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Mooketse, Rammolo Titus

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THE SHORT TERM COMPLICATIONS AND EXPERIENCES OF WOMEN AFTER LARGE LOOP EXCISION OF THE TRANSFORMATION ZONE AT CHBAH

Dr Titus Mooketse (student number no. 921034)

Research Report in partial fulfilment of the MMed(Obstetrics and Gynaecology) and FCOG (SA)



Supervisor: Prof Y. Adam

Date of submission: July 2017

Declaration

I Dr Rammolo Titus Mooketse declare that this research report is my own work. It is being submitted for the degree of master of medicine in obstetrics and gynaecology at the university of the Witwatersrand, Johannesburg. It has not been submitted before for any degree of examination at this or any other university.

Dedication

To my father John Mooketsa, my late mother, Mirriam Mooketsa (where you come from does not define who you are), lastly my wife Dr Ruth Mooketse who stood by me when the going was tough

Acknowledgements

The idea behind this research was conceived by my supervisor, my teacher and Head of department, Prof Y. Adam, who patiently assisted me in choosing this topic. She sacrificed her time and stood by me through all the struggles.

I would like to thank the patients who gave up their time in answering my questions

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Abbreviations

- AGUS: Atypical Glandular Cells of Undetermined Significance
- ASCUS: Atypical Squamous Cells of Unknown Significance
- ASC-H: Atypical Squamous Cells cannot exclude High Grade
- CHBAH: Chris Hani Baragwanath Academic Hospital
- CIN: Cervical Intraepithelial Neoplasia
- DMPA: Depot Medroxy Progesterone Acetate
- HPV: Human PapillomavirusHigh Grade Squamous Intra-epithelial Lesion
- HREC: Human Research Ethics Commitee
- HSIL: High Grade Squamous Intra-epithelial Lesion
- IARC: International agency for research on cancer
- LA: Local Anaesthesia
- LLETZ: Large Loop Excision of the Transformation Zone
- LSIL: Low Grade Squamous Intra-epithelial Lesion
- UK: United Kingdom
- USA: United State of America
- WHO: World Health Organization

Definitions:

ASCUS: This represents a cellular morphology in which changes are noted that appear worse than those that can be identified as reactive changes, but fall short of the morphologic criteria for squamous intraepithelial lesion

AGC: Glandular cell abnormalities may be atypical endocervical, endometrial or glandular cells, this is a clinically important category as it can be associated with a higher proportion of high grade lesions. In this study I will use AGUS, as the NHLS still uses this terminology. AGUS is the same as AGC, but AGUS is an from the older Bethesda 1988 terminology.

ASC-H: It is diagnosed when atypical squamous cells exhibit some equivocal features suggestive of HSIL but not sufficient to be called HSIL.

CIN 1: Abnormal cell growth which is confined to the basal third of the epithelium.
CIN 2: Abnormal cell growth which is confined to the basal two-third of the epithelium

CIN 3: Abnormal cell growth occupies the full thickness of the epithelium

Cervical dysplasia: precancerous condition in which abnormal cell growth occurs on the surface lining of the cervix or endocervical canal, the opening between the uterus and the vagina, it is also called cervical intraepithelial neoplasia.

Papanicolaou: Papanicolaou stain includes both acidic and basic dyes. The polychrome stain involves 5 dyes and allows separate visualization of all aspects of the cell; cytoplasm, nuclear material and keratin.

LSIL: This encompasses the presence of human papilloma virus and mild dysplasia/CIN1

HSIL: This encompasses moderate and severe dysplasia (CIN2 and CIN3) as well as carcinoma in situ.

LLETZ: it is a procedure aimed at removing the transformation zone using a wire loop.

VAS: This is a measurement instrument that tries to measure a characteristic or attitude that is believed to range across a continuum of values and cannot easily be directly measured

Abstract

Prevention of cervical cancer in SA became a National priority in 2003 and guidelines for screening using the Papanicolaou (Pap) smear was introduced. Women with abnormal Pap smears are referred to colposcopy according to national guidelines. Chris Hani Baragwanath Academic Hospital has a see and treat policy where all women who are referred are evaluated and when the colposcopy findings are that of a CIN2 or more severe a Large Loop Excision of the Transformation zone is performed. The complications and experience of women in this setting is unknown

Objectives

The main objective of this study was to evaluate the experiences, immediate and early complications following colposcopy and a LLETZ procedure.

Methods

This was a prospective, descriptive study. Demographic data, contraceptive use, HIV status, cytology findings and histology results were extracted from the clinic database in 150 women who had a LLETZ performed. A questionnaire was used to record women's experiences and the complications of the procedure. A VAS score was used to quantify pain

Results

The mean age was 40.41(SD±9.51), the mean parity 2.17(SD±1.34). Eighty- three (55%) women were HIV positive. The mean CD4+ count was 366.90µl/?? (SD±214.90),.Of 120 women who answered the question about smoking, 12(10%) were smokers. The cytology was reported as normal (1(0.74%)), ASCUS (4(2.66%)), ASC-H (10(6.67%), LSIL (18(12.00%)), HSIL (86(57.33)), AGUS (1(0.74%)) , suspected invasion (4(2.96%)), and squamous cell carcinoma (1(0.74%). Pap smears had not been recorded in (25(16.67%)) patients. There were 115 women who had a complete colposcopy diagnosis recorded. This was normal (3(2.08%)), CIN1 (22(19.13%)), CIN2 (50(43.48%)), CIN3 (27(23.48%)), and micro invasion (3(2.00%)). Histology results were available for 144 patients after LLETZ, 2(1.39%) had normal histology, 49(34.03%) women had CIN1, 35(24.31%) had CIN2, 54(37.50%) had CIN3, 1(0.68%) had micro invasion and 3(2.08%) women had a malignancy. Fifty women (33.33%) reported pain, 121 (80.67%) bleeding, and 94(62.67%) had a discharge in the 4 weeks after the procedure

Eighty-Five (56.07%) women were anxious, 1(0.67%) was feeling bad about the results, the biggest fear among patients was cancer (55,08%), only 1(0.67%) had a bad experience with the actual colposcopy, and more than 90% of patients said that they preferred local anaesthesia over general anaesthesia.

Conclusion

Pap smear screening, colposcopy and treatment are associated with medical and emotional morbidity. This has to be balanced with a proven reduction in cervical cancer.

Chapter 1

1.0 INTRODUCTION

Cervical cancer is still the most common cancer of women on the African continent.[1] According to the International agency for research on cancer (IARC), cervical cancer accounts for 23% of all cancers in South Africa (SA).[2] Cervical cancer is the second most common cancer among South African women, with 1 in 41 women developing the disease in her life time.[2] Cervical cancer is a preventable cancer with screening and treatment of cervical cancer precursors.[3]

Prevention of cervical cancer in SA became a national priority in 2003. Guidelines for screening were developed using the WHO recommendations.[1] The South African national policy on cervical cancer screening allows for three successive Pap smears from the age of 30 years.[1] However it is estimated that screening coverage is as low as 13% in some provinces.[1] The prevalence of cervical cancer precursors is approximately 7.4% for LSIL and 4.6% for HSIL in SA.[4] Women with abnormal Pap smears are referred to a colposcopy clinic for diagnosis according to National guidelines.

The colposcopy clinic at CHBAH has a see and treat policy, where all women with abnormal cervical cytology coupled with a colposcopy diagnosis suggesting Cervical Intraepithelial Neoplasia 2(CIN2) or worse or inadequate colposcopy are treated with large loop excision of the transformation zone(LLETZ) at the first visit.

The reason for treating at first visit was a long waiting time and because of the high number of women that do not attend the clinic for their appointment. In 2005, 80(34.6%) patients out of 231 who were booked for colposcopy did not come for the visit.[5] Women defaulted after treatment with 9.9% not returning for their histology results and 38.5% not returning for their 6 month visit at this clinic in Soweto.[5]

Overtreatment is one of the concerns of a see and treat clinic. The proportion of women who had normal histology at LLETZ in this clinic was 3.30%.[6] Immediate complications occur in less

than 4% of these patients at CHBAH.[5, 6] However we do not know what proportion of women have complications in the 4 weeks after treatment and what their experiences are.

The aim of this study is therefore to find out women's experiences and the complications in the 4 weeks after LLETZ.

1.1 LITERATURE REVIEW

In 2004 cervical cancer made up 18.5% of female cancers, with approximately 5000 new cases reported annually.[7] We have come a long way in understanding the natural history of cervical cancer and this has made it possible to prevent cervical cancer. Treatment of premalignant disease of the cervix has reduced cervical cancer by 95%, but the process of screening, diagnosis and treatment are associated with complications.[8] In this chapter, I will discuss primary and secondary screening, diagnosis and treatment, followed by a discussion on the complications of diagnosis and treatment. This will be followed by the problem statement and aims of the study.

Human papillomavirus (HPV) infection appears to be a necessary factor in the development of cervical cancer.[9, 10] There are around 40 HPV types associated with genital infection and they are classified according to their oncogenic potential : Low risk: 6, 11, 40, 41, 42 ,43, 44, 54, 61, 72, 73,81, High risk: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 62, 68, and 82, Probable high risk: 26 ,53, 66, 69 and 74.[4, 11] HPV 16 and 18 are the most oncogenic and are associated with approximately 70% of cervical cancers worldwide.[11] Most HPV infection will be cleared, however in those women where it persists there is a risk of dysplasia and cervical cancer. It takes approximately 10 to 30 years from infection with HPV to the development of cervical cancer.[12]

Risk factors for cervical cancer are smoking, human papilloma virus (HPV), steroid contraceptives, herpes simplex type 2, chlamydia trachomatis, early sexual debut, multiple sexual partners, immunosuppression and poverty.[13] Figure 1.1 below shows the factors that may lead to persistent HPV and cervical cancer.

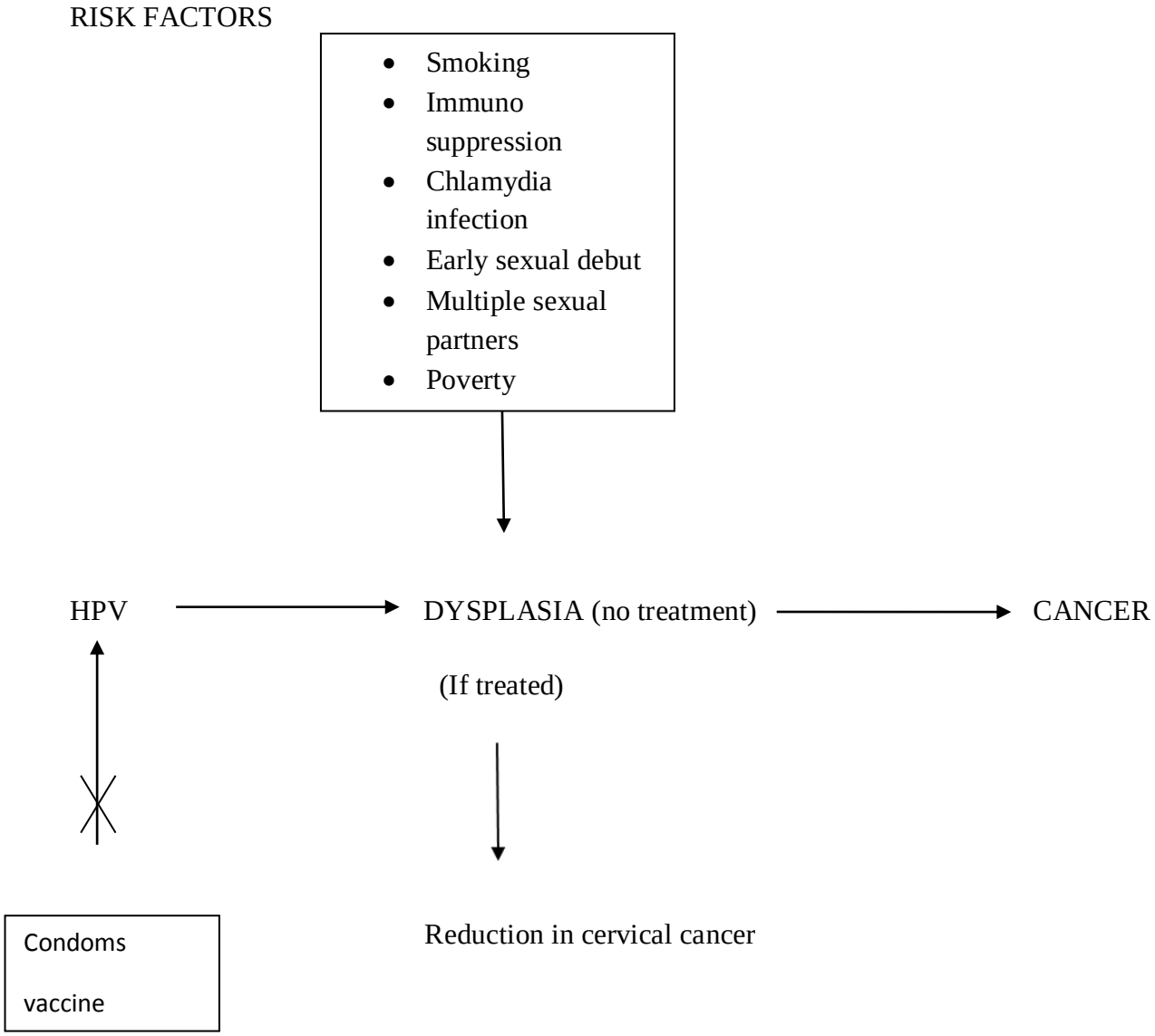


Figure 1.1 Schematic representation showing the natural history of cervical cancer.

Cervical intraepithelial neoplasia (CIN) is asymptomatic and essentially unrecognizable on inspection or palpation.[14]

Occasional signs and symptoms;[14]

- Abnormal bleeding
- Spotting after intercourse
- Vaginal discharge

1.2 PREVENTION

Prevention of cervical cancer may be primary or secondary. Primary prevention is possible using the HPV vaccination. There are 2 vaccines which are at present registered for use in SA; a quadrivalent vaccine with HPV 6/11/16/18 and a bivalent vaccine with HPV-16/18 . Both vaccines protect against infection from HPV- 16 and HPV-18, which are associated with 70% of cervical carcinoma. However, the vaccines are not as effective in women with previous HPV exposure.[15]Both vaccines are recommended for women between the ages of 11 and 26years.[15]

Other modalities for primary prevention are condoms, circumcision, abstinence or sticking to one trustworthy partner.[16]

Secondary prevention of cervical cancer is by finding and treating cervical cancer precursors. There are many different methods of screening such as HPV DNA testing, visual inspection with acetic acid or Lugol's Iodine and Pap smears.[17, 18]

Screening for high risk HPV is now an accepted modality of screening in other countries.[17, 19] The sensitivity of HPV testing is close to 100% due to the ability of PCR to detect HPV DNA even when present in minute quantities.[1, 17, 19] It is expensive, and it needs high technology to be performed and in low resourced countries is not affordable.[18]

HPV DNA test is very beneficial in a sense that, a negative HPV test, ensures that the risk for CIN3 or cervical cancer remains low for at least 5 years, and it accurately predicts future disease, grants self - sampling opportunities in populations with limited health care facilities.[18, 20]

Some problems using HPV testing as a screening test is how you counsel patients on what is wrong and what are their chances of developing cancer. HPV DNA testing has high sensitivity and lower specificity, and the detection rate of cervical lesions at the next screening round is lower compared to cytology based screening.[18]

A study in Cape Town comparing VIA, HPV testing and Pap smears showed that VIA was the most poorly performing test.[21] However it has been used with some success in Malawi and other countries and some other countries. VIA in these has been used with immediate treatment.[22]

Screening for cervical cancer precursors using the Pap smear has been credited for dramatically decreasing the incidence and mortality due to cervical cancer in developed countries.[1, 9,18,20,22] However, the sensitivity of Pap smear is between 55% and 80% for cervical cancer precursors.[1, 9, 22]

In SA, screening in the public sector is performed using mainly the conventional Pap smear. Pap smears are reported using Bethesda classification.[21]

Referral to colposcopy is the next step in management of a patient with abnormal Papanicolaou test in SA. It is necessary in order to make a diagnosis and then direct treatment.

The most important indication for colposcopy in modern practice is a positive screening test for cervical precursor lesions.

The cornerstone of colposcopic practice is take a colposcopically directed punch biopsy, to confirm the colposcopic diagnosis. Treatment can then be planned and over-treatment and undertreatment may be averted. Colposcopy on its own without biopsy may miss one-third of high grade lesions.[23, 24] A punch biopsy is also necessary to confirm or exclude invasive disease in patients undergoing ablative treatment.[25, 26] There is also growing concern about a single punch biopsy, a recent Norwegian study of 520 women, whose colposcopy directed biopsy was reported negative found that on follow up biopsy 78(23.8%) of women to have CIN2 and more.[27]

There are many clinics that now practice a “see and treat” or one stop approach for woman with an abnormal cytology report. The strategy is often operator dependent with the colposcopist making the decision on whether to take a punch biopsy or LLETZ biopsy.

Studies suggest that women who undergo colposcopy have raised levels of anxiety before and during the procedure.[28]

Although this is an effective treatment around 15% of patients will have persistence /recurrence on cytological follow up.

1.3 TREATMENT

There is national and international consensus that the majority of the procedures used to treat premalignant disease of the cervix can be performed in an outpatient setting. The National Health Service guidelines (United Kingdom) for the treatment of premalignant lesion suggests that "more than 80% of these procedures be performed in an outpatient setting".[29]

Treatment may be either ablative or excisional, ablative treatments may be performed in an outpatient setting under local anaesthetic. Some excisional methods such as LLETZ may also be performed in an outpatient setting. The table below shows the different methods used for treatment. One of the pitfalls of the see and treat policy is that women may be over treated .See and treat policy should be confined to patients who have unequivocal CIN on cytology and colposcopy.

TABLE 1.1

ABLATIVE	**EXCISIONAL**
Cryotherapy	LLETZ
Cold coagulation	Lazer conization
Laser vaporization	Cervical cone biopsy
Electrosurgery	Hysterectomy

Complications of ablative and excisional methods include the following; mild lower abdominal pain, excessive dark brown discharge, severe perioperative bleeding, post-operative pain, fainting (vasovagal reaction) and infection.[30-32] Table 1.2 below summarizes the differences between the different management options.

Cryotherapy, was first used by an English physician James Arnott, he used extreme cold locally for the destruction of tissue. It involves the application of liquid nitrogen or carbon dioxide to the cervix. This causes the cervical tissue to freeze and burst, which destroys the cells.[33]

Cold coagulation; is a method that uses electricity to heat a thermosound to temperatures of 100-120ºC, and causes an ablation of a cervical lesion by 'boiling' the cells.[34-36]

Laser vaporization, uses a carbon dioxide laser which is directed at the cervical lesion under colposcopic guidance. The laser energy is absorbed by water that's contained in the tissue, and the tissue is destroyed by vaporization.

Electrsurgery/Diathermy is a technique that uses a needle that is attached to a cautery device to destroy a cervical tissue.

The excisional methods LLETZ, cold knife cone and laser cone all aim at removing the transformation zone. LLETZ uses thin wire loop with an electric current (a blended current that can coagulate and cut).

Hysterectomy, which entails the removal of uterus, was previously performed for cervical precursor lesions and has largely been replaced by conservative treatments e.g LLETZ.

It can still be considered in special situation, HSIL in a postmenopausal woman or when there is involved margin post LLETZ in a patient who has completed her family or concurrent gynaecological disease.

TABLE 1.2

Treatment	**Advantages**	**Disadvantages**	**Complications**
Ablative			
Cryotherapy	Cheap Can be performed under LA in an outpatient setting. Easy to learn	Higher failure rate when treating large lesions Need a Biopsy Not suitable for women with large lesions occupying more than 75% of the	Discharge Pain Bleeding Infection Delayed bleeding[37]

		ectocervix, extending to the vaginal wall,[38] not suitable for atrophic cervix	
	Can be done with or without anaesthesia/analgesia	Inadvertent destruction of an early invasive disease missed on colposcopy Need a biopsy Not suitable for woman with lesions occupying more than 75% of the ectocervix[European guidelines][39]	Excessive vaginal discharge Mild lower abdominal cramps Vaginal bleeding
Laser Ablation	Can be performed under LA in an outpatient setting	Need a Biopsy Expensive Time consuming Tissue charring	Discharge Pain Bleeding Infection

Excisional			
LLETZ	Cheap Can be performed under LA in an outpatient setting Will obtain Tissue for Histology Easy to Learn	Overtreatment when used in a see and treat clinic	Post operative pain Dark brown mucus discharge Severe perioperative bleeding Infection
Laser Cone	Will obtain Tissue for Histology	Expensive Time consuming	Discharge Pain Bleeding Infection
Cold Knife Cone	Needs to be done under GA Will obtain Tissue for Histology.	Expensive Patient has to be an in- patient or could be done in a day clinic	Bleeding
Hysterectomy	Will obtain Tissue for Histology	Can only be done in theatre under GA Not advisable for those who still require fertility	Long hospital stay Complications of hysterectomy

The consensus is that local excisional techniques are by far superior to ablative techniques. They allow excised tissue to be evaluated histologically, however not all are of low cost. The duration is short whereas ablative techniques destroy the transformation zone and require accurate pre-treatment biopsy at a separate occasion, however they both have the same efficacy in eradicating cervical lesions. In some places they do not do a biopsy but use cryotherapy immediately.[40]

Complications of ablative and excisional methods include the following, mild low abdominal pains, excessive brown discharge, severe operative bleeding, post-operative pain, fainting (vasovagal reaction) and infection

The immediate and early complications of LLETZ have been previously reported. Immediate complications, are adverse effects occurring during the procedure and early complications occur after the procedure up to 4 weeks following the procedure, however both can overlap.

Immediate complications are;

- Vaginal bleeding
- Pain
- Bowel injury
- Discomfort
- Cramps

Early complications ;

- Vaginal bleeding
- Vaginal discharge
- Pelvic inflammatory.[41]

One randomised study looking at comparison between safety of cryotherapy and LLETZ , found that women who had LLETZ were more likely to have secondary bleeding (79% vs 40%) , offensive discharge(79% vs 68.2%) and less likely to have a watery discharge (78.5% vs 92.4%).[42]

An Indian study evaluating the effectiveness, safety and acceptability of 'see and treat' with cryotherapy in 2513 women, found that 25(2.1%) patients had mild pains or cramps during or

after the procedure, 19(1.6%) had a malodorous vaginal discharge, 9(0.7%) had mild bleeding or spotting, 3(0.2%) had delayed bleeding and 2(0.2%) had a fever. Early complications in this group were reported as local cervical infection in 14(1.4%), cervical tenderness in 5(0.5%), 1 (0.1%) had severe pelvic cramps and low abdominal pains which required medication. None of patients required blood transfusion or presented with cervical stenosis.

A study by Chan et al,[43] of 185 women who had a LLETZ for CIN from 1992 through 1994, and were followed up until 1995 found that anaesthesia was according to patient's request, however the standard anaesthesia was a local anaesthetic with lignocaine 1%. Nine patients were admitted because of persistent vaginal discharge.

Two (1.1%) patients had haemorrhage within 24 hours after the procedure and were admitted. Cervical stenosis developed in one patient, who presented with amenorrhea and cyclical abdominal pain, and ultrasound revealed haematometra and haematosalpinx, she subsequently had cervical dilatation.

In 2009 Sharp et al [31] reported on the frequency of after effects by women following colposcopy, cervical biopsies and LLETZ. This was a randomised controlled trial of 929 women with LSIL on cytology. A questionnaire was completed 6 weeks after the colposcopy by 750 women. Those who had colposcopic examination only, 14-18% reported pain, bleeding or discharge. In those who had biopsy and colposcopy, 53% had pain, 46% had discharge and 79% had bleeding. In those who had LLETZ, 67% had pain, 63% had a discharge and 87% had bleeding. Bleeding and discharge was longer in women who had LLETZ, however the duration of pain was similar across the groups.

Damage to the stroma and scarring of the cervix may lead to the late complications such as cervical stenosis, haematometra, cervical incompetence, late miscarriages, preterm labour, low birth weight and spontaneous rupture of membranes.[43]

Studies have shown that, pregnancy – related morbidity occur with both ablative and excisional techniques.[44, 45]

After conisation, (LLETZ, cold knife and electrosurgery) perinatal mortality increases as result of preterm delivery. After one conisation preterm delivery before 37 weeks the adjusted odds

ratio (AOR) was 2.8(95%CI 2.3-3.5); and preterm labour before 28weeks the AOR was 4.9(95%CI 2.5-9.7) compared with no conisation. After 2 conisations the AOR for preterm labour before 37 weeks was 9.9(95%CI 6-17) and the AOR for preterm labour before 28weeks was 9.8(95%1.4-70) compared with no conisation. The risk of perinatal mortality after one conisation increases by 2.8 fold.[46]

Another study assessing the risk of preterm labour following LLETZ has been reported by Poon et al, comparing 473 women who had LLETZ with 25772 without LLETZ spontaneous preterm labour before 34 weeks was higher in those who had LLETZ (3.4% versus 1.3%),and cervical length was shorter in patients who had a LLETZ procedure. Even after adjustment of maternal risk factors e.g smoking, previous preterm labour, LLETZ remained a risk for spontaneous preterm labour.[47]

Psychosocial morbidity following colposcopy in women with an abnormal Pap smear has been reported. Procedures for treating premalignant lesions of the cervix can have adverse psychological outcome. Anxiety has been reported by several studies in women following colposcopy.[48-51]The prevalence of anxiety was higher in women post- colposcopy than pre-colposcopy. Depression ranged from 7% to 22% at the first assessment time point post colposcopy.[49-54] Other studies on colposcopy, found depression to be higher in the group having colposcopy than control group.[50-55] One third of women had procedure related distress at the first assessment point.[50-56] Fears about cancer and future fertility was found in one-quarter of women and one third were fearful about future infertility post colposcopy and this was lower those women reporting these fears pre-colposcopy.

Studies were inconsistent regarding psychosexual functioning after colposcopy which includes; pain and lubrication during sexual intercourse, sexual satisfaction, sexual desire and frequency of intercourse.[57-63]

The level of anxiety in patients undergoing screening for premalignant disease of the cervix can also be compared with other screening methods e.g mammography. Women who receive communication about their negative mammography results have less anxiety, whereas those who are recalled for further testing have more anxiety. Women with false - positive results had more breast cancer specific worry (49% vs. 10%).[64]

Anxiety levels were also greater in women who received a diagnosis of CIN 2/CIN 3 than in women with a lesser diagnosis at colposcopy.[65]

Little is known about the predictors and psychosocial factors influencing the anxiety.[66, 67] A Prospective study of 100 Swedish women compared to 100 controls, looked at psychological factors influencing anxiety in women referred for colposcopy. They found that anxiety and depression scores were higher in the colposcopy group than the control group. Sixty one percent of women studied, did not know why they had had a cervical smear. Fifty-two percent feared they had cancer and their level of anxiety was high. Anxiety was higher in women with partners and in those who received letters mentioning some changes in their cervical smear.

Women have expressed worry about fertility, colposcopy, sexual problems and gynaecological examination.[68, 69] However there is not much following colposcopy with immediate LLETZ as is practiced in this clinic. This information would help in determining whether the complications have been underestimated.

1.4 Problem statement and Justification for the study

CHBAH has a see and treat clinic, where women with an abnormal cytology and a colposcopy diagnosis of CIN2 are treated immediately. Overtreatment (no dysplasia on histology was found in 3.4% of women treated at this clinic in 2008.[5] LLETZ is associated with immediate complications of pain and bleeding and early complications of bleeding, discharge and pain. Late complications of stenosis, pregnancy related complications and infertility are well known.[41]

The reason for a having a "look and LLETZ" clinic has many advantages and whilst the complications are known in other countries. The early complications and experiences of women in the first 4 weeks after a LLETZ procedure in this population is unknown. We are not sure about the severity and duration of bleeding and discharge in women treated with LLETZ at this clinic.

Such data would make an important contribution to the debate concerning the relative benefits and harms of different management options at colposcopy. It may also contribute to the counselling of women with abnormal Pap smear that are referred to colposcopy.

1.5 General Objective

To describe the immediate and short term complications and experiences in women who have had a LLETZ for cervical dysplasia at the colposcopy clinic at CHBAH between September 2014 to March 2015.

1.6 Specific Objectives

To describe the Demographics, Pap smear results, Colposcopy findings and histology results in women who agree to have LLETZ under LA between the study periods.

To describe the complications in the first 4 weeks after LLETZ.

To describe women's experiences of the LLETZ procedure.

Chapter 2

2.0 METHODS:

2.1 Setting

Chris Hani Baragwanath Academic Hospital is a secondary and tertiary hospital serving the population of Soweto of about 1.3 million people.[70] It also sees patients from surrounding areas and is a referral hospital for 7 community health centres and 56 local clinics. At the time this study was performed it was the referral hospital for 3 district hospitals and 4 regional hospitals.

The department of Gynaecology sees approximately 3000 patients a month in the outpatient department. There are 68 in-patient beds for Gynaecological problems. The colposcopy clinic sees 50 new patients every week.

2.2 Study Population

The study recruited 150 women over the age of 18 referred to colposcopy clinic from primary health centres, community health centres and general practitioners. Most of these women would have had screening Pap smears which have been performed by nurse practitioners at a primary health care level. Most Pap smears have been performed by National Health Laboratory Services(NHLS). This is an accredited laboratory that services South African public health care facilities. It has stringent internal and external quality control mechanism in place. The Pap smears are reported using the Bethesda Classification.

The referral criterion was according to Cervical Cancer Prevention guidelines. Any woman with an abnormal cervix on clinical examination is referred urgently irrespective of the Pap smear result. Those women with a report of HSIL, ASC-H, persistent LSIL or persistent ASCUS, were referred to the colposcopy clinic. HIV infected women with any abnormal Pap smear were also referred to the colposcopy clinic (Appendix 1).

Women were counselled prior to the Colposcopy, occasionally at the referral clinic and again at the colposcopy clinic. They were also counselled about the LLETZ procedure. They signed

written consent for the procedure. They were also given an information sheet which explains the procedure and describes the complications that may occur. Those who agreed to have a LLETZ under LA if indicated were eligible for recruitment. They were recruited on the day of LLETZ, by the doctor working at colposcopy clinic.

2.3 Procedure

Colposcopy was performed by a specialist gynaecologist or registrar under supervision. The saline technique was used and the colposcopic diagnosis was recorded using the modified Reid score. A subjective impression of the lesion was also recorded by the colposcopist. The colposcope used was a Liesegang colposcope.

The patients were placed in lithotomy position for the colposcopy and the colposcopist decided on whether a punch biopsy or a LLETZ needs to be performed. Generally all women with an abnormal cytology report coupled with a colposcopic impression of CIN2 or worse or an inadequate colposcopic examination were treated with a LLETZ. In those women where colposcopy was CIN1or normal a punch biopsy or small LLETZ just for diagnosis was performed.

A cervical block was performed using 2% lignocaine and adrenaline (1:80 000). Two percent lignocaine was injected at 5 and 7 O' clock and then in a circular fashion using dental syringe and a 27 gauge/38mm needle. In those women where a LLETZ was indicated, the colposcopist decided on a size of the loop depending on the size of the lesion and the transformation zone. Loops that were used were round loops with a diameter of between 10mm and 25mm and depths of between 10mm and 20mm. Alternatively C-loop was used with the diameter of between 11mm and 12mm and depths of between 10mm and 18mm, the aim was to excise the Transformation zone. The Finess11 was used with a foot or hand control.

The lesion was cauterised after excision only to control bleeding with a ball which was either 3mm/5mm. Sexual intercourse was discouraged for at least 4 weeks.

The patients were asked to come back in 4 weeks for the results of the histology. The histology specimens were sent in formalin to the NHLS.

2.4 Sample size

This was a descriptive study and a sample size was not calculated. 150 women were recruited. This was a convenience sample.

2.5 Study Design

This was a prospective cross sectional study of women attending the colposcopy clinic at Chris Hani Baragwanath Academic Hospital.

2.6 Data Management

Data was obtained using a questionnaire, some questions were asked on the day of the procedure and some were asked after 4 weeks. The questionnaire was piloted on 10 patients. Some information was extracted from the colposcopy database. Information is prospectively entered on the colposcopy database.

Variables: Age, parity, HIV status, CD4 count, smoking, Cytology results, histology results, and colposcopy diagnosis were obtained from the colposcopy data base.

Patient's experiences and complications were obtained using the questionnaire. The researcher administered all the questionnaires. The questionnaire was in English, but the researcher was able to speak 6 languages and was able to translate some questions.

2.7 Statistics

Data was entered onto a Microsoft excel data sheet which was then exported to the STATA 14.1(StataCorp, 4905Lakeway Drive,College Station, Texas 77845 USA) statistical package. Continuous variables were presented using means and standard deviations or medians and interquatile ranges. Categorical variables were described using frequencies and percentages.

For analytical statistics the student t- test was used to compare continuous variables and the chi2 to compare categorical variables. The Fisher's Exact was used for those comparisons where there the numbers were less than 10. Significance was set at 0.05

2.8 Funding

The researcher funded the entire research process and there was no third party involvement from commencement to completion.

2.9 Ethics

Ethics approval for this study was granted by University of the Witwatersrand HREC (M140632). Permission to do the study in this hospital was obtained from the Chief Executive Officer of CHBAH. The permission to use the data was also obtained from the database gate-keepers. There was a separate approval from the HREC to collect data for clinical and audit purpose at the colposcopy clinic (M080603/M040609). The storage of the information accrued was stored in password – protected computer. The Patient's permission to take part in the study was requested after they were given information on the study. There were three dedicated nurses and a doctor allocated to the clinic and they counselled patients after receiving their results.

Chapter 3

3.0 Results

This chapter describes the demographic factors of women who were recruited into the study. The histology and cytology will then be tabulated; it then describes the complications during and after the procedure. The women's experiences and feelings about the procedure are described at the end of the chapter.

3.1 Demographic data

There were 150 women who were recruited between September 2014 to March 2015. These women were referred to colposcopy according to the national guidelines. The mean age was 40.41(SD±9.51), with a range of 22-67 and the median was 40(IQR=34-46). The mean parity was 2.17(SD±1.34) with a range of (0-9) and the median parity was 2(IQR=1-3)

3.2 Contraception use

Condom usage was high in this group of women and a large number also used condoms with other methods as shown in the table 3.1 below.

Table 3.1 A description of the type of contraception used n= (150)

Type	Frequency	Percentage
No Contraception	43	28.67
Condoms only	59	39.33
Depo Medroxyprogesterone Acetate and condoms	12	8.00
Norethisterone Enantate and condoms	5	3.33
Implanon and condoms	2	1.33
COC and condoms	1	0.67

Tubal ligation and Condoms	2	1.33
Tubal ligation only	1	0.67
Total	150	100

3.3 HIV infection

There were 83(55.33%) women who were HIV positive, 37(24.67%) were negative, and 30(20%) were unknown. The mean CD4 count was 366.90 cells/µl (SD±214.90), and the median was 328(IQR= 194 - 504), with a range of (24-964) . Of those patients who were HIV positive 57(68.67%) were on ART, and 13(15.66%) were not on ART and there were 13(15.66%) in whom ART use was not known.

3.4 Educational Background

The highest level of education attained, was secondary school, with 136(90.67%) having attained this, and 12(8.00%) had gone as far as a primary school level and 2(1.30%) had no schooling

3.5 Relationship Status

Most of women in this study were single as shown in table 3.2 below. Not all women answered the question on number of partners. Of the 108 patients who answered the question, the mean number of partners was 3.36(SD±2.93), and the median was 3 (IQR=1-4) with a range of 1-20.

There were134 women who reported on their sexual debut. The mean age of sexual debut was 18.29(SD±2.53). The median age of sexual debut was 18(IQR=17-20) and the range was11-26.

Table 3.2 Women's relationship status (n=150)

Relationship	**Frequency**	**Percentage**
Cohabitating	4	2.67
Divorced	8	5.55
Married	31	20.67
Single	97	64.67
Widowed	10	6.67
Total	150	100

3.6 Smoking

Of the 120 women, where smoking was recorded, 12(10.00%) were smokers.

3.7 Pap smear abnormalities at referral

Table 3.3 shows Pap smear abnormalities at referral. There was one patient with a normal Pap smear. When the health worker thinks the cervix is suspicious the patient is referred to colposcopy irrespective of the cytology report.

Table 3.3 Papsmear abnormalities at referral n= (150)

Categories	**Frequency**	**Percentage**
NORMAL	1	0.74
ASCUS	4	2.96
ASC-H	10	7.41
LSIL	18	12.00
HSIL	86	63.70
AGC	1	0.74
SUSPECTED INVASION	4	2.96
SQUAMOUS CELL CARCINOMA	1	0.74
NO RECORDS	25	16.67

The following colposcopic diagnosis was made, 22(19.33%) had a CIN1, 50(43.48%) had a CIN2, 27(23.61%) had a CIN3, the data was not recorded in 10(8.70%) patients, and 3(2.61%) had microinvasion and there were 3(2.61%) patients in whom the colposcopy was thought to be normal.

3.8 Histology results after LLETZ

Of the 144 women, two (1.39%) had normal histology results. CIN1 was diagnosed in 49(34.03%), CIN 2 in 35(24.31%), CIN 3 in 54(37.50%), Microinvasion in 1(0.69%) and malignancy in 3(2.08%) women.

3.9 Margins on histology results after LLETZ

The presence of disease at the margins of excision is an important predictor of recurrent or persistent disease in patients with cervical intraepithelial neoplasia

Of 125 patients, 58(46.03%) had the lesion completely excised. The lesion was present at ectocervical margin in 32(25.31%) women, at the endocervical margin in 8 (4.88%) women and at both margins in 21(16.67%) , The presence of the lesion was not reported by NHLS in 6(4.88%) women.

3.10 Pain during the procedure

Most women 139(93.29%), did not have pain and 134(89.33%) did not have any discomfort. Table 3.4 below shows the proportion of women who had pain. Using the VAS pain scale for 10 patients with pain: the mean pain was 4.78(SD±2.91) and the median was 4(IQR=2-10) with a range of 1-10. We then categorised the pain into mild(1-3), moderate(4-6) and severe pain (7-10). Four (2.68%) patients had mild pains, 3(2.01%) had moderate pain, and 2(1.34%) women had severe pain. There was nothing that destinguishes the 2 patients with high pain scores from the rest of the patients. They were 30 years and 45 years old, neither of them had pain after and one had CIN3 (completely excised) and one had CIN2 (with a positive ectocervical margin) on their final histology.

There were 34(22.67%) women who had a history of dysmenorrhea. Women who had dysmenorrhea as a symptom were more likely to have pain during the procedure 6(60.00%) versus 4(40.00%) with p-value=0.01).

Table 3.4 Pain or discomfort experienced during the procedure (n=150)

Variable	Responses	Frequency	Percentage
Pain	No	139	92.67%
	Unsure	2	1.33%
	Mild	4	2.67%
	Moderate	3	2.00%
	Severe	2	1.33%
Discomfort	no	134	89.33%
	yes	16	10.67%

3.11 Pain after the procedure

One hundred (66.67%) did not experience any pain, 50(33.33%) had pain. Of those who had pain, the pain was mild in 26(17.33%), moderate in 16(10.67%) and severe in 8(5,33%) women. The mean pain was 4.32(SD±2.74) and the median was 3.5(IQR=1-10) with a range of (1-10) on the VAS scores.

The pain occurred for a mean of 9.24 days(SD± 10.12) and a median of 3.5days (IQR=2-4) with a range of 1-28.

There was no statistically significant difference between dysmenorrhea and pain after the procedure with 15(44.12%) patients with dysmenorrhea having pain after the procedure and 35(30.17%) without dysmenorrhea having pain after the procedure(p-value=0.15)

Of the fifty women who had pain after the procedure, 27(54.00%) took nothing for pain, 14(28.00%) took paracetamol, 7(14.00%) took anti-inflammatory drugs, 1(2.00%) took aspirin only, and 1(2.00%) took both anti-inflammatory drugs and paracetamol

3.12 The frequency and type of discharge before the procedure

Women were asked if they had an abnormal discharge. Table 3.5 outlines the frequency and type of discharge experienced by women prior to the procedure, 87(58.00%) had no discharge, 37(24.67%) had a white discharge, 14(9.33%) had a yellow discharge, 7(4.67%) had a brown discharge, 2(1,33%) had a green discharge, 2(1,33%) had a clear discharge and 1(0.67%) was unsure about the type of discharge. In terms of consistency, 18(12%) had a watery discharge, 15(10.00%) had a thin and 30(20.00%) had a thick discharge

The mean length of time that women had had this discharge was 19.29(SD±24.78), days and a median of 14(IQR=5-28) with a range of 1-168)

Table 3.5 Consistency of discharge before procedure (n=150)

Consistency	**Frequency**	**Percentage**
No discharge	87	58.00
Watery	18	12.00
Thin	15	10.00
Thick	30	20.00
Total	150	100

3.13 Discharge after the procedure

Women were again asked if they had abnormal discharge after the procedure. (Table 3.6) outlines the type of discharge after the procedure. There was no reported discharge in 56(37.00%), 33(22.00%) had a yellow discharge, 34(22.67%) had a brown discharge, 3(2.00%) had a red discharge, 9(6.00%) had a clear discharge, 13(8.67%) had a white discharge, and 2(1.33%) had a green discharge.

Regarding the consistency of the discharge after the procedure, 61(40.63%) had a watery discharge, 23(15.33%) had a thick discharge, and 10(6.67%) had a thin discharge.

The mean length of time of the discharge in days was 13.41(SD± 9.65), the median time was 10 (IQR=5-21) with a range of (2-28).

Overall there was no significant difference between subjects that had discharge before (63(42.00%)) and after the procedure (94(62.67%)) (P value=0.0590) and this is outlined in table 3.6

Table 3.6 A description of the type of discharge after the procedure n= (150)

Type	**Frequency**	**Percentage**
No discharge	56	37.00
Yellow	33	22.00
Brown	34	22.67
Red	3	2.00
Clear	9	6.00
White	13	8.67

Green	2	1.33
Total	150	100

3.14 Menstrual history prior to the LLETZ procedure

The menstrual histories of women in this study were that, 73(48.67%) had normal menstruation, 37(24.67%) were menopausal, 32(21.33%) had hormone related amenorrhea either due to Medroxy progesterone acetate(DMPA) or Norethisterone enantate , 7(4.67%) had irregular periods and 1(0.67%) was unsure of her menstrual history.

3.15 Bleeding

There were no women who had bleeding during the procedure that needed vaginal packing or admission.

There were 121 (80.67%) who had bleeding after the procedure. The mean number of days that women had bleeding was 8.44(SD±7.67) and the median was 5(IQR=3-4) with a range of 1-28. The mean number of pads used per day(taking the highest number per day was 2.83(SD±3.90) and the median was 2(IQR=1-3), with a range of 1-40.

There were 6(4.02%) who had to consult a health care practitioner because of bleeding. Of these, 3(2.48%) patients didn't specify the form of treatment they received, 1(0.67%) was admitted and transfused, 2(1.34%) of the patients were seen at the local clinic, and received Levonogestrel® and Ovral (Ethinyl estradiol 50µg and Levonogetrel 20µg) respectively

3.16 Emotions that women experienced at the first visit to the colposcopy clinic.

There were 85 (56.00%) who were worried about the procedure and the results. One woman (1.18%) worried because her mother died of cancer of the womb, 8(9.41%) were worried about the colposcopy procedure ,3(3.53%) were worried because they did not know what to expect, 24 (28.24%) were worried about cancer, 46(54.12%) were "just worried" about the results,

1(1,12%) thought something was wrong with her, 2(2.35%) were worried because they thought that they would have to have a hysterectomy.

The post procedure visit (after 4 week visit):

Most women (135(90%)) were feeling happy about the results, however there were, 12(8.00%) said they were "relieved", 1(0.67%) felt bad because she was told that had a cancer,1(0.67%) was stressed,1(0.67%) was unsure because the specimen lacked transformation zone.

3.17 Fear at colposcopy clinic

Table 3.7 outlines fear among women at colposcopy, and the total percentage might not necessarily add up to hundred percent, as each woman reported more than one fear.

Table 3 .7 A description of fear among women at colposcopy clinic (n=144)

Fear	**Frequency**	**Percentage**
Cancer	101	70.14
Colposcopy	11	7.64
Pain	6	4.17
Hysterectomy	1	0.69
Not knowing what to expect	4	2.44
Infertility	15	10.45
Leaving Kids behind	1	0.69
Might have sexual problems	3	2.08
No fear	27	18.75

3.18 Overall experience of colposcopy

Of the 150 women, 149(99.33%) had good experience, which was attributed to prior counselling, 1(0.67%) was bad ,“got shouted at by the nurse”

144(96.00%) were pleased that they had the procedure under local anaesthesia, and 6(4.00%) would have preferred the procedure to be done in theatre under general anaesthesia

All 150(100.00%) would advise a friend to have similar procedure if needed.

Chapter 4

4.0 Discussion

A 'See and treat' clinic which combines colposcopic diagnosis and treatment is common in South Africa.[5] This study is the first one locally, to look at the early complications and experiences of women after large loop excision of the transformation zone. In this chapter I will first discuss the main symptoms of pain, bleeding and discharge. I will then address women's fears and anxiety.

Large loop excision of the transformation zone remains one of the commonest treatments of premalignant lesions It is not without complications. Our patients reported bleeding, discharge and pain. Despite the use of local anaesthesia, pain during the procedure was reported, with (6.71%) having pain during, and (34.00%) after the procedure. There were 6(4.00%) who would have preferred to have the procedure under general anaesthesia. Overall the impression was good in that all of them would encourage a friend, to have the same procedure. When we quantified the pain there was only one woman who had severe pain. Other studies have shown similarly that few women have pain during the procedure. However pain after the procedure was reported in 67% of women who had LLETZ in the study by Sharp et al.[31] In this study, use of analgesia was never mentioned.

A meta-analysis on pain control during outpatient treatment of cervical pre-malignant lesions, evaluated cervical injection with lignocaine alone, lignocaine with adrenaline, prilocaine with felypressin, oral analgesics (NSAIDS), inhalational analgesia (gas mixture of isoflurane and desoflurane), lignocaine spray, cocaine spray, local application of benzocaine 20% gel, EMLA cream and TENS. They concluded that cocaine spray before treatment resulted in better pain relief and a local anaesthesia combined with vasoconstrictor was associated with better pain control. They could not reach any conclusion regarding optimum sites of injection to inject, depth of injection and dosage of the agent used.[71]

The commonest complication in our study was bleeding, with 121(80.67%) women reporting bleeding after the procedure, and only 1 patient was admitted and transfused. In the study by Sharp et al [31] 87% of women had bleeding after the procedure, which is similar to what we found.

There was no statistical difference between women who had an abnormal discharge before (42.00%) and after the procedure (62.67%) (P-value=0.059). Overall there is still high prevalence of discharge after the procedure, which is consistent with the study by Sharp et al where 63.00% women had a discharge after the procedure.[31]However this is in contrary with a Nigerian study which reported discharge in 17.40% of women who had colposcopy and biopsy, and only one patient required admission for persistent discharge.[72]

We usually give our patients metronidazole for7 days after the LLETZ, and this is in contrast with two previous studies where they found no significant benefit or any reduction in morbidity after LLETZ unless there is evidence of growth on an endocervical swab.[73,74] We postpone LLETZ in women with PID. The Australian and New Zealand guidelines do not recommend antibiotics during and after LLETZ procedure unless there are risk factors for pelvic inflammatory disease, and according to the guideline, they give doxycycline 100mg orally 60 minutes before the procedure and then 200 mg 90 minutes after the procedure and Metronidazole 500mg intravenously before the start of the procedure.[75]

Anxiety is a common symptom with screening tests. Increased levels of anxiety before and during colposcopy may lead to pain and discomfort during the procedure.[76] In our study we looked at an overall anxiety, and we did not divide it into before and after the procedure. Other screening tests like transrectal ultrasound guided prostate biopsy have also been shown to be associated with anxiety, with a quarter of the men reporting anxiety and other adverse effects if they felt inadequately prepared for the procedure.[76] Two other studies in Thai and Swedish women found that 14% to 52% were anxious after colposcopy.[65,78] There is also a study by T freeman et al which found that, level of anxiety was much higher in patients getting written information about see and treat versus information showed on videotapes before colposcopy.[80]

There is emerging evidence that the concerns of women post LLETZ might be cervical cancer, fertility and sexual issues.[65,78,79] We found that 56.00% of patients said that they had been worried about the colposcopy. Very few of our patients were concerned about fertility and sexual function, with 4(2.67%) patients thought that they will not be able to fall pregnant again and the 3(2.00) patients thought that they will not be able to have intercourse.

In our study most women (55.00%) were concerned about cancer, this is comparable to a Swedish prospective study, where they found that (52.00%) of patients feared that they had cancer and also had higher levels of anxiety.[78]

A Randomised controlled trial looking at immediate treatment versus biopsy and recall, found that women in the "see and treat" arm had lower anxiety levels than defer and treat arm. Women in the "see and treat" arm also felt more relieved than women who in the "defer and treat".[49] In the same study, women had good comments about see and treat, they believed that they had been treated without delay, not have to return to colposcopy clinic again and had psychological benefit of not being anxious while anticipating another procedure.[49]

We did not measure anxiety levels using a score, we just asked about it. There are also studies which suggest that anxiety is on-going may be higher in women who were concerned about future cancer or future fertility.[50, 81, 82]

Counselling just prior to the procedure is done at the local clinic on referral and by nurse practitioners at the colposcopy clinic. Despite counselling there were 85(56%) women who were worried, but most women (99.33%) had a good experience during the colposcopy.

The majority of the patients in our study were HIV positive, this affirms the relationship between HIV and the high prevalence of cervical cancer precursor lesions. Twenty-five of our patients had CD4≤200 cells/µl. The threshold of putting patients on anti- retroviral treatment at the start of the study was about 350 cells/µl and currently is 500 cells/µl. SA has the world's largest antiretroviral therapy programme with approximately 1.8 million people having started ART by mid-2011.[83] The number of women with unknown HIV status is of concern. After 2006 it became a protocol at this clinic to offer women an HIV test if their last test was more than 6 months ago or if they did not know their HIV status. There is still a stigma to being HIV infected and women may still refuse to be tested. More than 70% of patients were using contraceptives, which is more than what national data suggests, which is currently estimated to be 65%.[84]

This is quite high considering that we had 20.95% women who were menopausal, this may also be that women are using condoms for prevention of HIV and STI's and not just for contraception.

4.1 Limitation of the study

This study was not without limitations. It was carried out in one institution, and the study period was also short. A sample size was not calculated as this was the descriptive study .The majority of patients were black Africans, which limits generalisation to other racial groups. The sample size was small; however it is similar to a Nigerian study which yielded almost similar results. Even though this data base is used clinically there was missing data.

4.2 Recommendations

The prevention of cervical cancer is complex, with screening, diagnosis and then treatment of precursor lesions. Explaining this process after the woman has received the results of an abnormal Pap smear is difficult. We are not sure about what counselling women received prior to having had a Pap smear. It is advisable that women are counselled on what an abnormal Pap smear may mean prior to the test.

Some women might have poor knowledge and understanding of cervical cancer screening. Community education in newspapers and TV may also assist with understanding the screening process.

4.3 Conclusion

It should be remembered that treatment for premalignant lesions of the cervix reduces cervical cancer, but screening, colposcopy and treatment are associated with medical and emotional complications.

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APPENDIX A

DEMOGRAPHIC FACTORS

Information to be retrieved from the database

1. Age

2. Parity

3. Contraception: What contraception are you using at present?

COC	
Injectable	
Condoms	
POP	
IUCD	
Sterilization	
Other	

4. HIV Status?

5. Relationship

Single	
Married	
Divorced	
Widowed	
Other	

6. Any history of smoking?

7. I want to ask you about your sexual life, if you are not comfortable don't answer.

    a. Lifetime number of Partners?
    b. Age Sexual Debut?

8. Discharge: was the discharge normal or abnormal?

Before the procedure	
Yes/No	
How long in days	
colour	Clear White Yellow Green Brown Other:
offensive	Yes no
consistency	Watery Thin Thick other

9. Was there any discomfort during the procedure

10. Pain, during the procedure

    During the procedure: quantify(VAS score)

11. Menstrual history

    Last normal menstrual period?

    Menopausal?

12. Menstruation :

    Do you have a pain during menstruation?

    On which day is the worst?

Questions to be asked 4 weeks after the procedure:

1. Have you had a discharge in the last 4 weeks, was the discharge normal or abnormal?

After the procedure	
Yes/No	
How long in days	
colour	Clear White Yellow Green Brown other:
offensive	Yes no
Consistency	Watery Thin Thick other

Did you have pain in the 4 weeks after the procedure?

How severe was the pain?

Did you have to take medication for the pain?

What did you take?

How long did it last?

Have you had the need to go and see the doctor or go to the clinic for symptoms that may have been related to the procedure?

If yes explain;

2. Bleeding

How many days did you bleed for after the procedure?

How heavy….quantify pads?

Have you had a period since the procedure?

If yes…was it different from the normal period

immediately, how many days?

How is it normally?

3. Were you anxious or worried before your visit today…. Yes/no

What were anxious about?(was only asked at the last visit)

4. How do you feel now that you have the results?

What was your biggest fear/ concern when you first came to the clinic:

fertility issues?

Sexual issues?

Cancer?

Other?

5. How would you describe your experience at this clinic?

If you had a friend with a similar problem would you advise them to have the same

Would you have preferred to have been under anaesthesia/ asleep?

APPENDIX B

We know that some of the women who have had LLetz will complain about discharge, pain or bleed

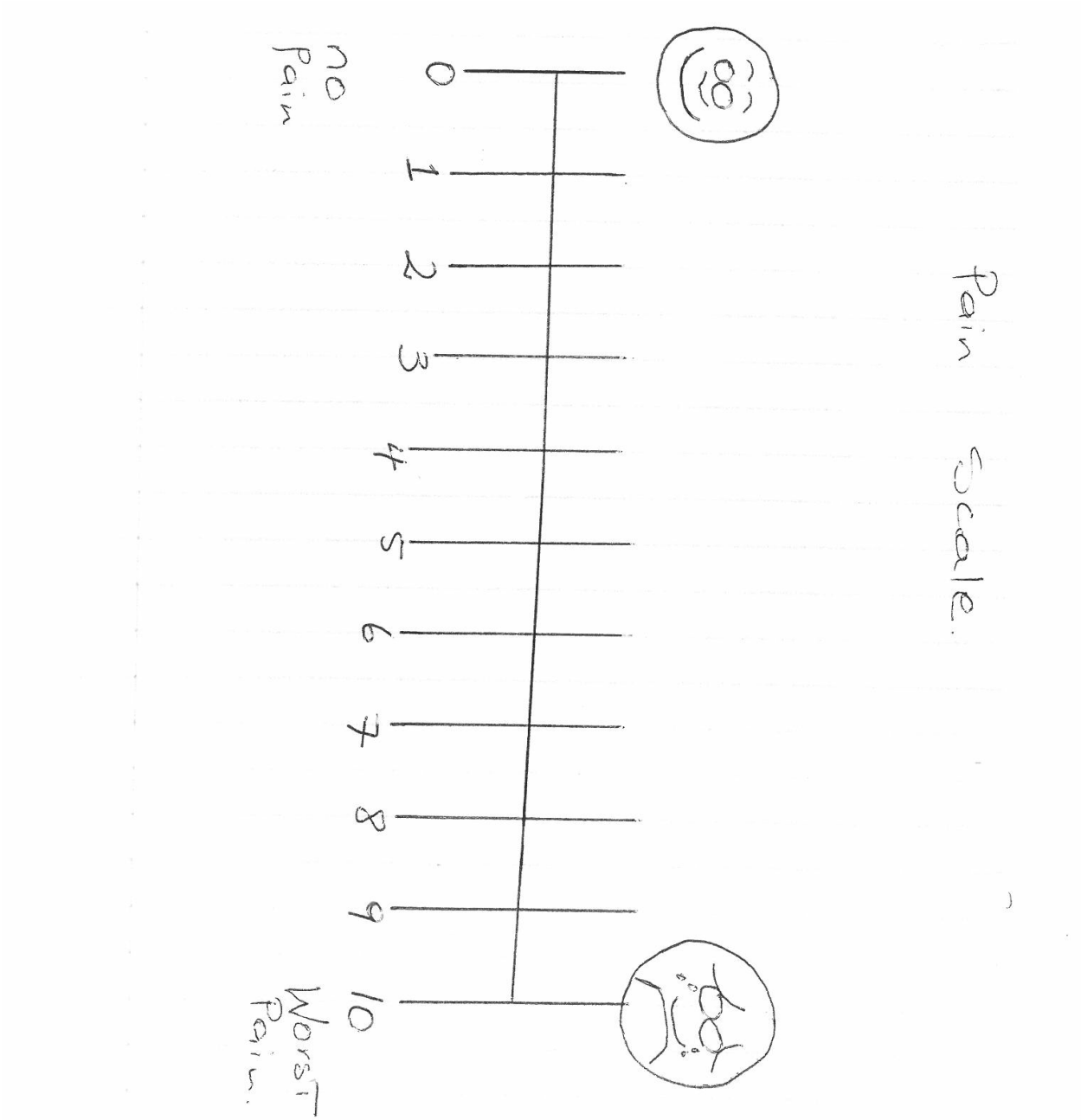
We also would like to give you a chart to mark whether you have had any of the following:

	Week 1	week 2	Week 3	Week 4
Pain				
Discharge				
Bleeding				

Thank you very much

Dr T Mooketsi

APPENDIX C



APPENDIX D

Information sheet

Good morning, my name is Dr Titus Mooketse. I am a doctor in this hospital, specialising in Obstetrics and Gynaecology. I am doing a study entitled: "The short term complications and experiences of women after large loop excision of the transformation zone at Chris Hani Baragwanath academic Hospital".

Before you agree to participate it is important for you to read and understand what the study is about. You can ask me any questions that you may have at any time during the interview. Your participation is completely voluntary. Your treatment at this clinic will be the same whether you are in the study or not.

Why are you being asked to participate?

I would like to invite you to participate in this study because you have had LLETZ . The doctors have given you the results and explained that you have to have to be followed up at this clinic.

What the study is about:

We would like to find out if you have had any complications in the 4 weeks since LLETZ and what your experiences with the procedure were.

We also have three dedicated nurses and a doctor who provide counseling after receiving your results

What is required for you to participate*? I would like to interview you, the interview will take about 20 minutes.*

We would also like to ask you some questions about the complaints that you may have in the 4 weeks after the procedure, complaints may be bleeding , discharge or pain before you go home we would like to ask you about the bleeding , discharge and pain in the last 4 weeks..

I would also like to give you a paper on which you can chart complaints that you may have in the 4 weeks.

The questions that we ask now will take 5 minutes.

Are there any risks for being in the study? There are no risk factors, you do not have to answer any questions if you are uncomfortable and you can stop the interview at any time.

Will there be any benefits to being in the study? There will no be any direct benefits to you for being in the study.

Will this information be confidential? Yes the information will be completely confidential; the information will only be available to the researchers in this study. We intend to publish this study in the medical journal, but there will be no information by which you could be identified.

You can contact me at any time in connection with the study. My name is Dr Titus Mooketse and my cell number is 0765291269

If you have any questions regarding the Ethics of this study, you may contact Prof Cleaton-Jones on 011-717 1234

If you are willing to be a participant in this study, kindly sign that you have understood all that has been explained to you and that you are a willing to take part in this study.

Patient name: _____

Patient signature: _____

Date*:* 2014 /_____/_____

Witness: _____

APPENDIX E

UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

Private Bag 3 Wits, 2050
Fax: 027117172119
Tel: 02711 7172076

Reference: Ms Thokozile Nhlapo
E-mail: thokozile.nhlapo@wits.ac.za

20 January 2016
Person No: 921034
PAG

Dr RT Mooketse
P.O Box 589
MEDUNSA
0204
South Africa

Dear Dr Mooketse

Master of Medicine: Approval of Title

We have pleasure in advising that your proposal entitled *The short term complications and experiences of women after large loop excision of the transformation zone at CHBAH* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

APPENDIX F



GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

MEDICAL ADVISORY COMMITTEE
CHRIS HANI BARAGWANATH ACADEMIC HOSPITAL

PERMISSION TO CONDUCT RESEARCH

Date: 09 June 2014

TITLE OF PROJECT: The short term complications and experiences of women at colposcopy clinic who have undergone large loop excision of the transformation zone of CHBAH

UNIVERSITY: Witwatersrand

Principal Investigator: RT Mooketse

Department: Gynaecology

Supervisor (If relevant): Y Adam

Permission Head Department (where research conducted): Yes

Date of start of proposed study: June 2014
Date of completion of data collection: Dec 2016

he Medical Advisory Committee recommends that the said research be conducted at Chris Hani Baragwanath Hospital. The CEO /management of Chris Hani Baragwanath Hospital is accordingly informed and the study is subject to:-

- Permission having been granted by the Committee for Research on Human Subjects of the University of the Witwatersrand.
- the Hospital will not incur extra costs as a result of the research being conducted on its patients within the hospital
- the MAC will be informed of any serious adverse events as soon as they occur
- permission is granted for the duration of the Ethics Committee approval.

.....
Recommended
(On behalf of the MAC)
Date: 09 June 2014

.....
Approved/Not Approved
Hospital Management
Date:

APPENDIX G

R14/49 Dr Titus Mooketse

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M140632

NAME: (Principal Investigator)	Dr Titus Mooketse
DEPARTMENT:	Obstetrics and Gynaecology Chris Hani Baragwanath Academic Hospital
PROJECT TITLE:	Experiences of Women at Colposcopy Clinic who have undergone Large Loop Excision of the Transformation Zone at Chris Hani Baragwanath Academic Hospital
DATE CONSIDERED:	27/06/2014
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Dr Yasmin Adam
APPROVED BY:	Professor P Cleaton-Jones, Co-Chairperson, HREC (Medical
DATE OF APPROVAL:	20/08/2014

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

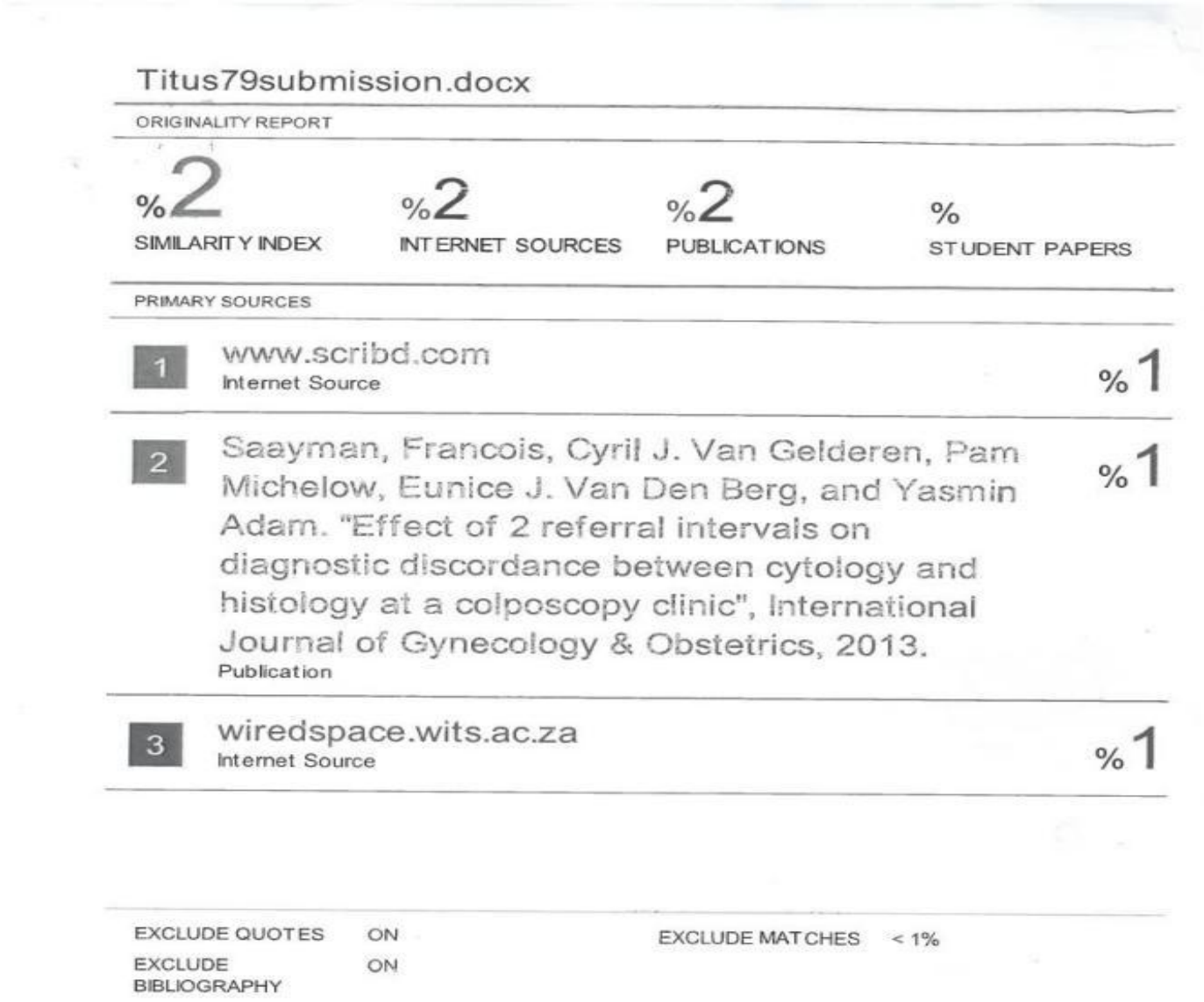
To be completed in duplicate and **ONE COPY** returned to the Secretary in Room 10004, 10th floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report.**

Principal Investigator Signature

Date 20/07/16

APPENDIX H



Titus79submission.docx

ORIGINALITY REPORT

%2	%2	%2	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.scribd.com Internet Source	%1
2	Saayman, Francois, Cyril J. Van Gelderen, Pam Michelow, Eunice J. Van Den Berg, and Yasmin Adam. "Effect of 2 referral intervals on diagnostic discordance between cytology and histology at a colposcopy clinic", International Journal of Gynecology & Obstetrics, 2013. Publication	%1
3	wiredspace.wits.ac.za Internet Source	%1

EXCLUDE QUOTES	ON	EXCLUDE MATCHES	< 1%
EXCLUDE BIBLIOGRAPHY	ON		