

**PROFILE OF PATIENTS WHO HAD HYSTERETOMY IN PRIVATE
PRACTICE IN PRETORIA BETWEEN 2005 AND 2009**

BY

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CHAPTER ONE: INTRODUCTION AND BACKGROUND OF THE STUDY

The origin of hysterectomy is lost in the mist of antiquity, as historians say when they do not know the answer. There is no mention of hysterectomy in the Genuine Works of Hippocrates. Soranus (98-138 AD) referred to the removal of a gangrenous uterus but does not confirm that he actually did so.

Themison of Athens, who lived in the first century BC in his writing the following were found "Now one must not suppose the uterus to be essential for life. For not only does it prolapsed, but in some cases, as it has been cut away without bringing death"²³. Writings like these presuppose that hysterectomy was done as far back as before the birth of Christ but the details thereof are a mystery.

Hysterectomy is one of the oldest operations performed in the female pelvis. It dates back to the era before anaesthesia and antibiotics. It has under gone many modifications in technique and indication over time. Even today it still undergoes evolution in surgical technique and indication, like any other scientific discovery, will forever go through stages of perfection and as critics and proponents of various methods exchange hot ideas all over the world.

There were times when it was done for treatment of premenstrual tension, depression and other psychiatric conditions like Hysteria. The name hysterectomy was coined for its role in the treatment of hysteria. The condition premenstrual tension was not well understood as we know it today. It was understood to be a form of hysteria. Removal of the uterus and ovaries was said to treat the condition and thus the name hysterectomy was found appropriate, as it was believed that women with intact uteruses had more hysteria and premenstrual tension than those without the uterus. To date it is well known that such allegations are baseless and without any scientific data to support^{2,16}.

Approximately 600 000 hysterectomies are performed each year in the USA, making the operation second only to caesarean section as most frequently performed major abdominal operation. National figures show that 98% of hysterectomies involve removal off the cervix.^{2,18}. Hysterectomy without removal of the cervix (Subtotal-

hysterectomy) is becoming gradually extinct operation, only mentioned in literature to be condemned.

David Nichols in his book of vaginal hysterectomy recommends that the procedure should be reserved for the inexperienced and the learners²². As it is not practiced so frequently any longer, our data contains none of the subtotal hysterectomy.

One of the factors that discourage the subtotal hysterectomy is the prevalence of cervical cancer in our population and the poor screening services for cancer of the cervix.

In recent years both locally and abroad, the debate regarding whether or not the cervix should be removed at operation has received considerable attention, both in medical literature and lay media. In our setting one may not be far from the truth to say that almost all hysterectomies done in the Third World involved removal of the cervix. Subtotal hysterectomy is merely done because of unexpected surgical difficulty to remove the cervix, resulting in intraoperative change of plan.

In some sectors of the society hysterectomy is still an unacceptable operation as the uterus is viewed as the organ that defines a female as a woman. A woman who had hysterectomy is therefore viewed as incomplete, lost her womanhood and reproductive potential.

It is for this reason that even today there are women who would not consent to the operation as a result of fear of being neglected, stigmatized or under rated in their society.

There are several myths and beliefs around removal of the uterus. Most patients will ask for reassurance that the operation will not affect their sexuality or the husband would not find them sexually satisfying and appealing. These are not baseless as most men believe that a woman who had her uterus removed is sexually cold and "tasteless".

In the author's practice, one of the fears that has to be addressed and dismissed is fear of being rejected by the partner after removal of the uterus. Women from middle

to upper class have false belief that the uterus is part of the vagina, and a woman without a uterus has her sexual organ halved and thus incomplete. They go to the extent of using derogatory terms such as, cul-de sac, hollow and dead end vagina.

Thanks should go to the liberal constitution of our country that removed the need for husband to consent if his wife has to undergo hysterectomy. Women can now be treated with absolute professional secrecy and confidentiality without been obliged to inform their partners that they had hysterectomy.

The first hysterectomy was performed by Charles Clay in 1863 in Manchester, England. It was done for what he thought was an ovarian cyst but only to be confronted with a huge fibroid uterus upon opening the abdomen. Unfortunately the patient died from sepsis on the fifteenth postoperative day. This was acceptable as in those times there were no antibiotics. Even the principle of antisepsis that was introduced by Simelweis was not known⁷.

In this age of litigation, it is professionally risky to follow the approach of guesswork in the diagnosis and treatment of patients as advancement in technology enables accurate pre-surgical diagnosis. The development of ultrasound and other radiological imaging techniques have enabled surgeons to make a preoperative diagnosis with precision and confidence and thus avoid medical misdiagnosis.

The advancement in the practice of women's health has evolved in such a tremendous velocity that hysterectomy is generally regarded as the last resort operation by some gynaecologists, and should be reserved for malignancies and other morbid benign pelvic diseases².

However anecdotal evidence suggests that doctors often use treatment modalities that are not necessarily informed by ethics and professional guidelines. The dilemma facing the 21st century gynaecologist is the choice of appropriate therapeutic modality of a specific ailment among so many approved therapeutic regimens.

With development of medical therapy for benign conditions like fibroids, endometriosis and infective conditions, surely performing hysterectomy for such

condition may be seen as going overboard in the light of efficacies of newer therapeutic modalities such as the use of gonadotrophin releasing analogues, laparoscopic myolysis and laser treatment of endometriosis. However, hysterectomy is still performed on many women in South Africa.

The researcher has interest in studying about the profile of these women as well as their preoperative diagnosis that resulted in the decision to perform hysterectomy. The ratio of vaginal over abdominal hysterectomy, the association with parity, age and province of origin will be analysed. Profile of diseases that commonly lead to hysterectomy and the dominant route of uterine removal for each condition are to be looked at from statistical perspective.

This study seeks to profile a cohort of women who underwent hysterectomy between 2005 and 2009 in two practices in Pretoria, to establish if these are in line with global trends in performing hysterectomy. The author has been a practicing Gynaecologist for nineteen years, eleven years of this was in private setting. The consented Gynaecologist also had his practice for nine years. They both received their training from the same institution and practice in the same town. From this it can assume that they belong to the same school of thought as far as patient counselling and performance of any surgical procedure, with special reference to hysterectomy.

The abundance of treatment options and choices often implies that the decisions are often influenced by a doctor's subjective preferences, as well as the financial factors relating to private health industry, which may have an influence in the decision to perform a particular type of hysterectomy. But mere presence of pathology is enough to warrant surgical extirpation of the uterus.

The influence of the authorisation by the funders (medical aids) have great influence in the decision making of the doctors as some of the funders do not pay for a more expensive procedure if there is a cheaper procedure to treat the same disease, despite evidence to prove that the expensive procedure has better outcomes than the inexpensive procedures on patient's recovery period, pain, complications and other morbidity determinants.

Private gynaecological practice experience more cases of hysterectomy and probably other operations than public hospital. Women do not freely opt for hysterectomy, because there are beliefs, especially among African clientele, that the operation may interfere with “being a woman” and several myths and superstitious beliefs surrounding hysterectomy⁷. This then makes them more reluctant to undergo hysterectomy. However the outcome of their reluctance is not known.

On the other hand, medical insurances would rather fund hysterectomy operation than other long term treatment regimen for conditions affecting the womb. The study problem is to which extent these factors play a role and who the women who eventually undergo hysterectomy are. The extent to which private gynaecologist “freely” recommend and perform hysterectomy is of interest.

As a fulfilment to a degree Master of Public Health the researcher took an opportunity to look at which women had hysterectomy in his private practice from 2005 to 2009. The other colleague who has a practice in the adjacent hospital agreed to pool his patients who had hysterectomy over the same period.

1.1 RATIONALE AND JUSTIFICATION OF THE STUDY

It is common for one to retrospectively look at his work over a period of time to see if he/she is practising in line with what is in the literature or to see how her/his rate of a particular operation compares with others. Most commonly the solo practice studies are done as part of multicentered studies at the request of instrument manufacturers or drug companies. This study was driven by none of the above; it is done as a pre-requisite for the fulfilment of a degree in public health at the University of Limpopo (Medunsa Campus).

It will also serve as an audit to the authors’ practice and may either testify positively or negatively to the author’s way of practising gynaecology especially the author’s indications and the threshold of performing hysterectomy. The profile of patients who attend the author’s practice, their age, parity, province, and their pathology will be analysed.

1.2 RESEARCH QUESTIONS

The study responded to the following research questions.

1. What is the profile of women who had hysterectomy in private practice from 2005 to 2009?
2. What are the common reasons for hysterectomy among these women?
3. What is the prevalence of hysterectomy over the study period?

1.3 OBJECTIVES OF THE STUDY

The objectives of the study are:

1. To describe the demographic, socioeconomic and clinical profile of patients who had hysterectomy in two practices between 2005 and 2009.
2. To identify the common reasons for hysterectomy among this cohort of patients.

1.4 ARRANGEMENT OF CHAPTERS

Chapter 1: Introduction

Chapter 2: Presents review of existing literature.

Chapter 3: Presents methodology of the study.

Chapter 4: The results of the study.

Chapter 5: Discussion of the results, Recommendations and Conclusions from the study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

A search through Medline, PubMed, Sciencedirect and other medical sites yield enormous volumes of publications on hysterectomy. Not all studies are designed to address the objective of our study. Only those studies that were found to have information relating to our studies were used. There were no self audits from solo practices but surveys and meta analysis were found very useful in compiling this report and supplying literature backing. The history, evolution, methodologies and the benefits of hysterectomy dominated the search while comparative studies were scanty.

The practice of hysterectomy is an ever evolving art. With conflicting schools of thought on the best way to manage uterine diseases with uterine conservation, the balance is on the easiest, the most acceptable to the patient and of course the most affordable modality of treatment. However in private practice setting, the management of gynaecological uterine ailments is dictated if not directed by the funders or medical schemes. They prefer to pay for the cheapest modality of treatment. As an example, it is universally accepted and proven by studies that dysfunctional uterine bleeding is best managed by ablation of the endometrium, but very few funders will reimburse for endometrial ablation as it is more expensive than removal of the uterus. Thus this condition is commonly managed by hysterectomy besides evidence by randomised controlled trial to prove that it is better managed by endometrial ablation⁶.

The route of removing the uterus is the prerogative of the attending doctor which is dictated upon by the doctor's experience and expertise. Patients should be thoroughly counselled about the procedure to be performed in order to give informed consent.

Vaginal hysterectomy is proven to have less morbidity, quicker return to normal daily activities, less pain and less blood loss than abdominal hysterectomy⁷. The debate

on whether the uterus should be removed vaginally or abdominally was sparked when first performed vaginal hysterectomy in 1813.

Casser Moiré, when asked a question “Why vaginal hysterectomy?” He intelligently countered with a question. “If you had to have your tonsils removed, would you rather have them removed through your mouth or through a hole on the side of your neck?⁸.”

Historically the reason why gynaecological surgery became a speciality on its own right was the extensive use of the vaginal route. Since then, vaginal route has always been the hallmark of gynaecological surgeon. In essence, all uteri that can be removed vaginally can be removed abdominally, but the inverse is not true. A famous French surgeon, Doyen insisted in 1939 that no one could call himself a gynaecologist until he performed vaginal hysterectomy in private⁷.

Very often a uterus that should have been removed vaginally is removed abdominally only because it is more easily executed or it is the favoured practice of the attending doctor.

Anecdotal evidence suggests that gynaecologists perform more abdominal hysterectomies than vaginal hysterectomies as warranted by the nature of pathology in the population. Such is the case in our experience, where patients mostly present late with advanced diseases not amenable to vaginal hysterectomy.

Due to financial constraints and the attitude of the funders, it is uncommon for a private practitioner to do Laparoscopically assisted vaginal hysterectomy (LAVH or Total laparoscopic hysterectomy (TLH). In our cohort there are no LAVH or TLH done as none of the two gynaecologists is practicing LAVH or TLH.

In addition to the above, there is escalating litigation and the increased likelihood of complications such as bowel injury, haemorrhage and gas embolism in Laparoscopic hysterectomy. It is less risky to do what is safe from medico-legal point³.

Another factor that needs to be conserved in private practice is the reputation and the name, which in the business sense, is the brand and the services offered are the

product. To preserve the reputation and the integrity of the brand one has to convince his clients that his services are of acceptably good quality by avoiding complication at all cost, as these may negatively affect his practice which is in essence a business with clients as patients.

The other discouraging factor is the colleagues who will rejoice or disgust over one's complication, especially of laparoscopic procedure.

Types of hysterectomies.

The definitions of types of hysterectomy commonly used in the one published in the Cochrane review, which is a modification of definitions published by Garry et al in 1994¹⁷.

1. Total Abdominal Hysterectomy (TAH) is the removal of only the uterine corpus through an abdominal incision.
2. Total abdominal hysterectomy and bilateral salpingo-oophorectomy (TAH + BSO) is the removal of the uterine corpus. Both fallopian tubes and both ovaries through and abdominal incision.
3. Vaginal hysterectomy (VAG-HYST) is the removal of the uterine body through the vagina.
4. Laparoscopic assisted vaginal hysterectomy (LAVH): A combined laparoscopic and vaginal approach with laparoscopic division of structures above the uterine artery; the remainder of the procedure is completed vaginally.
5. Laparoscopic hysterectomy (LHA): combined laparoscopic and vaginal approach with laparoscopic division of the uterine artery; the remainder of the procedure is completed vaginally. The letter 'a' distinguishes this laparoscopic approach to hysterectomy which involves vaginal division of the uterine artery.
6. Total laparoscopic hysterectomy (TLH): The operation is performed entirely laparoscopically.

.Today in the era of safe anaesthesia, antibiotic and antiseptics and meticulous attention to haemostasis, hysterectomy by any route is a comparatively safe procedure. This has led to explosive increase in the number of hysterectomies performed, so that it is now the second most common operation undertaken in United States of America with over 650 000 performed annually at a cost of approximately three billion dollars⁷. The South African data is lacking but it is unlikely to differ from developed world as a results of western influence in the practice of medicine in our country.

With these increasing safety the indications for the procedure have become lax, to the extent that at the end of the last decade, a Californian woman had a fifty –fifty chances of going to her grave still in possession of her uterus. One may not be far from the truth if extrapolating the same notion to middle class African woman attending a private Gynaecologist in private practice.

2.2 Overview of previous studies

In abdominal hysterectomy the uterus is removed from the pelvis though an incision on the abdomen. The incision may be longitudinal media, longitudinal paramedian or transverse. Vaginal hysterectomy the uterus is removed from the pelvis through the vagina. Recently both methods are undergoing progressive modifications to include Laparoscopic hysterectomy where the uterus is removed from the body through a small incision using a laparoscope and morcelator.

Laparoscopic hysterectomy is practiced mainly in the developed world where availability of resource is not a hindrance to performance of any operation. In our setting, cost saving preclude the use of this expensive, time consuming and potentially dangerous modality.

The world's first total laparoscopic hysterectomy was performed by an American gynaecologist in the name of Harry Reich. Reich initial method had today undergone several modifications in the hands of world renowned gynaecologic laparoscopists such as Ray Garry, C Y Leu and Charles Koh⁷.

Advancement in instrumentation is still gradually affecting the classification and nomenclature of hysterectomy steps and procedure.

In our setting, we agree with those gynaecologists who state that laparoscopic hysterectomy is rarely indicated when vaginal hysterectomy is possible and the uterine vessels are readily accessible vaginally.

From literature first uterus was removed from the human body vaginally, this was done by Soranus in the Greek city of Ephesus in AD 120, although there is a vague reference to the procedure having done before the birth of Christ. These were almost all done for the treatment of prolapsed which in modern classification would qualify to be Grade 5 or procidentia. The morbidity from bladder and urethra injuries was unacceptably high and almost all patients had to live with urine leaking from the vagina day and night as a result of vesico-vaginal-fistula¹². His complications are rarely encountered today as the knowledge of surgical anatomy is far much better that before the birth of Christ.

Some of the first vaginal hysterectomies were done by midwives who amputated the prolapsed or inverted puerperal uteri. The often quoted self help vaginal hysterectomy is that done by Faith Howard, a 46 years old peasant woman who performed the operation on herself. Apparently one afternoon as Faith was carrying a heavy load of coal, her uterus prolapsed completely, and, frustrated by its frequent occurrence, she grabbed the offending organ, pulled as hard as possible and cut the whole lot of it with a short knife. There was mighty bleeding which eventually stopped and Faith lived for many years after this with a vasico-vaginal-fistula⁷.

This brave action is evidence enough that sometimes uterine diseases are so disabling and inconveniencing that women themselves wish they would do better without the uterus.

In our study there are instances where hysterectomy was performed on request of the patient. This is interpreted as “social hysterectomy” but in essence we do not know the extent of suffering the woman is experiencing that drives her to request her uterus removed.

Doctors always look for pathological reason rather than incorporating the patients feeling in the decision making process. In this era of evidence-based approach to medicine and improved diagnostic skill with availability of effective healthcare facilities, what Faith has done to herself is a self injustice that is unlikely to be repeated.

Abdominal hysterectomy gained popularity over vaginal hysterectomy due to the ease of the procedure, the magnitude of exposure the surgeon has and the advantage of access the adjacent organs in the pelvis and the abdomen. The adage of old surgeons is” adequate exposure is key to successful surgery”.

During residency training in busy teaching hospitals like George Mukhari hospital, it is easier and convenient for the consultant to teach the abdominal approach in order to cope with heavy workload. Both the Gynaecologists who did hysterectomies, having qualified from the same institution are more in favour of abdominal approach than vaginal approach, this is mainly the effect of their teachers, the habit rather than policy of the institution where they trained.

Vaginal hysterectomy is reserved for the correction of pelvic organ prolapsed. Pelvic organ prolapsed is uncommon in this sample of black population, but it is common in Caucasoid women as a result of poor collagen content in their tissues^{7,10}. Having trained in South Africa during times of racial discrimination, the two gynaecologists had little training in vaginal hysterectomy as they were not allowed to treat the white women.

The age range for hysterectomy is varied and differs from region to region¹³. The age of presentation for surgically amenable condition ranges from paediatric population to geriatric population, however one is inclined to explore all treatment modalities that can preserve an adolescent and nulliparous uterus than it will be for a parous geriatric woman with the same pathology.

A uterus is an organ of reproduction, very rarely will a woman voluntarily opt to have hysterectomy before she conceives, except few anecdotal cases where women

voluntarily prefer to be childless. In agrarian African society, childbearing is one of the diagnostic criteria of a woman that will elevate her to a mother.

The advent of laparoscopy has shifted the trend towards laparoscopic hysterectomy and laparoscopic ally assisted vaginal hysterectomy. In the study by Jaroslav F. Hulka et al, 70% of hysterectomies done in private practice in United States of America are done with an aid of laparoscope¹³. However this trend is not envisaged in developing world like our country due to the expense of the procedure, the workloads and patient population together with the time of presentation and the extent of the disease. The complication rate and the extent of litigation emanating out of the use of laparoscope is another factor that made minimal invasive surgery unpopular in the developing world.

Abdominal versus Vaginal hysterectomy

Most patients in developing world including the Republic of South Africa are still managed by either abdominal or vaginal approach with very few Gynaecologists employing laparoscopic assistance to vaginal hysterectomy.

According to National hospital discharge data in UK, 67.9% of hysterectomies were performed abdominally, 21.7% vaginally and only 10.4% of vaginal hysterectomies were accompanied by laparoscopy between 2000 and 2004.

In five trials reviewed by Cochrane group vaginal hysterectomy resulted in fewer unspecified post operative infections or febrile episodes and more rapid discharge from the hospital and return to normal activity compared with abdominal hysterectomy for similar indications. Bebbasi et al found a significant reduction in pain($P<0.05$) , judged by lower analgesic requirements in the vaginal arm of their study; only 66% of patients required post operative analgesia, compared with 86% in the abdominal arm. Other studies also confirmed reduced pain scores with vaginal approach¹⁷.

The data on duration of surgery is conflicting, with no consistent pattern. It is more dependent on the speed of the surgeon than the procedure per se. the learning curve

of any surgical technique is the product of the number of cases the surgeon has done and the frequency of operation.

The data on urinary and alimentary tract injury are more in favour of abdominal than vaginal hysterectomy; but flawed by their methodological design and the smaller numbers. Today the likely hood of urinary injury in both operations is higher in vaginal surgery than in abdominal surgery if all other confounding factors are removed⁶.

This aspect is not looked at in our study, although our smaller numbers would not be able to yield any meaningful difference.

2.3 Summary of literature review

Internationally, there is still divergence on “pros” and “cons” of hysterectomies. In our age of ‘organ preserving surgery’ hysterectomy, though technically feasible, have decreased in numbers over the last century⁷. The decision to perform hysterectomy should be taken jointly by the patient and her gynaecologist. Factors such as culture, religion and lifestyle can influence this decision.

All hysterectomy procedures- laparoscopic, vaginal, abdominal, total, subtotal and radical approaches are well described in literature and every gynaecologist is free to select, within the limits of ‘good practice of medicine’, the hysterectomy modality if her/his choice. His decision may be influenced by other factors, such as the location of the practice, the instrumentation available and whether the patient can be seen again as an outpatient follow up.

Gynaecology is an ever-changing field with new clinical experience and research broadening our field. Standard safety precautions should never be sacrificed to the benefit of gaining experience or to be at par with fellow colleagues.

As a doctor who took the HIPPOCRATIC OATH, will concur that even the oath itself has undergone several modifications, with some sections such as “I will never give a woman pessary to procure abortion’ are out dated and obsolete. It is our duty to be

on the lookout to the emerging trends in the management of disease and execution of surgical operations.

All important dictum “primum non nocere” – DO NOT HARM.

CHAPTER THREE: METHODODOLOGY

3.1 Study Design

This is a retrospective record review study. It is a quantitative study where data was collected from the files of patients who had hysterectomy in the two practices between 2005 and 2009.

3.2 Study setting and population

The study was carried out in from two Gynaecologists practicing at and adjacent private hospitals, Medi-clinic Medforum hospital and Louis Pasteur hospital in Pretoria central. The two practices are approximately 500m apart and serve the same population. The patients are middle to upper class black women who attend private health care. The majority are employed or have stable source of income and can thus afford medical aid fees or cash for private health services.

The catchment areas for Pretoria practices are mainly from Gauteng, Mpumalanga, North West and Limpopo provinces.

Both practitioners are in full time private practice and see patient who are from the same catchment areas. Since the two Gynaecologists are the products of the same institution, they are likely to belong to the same school of thought as far as the indication for hysterectomy is. The patient population consists of patient who had hysterectomy from 2005 to 2009 in the two practices.

Hysterectomy is one of the major operations done for various gynaecological ailments. In the reports database of the practice software Med Ad 2000 Medimaas, there were five hundreds and ninety seven (597) major operations done over the same period. Major operation refers to any operative procedure where the peritoneal cavity is disrupted and penetrated in order to access the diseased organ to be operated at. This excluded all superficial integumentary surgical procedures done on the vulva, uterine cavity and the vagina.

3.3 Sampling and Sample size.

The sample consists of all patients who had hysterectomy in the two practices over the stated period of 5 years. A purposive sampling was aimed at the records of patients that satisfied the inclusion criteria. The records were extracted from the practice management software MedAd 2000- Medimaas using the SAMA procedure code in the report procedure search engine. The total number of major operations done from the two practices over the same period were five hundreds and ninety seven. This figure excludes caesarean section as it is, for the purpose of this study not regarded as a Gynaecological; operation but classified as an Obstetrical operation.

A sample of two hundreds and twenty two (222) patients were drawn from the two practices. The data from the two practices are pooled together and analysed.

Inclusion criteria

All patients who had hysterectomies done for benign diseases.

Exclusion criteria

Patients who had hysterectomy for malignancy, caesarean hysterectomy and emergency hysterectomies were excluded because there are no alternatives for these conditions.

3.4 Data Collection

Patient's files were identified from practice management software Med Ad 2000 using a procedure code search engine to identify those who underwent hysterectomy. From the files, identified variables were extracted for analysis. The individual patients are the sampling units.

The variables are:

Patient ID is the folder number or account number of the patient. ID is used to draw the patient file which contained other needed information.

AGE is the age of the patient at the time she underwent the hysterectomy procedure. The age is calculated from the year of the operation minus the year the patient was born, which is obtained from the first two digits of the patients' identity number.

Marital status of the patient which is recorded as.

M = Married

S= Single

W= Widowed

D = Divorced

Parity refers to the number of viable births, irrespective of the outcome of birth.

Pre-op Dx is the clinical diagnosis that led to the decision to do hysterectomy on the patient.

Province is the province that the patient gave on her home address.

Ovaries if removed are recorded as **R**, if left behind are recorded as **L**.

A Total of two hundreds and twenty two patients who had elective hysterectomy were pooled from the records of two practices.

3.5 Data Analysis

The data collected was captured into Excel 2010 spreadsheet, cleaned and sorted and then imported into SPSS for analysis. The descriptive statistics of the data collected included the calculation of Mean, Mode, Proportion, Ratios and Standard deviation.

Age: Age range was from 31years to 67years (31-67years)

The mean age was 45 years. This implies that most patients who had hysterectomy were within the reproductive age or premenopausal although by virtue of undergoing hysterectomy their reproductive career was curtailed.

3.6 Ethical considerations.

Prior to commencement of the study, approval to conduct the study was obtained from Medical Research, Ethics and Publication Committee (MREC). Anonymity and confidentiality of the patient was ensured by using the file numbers instead of patient name and any discussion and conclusion about the study will remain confidential. No personal identifiers such as name or address of the subjects were used in order to maintain confidentiality

CHAPTER FOUR: RESULTS

Data Analysis

In this chapter the results of the study are presented after analysis using excel 2010 and SPSS

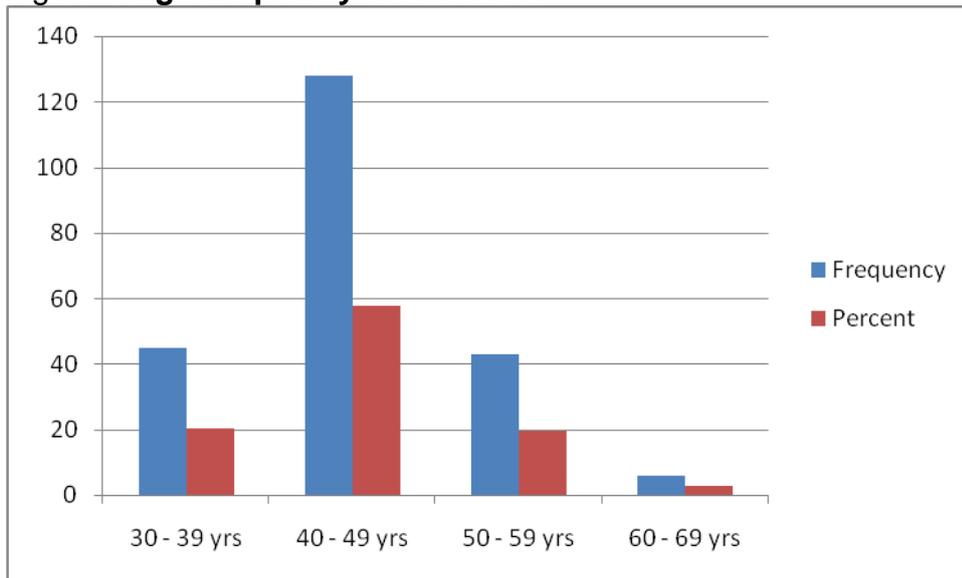
4.1 Demographic characteristics of the sample

The mean age was 45 ± 6.79 years, the age ranged from 31years to 67years. This implies that most patients who had hysterectomy were within the reproductive age or pre-menopausal. There were no women in the active reproductive age below 30years. The elderly post-menopausal women above 60 years were the least in the study population. The majority of the patients were between 40 and 49(57%) years as shown in Figure 1 below.

Table 1, Age Descriptive Statistics

Age Parameters	N	Minimum	Maximum	Mean	Std. Deviation
Value	222	31	67	45.05	6.791

Figure 1 Age frequency distribution



Age

In all age ranges there are more abdominal hysterectomies than vaginal hysterectomies. More than half of the patients was between 40 and 49years old.

4.1.2 Hysterectomies per year

Figure 2. Number of Hysterectomies per year

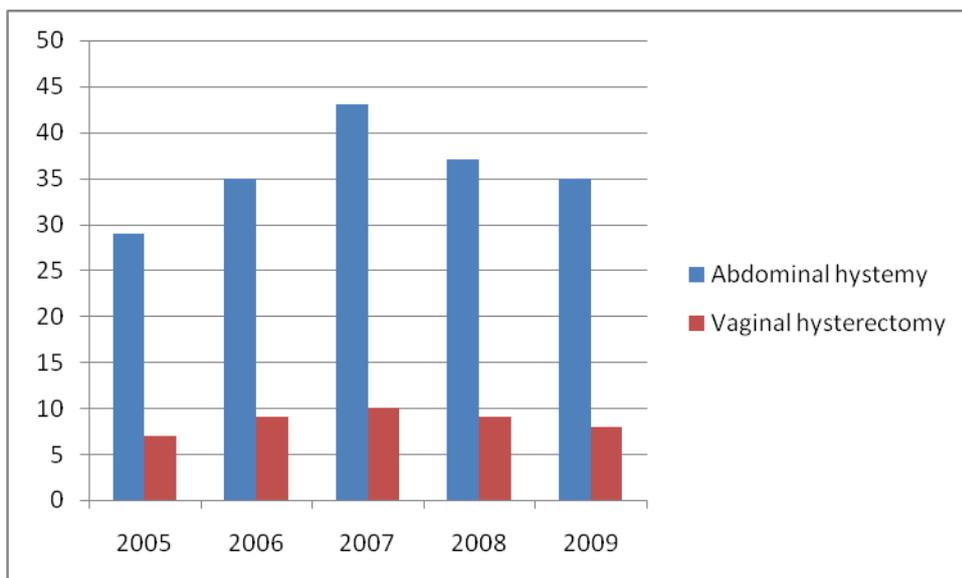
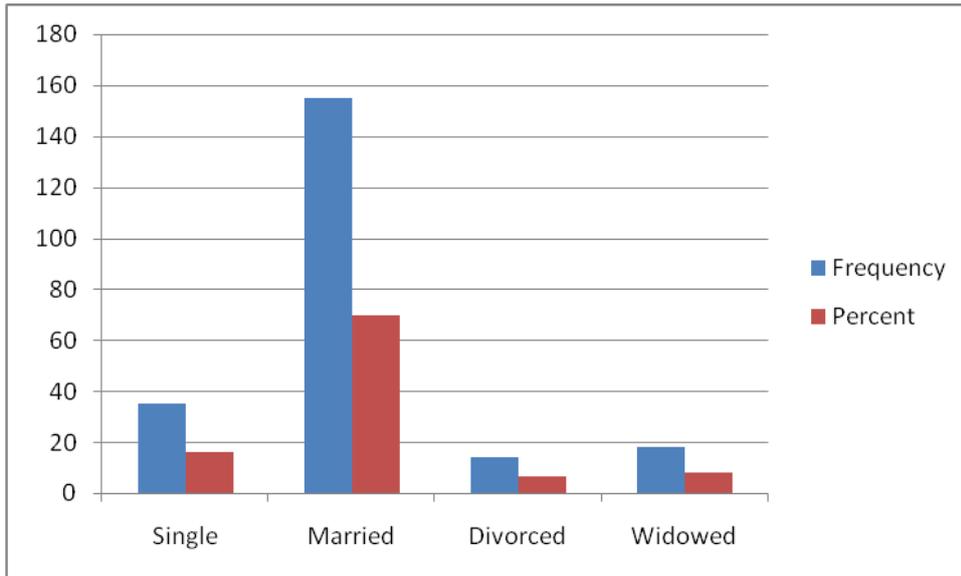


Figure 1 shows the bar chart of abdominal and vaginal hysterectomies done per year from 2005 to 2009. Notice the decline in both procedures after the global economic crisis in 2008.

4.1.3 Marital patient's status

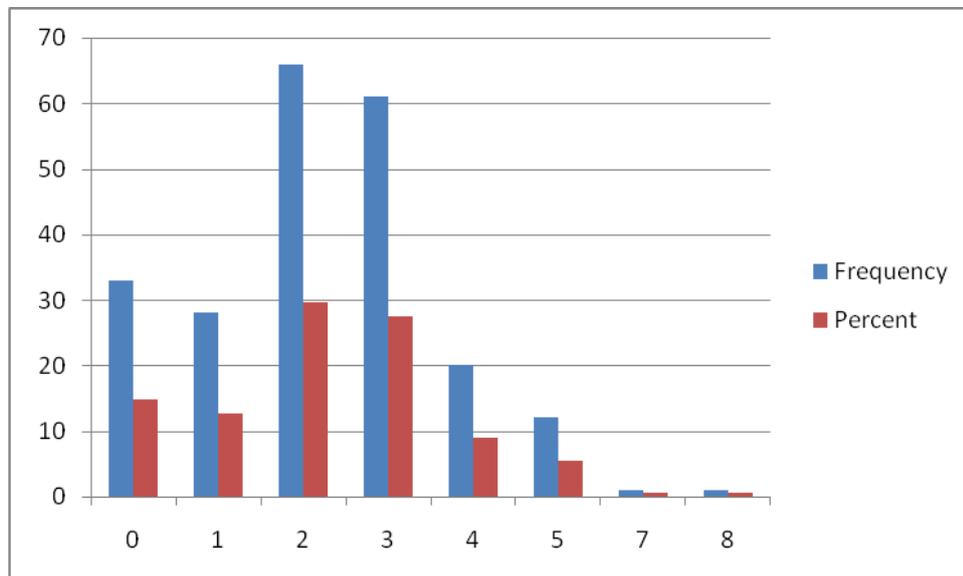
Figure 3 Marital status



Most patients who had hysterectomy were married (69.8%). While the divorced were the least (6.3%) in our study population. From this, one get the true impression that divorce is not as high as it seems in our population.

4.1.4 Parity

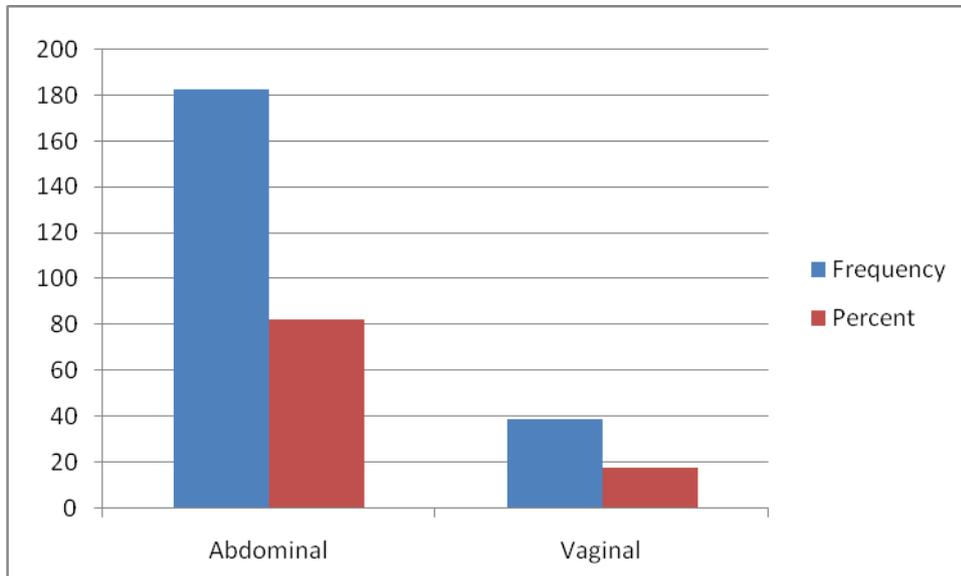
Figure 4 Patients parity frequency



Majority of patients had two or three children. According to UNICEF the South african fertility rate by 2009 was 2.5 births per woman. This is a similar finding from world bank report of 2010.

4.1.5 Types of hysterectomy

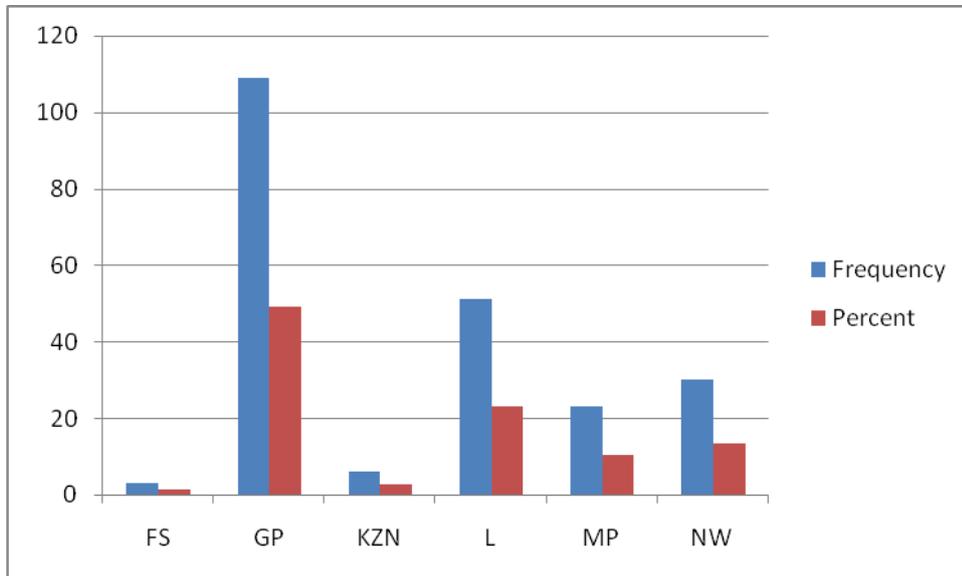
Figure 5 Hysterectomy frequencies



There were more abdominal hysterectomies (82.4%) than vaginal hysterectomies (17.6%) done over the same period of five years.

4.1.6 Province of residence.

Figure 6. Province of residence of patients



Majority of patients were from Gauteng Province (49.1%) while and the least were from Free State Province (2.7%). South Africa has nine provinces. Of note in the figure above is the absence of women from three provinces which are Eastern Cape, Western Cape and Northern Cape. From figure 6 above, women from the provinces which have a medical school and teaching hospitals are in the minority while those provinces without medical school and the teaching hospitals are in the majority. It can be concluded that Gauteng province having three medical schools, is providing service to women from other provinces without medical schools like North West Province, Mpumalanga and Limpopo province.

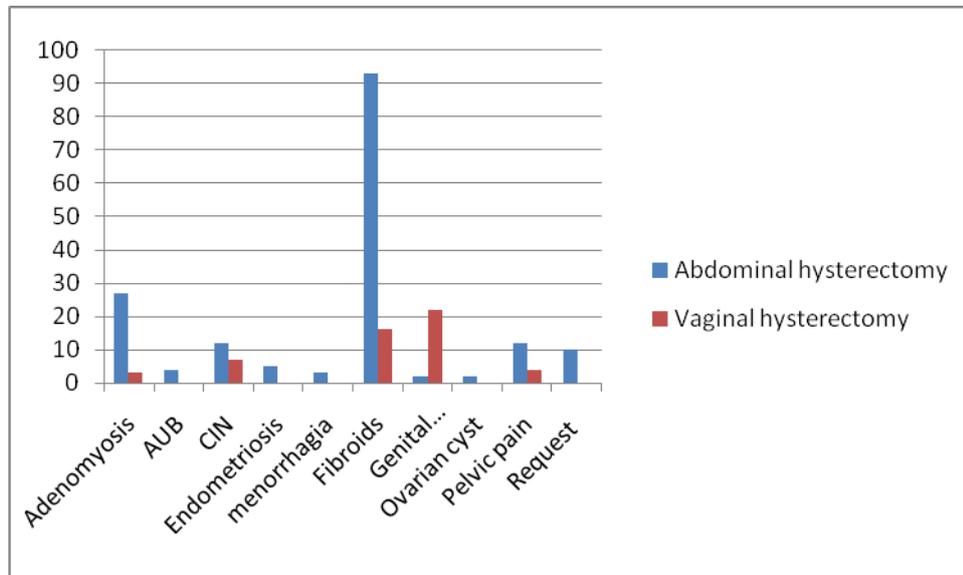
4.1.7: Diseases profile

Table 2. Disease profile of patients

Disease	Frequency	Percentage	Cumulative percent
Adenomyosis	30	13.5	13.5
AUB	7	3.2	16.7
CIN	19	8.5	25.2
Endometriosis	5	2.3	27.5
Fibroids	109	49.1	76.6
Genital prolapse	21	9.4	86.0
Menorrhagia	3	1.4	87.4
Ovarian cyst	2	0,9	88.3
Pelvic pain	16	7.2	95.5
Request	10	4.5	100.0

Fibroids are the most common indication for hysterectomy. This finding is fully explored in chapter 5 of the report.

Figure 7 Association between disease and type of hysterectomy



The most common indication for abdominal hysterectomy is fibroids while genital prolapse is the most common indication for vaginal hysterectomy.

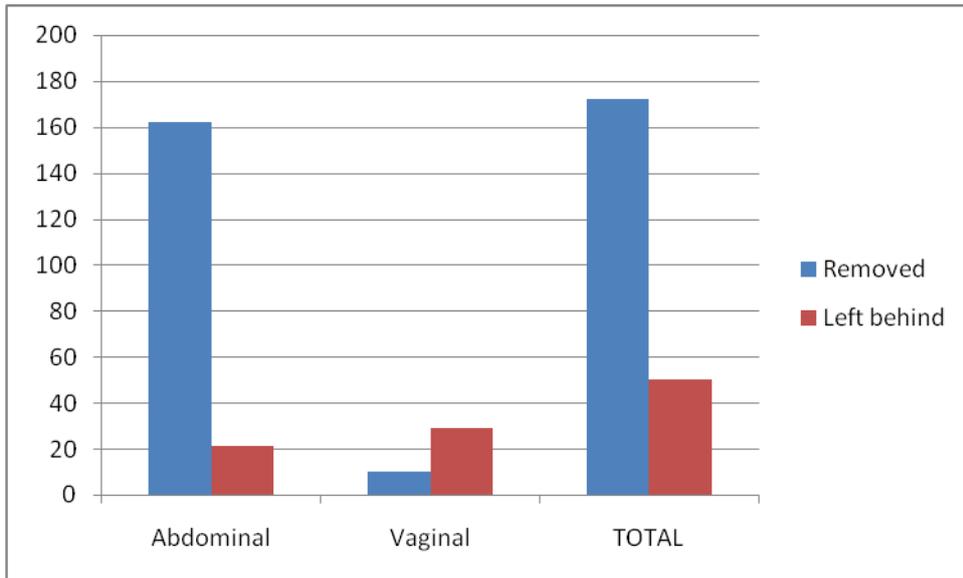
4.1.9 Management of ovaries at hysterectomy

Table 3. Ovarian management during abdominal and vaginal hysterectomy

			OVARIES	
			Left	Removed
Procedure	Abdominal	Count	21	162
		% within Procedure	11.5%	88.5%
	Vaginal	Count	29	10
		% within Procedure	74.4%	25.6%
Total		Count	50	172
		% within Procedure	22.5%	77.5%

The table above shows an already known accepted practice that more ovaries will be removed at abdominal hysterectomy than at vaginal hysterectomy¹⁷. This trend persists even in small study by only two operators. As is and was an expected finding, conducting larger studies will be a waste of resource in reinventing the wheel. Agreement to other studies in this finding is a positive testimonial that the researcher and his colleague are practicing in line with the rest of their peers in Gynaecology.

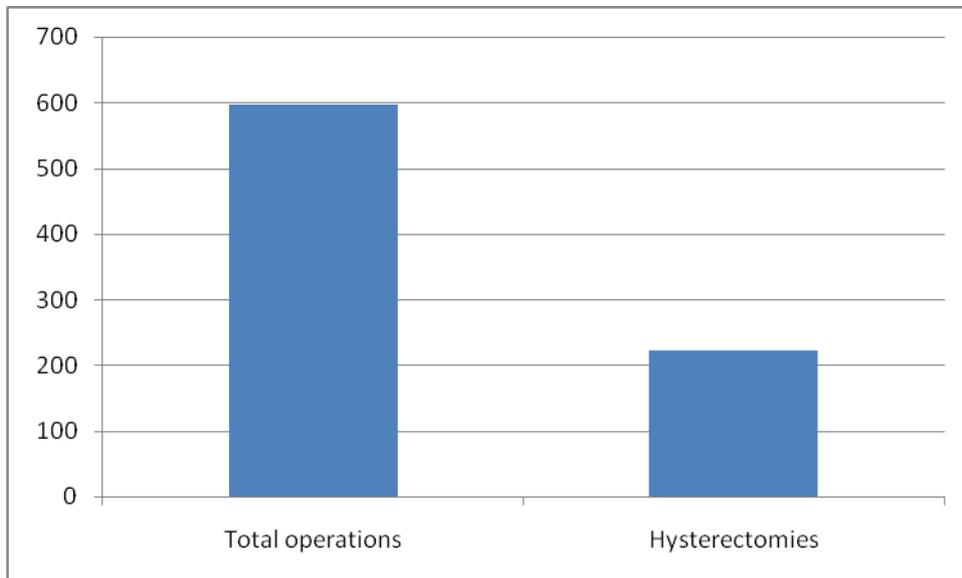
Figure 8. Ovarian management during abdominal and vaginal hysterectomy



More ovaries are removed at abdominal hysterectomy than at vaginal hysterectomy.

The difficulty in performing oophorectomy at vaginal oophorectomy together with the increase in complication rate of vaginal oophorectomy is deterrent to many practicing gynaecologists to oophorectomy at vaginal hysterectomy. However the influence of prior learning and teaching at residency and personal habit cannot be ruled out.

Figure 9. **Proportion of hysterectomies over total major Gynaecological operations**



Both combined abdominal and vaginal hysterectomies made 37.2% of all major gynaecological operations performed in the two practices over the period of five years.

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1, Discussion

5.1.1 Number of hysterectomies per year

The two practices are already established practices, by 2009 each one was already over five years old. By that time they were already established practice with stable referrals and reputation.

The practices had a total of 597 major Gynaecological operations done over the period of five years. Among these 222 were hysterectomies. The two methods of performing hysterectomy were transabdominal hysterectomy and transvaginal hysterectomy.

There are varying rates of hysterectomy among regions with sixfold difference amongst the developed countries with comparable resources, and as much as five fold difference within the same geographical area and among gynaecologists within the same hospital¹⁹.

In England and Wales the estimated rate of hysterectomy is 28 per 10 000 women per annum. In the United States of America, a woman's lifetime risk of hysterectomy is 25%, which compares with a much lower risk of 10.4% in the United Kingdom^{1,16}. This study revealed a 37.2% of all major gynaecological operations to be hysterectomies. This seems much higher than other areas but if all confounders like the sample size and the settings are adjusted, the figure is likely to be comparable with other countries with emerging economies.

From the study there is emergence increase in number of hysterectomies from 2005 to 2007. This pattern of increase occurred in both abdominal and vaginal hysterectomies performed. Vaginal hysterectomy constituted on average 23.2% of abdominal hysterectomies in the first three years.

Then from 2008 to 2009 a steady decline in the number of operations is observed. In those two years none of the gynaecologist had a long leave nor reduced hours of work. There is no scientific reason to account for this decline but few speculative assumptions can better explain the reduction in the number of patients who had hysterectomy in those two years.

Below are some of the most probable reasons for the decline in the number of hysterectomies performed..

i. Global economic melt-down

The world experienced an economic decline which affected all sectors in 2008. The medical and health sector were not spared by this global recession.

The global recession in 2008 had deleterious effect on the economy of the world including the economy of the Republic of South Africa. Most people lost jobs through retrenchments and closing down of some companies. Those who had their jobs had to prioritize on optional benefits to take from their employers. For some, the medical aid was an optional benefit which was sacrificed in order to have extra money to meet more important needs of the family like school, food, house bond, rates and taxes and life policies. In deed from observation in private practice we started to see professional people like teachers and nurses paying cash. This was a logical choice as they were young with families that are relatively healthy.

ii. Increase in medical fees

A lot happened in the medical aid industry around 2008; with the medical aid resistant to proposed increase in tariffs and the healthcare providers through their various representatives negotiating for higher percentage increase. This was a protracted debate that ended in the parties going to court for settlement

In 2008 South African Medical Association took the Department of Health to court over the prescribed fees and won the case with costs. Medical fees increased substantially to the level where fewer people could afford private fees. This has reduced the number of people who previously could afford to pay cash for the

operation like hysterectomy. The state hospitals had to cater for the patients who shifted from private to state hospitals. This increased the workload to state health workers to such extent that they protested on hours of work and remuneration to the point where they engaged in industrial actions in demand for better wages and Occupational specific dispensation (OSD).

As no one factor cannot be seen in isolation, the increase in medical costs was precipitated by the global economic recession discussed above.

iii. Increase in numbers of Gynaecologists in the vicinity

Every year there are two graduations from the seven medical Universities, this produce graduates and some of them join the private practice. Pretoria is the only city in South Africa with two medical universities training Gynaecologists. This led to an increase in influx of private gynaecologists in and around Pretoria.

Whenever a new practice is opened in the vicinity, it definitely takes a slice from the same pie that the rest were sharing. Although one is not in a position to know the exact number of new practices in the vicinity, there were few new practices to share the same population of patients.

The picture in Figure 1 is predictive of a gloomy future for private practice. Should the same trend persist for few more years, the future of private medicine in this country will be in jeopardy. Taking the economic circumstances of our country into consideration, one can only be optimistic enough to wish that it does not occur but for certain if there is improvement in the numbers, it will never be as good as it was in 2007.

Many more reasons may be present but not evident at this stage. A proper practice audit of many practices may shed light into the validity of assumptions given above.

5.1.2 Age distribution of the patients

In 222 study subjects the mean age was 35.05 years. The range is between 31 to 67years. This may imply that most patients who had hysterectomy in private practice

are the middle class women who can afford private medical fees. This age group are the women well in the reproductive age and most have probably completed their families.

The age group between 40 and 49 years comprises of almost half of the women (Figure 1). This are the women beyond the childbearing age as the rate of chromosomal anomalies and foetal losses increase in women who fall pregnant beyond age 40years, the most common chromosomal anomalies being trisomies13, 18, and 21.

In the modern days the goal of child bearing is to have a healthy baby and be able to offer good life and education to ensure brighter future for the baby. This implies that the priority is given to the quality of a baby as opposed to quantity of babies. Thus in figure 3 we find that the para 2 and para 3 make more than 50% of the study population. This is contrary to the trend during the baby boomers where the average parity was Para 5 or more 6, ¹⁴.

The findings in this study are supported by Dicker R C et al (1997) who found that 65% of hysterectomies in his study occurred in the reproductive age group between 15 and 44 years¹¹. As in our case fibroids were the leading diagnosis comprising approximately one third of the cases, while the other leading diagnosis, in order of frequency, included abnormal uterine bleeding, pelvic pain, cervical intraepithelial neoplasia, pelvic organ prolapse and endometriosis.

The women in the retirement age comprise the least to have the procedure done. Several reasons may be postulated for their scarcity in the study population. It may be that most women will have had their uteruses removed in their forties such that by the time they reach 60 years, very few develop ailments that need hysterectomy as the modality of treatment, or do not have sufficient funds to enable them to have the procedure done.

Women above 60years will thus resort to public facilities for diseases that will require hysterectomy as a mode of treatment. Fibroids are estrogens dependant tumours; they stop growing or regress after menopause. The post- menopausal women will

not present with symptoms due to fibroids for surgery. With the migrant labour system of the country most pensioners will be found outside the cities like Pretoria, in the rural areas where the nearest facilities will be the local hospitals and clinics, while the cities like Pretoria is populated by active working age group with means and freedom to choose between private and public health. The 2,7% women over 60years (Figure 1) are the fortunate few whose children either had them covered on their medical aids or children are able enough to afford to pay private fees for their parents.

The first proposition was found by Manyonda that 60% of women in USA will have had their uterus removed by the time they reach age 60²⁵. The actual figures in our settings are not yet available but may not differ much from those from the developed world.

5.1.3 Marital status

Most patients who had hysterectomy were married (69.8%). While the divorced were the least (6.3%) in our study population. Table 2 shows that 69.8% of women who had hysterectomy were married. These findings contradict the long held belief that men have negative influence on their wives' decision to undergo hysterectomy¹⁵. In his paper Dudgeon discussed in details the effects of male partners on the reproductive health of their wives as fathers of their children at macro-level, he does acknowledge the emergence of a paradigm shift to the better post Cairo and Beijing women conferences. There seems to be less male dominance over females and liberalization of traditional, social and religious norms in countries that previously disadvantaged the women. The establishment of various reproductive health initiatives, for women in various social structures such as politics, religious and communities, which incorporated men's issues into their program, has brought a rapid change in attitudes towards women's rights and preservation of their dignity and respect by the opposite gender²³.

Women in this study represent a bias sample of the women in South Africa. It selected the already emancipated cohort, the learned, professionals and the able women. It is the traditional and the marginalized women living in the remote rural

communities where state laws have least effect and where the state is least accountable that is still subservient to the patriarchal men. Some women in remote communities may explicitly reject the concept of “rights” or it may be difficult for marginalised women to understand and operationalize the concept on “rights”¹⁵.

Reproduction lies in the intersection of group of interested parties, so is the reproductive organs like the uterus. These interested parties are families, household, ethnic, religious groups, state and the international communities. It is not uncommon for a young woman with a disease whose treatment is hysterectomy to request sometimes to discuss the issues with the in-laws, parents and the husband before she can give consent to go ahead with the operation. A study that incorporates unemployed, rural housewives, whose main responsibility is to look after the husbands elderly parents and obey the in-laws without question will shed light into the full extend of freedom of women on consenting to hysterectomy.

Figures 3 in this study show that women who have their husband had more operations to remove their uteruses than those who did not have their husbands due to death, divorce or never married. This is contrary to the medical anthropological studies on reproductive health’s finding that men have negative influence on reproductive health of women.

It is our experience that most husbands are very supportive and co operative when their spouses have to decide on an operation even if the operation may affect reproductive and sexual rights of the couple. The spouses are the ones that sacrifice to look after the children when the mother is in hospital, they are mostly the main members of the medical aid used to have hysterectomy done and they give their partners support by hospital visitation and helping with house duties during the period of convalescence. To most husbands the benefits of hysterectomy far outweighs the perceived impairment on sexual life of the couple.

Feminists from developed and developing countries have extended the examination of men’s involvement in reproductive health by critiquing the patriarchal power structures in many societies that restrict women’s autonomy and access to resources. They attribute such constrains to asymmetry in pay and work

opportunities and to legal system that allow domestic violence and male dominance over female. With the advent of gender equality and improvement of the social status of women, the negative influence of spouses seems to have disappeared as shown in our study where 69.8 % of married women had hysterectomy and 14.9% of women were nulliparous.

In the post 1994 birth of democracy and liberalization of laws governing consent to operation in South Africa, a husband is no longer required to give consent if his wife needs to have an operation on her reproductive organ even if the operation may interfere with the reproductive capability of the couple. Operation like hysterectomy and sterilization can be done without involvement of the husband, but for humanitarian purpose, a reasonable woman will involve her partner from the beginning of the consultation right through the execution of hysterectomy.

More prospective multi-centered studies are needed on Africans to assess the influence of men on women's ability to consent to operation on their reproductive organs. Particular attention should be given to South African black population to assess the effect of post-apartheid women empowerment initiatives on their reproductive health, as opposed to pre 1994 where the concept of patriarchy, men's systemic domination of key structural resources and positions were institutionalized at political, legal and medical levels.

This is partly supported by figure 3 where it was evident that most women who had hysterectomy having only nil, one or two children were married. This may imply that the husband does not have any negative influence on the wife's consent to undergo hysterectomy procedure. From this non-randomised retrospective study, one is unable to draw a valid scientific conclusion due to the design and the size of the study. This finding contradicts earlier medical anthropological studies on the issue of men's influence on their spouse's health and reproductive rights¹⁵.

The study came up with a picture of a change in reproductive behaviour and beliefs with the African social and cultural setting. The women's role as a reproductive being is no longer given high priority as shown in figure 3. where 14.9% of women who had hysterectomy had no children. The reason for nulliparity may be multiple,

ranging from voluntary infertility to involuntary infertility. With fibroids being the commonest indication for hysterectomy and fibroids known to cause infertility, involuntary infertility seems to be most plausible explanation for nulliparous women to have their uteruses removed.

The number of children the woman has does not seem to deter the woman to have her uterus removed. The nature and severity of illness are the major determinants whether the woman will consent to hysterectomy. In this study 14.9% of women who had hysterectomy were para zero. One is unable to tell whether the nulliparity is due to the disease that led to hysterectomy or due to other factor.

However it is now accepted that the average parity in black population has dropped to 2 and 3. More than 50% of women who had hysterectomy were para 2 and para 3 and high parity 5 or more are becoming less and less as parity increases. (Figure 4). This is supported by World Bank Development indicators, which show a gradual decline in the South African fertility rate. By 2009 the estimated fertility rate in South Africa was 2.5 births per woman. Statistics South Africa also found a decline in fertility rate between 2001 and 2009 with an average of 2.5 births per woman.

François De Veliers (1982) in his study on ideal family size in rural Tswana population, found that there is an increasing trend to consider a larger family with increasing age²⁵. The mean number of children perceived to be ideal in a cohort of 350 men and women was 4 children. Although his study was a questionnaire study on perceived ideal family size, it reflected the actual family size in the rural African population at that time. There is a time lag of three decades between De Veliers's study and ours and the reduction in family size of 1.5 births per woman.

From our findings and De Veliers's finding there seems to be a decline in the birth rate of family size among Africans. The study disagrees with the traditional impression that black people want a larger family. A comparative study with the white counterpart will help to establish whether there is a real or perceived difference between the groups but from the findings in this study a plausible assumption is that there will be no difference between racial groups in similar economic and social clusters.

Concordance with World Bank is enough evidence that there is no difference in parity between Africans other population groups in South Africa.

5.1.4 Types of hysterectomy

Abdominal versus Vaginal hysterectomy

In the selection and recommendation of an operative procedure for hysterectomy, there is no place for surgical histrionics or dogmatic pronouncements. In most patients the route for hysterectomy, either vaginal or abdominal, is dictated by the diagnosis and specific clinical findings. As a results, patients undergoing abdominal hysterectomy and those undergoing vaginal hysterectomy are generally not comparable.

Vaginal hysterectomy is suitable when the indication for surgery is vaginal relaxation or uterine descensus, in that the entire procedure can be achieved through one approach. The vaginal approach is also suitable for women who had at least one vaginal delivery and the uterus small enough to be delivered through the vaginal canal, when the traction on the cervix results in sufficient descent to allow reasonable access to the vaginal fornices, the uterine vessel and the supporting ligaments.

Abdominal hysterectomy on the other hand, is suited for those conditions associated with decreased uterine mobility, pelvic adhesions and scarring. Adequate exploration of the abdominal cavity and the management of malignant diseases always require the abdominal route.

It should be the intention of the gynaecologist to gain by personal experience equal confidence in his or her abilities and the results that can be expected by both transabdominal and vaginal route for the intended operation. In the course of evaluating each patient's problem, he or she should choose the approach that seems to be clearly in the best interest of the patient²².

The indications for abdominal hysterectomy may be the contra-indications for vaginal hysterectomy, for instance, the presence of a suspicious adnexal mass, uterine

immobility and large uterine fibroids coupled with lack of operator experience, enthusiasm and confidence will favour abdominal approach than vaginal approach.

It is widely accepted that vaginal hysterectomy is superior to abdominal hysterectomy route, yet the reality is that almost 25-30% of hysterectomies for benign conditions are done through vaginal route. The same trend is found in this study as seen in figure 2. This trend may reflect experience, habit and the teaching of gynaecologists during their residency at tertiary hospitals. Moreover recent research by Mayonda has suggested that vaginal hysterectomy, especially in younger women with minimal or no prolapsed, is associated with higher rates of complications compared with abdominal hysterectomy¹⁵.

These factors deter the surgeons from vaginal route in order to avoid unnecessary complications and litigations. This view is contrary to the view advocated by David Nichols, a famous chief pelvic surgeon in Massachusetts, who is of the opinion that there is no need for abdominal approach for hysterectomy merely on the basis of lack of prolapse²². This difference in opinion may reflect the difference in the experience and patient population as the two worked on Negroids and Caucasoids respectively.

From this study there were more abdominal hysterectomies (82.4%) than vaginal hysterectomies (17.6%) done over the same period of five years. (Figure 2) What influenced this is not clearly known but the nature of dominant pathology which is large multi-fibroid uterus definitely had a role to play in favour of abdominal hysterectomy. Most women with fibroids uterus present very late with large multiple fibroid not amenable to vaginal hysterectomy. The surgeon in this case has no option but to resort to abdominal hysterectomy as the most suitable route of surgical extirpation of the uterus.

Vaginal hysterectomy is mostly done for genital prolapsed which is not a common condition in the African population. The presence of large myomatous uterus may correct a prolapsed uterus to be a totally pelvic organ, or mask an obvious prolapsed of the uterus. For safety of the procedure, to improve quality of life and permanently cure the woman of the disease, one needs adequate exposure to enable complete

pelvic assessment and treating associated morbidity like adhesion and endometriosis. This is not possible with vaginal approach but can adequately be achieved through abdominal route.

Nadine Zekam did a survey of 1647 gynaecologists with 51.2% response rate. Only 17% of gynaecologists preferred vaginal hysterectomy in a patient without prolapse. Most of them had no scientific literature backing for their preferences nor were aware of any data to support their preferences¹⁸.

The same findings were arrived at by Manyonda on African women¹⁵. However the data precedes the knowledge of this data that strongly supports our practice of gynaecology. This study indirectly serves as self audit of the practices and came out with valuable information to use in an attempt to better our professional practice and conduct.

5.1.5 Province of residence.

Majority of patients were from Gauteng province (49.1%) while the least were from Free State province (2.7%). The distance from Pretoria to the province and the availability of resources in the province seems to have played a role in the referral pattern. Pretoria by virtue of being in Gauteng would probably attract more patients as Gauteng is better resourced than the neighbouring provinces. Most Gauteng patients in the study are women from nearby suburbs and townships. Most are referred by general practitioners practicing near their places of residences while others are self referred or referred by friends and relatives.

The robust marketing system of the researcher and the easy access to internet by Gauteng people has increased the self referral system to our practice and extended recruitment from other provinces. Since the researcher enlisted his interactive website www.drmahapa.co.za to multiple search engines including Google and Yahoo in 2004, the number of electronic bookings and the hits count on the website has increased. The reason for Gauteng dominance is purely on the basis of proximity and accessibility.

Women from Limpopo province follow those from Gauteng in numbers despite Limpopo province being further than North West and Mpumalanga provinces. Among factor that can explain this is because the principal researcher is from Limpopo province and get some referrals from general practitioners from his home province. The language also may have played a role as patient better explain their problems in their mother tongue and are comfortable and understand better if consultation is conducted through the medium that they understand most. The language hypothesis is partly supported by the women from North West province being more than Mpumalanga province despite both provinces situated almost equidistant from Pretoria.

North West province and Mpumalanga province have 13, 5% and 10.4% women who had hysterectomy in the two practices over the chosen period of five years. The most reasonable explanation is that both provinces have no nearby teaching tertiary facilities and traditionally refer their patients to access health care in Gauteng which have three medical schools with teaching hospitals and training for specialists. Secondly the two provinces border Gauteng on the west and east, and Pretoria being a capital city where most government offices are situated, transport to Pretoria is much easier than transport to their respective provincial capital cities which are Mafikeng and Mbombela respectively.

KwaZulu-Natal (KZN) province and Free State (FS) province have the least women, 2.7% and 1.4% respectively. (Figure 3). Again an issue of availability of resources in the provinces and the distance from Pretoria seems to have had an effect on the number of patients from provinces which are far from Pretoria. KZN and FS both have their respective tertiary teaching hospitals attached to medical schools, which serve their population.

It has become clearly evident in this study that there were no women from Eastern Cape, Western Cape and Northern Cape Provinces. These are the predominantly provinces that utilizes the Western Cape Province health resources as their nearest most resourced province.

Hysterectomy rates widely vary from region to region with six fold difference among the western countries, there is also as much as five-fold variation among gynaecologist with the same geographical area and even within the same hospital. ^{7, 9, 15}. As this study was not multicentred, the varying provincial variation can mainly be attributable to the location of the study.

The residential province was extracted from the residential address given on records, this may not necessarily mean the province of origin of the patient but for the purpose of the study, it suffice to use the residential address as the “ domicile “ of the patient.

5.1.6: Diseases profile

The clinical presentations of women who need operative treatment differ from patient to patient. The approach to treatment for particular condition will differ from doctor to doctor. There were ten categories of pre-surgical clinical diagnosis that led to hysterectomy in our study. The frequency of presentation differs according to the prevalence of the condition in our population. The clinical diagnosis as made before surgery is assumed to be correct and not refuted by histological diagnosis.

Ten categories of disease profiles were found from records. Nine of them are actual disease categories but the tenth was found to be those patients who had hysterectomy without any evidence of disease. This category comprises of those women who come requesting hysterectomy for reasons that would not academically require hysterectomy, but by the nature of practice, persistence and reasons advanced by the patient, the Gynaecologist ends up performing hysterectomy on them. These women are categorised as women who had hysterectomy on “request”. This is not a new concept in private gynaecology. The private Gynaecology practice has two wings, the professional wing which obeys and fulfils the ethical and professional part of the practice and the business with which utilizes the business principles which are client satisfaction and maximizing of profit.

Malose Billy Ledwaba an experienced business consultant in Gauteng said, “ *If you want to succeed in business- forget about ethics*” (personal communication 2009). If

one sticks to ethics and academic standards and denies these group of patients the type of service they request, they will simply go to the competing Gynaecologist nearby, who may gladly offer the service at a reasonable fee to them, and ethical gynaecologist by so doing loses business and profit.

These women who had hysterectomy on request comprised 4.5% of the study population. They exceed in number those patients who came with common genuine diseases like endometriosis (2, 3%) and abnormal uterine bleeding (3.2). This supports the notion held by the medical aids that private practice is to some extent driven by clients' need than provider assessment of needs. In any way, the client in business is always right.

This kind of client driven clinical practice rather than provider driven evidence based medicine has its own pros and cons. The client's needs may be uninformed social fashion with no health benefits rather than aesthetic fashion that may be prevalent at that era in that age group. On the other hand the provider's motive for falling in the trap may be partially financial and partially humanitarian without due consideration to ethical and legal consequences that may arise out of a complication following the surgery.

More prospective randomised controlled studies are needed to explore the concept of hysterectomy on request and assess the extent of this type of practice in private practice settings. A survey of Gynaecologists in private practice to see to what extent this is practiced can be a good and informative study that may affect policy and management of women and their needs.

In the South African setting, it may not be improper as other potentially "sinful" policies like abortion on request are enshrined in the country's constitution. That may be what democracy is all about. To do what you want, as long as you do not interfere with the right of a fellow human being.

Fibroids are benign tumors of uterine corpus. They are the most common tumors of the female genital system. They are called fibroids due to the fibrous nature of the tumour on histological examination. The correct name for the tumour is leiomyoma.

In our study the fibroids made 49.1 % of all conditions that led to hysterectomy. Fibroids constitute 34% of the tumors of the uterus in general¹⁵. The increase in our study may be due to regional variation added to the fact that fibroids are known to be found more in Negroids than Caucasoids.

The aetiology of fibroids remains unknown. As small fibroids are asymptomatic, the patients in our study presented mainly with large symptomatic fibroids that necessitated surgical extirpation of the uterus. There is no medical necessity to do hysterectomy or asymptomatic fibroids less than 12 gestational weeks²². Accepted clinical practice is to do myomectomy (removal of fibroids) if the uterine size is less than that of 12weeks pregnant size. But our patients mostly presents late with large fibroids not amendable to myomectomy.

The most frequent presenting symptoms of fibroids are heavy menstrual flow, pain from degenerative changes and torsion of pedunculated fibroids. In patients that had vaginal hysterectomy, fibroid is second to genital prolapsed, which is the most common indication for vagina hysterectomy. Genital prolapse is common in women who had previous vaginal deliveries. The aetiology is the disruption in the muscular architecture of the levator plate together with pelvic denervation that occurs during vaginal delivery, especially when the baby is more than 4kg and labour is prolonged or assisted.

Because fibroids generally stabilize or regress after menopause, hysterectomy for fibroids in the postmenopausal woman is rare. Medical therapy for fibroids, which is recommended for fibroids between 14 and 18 gestational weeks size is expensive and the results are disappointing. In our setting the practice is to recourse to hysterectomy or myomectomy if the fibroids are more than 12 gestational week's size.

Adenomyosis follow fibroids in frequency; both adenomyosis and fibroids have almost similar presenting symptoms of heavy menstrual bleeding with clots. The distinguishing feature in ultrasonography is lack of distinct tumor as in fibroids. The adenomyotic uterus is homogeneously enlarged without pain. It is the frequent cause of infertility. It may not be surprising to find that 14.9% patients who are Para

zero in the study were having adenomyosis. The cause of adenomyosis is still speculative and several theories have been proposed towards the cause thereof.

Cervical Intraepithelial Neoplasia (CIN) is the pre-invasive stage of cancer of the cervix. Cancer of the cervix is the commonest cancer of the female genital system. It is a preventable form of cancer if regular pap smears are done yearly to detect pre cancerous lesions and treatment instituted before it becomes an invasive cancer.

In this study, pre cancerous lesions of the cervix known as CIN was 8.5%, it is comparable to painful conditions of the pelvis which was 7.2%. As most patients are referred patients, this figure shows that the general practitioners are doing a great job in the screening for cancer of the cervix with pap smears.

The smaller categories which have less patients are Abnormal Uterine Bleeding (AUB) 3.2%, Endometriosis 2.3% and Ovarian cyst 0.9% respectively. Plausible explanation for few numbers is that there are more cost effective treatment modalities for these conditions. Abnormal uterine bleeding here refers to any irregular heavy menses without any pathological cause also known as dysfunctional uterine bleeding and metrorrhagia metropathica. This is mostly treated medically with tablets, endometrial ablative techniques and levonogestrel releasing intrauterine system with good response.

Endometriosis is mainly treated by laparoscopic ablation or medically with hormonal manipulation with excellent response. Hysterectomy is the last resort in the treatment of endometriosis. In this study all patients who had hysterectomy for endometriosis were done abdominal hysterectomy, as it is our policy driven by experience that endometriosis of such severity to warrant surgical management has satellite implants that will also need to be attended to. Vaginal hysterectomy is thus not suitable operation for endometriosis.

Ovarian cysts rarely requires hysterectomy as management modality. In most cases of ovarian hysterectomy, it is done on request of the patient due to lack of knowledge of pelvic anatomy. The ever compliant gynaecologist kindly agrees to remove the uterus as a fulfilment to the business wing of his practice as discussed under

hysterectomy on request. More often there is a coexisting pathology that will need to be attended to together with an ovarian cyst.

5.1.6 Disease and the type of hysterectomy

The type of pathology diagnosed pre-surgically and the type of hysterectomy done for that pathology were analysed and graphically presented in figure 7. Concordance between clinical diagnosis and post surgical histological diagnosis was not analyzed. The most common indication for abdominal hysterectomy is fibroids while genital prolapse is the most common indication for vaginal hysterectomy. The size and the associated pathology of fibroid, such as adhesions are the compelling factors that lead to abdominal hysterectomy. Only small uteruses with fibroids can be removed vaginally provided there is concomitant genital prolapse. The prolapse makes it easier to remove the uterus vaginally. From figure 4, we observe that fibroid uteruses that were removed vaginally are the second to de novo genital prolapse in numbers. This is due to the prevalence of prolapsed genitals in women after vaginal deliveries.

Among those who had vaginal hysterectomy, genital prolapse was the highest. One observes the discrepancy between vaginal and abdominal hysterectomy in patients with genital prolapse. Genital prolapse is rarely treated by abdominal route except for the treatment of associate pathology like ovarian tumors.

As stated under the discussion for fibroid uterus, most patients with adenomyosis were treated by abdominal hysterectomy due to the size of the uterus at presentation and concurrent management of associated pathology.

Genital prolapsed was the most common indication for vaginal hysterectomy (Figure 7). This is so irrespective of known racial difference in genital prolapsed. The incidence of genital prolapse in black Africans is far less than in the white counterpart¹⁵. This may add to other alluded factors that led to the relative fewer vaginal hysterectomies in black population. This is supported extensively by literature.

There is an individual and racial differences in the incidence of genital prolapse. Geldenhuys correctly attributed this to the to the connective tissue strength, as noted

by the relative infrequency of genital prolapse in black women, who sustained extensive lacerations from unattended home deliveries in rural Africa. After studying Bantus in South Africa, it was that not so much environmental that influenced the occurrence of prolapse but rather the inherent racial constitutional factors, such as size and the form of the pelvis, quality of connective tissue pelvic support and tendency to fibrosis”¹⁵.

This racial difference was for the first time reported by F. G. Geldenhuys of the University of Pretoria, South Africa in 1950. This is an interesting scientific finding emanating out racism that was endemic in the country during those days. He reported the incidence in genital prolapsed of 6,5 and 0,6 percent between whites and Bantus as he puts it.

However his study though supported by other workers is doomed to suffer methodological flaws as at those times, the two racial groups were not treated the same. A repeat of the same study under the present conditions where there is no racial discrimination is likely to shed better light into the concept of racial differences in the occurrence of prolapse.

5.1.7 Ovaries and their management at hysterectomy

From theoretical standpoint, the desirability of ovarian removal at the time of vaginal hysterectomy should be considered by the surgeon by the same criteria as would be for abdominal hysterectomy. Because ovaries are not technically as readily available during a vaginal hysterectomy as during abdominal hysterectomy, there is a significantly decreased frequency of ovarian removal on prophylactic basis when hysterectomy is accomplished by vaginal approach. This is clearly evidenced in this study by relatively few ovaries removed at vaginal hysterectomy (25.6%) as compared to ovaries removed at abdominal hysterectomy (88.5%).

When evaluating the indication for surgical removal of the uterus in women, the surgeon should consider seriously and critically whether the effect of removing ovaries justifies the relative small chances that the individual may in future develop a neoplasm of the ovary if he ovaries are preserved.

The management of ovaries at hysterectomy depends on the indication for hysterectomy, the age of the patient and the risk of developing ovarian cancer. Conservation of the ovaries should be an informed decision by the woman undergoing hysterectomy. When a woman is postmenopausal, the usual recommendation is for bilateral oophorectomy if possible, this is based on the potential prophylactic effect of oophorectomy in preventing ovarian cancer, which carries lifetime risk of 1%.¹⁷.

Postmenopausal ovaries do not cease production of oestrogen immediately after menopause. They quantitatively showed that there is significant stromal oestrogen production for few years after cessation of menstruation, for this reason they emphasized that post menopausal ovaries continue to have a significant metabolic function even after cessation of menstruation^{15,22}. The fear of the development of ovarian cancer is over exaggerated.

Nichols suggests that ovarian removal should not be routine during hysterectomy even after menopause, as in his report totalling 7765 patients followed for varying interval after hysterectomy, only 12 individuals were known to have developed cancer in the preserved ovaries, an incidence of only 0.15%¹⁵. However it is generally accepted that in the high risk regions, the incidence of postmenopausal ovarian malignancy is in the region of 10%. Based on these conflicting arguments, ovarian castration should be individualized, based on the knowledge of the incidence of ovarian malignancy in your region, the family history of ovarian malignancy and the likelihood of good follow-up screening with annual pelvic ultrasound and tumor markers.

Our population for reasons ranging from poverty, to lack of sufficient health education, is notoriously known to default to follow-up after surgery and present to health services when there is pressing need to consult, which is often too late for any meaningful health intervention. Therefore it is customarily an accepted practice to remove the ovaries at climacteric, if the woman has to have hysterectomy for any indication remote from ovary and supplement her with exogenous hormone to prevent post menopausal sequelae like osteoporosis. This concept termed prophylactic oophorectomy is encouraged by the notion and knowledge that

postmenopausal vary is never too old to develop malignancies, the ovaries are still functioning at the time of oophorectomy, the surgeon should consider the advantages as well as the risks of ovarian preservation.

Because there is no arbitrary age at which all ovaries should be removed, the view of the surgeon who elects not to perform elective oophorectomy is defensible, and one's philosophy concerning ovarian preservation should determine the procedure recommended, whether hysterectomy was done through transabdominal or transvaginal route.

In the premenopausal woman, sexual activity can be impaired by removal of ovaries, particularly under the age of 45 years. This impairment in sexual activity can also occur in postmenopausal women due to androgen deficiency, patients should therefore be counselled regarding this potential effect.

In South Africa and other developing countries, due to poor screening services the cut-off age for ovarian conservation in hysterectomy for non-malignant condition is 40 years. The result on the management of ovaries showed that of the 222 patients who had hysterectomy 39(17.6%) patients had vaginal hysterectomy while 183(82.4%) patients had abdominal hysterectomy. This inequality has already been attributed to the type of the dominant pathology and the relative scarcity of prolapsed in African women.

Among those who had abdominal hysterectomy oophorectomy was done in 88.5% while 11.5% ovaries were left behind. From these findings we may easily deduce that there were more patients above the cut-off age of 40 years who had abdominal hysterectomy. This is also supported by Howard Jones that among gynaecologist the prevailing practice is to remove the ovaries on patients over 40years and ovarian conservation on patients under the age of 40years²⁴. These findings agree with age distribution in figure 2.

Looking at the management of ovaries among those who had vaginal hysterectomy, we find the inverse relation to that of abdominal hysterectomy. 74.4% of the patients who had vaginal hysterectomy did not have oophorectomy while 25.6% of them had

the ovaries removed at the time of the procedure. The age of the patient and the difficulty in removing the ovaries at vaginal hysterectomy contributed to this inverse outcome. In my experience, although oophorectomy can be accomplished at vaginal hysterectomy, I prefer to perform abdominal or laparoscopic procedure to achieve this. As to the exact reasons for leaving the ovaries in most women it is not clear, any attempt to forward a defensive reason will be subject to recall bias.

5.2 Conclusions

There is continued need for periodic studies in the most appropriate method of performing hysterectomy. Literature from different countries is still conflicting on indications and the best method of removing a diseased uterus. Regional variation in pathology together with personal habit and the teaching seems to play a role in the choice of the procedure than any objective evidence.

It is not possible to come with global management of any disease as there will always be logistical challenges, which will differ from region to region and even among gynaecologists within the same region.

The trend in practice evolution and introduction of newer instruments will perpetually bring changes in the way to practice surgery.

Although there is no objective data that advocates for abdominal hysterectomy to be superior to vaginal hysterectomy, gynaecologist should make all attempts to counsel their patients thoroughly before embarking on any particular type of operation in order to achieve desired results and improve the quality of life of their patients.

The study, though retrospective and included small numbers from the same region, agreed at many points with many studies in the journals and textbooks on findings such as, abdominal hysterectomy is done more frequent than vaginal hysterectomy, Fibroid tumours of the uterus are the common condition that lead to hysterectomy and the fact that most women undergoing hysterectomy are in the reproductive age group^{9,15,22}.

5.3 Recommendations

From the trends in figure 1 it is advisable for private practitioners to be proactive in anticipation for the worst in the years to come. They should super specialize in order to be able to charge more fees on fewer patients that they will be seeing. Some may take proactive move to move out of private practice before the “ship sinks”. The researcher has no regrets in spending sleepless hours at his age, reading for Masters in Public health. This may enable him to jump out of private practice and get a better job in both state and private rather than going to state and still do same job with its night shifts and emergencies for a meagre salary.

Larger prospective studies are needed to asses the validity of the findings of this small study from one location. Such studies should go further than this study and include histological diagnosis as the gold standard in diagnosis and to verify the clinical diagnoses used in this study. Studies from social sciences are needed to asses the knowledge attitudes and practices of the African women on matters that affect their gynaecological ailment particularly diseases that may lead to hysterectomy.

The health services of the provinces that do not have tertiary facilities and resources should be improved by building medical schools and the teaching hospitals in those provinces. North West province, Mpumalanga province and Limpopo province are dependent on expertise and resources in Gauteng. The announcement of the intention to build a medical faculty in Limpopo Province by the president of the Republic of South Africa in his state of the nation address this year is a step in the right direction of health service is to be taken to the people, rather than people going to the service as seen in this study.

Teaching on vaginal hysterectomy at academic institutions should be given priority to increase the aesthetic and economic benefits of the procedure. The large numbers of fibroid uteruses removed abdominally can be reduced by increase awareness on yearly pelvic examination at community levels in order to diagnose fibroids early to be managed by less invasive modalities like laparoscopy, myomectomy or vaginal hysterectomy.

Improved maternal health and maternity services at the clinics and district hospitals will greatly reduce the number of home deliveries, genital prolapses and urinary incontinence and subsequent vaginal hysterectomies, thus improving the psychosexual life of women.

Regardless of limitations of this study, it is believed that the study yield clinically useful results. First it is clear that abdominal hysterectomy is the more practiced than vaginal hysterectomy and nulli-parity is neither a contraindication nor deterrent to a woman to have her uterus removed. The concept of hysterectomy on request or 'social hysterectomy' as some put it needs further exploration on large multicentered studies which include both private and public setting to asses the full extent of the demand for hysterectomy in the general population.

Conservative or prophylactic removal of the ovaries is depended on the ease of accessing the ovaries at vaginal hysterectomy. Anthropometric shape of the pelvis of African woman, is android in configuration, contracted at the outlet, makes it technically difficult to accomplish ovarian extirpation at vaginal hysterectomy. If truly indicated, oophorectomy is rather done by laparoscopic approach after completion of removal of the uterus by vaginal route. This approach is accepted approach called abdomino-perineal approach

From figure 6 there is real need for medical schools and tertiary referral hospital in the three provinces that are dependent on Gauteng for health services. These provinces are Limpopo province, North West Province and Mpumalanga Province. In his state of the nation address the president of the Republic of South Africa , Jacob Gedleyidlekiza “ Msholozzi” Zuma made mention of the intention to build a medical school in Limpopo province.

A multicentred interprovincial prospective blinded study to access the true extend of hysterectomy in private practice in south Africa in needed to help in health planning at provincial and national levels.

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APPENDICES

1. Acceptance letter from a colleague

Dr. L. Nyende

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14 March 2011

I agree that Dr D T Mahapa may use the records of my practice to collect data for his research project toward fulfilment of the requirements of the degree MPh with the university of Limpopo (Medunsa campus)

Yours truly,



Dr L Nyende

2.Data collection form with raw data

ID	AGE	MARITAL STATUS	PARITY	PRO-OP DX	PROVINCE	OVARIANES
10085	47	M	1	Fibroid	GP	R
10041	38	M	0	Fibroids	GP	L
5858	42	M	3	Adenomyosis	L	R
6774	41	S	0	Fibroids	NW	R
5084	41	M	0	Fibroids	GP	R
6242	50	M	5	PID	L	R
6397	44	S	3	Fibroids	NW	R
6992	43	M	1	Fibroids	GP	R
6990	49	D	2	Ovarian cyst	L	R
9191	37	M	2	Fibroids	GP	R
9097	33	M	2	Adenomyosis	L	L
3945	37	M	1	PID	MP	R
6857	47	M	3	Fibroids	MP	R
4084	37	S	0	Fibroids	GP	R
6082	36	S	3	Fibroids	MP	R
9521	37	M	2	Fibroids	L	R
7070	44	S	4	Fibroids	NW	L
6836	44	M	0	Fibroids	MP	R
5916	42	M	2	CIN	GP	R
9036	42	S	2	Fibroids	NW	R
6941	57	W	0	Fibroids	L	R
6209	40	S	3	Haematoma	GP	R
6947	51	M	0	Fibroids	NW	R

3. Medusa Research and Ethics Committee approval

Medunsa Campus



MEDUNSA RESEARCH & ETHICS COMMITTEE
CLEARANCE CERTIFICATE

P O Medunsa
Medunsa
0204
SOUTH AFRICA

MEETING: 09/2010

Tel: 012 - 521 4000
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PROJECT NUMBER: MREC/H/210/2010; PG

PROJECT :

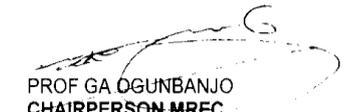
Title: Profile of patients who underwent hysterectomy in private practice in Pretoria between 2005 and 2009

Researcher: Dr D Mahapa
Supervisor: Dr KE Mokwena
Department: Public Health
School: Health Care Sciences
Degree: MPH

DECISION OF THE COMMITTEE:

MREC approved the project.

DATE: 04 November 2010


PROF GA OGUNBANJO
CHAIRPERSON MREC

Note:

- i) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.
- ii) The budget for the research will be considered separately from the protocol. PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

DECLARATION

I **Daniel Tlou Mahapa** solemnly declare that the work contained in this dissertation is original work that has not been submitted or published in part or in full in any journal and has not been submitted for a degree in any University or College.

I therefore present it for the award of a degree Master of Public Health at the University of Limpopo (Medunsa Campus).

D.T. Mahapa

Date

ACKNOWLEDGEMENTS

I am grateful to my supervisor Dr Kebogile Mokwena for her support, guidance, criticism and encouragement throughout the period of conducting this research and drafting of this script. I also like to extend my sincere gratitude to all my mentors, lecturer and colleagues at the School of Public Health, University of Limpopo for interactive knowledge exchange on embanet, from the moment we were still doing coursework till today. Without their dedicated mentorship, I would not be able do this study.

To my two receptionists, Tondani Tshidaisa and Phathutshedzo Rasalanavho for going an extra mile beyond their scope of work to draw files and help with data extraction, I say: If it was not with their patience and co operation, I would not be able to conduct this study.

To the patient population who do not even know that there is a mutual benefit between them and myself I wish that the almighty may bless them and keep them healthy and strong.

Last but not least I extend my gratitude to my understanding wife and children for allowing me time to be away from them in order to fulfil the requirements of this study. Their unconditional support and love in all my endeavours are greatly appreciated.

ABSTRACT

BACKGROUND: Hysterectomy is the second most common operation from caesarean section both in the developing and developed world¹. Its effectiveness in relieving symptoms, improving quality of life has long been investigated and found to be effective. It remains the only definitive cure for abnormal uterine bleeding, improving quality of life and rating highest in satisfaction score compared with other modalities of treatment for benign gynaecological conditions¹⁴.

In private practice setting it is also the most common gynaecological operation for benign condition. The route of the procedure differs according to the surgeon's preference and the presenting signs and symptoms. The same applies in the two practices from which data is obtained for this study. In the study the route of hysterectomy were transabdominal and transvaginal with and without oophorectomy.

OBJECTIVES: The study aim to assess the profile of patients who have undergone hysterectomy in private practice, their socio-demographic characteristics and the disease profile that presumably led them to hysterectomy.

METHODS: The study is a descriptive retrospective record review study. It included patients who had hysterectomy in two private practices over a period of five years.

RESULTS: A total of 222 records were drawn and information extracted from records. The age ranged from 31 to 67 years, mean age was 45.05 years. Fibroids were the commonest condition that led to hysterectomy (49.1%). Most women were from Gauteng province (49.1%) and 69.8% of women who had hysterectomy were married. Abdominal hysterectomy was more common than vaginal hysterectomy (37.2%). Hysterectomy constituted 27.2% of the total major operations performed in the two practices over a period of five years.

There were more abdominal hysterectomies (77.5%) than vaginal hysterectomy (22.5%). Women who had previous history of two or three deliveries made more than 50% of the study subjects. 77.5% of women who had hysterectomy also had their ovaries removed at operation.

CONCLUSION: This study supports what was long known that at any institution or country, there is more abdominal hysterectomy than vaginal hysterectomy. The fact that fibroids are the commonest indication for hysterectomy was found by many studies before. There is need for teaching and practicing the skill and the art of performing vaginal hysterectomy. The impression given by this study that the number of procedures is on the decline can only become confirmed by further similar studies in the years to come, this is just a cross sectional study with limited predictive value. Continued need for practice audit and research from private practices may yield results similar to results of large multi-centered studies.

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LIST OF ABBREVIATIONS AND ACRONYMS

Abbreviation	Full meaning
TAH	Total Abdominal Hysterectomy
VH	Vaginal Hysterectomy
BSO	Bilateral Salpingo-Oophorectomy
MP	Mpumalanga Province
GP	Gauteng Province
FS	Free State Province
KZN	Kwa-Zulu Natal Province
NW	North West Province
L	Limpopo Province
USA	United States of America
CIN	Cervical Intraepithelial Neoplasia
AUB	Abnormal Uterine Bleeding
OSD	Occupation Specific Dispensation

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