated	1 (0.4)	2 (1)	3 (1)
Population group, n (%)			
Black African	225 (99)	202 (98)	427 (99)
Coloured/Asian	1 (0.4)	2 (1)	3 (1)

IQR: interquartile range.

\*The total does not add up to 433 because of missing data caused by non-reporting from participants. Variable categories present column percentages.

**Table 2.** Distribution of knowledge and use of contraception by method type, Umlazi Township, KwaZulu-Natal, 2019.

Method type	Knowledge		Use during data collection	
	18–24 years n = 227	25–49 years n = 206	18–24 years n = 191	25–49 years n = 173
Abstinence	5 (2)	6 (3)	8 (4)	9 (5)
Condom	167 (74)	157 (76)	100 (52)	85 (49)
Diaphragm/foam/jelly	2 (1)	0 (0)	1 (1)	0 (0)
Female sterilization	4 (2)	8 (4)	2 (1)	10 (6)
Implant	51 (22)	38 (18)	7 (4)	0 (0)
Injection	197 (87)	192 (93)	104 (54)	109 (63)
IUD	37 (16)	46 (22)	2 (1)	6 (3)
Male sterilization	0 (0)	0 (0)	0 (0)	1 (1)
Pill	113 (50)	115 (56)	5 (3)	7 (4)
Withdrawal	3 (1)	5 (2)	0 (0)	4 (2)

\*Method type present column percentages.

aged 25–49 years who were unemployed, 46% (n=106) were using a contraceptive method. Table 3 shows more findings that are detailed.

#### *Factors associated with contraceptive use in univariate and multivariate analyses*

Contraceptive use among women in Umlazi Township, KwaZulu-Natal, showed significant association with two factors at univariate analysis (Table 4), and these were as follows: having secondary level of education (OR 2.18, 95% CI: 1.17–4.24) or tertiary level of education (OR

2.11, 95% CI: 1.12–2.33), and women who had an unplanned pregnancy (OR 0.39, 95% CI: 0.21–0.74). These variables were included in the multivariate analysis and disaggregated by age group.

In a multivariate analysis (Table 4), both variables were significant predictors of contraceptive use among women in Umlazi Township, KwaZulu-Natal. The odds of contraceptive use (AOR: 2.89, 95% CI: 0.99–5.38) among women who had attained secondary level of education was 2.89 times higher compared to those with primary level of education. For women who had attained tertiary level of education compared to those who had primary level of education,

**Table 3.** Characteristics of participants stratified by age group and contraceptive use status, Umlazi Township, KwaZulu-Natal, South Africa, 2019.

Characteristics	Contraceptive users		Non-contraceptive users		Total (18–49 years) n = 433
	18–24 years n = 191	25–49 years n = 173	18–24 years n = 36	25–49 years n = 33	
Level of education, n (%)					
Primary	0 (0)	5 (56)	1 (11)	3 (33)	9 (2)
Secondary	153 (44)	144 (41)	27 (8)	26 (7)	350 (81)
Tertiary	37 (52)	24 (34)	7 (10)	3 (4)	71 (16)
Marital status, n (%)					
Married	5 (14)	27 (73)	2 (5)	3 (8)	37 (9)
Single	180 (47)	144 (37)	33 (9)	29 (8)	386 (89)
Separated	1 (33)	1 (33)	0 (0)	1 (33)	3 (1)
Employment status, n (%)					
Unemployed	84 (37)	106 (46)	16 (7)	24 (10)	230 (53)
Employed	19 (23)	53 (65)	3 (4)	7 (9)	82 (19)
Studying	88 (76)	11 (9)	16 (14)	1 (1)	116 (27)
Ever diagnosed with HIV, n (%)					
No	154 (53)	91 (31)	26 (9)	18 (6)	289 (67)
Yes	28 (24)	73 (62)	4 (3)	12 (10)	117 (27)
HIV status of sexual partner, n (%)					
Do not know	26 (39)	34 (52)	2 (3)	4 (6)	66 (15)
Negative	137 (54)	83 (33)	25 (10)	10 (4)	255 (59)
Positive	17 (25)	40 (59)	3 (4)	8 (12)	68 (16)
Experienced hitting/slapping by partner, n (%)					
Agree	25 (56)	14 (31)	3 (7)	3 (7)	45 (10)
Neutral	4 (44)	4 (44)	1 (11)	0 (0)	9 (2)
Disagree	142 (45)	130 (41)	24 (8)	18 (6)	314 (73)
Ever been pregnant before, n (%)					
No	55 (66)	12 (14)	8 (10)	8 (10)	83 (19)
Yes	135 (39)	157 (46)	26 (8)	25 (7)	343 (79)
Terminated pregnancy, n (%)					
No	167 (43)	157 (41)	31 (8)	29 (8)	384 (89)
Yes	10 (53)	7 (37)	2 (11)	0 (0)	19 (4)
Partner has control over sex, n (%)					
Agree	40 (51)	31 (40)	5 (6)	2 (3)	78 (18)
Neutral	72 (43)	76 (45)	11 (7)	10 (6)	169 (39)
Disagree	61 (50)	40 (33)	12 (10)	8 (7)	121 (28)
Partner has control over condom use, n (%)					
Agree	31 (51)	22 (36)	5 (8)	3 (5)	61 (14)
Neutral	73 (44)	75 (45)	8 (5)	10 (6)	166 (38)
Disagree	68 (48)	52 (36)	15 (10)	8 (6)	143 (33)
Number of male sexual partners (past 3 months), n (%)					
One	167 (48)	139 (40)	27 (8)	14 (4)	347 (80)
More than one	11 (37)	14 (47)	3 (10)	2 (7)	30 (7)
Age at first sex, n (%)					
12–17 years	89 (55)	47 (29)	15 (9)	12 (7)	163 (38)
18–24 years	92 (39)	111 (47)	18 (8)	17 (7)	238 (55)

HIV: human immunodeficiency virus.

\*Variable categories present row percentages.

the odds of contraceptive use were 3.80 times higher (AOR 3.80, 95% CI: 1.07–3.53). The odds of using contraceptives were significantly higher among women who had experienced unplanned pregnancy (AOR 0.51, 95% CI: 0.22–3.79).

Further analysis for variables that had been found to be significant predictors in a multivariate analysis were disaggregated by age-group (Table 5). The analysis indicated that the level of education ( $p=0.942$ ) and whether one experienced unplanned pregnancy ( $p=0.913$ ), were not significant

**Table 4.** Factors associated with contraceptive use in univariate and multivariate analysis, Umlazi Township, KwaZulu-Natal, South Africa, 2019.

Determinants	Odds ratios (unadjusted)	P-value	95% conf. interval	Odds ratios (adjusted)	P-value	95% CI
Education level						
Primary (ref)						
Secondary	2.18	<b>0.029</b>	1.17—4.24	2.89	<b>0.053</b>	0.99—5.38
Tertiary	2.11	<b>0.035</b>	1.12 2.33	3.80	<b>0.040</b>	1.07—3.53
Employment status						
Unemployed (ref)						
Employed	1.52	0.273	0.72—3.19			
Studying	1.23	0.518	0.66—2.27			
Marital status						
Married (ref)						
Single	0.82	0.685	0.31—2.17			
Separated	0.31	0.377	0.02—4.12			
Ever been pregnant						
No (ref)						
Yes	1.37	0.324	0.73—2.54			
Planned pregnancy						
Not applicable (ref)						
Yes	0.60	0.163	0.29—3.82	0.63	0.214	0.30—2.31
No	0.39	<b>0.004</b>	0.21—0.74	0.51	<b>0.008</b>	0.22—3.79
Ever terminated pregnancy						
Yes (ref)						
No	1.57	0.551	0.35—6.99			
Ever diagnosed with HIV						
No (ref)						
Yes	1.13	0.690	0.61—2.10			
HIV status of sexual partner						
Do not know (ref)						
Negative	0.63	0.318	0.25—1.56			
Positive	0.52	0.224	0.18—1.49			
Experienced hitting/slapping by partner						
Neutral (ref)						
Agree	0.81	0.856	0.08—6.11			
Disagree	0.80	0.844	0.09—6.64			
Partner has control over sex						
Neutral (ref)						
Agree	1.44	0.428	0.58—3.54			
Disagree	0.72	0.324	0.37—1.39			

HIV: human immunodeficiency virus; Ref: reference category.

predictors of contraceptive use among women aged 18–24 years. Among women aged 25–49 years, level of education was not significantly associated with contraceptive use ( $p=0.307$ ). Women aged 25–49 years who had experienced pregnancy, whether planned (AOR 3.87, 95% CI: 1.08–3.89) or unplanned (AOR 3.60, 95% CI: 2.15–4.19) were significantly more likely to use a contraceptive method.

## Discussion

This study analysed the factors associated with contraceptive use among younger (aged 18–24 years) and older (aged

25–49 years) women in Umlazi Township, KZN province, South Africa. Eighty-four per cent (84%) of participants were currently using a contraceptive method. We found that women who had obtained a secondary level of education or a tertiary level of education were significantly more likely to use a contraceptive method compared to women who had obtained a primary level of education. Women who had experienced unplanned pregnancy were more likely to use a contraceptive method. After disaggregating by age group, results showed that the level of education ( $p=0.942$ ) and having experienced unplanned pregnancy ( $p=0.913$ ), were not significant predictors of contraceptive use among

**Table 5.** Multivariate analysis disaggregated by age group, Umlazi Township, KwaZulu-Natal, South Africa, 2019.

Determinants	18–24 years			25–49 years		
	OR	P-value	95% conf. interval	OR	P-value	95% conf. interval
Education level						
Primary (ref)						
Secondary	1.03	0.942	0.41 2.59	2.31	0.307	0.46 3.55
Tertiary				5.05	0.111	0.69 3.92
Planned pregnancy						
Not applicable (ref)						
Yes	1.07	0.913	0.30 3.89	3.87	<b>0.038</b>	1.08 3.89
No	1.51	0.336	0.65 3.49	3.60	<b>0.001</b>	2.15 4.19

OR: odds ratios; Ref: reference category.

women aged 18–24 years. Women aged 25–49 years who had experienced pregnancy, whether planned or unplanned were significantly more likely to use a contraceptive method.

The World Health Organization reported that contraceptive use among adolescents is low, given the estimated 220 000 unplanned pregnancies among HIV positive women in South Africa.<sup>24</sup> Similar to our findings, a study conducted in South Africa reported that being HIV positive, having been diagnosed with STI in the past 12 months and early sexual debut were not significant predictors of contraceptive use among younger women.<sup>25</sup> This poor contraceptive use may be explained by the fact that young women face many barriers such as lack of information, costs, unavailability of methods of choice, side effects, which hinder their access and utilization of family planning services in public health care facilities.<sup>6,26–28</sup> Younger women are also discouraged to seek contraceptive methods due to fear of being judged, stigma and negative attitudes from health care providers.<sup>15</sup>

The results of this study support what has been found in other settings, with older women having higher odds of using contraceptives compared to young women.<sup>7</sup> Among women aged 25–49 years, the association between contraceptive use and women who experienced unplanned pregnancies may be attributed to the fact that these women may be aiming to avoid occurrence of similar mistake. However, our study also found that women aged 25–49 years who had planned pregnancies were also significantly associated with contraceptive use. Contraceptive use has also been linked with having previously been pregnant among South African women.<sup>4</sup> This finding may suggest that older women may already have obtained the desired number of children or desire child-spacing, hence the need for using contraceptive methods to prevent another pregnancy.

Education was a significant predictor of contraceptive use in both groups of women at univariate and multivariate analysis, although the reverse was observed after stratifying data by age. It has been shown in another study that women with high level of education are more likely to use

contraceptives compared to women with low level of education,<sup>6</sup> as education is often associated with freedom to make independent decisions.<sup>29</sup> High level of education is a strong determinant for contraceptive use, because education may expose women to information useful for appropriate decision-making regarding their reproductive health needs.<sup>6</sup> An increasing level of education has also been linked with improved use of contraception among sexually active women, from 44% among women with no formal education to more than 60% among women who had attained a secondary level of education.<sup>18</sup> These findings suggest that empowering women through education is important for improving contraceptive use.

While this study is making an important contribution in the field of reproductive health, the following limitations should be noted. Given that the sampling frame for this study was limited to women seeking healthcare services in public health care clinics in Umlazi Township, women who do not use public health care services or use them less frequently were excluded and/or under-represented in the sample. Our findings showed a high proportion of women (84%) using contraception. While data was collected from Monday to Friday, our study may have over sampled women attending maternal and child health services. This study sought self-reported sexual health information from participants, thereby making the findings vulnerable to social desirability bias. Furthermore, information deemed to have potential for leading to value judgements may have been withheld by the participants. Older participants may have been unable to recall the age at which they had sexual debut.

## Conclusion

This study showed that the factors associated with contraceptive use differ between young and older women. Concerted educational efforts to addressing existing socio-economic and structural barriers related to contraceptive use among young women in Umlazi Township are necessary. Such efforts may be accompanied by educational

programmes aimed at improving contraceptive use. Results further suggest that family planning interventions should be tailored to address the specific needs of different age groups of women, as their needs may vary.

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### Author contributions

M.H. conceptualized and designed the study, as well as prepared the initial draft. C.K. supported with statistical analysis. K.H. and K.P. reviewed the study. All the authors reviewed the draft and approved the final version of the manuscript.

### Availability of data and materials

All the data analysed and reported in this paper will be made available upon request.

### Declaration of conflicting interests

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Ethics approval was obtained through the Biomedical Research Ethics Committee (BREC) from the University of KwaZulu-Natal (RefNo: BE424/18). Approval was obtained through the National Health Research Database (NHRD) from the KwaZulu-Natal Provincial Department of Health (RefNo: KZ\_2018009\_013).

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### Supplemental material

Supplemental material for this article is available online.

### References

1. Barbour B and Salameh P. Knowledge and practices of university students in Lebanon regarding contraception. *East Mediterr Health J* 2009; 15(2): 387–399.
2. Department of Health, Medical Research Council, ORC Macro. *South Africa demographic and health survey 2003*. Pretoria, South Africa: Department of Health, 2007.
3. National Department of Health, Statistics South Africa, South African Medical Research Council, ICF. *South Africa demographic and health survey 2016*. Pretoria, South Africa; Rockville, MD: National Department of Health (NDoH), Statistics South Africa (Stats SA), South African Medical Research Council (SAMRC), ICF, 2019.
4. MacPhail C, Pettifor AE, Pascoe S, et al. Contraceptive use and pregnancy among 15–24 year old South African women: a nationally representative cross-sectional survey. *BMC Medicine* 2007; 5: 31.
5. Massyn N, Day C, Peer N, et al. *District Health Barometer 2013/14*. Durban, South Africa: Health Systems Trust, 2014.
6. Hlongwa M, Mashamba-Thompson T, Makhunga S, et al. Evidence on factors influencing contraceptive use and sexual behavior among women in South Africa: a scoping review. *Medicine (Baltimore)* 2020; 99(12): e19490.
7. Cahill N, Sonneveldt E, Stover J, et al. Modern contraceptive use, unmet need, and demand satisfied among women of reproductive age who are married or in a union in the focus countries of the Family Planning 2020 initiative: a systematic analysis using the Family Planning Estimation Tool. *Lancet* 2018; 391(10123): 870–882.
8. National Department of Health. *The 2013 National Antenatal Sentinel HIV prevalence Survey South Africa*. Pretoria, South Africa: National Department of Health, 2015.
9. Hlongwa M, Peltzer K and Hlongwana K. Risky sexual behaviours among women of reproductive age in a high HIV burdened township in KwaZulu-Natal, South Africa. *BMC Infect Dis* 2020; 20(1): 563.
10. Ministry of Social Development. *National adolescent sexual and reproductive health and rights framework strategy 2014–2019*. Pretoria, South Africa: Ministry of Social Development, 2015.
11. National Department of Health. *Strategic plan for Maternal, Newborn, Child and Women's Health (MNCWH) and nutrition in South Africa 2012–2016*. Pretoria, South Africa: National Department of Health, 2012.
12. Chersich MF, Wabiri N, Risher K, et al. Contraception coverage and methods used among women in South Africa: a national household survey. *S Afr Med J* 2017; 107(4): 307–314.
13. Ross JA and Agwanda AT. Increased use of injectable contraception in sub-Saharan Africa. *Afr J Reprod Health* 2012; 16(4): 68–80.
14. Michalow J, Chola L, McGee S, et al. Triple return on investment: the cost and impact of 13 interventions that

- could prevent stillbirths and save the lives of mothers and babies in South Africa. *BMC Pregnancy Childbirth* 2015; 15(1): 39.
15. Hlongwa M, Tlou B and Hlongwana K. Healthcare providers' knowledge and perceptions regarding the use of modern contraceptives among adolescent girls in Umlazi Township, KwaZulu-Natal province, South Africa. *Pan Afr Med J* 2021; 38: 124.
  16. Smit JA and Bekinska ME. Hormonal contraceptive continuation and switching in South Africa: implications for evaluating the association of injectable hormonal contraceptive use and HIV. *J Acquir Immune Defic Syndr* 2013; 62(3): 363–365.
  17. Hofmeyr GJ, Singata-Madliki M, Lawrie TA, et al. Effects of the copper intrauterine device versus injectable progestin contraception on pregnancy rates and method discontinuation among women attending termination of pregnancy services in South Africa: a pragmatic randomized controlled trial. *Reprod Health* 2016; 13(1): 42.
  18. National Department of Health (NDoH), Statistics South Africa (Stats SA), South African Medical Research Council (SAMRC) and ICF. *South Africa demographic and health survey 2016*. Pretoria, South Africa; Rockville, MA: NDoH, Stats SA, SAMRC and ICF, 2019.
  19. Blanc AK, Tsui AO, Croft TN, et al. Patterns and trends in adolescents' contraceptive use and discontinuation in developing countries and comparisons with adult women. *Int Perspect Sex Reprod Health* 2009; 35(2): 63–71.
  20. Statistics South Africa (Stats SA). *Census 2011*. Pretoria, South Africa: Stats SA, 2012.
  21. Simbayi LC, Zuma K, Zungu N, et al. *South African national HIV prevalence, incidence, behaviour and communication survey, 2017*. Cape Town, South Africa: HSRC, 2019.
  22. Lauritsen JM and Bruus M. *EpiData Entry version 4.6. A comprehensive tool for validated entry and documentation of data*. Odense Denmark: The EpiData Association, 2018.
  23. StataCorp. *Stata statistical software: release 15*. College Station: TX: StataCorp LLC, 2017.
  24. World Health Organization. *Adolescent pregnancy*. Geneva: World Health Organization, 2011.
  25. Seutlwadi L, Peltzer K, Mchunu G, et al. Contraceptive use and associated factors among South African youth (18–24 years): a population-based survey. *SAJOG: S Afr J Obstet* 2012; 18(2): 43–47.
  26. Hlongwa M, Mashamba-Thompson T and Hlongwana K. Evidence on factors influencing contraceptive use and sexual behavior in South Africa: a systematic scoping review protocol. *Medicine (Baltimore)* 2018; 97(52): e13774.
  27. Capurchande R, Coene G, Schockaert I, et al. 'It is challenging . . . oh, nobody likes it!': a qualitative study exploring Mozambican adolescents and young adults' experiences with contraception. *BMC Womens Health* 2016; 16(1): 48.
  28. Muanda M, Gahungu Ndongo P, Taub LD, et al. Barriers to modern contraceptive use in Kinshasa, DRC. *PLoS ONE* 2016; 11(12): e0167560.
  29. Nsanya MK, Atchison CJ, Bottomley C, et al. Modern contraceptive use among sexually active women aged 15–19 years in North-Western Tanzania: results from the Adolescent 360 (A360) baseline survey. *BMJ Open* 2019; 9(8): e030485.

## **Chapter Six: Second Primary Manuscript**

This Chapter addressed the first part of objective five. This study investigated the predictors of risky sexual behaviours among women of reproductive age in a high HIV burdened township in KwaZulu-Natal, South Africa. This study has been peer-reviewed and published in an international academic journal.

### **Risky sexual behaviours among women of reproductive age in a high HIV burdened township in KwaZulu-Natal, South Africa**

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RESEARCH ARTICLE

Open Access

# Risky sexual behaviours among women of reproductive age in a high HIV burdened township in KwaZulu-Natal, South Africa



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## Abstract

**Background:** Despite several intervention programmes in South Africa, risky sexual behaviours among women of reproductive age remain a public health concern, making them vulnerable to unintended pregnancies and/or sexually transmitted infections (STIs), including human immunodeficiency virus (HIV) infection. The aim of this study was to investigate the predictors of risky sexual behaviours among women of reproductive age in a high HIV-burden township in KwaZulu-Natal, South Africa.

**Methods:** In a cross-sectional study, 471 women of reproductive age (18–49 years, mean: 25.83) in 10 public health clinics in Umlazi Township, responded to a structured questionnaire. Data were coded, entered into Epi Data Manager and exported to Stata for analysis. A Pearson Chi-square tests and logistic regression models (bivariate and multivariate) were employed to assess the level of the association between the predictor and outcome variables and the  $p$ -value  $< 0.05$  was considered statistically significant.

**Results:** More than half (51.80%) of the women were aged 18–24 years and only a handful (18.26%) had a tertiary qualification. The majority were single (88.96%) and the unemployed accounted for 53.50%. This study found that women who had talked about condoms with their partner in the past 12 months were more likely ( $p = < 0.0001$ ) to have used condoms during their last sexual intercourse. Older women ( $p = 0.035$ ) were more likely to have used a condom at last sex, compared to younger women. However, women who were exposed to physical partner violence (hitting and/or slapping), those who had been diagnosed with HIV and those whose sexual partners were diagnosed with HIV, did not show a significant association with condom use at last sex.

**Conclusion:** Exposure to physical partner violence and poor partner discussions about condoms are key deterrents to condom usage. Holistic interventions are required in order to address the risky behaviours, and consequently reduce sexually transmitted infections and/or unintended pregnancies.

**Keywords:** Sexual behaviour, Condom use, HIV, STIs, Women, KwaZulu-Natal, South Africa

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## Background

Despite several intervention programmes to curb the spread of sexually transmitted infections (STIs), such as HIV, in South Africa, risky sexual behaviours among women of reproductive age remain a public health concern. Risky sexual behaviours expose women to unintended pregnancies and STIs [1–3]. Many negative health outcomes such as unintended pregnancies and STI infections among women, have been linked to risky sexual habits [4]. These include, s having multiple sexual partners, engaging in unprotected sex and having sex under the influence of drugs or alcohol [5, 6]. While about one-fifth of women in their reproductive age (15–49 years) in South Africa are HIV positive [7], an increasing number of adolescents with early sexual debut, multiple sexual partners and inconsistent condom use has also been observed [3, 8]. Poor sexual communication has been flagged as one of the most important challenges facing these younger women [6], compounded by their vulnerability to gender-based violence (GBV) from their male partners [3, 9]. This, in turn, limits their ability to negotiate for safer sex [10]. These risky sexual behaviour patterns continue to rise in South Africa, with reports showing an increasing number of people with multiple sexual partners and inconsistent condom use at last sex [8, 11].

The South African government has developed and implemented many interventional programmes and strategies, such as the National Adolescent Sexual and Reproductive Health and Rights Framework Strategy (2014–2019) and The National HIV, AIDS and STI Strategic Plan for South Africa 2007–2011 [12, 13], aimed at educating and encouraging safer sexual practices. Although these intervention programmes and strategies put emphasis on improving the sexual behaviours of South African women, risky sexual behaviours still persist. Studies conducted in other parts of South Africa with similar settings, on the predictors of risky sexual behaviours among women, produced mixed findings. While increased access to HIV testing services has yielded some positive influence on risky sexual behaviour [14], on the same vein, there has been reports that utilizing HIV testing services has no influence on sexual behaviours of individuals [15].

Notably, KwaZulu-Natal (KZN) province has the highest HIV prevalence in South Africa among people aged 15–49 years (27%) [11], and 31.6% among women aged 20–24 years [8]. Therefore, conducting this study in this region provides an important opportunity to understand the predictors of risky sexual behaviours among women from a clinic-based setting. Sexual behaviour in the context of this study is defined as a form of sexual encounter with a single or multiple sexual partners, and including the use or non-use of preventive measures

against sexually transmitted infections and/or pregnancy. On the other hand, risky sexual behaviour includes inconsistent condom use during the last sexual encounter. This study investigated the predictors of condom use at last sex among women of reproductive age in a high HIV-burden township in KZN, South Africa, using a cross-sectional survey. The findings of this study are expected to be useful for informing policy-makers, health-care professionals and researchers on the predictors of risky sexual behaviours.

## Methods

### Study setting

Umlazi Township, which is located in KZN province, is the second most populated township in South Africa, with an estimated population of more than half a million people [16]. The Township falls under the eThekweni Metro, which has the highest HIV prevalence in South Africa [11]. Umlazi has 10 public clinics serving on average a total of more than 50,000 clients per month, and one public hospital. All 10 public health clinics participated in the study.

### Study design, participants and sampling

An analytic cross-sectional survey was conducted over a period of 5 months (November 2018 to April 2019). The study sample comprised of 471 women aged 18–49 years who had prior sexual exposure, residing at Umlazi Township and utilising health services at any of the 10 participating clinics located at Umlazi Township. The determination of sample size per each site (clinic) was proportional to the size and volume of patients seen at the clinic. The District Health Information System (DHIS) was used to obtain each clinic's monthly headcount for the past 6 months preceding data collection, in order to determine the average patient volume. Potentially eligible women who utilised services at the time of data collection were approached, introduced to the study and invited to participate. Women below the age of 18 years and those aged 50 years and older, were excluded. A convenience sampling technique was applied to enrol participants, due to time limitation. To ensure non-interruption of healthcare services, participants were only enrolled in the study after the health services had been rendered and just before they departed from the clinic.

### Study instrument and data collection

A structured questionnaire was designed based on the ideas gleaned from the literature review [17, 18], and translated into both English and IsiZulu languages. The questionnaire was pre-tested on 10 participants who were not going to form part of the actual study. The questionnaire design included sections on the

demographic and socioeconomic characteristics, the use of contraceptives and information related to sexual behaviour. Two trained and experienced Research Assistants (RAs), competent in both English and IsiZulu languages administered the questionnaire. The RAs explained the questionnaire in detail to participants who needed support. The inclusion criteria involved (a) women of reproductive age (18–49 years) visiting the healthcare facilities for any services during data collection and (b) women residing in Umlazi Township. Women below the age of 18 years and those aged 50 years and above were excluded. Men of all age-groups and women residing outside of Umlazi Township were also excluded. Data was collected during the clinic's operating hours (07:00–16:00) from Monday to Friday, after participants had received the services for which they visited the clinics for.

### Ethics

Ethical approval to conduct this study was obtained from the Biomedical Research Ethics Committee (BREC) at the University of KwaZulu-Natal (Ref No: BE424/18). The National Health Research Database (NHRD) from the KwaZulu-Natal Provincial Department of Health (Ref No: KZ\_2018009\_013), and The EThekweni District's Ethical Review Committee also approved the study. Gatekeeper permissions were obtained from the participating facilities prior to data collection. To ensure confidentiality of respondents, no personal identifiers were captured in the questionnaires.

### Data analysis

Data were coded, entered into Epi Data Manager (version 4.6) [19] and exported to Stata (version 15.0) [20] for analysis. Data cleaning was conducted to eliminate discrepancies in data before the analysis was carried out. Participants' background information was analysed using descriptive statistics, while the frequency distribution and cross-tabulations of each predictor and outcome variable was carried out for categorical data. Frequency distributions of continuous variables were tested for normality using Shapiro-Wilks test. Pearson Chi-square tests and logistic regression models (bivariate and multivariate) were employed to assess level of significance and the association between the dependent and exposure variables. A stratified, cluster analysis was used for statistical testing. The Pairwise correlation test was used to assess whether correlations between predictor variables existed. The significance level was kept at  $p < 0.05$  for all the analyses, and at a confidence interval of 95%.

## Results

### Background characteristics

The study sample consisted of 471 women who attended clinics in Umlazi Township anytime between November

2018 and April 2019. More than half ( $n = 244$ , 51.80%) of the participants were aged between 18 and 24 years (Mean: 25.83 and SD:  $\pm 6.45$ ). Most women were single ( $n = 419$ ; 88.96%) and of Black African descent ( $n = 464$ ; 98.51%). More than half ( $n = 252$ ; 53.50%) of participants were unemployed, while only a handful ( $n = 86$ ; 18.26%) had completed a tertiary level of education (Table 1).

### Sexual behaviour among study participants

All (100.0%,  $n = 471$ ) study participants had prior sexual encounter within the past 12 months, with 86.8% ( $n = 409$ ) reporting sexual encounter within the last 3 months preceding the survey (Table 2). More than a third of participants (37.2%,  $n = 175$ ) experienced sexual encounter before reaching 18 years of age. There was an almost equal distribution between women who used a condom at the last sexual encounter (49.7%,  $n = 234$ ) versus those who did not use it (50.3%,  $n = 237$ ) in the past 12 months.

More than a quarter of participants (25.9%,  $n = 122$ ) had been diagnosed with HIV positive status in the course of their lives and 40.2% ( $n = 49$ ) of them reported to have not used a condom at their last sex encounter. More than one in six of the participants (15.1%,  $n = 71$ ) were aware of their sexual partners' HIV positive status. Despite this awareness, more than half of these (56.3%,  $n = 40$ ) used a condom at their last sexual encounter. Only 11.5% ( $n = 54$ ) of participants reported to have been diagnosed with an STI in the past 12 months preceding the study. Of these, 53.7% ( $n = 29$ ) did not use a condom at their last sexual encounter. The majority of participants (89.6%,  $n = 422$ ) did not have sex under the influence of alcohol in the past 3 months.

The majority of participants (71.5%,  $n = 337$ ) reported that they were not exposed to violence with a sexual partner (i.e. sometimes hitting or slapping). About half of these (50.7%,  $n = 171$ ) used a condom at their last sexual encounter. More than a third (36.3%,  $n = 171$ ) of participants were neutral on whether or not the sexual partner has control over condom use, with 50.1% ( $n = 86$ ) of these not having used a condom at the last sex encounter. Close to a quarter (21.2%,  $n = 84$ ) of participants reported that the sexual partner has control over their sexual activities. The majority of participants (74.7%,  $n = 352$ ) had talked about condoms with their partners during the preceding 12 months leading to the study, and 56.5% ( $n = 199$ ) of these used a condom at last sex.

### Factors associated with condom use at last sex encounter in univariate and multivariate analysis

Condom use among women in Umlazi Township showed a significant association with four factors in univariate analysis, and these were: ever diagnosed with HIV (OR 1.78, 95% CI: 1.16–2.72), having talked about

**Table 1** Sociodemographic characteristics of participants

Background characteristics of respondents	Categories	Frequency (n)	Percent (%) of respondents by characteristic
<b>Sex</b>	Female	471	100.00
<b>Age group</b>	18–24 years	244	51.91
	25–34 years	172	36.60
	35–49 years	54	11.49
<b>Total</b>		<b>*470</b>	<b>100.00</b>
<b>Level of education</b>	Primary	10	2.13
	Secondary	373	79.53
	Tertiary	86	18.34
<b>Total</b>		<b>*469</b>	<b>100.00</b>
<b>Employment status</b>	Unemployed	252	53.96
	Employed	91	19.49
	Studying	124	26.55
<b>Total</b>		<b>*467</b>	<b>100.00</b>
<b>Marital status</b>	Married/living with partner	42	9.03
	Single	419	90.11
	Separated	4	0.86
<b>Total</b>		<b>*465</b>	<b>100.00</b>
<b>Population group</b>	Black African	464	99.15
	Coloured/Asian	4	0.85
<b>Total</b>		<b>*468</b>	<b>100.00</b>

\*The total does not add up to 471 as a result of missing data caused by non-reporting from participants.

condoms with partner during the preceding 12 months (OR 4.02, 95% CI: 2.38–6.80), women's delayed sexual debut, 18–24 years (OR 1.79, 95% CI: 1.21–2.64) and women's older age category, 35–49 years (OR 2.80, 95% CI: 1.48–5.29). In multivariate analysis, only two variables were significantly associated with condom use at last sex among women in Umlazi Township. Participants who had talked about condoms with their partner during the preceding 12 months to the study were significantly more likely to have used a condom in their last sex encounter. For example, condom use at last sex was 3.74 times (OR 3.74, 95% CI: 2.01–6.98) more likely in women who had talked about condoms with their partner during the preceding 12 months compared to those who had not. Older women (35–49 years) were significantly more likely to use a condom at last sex compared to their younger counterparts (OR 2.70, 95% CI: 1.07–6.81), suggesting that early sex debut is a risk factor to non-condom usage.

Interestingly, women who reported to have ever been diagnosed with HIV ( $p = 0.466$ ), those whose sexual partners had been diagnosed HIV positive ( $p = 0.847$ ), and those who had been diagnosed with an STI in the past 12 months leading to the study ( $p = 0.139$ ) did not influence condom use at last sex encounter. Women who were exposed to partner violence (i.e. sometimes hitting or slapping with a partner) was not associated with condom use

at last sex ( $p = 0.968$ ). Detailed univariate and multivariate analyses results are shown in Table 3.

### Discussion

This study aimed to investigate risky sexual behaviours and associated factors among women of reproductive age in Umlazi Township in KZN province, South Africa. The main findings of this study indicate that women who talked about condoms with partner during the preceding 12 months were significantly more likely to use condoms when having sex. Older women (35–49 years) were significantly more likely to use a condom at last sex compared to their younger counterparts, suggesting that early sex debut is a risk factor to non-condom usage. Having been diagnosed with HIV or having a sexual partner with a known HIV positive status, did not show any significant association with condom use at last sex among women in Umlazi Township. The sexual behaviour of women who reported to have more than one sexual partner in the past 3 months was risky, given the inconsistent condom use and exposure to STIs. Women who were exposed to partner violence (i.e. sometimes hit or slapped by a partner) was not significantly associated with condom use at last sex. This finding may be supported by the fact that women who are exposed to partner violence may find it difficult to negotiate condom use.

**Table 2** Sexual behaviour of participants (condom use at last sex)

	Condom use at last sex				Total (n = 471) n
	No (n = 237)		Yes (n = 234)		
	n	%	n	%	
<b>Number of male sexual partners (past 3 months)</b>					
0	25	54,3%	21	45,7%	46
1	190	50,4%	187	49,6%	377
More than 1	16	50,0%	16	50,0%	32
<b>Total</b>	<b>231</b>		<b>224</b>		<b>455</b>
<b>Partner employed</b>					
No	40	50,0%	40	50,0%	80
Yes	172	50,9%	166	49,1%	338
<b>Total</b>	<b>212</b>		<b>206</b>		<b>418</b>
<b>Ever Diagnosed with HIV</b>					
No	172	54,4%	144	45,6%	316
Yes	49	40,2%	73	59,8%	122
<b>Total</b>	<b>221</b>		<b>217</b>		<b>438</b>
<b>HIV status of sexual partner</b>					
Negative	145	53,1%	128	46,9%	273
Positive	31	43,7%	40	56,3%	71
Do not know	35	47,9%	38	52,1%	73
<b>Total</b>	<b>211</b>		<b>206</b>		<b>417</b>
<b>Sometimes hitting/slapping with partner</b>					
Agree	31	63,3%	18	36,7%	49
Neutral	7	63,6%	4	36,4%	11
Disagree	166	49,3%	171	50,7%	337
<b>Total</b>	<b>204</b>		<b>193</b>		<b>397</b>
<b>A lot of trust between you and him</b>					
Agree	138	50,2%	137	49,8%	275
Neutral	30	58,8%	21	41,2%	51
Disagree	32	50,0%	32	50,0%	64
<b>Total</b>	<b>200</b>		<b>190</b>		<b>390</b>
<b>Partner has control over sex</b>					
Agree	49	58,3%	35	41,7%	84
Neutral	91	51,1%	87	48,9%	178
Disagree	60	44,8%	74	55,2%	134
<b>Total</b>	<b>200</b>		<b>196</b>		<b>396</b>
<b>Partner has control over condom use</b>					
Agree	38	55,9%	30	44,1%	68
Neutral	86	50,3%	85	49,7%	171
Disagree	78	49,1%	81	50,9%	159
<b>Total</b>	<b>202</b>		<b>196</b>		<b>398</b>
<b>Diagnosed with STI (past 12 months)</b>					
No	199	49,6%	202	50,4%	401
Yes	29	53,7%	25	46,3%	54
<b>Total</b>	<b>228</b>		<b>227</b>		<b>455</b>

**Table 2** Sexual behaviour of participants (condom use at last sex) (Continued)

	Condom use at last sex				Total (n = 471)
	No (n = 237)		Yes (n = 234)		
	n	%	n	%	
Sex under influence of alcohol (past 3 months)					
No	211	50,0%	211	50,0%	422
Yes	16	48,5%	17	51,5%	33
Total	227		228		455
Talked about condoms with partner (past 12 months)					
No	68	75,6%	22	24,4%	90
Yes	153	43,5%	199	56,5%	352
Total	221		221		442
Age at first sex					
12–17 years	104	59,4%	71	40,6%	175
18–24 years	117	45,0%	143	55,0%	260
Total	221		214		435
Age group					
18–24 years	132	54,1%	112	45,9%	244
25–34 years	89	51,7%	83	48,3%	172
35–49 years	16	29,6%	38	70,4%	54
Total	237		233		470

The findings of this study are consistent with the findings of similar studies conducted in comparable settings [21, 22]. The fact that women who talked about condoms with their partner during the preceding 12 months were more likely to use condoms during their sexual encounter suggests that being in a relationship where women are confident to have discussions related to sexual practices with their partners, is important for improving women's confidence to negotiate for condom use. Similar findings were shown in a study conducted in Tanzania [21]. Women's capacity to speak about condoms with their sexual partners provides opportunities for improved sexual behavior and protection against STIs, as well as unintended pregnancies [21], while the opposite may be true for women who are unable to negotiate for condom use.

Despite some similar findings to a study conducted in Tanzania, some aspects are contradictory, in as far as the associations between condom use and multiple sexual partners among women are concerned [21]. However, in Ethiopia, participants who were on antiretroviral therapy (ART) and had multiple sexual partners were more likely to engage in risky sexual behaviour [22], and this pattern was observed in both males and females alike. In this study, we found no evidence to suggest that HIV positive status of women had any significant influence on condom use in multivariate analysis. This supports the importance of strengthening HIV education

among women and their sexual partners, given the risks of HIV infection. It has been shown that condom use is effective in preventing the spread of HIV by more than 90% [23].

In a study conducted in South Africa [18], the researchers revealed that factors previously found to be significantly associated with contraceptive use, such as being HIV positive, having been diagnosed with STI in the past 12 months, having concurrent sexual partners and early sexual debut, showed stronger negative associations with contraceptive use among women. Although this study did not precisely focus on contraceptive use, linking these behavioural changing patterns among women is important, given the concerns they are raising. Similar to this study, risky sexual behaviours among participants whose partners were HIV positive was also shown in Ethiopia [22]. There is less chances of condom use at sexual debut among youth [3, 24], suggesting the importance of delaying sexual debut among women until they are able to make the informed and/or guided decisions with full considerations of the exposure to HIV infection [25]. Interventions aimed at encouraging women to delay sexual debut and intentional condom use at first sexual encounter are imperative.

While this study provides an important contribution in the field of sexual and reproductive health, it has notable limitations. Given that the sampling frame for this study was limited to women seeking healthcare services

**Table 3** Factors associated with condom use at last sex in univariate and multivariate analysis

Determinants	Odds ratios (unadjusted)	P-value	95% conf. Interval	Odds ratios (adjusted)	P-value	95% Conf. Interval
<b>Number of male sexual partners (past 3 months)</b>						
0 (ref)						
1	1.17	0.613	0.63 2.17			
More than 1	1.19	0.705	0.48 2.94			
<b>Partner employed</b>	1.00	0.9	0.61 1.63			
No (ref)						
Yes	0.97	0.886	0.59 1.57			
<b>Ever diagnosed with HIV</b>						
No (ref)						
Yes	1.78	0.006	1.16 2.72	1.33	0.466	0.62 2.85
<b>HIV status of sexual partner</b>				1.50	0.131	0.89 2.53
Do not know (ref)						
Negative	0.81	0.433	0.48 1.36	1.10	0.784	0.57 2.12
Positive	1.89	0.606	0.62 2.29	1.10	0.847	0.44 2.74
<b>Sometimes hitting/slapping with partner</b>						
Neutral (ref)						
Agree	1.02	0.982	0.26 3.95	1.03	0.968	0.19 5.55
Disagree	1.80	0.354	0.52 6.27	2.05	0.360	0.44 9.56
<b>Lots of trust in the relationship</b>						
(ref)						
Agree	1.42	0.258	0.77 2.60			
Disagree	1.43	0.346	0.68 3.00			
<b>Partner has control over sex</b>						
Neutral (ref)						
Agree	0.75	0.275	0.44 1.26			
Disagree	1.29	0.267	0.83 2.02			
<b>Partner has control over condom use</b>						
Neutral (ref)						
Agree	0.80	0.436	0.45 1.41			
Disagree	1.05	0.822	0.68 1.62			
<b>Ever diagnosed with STI (past 12 months)</b>						
No (ref)						
Yes	0.85	0.574	0.48 1.50	0.59	0.139	0.29 1.19
<b>Sex under influence of alcohol</b>						
More than 1 (ref)						
Never	0.84	0.626	0.42 1.68			
<b>Talked about condoms with partner in 12 months</b>						
No (ref)						
Yes	4.02	0.000	2.38 6.80	3.74	< 0.0001	2.01 6.98
<b>Age at first sex</b>						
(Ref: 12–17 years)						
18–24 years	1.79	0.003	1.21 2.64	1.50	0.150	0.86 2.61
<b>Age group</b>						
(Ref: 18–24 years)						

**Table 3** Factors associated with condom use at last sex in univariate and multivariate analysis (Continued)

Determinants	Odds ratios (unadjusted)	P-value	95% conf. Interval	Odds ratios (adjusted)	P-value	95% Conf. Interval
25–34 years	1.10	0.636	0.74 1.62	0.85	0.530	0.52 1.40
35–49 years	2.80	0.002	1.48 5.29	2.70	0.035	1.07 6.81

Conf. Confidence

in public health clinics in Umlazi Township, women who do not use public healthcare services or use them less frequently were excluded and/or under-represented in the sample. However, the participants of this study represented all the 10 public health clinics in Umlazi Township. Therefore, the insights gained from the participants will likely be relevant to other public health clinics in similar settings in South Africa. This study sought self-reported sexual health information from participants, thereby making the findings vulnerable to social desirability bias. Furthermore, information deemed to have the potential for leading to judgements may have been withheld by the participants. Some participants may have been unable to recall whether or not a condom was used at last the sexual encounter, leading to incorrect information provided. Information on whether or not HIV positive status was reported among participant's monogamous partner, was not sought. In addition, the data collection instrument did not capture information on ART use among HIV positive women. Older participants may have been unable to recall the age at which they had sexual debut. This may have contributed to reporting bias. Given the cross-sectional nature of the study design, it is not possible to establish a cause-and-effect relationship between study variables.

The findings of this study raise concerns over women's exposures to new HIV infections, amid risky sexual behaviours. Therefore, we aim to expand this research project to include a qualitative component towards understanding women's perceptions and experiences regarding risky sexual behaviours and HIV prevention in Umlazi Township. Conducting longitudinal studies on this topic is important to understand women's sexual behavioural changes, exposures and patterns over time.

The findings of this study make a case for the importance of implementing and/or strengthening evidence-based educational programmes, aimed at improving women's sexual behaviours and HIV prevention strategies. We further recommend that such programmes may be integrated into school-health programmes to reach younger women, but also include men.

### Conclusion

Factors associated with risky sexual behaviours among women highlight a great risk of exposure to STIs such as HIV in Umlazi Township, KZN, South Africa. Exposure to physical partner violence and poor partner discussions about condoms are key deterrents to condom

usage. Some of the factors previously reported to have significant associations with condom use at last sex among women were not supported by the results of this study. The extent to which women engage in unprotected sexual activities are concerning and highlight an urgent need for a more holistic and adaptable educational approach to improving women's sexual behaviours, and STIs prevention, as well as including men.

### Abbreviations

AOR: Adjusted odds ratios; CI: Confidence interval; GBV: Gender-based violence; HIV: Human immunodeficiency virus; KZN: KwaZulu-Natal; OR: Odds ratios; SSA: Sub-Saharan Africa; STIs: Sexually transmitted infections

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### Authors' contributions

MH conceptualized and designed the study, as well as prepared the initial draft. KH and KP reviewed the study. All the authors reviewed the draft and approved the final version of the manuscript.

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### Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

### Ethics approval and consent to participate

Ethics approval was obtained through the Biomedical Research Ethics Committee (BREC) from the University of KwaZulu-Natal (Ref No: BE424/18). Approval was obtained through the National Health Research Database (NHDRD) from the KwaZulu-Natal Provincial Department of Health (Ref No: KZ\_2018009\_013). A written informed consent was obtained from the study participants prior to their enrolment. The two research assistants went through the informed consent with the potential participants in a language preferred by the participants. The study adhered to sound ethical standards including confidentiality, voluntariness of participation and full disclosure of the research process.

### Consent for publication

Not applicable.

### Competing interests

The authors declare that they have no competing interests.

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## References

- Douglas JM Jr, Fenton KA. Understanding sexual health and its role in more effective prevention programs. Los Angeles: Sage Publications Sage CA; 2013.
- Hlongwa M, Mashamba-Thompson T, Hlongwana K. Evidence on factors influencing contraceptive use and sexual behavior in South Africa: a systematic scoping review protocol. *Medicine*. 2018;97(52):e13774. <https://doi.org/10.1097/MD.00000000000013774>.
- Hlongwa M, Mashamba-Thompson T, Makhunga S, Hlongwana K. Evidence on factors influencing contraceptive use and sexual behavior among women in South Africa: a scoping review. *Medicine*. 2020;99(12):e19490. <https://doi.org/10.1097/MD.00000000000019490>.
- Adhikari R, Soonthornthada K, Prasartkul P. Correlates of unintended pregnancy among currently pregnant married women in Nepal. *BMC Int Health Hum Rights*. 2009;9(1):17.
- Latimore AD, Aramrattana A, Sherman SG, Galai N, Srirojn B, Thompson N, et al. Sexually transmitted infection risk behaviors in rural Thai adolescents and young adults: support for gender- and age-specific interventions. *Sex Transm Dis*. 2013;40(3):216.
- Alleyne-Green B, Coleman-Cowger VH, Henry DB. Dating violence perpetration and/or victimization and associated sexual risk behaviors among a sample of inner-city African American and Hispanic adolescent females. *J Interpers Violence*. 2012;27(8):1457–73.
- Statistics South Africa. Mid-year population estimates 2018. Pretoria: Statistics South Africa; 2018.
- Shisana O, Rehle T, Simbayi LC, Zuma K, Jooste S, Zungu N, et al. South African national HIV prevalence, incidence and behaviour survey, 2012. 2014.
- Dunkle KL, Jewkes RK, Brown HC, Yoshihama M, Gray GE, McIntyre JA, et al. Prevalence and patterns of gender-based violence and revictimization among women attending antenatal clinics in Soweto, South Africa. *Am J Epidemiol*. 2004;160(3):230–9.
- Lang DL, Salazar LF, Wingood GM, DiClemente RJ, Mikhail I. Associations between recent gender-based violence and pregnancy, sexually transmitted infections, condom use practices, and negotiation of sexual practices among HIV-positive women. *JAIDS*. 2007;46(2):216–21.
- Human Sciences Research Council. The fifth south African national HIV prevalence, incidence, behaviour and communication survey, 2017: HIV impact assessment summary report. Cape Town: HSRC Press; 2018.
- Department of Social Development. The National Adolescent Sexual and Reproductive Health Rights Framework 2014–2019. In: Development of Social Development, editor. Pretoria: Department of Social Development; 2015.
- The National Development Plan 2030. The National Strategic Plan (NSP) for HIV, TB and STIs: 2017–2022. Pretoria: The Presidency; 2017.
- Cremin I, Nyamukapa C, Sherr L, Hallett TB, Chawira G, Cauchemez S, et al. Patterns of self-reported behaviour change associated with receiving voluntary counselling and testing in a longitudinal study from Manicaland, Zimbabwe. *AIDS Behav*. 2010;14(3):708–15.
- Coates TJ, Kulich M, Celentano DD, Zelaya CE, Chariyalertsak S, Chingono A, et al. Effect of community-based voluntary counselling and testing on HIV incidence and social and behavioural outcomes (NIMH project accept; HPTN 043): a cluster-randomised trial. *Lancet Glob Health*. 2014;2(5):e267–e77.
- Statistics South Africa. Census 2011 Pretoria. South Africa: Statistics South Africa Pretoria; 2012.
- Chimbindi NZ, McGrath N, Herbst K, Tint KS, Newell M-L. Socio-demographic determinants of condom use among sexually active young adults in rural KwaZulu-Natal, South Africa. *Open AIDS J*. 2010;4:88–95.
- Seutlwadi L, Peltzer K, Mchunu G, Tutshana BO. Contraceptive use and associated factors among South African youth (18–24 years): A population-based survey. *South Afr J Obstet Gynaecol*. 2012;18(2):43–7.
- Lauritsen JM, Bruus M. EpiData entry version 4.6. A comprehensive tool for validated entry and documentation of data. The EpiData Association: Odense Denmark; 2018.
- StataCorp. Stata Statistical Software: Release 15. College Station: StataCorp LLC; 2017.
- Exavery A, Kanté AM, Jackson E, Noronha J, Sikustahili G, Tani K, et al. Role of condom negotiation on condom use among women of reproductive age in three districts in Tanzania. *BMC Public Health*. 2012;12(1):1097.
- Mosisa G, Woldemichael K, Ayalew F. Risky sexual behavior and associated factors among antiretroviral therapy attendees in Nekemte Referral Hospital, Western Ethiopia: a cross-sectional study. *HIV/AIDS (Auckland, NZ)*. 2018;10:125.
- Nyembezi A, Ruiter RA, van den Borne B, Sifunda S, Funani L P. R. Correlates of consistent condom use among recently initiated and traditionally circumcised men in the rural areas of the eastern Cape Province, South Africa. *BMC Public Health*. 2014;14(668).
- Zuma K, Setswe G, Ketye T, Mzolo T, Rehle T, Mbelle N. Age at sexual debut a determinant of multiple partnership among south African youth. *Afr J Reprod Health*. 2010;14(46):1–10.
- Ntshiga T, Musekiwa A, Mlotshwa M, Mangold K, Reddy C, Williams S. Predictors of male condom use among sexually active heterosexual young women in South Africa, 2012. *BMC Public Health*. 2018;18(1137):1–14.

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## **Chapter Seven: Third Primary Manuscript**

This Chapter addressed the second part of objective five. This study assessed knowledge and perceptions of healthcare providers regarding the use of modern contraceptives among adolescent girls in Umlazi Township, KwaZulu-Natal province, South Africa. This study has been peer-reviewed and published in an international academic journal.

### **Healthcare providers' knowledge and perceptions regarding the use of modern contraceptives among adolescent girls in Umlazi Township, KwaZulu-Natal province, South Africa**

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## Research



# Healthcare providers' knowledge and perceptions regarding the use of modern contraceptives among adolescent girls in Umlazi Township, KwaZulu-Natal province, South Africa

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**Healthcare providers' knowledge and perceptions regarding the use of modern contraceptives among adolescent girls in Umlazi township, KwaZulu-Natal province, South Africa**

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## Abstract

**Introduction:** the phenomenon of unintended adolescent pregnancy continues to be a reproductive and public health concern in sub-Saharan Africa. Healthcare providers play an important role in influencing the use of contraceptives among adolescent girls. This study assessed knowledge and perceptions of healthcare providers regarding the use of modern contraceptives among adolescent girls in Umlazi township, KwaZulu-Natal province, South Africa.

**Methods:** this was a descriptive study involving 35 healthcare providers covering all 10 primary healthcare clinics in Umlazi township. Data collected through a structured questionnaire were coded, entered into Epi data manager (version 4.6) and exported to STATA (version 15.0) for analysis.

**Results:** of the thirty-five healthcare providers that participated in this study, professional nurses (54.3%) and enrolled nurses (17.1%) constituted the majority. The mean age of the participants was 42.11 years, with 88.6% being females. More than a third (37.1%) of healthcare providers did not know whether or not modern contraceptives make users promiscuous, while more than half (57%) had negative attitudes towards adolescents exploring contraceptive methods. Healthcare providers viewed health systems challenges, such as poor working conditions, long queues, and contraceptives stock-outs, as deterrents towards the provision of quality sexual behaviour counselling and modern contraceptive education to users. **Conclusion:** poor health systems and negative behaviours by healthcare providers influences the delivery of family planning services in primary healthcare clinics and serve as barriers to quality family planning services provided to younger women.

## Introduction

Unintended pregnancy continues to be a reproductive and public health concern in sub-Saharan Africa [1]. However, the extent to which women manage various aspects of their sexual and

reproductive health, including the prevention of unplanned or unwanted pregnancies and exposure to HIV/AIDS, raises questions of public health and health promotion concern [2]. While the sub-Saharan African region experiences more than 14 million abortions related to unintended or unwanted pregnancies each year [3], adolescent women are the most affected by high unintended pregnancies and termination of pregnancies [4]. South Africa continues to experience a high number of termination of pregnancies [5], an indication that many pregnancies are unintended. Factors influencing poor modern contraceptive use among adolescent girls usually include stigma, embarrassment, and shame [6]. Negative attitudes of healthcare providers towards younger women have been reported to prevent adolescents from utilising contraceptive methods from local clinics [7,8]. Some healthcare providers have been reported to be hesitant or unprepared to provide contraceptive methods to younger women [9]. Instead, some healthcare providers would opt to deter adolescents from engaging in early sex [10]. Healthcare providers sometimes view the provision of modern contraceptives to unmarried adolescents girls as promoting sexual promiscuity [11]. Healthcare providers' poor knowledge of different contraceptive methods has been flagged as one of the contributing factors to incomplete information sharing towards current and potential contraceptive users [12].

Less than half of the healthcare providers have been reported to have sufficient information about all the types of contraceptive methods available in clinic settings [13], which is an indication of lack of training or education regarding contraceptive methods accessible in primary healthcare clinics. While this may be indicative of poor training on contraceptives, this could also be related to their attitudes towards the contraceptives, which in turn would adversely affect their learning desire. In South Africa, lack of confidence was noted to adversely affect nurses effectively providing Implanon contraceptive method services [14]. While negative views towards some contraceptive methods persist among healthcare providers [14],

age and length in practice have been shown to influence the prescribing patterns of contraceptives for adolescents. The recently graduated and/or younger healthcare providers are more likely to offer contraceptives to adolescents freely compared to their older counterparts [15]. In a province like KwaZulu-Natal, where unintended and termination of pregnancies are high, it is important to understand healthcare providers' knowledge of modern contraceptive methods and their perceptions towards adolescents seeking modern contraceptive methods in primary healthcare clinics. This is an important step, in so far as, determining challenges related to adolescents accessing family planning services in primary healthcare clinics, is concerned. Therefore, this study aimed to assess knowledge and perceptions of healthcare providers regarding modern contraceptive use among adolescent girls in Umlazi Township, KwaZulu-Natal province, South Africa.

## Methods

**Study setting:** Umlazi township, is located in the province of KwaZulu-Natal, with an estimated population of more than half a million people [16]. The township falls under the Ethekwini metro, which has the highest HIV prevalence in South Africa [17]. Umlazi has 10 primary healthcare clinics and one hospital. All 10 clinics in Umlazi participated in the study. All 10 clinics combined serve more than 50 000 clients on average per month.

**Study design, participants and sampling:** across-sectional descriptive survey was conducted from November 2018 to April 2019. Of the 124 invited nurses, 108 agreed to participate in the study (87.1%), with only 35 returning the completed questionnaires (32.4%). Evidence shows that studies with nurses as participants often report lower response rates [18]. The study sample was drawn from healthcare providers covering all 10 Umlazi township's primary healthcare clinics. All nurses who were available and providing health services at the time of data collection were

approached, introduced to the study and invited to participate. Participants were only enrolled in the study after the health services had been rendered to clients.

**Study instrument and data collection:** a structured self-administered questionnaire was designed in English and a local language, IsiZulu. The trained and experienced research assistants, who understand both languages were available to clarify aspects of the questionnaire when required by the participants. The study instrument covered these aspects: demographic and socioeconomic characteristics of the study participants, awareness of modern contraceptives, capacity building, the use of modern contraceptives, the technical expertise, and information related to working conditions. Data quality assurance was achieved through data validation, data cleaning, questionnaire verification, as well as ensuring that questionnaires were field-tested for consistency. Administered questionnaires were initially checked by the principal investigator to ensure quality assurance of collected data and completeness of questionnaires.

**Data analysis:** data were coded, entered into Epi data manager (version 4.6) [19] and exported to STATA (version 15.0) [20] for analysis. Data cleaning was conducted to eliminate discrepancies in data before analysis were carried out. The background information of participants were analysed using descriptive statistics. The frequency distribution and cross-tabulations of each variable were carried out for categorical data. Frequency distributions of continuous variables were tested for normality using Shapiro-Wilks test.

## Results

**Demographic characteristics of the participants:** professional nurses (54.3%) and enrolled nurses (17.1%) constituted the most participants (Table 1). The ages of participants ranged between 26 to 63 years, with the mean age and the standard deviation of 42.11 and 11, respectively. Most healthcare providers were females (88.6%), and a

large proportion of healthcare providers' (80%) first language was IsiZulu. Married, single and divorced participants made up 34.3%, 28.6% and 17.1%, respectively.

**Healthcare providers' knowledge of modern contraceptive methods:** about a quarter (25.7%) of healthcare providers reported that modern contraceptives make users promiscuous, while 37.1% did not know (Table 2). More than half (57.2%) of participants indicated that modern contraceptives are the most effective way of avoiding or delaying pregnancies, while 11.5% was not so positive about the effectiveness of modern contraceptives. Over one-third (34.3%) of participants indicated that they have not had any form of training or refresher course on any contraceptive methods in the past 12 months. The majority of participants (74.3%) reported that they had not attended any training or refresher course on sexual behaviour and modern contraceptive use counselling in the past 12 months.

**Healthcare providers' perceptions towards modern contraceptive use and users:** the majority (74.3%) of participants reported that modern contraceptive users have good knowledge of different contraceptive methods, with 68.6% reporting that users understand the different modern contraceptive methods available in Umlazi township primary healthcare clinics (Table 3). More than half (51.4%) of participants reported that users are aware of side effects from using particular contraceptive methods, with 20% reporting the opposite. The majority (80.0%) of participants disagreed that healthcare providers do provide sexual health behaviour counselling and education each time a woman visit the clinic. The majority (80.0%) of participants disagreed that healthcare providers are friendly and open despite a woman's age and HIV status when seeking modern contraceptives. Most (82.9%) participants reported that healthcare providers do judge women when acquiring services, and 77.1% disagreed that women do not feel judged at all by healthcare providers. More than half (57.2%) of participants reported that they either mostly or always advise

adolescents to abstain from sex when they seek modern contraceptives. The majority (91.4%) of participants reported that women have a good to excellent attitude when acquiring contraceptive methods in Umlazi township clinics.

**Healthcare providers' observation of modern contraceptive usage, including how they advise clients:** nearly half (45.7%) of participants reported that they generally recommend injectable contraceptives to their clients (Table 4). The majority (80.0%) of participants reported that the intrauterine contraceptive device (IUD) is the most commonly requested contraceptive method by users. Some concerns were raised regarding the modern contraceptives, such as injectable (28.6%), the pill contraceptives (28.6%), Implanon (14.3%) and the IUD (14.3%). Concerns regarding side-effects were reported by 71.4% participants, whereas 54.3% of the participants were concerned about the unbearable waiting hours and clinic conditions. The majority (74.3%) of users disagreed that women's modern contraceptive methods of choice are always available in Umlazi township clinics. More than half (60.0%) of participants disagreed that the working environment in clinics is conducive enough to provide sexual behaviour and contraceptive use counselling and education to clients.

## Discussion

Our findings revealed a gap in contraceptive-related training programmes aimed at benefiting clients seeking contraception services in primary healthcare clinics in Umlazi township. Healthcare providers' knowledge raises serious concerns, given the high number of healthcare providers who do not know whether or not modern contraceptives make users promiscuous (37.1%) and those (25.7%) who believed that modern contraceptives make users promiscuous. This is consistent with literature, such as a study conducted in Nigeria where 57% of nurses reported that providing contraceptives to unmarried adolescents promotes sexual promiscuity [11]. The notion, particularly held by men, that using modern

contraceptives encourages adolescent girls to become sexually promiscuous was also reported in Kenya and should be corrected [21]. Lack of training remains an obvious barrier to the provision of quality family planning services [22]. This is consistent with the findings of the study conducted in similar setting, whereby healthcare providers showed poor understanding of different modern contraceptive methods [9]. Nurses can also influence the choice of contraceptive method. The quality of counselling may motivate or serve as a barrier to adolescent girls accessing modern contraceptives. Arising from poor knowledge and/or unavailability of contraceptive methods, healthcare providers often limit contraceptive methods discussions to few methods [23]. Discouragement of adolescent girls from using contraceptives by healthcare providers was one of the striking findings worthy of targeted intervention. Healthcare providers appeared to be generally comfortable with advising adolescents to abstain from sex as evidenced in the studies conducted in South Africa, Kenya, and Zambia [10,24].

This is despite a wide body of evidence revealing that the majority of adolescents in sub-Saharan Africa and South Africa, in particular, do engage in sex [25, 26]. This provider attitude may likely discourage younger women from seeking contraceptive methods in primary healthcare clinics, for fear of being judged and/ or dissuaded from receiving their preferred contraceptive method. Healthcare providers in this study had negative attitudes towards women's age, as well as judgemental towards women when acquiring family planning services. This is concerning and directly contravenes women's sexual and reproductive health rights as prescribed by the World Health Organization [27,28]. The South African guidelines on contraception also emphasize the need for expanding contraceptive choices to all women, despite their age and HIV status [23]. Concerns over age restrictions on contraceptive provision have also been reported in similar settings [7,9] and continue to occupy public discourse. This study further found that health

systems challenges, such as poor working conditions, long waiting queues, and contraceptives stock-outs may compromise the provision of quality contraception services. The results of this study are consistent with other studies conducted in South Africa, where it was noted that non-availability of contraceptive methods, long waiting hours and nurses' negative attitudes at clinics are likely to be negatively associated with contraceptive use [29,30]. More than 60% of women reported the unavailability of contraceptives as the reason for poor usage of contraception in South Africa [31]. In South Africa, primary healthcare clinics are known for being understaffed and overloaded with patients, thereby resulting in patients waiting long periods of time (hours) in queues, which in turn may likely discourage women from asking family planning-related questions [30,32,33].

While this study provides an important contribution in the field of sexual and reproductive health, it has notable limitations. The study sample size was small ( $n=35$ ) and confined to Umlazi township primary healthcare clinics, an indication that healthcare providers were under-represented in the sample. This limits the generalisability of the findings. Due to high workloads and long queues nurses face each day, this small sample size can be justified. Only nurses available at the clinic during the time of data collection were included (convenience). Therefore, the findings of this study should be interpreted with caution. Nevertheless, the participants of this study represented all the 10 primary healthcare clinics in Umlazi township. Therefore, the insights gained from the participants have a potential for use in other similar settings in South Africa. Conducting similar studies on a larger scale, with a bigger sample size and extended geographical area is essential for a broader understanding of all the issues affecting the contraceptive use by adolescent girls in South Africa, against the backdrop of high teenage pregnancy compounded with high HIV prevalence. Understanding healthcare providers' knowledge and perceptions related to family planning services are important for designing targeted interventions

aimed at improving contraceptive uptake by adolescent girls. There is a need for a provider retraining or refresher courses on various contraceptive methods and sexual and reproductive health education. Strategies to strengthen healthcare providers' knowledge and skills about different contraceptive methods, as well as changing restrictive attitudes towards younger or HIV positive women are key to addressing unintended pregnancies. This also has the potential for improving contraceptive access to women. Educational programmes about contraceptive methods, benefits, uses, and side effects should be strengthened and implemented at community levels, as well as hospitals and clinic waiting rooms. Healthcare systems should be strengthened to meet the contraceptive demands and addressing issues related to long queues. While South Africa is implementing the provision of integrated healthcare services, it is important that this initiative is strengthened to improve and facilitate access to family planning services.

## Conclusion

The findings of this study revealed that healthcare providers' attitudes may negatively affect younger women from seeking and accessing contraceptive methods in primary healthcare clinics. Health systems challenges, such as long queues and poor working conditions and shortages of contraceptive methods should be addressed in order to improve the quality of family planning services provided to younger women. Initiatives aimed at improving healthcare providers' knowledge of contraceptive methods and attitudes towards younger women should be prioritized

### What is known about this topic

- Although nurses' perceptions on contraceptive use among young women is documented elsewhere, understanding this in a setting with high unintended pregnancies, termination of pregnancies, HIV/AIDS, risky sexual behaviors is important;

- Perceptions of healthcare providers remain critical aspects of whether or not younger women seek contraceptive use in primary healthcare clinics.

### What this study adds

- Key information on healthcare providers' knowledge and perceptions related to family planning services towards adolescents in a setting with high unintended pregnancies;
- Understanding of healthcare systems challenges that may prevent adolescent girls from accessing contraceptive methods.

## Competing interests

The authors declare no competing interests.

## Authors' contributions

MH conceptualized and designed the study, as well as prepared the initial draft. KH and BT reviewed the study. All the authors reviewed the draft and approved the final version of the manuscript.

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## Tables

**Table 1:** characteristics of healthcare providers (n=35)

**Table 2:** healthcare providers' knowledge of modern contraceptive methods

**Table 3:** healthcare providers' perceptions of modern contraceptive use and users

**Table 4:** healthcare providers' observation of modern contraceptive usage

## References

1. Ameyaw EK, Budu E, Sambah F, Baatiema L, Appiah F, Seidu AA *et al.* Prevalence and determinants of unintended pregnancy in sub-Saharan Africa: a multi-country analysis of demographic and health surveys. *PLOS ONE*. 2019 Aug 9;14(8): e0220970. [PubMed](#) | [Google Scholar](#)
2. Ackermann L, Klerk GWd. Social factors that make South African women vulnerable to HIV infection. *Health Care for Women International*. 2002 Feb;23(2): 163-72. [PubMed](#) | [Google Scholar](#)
3. World Health Organization. Unsafe abortion incidence and mortality global and regional levels in 2008 and trends during 1990-2008, Information sheet. Geneva. WHO. 2012. [Google Scholar](#)
4. Mbelle N, Setswe G, Sifunda S, Mabaso M, Maduna V. HIV and AIDS related knowledge, attitudes and behaviours of students and staff at South Africa's technical and vocational education and training colleges. *HEAIDS*. 2014. [Google Scholar](#)
5. Massyn N, Padarath A, Peer N, Day C. District health barometer 2016/17. Durban. Health Systems Trust. 2017.
6. Lindberg C, Lewis-Spruill C, Crownover R. Barriers to sexual and reproductive health care: urban male adolescents speak out. *Issues Compr Pediatr Nurs*. Apr-Jun 2006;29(2): 73-88. [PubMed](#) | [Google Scholar](#)
7. Schwandt HM, Speizer IS, Corroon M. Contraceptive service provider imposed restrictions to contraceptive access in urban Nigeria. *BMC Health Services Research*. 2017 Apr 12;17(1): 268. [PubMed](#) | [Google Scholar](#)
8. Agampodi SB, Agampodi CT, Piyaseeli UKD. Adolescents perception of reproductive health care services in Sri Lanka. *BMC Health Serv Res*. 2008 May 3;8: 98. [PubMed](#) | [Google Scholar](#)
9. Nalwadda G, Mirembe F, Tumwesigye NM, Byamugisha J, Faxelid E. Constraints and prospects for contraceptive service provision to young people in Uganda: providers' perspectives. *BMC Health Serv Res*. 2011 Sep 17;11: 220. [PubMed](#) | [Google Scholar](#)
10. Wood K, Jewkes R. Blood blockages and scolding nurses: barriers to adolescent contraceptive use in South Africa. *Reprod Health Matters*. 2006 May;14(27): 109-18. [PubMed](#) | [Google Scholar](#)
11. Ahanonu EL. Attitudes of health care providers towards providing contraceptives for unmarried adolescents in Ibadan, Nigeria. *J Fam Reprod Health*. 2014 Mar;8(1): 33-40. [PubMed](#) | [Google Scholar](#)
12. Dehlendorf C, Levy K, Ruskin R, Steinauer J. Health care providers' knowledge about contraceptive evidence: a barrier to quality family planning care. *Contraception*. 2010 Apr;81(4): 292-8. [PubMed](#) | [Google Scholar](#)
13. Omishakin MYJ. Knowledge, attitude and practice of family planning among health care providers in two selected health centres in Osogbo local government, Osun State. *Women's Health and Gynecology*. 2015;4: 12-6.
14. Adeagbo O, Mullick S, Pillay D, Chersich M, Morroni C, Naidoo N *et al.* Uptake and early removals of Implanon NXT in South Africa: perceptions and attitudes of healthcare workers. *South African Medical Journal*. 2017 Oct 1;107(10): 822-826. [PubMed](#) | [Google Scholar](#)
15. Vaaler ML, Kalanges LK, Fonseca VP, Castrucci BC. Urban-rural differences in attitudes and practices toward long-acting reversible contraceptives among family planning providers in Texas. *Women Health Issues*. 2012 Mar;22(2): e157-62.. [PubMed](#) | [Google Scholar](#)
16. Statistics South Africa. Census 2011. Pretoria. 30 October 2012.
17. Shisana O, Rehle T, Simbayi LC, Zuma K, Jooste S, Zungu N *et al.* South African national HIV prevalence, incidence and behaviour survey, 2012. Cape Town. HSRC Press. 2012. [Google Scholar](#)

18. Khamisa N, Peltzer K, Ilic D, Oldenburg B. Evaluating research recruitment strategies to improve response rates amongst South African nurses. *SA Journal of Industrial Psychology*. 2014;40(1): 1-7. **Google Scholar**
19. Lauritsen JM, Bruus M. A comprehensive tool for validated entry and documentation of data. Odense Denmark. The EpiData Association. 2010.
20. StataCorp. Stata Statistical Software: release 15. College Station TX. StataCorp LLC. 2017.
21. Ochako R, Mbondo M, Aloo S, Kaimenyi S, Thompson R, Temmerman M *et al*. Barriers to modern contraceptive methods uptake among young women in Kenya: a qualitative study. *BMC Public Health*. 2015 Feb 10;15: 118. **PubMed | Google Scholar**
22. Mugisha JF, Reynolds H. Provider perspectives on barriers to family planning quality in Uganda: a qualitative study. *J Fam Plann Reprod Health Care*. 2008 Jan;34(1): 37-41. **PubMed | Google Scholar**
23. Lince-Deroche N, Pleaner M, Harries J, Morroni C, Mullick S, Firnhaber C *et al*. Achieving universal access to sexual and reproductive health services: the potential and pitfalls for contraceptive services in South Africa. *South Afr Health Rev*. 2016;2016(1): 95-108. **Google Scholar**
24. Warenius LU, Faxelid EA, Chishimba PN, Musandu JO, Ong'any AA. Nurse-midwives' attitudes towards adolescent sexual and reproductive health needs in Kenya and Zambia. *Reprod Health Matters*. 2006 May;14(27): 119-28. **PubMed | Google Scholar**
25. Zgambo M, Kalembo FW, Mbakaya BC. Risky behaviours and their correlates among adolescents living with HIV in sub-Saharan Africa: a systematic review. *BMC Reproductive Health*. 2018 Oct 24;15(1): 180. **PubMed | Google Scholar**
26. Hlongwa M, Peltzer K, Hlongwana K. Risky sexual behaviours among women of reproductive age in a high HIV burdened township in KwaZulu-Natal, South Africa. *BMC Infectious Diseases*. 2020 Aug 1;20(1): 563. **PubMed | Google Scholar**
27. World Health Organization. Ensuring human rights in the provision of contraceptive information and services: guidance and recommendations. Geneva. WHO. 2014. **Google Scholar**
28. World Health Organization. Consolidated guideline on sexual and reproductive health and rights of women living with HIV: executive summary [press release]. Geneva: WHO. 2017. **Google Scholar**
29. Chersich MF, Wabiri N, Risher K, Shisana O, Celentano D, Rehle T *et al*. Contraception coverage and methods used among women in South Africa: a national household survey. *South African Medical Journal*. 2017 Mar 29;107(4): 307-314. **PubMed | Google Scholar**
30. Hlongwa M, Mashamba-Thompson T, Makhunga S, Hlongwana K. Evidence on factors influencing contraceptive use and sexual behavior among women in South Africa: a scoping review. *Medicine*. 2020 Mar;99(12): e19490. **PubMed | Google Scholar**
31. Hoque M, Ghuman S. Contraceptive practices in the era of HIV/AIDS among university students in KwaZulu-Natal, South Africa, Sahara. *Journal of Social Aspects of HIV/AIDS Research Alliance*. 2012;9(1): 15-9. **PubMed | Google Scholar**
32. Marlow HM. HIV Status and Post-partum contraceptive use in an antenatal population in Durban, South Africa. *Contraception*. 2015 Jan;91(1): 39-43. **PubMed | Google Scholar**
33. Hlongwa M, Mashamba-Thompson T, Hlongwana K. Evidence on factors influencing contraceptive use and sexual behavior in South Africa: a systematic scoping review protocol. *Medicine*. 2018 Dec;97(52): e13774. **PubMed | Google Scholar**

**Table 1:** characteristics of healthcare providers (n=35)

Variable	Frequency	Percentage (%)
<b>Type of provider</b>		
Enrolled Nursing Assistant	3	8.6
Enrolled Nurse	6	17.1
Professional Nurse	19	54.3
No response	7	20.0
<b>Sex</b>		
Female	31	88.6
Male	4	11.4
<b>Home language</b>		
IsiZulu	27	80.0
English	3	8.6
Xhosa	3	8.6
Sotho	1	2.9
<b>Racial group</b>		
Black/African	32	91.4
Coloured	1	2.9
Asian/Indian	2	5.7
<b>Marital status</b>		
Married	12	34.3
Never married/single	10	28.6
Divorced	6	17.1
Widowed	3	8.6
No response	4	11.4
<b>Age: ranged between 26-63 years</b>		
Mean (SD): 42.11 (11)		

<b>Table 2: healthcare providers' knowledge of modern contraceptive methods</b>		
<b>Variable</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Contraceptives make users promiscuous</b>		
No	7	20
Yes	9	25.7
Don't know	13	37.1
No response	6	17.1
<b>Contraceptives are harmful</b>		
No	23	65.7
Yes	3	8.6
Don't know	5	14.3
No response	4	11.4
<b>Contraceptives have side effects</b>		
No	2	5.7
Yes	25	71.4
Don't know	3	8.6
No response	5	14.3
<b>How often do contraceptives actually effective in planning families?</b>		
Never	3	8.6
Seldom	1	2.9
Sometimes	4	11.4
Most often	8	22.9
Always	12	34.3
No response	7	20.0
<b>Which contraceptive methods have you been trained on to give better guidance and education to your clients in the past 12 months?</b>		
Condom	3	8.6
Injections	6	17.1
More than 1 contraceptives	9	25.7
None	12	34.3
No response	5	14.3
<b>Have you been trained or given refresher training on sexual behaviour counselling in the past 12 months?</b>		
No	26	74.3
Yes	4	11.4
No response	5	14.3
<b>Have you been trained or given refresher training on contraceptive use counselling in the past 12 months?</b>		
No	26	74.3
Yes	5	14.3
No response	4	11.4
<b>Have you been trained or given refresher training on sexual and reproductive health education in the past 12 months?</b>		
No	26	74.3
Yes	4	11.4
No response	5	14.3

**Table 3:** healthcare providers' perceptions of modern contraceptive use and users

Variable	Frequency	Percentage (%)
<b>Do you believe that your clients understand the different contraceptive methods available to them from this facility?</b>		
No	5	14.3
Yes	24	68.6
Don't know	2	5.7
Not answered	4	11.4
<b>Do you think your clients know the side effects of using particular contraceptives?</b>		
No	7	20.0
Yes	18	51.4
Don't know	4	11.4
Not answered	6	17.1
<b>Nurses at this clinic provide sexual health behaviour counselling and education each time a woman visits the clinic</b>		
Strongly agree	1	2.9
Neither agree nor disagree	3	8.6
Moderately disagree	7	20.0
Strongly disagree	21	60.0
Not answered	3	8.6
<b>Nurses at this clinic are friendly and open despite a woman's age and HIV status when acquiring family planning services</b>		
Strongly agree	2	5.7
Moderately disagree	6	17.1
Strongly disagree	22	62.9
Not answered	5	14.3
<b>Nurses at this clinic do not judge women at all despite the service provided</b>		
Strongly agree	2	5.7
Moderately disagree	7	20.0
Strongly disagree	22	62.9
Not answered	4	11.4
<b>Do you advise adolescents to abstain from sex when they seek contraceptives?</b>		
No	8	22.9
Rare times	3	8.6
Most of the times	12	34.3
Always	8	22.9
Not answered	4	11.4
<b>How is the attitude of women when acquiring contraception in the clinic?</b>		
Excellent	9	25.7
Very Good	7	20.0
Good	16	45.7
Fair	1	2.9
Poor	1	2.9
Not answered	1	2.9

<b>Table 4: healthcare providers' observation of modern contraceptive usage</b>		
<b>Variable</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Which contraceptive method do you generally recommend to your clients?</b>		
Injections	16	45.7
IUD	7	20.0
Condom	5	14.3
Abstinence	1	2.9
More than 1 contraceptives	3	8.6
No response	3	8.6
<b>What is the most requested contraceptive method by your clients?</b>		
Injections	2	5.7
IUD	28	80.0
Condom	1	2.9
No response	4	11.4[MH1]
<b>Which contraceptive method do your clients complain about the most?</b>		
Condom	3	8.6
IUD	5	14.3
Injections	10	28.6
Implanon	5	14.3
Pill	10	28.6
None	1	2.9
No response	1	2.9
<b>What do clients normally complain about regarding those contraceptives?</b>		
Side effects	25	71.4
Other	4	11.4
Not applicable	3	8.6
Not answered	3	8.6
<b>Working conditions/health systems</b>		
<b>The waiting hours are unbearable at this clinic</b>		
Strongly agree	13	37.1
Moderately agree	6	17.1
Neither agree nor disagree	6	17.1
Moderately disagree	4	11.4
Strongly disagree	2	5.7
Not answered	4	11.4
<b>Women's contraception of choice always available in this clinic</b>		
Strongly agree	5	14.3
Neither agree nor disagree	1	2.9
Moderately disagree	9	25.7
Strongly disagree	17	48.6
Not answered	3	8.6
<b>The working environment is conducive enough to provide sexual behaviour and contraceptive use counselling and education to clients</b>		
Strongly agree	2	5.7
Moderately agree	3	8.6
Neither agree nor disagree	5	14.3
Moderately disagree	5	14.3
Strongly disagree	16	45.7
Not answered	4	11.4

## **Chapter Eight: Fourth Primary Manuscript**

This Chapter addresses objective six of the study. This chapter explores perceptions and experiences regarding contraceptive use and risky sexual behaviours among women of reproductive age in Umlazi Township, South Africa. This manuscript was undergoing peer-review by an international academic journal at the time of submission of this thesis.

### **“In fact, that’s when I stopped using contraception”: A qualitative study of the experiences of sexually active women regarding contraceptive use in KwaZulu-Natal, South Africa**

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## **Abstract**

### **Introduction**

Over the past decade, significant gains in improving the uptake of contraceptives by women of reproductive age, have been made in Sub-Saharan Africa (SSA). However, the number of unplanned pregnancies remain high in the SSA region, a phenomenon that is also pervasive in South Africa generally, and in KwaZulu-Natal in particular. Using qualitative methods, this study explored the experiences of women of reproductive age in the use of contraceptives, in relation to their sexual behaviour in KwaZulu-Natal, South Africa.

### **Methods**

In October 2021, we conducted a qualitative study at Umlazi Township in KwaZulu-Natal through face-to-face in-depth interviews, exploring how women of reproductive age experienced contraceptives in relation to their sexual behaviour. Fifteen women from four primary health care facilities were recruited through a combination of convenience and criterion-based sampling techniques. Using NVivo version 11, two skilled researchers independently conducted thematic data analysis, as a mechanism for quality assurance, before the results were collated and reconciled.

### **Results**

The study included 15 female participants, aged between 18 and 35 years, of whom two-thirds were aged 18-24 years. This study found that women were concerned about unpleasant contraceptive side effects such as prolonged or irregular menstrual periods, bleeding, weight gain, and/or severe pains. Some women stopped using their preferred contraceptive method or opted for a different contraceptive method due to undesirable side effects and/or contraceptive stock outs. Women also stated that they were not adequately counselled or informed on the use or potential negative effects of various contraceptive methods available at health care facilities. The following key themes emerged from the analysis, namely: early sexual debut and unplanned pregnancy; concerns over contraceptives' efficacy and side effects; contraceptive methods' stock-outs, inconsistent or incorrect use of contraceptive methods; inadequate counselling on contraceptive methods; misconceptions about contraception; risky sexual behaviours.

## **Conclusion**

Our findings revealed that the uptake of contraceptives is affected by multiple factors, hence approaches to address the issues raised, are required. Interventions aimed at reducing contraceptive stock outs are required to ensure that women are empowered to choose contraception based on their own preference, convenience, and/or experience. A variety of contraceptive methods should always be available at local public health care facilities. It is imperative that counselling on contraceptive methods' side effects be improved, to ensure that women have freedom to make informed decisions about their preferred method, proper management of side effects, and to assist them with method switching as needed, instead of discontinuation. Innovative approaches, such as internet-based sources of information, text message reminders, and brochures are needed to improve women's comprehension of how contraceptive methods work.

**Keywords:** Women, perceptions, experiences, contraceptive use, sexual behaviour, KwaZulu-Natal, South Africa

## Introduction

Despite the notable improvements in the uptake of contraceptives by women of reproductive age globally, the Sub-Saharan African (SSA) region continues to record a high proportion of women who experience unplanned pregnancies every year (1). In SSA, unmet contraception needs for women of reproductive age continue to be a public health concern, with a substantial number of these women being unable to access and use their preferred methods of contraception, which jeopardizes their desire to circumvent unplanned pregnancies (2). In the context of this study, an unmet need for contraception is defined as an inconsistent or incorrect use of a contraceptive method by a sexually active woman of reproductive age, for preventing unwanted pregnancy (3, 4). The rate of unmet needs for contraceptive use is more than 20% among sexually active women in SSA (5, 6).

Contraception is one of the most important public health interventions which respond to sexual and reproductive health needs of women, thereby enabling them to plan their pregnancies and decide on the number of children they desire (7). The consistent and correct use of contraception has far-reaching benefits to both individuals and societies, including the reduction of pregnancy-related morbidity and mortality, termination of pregnancies (ToPs), improving educational opportunities, and empowerment of women (8, 9). Furthermore, contraceptive use positively affects the overall health of women of reproductive health, as it empowers them to autonomously make decisions regarding their own sexual and reproductive health (10, 11). Studies have shown that empowered and educated women are more likely to make informed decisions about the use of contraception (12, 13).

The 2016 Demographic and Health Survey report showed that 55% and 60% of married women and sexually active women, respectively, used contraceptives in South Africa (3). At least 15% of women who are in-union, have an unmet need for contraception to prevent unplanned pregnancy in the country, and the figure is slightly higher (19%) for sexually active women; meanwhile, KwaZulu-Natal (KZN) accounts for 18% and 21% of the national figures, respectively, among in-union and sexually active women (3). In South Africa, more than 100 000 terminations of pregnancy were reported in designated facilities in the 2016/2017 financial year, with KZN accounting for 15% of these (14). Most ToPs are conducted illegally, contributing to high maternal morbidity and mortality rates (9, 15, 16). High rates of unplanned

pregnancy have also been reported among women diagnosed with HIV in South Africa (17). Risky sexual behaviours are also common among young women in this country, as well as in KZN, including early sexual debut (below 15 years), sex under the influence of alcohol or drugs, multiple sexual partners, and inconsistent condom use, all of which contribute to high levels of unplanned pregnancy and sexually transmitted diseases, including HIV (18-23).

Factors contributing to high rates of unplanned pregnancy in limited resource settings, including South Africa, are well documented. Insufficient knowledge of contraception, gender inequality, intimate partner violence, poverty, and inconsistent and incorrect use of contraception, are some of the factors (1, 24, 25). Low levels of contraceptive use have been associated with age, low education level and low socioeconomic status, limited knowledge and inaccessibility of contraceptive methods, and resource-limited rural residential settings (20, 26-28). Health system challenges, including contraception stock-outs, long waiting times, and negative attitudes displayed by some health care providers, have also been reported to deter women, especially young women, from accessing contraceptive services from health care facilities, thereby contributing to low or inconsistent uptake of contraceptives (29, 30).

Despite these challenges, the South African government has demonstrated commitment to ensuring universal access to contraception by women of reproductive age. However, contraceptive use in this age group remains low in the country, and in KZN in particular. The use of qualitative methods to explore women's experiences of contraceptives will deepen our understanding of this phenomenon; this will in turn guide the development and/or the strengthening of interventions aimed at improving contraceptive use among women of reproductive health in KwaZulu-Natal, and other comparable resource-limited settings.

## **Methods**

### **Study setting**

Umlazi, a township populated with more than half a million people, is located in the province of KZN (31) and is part of the eThekweni Metro, which has the largest number of people on lifelong antiretroviral therapy (ART) in the province (32). Umlazi has 10 public health care

clinics and one public health hospital. Four public health care clinics, spread across various parts of Umlazi, participated in the study.

### **Study design**

We explored women's experiences of contraceptives in relation to their sexual behaviour, using an exploratory descriptive qualitative study design (33). We generated data in October 2021, through face-to-face in-depth interviews with women of reproductive age accessing health care services, from four facilities in Umlazi.

### **Sampling**

We employed a combination of convenience and criterion-based sampling strategies, to identify potentially eligible women from four primary health care facilities in Umlazi Township, KZN. We used convenience sampling in the sense that we had no prior knowledge of the information richness of our participants, but conveniently recruited from those women who presented themselves to the participating health facilities, during the period of data collection. After conveniently identifying the potentially eligible women, we drew from criterion-based sampling techniques, by screening whether women were or not: (a) of reproductive age (18–49 years); (b) residing in Umlazi Township; (c) sexually active (women who had sexual intercourse within three months preceding data collection); and (d) using contraception or had used contraception within three months preceding data collection. Women who were outside the age brackets (18-49 years), pregnant, or sexually inactive, were excluded from the study. Interviews were conducted after services had been rendered by the facility.

### **Data collection tool**

We developed an in-depth interview guide in the English language and then translated it into IsiZulu, which is the dominant language used in Umlazi. A female research assistant with a track record of conducting interviews and qualitative research, generally, was recruited and provided with refresher training prior to collecting data. The research assistant was fluent in both English and IsiZulu languages. Interviews were audio-recorded (with participants' permission). To minimize any inconsistencies during the data collection period, the interview guide was pre-tested with five participants who did not form part of the study.

## **Data collection**

Data was collected iteratively to ensure that researchers engaged with preliminary data analysis of the information collected, learn emerging themes, identify gaps in the data, and adapt the data collection process for subsequent interviews. Each interview lasted for 30 to 60 minutes. Data saturation was reached at 15 interviews. At least five potential participants refused to participate in the study when they were approached. The lead author held regular debriefing meetings with the research assistant to discuss field experiences, challenges, emergent issues, lessons learned, and how she affected and/or was affected by the interviews. The scope of inquiry of the interviews focused on four key components of contraception, namely: (i) awareness about different contraceptive methods, (ii) access (availability/stock-outs of preferred contraceptive methods, counselling), (iii) uptake (key considerations in deciding whether or not to start using contraception), and (iv) adherence/continuation (key considerations in deciding whether or not to continue or discontinue using contraception, including side effects, violence, stigma, discrimination, judgements).

## **Data analysis**

Using NVivo version 11, two researchers independently conducted the analysis from data coding to the development of themes, and this was done iteratively, guided by Richie and Spencer's framework (34). The framework outlines the following stages for conducting qualitative data analysis: (a) familiarisation with the data through reading all the transcripts and listening to the audio recordings; (b) generating initial codes using an open coding method, where each segment of data relevant to this study's research objective was coded; (c) development of a thematic framework extracting key themes from the coded data; (d) application of the thematic framework to all the data; (e) charting of the data, enabling systematic comparisons between data sets; and (f) analysis of the charts for patterns and associations between and within each unit of analysis.

## **Data quality**

To ensure rigor and accuracy, comparative data analysis was conducted by two skilled researchers, who independently read all the transcripts to gain an understanding of the content and scope of data collected, prior to data coding. The outcome of coding was verified, cross-checked, and thoroughly discussed between the two members, to ensure that the research question was answered. We used the COREQ checklist to ensure that the study adhered to quality standards for reporting qualitative study findings (35).

## Ethical considerations

Ethical approval and gatekeeper permission were obtained from the University of KwaZulu-Natal (UKZN) Biomedical Research Ethical Committee (BREC) (Ref No: BE424/18) and the Department of Health's National Health Research Database (NHRD) (Ref No: KZ\_2018009\_013), respectively. The EThekweni District's Ethical Review Committee also approved the study. The study was also supported by the participating health facilities. All participants who volunteered to participate in the study signed an informed consent form prior to their participation. The privacy and confidentiality of participants were protected.

## Results

### Background characteristics of study participants

The study included 15 women, aged between 18 and 35 years, with a median age of 23 years. All participants were Black African women, with more than two-thirds (n=10) aged 18-24 years. The majority (n=12) had attained a secondary level of education and nearly half (n=7) were unemployed. Almost all participants (n=14) were not married.

**Table 1: Demographic characteristics of participants, Umlazi Township, KwaZulu-Natal, South Africa, 2021**

Characteristic	Participants n=15
Age (years)	18-49
Median (IQR)	23 (19-26)
Age categories, n (%)	
18-24 years	10 (67)
25-49 years	5 (33)
Population group, n (%)	
Black African	15 (100)
Level of education, n (%)	
Secondary	12 (80)
Tertiary	3 (20)
Employment status, n (%)	
Unemployed	7 (47)
Employed	4 (27)
Studying	4 (27)
Marital status, n (%)	
Not married	14 (93)
Married	1 (7)

## Key themes

The following key themes emerged from the analysis: early sexual debut and unplanned pregnancy; concerns over contraceptives efficacy and side effects; contraceptive methods' stock-outs, inconsistent or incorrect use of contraceptive methods; inadequate counselling on contraceptive methods; misconceptions about contraception; and risky sexual behaviours.

### Early sexual debut and fear of unplanned pregnancy

Most participants reported that they started to use contraceptive methods at a young age, and they attributed their decisions to an early sexual debut. Some participants' use of contraceptives dated back to their schooling days and the main motivator was pregnancy avoidance.

*“For me to decide using contraception, I was seeing that I was still young and I was still attending school. I was also thinking for my mom that she’s working this side and having a baby while studying was not right. So I decided that since I’m having sex, I should decide that instead I should then use contraception”. (24-year-old, unemployed, with secondary-level education)*

*“I was 17 years at the time and I started using contraception. I was starting to have sex then I used contraception”. (19-year-old, unemployed, with tertiary-level education)*

*“No, the first time I had sex, I was still young. I was 15 years old”. (29-year-old, employed, with secondary-level education)*

Due to an early sexual debut, some women reported being surprised by their first unplanned pregnancy, which occurred while they were very young. Becoming pregnant after the first time having sexual intercourse was particularly surprising for them, as they thought pregnancy occurs after several sexual encounters.

*“Even with this first birth, it was a big mistake. I did not plan to have a child. It was my first time having sex. I didn’t even know I was pregnant. My mother is the one who noticed.... I couldn’t believe it.... It was my first time having sex, I had not planned to get pregnant. Even my boyfriend had not planned it. He was also surprised”. (18-year-old studying at secondary-level education)*

*I didn't plan to get pregnant. That mistake happened when I did not use a protection. And then I got a child. I started having sex when I was doing grade 12". (20-year-old, unemployed, with secondary-level education)*

One woman indicated that she experienced unplanned pregnancy while she was actively using a contraceptive method, and the health care providers responded by saying that the injectable contraceptive method is not 100% effective.

*"Let me see, 2018 I did use the injection. I used the injection throughout 2018. I was active on injection because I didn't want another child. And then I got pregnant while I was using the injection. And the nurse said that the injection is not 100% effective... I asked them, how, it's not 100% then why are we using it? The nurse just said that the injection is not 100% protective. I was using contraception when I got pregnant. I didn't plan to have a child". (23-year-old, unemployed, with secondary-level education)*

### **Concerns over contraceptives' efficacy and their side effects**

Concerns over the effectiveness of using contraceptive methods were raised, with some women reporting that they do not trust that the contraceptives are effective enough to prevent someone from getting an unplanned pregnancy.

*"Yoh ehm, I think that because there's many different contraceptive methods, what I know about the injection is that it reduces chances of getting pregnant. But it is not 100% accurate.... I will continue using a condom because I know that the injection is not 100% sure." (18-year-old studying at secondary-level education)*

*"Even pills, I'm scared of them. I got pregnant while I had used the morning after pills. I don't trust the pills". (26-year-old, unemployed, with secondary-level education)*

In addition to contraceptive mistrust, there were reports of unpleasant contraceptive side effects from some of the participants. The most common side effect reported by the participants, was prolonged menstrual periods resulting from using injectable contraceptives.

*"The injection made me have prolonged periods than usual. I usual go on periods for three days, but after taking the injection my periods would last for seven days... I was tired of being on periods all the time. My periods lasted longer than usual. I'd keep having periods. Then it would stop eventually, but then again the following months when it's time for my*

*periods, they would last longer... The next month, same thing". (19-year-old, unemployed, with tertiary-level education)*

*"I went on a prolonged menstrual cycle, my periods started from the 2<sup>nd</sup> to the 12<sup>th</sup> August... I don't know what is going on, I don't know...But the injection didn't treat me well. I had started with the two months injection. But I stopped using the two months injection because it would make me go on periods at any time. It made me bleed at any time". (19-year-old studying at secondary-level education)*

Some women indicated that using the injectable contraceptives made them bleed heavily, or that the injectable interfered with their menstrual cycle, and resulted in inconsistent menstrual periods.

*She [nurse] had given me the 3 months injection. The three months injection was making me bleed a lot. My bleeding couldn't stop. Then I did some research and asked from others and they said that it happens that the injection would not respond well on your body". (20-year-old, unemployed, with secondary-level education)*

*"It was not treating me well. It would make me go on periods at least twice in one month. I would go on periods for three or four days but twice a month. In the beginning it treated me well. Then it changed later on". (25-year-old, employed, with secondary-level education)*

Women reported that using contraception contributed to changes in their appetite for food, thereby affecting their weight. Some experienced weight gain and others lost weight.

*"I would eat a lot. I would eat every now and then. And if I wanted food, I really wanted food, like someone who's pregnant". (20-year-old, unemployed, with secondary-level education)*

*"...when I started with the contraceptives, I gained a lot of weight and I was oily, like my face was messed up so I stopped and then after a year I went back [re-started contraception]...". (22-year-old, employed, with secondary-level education)*

*"I started by using the three months injection, but it made me lose weight so bad, then I switched from it to the two months injection". (25-year-old, employed, with secondary-level education)*

Some women indicated that they experienced severe pains, as a result of using the injectable contraceptive method.

*“No, but I’ve used injection before and the injection didn’t treat me well. I always had problems in my bladder and I decided to stop using it. I would have unusual pains, which is something I had never experienced before I started using contraception”. (27-year-old, unemployed, with secondary-level education)*

### **Participants’ reactions to side effects**

Some participants reacted to side effects by simply discontinuing contraception.

*“The injection made me have [more] extended periods than usual... So I didn’t even ask, I just decided to stop using contraception. In fact, that’s when I stopped using contraception. I stopped using contraception last year or last-of-last year”. (19-year-old, unemployed, with tertiary-level education)*

*“At the clinic they told me there’s this kind of injection and I should try it. But I then stopped it when I experienced these side effects. I would also get sick. I was supposed to go on periods. But because of the injection I wouldn’t go on periods. I stopped it”. (27-year-old, unemployed, with secondary-level education)*

Others reacted to side effects by simply switching to a different contraceptive method.

*“Then I came back and told the nurse about the side effects I was experiencing while using that injection. I then asked her to switch me to a different method. And then she switched me to a two-months injection”. (20-year-old, unemployed, with secondary-level education)*

*“I told them that I’d like to switch from using this contraception because I had started using the pills for a short while. So I knew how they worked. Then I asked them to change me to the pills. Now I only go on periods once a month”. (35-year-old, unemployed, with tertiary-level education)*

### **Stock-outs of preferred contraceptive methods and participants’ reactions**

Participants reported stock-outs of their preferred contraceptive methods as a pervasive challenge in the health care facilities.

*“Yes, even last week they said they were out of stock, especially the three months injection, they only had the two month’s one”. (18-year-old studying at secondary-level education)*

*“...sometimes you come here and find that injection is not available... I don’t know what can they do to improve the situation. I sometimes ask nurses why they don’t have the injections and they say that it is the department that is not delivering them”. (20-year-old, unemployed, with secondary-level education)*

One participant saw Implanon as a potential solution to the challenge of stock-outs, as this method does not require her to make regular visits to the facility for contraceptive purposes.

*“...so, I’m considering using it [Implanon] because the injection is sometimes not available at the clinic. And they said at the clinic that if the injections are finished again, they don’t know when it will be available again...”. (23-year-old, unemployed, with secondary-level education)*

*“When I got to this clinic, I was told that injectable contraceptive methods is no longer available. They told me that there is the implant contraceptive method. But I’m scared of implant. I ended up stopping using contraception because I was scared of using the implant. I’m still going to think about the implant but it is scary...I came [to the clinic] on September 15, and I asked for implant and they said that I should come back another day....They do tell you that it’s not that they don’t offer it, it’s just out of stock, you should come back”. (24-year-old, unemployed, with secondary-level education)*

Changing to an alternative contraception method was one of the options pursued by some participants whenever they were unable to receive their preferred contraceptive method, while others opted to wait for their preferred contraception. Those who opted to wait for their contraception of choice, had to modify their lifestyle during the period of being not protected by contraception.

*“I continued using the three months injection. But it would happen that sometimes they would not have it at the clinic. Then I would be switched to the two months injection”. (20-year-old, unemployed, with secondary-level education)*

*“I decided to stop. I didn’t take them. I stopped using contraceptives. My date was on the 12<sup>th</sup> September. I came here and I was told that the injection is not available. Then, again I came back on the 18<sup>th</sup> September. And they told me again that the injection is not available. Then I waited. Then I received a message from my friend who told me that she was at the clinic and that the injection is now available. I think it was last week. Then I came back and took the injection”. (20-year-old, unemployed, with secondary-level education)*

*“For me I don’t want to use something else when I’m still going to use the implant. I don’t want too many in my body. At least if I use one. I should not mix. I should just be patient for the implant. I should be able to control myself. For now, I’m trying to avoid having sex, since August”.* (24-year-old unemployed, with secondary-level education)

The contraception stock-out has far-reaching implications on women of reproductive age, as it does not only make them vulnerable to unplanned pregnancies, but also causes emotional discomfort.

*“During that time the injection is not available, you are not comfortable. You are scared. It is hard when the injection is not available”.* (20-year-old, unemployed, with secondary-level education)

Others were discouraged to continue using contraception due to stock-outs.

*“You’ll end up getting discouraged if you don’t get the contraceptive methods you need. All they need to do is to ensure that the preferred contraceptive methods are always available”.* (35-year-old, employed, with tertiary-level education)

### **Inconsistent or incorrect use of contraceptive methods**

Participants indicated that they sometimes could not consistently use contraceptives, as some of them missed their re-injection appointments. This resulted in them experiencing an unplanned pregnancy.

*“...When my re-injection date had passed, as I was taking a break, so that my blood will flow and the side effects would stop, I then got pregnant. I had planned to wait for a month. Then I would start the following month. It was stupid I don’t know how [laughs]. And then during that period I became pregnant. It just happened so quickly. I couldn’t believe it. I couldn’t believe that I was really pregnant”.* (23-year-old, unemployed, with secondary-level education)

*“I do have a child. I didn’t stop using contraception, but I got the child after I skipped my date for re-injection. It just happened that I got pregnant”.* (25-year-old, employed, with secondary-level education)

Most participants showed less preference for the contraceptive pills, fearing that they would not be able to maintain or use them consistently or correctly.

*“...what made me stop using them [contraceptive pills] is because I used to miss them because you have to take them at the same time daily, I stopped taking them... I stopped using them because I kept missing the time whereas you are supposed to take them at the same time”. (19-year-old studying at secondary-level education)*

*“I’ve never used something else. I’ve only used the injection. Because I cannot use the pills because I would forget them. I forget the pills I cannot use them”. (23-year-old, unemployed, with secondary-level education)*

Some participants reported instances where health care providers either inserted the implant incorrectly, or inserted it into a pregnant woman, as they hardly ever checked a woman’s pregnancy status before inserting the implant.

*“...and I also got pregnant while the implant was inserted in me... Maybe they inserted it while I was already pregnant. They didn’t check my pregnancy status. They didn’t run pregnancy tests. They just inserted it”. (19-year-old studying at secondary-level education)*

*“I had pregnancy symptoms. I would vomit. I would experience things that I didn’t understand. Then I went back to the clinic and I was told that the implant was not inserted correctly. Then they started telling me about the possible risks since I am already pregnant. That I might get a miscarriage. And I did get a miscarriage. I don’t know if that’s what caused the miscarriage. After they removed the implant, I had already lost hope because I was bleeding”. (19-year-old studying at secondary-level education)*

### **Lack of counselling on contraceptive methods**

Participants indicated that they were not counselled or given information regarding the use of, and the possible side effects, of various contraceptive methods offered at health care facilities.

*“...the nurse did not explain anything to me. She did not tell me how it works. I do have some questions about using contraception. I want to ask that since they are different, there’s one for three months and another one for two months – what’s the difference between them? That’s all I want to ask”. (18-year-old studying at secondary-level education)*

*“She didn’t even ask me which method I wanted to use or what. She didn’t and I couldn’t ask questions. I didn’t even know which injection she was giving to me [after giving birth at the hospital]. She didn’t say anything. She just calls your name and then gives you the injection..... It got me confused. Because I wanted to use a different method. But I only realized what they had given me when I was reading the card because it was written there.*

*And there was nothing I could still do”. (20-year-old, unemployed, with secondary-level education)*

*“...there was no opportunity because in the room we were getting injections from, we were many so there was no space for discussing or asking questions. So you’d get the injection and go home. You didn’t have time to discuss things or ask questions”. (24-year-old, unemployed, with secondary-level education)*

### **Misconceptions about contraception**

Some participants raised concerns about the possibility of contraception impairing future fertility, with others preferring to wait until they got their first child before using contraceptive method.

*“...but the very first time I heard about contraception, I was told by my mother who asked me to use contraception, so that I won’t get pregnant. I hadn’t had a child at that time. But I refused because I heard people saying that if you use contraception when you haven’t had a child, it happens that you might not be able to conceive. So I didn’t use contraception. I only started using contraception after getting a baby. I have one child”. (20-year-old, unemployed, with secondary-level education)*

*“I only used it for a short period because I was told that it’s dangerous to use the injection when you don’t have a child because it completely prevents you from getting pregnant in future....”. (25-year-old, employed, with secondary-level education)*

*“I do have questions. I have many questions. Because even now I am concerned. Some people do say that the injection makes you infertile even after you have stopped using it. You won’t go on periods. Now that it’s been months without seeing my periods, I’m scared”. (19-year-old, unemployed, with secondary-level education)*

### **Spontaneity of sexual activities**

Some women reported that they engaged in spontaneity of sex, whereby they find themselves engaging in unprotected sex without any anticipation or preparation, some of which resulted in sexually transmitted infections.

*“That’s where the mistake was [laughs]. We didn’t use a condom. When I was visiting him, I hadn’t planned to have sex with him. It just happened. I just gave him one round”.* (18-year-old studying at secondary-level education)

*“I just went to check for HIV. I already knew that I was running (promiscuous). I didn’t get sick or anything. And they told me that I am HIV positive... things just got too fast. I was even shocked that how did it happen that I would have sex with someone so quick. It was like there was something that said that I want to teach you a lesson. Condom is really important”.* (26-year-old, unemployed, with secondary-level education)

*“That has happened... Sometimes we run out of condoms. Sometimes it’s there and it just happens that we don’t use it... I came to the clinic and I was told that I have drop...My partner also came to check and found that he also had it... ”.* (23-year-old, unemployed, with secondary-level education)

## **Discussion**

Understanding the disparities in contraceptive use in South Africa, requires a thorough investigation of factors contributing to contraceptive uptake and discontinuation. In this country, the use of contraception is often limited to a few methods, such as the injectable, oral contraceptive pills, and condoms (3). Availability of contraceptive methods at primary health care facilities varies, with injectable, oral contraceptive pills, and condoms being the most common, despite the stock-outs and side effects being regularly reported.

In this study, we adopted a qualitative approach to exploring women’s experiences of contraceptive use, in relation to their sexual behaviour in KwaZulu-Natal, South Africa. Our study participants shared crucial insights for understanding the challenges women face, when accessing and using contraceptive methods in Umlazi Township, KZN. Our results show that concerns over contraceptives’ efficacy, contraceptive method side effects, contraceptive methods’ stock-outs, and lack of counselling on contraceptive methods, affect the uptake of contraceptives in the study setting, and this may have some relevance for other comparable settings.

Side effects play an important role in a woman's decision as to whether to continue or discontinue using contraception, as has been reported in other studies (36, 37). Similar to our study, prolonged or irregular menstrual cycle patterns have also been reported as one of the most common side effects that influence women to discontinue contraceptive use (37-39). Both the injectable users and implant users have concerns about bleeding side effects, which are known to have contributed to discontinuation of contraception in similar settings (37). Contraceptive discontinuation has dire implications, including unplanned pregnancy. Therefore, women should be empowered to avoid unplanned pregnancies, by identifying alternative contraceptive methods that meet their individual needs.

There has been concern about the growing number of women who return to clinics for implant removal, only after a few months of insertion, due to changes in bleeding patterns or excessive bleeding (38, 40, 41). Side effects, notably prolonged or irregular bleeding, have also been reported by health care providers as the most common reason for early Implanon discontinuation (38). In addition to this, other factors have been reported to influence women to remove the implant, including incorrect positioning and low quality of care (42-44). Incorrect positioning of the implant was also reported in this study as an important factor for its discontinuation. The implant protects against pregnancy for up to three years before it needs to be replaced, and this reduces frequent clinic visits among users (45). The growing number of women removing the implant given the side effects, suggests the need for pre-insertion counselling, proper management, and empowerment of women through information regarding alternative contraceptive options for better decision-making (41).

Contraceptive stock-outs occur when one or more contraceptive methods are not available at a health care facility that routinely provides that method. Contraception stock-outs are one of the main factors contributing to contraceptive switching and discontinuation among women (46, 47). Contraceptive methods should be available at all levels of health care, but not all health care facilities offer the full mix of modern contraceptive methods. Women have different contraceptive method preferences and experiences, therefore, a wide variety of contraceptive methods should always be available; this ensures that women are empowered to choose contraception based on their own preference, convenience, and/or experience. Given the high rates of contraceptive method stock-outs in South Africa, unemployed women are likely to

suffer the most, due to financial constraints, whereas women with financial resources, may be able to access preferred contraceptive methods through the private sector.

Health care providers play an important role in ensuring access to contraceptive methods among women. As such, health care providers have an important responsibility in educating women and providing complete information about possible side effects, and the effectiveness of their preferred method. It is imperative that counselling on side effects be improved, to ensure that women have freedom to make informed decisions about their preferred method, and to assist them with method switching as needed. However, counselling when receiving family planning services, is limited in South Africa (48).

In this study, some women had concerns about contraception impairing future fertility. There were also concerns among some women over the effectiveness of contraceptive methods, due to experiencing pregnancy while actively using contraception. These concerns may be addressed through improved counselling and support from health care providers. Some women were concerned about inconsistent or incorrect use of contraceptive methods. These results suggest the need to improve counselling to promote contraception awareness among women, and to clarify any myths and complexities.

Much more effort is needed for counselling, to ensure that women are aware of potential adverse effects from contraceptive use, so as to allow them to make informed decisions. However, a single face-to-face counselling appointment in a busy facility may not be enough to convey all of the information a woman requires about: the reproductive cycle, returning to fertility after discontinuing a method, potential drug–drug interactions, the need for dual protection, and so on (48). In addition to traditional face-to-face interactions between health care providers and contraceptive users, innovative approaches, such as internet-based sources of information, text message reminders, and brochures are needed to improve women’s comprehension of how contraceptive methods work (48-50).

Our study has important limitations to note. The findings of this study were sought from participants' self-reported sexual and reproductive health information, rendering them prone to social desirability bias. Lastly, due to the qualitative nature of the study, the fact that this study was confined to limited health care facilities and participants, meant that our study findings cannot be generalised to other settings. However, the study provides important insights regarding the perceptions and experiences of contraceptive use among sexually active women in Umlazi Township, KwaZulu-Natal, South Africa.

## **Conclusion**

This study contributes to our understanding of women's concerns and challenges arising from accessing and using contraception in Umlazi Township, KwaZulu-Natal. Our findings illustrate that concerted efforts are urgently required to address women's concerns regarding the side effects arising from using contraceptive methods, as well as contraceptive stock-outs, given the dire implications these may have on contraceptive discontinuation and subsequent unplanned pregnancy. The provision of comprehensive counselling services to support women who are having short-term side effects is paramount, to ensure that they are able to deal with side effects, or switch to a different method instead of completely discontinuing contraceptive use, to avoid unplanned pregnancy.

## **Declarations**

**Ethics approval and consent to participate:** Ethics approval was obtained through the Biomedical Research Ethics Committee (BREC) from the University of KwaZulu-Natal (Ref No: BE424/18). Approval was obtained through the National Health Research Database (NHRD) from the KwaZulu-Natal Provincial Department of Health (Ref No: KZ\_2018009\_013).

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## References

1. Cleland J, Harbison S, Shah IH. Unmet need for contraception: issues and challenges. *Studies in family planning*. 2014;45(2):105-22.
2. United Nations. *Family Planning and the 2030 Agenda for Sustainable Development*. . New York: United Nations, Department of Economic and Social Affairs, Population Division.; 2019.
3. NDoH, Stats SA, SAMRC, ICF. *South Africa Demographic and Health Survey 2016*. Pretoria, South Africa, and Rockville, Maryland, USA: National Department of Health (NDoH), Statistics South Africa (Stats SA), South African Medical Research Council (SAMRC), ICF; 2019.
4. Sedgh G, Ashford LS, Hussain R. Unmet need for contraception in developing countries: examining women's reasons for not using a method. 2016.
5. Darroch JE, Sully E, Biddlecom A. Adding it up: investing in contraception and maternal and newborn health, 2017—supplementary tables. New York, NY: The Guttmacher Institute. 2017.
6. World Health Organization. *Contraception* Geneva, Switzerland: World Health Organization; 2019.
7. Bongaarts J, Cleland JC, Townsend J, Bertrand JT, Gupta MD. *Family planning programs for the 21st century: rationale and design*. 2012.
8. Michalow J, Chola L, McGee S, Tugendhaft A, Pattinson R, Kerber K, et al. Triple return on investment: the cost and impact of 13 interventions that could prevent stillbirths and save the lives of mothers and babies in South Africa. . *BMC Pregnancy and Childbirth* 2015;15(1):1-13.
9. Darroch JE, Woog V, Bankole A, Ashford LS. Adding it up: costs and benefits of meeting the contraceptive needs of adolescents. 2016.
10. Ganatra B, Faundes A. Role of birth spacing, family planning services, safe abortion services and post-abortion care in reducing maternal mortality. *Best Practice & Research Clinical Obstetrics & Gynaecology*. 2016;36:145-55.
11. Hameed W, Azmat SK, Ali M, Sheikh MI, Abbas G, Temmerman M, et al. Women's empowerment and contraceptive use: the role of independent versus couples' decision-making, from a lower middle income country perspective. *PloS one*. 2014;9(8):e104633.
12. Corroon M, Speizer IS, Fotso J-C, Akiode A, Saad A, Calhoun L, et al. The role of gender empowerment on reproductive health outcomes in urban Nigeria. *Maternal and child health journal*. 2014;18(1):307-15.
13. Tekelab T, Melka AS, Wirtu D. Predictors of modern contraceptive methods use among married women of reproductive age groups in Western Ethiopia: a community based cross-sectional study. *BMC women's health*. 2015;15(1):1-8.
14. Department of Health. *Pregnancy terminations in designated South African facilities*. Pretoria: SA National Department of Health; 2017.
15. Hodes R. The culture of illegal abortion in South Africa. *Journal of Southern African Studies*. 2016;42(1):79-93.
16. Seidu A-A, Ahinkorah BO, Agbemavi W, Amu H, Bonsu F. Reproductive health decision-making capacity and pregnancy termination among Ghanaian women: Analysis of the 2014 Ghana demographic and health survey. *Journal of Public Health*. 2021;29(1):85-94.
17. Adeniyi OV, Ajayi AI, Moyaki MG, Ter Goon D, Avramovic G, Lambert J. High rate of unplanned pregnancy in the context of integrated family planning and HIV care services in South Africa. *BMC health services research*. 2018;18(1):1-8.
18. Hlongwa M, Peltzer K, Hlongwana K. Risky sexual behaviours among women of reproductive age in a high HIV burdened township in KwaZulu-Natal, South Africa. *BMC Infectious Diseases*. 2020;20(1):1-9.
19. Toska E, Cluver LD, Boyes M, Pantelic M, Kuo C. From 'sugar daddies' to 'sugar babies': exploring a pathway among age-disparate sexual relationships, condom use and adolescent pregnancy in South Africa. *Sexual health*. 2015;12(1):59-66.
20. Christofides NJ, Jewkes RK, Dunkle KL, Nduna M, Shai NJ, Sterk C. Early adolescent pregnancy increases risk of incident HIV infection in the Eastern Cape, South Africa: a longitudinal study. *Journal of the International AIDS Society*. 2014;17(1):18585.

21. Atuyambe LM, Kibira SP, Bukenya J, Muhumuza C, Apolot RR, Mulogo E. Understanding sexual and reproductive health needs of adolescents: evidence from a formative evaluation in Wakiso district, Uganda. *Reproductive health*. 2015;12(1):1-10.
22. Solanke BL. Factors influencing contraceptive use and non-use among women of advanced reproductive age in Nigeria. *Journal of Health, Population and Nutrition*. 2017;36(1):1-14.
23. Blackstone SR, Iwelunmor J. Determinants of contraceptive use among Nigerian couples: evidence from the 2013 Demographic and Health Survey. *Contraception and reproductive medicine*. 2017;2(1):1-8.
24. Maharaj P. Stalling contraception? Perspectives and experiences of sexually active women and men. *Agenda*. 2012;26(2):100-10.
25. Jewkes R, Morrell R, Christofides N. Empowering teenagers to prevent pregnancy: lessons from South Africa. *Culture, health & sexuality*. 2009;11(7):675-88.
26. Makola L, Mlangeni L, Mabaso M, Chibi B, Sokhela Z, Silimfe Z, et al. Predictors of contraceptive use among adolescent girls and young women (AGYW) aged 15 to 24 years in South Africa: results from the 2012 national population-based household survey. *BMC women's health*. 2019;19(1):1-7.
27. Digitale J, Psaki S, Soler-Hampejsek E, Mensch BS. Correlates of contraceptive use and health facility choice among young women in Malawi. *The ANNALS of the American Academy of Political and Social Science*. 2017;669(1):93-124.
28. Nyarko SH. Prevalence and correlates of contraceptive use among female adolescents in Ghana. *BMC women's health*. 2015;15(1):1-6.
29. Hlongwa M, Tlou B, Hlongwana K. Healthcare providers' knowledge and perceptions regarding the use of modern contraceptives among adolescent girls in Umlazi Township, KwaZulu-Natal province, South Africa. *The Pan African Medical Journal*. 2021;38.
30. Smith P, Marcus R, Bennie T, Nkala B, Nchabeleng M, Latka M, et al. What do South African adolescents want in a sexual health service? Evidence from the South African Studies on HIV in Adolescents (SASHA) project. *South African Medical Journal*. 2018;108(8).
31. Statistics South Africa. *Census 2011*. Pretoria: Statistics South Africa; 2012.
32. Simbayi L, Zuma K, Zungu N, Moyo S, Marinda E, Jooste S, et al. *South African National HIV Prevalence, Incidence, Behaviour and Communication Survey, 2017*. Cape Town: HSRC; 2019.
33. Parker I. Discourse analysis: Dimensions of critique in psychology. *Qualitative Research in Psychology*. 2013;10(3):223-39.
34. Ritchie J, Spencer L. *Qualitative data analysis for applied policy research. Analyzing qualitative data*: Routledge; 2002. p. 187-208.
35. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International journal for quality in health care*. 2007;19(6):349-57.
36. Castle S, Askew I. *Contraceptive discontinuation: Reasons, challenges and solutions*: Population Council. FP2020. 2015.
37. Keogh SC, Otupiri E, Castillo PW, Chiu DW, Polis CB, Nakua EK, et al. Hormonal contraceptive use in Ghana: the role of method attributes and side effects in method choice and continuation. *Contraception*. 2021.
38. Adeagbo O, Mullick S, Pillay D, Chersich M, Morroni C, Naidoo N, et al. Uptake and early removals of Implanon NXT in South Africa: Perceptions and attitudes of healthcare workers. *South African Medical Journal*. 2017;107(10).
39. Veisi F, Zangeneh M. Comparison of two different injectable contraceptive methods: Depo-medroxy progesterone acetate (DMPA) and cyclofem. *Journal of family & reproductive health*. 2013;7(3):109.
40. Burusie A. Reasons for premature removal of Implanon among users in Arsi zone, Oromia region, Ethiopia, 2013. *Reproductive System & Sexual Disorders: Current Research*. 2015;4(1):1-6.
41. Mrwebi KP, Ter Goon D, Owolabi EO, Adeniyi OV, Seekoe E, Ajayi AI. Reasons for discontinuation of Implanon among users in Buffalo City Metropolitan Municipality, South Africa: a cross-sectional study. *African journal of reproductive health*. 2018;22(1):113-9.
42. Zerihun H, Biru A, Worku A, Desta E, Tafesse H, Dinssa H, et al. Implanon removal experiences of women in Butajira, Ethiopia. *The Ethiopian Journal of Health Development*. 2015;29(3).

43. Birhane K, Hagos S, Fantahun M. Early discontinuation of implanon and its associated factors among women who ever used implanon in Ofla District, Tigray, Northern Ethiopia. *International Journal of Pharma Sciences and Research*. 2015;6(3):544-51.
44. Graesslin O, Korver T. The contraceptive efficacy of Implanon®: A review of clinical trials and marketing experience. *The European Journal of Contraception & Reproductive Health Care*. 2008;13(sup1):4-12.
45. Bhatia P, Nangia S, Aggarwal S, Tewari C. Implanon: subdermal single rod contraceptive implant. *The Journal of Obstetrics and Gynecology of India*. 2011;61(4):422.
46. Burke H, Ambasa-Shisanya C. Qualitative study of reasons for discontinuation of injectable contraceptives among users and salient reference groups in Kenya. *African journal of reproductive health*. 2011;15(2).
47. Daff BM, Seck C, Belkhatat H, Sutton P. Informed push distribution of contraceptives in Senegal reduces stockouts and improves quality of family planning services. *Global Health: Science and Practice*. 2014;2(2):245-52.
48. Lince-Deroche N, Pleaner M, Morroni C, Mullick S, Firnhaber C, Harries J, et al. Achieving universal access to sexual and reproductive health services: the potential and pitfalls for contraceptive services in South Africa. *South African Health Review*. 2016;2016(1):95-108.
49. Trent M, Thompson C, Tomaszewski K. Text messaging support for urban adolescents and young adults using injectable contraception: outcomes of the DepoText pilot trial. *Journal of Adolescent Health*. 2015;57(1):100-6.
50. Lou C-H, Wang B, Shen Y, Gao E-S. Effects of a community-based sex education and reproductive health service program on contraceptive use of unmarried youths in Shanghai. *Journal of Adolescent Health*. 2004;34(5):433-40.

## Chapter Nine: Integrative Synthesis

This chapter synthesizes the main findings from a set of different research outputs, aimed at addressing the above-mentioned study objectives.

### Introduction and Overview of the Study

Unplanned pregnancies continue to be a public health concern in South Africa (SA), as they signal that the women affected are still participating in unprotected sexual intercourse. Despite high levels of awareness about contraceptive methods in South Africa, the consistent use of contraception has been largely sub-optimal (1). Unplanned pregnancies, morbidity and maternal mortality, especially among young people, are some of the effects of incorrect or inconsistent use of contraceptives (2). Unplanned pregnancies are intricately linked to the rise in terminations of pregnancies, some of which are performed illegally (3, 4). These contraceptive challenges occur against the backdrop of the Sub-Saharan countries, including South Africa, signing up to the Sustainable Development Goals (SDGs), with Goal 3.7 having the target of improving universal access to sexual and reproductive health care services. This includes family planning, information and education, and the integration of reproductive health into national strategies and programmes; and the target of Goal 3.8, which is to achieve good health and wellbeing for all by 2030 (5). To achieve universal health care, countries are expected to, among other things, expand the use of contraception in their populations, particularly among young women (5).

In South Africa, the percentage of sexually active women using modern contraceptive methods has marginally dropped from 64% in 2003 to 60% in 2016 (6), despite the freely and widely available contraceptive methods in public health care facilities. The high incidence of unplanned pregnancies may be indicative of the unmet needs for contraceptive use and/or the occurrence of unprotected sexual activities in SA. This is worsened by the early sexual debut (at 15 years) among adolescent girls, who may either be unaware of the available contraceptive services, or simply lack courage to access them, for fear of possible moral judgement or compromised confidentiality in health care facilities (7, 8). Risky sexual behaviours expose women to unprotected sexual encounters, often culminating in unintended pregnancies and STIs (7, 9).

Negative attitudes of health care providers towards younger women, have been reported as a deterrent to adolescents' utilisation of contraceptive methods from their local clinics (4, 8, 10), yet they may lack resources to seek help in distant facilities. Some health care providers have been reported to be hesitant or unprepared to provide contraceptive methods to younger women (11). However, health system challenges, such as poor working conditions, long queues, and contraceptives stock-outs, have also been reported as deterrents to accessing contraceptive methods, the provision of quality sexual behaviour counselling, and modern contraceptive education to users. There are reasons to believe that more efforts are needed to understand and improve the uptake of modern contraceptives in Sub-Saharan Africa (SSA) and SA, in particular (12).

The main purpose of this study was to investigate the factors influencing contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, KwaZulu-Natal, South Africa, both from a user and provider perspective.

The specific objectives of this study were as follows:

1. To map evidence on factors influencing contraceptive use and sexual behaviour in South Africa, through a systematic scoping review.
2. To determine the proportion of women of reproductive age using contraceptives in Umlazi Township, KwaZulu-Natal, South Africa.
3. To examine women's knowledge of different contraceptive methods in Umlazi Township, KwaZulu-Natal province, South Africa.
4. To determine contraceptive methods used by women in Umlazi Township, KwaZulu-Natal province, South Africa.
5. To identify factors influencing contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, both from a user and provider perspective.
6. To explore the experiences of women of reproductive age regarding contraceptive use and risky sexual behaviours in Umlazi Township.

This chapter aims to synthesize the main findings from a set of different research outputs, aimed at addressing the above-mentioned study objectives. The overall thesis was organised in

chapters, which individually or in combination addressed the study objectives. The following objectives and outputs were achieved:

**Table 1: Research outputs by study objectives**

#	Objective	Publication Outputs	Status
1	To map evidence on factors influencing contraceptive use and sexual behaviour in South Africa through a systematic scoping review.	Hlongwa M, Mashamba-Thompson T, Hlongwana K. Evidence on factors influencing contraceptive use and sexual behavior in South Africa: a systematic scoping review protocol. <i>Medicine</i> . 2018 Dec; 97(52).	Published
		Hlongwa M, Mashamba-Thompson T, Makhunga S, Hlongwana K. Evidence on factors influencing contraceptive use and sexual behavior among women in South Africa: a scoping review. <i>Medicine</i> . 2020 Mar; 99(12).	Published
2	To determine the proportion of women of reproductive age using contraceptives in Umlazi Township, KwaZulu-Natal, South Africa	Hlongwa, M., Kalinda C., Peltzer K. and Hlongwana, K. (2021) Factors associated with modern contraceptive use: a comparative analysis between younger and older women in Umlazi Township, KwaZulu-Natal, South Africa. <i>Women's Health</i> . 2021 Nov; 17:1-9	Published
3	To examine women's knowledge of different contraceptive methods in Umlazi Township, KwaZulu-Natal province, South Africa.		
4	To determine contraceptive methods used by women in Umlazi Township, KwaZulu-Natal province, South Africa		
5	To identify factors influencing contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, both from a user and provider perspective.	Hlongwa M, Peltzer K, Hlongwana K. Risky sexual behaviours among women of reproductive age in a high HIV burdened township in KwaZulu-Natal, South Africa. <i>BMC Infectious Diseases</i> . 2020 Dec; 20(1):1-9.	Published
		Hlongwa M, Tlou B, Hlongwana K. Healthcare providers' knowledge and perceptions regarding the use of modern contraceptives among adolescent girls in Umlazi Township, KwaZulu-Natal province, South Africa. <i>The Pan African Medical Journal</i> . 2021 Feb 4; 38(124).	Published
6	To explore the experiences of women of reproductive age regarding contraceptive use and risky sexual behaviours in Umlazi Township, South Africa	"In fact, that's when I stopped using contraception" A qualitative study of the experiences of sexually active women regarding contraceptive use in KwaZulu-Natal, South Africa. <i>PLOS One</i> .	In review

This section presents the study objectives against the paper/research output that addressed each objective. All but one of these research outputs have been published in peer-reviewed international journals, accredited by the Department of Higher Education and Training (DHET):

## **Summary of Findings**

This study found that women who had talked about condoms with their partner/s in the past 12 months, were more likely ( $p < 0.0001$ ) to have used condoms during their last sexual intercourse. Confidence in negotiating safer sex practices among women is critical, given the high rates of HIV and AIDS prevalence and unplanned pregnancies. Studies in other settings found that communication between sexual partners about condom use is associated with increased use of these (13, 14). When used appropriately and regularly, a condom can prevent HIV acquisition and transmission in heterosexual relationships by more than 90% (15, 16). The ability of women to discuss condoms with their sexual partners opens up possibilities for better sexual conduct and protection against STIs, as well as unplanned pregnancies (17). These findings suggest that being in a relationship in which women feel comfortable discussing sexual practices with their partners, is important for improving women's confidence in negotiating condom use (7).

In this study, women who experienced hitting and/or slapping, did not show a significant association with condom use at their last sexual encounter. These findings suggest that gender inequality may be a contributory factor to women's inability to negotiate condom use. For example, evidence suggests that attempts by some of the women to negotiate condom use and/or refusal of sex without condoms, result in physical violence and/or forced sex, thus putting the women at increased risk of HIV infection (18). Furthermore, women are compelled to have unsafe sexual practices for fear of being rejected and/or abandoned by their partner, concern of separation, and fear that their partner would seek sexual favours from other women (19-21). Instances of men turning violent when their expectations of sex are not realized, have been reported, and these are inherently linked to non-consensual sex, including discouraging condom use, since it is thought to imply mistrust or lack of intimacy (21).

In terms of contraceptive use, this study found that women who had previously experienced unplanned pregnancy were more likely to use a contraceptive method. This result suggests that women may be using contraceptives to space out their children, or that they may have obtained the desired number of children. Women who had attained a secondary or tertiary level of education, were more likely to use a contraceptive method, compared to women with a primary level of education. Education has been shown to be a strong predictor of contraceptive use among women in South Africa; this is an indication that women's empowerment through education is critical for improving decision-making regarding sexual and reproductive health among women (1). The higher a woman's educational level, the more likely it is that she will access information that is useful for deciding whether or not to use contraception. According to the 2016 South African Demographic and Health Survey, an increased level of education is connected to improved contraceptive use among sexually active women (1). These findings suggest that improving contraceptive use, requires empowering women through educational opportunities.

This study also found that nurses' attitudes toward HIV positive or younger clients, create a barrier to adolescent girls' courage and motivation in consistently accessing contraceptive services. This result suggests that women may likely be discouraged from seeking family planning services in public care facilities, for fear of being judged and/or discouraged from receiving their preferred contraceptive services. Factors such as contraceptive stock-outs, side effects, and lack of counselling from health care providers play an important role in influencing women to continue or discontinue using contraception. Side effects, including prolonged or irregular menstrual bleeding and weight gain, have been reported in this study as some of the key factors resulting in method switching and subsequent discontinuation. Contraceptive stock-outs also pose important challenges, resulting in inconsistent use of contraception among women. However, providing extensive counselling services is critical to improving contraception knowledge, method switching, and preventing discontinuation, especially among women experiencing short-term side effects.

In summary, factors influencing the contraceptive use and sexual behaviour among women of reproductive age in Umlazi township, could be best presented and understood through the use of an adapted Socio-Ecological Model (22). At an individual level, factors such as age, sexual

debut, knowledge, attitudes, and behaviours appear to influence women to engage in risky sexual behaviours. These factors can also influence women to access, or not access, preferred contraceptive methods. At an interpersonal level, women who are exposed to partner violence or coercion may find it difficult to negotiate safe sex (7). Furthermore, peer pressure can influence women to access, or not access, preferred contraceptive methods. At community level, women may be unable to access contraceptive methods at the nearest facilities, due to discrimination and stigma. Unemployed women are less likely to use contraceptive methods of choice, compared to those who are employed (23). At the health care level, factors such as long queues, negative attitudes of health care providers, side effects, and contraceptive stock-outs have been reported to deter women from accessing or continuing to use contraceptives (4, 8).

### **Strengths and Limitations of the Study**

The participants of this study represented all ten public health clinics in Umlazi Township, which is the biggest township in KwaZulu-Natal province. Therefore, the insights gained from the participants will likely be relevant to other public health clinics in comparable settings in South Africa and beyond. The scoping review, which collated literature from across the country, created a good context and broader understanding of the issues affecting contraceptive use in SA. Moreover, the systematic scoping review was helpful in mapping out what has or has not been done in the field of contraceptive use in the country. The fact that the study sought insights from both the service users (women of reproductive age) and service providers (health care workers in participating health facilities), was a unique strength of this study. This study also included a qualitative design component to complement findings from the quantitative study.

While the results of this study provide an important contribution in the field of sexual and reproductive health, they also have notable limitations. Given that the sampling frame for this study was limited to women accessing health care services in public health clinics in Umlazi Township, women who do not use public health care services, use them less frequently, or use private health care services, were excluded and/or under-represented in the sample. This study sought self-reported sexual health information from participants, thereby making the findings vulnerable to social desirability bias, especially since the issues covered in the study are considered sensitive. However, we still believe that the purpose and procedure of the study were adequately explained to minimise this potential bias. Given the sensitivity of the topic,

information deemed to have the potential for leading to judgements, may have been withheld by the participants for image preservation. Furthermore, the study design was cross-sectional, therefore, it was not possible to establish a cause-and-effect relationship between study variables. The sample size, especially for health care providers, was small and this may compromise the generalisability of the findings. Therefore, conducting similar studies on a larger scale, with a larger sample size and more extended geographical area, may be essential; these would provide a broader understanding of the issues affecting contraceptive use by women of reproductive age in South Africa, against the backdrop of a high teenage pregnancy rate, compounded with a high burden of HIV. Also, the variable hitting/slapping included 'neutral' as one of the response categories. The 'neutral' response should have been treated as an invalid response category and the analysis for this question should have been based on participants who gave a 'yes' or 'no' answer. Lastly, the high proportion of women using contraception in the sample, could suggest that more women were enrolled due to the family planning days that were taking place. This may have resulted in an overestimation of women accessing the facilities for family planning services, given that this study focused on women attending a public health care facility.

## **Implications of the Study Findings**

- **Implications for practice**

The findings of this study make the case for the importance of implementing and/or strengthening evidence-based educational programmes, aimed at improving women's sexual behaviours and HIV prevention strategies. These programmes may be integrated into school health programmes to timeously reach younger women, but also to include men. Male influence over contraceptive use among women, including violence, should be addressed immediately, to allow women freedom to make their own decisions regarding sexual behaviours and contraceptive use. Initiatives aimed at improving health care providers' knowledge of contraceptive methods and attitudes towards younger women, should be prioritized, as well as improving public health systems. Given the important role played by having a high level of education in contraceptive use, efforts to empower women through educational opportunities should be prioritized and strengthened. Family planning policies should be tailored to address the specific needs of different age groups of women, as their needs may vary. Young women-friendly contraceptive spaces are required for this

group to access contraceptive services. A similar concept has been used for children living with HIV to increase their uptake of HIV care services, through what is referred to as child-friendly spaces (24).

Health systems challenges, such as long queues, poor working conditions, and contraceptive stock-outs should be addressed in order to improve the quality of family planning services provided to women. Despite the busyness of health care facilities, efforts should be made by health care providers to provide comprehensive counselling services to support women's understanding of and manage side effects resulting from contraception, instead of discontinuation. Innovative strategies, including through social media platforms, text message reminders, and brochures are also needed to improve knowledge and use of contraception.

- **Implications for further research**

Mixed methods played a complementary role in this study, so future studies should consider this approach. Conducting longitudinal and interventional studies on this topic is also important in order to understand women's sexual behaviours, contraceptive use changes, exposures, and patterns over time.

## **Overall Conclusion**

Factors associated with risky sexual behaviours among women highlight a great risk of exposure to STIs in Umlazi Township, KwaZulu-Natal. The extent to which women engage in unprotected sexual activities, is concerning and highlights an urgent need for a robust, more holistic, and adaptable educational approach to improving sexual behaviours among women of reproductive age, and STIs prevention. Interventions aimed at improving contraceptive use among women should be tailored to address the needs of different age groups of women, given their varying needs. Education should be prioritized, given the many benefits associated with it, including access to important information which is helpful for decision-making, regarding sexual and reproductive health among women. Lastly, innovative strategies should be implemented to improve counselling services, so as to support women dealing with side effects, so they can continue using contraceptive methods.

## References

1. NDoH, Stats SA, SAMRC, ICF. South Africa Demographic and Health Survey 2016. Pretoria, South Africa, and Rockville, Maryland, USA: National Department of Health (NDoH), Statistics South Africa (Stats SA), South African Medical Research Council (SAMRC), ICF. ; 2019.
2. Sedgh G, Singh S, Hussain R. Intended and unintended pregnancies worldwide in 2012 and recent trends. *Studies in family planning*. 2014;45(3):301-14.
3. Ahinkorah BO, Hagan Jr JE, Seidu A-A, Sambah F, Adoboi F, Schack T, et al. Female adolescents' reproductive health decision-making capacity and contraceptive use in sub-Saharan Africa: What does the future hold? *PloS one*. 2020;15(7):e0235601.
4. Hlongwa M, Mashamba-Thompson T, Makhunga S, Hlongwana K. Evidence on factors influencing contraceptive use and sexual behavior among women in South Africa: A scoping review. *Medicine* 2020;99(12):e19490.
5. United Nations. Family Planning and the 2030 Agenda for Sustainable Development. New York: United Nations; 2019.
6. NDoH, SSA, SAMRC, ICF. South Africa Demographic and Health Survey 2016. Pretoria, South Africa, and Rockville, Maryland, USA: National Department of Health (NDoH), Statistics South Africa (Stats SA), South African Medical Research Council (SAMRC), ICF. ; 2019.
7. Hlongwa M, Peltzer K, Hlongwana K. Risky sexual behaviours among women of reproductive age in a high HIV burdened township in KwaZulu-Natal, South Africa. *BMC Infectious Diseases*. 2020;20(1):1-9.
8. Hlongwa M, Tlou B, Hlongwana K. Healthcare providers' knowledge and perceptions regarding the use of modern contraceptives among adolescent girls in Umlazi Township, KwaZulu-Natal province, South Africa. *The Pan African Medical Journal*. 2021;38(124).
9. Govender D, Naidoo S, Taylor M. "My partner was not fond of using condoms and I was not on contraception": understanding adolescent mothers' perspectives of sexual risk behaviour in KwaZulu-Natal, South Africa. *BMC public health*. 2020;20(1):1-17.
10. Schwandt HM, Speizer IS, Corroon M. Contraceptive service provider imposed restrictions to contraceptive access in urban Nigeria. *BMC health services research*. 2017;17(1):1-9.
11. Nalwadda G, Mirembe F, Tumwesigye NM, Byamugisha J, Fanelid E. Constraints and prospects for contraceptive service provision to young people in Uganda: providers' perspectives. *BMC health services research*. 2011;11(1):1-9.
12. Tsui AO, Brown W, Li Q. Contraceptive practice in sub-Saharan Africa. *Population and development review*. 2017;43(Suppl Suppl 1):166.
13. Gause NK, Brown JL, Welge J, Northern N. Meta-analyses of HIV prevention interventions targeting improved partner communication: effects on partner communication and condom use frequency outcomes. *Journal of behavioral medicine*. 2018;41(4):423-40.
14. Namisi FS, Aarø LE, Kaaya S, Onya HE, Wubs A, Mathews C. Condom use and sexuality communication with adults: a study among high school students in South Africa and Tanzania. *BMC public health*. 2013;13(1):1-11.
15. Pinkerton SD, Abramson PR. Effectiveness of condoms in preventing HIV transmission. *Social science & medicine*. 1997;44(9):1303-12.
16. Hearst N, Chen S. Condom promotion for AIDS prevention in the developing world: is it working? *Studies in family planning*. 2004;35(1):39-47.
17. Exavery A, Kanté AM, Jackson E, Noronha J, Sikustahili G, Tani K, et al. Role of condom negotiation on condom use among women of reproductive age in three districts in Tanzania. *BMC public health*. 2012;12(1):1-11.
18. Madiba S, Ngwenya N. Cultural practices, gender inequality and inconsistent condom use increase vulnerability to HIV infection: narratives from married and cohabiting women in rural communities in Mpumalanga province, South Africa. *Global health action*. 2017;10(sup2):1341597.
19. Mugweni E, Omar M, Pearson S. Understanding barriers to safer sex practice in Zimbabwean marriages: implications for future HIV prevention interventions. *Health education research*. 2015;30(3):388-99.

20. Wadesango N, Rembe S, Chabaya O. Violation of women's rights by harmful traditional practices. *The Anthropologist*. 2011;13(2):121-9.
21. Nyamhanga TM, Frumence G. Gender context of sexual violence and HIV sexual risk behaviors among married women in Iringa Region, Tanzania. *Global health action*. 2014;7(1):25346.
22. Control CfD, Prevention. The social-ecological model: A framework for prevention. Atlanta, GA: CDC. 2015.
23. Osuafor GN, Maputle SM. Dual protection and contraceptive method use among women in heterosexual relationships in Mahikeng, South Africa. *African journal of reproductive health*. 2017;21(1):64-72.
24. Mutambo C, Shumba K, Hlongwana KW. User-provider experiences of the implementation of KidzAlive-driven child-friendly spaces in KwaZulu-Natal, South Africa. *BMC public health*. 2020;20(1):1-15.

# Appendices

## Appendix One: Ethical clearance and permission for data collection



UNIVERSITY OF  
KWAZULU-NATAL  
INYUVESI  
YAKWAZULU-NATALI

12 October 2018

Mr M Hlongwa (207501517)  
School of Nursing and Public Health  
College of Health Sciences  
[Hlongwa.mbu@gmail.com](mailto:Hlongwa.mbu@gmail.com)

Protocol: Factors influencing contraceptive use and sexual behavior among women of reproductive age in Umlazi Township, KwaZulu-Natal province, South Africa.  
Degree: PhD

BREC Ref No: BE424/18

### EXPEDITED APPLICATION: APPROVAL LETTER

A sub-committee of the Biomedical Research Ethics Committee has considered and noted your application received on 12 July 2018.

The study was provisionally approved pending appropriate responses to queries raised. Your response received on 10 September 2018 to BREC letter dated 24 August 2018 have been noted by a sub-committee of the Biomedical Research Ethics Committee. The conditions have now been met and the study is given full ethics approval and may begin as from 12 October 2018. Please ensure that site permissions are obtained and forwarded to BREC for approval before commencing research at a site.

This approval is valid for one year from 12 October 2018. To ensure uninterrupted approval of this study beyond the approval expiry date, an application for recertification must be submitted to BREC on the appropriate BREC form 2-3 months before the expiry date.

Any amendments to this study, unless urgently required to ensure safety of participants, must be approved by BREC prior to implementation.

Your acceptance of this approval denotes your compliance with South African National Research Ethics Guidelines (2015), South African National Good Clinical Practice Guidelines (2006) (if applicable) and with UKZN BREC ethics requirements as contained in the UKZN BREC Terms of Reference and Standard Operating Procedures, all available at <http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx>.

BREC is registered with the South African National Health Research Ethics Council (REC-290408-009). BREC has US Office for Human Research Protections (OHRP) Federal-wide Assurance (FWA 678).

The sub-committee's decision will be noted by a full Committee at its next meeting taking place on 13 November 2018.

We wish you well with this study. We would appreciate receiving copies of all publications arising out of this study.

Yours sincerely

Prof V Rambiritch  
Chair: Biomedical Research Ethics Committee

Supervisor: [Hlongwanak@ukzn.ac.za](mailto:Hlongwanak@ukzn.ac.za)  
Postgraduate administrator: [arumugamd@ukzn.ac.za](mailto:arumugamd@ukzn.ac.za)

Biomedical Research Ethics Committee

Professor V Rambiritch (Chair)

Westville Campus, Govan Mbeki Building

Postal Address: Private Bag X54001, Durban 4000

Telephone: +27 (0) 31 260 2486 Facsimile: +27 (0) 31 260 4609 Email: [brec@ukzn.ac.za](mailto:brec@ukzn.ac.za)

Website: <http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx>



1910 - 2010  
100 YEARS OF ACADEMIC EXCELLENCE

Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

06 October 2021

Mr M Hlongwa (207501517)  
School of Nursing and Public Health  
College of Health Sciences  
[Hlongwa.mbu@gmail.com](mailto:Hlongwa.mbu@gmail.com)

Dear Mr Hlongwa

Protocol: Factors influencing contraceptive use and sexual behavior among women of reproductive age in Umlazi Township, KwaZulu-Natal province, South Africa.

Degree: PhD

BREC Ref No: BE424/18

We wish to advise you that your application for amendments (listed below) received on 19 September 2021 for the above study has been **noted and approved** by a subcommittee of the Biomedical Research Ethics Committee.

Amendments noted and approved:

- a. To determine the proportion of women of reproductive age using contraceptives in Umlazi Township, KwaZulu-Natal, South Africa.
- b. To determine contraceptive methods used by women in Umlazi Township, KwaZulu-Natal province, South Africa.
- c. A new objective : To explore perceptions and experiences regarding contraceptive use and risky sexual behaviours among women of reproductive age in Umlazi Township, South Africa.
- d. This study is no longer quantitative, but mixed methods design. This change emanates from the inclusion of qualitative objective.

The committee will be advised of the above at its next meeting to be held on 09 November 2021.






Yours sincerely



.....  
Ms A Marimuthu  
(for) Prof D Wassenaar  
Chair: Biomedical Research Ethics Committee

---

Biomedical Research Ethics Committee  
Chair: Professor D R Wassenaar  
UKZN Research Ethics Office Westville Campus, Govan Mbeki Building  
Postal Address: Private Bag X54001, Durban 4000  
Email: [BREC@ukzn.ac.za](mailto:BREC@ukzn.ac.za)

Website: <http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx>  
Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville

INSPIRING GREATNESS



**health**

Department:  
Health  
PROVINCE OF KWAZULU-NATAL

Physical Address: 330 Langalibalele Street, Pietermaritzburg  
Postal Address: Private Bag X9051  
Tel: 033 395 2805/ 3189/ 3123 Fax: 033 394 3782  
Email: [hrkm@kznhealth.gov.za](mailto:hrkm@kznhealth.gov.za)  
[www.kznhealth.gov.za](http://www.kznhealth.gov.za)

**DIRECTORATE:**

Health Research & Knowledge  
Management

NHRD Ref: KZ\_2018009\_013

Dear Mr M. Hlongwa  
UKZN

**Approval of research**

1. The research proposal titled '**Factors influencing contraceptive use and sexual behaviour among women of contraceptive age in Umlazi township, KwaZulu Natal, province, SA**' was reviewed by the KwaZulu-Natal Department of Health.

The proposal is hereby **approved** for research to be undertaken at Prince Mshiyeni Memorial Hospital, Ekuphileni (Umlazi L), Isozweni (Umlazi Q), Umlazi D, H, K, U21 and Umlazi V.

2. You are requested to take note of the following:
  - a. Kindly liaise with the facility manager BEFORE your research begins in order to ensure that conditions in the facility are conducive to the conduct of your research. These include, but are not limited to, an assurance that the numbers of patients attending the facility are sufficient to support your sample size requirements, and that the space and physical infrastructure of the facility can accommodate the research team and any additional equipment required for the research.
  - b. Please ensure that you provide your letter of ethics re-certification to this unit, when the current approval expires.
  - c. Provide an interim progress report and final report (electronic and hard copies) when your research is complete to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to [hrkm@kznhealth.gov.za](mailto:hrkm@kznhealth.gov.za)

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

Yours Sincerely

**Dr E Lutge**

Chairperson, Health Research Committee

Date: 03/10/18

Fighting Disease, Fighting Poverty, Giving Hope



**health**

Department:  
Health  
PROVINCE OF KWAZULU-NATAL

**DIRECTORATE: Senior Medical Manager**

Mangosuthu Highway, Private Bag X 07  
MOBENI  
Tel: 031 907 8317/8304 Fax: 031 906 1044 Email: [myint.aung@kznhealth.gov.za](mailto:myint.aung@kznhealth.gov.za)  
[www.kznhealth.gov.za](http://www.kznhealth.gov.za)

Prince Mshiyeni Memorial  
Hospital

**Enquiry: Dr M AUNG**  
**Ref No: 50/RESH/2018**  
**Date: 15/10/2018**

**TO: Mr M Hlongwa**

**RE: LETTER OF APPROVAL TO CONDUCT RESEARCH AT PMMH**

Dear Researcher;

I have pleasure to inform you that PMMH has granted to conduct research on **"Factors influencing contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, KwaZulu-Natal province"** in our institution.

Please note the following:

1. Please ensure this office is informed before you commence your research.
2. The institution will not provide any resources for this research.
3. You will be expected to provide feedback on you finding to the institution.

With kind regard



MYINT AUNG

Senior Medical Manager & specialist in Family Medicine  
MBBS, DO(SA), PGDip in HIV (Natal), M.Med.Fam.Med (natal), PhD  
Tel: 031 9078317  
Fax: 031 906 1044  
[myint.aung@kznhealth.gov.za](mailto:myint.aung@kznhealth.gov.za)



21 February 2019

Dear Mr. M. Hlongwa (UKZN)

Subject: Approval of a Research Proposal

**The Research Protocol Titled: FACTORS INFLUENCING CONTRACEPTIVE USE AND SEXUAL BEHAVIOUR AMONG WOMEN OF REPRODUCTIVE AGE IN UMLAZI TOWNSHIP, KWAZULU-NATAL PROVINCE, SOUTH AFRICA**, has, been reviewed by the eThekweni Municipality Health Department Research Committee. The study is hereby approved at the following sites: Umlazi AA, Umlazi G and Umlazi N clinics till August 2019.

The following conditions need to be noted:

- Submission of the indemnity form obtainable from the eThekweni Municipality Health Unit before commencement of the study.
- Prior arrangements to be made with the facility and an assurance that all services will not be disrupted.
- No staff member should be used for collecting data for the researchers.
- **Progress reports to be provided and the final report of the study to the eThekweni Municipality Health Unit or emailed to: rochelle.peters@durban.gov.za**
- Obtain permission from the eThekweni municipality health department for press releases and release of results to communities/stakeholders.
- The department has to receive recognition for the assistance given.
- Any amendment to the study must be communicated with the eThekweni Municipality Health Unit and the relevant amendment form obtainable from the unit to be submitted.
- Withdrawal of permission to conduct research will be left to the discretion of the eThekweni Municipality Health Unit.
- **Please take note of the duration of the approval.**
- **An extension may be applied for. The committee will review such a request and provide feedback accordingly.**

Yours faithfully

Head of Health

( Dr.N I Gxagxisa )



**health**

Department:  
Health  
PROVINCE OF KWAZULU-NATAL

**DIRECTORATE: CORPORATE SERVICES**

83 King Cetshwayo Highway  
Mayville, Durban, 4001  
Tel: 031 240 5455 Email: [avashri.harrichandparsad@kznhealth.gov.za](mailto:avashri.harrichandparsad@kznhealth.gov.za)  
[www.kznhealth.gov.za](http://www.kznhealth.gov.za)

**ETHEKWINI HEALTH DISTRICT OFFICE**

10 September 2018

Dear Mr M Hlongwa

**Re: Permission To Conduct Research at eThekweni District Facilities.**

This letter serves to confirm that your application to conduct the research study titled "Factors influencing contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, KwaZulu-Natal province", in the eThekweni district, with recruitment from the following health care facilities, has been recommended:

Ekuphileni (Umlazi L)  
Osizweni (Umlazi Q)  
Umlazi D  
Umlazi H (Umzomuhle)  
Umlazi K  
Umlazi U21  
Umlazi V

Kindly upload this letter together with your application as required to the Health Research and Knowledge Unit for the KZN Department of Health for Approval.

Please also note the following:

1. This research project should only commence after final approval by the KwaZulu-Natal Health Research and Knowledge Unit, and full ethical approval, has been granted,
2. That you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
3. All research activities must be conducted in a manner that does not interrupt clinical care at the health care facility,
4. Ensure that this office is informed before you commence your research
5. The District Office/Facility will not provide any resources for this research
6. All logistical details must be arranged with the CEO/medical manager /operational manager of the facility,
7. You will be expected to provide feedback on your findings to the District Office/Facility

Yours sincerely



**Dr. A. Harrichandparsad**  
pp **Ms. T. P. Msimango**  
Chief Director  
eThekweni Health District



health

Department  
of Health

PROVINCE OF KWAZULU-NATAL

U21 CLINIC UMLAZI

U 2104 UMLAZI (105 MAURICE GUMEDE DRIVE)

P.O UMLAZI

4031

04 /11 /2016

Dear sir /madam

Letter to grant permission to study

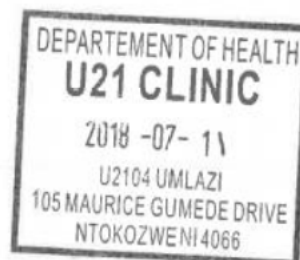
We are hereby support that Mr M. Hlongwa (207501517) conducts a study on the 'Factors influencing contraceptive use and sexual behavior among women of reproductive age in Umlazi Township, KwaZulu-Natal province, South Africa' - upon the Ethics Approval from authorities.

Kind regards,

Facility Manager

Signature

031-9091017.





health

Department:

Health

PROVINCE OF KWAZULU-NATAL

V- clinic 1054 MALAMBA ROAD UMLAZI 4031 TEL : ( 031) 907 2610 FAX : ( 031) 906 5238

DATE: 11/JULY/2018

We support MR M HLONGWA conduct the study on FACTORS INFLUENCING CONTRACEPTIVE USE AND SEXUAL BEHAVIOUR AMONG WOMEN OF REPRODUCTIVE AGE IN UMLAZI, KWAZULU – NATAL PROVINCE, SOUTH AFRICA.

Acting facility manager



DR INYANGO WEZEMPILO  
PRINCE MS. HYENI  
MEMORIAL HOSPITAL  
V-CLINIC

2018 -07- 11

PRIVATE BAG X07, MOBENI 4060  
TEL: 031-907 2610  
KZN DEPARTMENT OF HEALTH



**health**

Department:  
Health  
PROVINCE OF KWAZULU-NATAL

Physical Address

L1221 Umlazi

Vumani Khawula Avenue

Umlazi 4066

Tel: 031 908 1212 fax: 031 908 7931

EKUPHILENI L CLINIC

Date: 11 / 07 / 2018

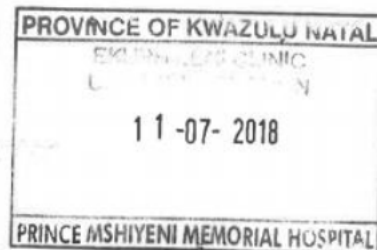
To: Whom it may concern

Re: Notification conducting Study on Contraceptives

Kindly be advised that the Student **Mbuzeni HLongwa** is allowed to conduct the study on factors influencing contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, KwaZulu Natal province South Africa in the above mentioned facility once he received approval from **ETHICS COMITEE PROVINCE**

Thank you

Mr Z MKhize





Umlazi AA Clinic

290 Ngcede Drive

11/07/2018

RE: CONDUCTING OF RESEARCH STUDY

This serves to confirm that Mbuzeleni Hlongwa student no: 207501517 (UKZN) has engage with Umlazi AA Clinic on the proposed research study. The facility has no problem in allowing him to conduct the study once he has received the authority to conduct the study from Ethekekwini Municipality Research Unit.

Regards

BUHLE DLUDLA

Nursing Services Manager

Umlazi AA Clinic

0319090633/0722807606

**UMLAZI AA CLINIC**  
290 NGCEDE DRIVE  
UMLAZI, 4031  
CELL: 031 909 0633

## Appendix Two: Informed consent forms

### UKZN BIOMEDICAL RESEARCH ETHICS COMMITTEE

#### For research with human participants (Biomedical)

#### **Information Sheet and Consent to Participate in Research**

Date: .....

Dear Potential Participant,

My name is Mbu Hlongwa, a PhD candidate, from the University of KwaZulu-Natal (Howard College), School of Nursing and Public Health. I can be reached on 073 589 5151 or hlongwa.mbu@gmail.com.

You are being invited to consider participating in a study that involves research on contraceptive use and sexual behaviour. The aim and purpose of this research is to examine the factors that influence contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, KwaZulu-Natal province, South Africa. The study is expected to enroll 375 adult women attending eight public health clinics in Umlazi, as well as 20 healthcare workers in the health same facilities. It will involve completing a questionnaire. The duration of your participation if you choose to enroll and remain in the study is expected to be approximately 30 minutes. The study is funded by the College of Health Sciences from the University of KwaZulu-Natal.

#### **Risks/discomforts**

At the present time, we do not foresee any risk of harm arising from your participation. The risks associated with participation in this study are no greater than the discomfort that you would generally encounter when discussing contraception and sexual behaviour in daily life. If you find that speaking about contraceptive use and/or sexual behaviour experiences uncomfortable for you, you are free to say so or even opt not to answer certain questions you deem invasive or uncomfortable. You may ask to withdraw from the study at any time. All the services that you are entitled to will not be affected by your participation, non-participation or withdrawal from the study. Should you experience a level of stress that requires professional help, referral services can be recommended.

#### **Benefits**

There are no immediate benefits to you from participating in this study. However, the information that you provide will help us to better understand the challenges faced by women on contraceptive use and sexual behaviour. This understanding is important for scoping the realities and effects of different factors to women's sexual reproductive health in Umlazi, KwaZulu-Natal. Your contribution in this regard will be of much value. Your participation would be helpful and appreciated but of course your participation is totally voluntary, and you can withdraw your participation at any time.

This study has been ethically reviewed and approved by the UKZN Biomedical research Ethics Committee (approval number\_\_\_\_\_).

In the event of any problems or concerns/questions you may contact the researcher at 073 589 5151 or [hlongwa.mbu@gmail.com](mailto:hlongwa.mbu@gmail.com) or the UKZN Biomedical Research Ethics Committee, contact details as follows:

**BIOMEDICAL RESEARCH ETHICS ADMINISTRATION**

Research Office, Westville Campus  
Govan Mbeki Building  
Private Bag X 54001  
Durban  
4000  
KwaZulu-Natal, SOUTH AFRICA  
Tel: 27 31 2604769 - Fax: 27 31 2604609  
Email: [BREC@ukzn.ac.za](mailto:BREC@ukzn.ac.za)

**Voluntary**

Please understand that your participation is voluntary and you are not forced to take part in this study. The choice of whether to participate or not, is yours alone. If you choose not to take part, you will not be affected in any way whatsoever. If you agree to participate, you may stop participating at any time and tell me that you don't want to continue. If you do this, there will be no penalties and you will not be prejudiced in any way.

**Confidentiality**

All identifying information will be kept in a locked file cabinet and will not be available to others and will be kept confidential to the extent possible by law. The records from your participation may be reviewed by people responsible for making sure that the study is done properly, including members of the ethics committee at the University of KwaZulu-Natal's Biomedical Research Ethics Committee. All of these people are required by law to keep your identity confidential. Otherwise, records that identify you will be available only to people working on the research, unless you give permission for other people to see the records. The collected data will be stored in a safe and secure place by the University of KwaZulu-Natal and destroyed five years post the completion of the study.

---

**Consent**

I, (name:.....) have been informed about the study entitled "Factors influencing contraceptive use and sexual behaviour among women of reproductive age in Umlazi township, KwaZulu-Natal province, South Africa" by Mr. Mbu Hlongwa.

I understand the purpose and procedures of the study.

I have been given an opportunity to ask questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any treatment or care that I would usually be entitled to.

I have been informed about any available compensation or medical treatment if injury occurs to me as a result of study-related procedures.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at (provide details).

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

**BIOMEDICAL RESEARCH ETHICS ADMINISTRATION**

Research Office, Westville Campus  
Govan Mbeki Building  
Private Bag X 54001  
Durban  
4000  
KwaZulu-Natal, SOUTH AFRICA  
Tel: 27 31 2604769 - Fax: 27 31 2604609  
Email: [BREC@ukzn.ac.za](mailto:BREC@ukzn.ac.za)

\_\_\_\_\_  
**Signature of Participant**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Signature of Witness  
(Where applicable)**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Signature of Translator  
(Where applicable)**

\_\_\_\_\_  
**Date**

## **UKZN BIOMEDICAL RESEARCH ETHICS COMMITTEE**

### **For research with human participants (Biomedical)**

#### **Information Sheet and Consent to Participate in Research**

Date: .....

Dear Potential Participant,

My name is Mbu Hlongwa, a PhD candidate, from the University of KwaZulu-Natal (Howard College), School of Nursing and Public Health. I can be reached on 073 589 5151 or hlongwa.mbu@gmail.com.

You are being invited to consider participating in a study that involves research on contraceptive use and sexual behaviour. The aim and purpose of this research is to examine the factors that influence contraceptive use and sexual behaviour among women of reproductive age in Umlazi Township, KwaZulu-Natal province, South Africa. The study is expected to enroll 375 adult women attending eight public health clinics in Umlazi, as well as 20 healthcare workers in the health same facilities. It will involve completing a questionnaire. We will also enroll a minimum of 12 adult women (18-49 years) to participate in the interviews to share their experiences and perceptions of contraceptive use and sexual behaviors. The duration of your participation if you choose to enroll and remain in the study is expected to be approximately 30 minutes. Interviews will take approximately between 60 to 90 minutes. The study is funded by the College of Health Sciences from the University of KwaZulu-Natal.

#### **Risks/discomforts**

At the present time, we do not foresee any risk of harm arising from your participation. The risks associated with participation in this study are no greater than the discomfort that you would generally encounter when discussing contraception and sexual behaviour in daily life. If you find that speaking about contraceptive use and/or sexual behaviour experiences uncomfortable for you, you are free to say so or even opt not to answer certain questions you deem invasive or uncomfortable. You may ask to withdraw from the study at any time. All the services that you are entitled to will not be affected by your participation, non-participation or withdrawal from the study. Should you experience a level of stress that requires professional help, referral services can be recommended.

#### **Benefits**

There are no immediate benefits to you from participating in this study. However, the information that you provide will help us to better understand the challenges faced by women on contraceptive use and sexual behaviour. This understanding is important for scoping the realities and effects of different factors to women's sexual reproductive health in Umlazi, KwaZulu-Natal. Your contribution in this regard will be of much value. Your participation would be helpful and appreciated but of course your participation is totally voluntary, and you can withdraw your participation at any time.

This study has been ethically reviewed and approved by the UKZN Biomedical research Ethics Committee (approval number\_\_\_\_\_).

In the event of any problems or concerns/questions you may contact the researcher at 073 589 5151 or [hlongwa.mbu@gmail.com](mailto:hlongwa.mbu@gmail.com) or the UKZN Biomedical Research Ethics Committee, contact details as follows:

**BIOMEDICAL RESEARCH ETHICS ADMINISTRATION**

Research Office, Westville Campus  
Govan Mbeki Building  
Private Bag X 54001  
Durban  
4000  
KwaZulu-Natal, SOUTH AFRICA  
Tel: 27 31 2604769 - Fax: 27 31 2604609  
Email: [BREC@ukzn.ac.za](mailto:BREC@ukzn.ac.za)

**Voluntary**

Please understand that your participation is voluntary and you are not forced to take part in this study. The choice of whether to participate or not, is yours alone. If you choose not to take part, you will not be affected in any way whatsoever. If you agree to participate, you may stop participating at any time and tell me that you don't want to continue. If you do this, there will be no penalties and you will not be prejudiced in any way.

**Confidentiality**

All identifying information will be kept in a locked file cabinet and will not be available to others and will be kept confidential to the extent possible by law. The records from your participation may be reviewed by people responsible for making sure that the study is done properly, including members of the ethics committee at the University of KwaZulu-Natal's Biomedical Research Ethics Committee. All of these people are required by law to keep your identity confidential. Otherwise, records that identify you will be available only to people working on the research, unless you give permission for other people to see the records. The collected data will be stored in a safe and secure place by the University of KwaZulu-Natal and destroyed five years post the completion of the study.

**Consent**

I, (name :.....) have been informed about the study entitled "Factors influencing contraceptive use and sexual behaviour among women of reproductive age in Umlazi township, KwaZulu-Natal province, South Africa" by Mr. Mbuzeleni Hlongwa.

I understand the purpose and procedures of the study.

I have been given an opportunity to ask questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any treatment or care that I would usually be entitled to.

I have been informed about any available compensation or medical treatment if injury occurs to me as a result of study-related procedures.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at (provide details).

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

**BIOMEDICAL RESEARCH ETHICS ADMINISTRATION**

Research Office, Westville Campus  
Govan Mbeki Building  
Private Bag X 54001  
Durban  
4000  
KwaZulu-Natal, SOUTH AFRICA  
Tel: 27 31 2604769 - Fax: 27 31 2604609  
Email: [BREC@ukzn.ac.za](mailto:BREC@ukzn.ac.za)

\_\_\_\_\_  
**Signature of Participant**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Signature of Witness  
(Where applicable)**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Signature of Translator  
(Where applicable)**

\_\_\_\_\_  
**Date**

## Appendix Three: Data collection instruments

### Questionnaire 1: Women aged 18-49 years

**Title: FACTORS INFLUENCING CONTRACEPTIVE USE AND SEXUAL BEHAVIOUR AMONG WOMEN OF REPRODUCTIVE AGE IN UMLAZI TOWNSHIP, KWAZULU-NATAL PROVINCE, SOUTH AFRICA.**

#### **SECTION 1: DEMOGRAPHIC CHARACTERISTICS**

##### **1.1 What was your age (in years) in your last birthday?**

1.		Years
----	--	-------

##### **1.2 What is your gender?**

1.	Born Female	1
2.	Born Male	2
3.	Other (please specify)	3

##### **1.3 What is your home language?**

1.	IsiZulu	1
2.	English	2
3.	Afrikaans	3
4.	Ndebele	4
5.	Venda	5
6.	Tsonga	6
7.	Sepedi	7
8.	Swati	8
9.	Xhosa	9
10.	Sotho	10
11.	Tswana	11
12.	Other (Please specify):	12

##### **1.4 Which race group do you consider yourself to belong to?**

1.	Black/African	1
2.	Coloured	2
3.	White	3
4.	Asian/Indian	4
5.	Other (Please specify)	5

##### **1.5 What is the highest level of education you have passed?**

1.	No formal education	1
2.	Grade 1	2
3.	Grade 2	3
4.	Grade 3	4
5.	Grade 4	5
6.	Grade 5	6
7.	Grade 6	7
8.	Grade 7	8
9.	Grade 8	9
10.	Grade 9	10
11.	Grade 10	11
12.	Grade 11	12
13.	Grade 12	13
14.	Diploma/ Degree/ other post school – incomplete	14
15.	Diploma/ Degree/ other post school – complete	15
16.	Diploma/ Degree graduate	16
17.	Postgraduate Diploma/ Degree	17

**Questionnaire 1: Women aged 18-49 years**

**1.6 What is your current marital status?**

1.	Legally married	1
2.	Traditionally married	2
3.	Living with man in union	3
4.	Never married/Single	4
5.	Divorced	5
6.	Married but separated	6
7.	Widowed	7

**SECTION 2: ECONOMIC FACTORS**

**2.1 Have you done any paid work in the last 12 months?**

1.	No	0
2.	Yes	1

**2.2 Which of the following describes your current employment status?**

1.	Unemployed	1
2.	Employed part-time	2
3.	Employed full-time	3
4.	Self-employed	4
5.	Studying	5

**2.3 Please indicate which of the following are your source(s) of income.  
(Please answer this question whether or not you are working).**

		Yes	No
1.	Work/self-employment	1	0
2.	Spouse/partner	1	0
3.	Parents	1	0
4.	Brothers and/or sisters	1	0
5.	Children	1	0
6.	Child Support Grant	1	0
7.	State Old Age Pensions	1	0
8.	Disability Grant	1	0
9.	Care Dependency Grant	1	0
10.	Foster Care Grant	1	0
11.	Grants-in-Aid	1	0
12.	Workman's Compensation Fund	1	0
13.	Other (Please specify)	1	0

**SECTION 3: HEALTH**

**3.1 In general, how would you rate the state of your health?**

1.	Excellent	1
2.	Very Good	2
3.	Good	3
4.	Fair	4
5.	Poor	5

**Questionnaire 1: Women aged 18-49 years**

**3.2 Please choose the number that best describes the extent to which each of the following statements is true or false for you.**

		Definitely true	Mostly true	Not sure	Mostly false	Definitely false
1.	I am somewhat ill	1	2	3	4	5
2.	I am as healthy as anybody I know	1	2	3	4	5
3.	My health is excellent	1	2	3	4	5
4.	I have been feeling unhealthy lately	1	2	3	4	5

**SECTION 4: USE OF CONTRACEPTIVES**

**4.1 How old were you when you had your first period?**

1.	Less than ten years old	1
2.	Ten to fifteen years old	2
3.	Sixteen to twenty years old	3
4.	Beyond twenty years old	4

**4.2 Have you ever used anything or tried in any way to delay or avoid getting pregnant?**

1.	No	0
2.	Yes	1

**4.3 Which is the contraceptive method are you most familiar with to delay or avoid getting pregnant?**

1.	Pill	1
2.	IUD	2
3.	Injections	3
4.	Diaphragm/foam/jelly	4
5.	Condom	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal	9
10.	Traditional herbs/remedies	10
11.	Abstinence	11
12.	Other (Please specify)	12
13.	None	98

**4.4 Which is the main method that you are using now to delay or avoid getting pregnant?**

1.	Pill	1
2.	IUD	2
3.	Injections	3
4.	Diaphragm/foam/jelly	4
5.	Condom	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal	9
10.	Traditional herbs/remedies	10
11.	Abstinence	11
12.	Other (Please specify)	12
13.	None	98

**Questionnaire 1: Women aged 18-49 years**

**4.5 For how long have you used this method?**

1.		Years
2.		Months
3.	99	Not applicable

**4.6 Which are the methods that you have used in the past to delay or avoid getting pregnant?**

	Yes	No
1. Pill	1	0
2. IUD	1	0
3. Injections	1	0
4. Diaphragm/foam/jelly	1	0
5. Condom	1	0
6. Female sterilisation	1	0
7. Male sterilisation	1	0
8. Calendar/rhythm	1	0
9. Withdrawal	1	0
10. Traditional herbs/remedies	1	0
11. Abstinence	1	0
12. Other (Please specify)	1	0
13. Unsure	1	0
14. None	1	0

**4.7 Where do/did you obtain the method you are using currently?**

1.	Government Hospital	1
2.	Government Clinic	2
3.	Community Health Centre	3
4.	Family Planning Clinic	4
5.	Private Hospital	5
6.	Private Clinic	6
7.	Private Doctor	7
8.	Mobile clinic	8
9.	Pharmacy/Chemist	9
10.	Traditional healer	10
11.	Faith healer	11
12.	Don't know	12
13.	Other (Please specify)	13
14.	Not applicable	99

**4.8 From whom did you first get information about methods to avoid or delay pregnancy?  
(Circle as many as apply)**

1.	Mother	1	0
2.	Sister	1	0
3.	Father	1	0
4.	Other Relative	1	0
5.	Friend	1	0
6.	Teacher	1	0
7.	Nurse	1	0
8.	Doctor	1	0
9.	Social Worker	1	0
10.	Poster/Leaflet/Magazine	1	0
11.	Radio/Television	1	0
12.	Other (Please specify)	1	0

**Questionnaire 1: Women aged 18-49 years**

**4.9 How old were you when you first used something to avoid or delay getting pregnant?**

1.		Years
2.	99	Not applicable

**4.9 Have your parent(s) or guardian(s) ever given you advice on contraceptives or explain how to use them?**

1.	No	0
2.	Yes	1

**4.10 Please indicate how strongly you agree or disagree with the following statements.**

		Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1.	Condoms are easily available	1	2	3	4	5
2.	The Pill is easily available	1	2	3	4	5
3.	Injectable contraception is easily available	1	2	3	4	5

**4.11 Choose the reason(s) why you are using contraception.**

		Yes	No
1.	My parents told me to	1	0
2.	All my friends do it	1	0
3.	My teacher told me to	1	0
4.	I saw it on TV	1	0
5.	Healthcare worker told me to	1	0
6.	Other (please specify)	1	0

**4.12 Choose the reason(s) why you are NOT using contraception.**

		Yes	No
1.	All my friends are not using it	1	0
2.	Sex feels better without a condom	1	0
3.	It is difficult to get hold of contraception	1	0
4.	Contraception is expensive	1	0
5.	It is against my religion	1	0
6.	It is against my culture	1	0
7.	My boyfriend doesn't want me to use it	1	0
8.	It's a nuisance	1	0
9.	Contraception has side effects	1	0
10.	I don't know what contraception is	1	0
11.	Other (please specify)	1	0

**SECTION 5: SEXUAL BEHAVIOUR**

**5.1 When was the last time you had sex, if ever?**

1.	Never	0
2.	Within the last week	1
3.	Within the last month	2
4.	More than one month ago	3

**IF YOU HAVE NEVER HAD SEX, PLEASE GO TO SECTION 9**

**5.2 Who did you last have sex with?**

1.	Husband	1
2.	Boyfriend	2
3.	Other regular partner	3
4.	Casual acquaintance	4

**Questionnaire 1: Women aged 18-49 years**

5.	Someone just met	5
6.	Other (Please specify)	6

**5.3 How old were you when you first had sex?**

1.		Years
2.	99	Not applicable

**5.4 How frequent did you have sexual intercourse in the past month?**

1.	0	0
2.	1-5 times	1
3.	6 times or more	2

**5.5 Have you ever been treated for an STI?**

1.	No	0
2.	Yes	1

**5.6 Have you been diagnosed with an STI in the past 12 months?**

1.	No	0
2.	Yes	1

**5.7 What is the total number of sexual partners you have had in the past three months?**

1.	None 0	0
2.	1	1
3.	2-3	2
4.	4-5	3
5.	6-7	4
6.	8-9	5
7.	More than 9	6

**5.8 How often have you had sex under the influence of alcohol in the past three months?**

1.	Never	0
2.	1-3 times	1
3.	4-6 times	2
4.	7-9 times	3
5.	10-12 times	4
6.	More than 12 times	5
7.	Not applicable	9

**SECTION 6: USE OF CONDOMS**

**6.1 How often have you used condoms with your spouse or regular partner(s) in the past 3 months?**

1.	Never	0
2.	Seldom	1
3.	Sometimes	2
4.	Always	3
5.	Not applicable (respondent had no spouse or regular partner in the past three months)	9

**6.2 How frequently have you used condoms with casual partners in the past 3 months?**

1.	Never	0
2.	Seldom	1
3.	Sometimes	2
4.	Always	3

**Questionnaire 1: Women aged 18-49 years**

5.	Not applicable (respondent had no spouse or regular partner in the past three months)	9
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**6.3 The last time you had sex, was a condom used?**

1.	No	0
2.	Yes	1
3.	Don't know	2
4.	Not applicable	9

**6.4 Why did you not use a condom the last time you had sex?**

	Yes	No	Not Applicable
1. I did not want to use a condom	1	0	9
2. I did not need to use a condom	1	0	9
3. I did not like condoms	1	0	9
4. I did not know about condoms	1	0	9
5. I did not have a condom	1	0	9
6. Other (Please specify)	1	0	9
7. I used a condom the last time I had sex	1	0	9

**6.5 Where can you get condoms from?**

	Yes	No
1. Government Hospital	1	0
2. Day Hospital/Clinic	1	0
3. Community Health Centre	1	0
4. Family Planning Clinic	1	0
5. Mobile Clinic	1	0
6. Community Health Worker	1	0
7. Private Hospital/Clinic	1	0
8. Pharmacy	1	0
9. Private Doctor	1	0
10. Supermarket	1	0
11. Filling station	1	0
12. Other (Please specify)	1	0

**6.6 How easy is it for you to buy condoms in your community?**

1.	Very difficult	0
2.	Quite difficult	1
3.	Quite easy	2
4.	Very easy	3
5.	Don't know	4

**6.7 How easy is it for you to get free condoms from clinics in your community?**

1.	Very difficult	0
2.	Quite difficult	1
3.	Quite easy	2
4.	Very easy	3
5.	Don't know	4

**6.8 How important is it for you to use condoms when you have sexual intercourse with a casual partner?**

1.	Extremely important	0
2.	Quite important	1
3.	Quite unimportant	2

**Questionnaire 1: Women aged 18-49 years**

4.	Extremely unimportant	3
5.	Don't know	4

**6.9 How important is it for you to use condoms when you have sexual intercourse with your regular partner?**

1.	Extremely important	0
2.	Quite important	1
3.	Quite unimportant	2
4.	Extremely unimportant	3
5.	Don't know	4

**6.10 Have you talked with your partner about condoms in the past 12 months?**

1.	No	0
2.	Yes	1
3.	Not applicable	9

**SECTION 7: PREGNANCY EXPERIENCES**

**7.1 Have you ever been pregnant?**

1.	No	0
2.	Yes	1

**7.2 If yes, did you intentionally want to get pregnant?**

1.	No	0
2.	Yes	1
3.	Not applicable	9

**7.3 How many miscarriages have you had in total, if any?**

1.	None	0
2.	1 to 2	1
3.	3 to 4	2
4.	5 or more	3

**7.4 Have you ever terminated pregnancy?**

1.	No	0
2.	Yes	1
3.	Not applicable	9

**IF NEVER PREGNANT AND NEVER HAD MISCARRIAGES, PLEASE GO TO SECTION 9.**

**7.5 At the time you became pregnant with your last child, how much did you want to become pregnant then?**

1.	A great deal	1
2.	A little	2
3.	Not much	3
4.	Not at all	4

**7.6 How much longer would you like to have waited?**

1.		Months
2.		Years
3.	9	Not applicable

**Questionnaire 1: Women aged 18-49 years**

**7.7 Where did you go for antenatal care the majority of times during the last pregnancy?**

1.	Public hospital	1
2.	Private hospital	2
3.	Public clinic	3
4.	Public surgery	4
5.	Private midwife's office	5
6.	Other (please specify)	6
7.	Not applicable	9

**7.8 What was the outcome of the pregnancy?**

1.	Full-term	1
2.	Pre-term (premature)	2
3.	Still-born	3
4.	Voluntarily terminated pregnancy	4
5.	Miscarriage	5

**7.9 Where did you give birth?**

1.	Home	1
2.	Government Hospital	2
3.	Day hospital/clinic/community health centre	3
4.	Private hospital/clinic	4
5.	Other (Please specify)	5

**7.10 How old were you when you gave birth to your last child?**

1.		Years
2.	99	Do not know/do not remember

**SECTION 8: PREGNANCY AND ALCOHOL USE**

**8.1 When last were you pregnant?**

1.	In the past year	1
2.	Between 1-2 years ago	2
3.	Between 2-3 years ago	3
4.	Between 3-4 years ago	4
5.	Between 4-5 years ago	5
6.	More than 5 years ago	6

**8.2 Did you plan to stop drinking because of the pregnancy?**

1.	No	0
2.	Yes	1
3.	Not applicable/Not drinking at time of falling pregnant	9

**8.3 Which of the following factors made it difficult for you to stop drinking during pregnancy?**

Pregnancy?		Definitely true	Mostly true	Not sure	Mostly false	Definitely false	Not applicable
1.	Influences from my friend(s)	1	2	3	4	5	6
2.	Influences from my partner(s)	1	2	3	4	5	6
3.	Influences from family member(s)	1	2	3	4	5	6
4.	Stress	1	2	3	4	5	6
5.	I felt addicted	1	2	3	4	5	6
6.	I enjoyed drinking too much	1	2	3	4	5	6

**Questionnaire 1: Women aged 18-49 years**

**8.4 After you knew you were pregnant, how often did you have a drink containing alcohol?**

1.	Never	0
2.	Monthly or less	1
3.	2 to 4 times a month	2
4.	2 to 3 times a week	3
5.	4 or more times a week	4

**8.5 After you knew you were pregnant, how many drinks containing alcohol did you have on a typical day when you were drinking?**

1.	None	0
2.	1 or 2	1
3.	3 or 4	2
4.	5 or 6	3
5.	7 to 9	4
6.	10 or more	5
7.	Other, please specify. If the respondent drank homebrew please ask her to indicate the name of the homebrew, type of container, and quantity consumed.	6

**SECTION 9: ALCOHOL USE**

**9.1 Have you had a drink containing alcohol in the past 3 months?**

1.	No	0
2.	Yes	1

**IF NO, PLEASE GO TO SECTION 10**

**9.2 How old were you when you first started drinking alcohol?**

1.		years
2.	1	Can't remember

**9.3 Do you still take a drink with alcohol sometimes?**

1.	No	0
2.	Yes	1

**9.4 How often do you have a drink containing alcohol?**

1.	2 to 3 times a week	1
2.	4 or more times a week	2
3.	Monthly or less	3
4.	2 to 4 times a month	4

**9.5 When did you stop drinking alcohol?**

1.	0-6 months ago	1
2.	7-12 months ago	2
3.	1-2 years ago	3
4.	2-3 years ago	4
5.	3 years or more	5
6.	Not applicable	9

**IF YOU HAVE NOT HAD AN ALCOHOLIC DRINK IN THE PAST YEAR,  
PLEASE GO TO SECTION 10**

**Questionnaire 1: Women aged 18-49 years**

**9.6 How many drinks containing alcohol do you have on a typical day when you are drinking? (Please note that one drink is equivalent to one can or bottle of beer, cider or coolers, one glass of wine, or one tot of spirits).**

1.	None	0
2.	1 or 2	1
3.	3 or 4	2
4.	5 or 6	3
5.	7 to 9	4
6.	10 or more	5
7.	Other (please specify). If you drink homebrew please indicate the name of the homebrew, type of container, and quantity	6

**SECTION 10: CULTURE**

**10.1 According to your culture, men are entitled to have as many children as they wish to have.**

1.	Strongly agree	1
2.	Moderately agree	2
3.	Moderately disagree	3
4.	Strongly disagree	4



**10.2 According to your culture, it is always, usually, sometimes or never wrong not to have children?**

1.	Always wrong	1
2.	Usually wrong	2
3.	Sometimes wrong	3
4.	Never wrong	4



**10.3 According to your culture, having children is a sign that you are a worthy woman.**

1.	Very true	1
2.	Somewhat true	2
3.	Somewhat untrue	3
4.	Very untrue	4

**10.4 According to your culture, for a man to have children is a sign that he is a worthy man.**

1.	Very true	1
2.	Somewhat true	2
3.	Somewhat untrue	3
4.	Very untrue	4

**SECTION 11: MALE PARTNERS**

**11.1 How many sexual male partners do you currently have?**

**11.2 How many sexual male partners did you have in the past year?**

**11.3 How many sexual male partners have you ever had in your lifetime?**

**Questionnaire 1: Women aged 18-49 years**

**11.4 Who is your current partner?**

1.	No one	0
2.	Father of the child	1
3.	Someone else	2

**11.5 How old is your sexual partner(s)?**

1.		Years
----	--	-------

**11.6 Is your partner employed?**

1.	No	0
2.	Yes	1
3.	Self employed	2

**11.7 What is your sexual partner's HIV status?**

1.	HIV negative	0
2.	HIV positive	1
3.	I don't know	2

**11.8 Have you ever been diagnosed with HIV positive?**

1.	No	0
2.	Yes	1

**11.9 Please indicate how strongly you agree or disagree with the following statements.**

	Strongly agree	Moderately agree	Neither agree nor disagree	Moderately disagree	Strongly disagree
1. You are satisfied with your relationship with this person	1	2	3	4	5
2. Sometimes there is serious disagreements between you and him	1	2	3	4	5
3. Sometimes there is hitting or slapping between you and him	1	2	3	4	5
4. You have a lot of control in your relationship with him	1	2	3	4	5
5. There is a lot of trust between you and him	1	2	3	4	5
6. Your partner has a control of whether or not to have sex	1	2	3	4	5
7. Your partner has control of whether or not a condom is used	1	2	3	4	5
8. Your partner has control of whether or not a contraceptive method is used for birth control	1	2	3	4	5

**11.10 Now I would like to ask about his drinking of alcoholic beverages.**

	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
1. How often does he have a drink containing alcohol?	0	1	2	3	4
2. How often do you drink with him?	0	1	2	3	4
3. How often does he have six or more drinks on one occasion?	0	1	2	3	4

**Questionnaire 1: Women aged 18-49 years**

**11.11 Now I would like to ask about the effect of his drinking of alcoholic beverages**

		No	Yes	Don't know
1.	Has he or someone else ever injured as a result of his drinking?	0	1	2
2.	Did a relative, friend, or a doctor or other health worker ever express concern about his drinking or suggest that he cut down?	0	1	2

**11.12 How many drinks containing alcohol does he have on a typical day when he is drinking?**

1.	None	0
2.	1 or 2	1
3.	3 or 4	2
4.	5 or 6	3
5.	7 to 9	4
6.	10 or more	5

**11.13 Do you feel obliged to drink alcohol when your partner is drinking?**

1.	No	0
2.	Yes	1

**11.14 Have you ever experienced forced sex with your partner?**

1.	No	0
2.	Yes	1

**SECTION 12: HEALTHCARE FACILITY**

**12.1 How often do you go to clinic?**

1.	More than 1 time(s) a month	1
2.	1 time each month	2
3.	Once in 2 months	3
4.	Once in 3 - 5 months	4
5.	Once in more than 5 months, but less than a year	5
6.	Once a year	6

**12.2 Please indicate how strongly you agree or disagree with the following statements.**

		Strongly agree	Moderately agree	Neither agree nor disagree	Moderately disagree	Strongly disagree
1.	Is it easy to access contraceptives at my nearest clinic	1	2	3	4	5
2.	Nurses at the clinic know their work	1	2	3	4	5
3.	Nurses at the clinic provide counselling and education about contraception each time I visit the clinic	1	2	3	4	5
4.	Nurses at the clinic are friendly and open despite my age and HIV status	1	2	3	4	5
5.	I do not feel judged at all by nurses at the clinic	1	2	3	4	5
6.	The waiting hours are long at the clinic	1	2	3	4	5
7.	The waiting hours are unbearable at the clinic	1	2	3	4	5
8.	My contraceptive method of choice is always available at the clinic	1	2	3	4	5

**THE END.**

**THANK YOU FOR YOUR PARTICIPATION**

## Questionnaire 2: Healthcare Workers

**Title: FACTORS INFLUENCING CONTRACEPTIVE USE AND SEXUAL BEHAVIOUR AMONG WOMEN OF REPRODUCTIVE AGE IN UMLAZI TOWNSHIP, KWAZULU-NATAL PROVINCE, SOUTH AFRICA.**

### **SECTION 1: DEMOGRAPHIC CHARACTERISTICS**

#### **1.1 What was your age (in years) in your last birthday?**

1.		Years
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#### **1.2 What is your gender?**

1.	Born Female	1
2.	Born Male	2
3.	Other	3

#### **1.3 What is your home language?**

1.	IsiZulu	1
2.	English	2
3.	Afrikaans	3
4.	Ndebele	4
5.	Venda	5
6.	Tsonga	6
7.	Sepedi	7
8.	Swati	8
9.	Xhosa	9
10.	Sotho	10
11.	Tswana	11
12.	Other (Please specify)	12

#### **1.4 Which race group do you consider yourself to belong to?**

1.	Black/African	1
2.	Coloured	2
3.	White	3
4.	Asian/Indian	4
5.	Other (Please specify)	5

#### **1.5 What is the highest level of education you have passed?**

1.	No formal education	1
2.	Grade 1	2
3.	Grade 2	3
4.	Grade 3	4
5.	Grade 4	5
6.	Grade 5	6
7.	Grade 6	7
8.	Grade 7	8
9.	Grade 8	9
10.	Grade 9	10
11.	Grade 10	11
12.	Grade 11	12
13.	Grade 12	13
14.	Diploma/ Degree/ other post school – incomplete	14
15.	Diploma/ Degree/ other post school – complete	15

## Questionnaire 2: Healthcare Workers

16.	Diploma/ Degree graduate	16
17.	Postgraduate Diploma/ Degree	17

### 1.6 What is your current marital status?

1.	Legally married	1
2.	Traditionally married	2
3.	Living with man in union	3
4.	Never married/Single	4
5.	Divorced	5
6.	Married but separated	6
7.	Widowed	7

## SECTION 2: ECONOMIC FACTORS

### 2.1 What is your occupation?

1.	Enrolled Nursing Assistant	1
2.	Enrolled Nurse	2
3.	Professional Nurse	3
4.	Operations/Facility Manager	4
5.	Medical Doctor	5
6.	Other (Specify)	6

### 2.2 How long have you been employed in this position in this facility?

1.	0-11 months	1
2.	1-2 years	2
3.	3-4 years	3
4.	5-10 years	4
5.	More than 10 years	5

### 2.3 How long have you been employed in this clinic?

1.	0-11 months	1
2.	1-2 years	2
3.	3-4 years	3
4.	5-10 years	4
5.	More than 10 years	5

## SECTION 3: HEALTH

### 3.1 In general, would you say your health is:

1.	Excellent	1
2.	Very Good	2
3.	Good	3
4.	Fair	4
5.	Poor	5

### 3.2 How much bodily pain have you had during the past 4 weeks?

1.	None	1
2.	Very Mild	2
3.	Mild	3
4.	Moderate	4
5.	Severe	5

## Questionnaire 2: Healthcare Workers

6.	Very Severe	6
----	-------------	---

### 3.3 Does your health keep you from working at a job or doing work around the house?

1.	Yes, for more than 3 months	1
2.	Yes, for 3 months or less	2
3.	No	3

### 3.4 Please choose the number that best describes the extent to which each of the following statements is true or false for you.

		Definitely true	Mostly true	Not sure	Mostly false	Definitely false
1.	I am somewhat ill	1	2	3	4	5
2.	I am as healthy as anybody I know	1	2	3	4	5
3.	My health is excellent	1	2	3	4	5
4.	I have been feeling unhealthy lately	1	2	3	4	5

## SECTION 4: WORKING CONDITIONS

### 4.1 Do you enjoy doing your work?

1.	No	0
2.	Yes	1

### 4.2 Are you satisfied with the working conditions in this clinic?

1.	No	0
2.	Yes	1

### 4.3 What is the waiting time in this clinic?

1.		Hours
2.		Minutes

### 4.4 Please indicate how strongly you agree or disagree with the following statements.

		Strongly disagree	Moderately disagree	Neither agree nor disagree	Moderately agree	Strongly agree
1.	It is easy for women to access contraception at this clinic	1	2	3	4	5
2.	Nurses at this clinic know their work	1	2	3	4	5
3.	Nurses at this clinic provide sexual health behaviour counselling and education each time a woman visit the clinic	1	2	3	4	5
4.	Nurses at this clinic provide contraceptive use counselling and education each time a woman visit the clinic	1	2	3	4	5
5.	Nurses at this clinic are friendly and open despite woman's age and HIV status when acquiring family planning services	1	2	3	4	5
6.	Nurses at this clinic do not judge women at all despite the service provided	1	2	3	4	5
7.	Women do not feel judged at all by nurses from this clinic	1	2	3	4	5
8.	The waiting hours are long at the clinic	1	2	3	4	5
9.	The waiting hours are unbearable at this clinic	1	2	3	4	5
10.	The working environment is conducive enough to provide sexual behaviour and contraceptive use counselling and education to clients	1	2	3	4	5

## Questionnaire 2: Healthcare Workers

11.	Women's contraceptive method of choice is always available at this clinic	1	2	3	4	5
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### SECTION 5: CONTRACEPTIVE USE

#### 5.1 Do you offer family planning services in this clinic?

1.	No	1
2.	Yes	2

#### 5.2 Does family planning make its users promiscuous?

1.	No	1
2.	Yes	2
3.	Don't know	3

#### 5.3 Are contraceptives harmful?

1.	No	1
2.	Yes	2
3.	Don't know	3

#### 5.4 Do contraceptives have side effects?

1.	No	1
2.	Yes	2
3.	Don't know	3

#### 5.5 Are the family planning services affordable to patients?

1.	No	1
2.	Yes	2
3.	Don't know	3

#### 5.6 How often do you use contraceptives/family planning services?

1.	Never	0
2.	Seldom	1
3.	Sometimes	2
4.	Most often	3
5.	Always	4

#### 5.7 How often does your role in family planning conflict with your moral/ cultural/ religious beliefs?

1.	Never	0
2.	Seldom	1
3.	Sometimes	2
4.	Most often	3
5.	Always	4

#### 5.8 How often do contraceptives actually effective in planning families?

1.	Never	0
2.	Seldom	1
3.	Sometimes	2
4.	Most Often	3
5.	Always	4

## Questionnaire 2: Healthcare Workers

### 5.9 How is your clients' attitude towards family planning?

1.	Excellent	1
2.	Very Good	2
3.	Good	3
4.	Fair	4
5.	Poor	5

### 5.10 Which contraceptive method do you generally recommend to your clients to delay or avoid getting pregnant?

1.	Pill	1
2.	IUD	2
3.	Injections	3
4.	Diaphragm/foam/jelly	4
5.	Condom	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal	9
10.	Traditional herbs/remedies	10
11.	Abstinence	11
12.	Other (Please specify)	12
13.	None	99

### 5.11 What is the mostly requested contraceptive method by your clients for delaying or avoiding getting pregnant?

1.	Pill	1
2.	IUD	2
3.	Injections	3
4.	Diaphragm/foam/jelly	4
5.	Condom	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal	9
10.	Traditional herbs/remedies	10
11.	Abstinence	11
12.	Other (Please specify)	12
13.	None	99

### 5.12 Which contraceptive method do your clients complain about the most?

1.	Pill	1
2.	IUD	2
3.	Injections	3
4.	Diaphragm/foam/jelly	4

## Questionnaire 2: Healthcare Workers

5.	Condom	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal	9
10.	Traditional herbs/remedies	10
11.	Abstinence	11
12.	Other (Please specify)	12
13.	None	99

### 5.13 What do clients normally complain about regarding those contraceptives?

1.	Side effects	1
2.	Other (specify)	2
3.	Not applicable	3

### 5.14 Does the facility have all the contraceptive methods that should be available at a government clinic?

1.	No	1
2.	Yes	2
3.	Don't know	3

### 5.15 Which contraceptive method(s) does this facility keep in stock in general?

1.	Pill	1
2.	IUD	2
3.	Injections	3
4.	Diaphragm/foam/jelly	4
5.	Condom	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal	9
10.	Traditional herbs/remedies	10
11.	Abstinence	11
12.	Other (Please specify)	12
13.	None	99

### 5.16 Does the facility run out of contraceptive methods at times?

1.	No	1
2.	Yes	2
3.	Don't know	3

### 5.17 If yes, how often does the facility experience a shortage of any contraceptive methods?

1.	Every month	1
2.	Once in 2 months	2
3.	Once in 3 months	3
4.	Once in 6 months	4

**Questionnaire 2: Healthcare Workers**

5.	Once in 12 months	5
6.	Not applicable	9

**5.18 How is the attitude of women when acquiring contraception in the clinic?**

1.	Excellent	1
2.	Very Good	2
3.	Good	3
4.	Fair	4
5.	Poor	5

**5.19 How is the behaviour of women when acquiring contraception in the clinic?**

1.	Excellent	1
2.	Very Good	2
3.	Good	3
4.	Fair	4
5.	Poor	5

**5.20 How many clients request contraception on average per month?**

1.		Number
----	--	--------

**5.21 How many clients have you diagnosed with STI on average per month?**

1.		Number
----	--	--------

**5.22 Do these STI diagnosed clients collect contraceptive methods in this facility?**

1.	No	1
2.	Sometimes	2
3.	Rare times	3
4.	Most of the times	4
5.	Always	5
6.	Don't know	5

**5.23 What is the dominant age group of clients who mostly request contraceptive methods?**

1.	Less than 12 years	0
2.	12-14 years	1
3.	14 -19 years	2
4.	20-24 years	3
5.	25-29 years	4
6.	30-35 years	5
7.	36-40 years	6
8.	41-44 years	7
9.	45-49 years	8

**5.24 Do you encourage/promote female condom use among your clients?**

1.	No	1
2.	Rare times	2

## Questionnaire 2: Healthcare Workers

3.	Most of the times	3
4.	Always	4

### 5.24 Do you advise adolescents to abstain from sex when they seek contraceptives?

1.	No	1
2.	Rare times	2
3.	Most of the times	3
4.	Always	4

## SECTION 6: CONTRACEPTIVE KNOWLEDGE

### 6.1 How is the level of contraception knowledge do the majority of your clients have in general?

1.	Excellent	1
2.	Very Good	2
3.	Good	3
4.	Fair	4
5.	Poor	5

### 6.2 Do you believe that your clients understand the different contraceptive methods available to them from this facility?

1.	No	1
2.	Yes	2
3.	Don't know	3

### 6.3 Do you think your clients know the side effects of using particular contraceptives?

1.	No	1
2.	Yes	2
3.	Don't know	3

### 6.4 What are the main side effects from using the Pill contraceptive method?

1.		1
2.		2
3.	I don't know	3

### 6.5 What are the main side effects from using the injectable contraceptive method?

1.		1
2.		2
3.	Don't know	3

### 6.6 Which contraceptive method(s) are you most familiar with?

1.	Pill	1
2.	IUD	2
3.	Injections	3
4.	Diaphragm/foam/jelly	4
5.	Condom	5
6.	Female sterilisation	6
7.	Male sterilisation	7
9.	Calendar/rhythm	8
10.	Withdrawal	9

## Questionnaire 2: Healthcare Workers

11.	Traditional herbs/remedies	10
12.	Abstinence	11
13.	Other (Please specify)	12
14.	None	99

### SECTION 7: CAPACITY BUILDING

#### 7.1 Which contraceptive methods have you been trained on to give better guidance and education to your clients in the past 12 months?

1.	Pill	1
2.	IUD	2
3.	Injections	3
4.	Diaphragm/foam/jelly	4
5.	Condom	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal	9
10.	Traditional herbs/remedies	10
11.	Abstinence	11
12.	Other (Please specify)	12
13.	None	99

#### 7.2 Have you been trained or given refresher training on sexual behaviour counselling in the past 12 months?

1.	No	1
2.	Yes	2
3.	Don't know	3

#### 7.3 Have you been trained or given refresher training on contraceptive use counselling in the past 12 months?

1.	No	1
2.	Yes	2
3.	Don't know	3

#### 7.4 Have you been trained or given refresher training on sexual and reproductive health education in the past 12 months?

1.	No	1
2.	Yes	2
3.	Don't know	3

### SECTION 8: TECHNICAL EXPERTISE

#### 8.1 Statements assessing healthcare providers' contraception technical expertise

1.		Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
2.	There is an increased risk of infertility associated with the use of contraception.	1	2	3	4	5

## Questionnaire 2: Healthcare Workers

3.	A woman who uses contraception has a higher risk of pelvic inflammatory disease than if she were not to use contraception.	1	2	3	4	5
4.	Emergency contraception (Plan B) is only effective up to 48 hours after intercourse.	1	2	3	4	5
5.	Women with migraine with aura should not be prescribed combined hormonal contraceptives.	1	2	3	4	5
6.	Women with a history of deep venous thrombosis or pulmonary embolism should not be prescribed progestin-only contraceptives.	1	2	3	4	5
7.	Hypertension, even if well controlled, is an absolute contraindication to combined hormonal contraception.	1	2	3	4	5

THE END.  
THANK YOU FOR YOUR PARTICIPATION.

Questionnaire 1: Women aged 18-49 years

**Title: FACTORS INFLUENCING CONTRACEPTIVE USE AND SEXUAL BEHAVIOUR AMONG WOMEN OF REPRODUCTIVE AGE IN UMLAZI TOWNSHIP, KWAZULU-NATAL PROVINCE, SOUTH AFRICA.**

**ISIGABA 1: IZIMO ZOKUZALWA**

**1.1 Uneminyaka emingaki?**

1.		Iminyaka
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**1.2 Yini ubulili bakho?**

1.	Owesifazane	1
2.	Owesilisa	2
3.	Okunye	3

**1.3 Luyini ulimi lwakho lwasekhaya?**

1.	IsiZulu	1
2.	IsiNqisi	2
3.	Isi-Afrikaans	3
4.	IsiNdebele	4
5.	Venda	5
6.	Tsonga	6
7.	Sepedi	7
8.	Swati	8
9.	Xhosa	9
10.	Sotho	10
11.	Tswana	11
12.	Okunye (Sicela ucacise)	12

**1.4 Yiluphi uhlobo lobuhlanga ocabanga ukuthi ngolwakho?**

1.	Omnyama / we-Afrika	1
2.	Coloured	2
3.	White	3
4.	Asian/Indian	4
5.	Okunye (Sicela ucacise)	5

**1.5 Yiliphi izinga eliphezulu lezemfundo ophumelele kulo?**

1.	Ayikho imfundo ehlelekile	1
2.	Ibanga 1	2
3.	Ibanga 2	3
4.	Ibanga 3	4
5.	Ibanga 4	5
6.	Ibanga 5	6
7.	Ibanga 6	7
8.	Ibanga 7	8
9.	Ibanga 8	9
10.	Ibanga 9	10
11.	Ibanga 10	11
12.	Ibanga 11	12
13.	Ibanga 12	13
14.	I-Diploma / Degree / enye i-post school - ayiphelelwa	14
15.	Diploma / degree / ezinye esikoleni okuthunyelwe - ephilele	15
16.	Isiqu seDiploma / Degree	16
17.	Yi-diploma ye-Postgraduate / noma yi-Degree	17

**Questionnaire 1: Women aged 18-49 years**

**1.6 Sinjani isimo sakho somshado samanje?**

1.	Ukushada ngokomthetho	1
2.	Ukushada ngokwesiko	2
3.	Ukuhlala nomuntu emunye ngaphandle kokushada	3
4.	Angikaze ngishade / Angishadile	4
5.	Ngahlukanisa	5
6.	Ngishadile kodwa sihlukene	6
7.	Umfelokazi	7

**ISIGABA 2: IZIMO ZEZOMNOTHO**

**2.1 Uke wenza noma yimuphi umsebenzi okhokhelwayo ezinyangeni ezingu-12 zokugcina?**

1.	Cha	0
2.	Yebo	1

**2.2 Yikuphi kokulandelayo okuchaza isimo sakho samanje somsebenzi?**

1.	Angisebenzi	1
2.	Ngisebenza ngesikhathi esithile	2
3.	Ngigashwe isikhathi esigcwele	3
4.	Ngizisebenza	4
5.	Ngizifunda	5

**2.3 Sicela ukhombise ukuthi yikuphi okulandelayo okungumthombo wakho wemali engenayo. (Sicela uphendule lo mbuzo ngisho ngabe uyasebenza noma cha).**

		Yes	No
1.	Umsebenzi / ukuzigasha	1	0
2.	Umlingani / umlingani wami	1	0
3.	Abazali	1	0
4.	Abafowethu kanye / noma odadewethu	1	0
5.	Izingane	1	0
6.	Isibonelelo Sokusekela Ingane/iGrant	1	0
7.	Impesheni kaHulumeni	1	0
8.	Isibonelelo sokukhubazeka	1	0
9.	Isibonelelo Sokwethenjela Kwezokunakekelwa	1	0
10.	Isibonelelo Sokunakekelwa Kwabazali	1	0
11.	Izibonelelo-zosizo	1	0
12.	Isikhwama Sempesheni Yomsebenzi	1	0
13.	Okunye (Sicela ucacise)	1	0

**ISIGABA 3: EZEMPILO**

**3.1 Ngokuvamile, ungasho ukuthi impilo yakho injani:**

1.	Yinhle ngokuvelele	1
2.	Yinhle kakhulu	2
3.	Yinhle	3
4.	Okulungile	4
5.	Kubi	5

**Questionnaire 1: Women aged 18-49 years**

**3.2 Sicela ukhethe inombolo echaza kahle ukuthi izitatimende ezilandelayo ziyiqiniso noma zingamanga ngawe.**

		Ngokuqiniseki le kuyiqiniso	Iningi liyiqiniso	Angiqinise ki	Iningi lamanga	Ngokuqiniseki le amanga
1	Ngiyagula kwesinye isikhathi	1	2	3	4	5
2	Nginempilo njengawo wonke umuntu	1	2	3	4	5
3	Impilo yami yinhle kakhulu	1	2	3	4	5
4	Ngike ngizizwe ngingaphili kahle kulamalanga	1	2	3	4	5

**ISIGABA 4: UKUSETSHENZISWA KOKUVIKELA/UKUTHIBA UKUKHULELWA**

**4.1 Ubuneminyaka emingaki ngenkathi uqala ukuya esikhathini?**

1.	Ingaphansi kweminyaka eyishumi ubudala	1
2.	Uneminyaka eyishumi kuya kweshumi nanhlano ubudala	2
3.	Uneminyaka eyishumi nesithupha kuya kwamashumi amabili ubudala	3
4.	Ngaphezu kweminyaka engamashumi amabili ubudala	4

**4.2 Wake wasebenzisa noma yini noma wazama nganoma iyiphi indlela ukulibazisa noma ukugwema ukukhulelwa?**

1.	Cha	0
2.	Yebo	1

**4.3 Yiluphi uhlobo lwama-philisi/imijovo oyijwayele ukubambezeka noma ukugwema ukukhulelwa?**

1.	Iphilisi	1
2.	IUD	2
3.	Umjovo	3
4.	I-Diaphragm / foam / i-jelly	4
5.	iCondomu	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal/ukuhoxiswa	9
10.	Amakhambi endabuko / esintu	10
11.	ukuzithiba	11
12.	Okunye (Sicela ucacise)	12
13.	Akukho	98

**4.4 Iyiphi indlela esemqoka oyisebenzisayo manje ukubambezela noma ukugwema ukukhulelwa?**

1.	Iphilisi	1
2.	IUD	2
3.	Umjovo	3
4.	I-Diaphragm / foam / i-jelly	4
5.	iCondomu	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal/ukuhoxiswa	9
10.	Amakhambi endabuko / esintu	10

**Questionnaire 1: Women aged 18-49 years**

11.	ukuzithiba	11
12.	Okunye (Sicela ucacise)	12
13.	Akukho	98

**4.5 Usebenzise isikhathi esingakanani le ndlela?**

1.		Iminyaka
2.		Izinyanga
3.	99	Akufaneleki

**4.6 Yiziphi izindlela ozisebenzise esikhathini esidlule ukubambezela noma ukuqwema ukukhulelwa?**

	Yebo	Cha
1. Iphilisi	1	0
2. IUD	1	0
3. Umjovo	1	0
4. I-Diaphragm / foam / i-jelly	1	0
5. iCondomu	1	0
6. Female sterilisation	1	0
7. Male sterilisation	1	0
8. Calendar/rhythm	1	0
9. Withdrawal/ukuhoxiswa	1	0
10. Amakhambi endabuko / esintu	1	0
11. ukuzithiba	1	0
12. Okunye (Sicela ucacise)	1	0
13. Akukho	1	0
14. None	1	0

**4.7 Uyithole kuphi indlela oyisebenzisayo njengamanje?**

1.	Isibhedlela sikahulumeni	1
2.	Umtholampilo Kahulumeni	2
3.	Isikhungo sempilo yomphakathi	3
4.	Umtholampilo Wokuhlela Umndeni	4
5.	Isibhedlela esizimele	5
6.	Umtholampilo ozimele	6
7.	Udokotela ozimele	7
8.	Umtholampilo ohambayo	8
9.	Pharmacy / ikhemisi	9
10.	Udokotela wendabuko/wesintu	10
11.	Udokotela wezenkolo	11
12.	Angazi	12
13.	Okunye (Sicela ucacise)	13
14.	Not applicable/ Akufaneleki	99

**4.8 Ubani othole kuqala ulwazi kuye mayelana nezindlela zokugwema noma ukubambezela ukukhulelwa? (khetha konke okuhambiselana nawe)**

1.	Umama	1	0
2.	Udadewethu	1	0
3.	Ubaba	1	0
4.	Isihlobo	1	0
5.	Umgani	1	0
6.	Uthisha	1	0
7.	Umhlangikazi	1	0

**Questionnaire 1: Women aged 18-49 years**

8.	Udokotela	1	0
9.	Usonhlala kahle	1	0
10.	I-Poster / Leaflet / Umagazini	1	0
11.	Umsakazo / umabonakude	1	0
12.	Okunye (Sicela ucacise)	1	0

**4.9 Uneminyaka emingaki lapho uqala ukusebenzisa okuthile ukugwema noma ukubambezela ukukhulelwa?**

1.		Iminyaka
2.	99	Not applicable/Akufaneleki

**4.9 Ingabe abazali bakho noma akugadayo bake bakunikeze iseluleko ngemithi/imijovo yokuvikela noma ukuthiba ukukhulelwa noma bachaze ukuthi ungayisebenzisa kanjani?**

1.	Cha	0
2.	Yebo	1

**4.10 Sicela ubonise ukuthi uvuma noma awuvumi kangakanani nezitatimende ezilandelayo.**

		Ngiphikisa kakhulu	Angivumela ni nhlobo	Phakathi nendawo	Vumelana ngokulinganayo	Vumelana kakhulu
1	Amakhondomu atholakala kalula	1	2	3	4	5
2	Iphilisi litholakala kalula	1	2	3	4	5
3	Imijovo yokuvikela ukukhulelwa iyatholakala kalula	1	2	3	4	5

**4.11 Khetha isizathu (s) ukuthi kungani usebenzisa umuthi/umjovo wokuvikela/ukubambezela ukukhulelwa.**

	Yebo	Cha
1. Ngatshelwa ngabazali	1	0
2. Bonke abangani bami bayakwenza	1	0
3. Uthisha wami wangitshela	1	0
4. Ngibonile kuyi-TV	1	0
5. Ngatshelwa umsebenzi wezempilo	1	0
6. Okunye (sicela ucacise)	1	0

**4.12 Khetha isizathu (s) ukuthi kungani ungasebenzisi umuthi/umjovo wokuvikela/ukubambezela ukukhulelwa.**

	Yebo	Cha
1. Bonke abangane bami abazisebenzisi	1	0
2. Ucansi luzwakala kangcono ngaphandle kwekhondomu	1	0
3. Kunzima ukuthola imithi/umjovo wokuvikela/wokubambezela ukukhulelwa	1	0
4. Imithi/imijovo yokuvikela/yokuthiba ukukhulelwa iyabiza	1	0
5. Kuphikisana nenkolo yami	1	0
6. Kuphikisana namasiko ami	1	0
7. Isoka lami alifuni ukuthi ngiyisebenzise	1	0
8. Kuyinto eyisicefe	1	0
9. Imithi/imijovo yokuvikela ukukhulelwa inemiphumela emibi emzimbeni	1	0
10. Angazi ukuthi ukukhulelwa kuvimbelwa ngani	1	0
11. Okunye (sicela ucacise)	1	0

**ISIGABA 5: EZOCANSI**

**5.1 Ugcine nini ukwenza ucansi, uma kwenzeka?**

1.	Angikaze	0
2.	Kulelisonto noma ngesonto eledule	1
3.	Ngenyanga edule	2

**Questionnaire 1: Women aged 18-49 years**

4.	Ingaphezu kwenyanga eyodwa edlule	3
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**UMA UNGAKAZE WENZE UCANSI, SICELA UYE KWISIGABA SIKA-9**

**5.2 Ubani ogcine wenze naye ucansi?**

1.	Umyeni/umkhwenyana wami	1
2.	Isoka lami	2
3.	Omunye umlingani ovamile	3
4.	Umuntu engijwayelene naye	4
5.	Umuntu ebengisanda ukuhlalana naye	5
6.	Okunye (Sicela ucacise)	6

**5.3 Ubuneminyaka emingaki lapho uqala ukuya ocansini?**

1.		Iminyaka
2.	99	Not applicable

**5.4 Ubuvame kangakanani ukuya ocansini ngenyanga edlule?**

1.	0	0
2.	1-5 izikhathi	1
3.	Izikhathi ezingu-6 noma ngaphezulu	2

**5.5 Wake walashelwa isifo esithelelana ngokocansi (STI)?**

1.	Cha	0
2.	Yebo	1

**5.6 Wake watholakala ukuthi une-STI ezinyangeni ezingu-12 ezedlule?**

1.	Cha	0
2.	Yebo	1

**5.7 Iyini inombolo ephelile yabalingani besitisa oke wenza nabo ucansi ezinyangeni ezintathu ezedlule?**

1.	0	0
2.	1	1
3.	2-3	2
4.	4-5	3
5.	6-7	4
6.	8-9	5
7.	Ngaphezu kuka- 9	6

**5.8 Uke wenza ucansi kangaki uphuze utshwala ezinyangeni ezintathu ezedlule?**

1.	Angikaze	0
2.	Izikhathi ezingu-1-3	1
3.	Izikhathi ezingu-4-6	2
4.	Izikhathi ezingu-7-9	3
5.	Izikhathi ezingu-10-12	4
6.	Izikhathi ezingaphezu kwezi-12	5
7.	Not applicable/akufaneleki	9

**ISIGABA 6: UKUSETSHENZISWA KWE-CONDOM**

**6.1 Usebenzise kangakanani amakhondomu nomlingani noma abalingani bakho abajwayelekele ezinyangeni ezintathu ezedlule?**

1.	Angizange	0
2.	Ngokungavamile	1
3.	Ngezinye izikhathi	2
4.	Njalo	3

**Questionnaire 1: Women aged 18-49 years**

5.	Not applicable/akufaneleki (respondent wayengenaye umlingani ezinyangeni ezintathu ezedlule)	9
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**6.2 Usebenzise kangaki amakhondomu nomlingani/nabalingani abangajwayelekile ezinyangeni ezintathu ezedlule?**

1.	Angizange	0
2.	Ngokungavamile	1
3.	Ngezinye izikhathi	2
4.	Njalo	3
5.	Not applicable/akufaneleki (respondent wayengenaye umlingani ezinyangeni ezintathu ezedlule)	9

**6.3 Ngesikhathi sokugcina wenza ucansi, ingabe ikhondomu isetshenzisiwe?**

1.	Cha	0
2.	Yebo	1
3.	Angazi	2
4.	Not applicable/akufaneleki	9

**6.4 Kungani ungayisebenzisanga ikhondomu ngesikhathi sokugcina wenza ucansi?**

		Yebo	Cha	Not Applicable
1.	Ngangingafuni ukusebenzisa ikhondomu	1	0	9
2.	Ngangingadingeki ukusebenzisa ikhondomu	1	0	9
3.	Ngangingawathandi amakhondomu	1	0	9
4.	Ngangingazi ngamakhondomu	1	0	9
5.	Ngangingenayo ikhondomu	1	0	9
6.	Okunye (Sicela ucacise)	1	0	9
7.	Ngayisebenzisa ikhondomu ngesikhathi sokugcina ngenza ucansi	1	0	9

**6.5 Ungawathola kuphi amakhondomu?**

6.5 Ungawathola kuphi amakhondomu?		Yebo	Cha
1.	Isibhedlela sikahulumeni	1	0
2.	Isibhedlela Sosuku / Umtholampilo	1	0
3.	Isikhungo sempilo yomphakathi	1	0
4.	Umtholampilo Wokuhlela Umndeni	1	0
5.	Umtholampilo ohambayo	1	0
6.	Umsebenzi Wezempilo Yomphakathi	1	0
7.	Isibhedlela esizimele	1	0
8.	Ikhemisi	1	0
9.	Udokotela ozimele	1	0
10.	Isuphamakethe	1	0
11.	Isiteshi sikaphethiloli	1	0
12.	Okunye (Sicela ucacise)	1	0

**6.6 Kulula kanjani ukuthi uthenge amakhondomu emphakathini wakho?**

1.	Kunzima kakhulu	0
2.	Kuthanda ukuba nzima	1
3.	Kulula	2
4.	Kulula kakhulu	3
5.	Angazi	4

**Questionnaire 1: Women aged 18-49 years**

**6.7 Kulula kangakanani kuwe ukuthola ama-condoms mahhala emitholampilo emphakathini wakho?**

1.	Kunzima kakhulu	0
2.	Kuthanda ukuba nzima	1
3.	Kulula	2
4.	Kulula kakhulu	3
5.	Angazi	4

**6.8 Kubaluleke kangakanani ukuthi usebenzise amakhondomu uma ulala ocansini nomlingani ongavamile?**

1.	Kubaluleke kakhulu	0
2.	Kubalulekile	1
3.	Akubalulekile	2
4.	Akubalulekile kakhulu	3
5.	Angazi	4

**6.9 Kubaluleke kangakanani ukuthi usebenzise amakhondomu uma ulala ocansini nomlingani wakho ovamile?**

1.	Kubaluleke kakhulu	0
2.	Kubalulekile	1
3.	Akubalulekile	2
4.	Akubalulekile kakhulu	3
5.	Angazi	4

**6.10 Uke wakhuluma nomlingani wakho mayelana namakhondomu ezinyangeni ezingu-12 ezedlule?**

1.	Cha	0
2.	Yebo	1
3.	Not applicable/akufaneleki	9

**ISIGABA 7: UKUKHULELWA**

**7.1 Wake wakhulelwa?**

1.	Cha	0
2.	Yebo	1

**7.2 Uma kunjalo, ngabe ukukhulelwa kwakho bekuyinhloso yakho?**

1.	Cha	0
2.	Yebo	1
3.	Not applicable/akufaneleki	9

**7.3 Zingaki izikhathi lapha uke waphuphumelwa isisu khona, uma kuke kwenzeka?**

1.	0	0
2.	1 to 2	1
3.	3 to 4	2
4.	5 noma ngaphezulu	3

**7.4 Wake wasikhipha isisu?**

1.	Cha	0
2.	Yebo	1
3.	Not applicable/akufaneleki	9

Questionnaire 1: Women aged 18-49 years

UMA UNGAKAZE UKHULELWE NOMA UPHUPHUMELWE YISISU, SICELA UYE KWISIGABA-9.

7.5 Ngesikhathi ukhulelwe ingane yakho yokugcina, ngabe ubufuna ukukhulelwa kangakanani?

1.	Kakhulu	1
2.	Kancane	2
3.	Hhayi kangako	3
4.	Lutho neze	4

7.6 Ubungathanda ukulinda isikhathi esingakanani?

1.		Izinyanga
2.		iminyaka
3.	9	Not applicable

7.7 Iyiphi indawo obuya kuyona ukunakekelwa kokubeletha izikhathi eziningi ngesikhathi sokukhulelwa kokugcina?

1.	Isibhedlela sikahulumeni/somphakathi	1
2.	Isibhedlela esizimele	2
3.	Umtholampilo womphakathi	3
4.	I-surgery yomphakathi	4
5.	Ihlovisi lika-midwife elizimele	5
6.	Okunye (sicela ucacise)	6
7.	Not applicable/akufanelekile	9

7.8 Waba yini umphumela wokukhulelwa?

1.	Isikhathi esigcwele	1
2.	I-pre-term (ngaphambi kwesikhathi)	2
3.	Yazalwa isishonile	3
4.	Ukugeda ngokuzithandela ukukhulelwa	4
5.	Saphuphuma isisu	5

7.9 Ubelethele kuphi?

1.	Ekhaya	1
2.	Esibhedlela sikahulumeni	2
3.	Isibhedlela sosuku / isikhungo sempilo semitholampilo / yomphakathi	3
4.	Isibhedlela / umtholampilo ozimele	4
5.	Okunye (Sicela ucacise)	5

7.10 Ubuneminyaka emingaki lapho ubeletha ingane yakho yokugcina?

1.		Iminyaka
2.	99	Angazi/angikhumbuli

ISIGABA 8: UKUKHULELWA KANYE NOKUSETSHENZISWA KOTSHWALA

8.1 Ugcine nini ukukhulelwa?

1	Ngonyaka odlule	1
2	Phakathi kweminyaka engu-1-2 edlule	2
3	Phakathi kweminyaka engu-2-3 edlule	3
4	Phakathi kweminyaka engu-3-4 edlule	4
5	Phakathi kweminyaka engu-4-5 edlule	5

**Questionnaire 1: Women aged 18-49 years**

6	Eminyakeni engaphezu kwengu-5 edule	6
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**8.2 Ingabe uhlele ukuyeka ukuphuza ngenxa yokukhulelwa?**

1	Cha	0
2	Yebo	1
3	Not applicable/Benqingaphuzi ngesikhathi sokukhulelwa	9

**8.3 Yiziphi zezici ezilandelayo ezenze kube nzima kuwe ukuyeka ukuphuza ngesikhathi ukhulelwe?**

	Ngokuqinisekile kuyiqiniso	Iningi liyiqiniso	Angiqiniseki	Iningi lamanga	Ngokuqinisekile amanga	Not applicable/akufaneleki
1	Iziyalo ezivela kumngani wami	1	2	3	4	5
2	Iziyalo ezivela kumlingani wami	1	2	3	4	5
3	Iziyalo ezivela kumalungu omndeni	1	2	3	4	5
4	Stress/ukucindezeleka	1	2	3	4	5
5	Ngangizizwa ngingumlutha/addicted	1	2	3	4	5
6	Ngangikujabulela ukuphuza kakhulu	1	2	3	4	5

**8.4 Ngemuva kokuthi wazi ukuthi ukhulelwe, usiphuze kangakanani isiphuzo esinotshwala?**

1	Angikaze	0
2	Kanye ngenyanga noma ngaphansi	1
3	Izikhathi ezimbili kuya kweziyi-4 ngenyanga	2
4	2 kuya kwezi-3 ngesonto	3
5	Izikhathi ezine noma ngaphezulu ngesonto	4

**8.5 Ngemuva kokuthi wazi ukuthi ukhulelwe, zingaki iziphuzo eziqethe utshwala obuziphuza ngosuku olujwayelekile uma uphuza?**

1.	0	0
2.	1 noma 2	1
3.	3 noma 4	2
4.	5 noma 6	3
5.	7 kuya 9	4
6.	10 nangaphezulu	5
7.	Okunye, sicela ucacise. Uma ubephuza utshwala basekhaya sicela umcele ukuthi akhombise igama lalobutshwala, kanye nohlobo lwakhona.	6

**Questionnaire 1: Women aged 18-49 years**

**ISIGABA 9: UKUSESHENZISWA KOTSHWALA**

**9.1 Uke waphuza isiphuzo esinotshwala ezinyangeni ezintathu ezedlule?**

1.	Cha	0
2.	Yebo	1

**UMA UTHI CHA, SICELA UYE KWISIGABA 10**

**9.2 Ubuneminyaka emingaki lapho uqala ukuphuza utshwala?**

1.		Iminyaka
2.	1	angisakhumbuli

**9.3 Ingabe usabuphuza utshwala ngezinye izikhathi?**

1.	Cha	0
2.	Yebo	1

**9.4 Uvame kangakanani ukuphuza utshwala?**

1.	2 kuya kwezi-3 ngesonto	1
2.	Izikhathi ezine noma ngaphezulu ngesonto	2
3.	Ngenyanga noma ngaphansi	3
4.	Izikhathi ezimbili kuya kweziyi-4 ngenyanga	4

**9.5 When did you stop drinking alcohol?**

1.	Izinyanga ezingu-0-6 ezedlule	1
2.	Izinyanga ezingu-7-12 ezedlule	2
3.	Iminyaka engu-1-2 edlule	3
4.	Eminyakeni engu-2-3 edlule	4
5.	Iminyaka emithathu noma ngaphezulu	5
6.	Not applicable/akufaneleki	9

**UMA AWUZANGE UPHUZE ISIPHUZO ESINOTSHWALA ENYAKENI OWEDLULE, SICELA UYE ESIGABENI SE-SHUMI (10)**

**9.8 Zingaki iziphuzo ezinotshwala oziphuzayo ngosuku olujwayelekile uma uphuza? (Sicela uqaphele ukuthi isiphuzo esisodwa silingana nekani noma ibhodlela likabhiya, cider noma coolers, ingilazi eyodwa yewayini, noma i-spirit).**

1.	0	0
2.	1 noma 2	1
3.	3 noma 4	2
4.	5 noma 6	3
5.	7 noma 9	4
6.	10 noma ngaphezulu	5
7.	Okunye (sicela ucacise). Uma ubephuza utshwala basekhaya sicela umcele ukuthi akhombise igama lalobutshwala, kanye nohlobo lwakhona.	6

**ISIGABA 10: AMASIKO**

**10.1 Ngokwesiko lakho, amadoda anelungelo lokuba nezingane eziningi njengoba efisa ukuba nazo.**

1.	Vumelana kakhulu	1
2.	Vumelana ngokulinganayo	2
3.	Angivumelani	3
4.	Angivumelani kakhulu	4

**Questionnaire 1: Women aged 18-49 years**

**10.2 Ngokwesiko lakho, njalo, ngokuvamile, ngezinye izikhathi noma akukaze kwenzeke ukungabi nabantwana?**

1.	Njalo akulungile	1
2.	Ngokuvamile akulungile	2
3.	Ngezinye izikhathi akulungile	3
4.	Akukaze kungalungi	4

**10.3 Ngokwesiko lakho, ukuba nezingane kuyisibonakaliso sokuthi ungumfazi ofanelekayo.**

1.	Kuyiqiniso ngampela	1
2.	Kuyiqiniso imvamisa	2
3.	Akulona iqiniso imvamisa	3
4.	Akuyiqiniso neze	4

**10.4 Ngokwesiko lakho, ukuba indoda ibe nezingane kuyisibonakaliso sokuthi uyindoda efanelekayo.**

1.	Kuyiqiniso ngampela	1
2.	Kuyiqiniso imvamisa	2
3.	Akulona iqiniso imvamisa	3
4.	Akuyiqiniso neze	4

**ISIGABA 11: ABALINGANI BESILISA**

**11.1** Bangaki abalingani besilisa ngokobulili olala nabo okwamanje?

**11.2** Bangaki abalingani besilisa oke waya nabo ocansini ngonyaka odlule?

**11.3** Bangaki abalingani besilisa owake waya nabo ocansini empitweni yakho?

**11.4 Ubani umlingani wakho wamanje?**

1.	Akekho neyodwa	0
2.	Ubaba wengane/wezingane	1
3.	Omunye umuntu	2

**11.5 Uneminyaka engakanani umlingani wakho olala naye?**

1.	<input type="text"/>	Iminyaka
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**11.6 Ingabe umlingani wakho uyasebenza?**

1.	Cha	0
2.	Yebo	1
3.	Uyazisebenza	2

**11.7 Sithini isimo sakho segciwane lesandulela ngculaza?**

1.	I-HIV anginayo	0
2.	I-HIV nginayo	1
3.	Angazi	2

**11.8 Wake watholakala ukuthi une-HIV?**

1.	Cha	0
2.	Yebo	1

**Questionnaire 1: Women aged 18-49 years**

**11.9 Sicela ubonise ukuthi uvumelana noma awuvumelani kangakanani nezitatimende ezilandelayo.**

		Ngivuma kakhulu	Vumelana ngokulinganayo	Angivumi futhi Angiphiki	Angivumi kakhulu	Angivumi nhlobo
1.	Wanelisekile ngobuhlobo/ngobudlelwano bakho nalo muntu	1	2	3	4	5
2.	Ngezinye izikhathi kukhona ukungavumelani okukhulu phakathi kwakho kanye naye	1	2	3	4	5
3.	Ngezinye izikhathi kukhona ukushayana noma ukubekana isandla phakathi kwakho nawe	1	2	3	4	5
4.	Unokulawula okuningi ebuhlotseni bakho naye	1	2	3	4	5
5.	Kunokuthembana okuningi phakathi kwakho nawe	1	2	3	4	5
6.	Umlingani wakho uyawula ukuthi ucansi niyalenza noma cha	1	2	3	4	5
7.	Umlingani wakho uyawula ukuthi ngabe ikhondomu niyayisebenzisa noma cha	1	2	3	4	5
8.	Umlingani wakho ulawula ukuthi ngabe imithi/imijovo yokuvikela ukukhulelwa iyasetshenzisiwa noma cha	1	2	3	4	5

**11.10 Manje ngicela ukubuza mayelana nokuphuza utshwala.**

		Nhlobo	Ngaphansi kwenyanga	Zinyanga zonke	Masonto onke	Nsuku zonke noma cishe nsuku zonke
1.	Umlingane wakho uvame kangakanani ukuphuza utshwala?	0	1	2	3	4
2.	Wena uphuza kaningi kangakanani naye?	0	1	2	3	4
3.	Ngabe singakanani isikhathi lapho ephuza utshwala/ amakani avisithupha noma ngaphezulu ngosuku olulodwa?	0	1	2	3	4

**11.11 Manje ngicela ukubuza mayelana nomphumela wokuphuza kwakhe utshwala**

		Cha	Yebo	Angazi
1.	Ingabe yena noma omunye umuntu walimala ngenxa yokuphuza kwakhe?	0	1	2
2.	Ingabe isihlobo, umngane, noma udokotela noma esinye isisebenzi sezempilo sake sakhombisa ukukhathazeka ngokuphuza kwakhe noma saphakamisa ukuthi makehlise?	0	1	2

**11.12 Zingaki iziphuzo eziqethe utshwala aziphuzayo ngosuku olujwayelekile uma ephuza?**

1.	0	0
2.	1 noma 2	1
3.	3 noma 4	2
4.	5 noma 6	3
5.	7 noma 9	4
6.	10 noma ngaphezulu	5

**Questionnaire 1: Women aged 18-49 years**

**11.13 Ingabe uzizwa unesibopho sokuphuza utshwala lapho umlingani wakho ephuza?**

1.	Cha	0
2.	Yebo	1

**11.14 Uke wabhekana nocansi oluphoqelekile nomlingani wakho?**

1.	Cha	0
2.	Yebo	1

**ISIGABA 12: UMTHOLAMPILO**

**12.1 Uya kangaki emtholampilo?**

1.	Ngaphezulu kwesikhathi esisodwa ngenyanga	1
2.	Isikhathi esinye inyanga ngayinye	2
3.	Kanye ezinyangeni ezimbili	3
4.	Kanye ezinyangeni ezintathu kuya kweziyisihlanu	4
5.	Kanye ezinyangeni ezingaphezu kwezinhlanu, kodwa ngaphansi konyaka	5
6.	Kanye ngonyaka	6

**12.2 Sicela ubonise ukuthi uvumelana noma awuvumelani kangakanani nezitatimende ezilandelayo.**

		Ngivuma kakhulu	Vumelana ngokulinganayo	Angivumi futhi Angiphiki	Angivumi kakhulu	Angivumi nhlobo
1.	Kulula ukuthola imijovo/imithi yokuvikela ukukhulelwa emtholampilo oseduzane nami	1	2	3	4	5
2.	Abahlengikazi emtholampilo bayawazi umsebenzi wabo	1	2	3	4	5
3.	Abahlengikazi emtholampilo banikeza ukwelulekwa kanye nemfundo ngokuphathelele ngezinto zokuvikela ukukhulelwa njalo ngesikhathi ngivakashela emtholampilo	1	2	3	4	5
4.	Abahlengikazi emtholampilo banobuntu futhi bavulekile ngaphezu kweminyaka yami nesimo se-HIV	1	2	3	4	5
5.	Angizizwa ngihlulelwa abahlengikazi emtholampilo	1	2	3	4	5
6.	Amahora okulinda usizo made emtholampilo	1	2	3	4	5
7.	Amahora okulinda awabekezeleleki emtholampilo	1	2	3	4	5
8.	Zonke izinhlobo zokuvikela noma zokuthiba ukukhulelwa zihlezi zikhona emtholampilo	1	2	3	4	5

**ISIPHETHO.**

**NGIYABONGA NGOKUHLANGANYELA KWAKHO.**

## Questionnaire 2: Healthcare Workers

**Title: FACTORS INFLUENCING CONTRACEPTIVE USE AND SEXUAL BEHAVIOUR AMONG WOMEN OF REPRODUCTIVE AGE IN UMLAZI TOWNSHIP, KWAZULU-NATAL PROVINCE, SOUTH AFRICA.**

### **ISIGABA 1: IZIMO ZOKUZALWA**

#### **1.1 Uneminyaka emingaki?**

1.		Iminyaka
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#### **1.2 Yini ubulili bakho?**

1.	Owesifazane	1
2.	Owesilisa	2
3.	Okunye	3

#### **1.3 Luyini ulimi lwakho lwasekhaya?**

1.	IsiZulu	1
2.	IsiNgesi	2
3.	Isi-Afrikaans	3
4.	IsiNdebele	4
5.	Venda	5
6.	Tsonga	6
7.	Sepedi	7
8.	Swati	8
9.	Xhosa	9
10.	Sotho	10
11.	Tswana	11
12.	Okunye (Sicela ucacise)	12

#### **1.4 Yiluphi uhlobo lobuhlanga ocabanga ukuthi ngolwakho?**

1.	Omnyama / we-Afrika	1
2.	Coloured	2
3.	White	3
4.	Asian/Indian	4
5.	Okunye (Sicela ucacise)	5

#### **1.5 Yiliphi izinga eliphezulu lezemfundo ophumelele kulo?**

1.	Ayikho imfundo ehlelekile	1
2.	Ibanga 1	2
3.	Ibanga 2	3
4.	Ibanga 3	4
5.	Ibanga 4	5
6.	Ibanga 5	6
7.	Ibanga 6	7
8.	Ibanga 7	8
9.	Ibanga 8	9
10.	Ibanga 9	10
11.	Ibanga 10	11
12.	Ibanga 11	12
13.	Ibanga 12	13
14.	I-Diploma / Degree / enye i-post school - ayiphelelanga	14
15.	Diploma / degree / ezinye esikoleni okuthunyelwe - ephilele	15
16.	Isiqu seDiploma / Degree	16

**Questionnaire 2: Healthcare Workers**

17.	Yi-diploma ye-Postgraduate / noma yi-Degree	17
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**1.6 Sinjani isimo sakho somshado samanje?**

1.	Ukushada ngokomthetho	1
2.	Ukushada ngokwesiko	2
3.	Ukuhlala nomuntu emunye ngaphandle kokushada	3
4.	Angikaze ngishade / Angishadile	4
5.	Ngahlukanisa	5
6.	Ngishadile kodwa sihlukene	6
7.	Umfelokazi	7

**ISIGABA 2: IZIMO ZEZOMNOTHO**

**2.1 Yimuphi umsebenzi owenzayo?**

1.	Enrolled Nursing Assistant	1
2.	Enrolled Nurse	2
3.	Professional Nurse	3
4.	Operations/Facility Manager	4
5.	Medical Doctor	5
6.	Okunye (Sicela ucacise)	6

**2.2 Sekuyisikhathi esingakanani usebenza kulesikhundla kulesi sikhungo?**

1.	Izinyanga ezingu-0-11	1
2.	1-2 iminyaka	2
3.	3-4 iminyaka	3
4.	5-10 iminyaka	4
5.	Iminyaka engaphezu kwengu-10	5

**2.3 Sekuyisikhathi esingakanani usebenza kulomtholampilo?**

1.	Izinyanga ezingu-0-11	1
2.	1-2 iminyaka	2
3.	3-4 iminyaka	3
4.	5-10 iminyaka	4
5.	Iminyaka engaphezu kwengu-10	5

**ISIGABA 3: EZEMPILO**

**3.1 Ngokuvamile, ungasho ukuthi impilo yakho injani:**

1.	Yinhle ngokuvelele	1
2.	Yinhle kakhulu	2
3.	Yinhle	3
4.	Okulungile	4
5.	Kubi	5

**3.2 Ubuhlungu obungakanani bomzimba owake waba nawo phakathi namasonto amane adlule?**

1.	Abukho	1
2.	Buncane kakhulu	2
3.	Bukahle	3
4.	Bu-moderate	4
5.	Bukhulu	5

## Questionnaire 2: Healthcare Workers

6.	Bukhulu kakhulu	6
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### 3.3 Ingabe impilo yakho ikuvimbela ukuba ungasebenzi emsebenzini noma wenze umsebenzi wasendlini?

1.	Yebo, izinyanga ezingaphezu kwezintathu	1
2.	Yebo, izinyanga ezintathu noma ngaphansi	2
3.	Cha	3

### 3.4 Sicela ukhethe inombolo echaza kahle ukuthi izitatimende ezilandelayo ziyiqiniso noma zingamanga ngawe.

		Ngokuqinisekile e kuyiqiniso	Iningi liyiqiniso	Angiqiniseki	Iningi lamanga	Ngokuqinisekile e amanga
1.	Ngiyagula kwesinye isikhathi	1	2	3	4	5
2.	Nginempilo njengawo wonke umuntu	1	2	3	4	5
3.	Impilo yami yinhle kakhulu	1	2	3	4	5
4.	Ngike ngizizwe ngingaphili kahle kulamalanga	1	2	3	4	5

## ISIGABA 4: ISIMO SOKUSEBENZA

### 4.1 Uyakujabulela ukwenza umsebenzi wakho?

1.	Cha	0
2.	Yebo	1

### 4.2 Unelisekile ngezimo zokusebenza kulo mtholampilo?

1.	No	0
2.	Yes	1

### 4.3 Singakanani isikhathi sokulinda kulo mtholampilo?

1.		Amahora
2.		imizuzu

### 4.4 Sicela ubonise ukuthi uvuma kangakanani noma awuvumelani nezitatimende ezilandelayo.

		Ngiphikisa kakhulu	Angivumelani nhlobo	Phakathi nendawo	Vumelana ngokulinganayo	Vumelana kakhulu
1.	Kulula ukuthi abesifazane bahlele kulo mtholampilo	1	2	3	4	5
2.	Abahlengikazi kulo mtholampilo bayawazi umsebenzi wabo	1	2	3	4	5
3.	Abahlengikazi kulo mtholampilo banikeza ukwelulekwa ngezempilo ngokocansi kanye nokufundisa njalo ngesikhathi owesifazane ehambela emtholampilo	1	2	3	4	5
4.	Abahlengikazi kulo mtholampilo banikeza ukululekwa kokusetshenziswa imithi yokuhlela umndeni kanye nokufundisa njalo lapho owesifazane ehambela emtholampilo	1	2	3	4	5
5.	Abahlengikazi kulo mtholampilo banobuntu futhi bavulekile naphezu kweminyaka yobudala besifazane nesimo se-HIV lapho bethola izinsizakalo zokuhlela umndeni	1	2	3	4	5
6.	Abahlengikazi kulo mtholampilo abahluleli abesifazane noma ngabe badinga luphi usizo	1	2	3	4	5
7.	Abesifazane abazizwa behlulelwa yiyo bonke abahlengikazi abavela kulo mtholampilo	1	2	3	4	5
8.	Amahora okulinda made kulo mtholampilo	1	2	3	4	5
9.	Amahora okulinda usizo awabekezeleki kulo mtholampilo	1	2	3	4	5

## Questionnaire 2: Healthcare Workers

10.	Isimo sokusebenza sihle ngokwanele ukuhlizeka ngokuziphatha ngokobulili nokululekwa kokusetshenziswa kokukhulelwa kanye nemfundo kumphakathi	1	2	3	4	5
11.	Lonke uhlobo yokuhlela olukhethwe owesifazane ukuvikela ukukhulelwa luhleli lukhona kulo mtholampilo	1	2	3	4	5

### **ISIGABA 5: UKUSETSHENZISWA KOKUVIKELA/UKUTHIBA UKUKHULELWA**

#### **5.1 Ingabe unikeza izinsizakalo zokuhlela umndeni kulomtholampilo?**

1.	Cha	1
2.	Yebo	2

#### **5.2 Ingabe ukuhlela komndeni kwenza abasebenzisi bayo baphathe kabi emzimbeni?**

1.	Cha	1
2.	Yebo	2
3.	Angazi	3

#### **5.3 Ingabe ukusebenzisa imithi yokuvimbela ukukhulelwa kuyingozi?**

1.	Cha	1
2.	Yebo	2
3.	Angazi	3

#### **5.4 Ingabe ukuvimbela ukusebenzisa imithi/imijovo yokukhulelwa kunemiphumela emibi emzimbeni?**

1.	Cha	1
2.	Yebo	2
3.	Angazi	3

#### **5.5 Ingabe izinsizakalo zokuhlela umndeni azibizi kubantu abazidingayo?**

1.	Cha	1
2.	Yebo	2
3.	Angazi	3

#### **5.6 Usebenzisa kangaki imithi/umjovo yokuvikela ukukhulelwa / ukuhlela umndeni?**

1.	Angikaze	0
2.	ngokungavamile	1
3.	Ngezinye izikhathi	2
4.	Ngokuvamile kaningi	3
5.	Njalo	4

#### **5.7 Indima yakho ekuhleleni komndeni iphikisana kaningi kangakanani nezinkolelo zakho zokuziphatha / zamasiko / zenkolo?**

1.	ayikaze	0
2.	ngokungavamile	1
3.	Ngezinye izikhathi	2
4.	Ngokuvamile kaningi	3
5.	Njalo	4

#### **5.8 Ngabe kusebenza kahle kangakanani ukusebenzisa imithi/umjovo wokuhlela umndeni ekuhleleni imindeni?**

1.	ayikaze	0
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## Questionnaire 2: Healthcare Workers

2.	Akuvamile	1
3.	Ngezinye izikhathi	2
4.	Ngokuvamile kaningi	3
5.	Njalo	4

### 5.9 Sinjani isimo sokuziphatha nokuhlonipha samakhasimende akho ngokuhlela komndeni?

1.	Sihle ngokuvelele	1
2.	Sihle kakhulu	2
3.	Sihle	3
4.	Silungile	4
5.	Sibi	5

### 5.10 Iyiphi indlela yokuvimbela ukukhulelwa noma ukugwema/ukuthiba ukukhulelwa owayele ukuyiqhakambisa kumakhasimende akho?

1.	Iphilisi	1
2.	IUD	2
3.	Umjovo	3
4.	I-Diaphragm / foam / i-jelly	4
5.	iCondomu	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal/ukuhoxiswa	9
10.	Amakhambi endabuko / esintu	10
11.	ukuzithiba	11
12.	Okunye (Sicela ucacise)	12
13.	Akukho	99

### 5.11 Iyiphi indlela yokuvikela ukukhulelwa ecelwa kakhulu ngamakhasimende akho ukuze babambezele noma bagweme ukukhulelwa?

1.	Iphilisi	1
2.	IUD	2
3.	Umjovo	3
4.	I-Diaphragm / foam / i-jelly	4
5.	iCondomu	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal/ukuhoxiswa	9
10.	Amakhambi endabuko / esintu	10
11.	ukuzithiba	11
12.	Okunye (Sicela ucacise)	12

## Questionnaire 2: Healthcare Workers

13.	Akukho	99
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### 5.12 Iyiphi indlela yokuvikela ukukhulelwa eyenza amaklayenti/amakhsimende akho akhononde kakhulu?

1.	Iphilisi	1
2.	IUD	2
3.	Umjovo	3
4.	I-Diaphragm / foam / i-jelly	4
5.	iCondomu	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal/ukuhoxiswa	9
10.	Amakhambi endabuko / esintu	10
11.	ukuzithiba	11
12.	Okunye (Sicela ucacise)	12
13.	Ayikho	99

### 5.13 Ngabe amakhasimende avame ukukhononda ngani ngokuphathelene nalawo mithi/umjovo?

1.	Ukungaphatheki kahle emzimbeni	1
2.	Okunye (chaza)	2
3.	Not applicable	3

### 5.14 Ingabe lesi sakhawo sinalo lonke uhlobo lwemishanguzo/imijovo yokuvikela ukukhulelwa okufanele itholakale emtholampilo kahulumeni?

1.	Cha	1
2.	Yebo	2
3.	Angazi	3

### 5.15 Iyiphi indlela/izindlela yokuvikela ukukhulelwa etholaka kulomtholampilo ngokujwayelekile?

1.	Iphilisi	1
2.	IUD	2
3.	Umjovo	3
4.	I-Diaphragm / foam / i-jelly	4
5.	iCondomu	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal/ukuhoxiswa	9
10.	Amakhambi endabuko / esintu	10
11.	ukuzithiba	11
12.	Okunye (Sicela ucacise)	12
13.	Ayikho	99

### 5.16 Ingabe lesi sikhungo siyaphelelwa imithi/imijovo yokuvikela ukukhulelwa ngezinye izikhathi?

1.	Cha	1
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**Questionnaire 2: Healthcare Workers**

2.	Yebo	2
3.	Angazi	3

**5.17 Uma kunjalo, lesi sakiwo sibhekana kangakanani nokuntuleka kwanoma iyiphi indlela yokuvikela ukukhulelwa?**

1.	Nyanga zonke	1
2.	Kanye ngezinyanga ezimbili	2
3.	Kanye ngezinyanga ezintathu	3
4.	Kanye ezinyangeni eziyisithupha (6)	4
5.	Kanye ezinyangeni eziyishumi nambili (12)	5
6.	Not applicable	9

**5.18 Banenhlonipho abantu besifazane mgesikhathi bezocela imishanguzo/imithi/amaphilisi okuvikela ukukhulelwa kulomtholampilo?**

1.	Kahle ngokuvelele	1
2.	Kahle kakhulu	2
3.	Kahle	3
4.	Okulungile	4
5.	Kabi	5

**5.19 Baziphatha kanjani abantu besifazane mgesikhathi bezocela imishanguzo/imithi/amaphilisi okuvikela ukukhulelwa kulomtholampilo?**

1.	Kahle ngokuvelele	1
2.	Kahle kakhulu	2
3.	Kahle	3
4.	Okulungile	4
5.	Kabi	5

**5.20 Mangaki amaklayenti/abantu abacela imithi/imijovo yokuvikela ukukhulelwa ngokwenjwayelo njalo ngenyanga?**

1.		Inombolo
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**5.21 Mangaki amaklayenti/abantu abake bathola ukuthi bane-STI ngokwesilinganiso njalo ngenyanga?**

1.		Inombolo
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**5.22 Ingabe la maklayenti atholakale ene-STI athola imithi/imijovo yokuvikela ukukhulelwa kulomtholampilo?**

1.	Cha	1
2.	Ngezinye izikhathi	2
3.	Izikhathi ezingajwayelekile	3
4.	Izikhathi eziningi	4
5.	Njalo	5
6.	Angazi	5

**5.23 Iningi labantu abacela imithi/imijovo yokuvikela ukukhulelwa lineminyaka emingaki?**

1.	Nqaphansi kweminyaka eyishumi nambili (12)	0
2.	Iminyaka engu-12-14	1

## Questionnaire 2: Healthcare Workers

3.	Iminyaka engu-14 -19	2
4.	Iminyaka engu-20-24	3
5.	Iminyaka engu-25-29	4
6.	Iminyaka engu-30-35	5
7.	Iminyaka engu-36-40	6
8.	Iminyaka engu-41-44	7
9.	Iminyaka engu-45-49	8

**5.24 Ingabe uyakukhuthaza ukusetshenziswa kwekhondomu yabesifazane phakathi kwamakhasimende akho?**

1.	Cha	1
2.	Izikhathi ezingajwayelekile	2
3.	Izikhathi eziningi	3
4.	Njalo	4

**5.24 Ingabe uyabayala abesifazane abasebasha ukuba bangalwenzi ucansi uma befuna imithi/imijovo yokuvikela ukukhulelwa?**

1.	Cha	1
2.	Izikhathi ezingajwayelekile	2
3.	Izikhathi eziningi	3
4.	Njalo	4

### **ISIGABA 6: ULWAZI NGOKUSETSHENZISWA KOKUVIKELA/UKUTHIBA UKUKHULELWA**

**6.1 Iningi la'maklayenti akho anolwazi olungakanani ngemithi/imijovo yokuvikela ukukhulelwa jikelele?**

1.	Luhle ngokuvelele	1
2.	Luhle kakhulu	2
3.	Luhle	3
4.	Okulungile	4
5.	Kubi	5

**6.2 Ukholelwa ukuthi amaklayenti akho ayaziqonda izindlela ezahlukene zokuvikela ukukhulelwa ezizitholakala kulo mtholampilo?**

1.	Cha	1
2.	Yebo	2
3.	Angazi	3

**6.3 Ucabanga ukuthi amaklayenti akho ayayazi imiphumela emibi yokusebenzisa imithi/imijovo ethile yokuvikela ukukhulelwa?**

1.	Cha	1
2.	Yebo	2
3.	Angazi	3

**6.4 Yimiphi imiphumela emibi kakhulu yokusebenzisa uhlelo lwePhilisi lokuvikela ukukhulelwa?**

1.		1
2.		2
3.	Angazi	3

**6.5 Yimiphi imiphumela emibi kakhulu yokusebenzisa indlela yokuvimbela inzalo ngokujova?**

1.		1
2.		2

Questionnaire 2: Healthcare Workers

3.	Angazi	3
<b>6.6 Iyiphi indlela (s) yokuvimbela ukukhulelwa oyazi kakhulu kunezinye?</b>		
1.	Iphilisi	1
2.	IUD	2
3.	Umjovo	3
4.	I-Diaphragm / foam / i-jelly	4
5.	iCondomu	5
6.	Female sterilisation	6
7.	Male sterilisation	7
9.	Calendar/rhythm	8
10.	Withdrawal/ukuhoxiswa	9
11.	Amakhambi endabuko / esintu	10
12.	ukuzithiba	11
13.	Okunye (Sicela ucacise)	12
14.	Ayikho	99

**ISIGABA 7: EZOQEQESHO**

**7.1 Yiziphi izindlela zokuvimbela ukukhulelwa osuke waqeqeshwa kuzo ezinyangeni eziyi-12 ezedlule ukuze unikeze isiqondiso nemfundo engcono kumaklayenti akho?**

1.	Iphilisi	1
2.	IUD	2
3.	Umjovo	3
4.	I-Diaphragm / foam / i-jelly	4
5.	iCondomu	5
6.	Female sterilisation	6
7.	Male sterilisation	7
8.	Calendar/rhythm	8
9.	Withdrawal/ukuhoxiswa	9
10.	Amakhambi endabuko / esintu	10
11.	ukuzithiba	11
12.	Okunye (Sicela ucacise)	12
13.	Ayikho	99

**7.2 Ingabe uke waqeqeshwa noma wanikezwa ukuqeqeshwa okuqabulayo mayelana nokululekwa kokuziphatha ngokocansi ezinyangeni ezingu-12 ezedlule?**

1.	Cha	1
2.	Yebo	2
3.	Angazi	3

**7.3 Uke waqeqeshwa noma wanikezwa ukuqeqeshwa okuvuselelayo mayelana nokululekwa kokusebenzisa imithi/imijovo yokuvikela ukukhulelwa ezinyangeni ezingu-12 ezedlule?**

1.	Cha	1
2.	Yebo	2
3.	Angazi	3

## Questionnaire 2: Healthcare Workers

**7.4 Uke waqeqeshwa noma wanikezwa ukuqeqeshwa okuvuselelayo mayelana nemfundo yezocansi nokuzala esikhathini ezinyangeni ezingu-12 ezedlule?**

1.	Cha	1
2.	Yebo	2
3.	Angazi	3

### ISIGABA 8: ULWAZI OLUNZULO

**8.1 Izitatimende ekuhloleni abahlinzeki bezempilo ngobuchwepheshe nolwazi ngemithi/ngemijovo yokuvikela inzalo**

		Ngiphikisa kakhulu	Angivumelani nhlobo	Phakathi nendawo	Vumelana ngokulinganayo	Vumelana kakhulu
1.	Kukhona ingozi eyengeziwe yokwelashwa okuhlobene nokusetshenziswa kwemithi/imijovo yokuvimbela ukukhulelwa.	1	2	3	4	5
2.	Owesifazane osebenzisa imithi/imijovo yokuvikela ukukhulelwa ngokweqile unengozi ephezulu yesifo sokuvuvukala kwe-pelvic kunalowo ongayisebenzisi imithi/imijovo yokuvikela ukukhulelwa.	1	2	3	4	5
3.	Imithi/imijovo ephuthumayo yokuvimbela inzalo (Plan B) isebenza kuphela uma isetshenziswe esikhathini esingamahora angu-48 emva kocansi.	1	2	3	4	5
4.	Abesifazane abane-migraine ne-aura akufanele basebenzise imithi/imijovo yokuvikela ukukhulelwa ehlanganiswe nemithi e-hormonal.	1	2	3	4	5
5.	Abesifazane abanomlando we-thrombosis enezinhlungu ezijulile noma i-embolism ye-pulmonary akufanele banikezwe imithi/imijovo yokuvikela inzalo ye-progestin-kuphela.	1	2	3	4	5
6.	Ukushisa ngokweqile, ngisho noma kulawulwa kahle, kungukuphikisana okuphelele kokuvimbela ukukhulelwa kwe-hormonal.	1	2	3	4	5

**ISIPHETHO.  
NGIYABONGA NGOKUHLANGANYELA KWAKHO.**

**Interview guide: women of reproductive age (18-49 years)**

**Title: FACTORS INFLUENCING CONTRACEPTIVE USE AND SEXUAL BEHAVIOUR AMONG WOMEN OF REPRODUCTIVE AGE IN UMLAZI TOWNSHIP, KWAZULU-NATAL PROVINCE, SOUTH AFRICA.**

**SOCIO-DEMOGRAPHIC CHARACTERISTICS:**

1. What was your age (in years) in your last birthday?
2. What is your home language?
3. Which race group do you consider yourself to belong to?
4. What is the highest level of education you have passed?
5. What is your current marital status?
  - o If married, for how long have you been married?
6. What is your occupation?
7. Have you used a contraceptive method in the past 3 months?

**AWARENESS:**

8. Please share how you first heard about contraceptives
9. Please share how the use of contraceptives and pregnancy are related.
10. Please take me through your decision-making process regarding the use of contraceptives. If you are using them, please share how did this come about, and if you are not using them, why are you not?
11. What role do you think the Department of Health should play in the use of contraceptives by women of child-bearing age (18-49 years)?
12. Which contraceptive methods are you most familiar with?
  - o How did this familiarity come about?

**ACCESS:**

Questions for participants who initiated on contraception

13. I understand that a health care provider recently offered you a contraceptive method to prevent getting pregnant. Please describe how your conversation with the healthcare provider unfolded regarding the use of contraceptives.
  - o What kinds of information did the health worker share with you about contraceptive methods?
  - o Did you have any questions that the health worker could not answer?
14. How has your discussion with the health worker affected your understanding of contraceptives?
  - o Before meeting the healthcare provider, what concerns did you have about contraception?
  - o What concerns do you have now?
15. If someone needed to make a decision on contraceptive use, what would you tell her?
16. Do you have any preference of contraceptive method(s)? Please elaborate.
  - o If you are on contraceptives, which one do you currently use?
  - o Is your preferred contraceptive method always available at this clinic?
  - o If not, what happens when it is not available?
17. Some people experience side effects with certain contraceptives, what has been your experience?
18. Have you had to switch from one contraceptive to the other? Please elaborate on how that came about.

**UPTAKE:**

19. What are your key considerations in deciding whether or not to take and stay on contraception?
20. Under what circumstances would you consider to discontinue taking contraceptives? Please elaborate

**ADHERENCE/CONTINUATION:**

21. Let us talk about the role played by those close to you in your decisions to take, not take, continue and/ or discontinue contraceptives (probe about violence, openness, stigma, discrimination, judgements).
  - o Let us start with your family?
  - o Your peers?

**Interview guide: women of reproductive age (18-49 years)**

- Your partner?
  - Your health care providers?
  - Your community?
22. How can healthcare providers support you in taking contraception?
23. How long do you think you will like to take contraception? (*Probe: Why do you think it is important for you to take it that long?*)
24. Are you still planning on having a child/ren?

**General questions for all participants**

25. How do you feel about the way healthcare providers at this clinic handle issues pertaining to sexual health behaviour counselling and education? (Please elaborate?)
26. How is the behaviour of healthcare providers when you come for contraception in this clinic?
27. What is your understanding of contraception?
28. Do you experience any challenges accessing contraceptive methods in this clinic, please elaborate?
29. Are then nurses judgemental in any way toward you in this clinic?
30. Are you getting the best service in this clinic whenever seeking contraceptive methods? Please elaborate and give examples?
31. Are you given enough time to ask questions relating to the contraceptive methods of choice?
32. Have the waiting times in this clinic affected you in any way when needing services, please elaborate how?
33. Is there anything else you would like to share with me regarding contraceptives, that we did not cover in this interview?

THE END. THANK YOU FOR YOUR PARTICIPATION.

**Title: FACTORS INFLUENCING CONTRACEPTIVE USE AND SEXUAL BEHAVIOUR AMONG WOMEN OF REPRODUCTIVE AGE IN UMLAZI TOWNSHIP, KWAZULU-NATAL PROVINCE, SOUTH AFRICA.**

**SOCIO-DEMOGRAPHIC CHARACTERISTICS:**

1. Yayimingaki iminyaka yakho ngosuku lwakho lokuzalwa olwedlule?
2. Yiluphi ulimi lwakho olukhulumayo ekhaya?
3. Yiluphi uhlanga (race) ozibona ulilungu lalo?
4. Yiliphi izinga eliphakeme kakhulu lwemfundo oyiphasile esikoleni?
5. Siyini isimo sakho somshado njengamanje? (married/single/cohabitating/divorced)
6. What is your current marital status?
7. Uma ushadile, unesikhathi esingakanani ushadile?
8. Wenza msebenzi muni?
9. Uke wayisebenzisa yini indlela yokuvimbela inzalo ezinyangeni ezi-3 ezedlule?

**AWARENESS:**

10. Ngicela usixoxele ukuthi waqala kanjani ukuzwa ngezindlela zokuvikela inzalo
11. Ngokwazi kwakho, ukusetshenziswa kwezinto zokuvikela ukukhulelwa kuhlobene kanjani nokukhulelwa?
12. Ngicela ungichazele ngenqubo yakho yokwenza izinqumo maqondana nokusebenzisa izinto zokuvimbela inzalo. Uma usebenzisa zona, sicela usichazele ukuthi kwenzeke kanjani lokhu, futhi uma ungazisebenzisi, kungani ungazisebenzisi?
13. Ngabe ucabanga ukuthi yiliphi iqhaza uMnyango Wezempilo okufanele ulibambe ekusetshenzisweni kwezindlela zokuvimbela inzalo ngabesifazane abaneminyaka yobudala yokuzala ephakathi kuka 18-49?
14. Yiziphi izindlela zokuvimbela inzalo ozazi kakhulu?
  - o Lokhu kwenzeka kanjani?

**ACCESS:**

Questions for participants who initiated on contraception

15. Ngiyakuqonda ukuthi umhlinzeki wezokunakekelwa kwempilo muva nje ukunikeze indlela yokuvimbela inzalo ukuvimbela ukukhulelwa. Sicela uchaze ukuthi ingxoxo yakho nomhlinzeki wezokunakekelwa kwempilo yahamba kanjani maqondana nokusetshenziswa kwezindlela zokuvimbela inzalo.
  - o Yiluphi uhlobo lwemininingwane umsebenzi wezempilo axoxe nawe ngayo mayelana nezindlela zokuvimbela inzalo?
16. Ngabe ikhona imibuzo abengakwazi ukuyiphendula umsebenzi wezempilo?
17. Ingxoxo yakho nomsebenzi wezempilo ikuthinte kanjani ukuqonda kwakho ngezindlela zokuvimbela inzalo?
  - o Ngaphambi kokuhlangana nomhlinzeki wezokunakekelwa kwempilo, ikuphi ukukhathazeka okade unakho mayelana nokuvimbela inzalo?
  - o Yikuphi ukukhathazeka onakho manje?
18. Uma othile edinga ukwenza isinqumo ngokusetshenziswa kwezindlela zokuvimbela inzalo, ubungamtshelani?
19. Ingabe yiluphi uhlobo oluthandayo kulezi ezikhona zokuvimbela inzalo? Sicela uchaze kabanzi
  - o Uma usebenzisa izindlela zokuvimbela inzalo, iyiphi oyisebenzisayo njengamanje?
  - o Ingabe uhlobo lwakho lokuvikela inzalo oluthandayo luhlale lukhona kulo mtholampilo?
  - o Uma kungenjalo, kwenzekani uma lungatholakali?
20. Abanye abantu baba nemiphumela engemihle ngezindlela ezithile zokuvimbela inzalo, yimiphi imiphumela engemihle oke waba nayo emzimbeni uma usebenzisa izinto zokuvikela inzalo?
21. Ngabe uke washintsha usuka kolunye uhlelo lokuvimbela inzalo waya kolunye? Sicela uchaze ukuthi kwenzeka kanjani lokho.

**Interview guide: women of reproductive age (18-49 years)**

**UPTAKE:**

22. Yikuphi ukubheka kwakho okuphambili ekuthathweni kwesinqumo sokuthi kumele usebenzise noma ungasebenzisi okokuvikela inzalo?
23. Kungaphansi kwaziphi izimo lapho ungacabanga ukuyeka ukuthatha izinto zokuvimbela inzalo? Sicela uchaze kabanzi

**ADHERENCE/CONTINUATION:**

24. Ake sikhulume ngeqhaza elibanjwe yilabo osondelene nabo ezinqumweni zakho mayelana nokusebenzisa, ukungasebenzisi, ukuqhubeka, noma ukungaqhubeki nezinto zokuvimbela inzalo (buza ngesimo sodlame ekhaya, ukungafihli lutho, ukucwaswa, ukubandlululwa, ukwahlulela).
  - o Ake siqale ngokuhlela umndeni?
  - o Ontanga yakho?
  - o Umlingani wakho?
  - o Abahlinzeki bakho bezempilo?
  - o Umphakathi wakho?
25. Abahlinzeki bezokunakekelwa kwezempilo bangakusekela kanjani ekusebenziseni izinto zokuvimbela inzalo?
26. Ngabe ucabanga ukuthi ungathanda ukuthatha isikhathi esingakanani ukuvikela inzalo? (buza futhi: Ucabanga ukuthi kungani kubalulekile ukuthi uthathe isikhathi eside kangako?)
27. Ngabe usahlala ukuba nengane / izingane?

**General questions for all participants**

28. Uzizwa kanjani ngendlela abahlinzeki bezokunakekelwa kwempilo kulo mtholampilo abasingatha ngayo izindaba eziphathelele nokwelulekwa nokuziphatha kwezocansi. (Sicela uchaze kabanzi?)
29. Kunjani ukuziphatha kwabahlinzeki bezokunakekelwa kwezempilo uma uzela ukuvikela inzalo kulo mtholampilo?
30. Yini oyiqondayo noma oyaziyo ngokuvimbela inzalo?
31. Ngabe kukhona yini okunye ongathanda sikhulume ngakho maqondana nezindlela zokuvimbela inzalo, esingazange sikhulumanise kule ngxoxo?

ISIPHETHO. NGIYABONGA NGOKUBAMBA IQHAZA LAKHO.

## Appendix Four: Certificate of Editing



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### Certificate of Editing

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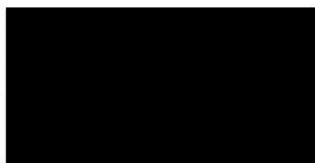
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This serves to confirm that the above document was edited substantively by members of the KZN Language Institute's professional English language editing team. The document was returned to the author with tracked changes and comments intended to correct errors and to clarify meaning. It was the responsibility of the author to attend to these changes.



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