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EVALUATION OF THE TERMINATION OF PREGNANCY SERVICES IN SOUTH AFRICA

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A research report submitted to the Faculty of Health Sciences,

University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements

for the degree of Master of Medicine in Community Health

Johannesburg, 2011

DECLARATION

I, Jacqueline Faria Mendes declare that this research report is my own work. It is being submitted for the degree of Master of Medicine in the field of Community Health, in the University of Witwatersrand, Johannesburg. It has not been submitted for any other degree or examination at this or any other University.

_____

27th day of May, 2011

DEDICATION

All Glory and Honour to **God** in the Highest

My fiancé
Daniel José Roque,
for showing me the Heart of **God**

PUBLICATION

Mendes JF, Basu D, Basu JK. Addressing the demand for termination of pregnancy services in district health facilities in Johannesburg. South African Medical Journal. 2010;100 (10):614 (1).

PRESENTATIONS

Federation of Gynaecology and Obstetrics World Congress -October 2009 -International Conference, Cape Town, South Africa.

Mendes JF, Basu D, Basu J. The Evaluation of the Termination of Pregnancy Services in the Johannesburg Metropolitan Municipality (providers). Oral presentation.

5th Public Health Association of South Africa Conference 2009, Millennium Development Goals, 1st – 2nd Dec 2009, Durban, South Africa.

Mendes JF, Basu D, Basu J. The Evaluation of the Termination of Pregnancy services in the Johannesburg Metropolitan Municipality (clients). Oral presentation.

Johannesburg Metropolitan Municipality -Health Programme Director and Assistant Directors Meeting – March 2010, Johannesburg, South Africa.

Mendes JF. Feedback and dissemination of preliminary findings.

EXECUTIVE SUMMARY

Introduction

Three public health interventions well known to decrease the risks associated with pregnancy and child birth are access to maternity care, family planning and contraception, and safe abortion. Worldwide, the African region has the highest case fatality rate associated with unsafe abortion 750 per 100 000, largely as a result of restrictive abortion laws.

South Africa (SA) legalised abortion in 1996 with the "Choice on Termination of Pregnancy" (CTOP) Act. It sought to improve the quality and access to termination of pregnancy (TOP) services in SA. Since its enactment there has been a 91% decrease in deaths due to unsafe abortions. There have been some experienced challenges associated with the implementation of the Act, limited number of functional TOP facilities, prolonged waiting times, and negative attitudes of TOP providers to clients. After more than a decade of liberalised law in SA, what are TOP providers' perceptions, clients' experiences and the overall quality of TOP services?

Main Aim

The evaluation of TOP services in the urban Johannesburg Metropolitan Municipality (JHB), Gauteng Province, and two rural municipalities Bela-Bela Municipality, Limpopo Province and Mangaung Municipality, Free State Province.

Methodology

A mixed methods approach was adopted; both quantitative and qualitative data were collected in three sections. Included were all primary health care facilities offering first trimester TOPs in the Johannesburg Metropolitan, Mangaung, and Bela-Bela Municipalities. Section I the analysis of district health information management system (DHIS) data for JHB. Section II, TOP providers and TOP clients completed self-administered questionnaires. Section III the TOP clients from JHB were questioned again after eighteen months. Various parametric and non-parametric tests were conducted on the data, based on the data distribution. The statistical software used for quantitative data analyses was Stata release 10.0 and qualitative data MAXQDA release 10.0.

Results

The DHIS showed a 61% increase in TOP requests from 2006 to 2009 (Chi-square for trend; P=0.08). The number of first trimester procedures performed only addressed 40% of total requests in 2006 and 33% of total requests in 2009. Section II demonstrated that all the TOP providers reported not coping with their duties, only two (15%) providers were comfortable with

administering TOPs. One hundred and fifty-two TOP clients were recruited into the study. The mean age was 26.00 (±6.03) years. One hundred and sixteen (76%) women were not using contraception. Clients from JHB had prolonged waiting times 14 days (IQR; 6-28) compared to Bela-Bela clients' 3 days (IQR; 1-6) (Post-hoc Wilcoxon- Ranksum; P<0.0001). Hence clients from JHB had TOPs at later median gestational ages of 9 weeks (IQR; 8-11) and Bela-Bela clients at 7.5 weeks (IQR;4-8) (Post-hoc Wilcoxon Ranksum; P<0.0001). Knowledge of the CTOP Act exceeded seventy percent across all three municipalities (Pearson Chi-square; P=0.83).

Section III identified that 39% (n=9) of interviewed clients experienced a TOP-related complication. The odds of experiencing a complication was decreased if client received a follow-up appointment (OR 0.12; 95% CI 0.02-1.51; P=0.02), if client was aware of the CTOP Act (OR 0.11; 95% CI 0.01-2.08; P=0.06), and clients that had attended Lenasia South CHC had odds of complication 8 times higher than clients who had presented to Bophelong clinic (OR 8.68; 95% CI 3.47 -21.7; P<0.0001). The qualitative analysis identified themes of an association with intra-procedural pain and perceived inadequate counselling with those reporting emotional distress.

Discussion

The prevalence of contraceptive use during the month of conception was low, and the majority of clients were unaware of the correct gestational age for termination of pregnancy according to the CTOP Act. This suggests that the pre-TOP services required strengthening. The TOP services in the public sector may not to be addressing the number of TOP requests; this affects the availability of the service. TOP providers in different South African settings report similar challenges associated with delivering TOP services. The clients from JHB are waiting longer for the TOP and hence having the abortion at later gestational ages which are associated with increased complications rates. The study estimated a complication rate of approximately 26 per 100 abortion clients, higher than acceptable global rates which approximate 3 per 100. The improvement of pre and post-TOP counselling was highlighted.

Conclusion

This study introduces the importance of passive surveillance in improving the quality of service delivery. Though this is only achieved when data collected are analysed and used to inform policy and service. The studies conducted in South Africa since the CTOP Act enactment has demonstrated various challenges and areas for improvement. These findings have ensured that issues of public health importance continue to be studied and relevant findings disseminated to stakeholders for and consideration and action where appropriate.

Keywords

Abortion, termination of pregnancy, TOP, family planning, providers, clients

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GLOSSARY OF TERMS

Abortion

The termination of a pregnancy before the foetus has attained viability i.e. become capable of independent extra-uterine life (2).

The term abortion and termination of pregnancy will be used interchangeably in this research report.

Abortion Rate

The estimated annual number of abortions per 1000 women of reproductive age (defined as women between 15 and 44 years of age) (3).

Abortion Ratio

The number of abortions per 100 live births per year (4).

Acceptability

Is conformity to the realistic wishes, desires and expectations of healthcare users and their families (5).

Accessibility

The ease with which health services are reached by healthcare seekers, access can be physical, financial or psychological (6).

Adult

The study refers to termination of pregnancy clients as adults when they are eighteen years and older.

District Health Information Management System

All districts have primary health care minimum data sets that are required by provincial and national department. The data are collected at facility level manually using the daily sheets that

are condensed monthly and send to the district office. Here they are captured into a computer and aggregated before being send to the Regional, Provincial and National Office. The information is beneficial for planning and monitoring and evaluation processes (7).

District Health System

A district health system based on primary health care is a more or less self-contained segment of the national health system. "a well-defined population living within a clearly delineated administrative and geographical area" (8).

Effectiveness

Is the degree of achieving desirable outcomes, given the correct provision of evidence-based healthcare services to all who could benefit, but not to those who would not benefit (6).

First Trimester Procedure

The first twelve weeks of pregnancy gestational age (9).

Induced Abortion

The deliberate termination of a pregnancy before the foetus has attained viability (2).

Maternal Mortality Ratio

The maternal mortality ratio is obtained by dividing the number of maternal deaths in a population during a time interval by the number of live births occurring in the same period. Thus, the ratio depicts the risk of maternal death relative to the frequency of childbearing (10).

Millennium Development Goals

Eight Millennium Development Goals (MDGs), endorsed by governments at the United Nations in September 2000, aim to improve human well-being by reducing poverty, hunger, child and maternal mortality, ensuring education for all, controlling and managing diseases, tackling gender disparity, ensuring sustainable development and pursuing global partnerships (11).

Minor

A termination of pregnancy client younger than eighteen years of age (12).

Mixed Methods

The study procedure for collecting, analysing and mixing or integrating both quantitative and qualitative data within a single study (13).

Participants

The term is used to describe the clients and health professionals whom participated in the study.

Post-Abortion Care

It encompasses "emergency treatment for complications from an incomplete abortion, the provision of family planning services and counselling, and referral for other reproductive health care needs" (14;15).

Post-Termination of Pregnancy Services

In this study refers to post-abortion counselling, and treatment of abortion related complications (15). With the post-termination of pregnancy services monitoring and evaluation are included (Client surveys, TOP provider feedback, DHIS data analysis).

Pre-Termination of Pregnancy Services

In this study refers to the following: the client's utilisation of contraception, utilisation of emergency contraception, awareness of abortion legislation, and knowledge of correct gestational age to request TOP.

Primary Health Care

Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination (14).

Safety

The degree to which health care processes avoid, prevent, and improve adverse outcomes or injuries that stem from the processes of health care itself (6).

Second Trimester Procedure

From the 13th to the 20th week of gestational age of a pregnancy (9).

Surveillance

The systematic and continuous collection, analysis and interpretation of data, with a dissemination of results and assessments to the relevant parties for action to be taken (3).

Termination of Pregnancy

The separation and expulsion, by medical or surgical means, of the contents of the uterus of a pregnant woman (12).

Termination of Pregnancy Clients

These are the women that have attended the TOP facility requesting a termination of pregnancy. In this study TOP client will refer to the study participants that are accessing TOP services.

Termination of Pregnancy Providers

These are the health care workers that are employed at the TOP facility and are involved in administering the TOP service.

Termination of Pregnancy Service

In this study this term has two principle meanings. The first meaning refers to the step subsequent to the pre-termination of pregnancy services within the overall termination of pregnancy process. This includes clinical examination, sonar determined gestational age, counselling, the administration of Misoprostol and the manual vacuum aspiration. The second meaning of this term refers to the overarching termination of pregnancy service that includes pre, intra and post-termination of pregnancy services.

Total Fertility Rate

The average number of children that a woman gives birth to in her lifetime (16).

Unsafe Abortion

A procedure for terminating an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking the minimal medical standards or both (2).

ABBREVIATIONS

ANOVA	Analysis of Variance
CHC	Community Health Centre
CTOP	Choice on Termination of Pregnancy
CTOPA	Choice on Termination of Pregnancy Act
DHIS	District Health Information Management System
EC	Emergency Contraception
GDHSD	Gauteng Department of Health and Social Development
HIV	Human Immunodeficiency Syndrome
HP	Health Professionals
JHB	Johannesburg
MDG	Millennium Development Goals
MMR	Maternal Mortality Ratio
NDoH	National Department of Health
OECD	Organization of Economic Co-operation Development
SAHR	South African Health Review
SAMM	Severe Acute Maternal Morbidity
STI	Sexually Transmitted Infection
TFT	Total Fertility Rate
TOP	Termination of Pregnancy
WITS	University of Witwatersrand
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

The following chapter will set the background and context this study relates to. Further it introduces the study, and explains the rationale and justification for the study. The aim and specific objectives are noted. This chapter will be concluded with a brief overview of the chapters that this research report encompasses.

1.1. BACKGROUND

In 1978 the Alma Ata Declaration defined health to be the physical, mental and social well being of a person and not just the absence of disease. It took sixteen years for the International Conference on Population and Development Programme to solidify a definition for reproductive health, namely the state of complete physical, mental and social well being and not just merely the absence of disease, in matters relating to the reproductive system and its functions and processes (17;18).

At the Millennium Summit in September 2001. The international community adopted the Millennium Development Goals. The goals are commonly accepted as a framework for measuring progress towards development (19). The United Nations' member states agreed that improving maternal health would be an essential element of MDG's hence documented it as the fifth goal. The target achieved would see no less than a 75% reduction in the Maternal Mortality Ratio by 2015.

The World Health Organization (WHO) has 17 main indicators that it uses for monitoring reproductive health (20). One specific indicator measures the "Prevalence of Obstetric and Gynaecological admissions owing to abortion"

In order to accurately attain data and quantify this objective mentioned above, the WHO identified five crucial key areas that require intervention:

- The strengthening of health system capacity.
- The improved collection of health data for decision making.
- Mobilising political will.
- Creating a supportive, legislative and regulatory framework and strengthening monitoring, evaluation and accountability.

There had been no systematic structures in place for the collection and analysis of reproductive health indicators. In view of that it was considered necessary to establish a surveillance system in collaboration with GDHSD, City of Johannesburg and University of Witwatersrand, to collect information on the WHO reproductive health indicators.

At the time of the study there had been no baseline data analysed on the abortion services in the Johannesburg Metropolitan Municipality (JHB). This study analysed JHB's district health information system data, developed a profile of abortion clients and the providers employed in the service. The findings of the initial study led to its expansion to further include two rural municipalities in South Africa.

1.2. PROBLEM STATEMENT

Recent literature suggests unsafe abortions are on the increase in South Africa despite liberalisation of abortion with the enactment of the Choice on Termination of Pregnancy Act in 1996 (21). The barriers to safe abortion are well documented in the literature, but the recent hindrances in South African termination of pregnancy services are not well known and require further exploration to ensure that access to free and safe abortion remains a reality in South Africa more than a decade after the law's enactment.

1.3. RESEARCH QUESTIONS

- Have the numbers of termination of the pregnancies performed over the last four years changed significantly?
- What is the socio-demographic and clinical profile of clients utilising the TOP services in urban Johannesburg Metropolitan Municipality, and how does it compare to rural municipalities?
- What are the current challenges experienced by health professionals administering TOPs in the Johannesburg Metropolitan Municipality, and how does it compare to rural municipalities?

1.4. JUSTIFICATION

The current literature suggests that unsafe abortions are increasing in South Africa (21). The recent literature regarding abortion in the Gauteng Province was sparse; the direct comparison between urban and rural municipalities may identify factors to understand the quality of service issues. The follow-up of termination of clients would importantly inform the researcher about post-abortion care services required by clients.

- Information that may positively influence and improve the maternal mortality ratio, and hence contribute to attainment of Millennium Development Goal Five.
- The understanding of current practices in the termination of pregnancy facilities at the municipality level is poorly understood.
- The current knowledge regarding the type of client accessing services since 2006 is limited to the variables collected on the DHIS database, and a more detailed understanding is warranted.
- Strengths and weakness regarding the current services as perceived and experienced by the termination of pregnancy providers is very limited in the JHB, Bela-Bela and Mangaung Municipalities and may be helpful for improving the services.

1.5. AIM

To evaluate the termination of pregnancy services in the urban Johannesburg Metropolitan Municipality, Gauteng Province and compare findings to two rural municipalities, Bela-Bela Municipality in the Limpopo Province and Mangaung Municipality in the Free State Province, in terms of the factors that influences its quality namely availability, effectiveness, client perceptions, staffs' perceptions and safety.

1.6. OBJECTIVES OF THE STUDY

1. To describe the Johannesburg Metropolitan Municipality, district health information management system data as collected by termination of pregnancy facilities since 2006.

2. To determine the experiences of health professionals employed at the termination of pregnancy facilities in Johannesburg, Bela-Bela and Mangaung Municipalities:
    i. The experiences and knowledge of termination of pregnancy providers.
    ii. The strengths and challenges faced in the termination of pregnancy service.
    iii. The providers' perception of staff attitude and quality of service.

3. To describe the profile of patients utilising the termination of pregnancy services at all facilities in the three Municipalities:
    i. The utilisation of contraception at time of conception and future use.
    ii. The factors that may be associated with gestational age at first presentation and at termination of pregnancy.
    iii. The clients' perception of staff attitude and quality of service.
    iv. The knowledge and awareness of the Choice on Termination of Pregnancy Act and legal gestational age stipulated in the Act.

4. Determine the subsequent reproductive health care needs of termination of pregnancy clients post-abortion:
    i. Estimate the current complication rate in the Johannesburg Municipality.
    ii. The proportion of clients receiving and attending follow-up examination appointments.

1.7. SUBSEQUENT CHAPTERS

Chapter Two

Literature review: Pertinent international and local literature that highlighted research done on termination of pregnancy and health systems issues related to it.

Chapter Three

Methods: The study design and sampling strategy used to complete the study, and the manner in which data were collected and analysed.

Chapter Four

Results: The findings will be shown predominantly in tables and figures with narration.

Chapter Five

Discussion: This will highlight the pertinent findings from the study. Reference will be made to relevant literature. The limitations and strengths of the study listed.

Chapter Six

Conclusion and recommendations: The last chapter will summarise the findings and where possible, appropriate recommendations will be made. The recommendations were intended to assist in addressing the gaps found at the district health service level to ensure that the quality of services is enhanced.

CHAPTER TWO

LITERATURE REVIEW

This chapter services to identify the reasons abortion is of public health importance. Local and international literature relevant to the public health aspects of abortion are described and referred to below. A summary paragraph of the pertinent issues informing the study concludes this chapter.

2.1. REPRODUCTIVE HEALTH

Reproductive health was defined in the Programme of Action of the International Conference on Population and Development in 1994, as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes." This shone a light on the neglected area of sexual and reproductive health. The INTERNATIONAL CONFERENCE ON POPULATION AND DEVELOPEMNT began a move towards the promotion of safe and improved quality of care in the sphere of sexual and reproductive health, for both women and men (22).

The promotion and protection of sexual and reproductive health was further supported in 2000 at the Millennium World Summit. Altogether eight Millennium Development Goals (MDGs) were identified at the culmination of the summit. Two of the goals focussed particularly on women's issues, MDG Three focussed on the empowerment of women and MDG Five set a more than two-thirds reduction in maternal mortality ratio by 2015 (11).

Despite this, the Global Burden of Disease Report published by the WHO in 2004 (Table 2.1) ranked maternal related conditions as the second leading cause of mortality in women aged 15 to 44 years across all country income groups except high-income countries (23). The table illustrates that approximately 516 000 women died globally as a result of maternal conditions.

Table 2.1: Ten leading causes of death in women aged 15-44 years by country income group (2004)

World				Low-income countries			
Rank	**Cause**	**Deaths (000s)**	**%**	**Rank**	**Cause**	**Deaths (000s)**	**%**
1	HIV/AIDS	682	19.2	1	HIV/AIDS	494	22.3
2	Maternal conditions	516	14.6	2	Maternal conditions	434	19.5
3	Tuberculosis	228	6.4	3	Tuberculosis	161	7.3
4	Self-inflicted injuries	168	4.7	4	Lower respiratory conditions	94	4.3
5	Road traffic accidents	132	3.7	5	Fires	89	4.0
6	Lower respiratory conditions	121	3.4	6	Self-inflicted injuries	80	3.6
				7	Ischaemic heart disease	64	2.9
7	Ischaemic heart disease	104	2.9	8	Road traffic accidents	40	1.8
8	Fires	101	2.9	9	Stroke	32	1.5
9	Stroke	77	2.2	10	Diarrhoeal diseases	30	1.3
10	Violence	61	1.7				
Middle-income countries				**High-income countries**			
Rank	**Cause**	**Deaths (000s)**	**%**	**Rank**	**Cause**	**Deaths (000s)**	**%**
1	HIV/AIDS	183	15.4	1	Road traffic accidents	14	10.2
2	Maternal conditions	81	6.8	2	Self-inflicted injuries	13	9.8
3	Road traffic accidents	78	6.6	3	Breast cancer	11	7.9
4	Self-inflicted injuries	75	6.3	4	Poisonings	5	3.8
5	Tuberculosis	66	5.6	5	Stroke	5	3.6
6	Stroke	40	3.4	6	Ischaemic heart disease	4	3.2
7	Ischaemic heart disease	36	3.0	7	Violence	4	2.9
8	Breast cancer	31	2.6	8	HIV/AIDS	3	2.6
9	Violence	28	2.4	9	Trachea, bronchus and lung cancer	3	2.5
10	Lower respiratory conditions	25	2.1	10	Cirrhosis of the liver	3	2.4

Source: (23;24)

Ninety-nine percent of the burden of maternal mortality is carried by the developing countries (24). Three public health interventions that are well known to decrease the risks associated with pregnancy and child birth (24) are:

- Access to maternity care.
- Access to family planning and contraception.
- Access to safe and affordable abortion.

These deaths are therefore preventable as demonstrated by developed countries that boast low maternal mortality ratios. In most developing counties access to health care services and family planning services have improved (24). Unfortunately, many countries continue to promote restrictive policies governing women's access to safe abortion, therefore negating a women's right to safe and appropriate reproductive health care as set out by the 1994 International Conference on Population and Development Resolution in Cairo (25).

2.2. ABORTION

2.2.1. Global Context of Abortion

It is estimated that annually 42 million unplanned pregnancies will terminate in an abortion. This results in approximately one abortion completed for every seven births (26). Approximately half of these women will choose to, or have to undergo an unsafe abortion (15).

In countries where abortion is outlawed or restricted desperate women definite about terminating an unwanted pregnancy will find means to do so. Sedgh et al, commented that women seek abortion even if the countries legalisation does not condone it, hence putting women at extreme risk of mortality or morbidity related to unsafe abortions (27). Sedgh continued that in 2003 more than 97% of all unsafe abortions occurred in the developing world. Annually approximately 70 000 to 80 000 women die as a result of unsafe abortions (24). This is approximately nine percent of all maternal deaths (11). The WHO report on unsafe abortion cites unsafe abortion to cause as much as 13% of all maternal deaths (28). This therefore equates

to at one woman dying as a result of an abortion for every eleven women dying from a maternal-related condition (29).

Many women survive the abortion but experience acute or chronic sequelae as a result of unsafe abortion practices as listed below: (2;30)

Acute complications associated with induced abortion

- Infection
- Haemorrhage
- Retained products of conception
- Iatrogenic trauma to the uro-genital tract or other viscera
- Toxic or chemical reactions to the abortifacients

Chronic complications associated with induced abortion

- Chronic pelvic pain
- Secondary infertility
- Psychological issues

Data on maternal deaths in the developing world are often inaccurate or erroneous (24). The reporting of induced abortion is commonly inaccurate as it is restricted in many developing countries and the extent of reliable reporting is limited (31). Therefore the statistics on mortality due to unsafe abortion, as high as they are, may be an underestimation (32; 33).

The global public health importance of unsafe abortion cannot be ignored for some of the reasons stated below:

- The current mortality and morbidity statistics related to abortion are startling.
- The extent of clinical consequences associated with unsafe abortion is not properly quantified as a result of flawed data.
- Access to safe reproductive health care is a basic human right for all women.

2.2.2. Context of Abortion in Sub-Saharan Africa

The situation in Africa is unfortunately dire as abortions are illegal or restricted in many Sub-Saharan countries including Angola, Congo, Côte d'Ivoire, Democratic Republic of Congo, Kenya, Lesotho, Madagascar, Mali, Mauritius, Somalia, Tanzania and Uganda. Only South Africa, Tunisia and Cape Verde allow first trimester abortions on request (15). Hence, the African region has the highest mortality rate from unsafe abortions. A case fatality rate of 750 per 100 000 unsafe abortion procedures performed, compared to the developed regions of 10 per 100 000 (29).

WHO estimates show that adolescent women between the ages of 15 to 19 account for 26% of all unsafe abortions in the region (34;35). When the age is increased to include women 24 years and younger the total percent of unsafe abortions doubles to 59% (29).

As more countries legalise abortions the opportunity for women to undergo safe abortions is optimistic. It a positive step forward but legislated abortion on request does not equate to safe abortions. Barriers and poor quality of abortion services may continue to put women's health at risk (36).

2.2.3. Context of Abortion in South Africa

South Africa has emerged from a historical past of racial discrimination and restrictive legislation. The Abortion and Sterilization Act of 1975 (37), made abortion inaccessible to women. This unfortunately resulted in South African women requiring the assistance of unsafe abortionists (38).

Abortion was then legalised in 1996 with the enactment of the Choice on Termination of Pregnancy (CTOP) Act. It sought to improve the quality of, and access to TOP services in South Africa (12). After the enactment of the Amendment Acts of 2004 and 2008, South Africa's abortion law was considered model legislation as it permitted: i) women the right to have a TOP in the first trimester with no restrictions; ii) allowed midlevel providers to perform TOP in the first trimester; and iii) women had the right to consent without the approval of husbands or

guardians; iv) a TOP facility had to meet specified criteria before certified to conduct TOPs (12;39;40).

These amendments ensured increased accessibility to services and broadened the scope of TOP providers to include appropriately trained registered nurses. The approval of TOP facilities were decentralised to the Provincial government and 24-hour maternity facilities were required to provide TOP services (41). The CTOP Act also considered other sexual and reproductive health rights of TOP clients with its inclusion of women's access to health promotion, contraception and family planning for the prevention of repeat unwanted pregnancies. The Act emphasised safer treatment modalities with the preferment of manual vacuum aspiration for abortion and post-abortion care, and the introduction of medical abortion methods (36).

In just four years from its implementation the CTOP Act resulted in a 91.1% decrease in the maternal mortality due to unsafe abortion (42), and a decrease in the overall maternal mortality rate, from 230 per 100 000 in 1990 to 103 per 100 000 in 2002 (16).

An important distinction to be emphasised is, legalised abortion is not synonymous with safe abortion. The appropriate utilisation of the CTOP Act is dependent on the women's awareness and knowledge of the Act. Uninformed women are therefore vulnerable to receiving poor quality care (43). Inappropriately trained providers, poor equipment, ineffective counselling and incorrect infection control techniques may be detrimental to the health of the abortion client (44).

The Guttmacher Institute, in 2010, released a review report "Methodologies for Estimating Abortion Incidence and Abortion-related Morbidity" (45). The report suggested the importance of particular indicators for the monitoring of abortion in the health system. Abortion ratio and abortion rate were identified as important (4;45). Despite South Africa having data available in the public domain, these indicators were not. The researcher therefore calculated these measures utilising various sources.

The Figure 2.1 below was developed from extracted National DHIS data for 2002 to 2009; the absolute numbers of TOP performed in the country peaked in 2004 and 2005 with an apparent downward trend in the subsequent numbers of TOPs performed (16).

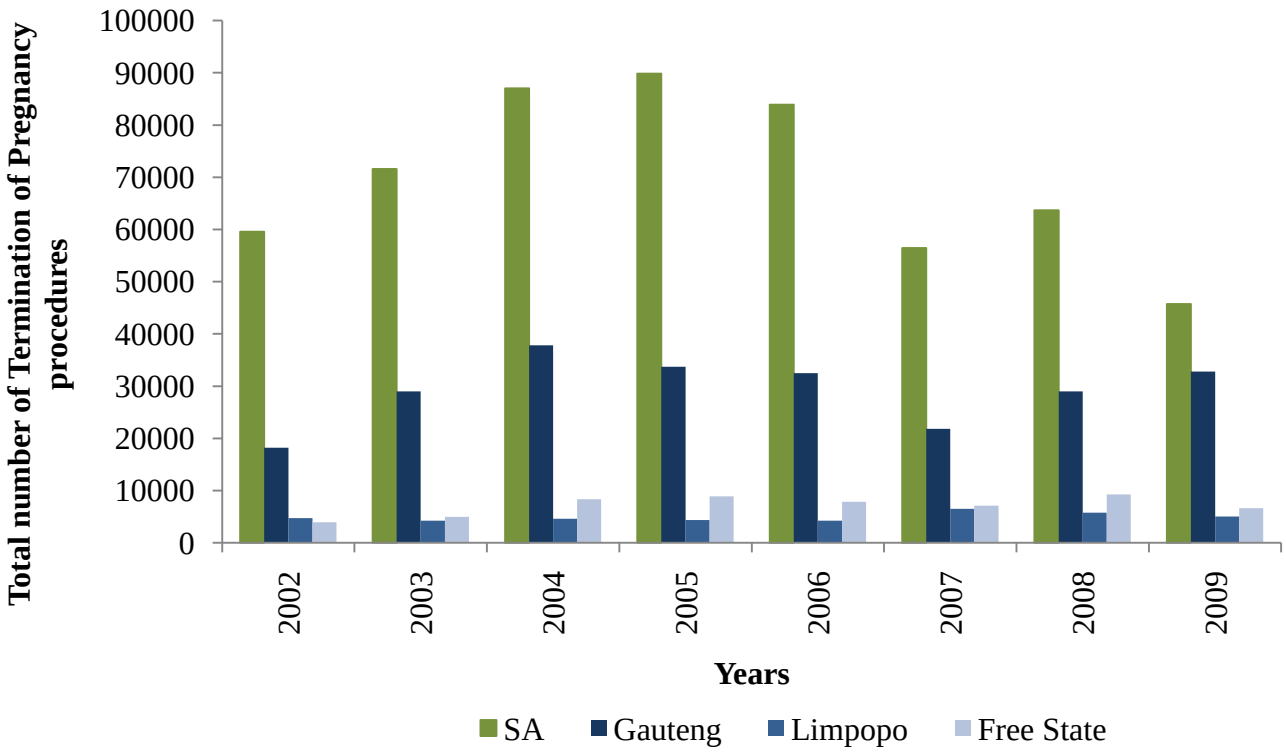


Figure 2.1: Absolute number of total termination of pregnancies completed in three South African provinces (2002-2009)

Further, the researcher then utilised data from Statistics South Africa's Annual "Live births" report and the South African Health Review for 2010 to calculate the abortion ratio. The results showed the abortion ratio in 2006, for Gauteng to be 18.87 per 100 live births, approximately double the national abortion ratio of 9.76 per 100 live births (16;46). Then the abortion ratio decreased in 2009, for Gauteng to 12.98 per 100 live births and South Africa 8.78 per 100 live births (16;47).

The South African total fertility rate (TFR) has remained relatively stable at 2.8 from 2001 to 2006 (16). The prevalence of contraception utilisation has marginally increased from 61.2% in 1998 to 64.7% in 2007 (16). Similarly, the current uptake of emergency contraception (EC) is low, despite it being freely available in public sector and private sector clinics without a prescription (48;49).

A conceptual framing was fabricated using the information stated above (Figure 2.2). The reason for the decrease in the number of abortions being performed in South Africa is not clear. There has not been a profound change in contraception or total fertility rate. The concern is an increasing number of women are requiring the services of TOP facilities outside the public sector (red dashed line). More clarity is required to determine where these women are accessing these services and what are the barriers encountered in public sector that prevents them from undergoing free and safe abortions (1;16).

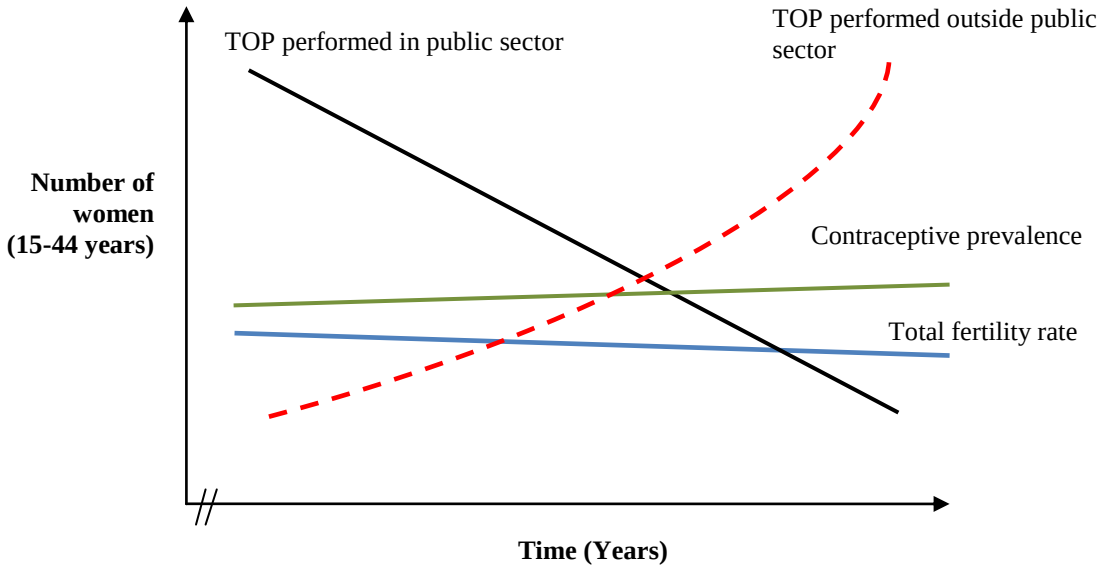


Figure 2.2: Conceptual framing of South African context of change in fertility control methods utilised by women

(Graph not created to scale)

These questions raised concerns about health systems barriers and the client factors that may influence a shift in the numbers of abortions from the public sector to the non-public sector in

South Africa; the converse of the objective set out by the health department actively working at increasing accessibility and availability of the service.

2.3. HEALTH SYSTEMS ISSUES OF TERMINATION OF PREGNANCY SERVICES WITHIN SOUTH AFRICA

The WHO defined "a good health service as one that delivers effective, safe, personal and non-personal health interventions to those that need them, when and where needed, with minimum waste of resources" (50).

The Organization for Economic Co-operation and Development developed a conceptual framework for measuring quality of health care. These dimensions of health care quality measures important for this study are depicted in Figure 2.3 (6).

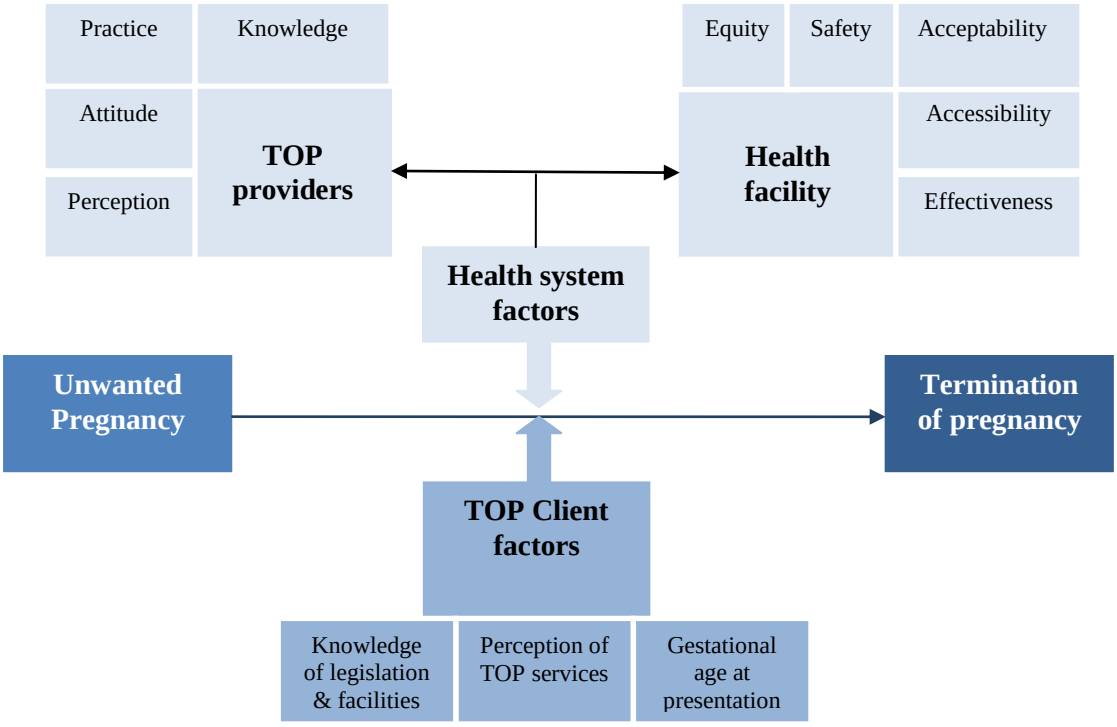


Figure 2.3: Client and health system issues influencing termination of pregnancy

The British Pregnancy Advisory Service in the United Kingdom defines the mission statement for its abortion services as the provision of abortions which are speedy and safe, to reduce unintended pregnancies and abortions and further to ensure that the promotion of sexual health among those that use the service (51).

The Guttmacher Institute, in 2006, published a comprehensive manual "Preventing Unsafe Abortion and its Consequences: Priorities for Research and Action" (15). Horga developed a framework for the priorities related to the care of abortion seekers, and the responsibilities on the health care system to promote and protect the reproductive health of both women and men. These were simplistically divided into pre-conception and post-conception goals (Figure 2.4) (52).

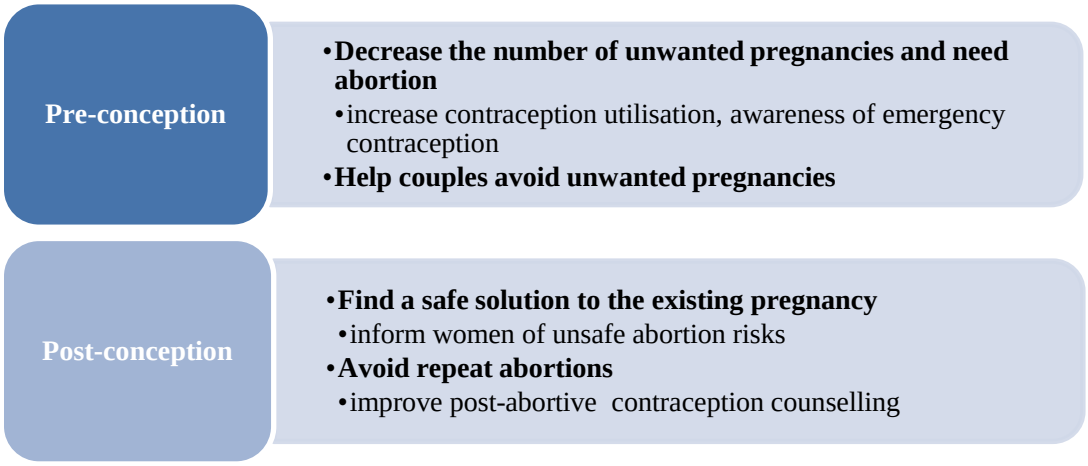


Figure 2.4: Priorities to be addressed in the South African Reproductive Health Services in relation to timing of conception

Source: (52)

Utilising the pre-, post-conception framework and the OECD measures of quality dimensions, the quality of termination of pregnancy services are discussed below.

2.3.1. Termination of Pregnancy Facilities

Pre-Conception Priorities

Accessibility

In 2003, only 60% of designated facilities were functional. The heavy burden of high patient volumes, deficiency in suitably trained and willing medical staff cause lengthy waiting times, jeopardising the pregnancy gestations prescribed by the law for legal abortion. It has been reported that 6.5% of women interviewed, who had had abortions in undesignated facilities, were unable to get a legal abortion early enough in the pregnancy to comply with the law (38; 53; 54).

Equity

Dickson et al, in 2006, reported that 83 913 legal abortions were performed nationally. An in-equitable proportion (39%) were completed in health facilities in Gauteng, despite less than one-fifth of women of a reproductive age living in the province (55). This suggested inequitable distribution of services in other areas in South Africa.

Post-Conception Priorities

Safety

The International Conference on Population and Development in 1994 promoted the importance of post-abortion care as a feature of women's reproductive health services. It compromised three care components (18; 53; 54):

- Emergency treatment for complications from an incomplete abortion.
- Provision of family planning services.
- Referral for other reproductive health care needs.

These three components required that the health services become increasingly more patient-centred and offer the women seeking reproductive health care a more holistic service. It was the platform where abortion services integrated various health issues pertinent to the client accessing abortion services (15). In Cambodia the package of safe abortion care included among other things post-abortion services (56).

The treatment of Sexually Transmitted Infections (STI) is paramount in these groups of health care seekers, as women with unwanted pregnancies may be considered as a high risk group for the acquisition of STIs (51). It may be an opportune time to offer women the counselling and testing required in the HIV Counselling and Testing (HCT) Campaign (57). The CTOP Act makes provision for non-mandatory and non-directive counselling to be available, and a safe environment that enables a decision to be exercised without fear or harm (12).

Section 3 of the amendment to Choice on Termination of Pregnancy Act stipulates 'the person in charge of the facility shall collate prescribed information and forward it to the Director General…' the indicators that need to be reported on are listed in Table 2.2 (12). Although the complication rate is not among these, it forms an important part of monitoring reproductive health care as outlaid by the WHO in the "Reproductive Health Indicators" report (20).

Table 2.2: Termination of pregnancy indicators in South Africa

Indicators	Definition
TOP facilities functioning (%)	Percentage of functioning TOP facilities for the public, private sectors or total (public and private).
TOP	The number of terminations of pregnancy.
TOP by gestational age (%)	Percentage of total terminations of pregnancy for various gestational ages.
TOP by maternal age (%)	Percentage of total terminations of pregnancy for various maternal ages.

The global rate for complication of first trimester safe abortion is 1-3 per 100 (58). These data on complication due to abortion are not easily accessible for South Africa, provinces, districts or

municipalities. This therefore makes comprehensive surveillance of abortion care a challenge in South Africa. The passive surveillance system is legislated but the feedback loop required for quality issues requires strengthening (3).

2.3.2. Termination of pregnancy providers

Pre-Conception Priorities

In South Africa very few studies have been conducted that particularly investigate the perception of TOP provider of the termination of pregnancy services. Before, and after, the CTOP Act enactment, the plight of health professionals, as a result conscience objection, was heard and well documented (59). It was similar to that observed in other countries that passed through the same change in legislation (60).

The few studies completed, report the many challenges that TOP providers are facing more than a decade after the law was passed; namely, lack of equipment, poor management and supervisory support and intimation and harassment from fellow health professionals (61-63).

Post-Conception Priorities

Training and experience

The use of mid-levels workers as TOP providers has been shown to have a very low complication rate, comparable to medical doctors, with the added benefit of increasing accessibility (62;64;65). In the Western Cape providers were concerned with the quality of service offered to the TOP seekers (66).

Knowledge and attitude

A study completed on Zambian and Kenyan nurse-midwives found that nurses disapproved of adolescents seeking reproductive health care (67). A study completed in South Africa in 2007, in

the Western Cape found that health care providers in TOP provision, were concerned with the challenges that TOP clients faced (66).

2.3.3. Termination of Pregnancy Clients

Pre-Conception Priorities

Contraceptive utilisation

The contraceptive use prevalence in South Africa has increased from 61.2% to 64.7% among the sexually active South Africans from 1998 to 2003 (16). The total fertility rate is relatively constant, but with a decline from 2.9 to 2.8 over the same period and now in 2010 at its lowest level 2.4 (68). Contraceptive use is essential to decrease the numbers of unwanted pregnancies and to prevent repeat abortions as women try meeting their need to control their fertility. In countries where fertility remains constant, abortion declines as contraception rises. However, where fertility is in the process of declining, an increase in contraceptive use alone has been shown not to be sufficient to address the need for fertility regulation, and an increase in abortion incidence may result until fertility levels have stabilized (69). Studies have shown the contraceptive use among TOP seekers to be low (70).

The studies suggest contraception services should ensure appropriate information and guidance to TOP clients, and ensure the contraception methods that suit the client are offered and discussed to prevent further unwanted pregnancies and repeat abortions (51). Despite the ease at which EC is available over the counter without prescription in private and public health facilities, the reported use is poor, and an increase in the promotion and awareness of EC may possibly improve its use (48).

Post-Conception Priorities

Effectiveness

Jewkes et al further reported that fifty-four percent of women managed for incomplete abortion did not use the public sector TOP services as they were not aware of the law and fifteen percent, who knew the law, were unaware of appropriate facilities (38).

Acceptability

Service acceptability has been tainted by patients' poor perception of health professional attitudes and quality of service that they receive in governmental abortion facilities. Studies have highlighted the staff rudeness and unprofessional behaviour encountered by women at TOP facilities. Jewkes, Gumede and Westway's study found that the seventeen percent of women who had self-induced abortions feared staff rudeness and approximately six percent were concerned the health professionals would breach their right to confidentiality (38).

2.4. SUMMARY

Every effort should be made to prevent an unwanted pregnancy. An abortion is usually due to myriad of failures and an unsafe abortion in South Africa even more so. These may include the women's failure to use contraception or failure of the contraceptive method. The failures may have occurred at the health systems levels, minimal availability or challenging accessibility, poor perceptions, lack of dissemination to likely clients of safe gestational ages and the correct facilities to attend (54;71). The non-restrictive legislation of South Africa allows women the opportunity to access free and safe abortion. Though current data suggest abortions are on the decrease in the public sector.

A quote by the former Minister of Health, Dr Dlamini-Zuma, on the CTOP Act in 1995 stated: "No woman enjoys having a pregnancy terminated. Therefore as a society we should strive to prevent by caring. I shall be the happiest person, if, one day, even in the presence of the Choice

on Termination of Pregnancy Act, no woman feels compelled to terminate her pregnancy" (72). It is therefore important to ascertain the barriers facing women a decade after the enactment of the Choice on Termination of Pregnancy Act, and remedy them. Offer women comprehensive reproductive health care in quality termination of pregnancy services deemed so by both client and provider. The late Jonathan Mann, a former head of the World Health Organization global AIDS programme, once emphasised in an authored essay, that the two principle responsibilities bestowed on a public health official were to firstly, protect the public and the secondly, to promote health (73).

CHAPTER THREE

STUDY METHODS AND MATERIALS

The following chapter will describe the methods used to conduct this study, the tools utilised and the manner in which data were managed. This study utilised a mixed methods approach as both quantitative and qualitative data were collected, analysed and later discussed.

3.1. INTRODUCTION

The study included three sections (Figure 3.1):

1. The analysis of district health information management system (DHIS) data.
2. TOP providers and TOP clients completed self-administered questionnaires.
3. TOP clients were followed up and interviewed after eighteen months.

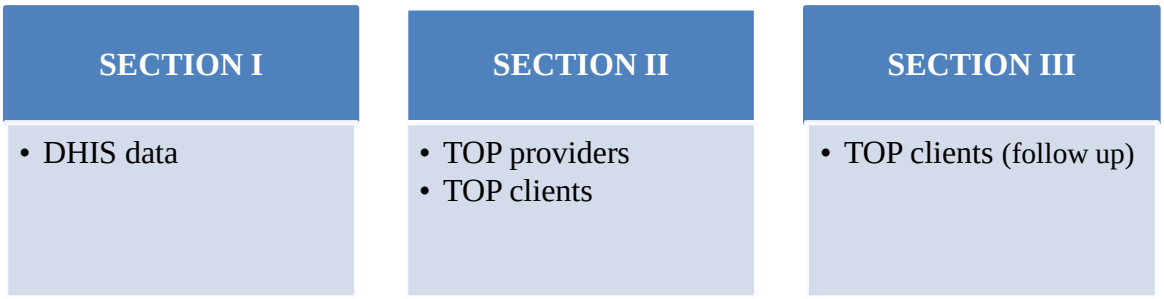


Figure 3.1: Schematic representation of the study components related to time of 2008 to 2010

The methods for each section will be explained chronologically.

3.2. SECTION I: DISTRICT HEALTH INFORMATION FOR JOHANNESBURG METROPOLITAN HEALTH DISTRICT

3.2.1. Study Design

A descriptive cross-sectional analysis was completed.

3.2.2. Study Setting and Study Scope

In this component of the study the DHIS indicators collected at the district level in the Johannesburg Metropolitan Municipality were described. This was to develop an overall understanding of TOPs in the district, gather preliminary data on the clients accessing the service.

3.2.3. Study Population

The facilities used for the study included all the health care facilities administering first and second trimester TOPs in the Johannesburg Metropolitan Municipality (JHB).

3.2.4. Study Period

Data from 2006 to 2009 were collected. The year 2006 was the commencement period for DHIS data collection for TOP in the municipality.

3.2.5. Data Management

Data Collection and Capture

The data were attained from the DHIS coordinator for TOP DHIS data in JHB. All DHIS indicators were collected (as discussed in Chapter 2). The principle investigator was responsible for collection, capture and collation of the data. The data were cleaned before analysis.

Study Tools

Tool one was developed and data captured into Microsoft Office Excel 2003 (Tool I).

Study Variables

The variables available for analyses from the DHIS database included:

- The number of TOP requests.
- The number of first trimester TOP procedures completed.
- The number of second trimester TOP procedures completed.
- The number of TOP procedures completed per health facilities.
- Number of adult (≥18 years) TOP clients who underwent TOP.
- Number of minors (<18 years) TOP clients who underwent TOP.

Statistical Analyses

Stata release 10.0 (StataCorp LP), for Microsoft Windows, was the preferred software for analyses.

The descriptive analyses reported proportions and percentages. Central tendency and data dispersion was described in normally distributed data using mean and standard deviation (±SD), and in non-normally distributed data, median and inter-quartile range (IQR) respectively. The abortion rate was calculated using mid-year population data for women 15 to 44 years of age. The Chi-square test for trend was used to determine any significant changes in TOP requests and performed procedures over time.

A weighted logistic regression model was used to determine the odds of minors (<18 years) undergoing a first and second trimester TOPs compared to adult women.

3.3. SECTION II: SELF-ADMINISTERED QUESTIONNAIRES

In this section of the study, both the TOP providers and TOP clients were enrolled into the study. This portion of the study was extended to include two municipalities in South Africa.

3.3.1. Study Design

An analytical cross-sectional study design was utilised.

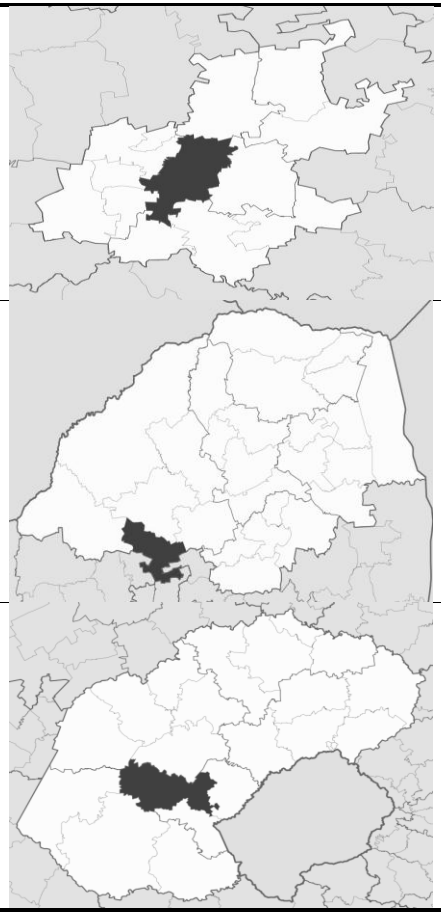
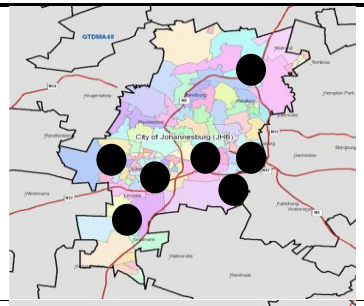
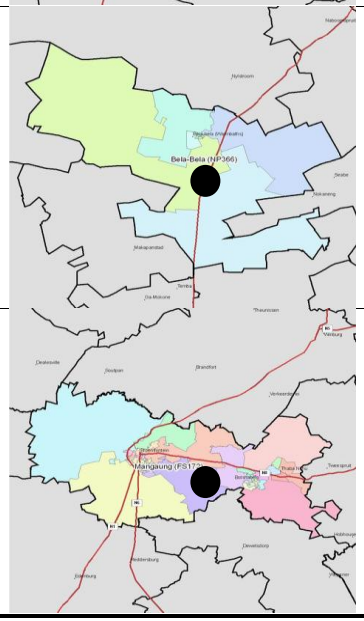
3.3.2. Study Setting and Study Scope

The study was completed in all the primary health care facilities offering first trimester TOPs in the Johannesburg Metropolitan Municipality in the Gauteng province, Mangaung Municipality in the Motheo District in the Free State province, and Bela-Bela Municipality in the Waterberg District, in the Limpopo province (Table 3.1).

Rationale for selecting these regions:

- The municipalities were selected as they are the smallest unit demarcated to provide health services at the district level. There are no sub-districts in Johannesburg; it being a metropolitan municipality.
- The urban and rural comparison was deemed to be beneficial.
- The health facilities managers of facilities in Johannesburg, Bela-Bela and Mangaung showed interest in the study as it was the first in the respective municipalities.

Table 3.1: Overview of study settings and geographical and population numbers

Local Municipality	District	Province	Mid-year population density (2007)[§]	Mid-year population density (women 15-44 years)	Geographical location[$]	
					Municipality within the Province	Health facilities within Municipality
Johannesburg Metropolitan Municipality	Johannesburg Metropolitan District	Gauteng	3 888 180	916 216		
Bela-Bela Local Municipality	Waterberg District	Limpopo	55 844	13 048		
Mangaung Local Municipality	Motheo District	Free State	752 906	175 566		

§ Source: (74) $ Source: (75)

All district public sector facilities (provincial and local government), offering first trimester TOP operational at the time of the study, were included (Table 3.2).

Table 3.2: Designated study facilities in the Johannesburg, Waterberg and Mangaung Municipalities

Province	Municipality	Health Facility Name
Gauteng	Johannesburg	Bophelong Clinic
		Chiawelo Community Health Centre
		Hillbrow Community Health Centre
		Lenasia South Community Health Centre
		South Rand District Hospital
Free State	Mangaung	Dr J.S. Moroka District Hospital
Limpopo	Bela-Bela	Warmbaths District Hospital

3.3.3. Study Population

The study population included all the TOP providers employed and TOP clients at these respective TOP facilities during the study period.

Description of the study population

The health providers employed at the TOP facilities are responsible for the pre-TOP ultrasounds to determine the gestational age of the clients' pregnancies, pre-TOP counselling, Manual Vacuum Aspiration, cleaning and sterilisation of equipment and post-TOP counselling. These are nurses that have been trained in the administration of TOPs. Each TOP facility employs anywhere from one to three nurses.

The specific profile and description of TOP clients accessing the TOP facilities in these three municipalities is not well understood. The clients' ages presumable vary widely, but may start from 12 years of age as permitted by the CTOP Act. The clients may be referrals from peripheral clinics within the CHCs' catchment area or walk-in clients. The clients targeted for study recruitment were those that had returned for the commencement of their TOP.

Inclusion Criteria

Health professionals employed as TOP providers at the TOP facilities:

- All health professionals employed and involved in management or clinical responsibilities in the TOP service during at the study period.
- Staff on annual leave were not included if their return did not coincide with study period.

Clients accessing the TOP service at the TOP facilities:

- The TOP client would be accessing the service to undergo the TOP in the study period.
- The clients' gestation of index pregnancy falls within the first trimester.
- The client would only have been interviewed after the pre-TOP counselling had been completed, and they were waiting for commencement of TOP.
- Adult clients were called to participate but the self-administered questionnaire was distributed to all clients.

Benefits and Risks to the Participants

In all instances where participants approached the researcher or the research assistants for assistance, participants were referred to the appropriate health care worker, outside the TOP clinic, for further management and care. The researchers remain sensitive to the fact that questioning participants about their experiences related to the termination may have negative consequences.

3.3.4. Sample Size

Health professionals employed as TOP providers

The sample size equated the total number of employed TOP providers at these facilities; in total fourteen TOP providers were employed in the TOP facilities. The response rate at the culmination of the study was 13/14 (93%) as a TOP provider was not available during the study period.

Johannesburg Metropolitan Municipality TOP Clients

For the TOP clients, Epi-Info release 6 (TM; November 1996), StatCalc assisted with the sample size calculation. The study was powered for 80% (76). The statistical calculator estimated that approximately 110 participants should be recruited into the study. The DHIS allowed for the total number of TOPs completed in JHB district facilities to be calculated. This was approximately 5000 procedures per annum, and monthly to be 440 (±SD=70.58). One week of sampling data would allow for the required number of clients to be recruited.

Bela-Bela Municipality and Mangaung Municipality TOP Clients

The DHIS data was unavailable and therefore there was a challenge to calculate the caseload of termination of pregnancy completed at the relevant district facilities. These facilities were also sampled for one week duration, similarly to JHB.

3.3.5. Sampling Strategy

One month in the year of 2008 was randomly selected. Once a month was selected, a week from the month was randomly selected. Only full five day weeks were included. During this week every operational facility offering TOP services in the district in the public health sector were visited. A similar strategy was utilised for Mangaung and Bela-Bela district over a 12 month period in 2010, the two facilities were attended in the same one week period.
Convenience sampling was used as the TOP providers and TOP clients at the facility during the randomly selected weeks, and who met inclusion criteria, were invited to partake in the study.

3.3.6. Study Period

After the sampling procedure the study period was randomly selected to be 10th to 14th November 2008.

3.3.7. Data Management

Study Tools

Anonymous self –administered questionnaires were used to attain information from the TOP providers (Tool II) and TOP clients (Tool III) respectively. These were semi-structured questionnaires with both open and closed ended questions. Lickert scales were used for rating purposes

Study Variables

The variables of interest to the researcher and the tools utilised to collect them are listed in Table 3.3.

Table 3.3: List of study variables and tools utilised in section II of this study

Objectives	Tools	Categories	Variables
TOP providers			
Two	Tool II	Training & Work Experience	Years in Nursing and TOP Service
			Comfort with Administering TOP
		Challenges Faced	Career-Pathing, Professional Development
	Tool II	Knowledge	Legislation, Legal T.O.P Gestation
		Perceptions	Quality Of Service, Challenges,
			Attitude Of Provider Towards Clients
TOP Clients			
Three	Tool III	Demographic Profile	Age, Ethnicity, Education
		Socio-Economic Status	Employment, Social Grant
		Medical History	Concurrent Illnesses, Current medication,
		Family Planning	Previous TOPs, Contraception,
		Current Pregnancy	Parity, Gravida, Gestational Age,
			Reason for T.O.P,
	Tool III	Knowledge	Legislation, Legal T.O.P Gestation
		Perceptions	Quality Of Service, Challenges,
			Attitude Of Provider Towards Clients
Four		Post-abortion care	Post-TOP counselling, Complications

Data Collection

Seven TOP facilities were identified for data collection in five days concurrently. The assistance of research assistants was employed. The following procedure was followed with the research assistants:

- Women capable of speaking English and one African language, proficient in literacy skills were selected.
- A one-day workshop was held discussing the study and aspects around abortion. They were trained in research skills required for administering self-administered questionnaires, were familiarised with the questions if their assistance was called upon by participants.
- After the study was completed there was a debriefing session for the research assistants in the event any emotionally challenging issues had arisen during the study.

The data was obtained from the self-administered questionnaires that were handed out to all clients that had entered the waiting room after the counselling session. The questionnaires were anonymous and no identification information was on the questionnaire. The clients were given the opportunity to complete the form in their own time. A collection box was situated in an inconspicuous location at the exit of the clinic, and this gave the clients the opportunity to submit questionnaires anonymously.

The researcher identified the steps within the TOP service and also the steps within the study. These two processes were merged optimally to ensure TOP services or the clients' confidentiality or were not impacted upon due to the sensitivity of the topic under discussion, the researcher deemed the most appropriate time for the questionnaire to be administered would be after the pre-TOP counselling and before any medication or procedure was initiated. The timing

of the study questionnaire in relation to the typical TOP protocol is illustrated in Figure 3.2.

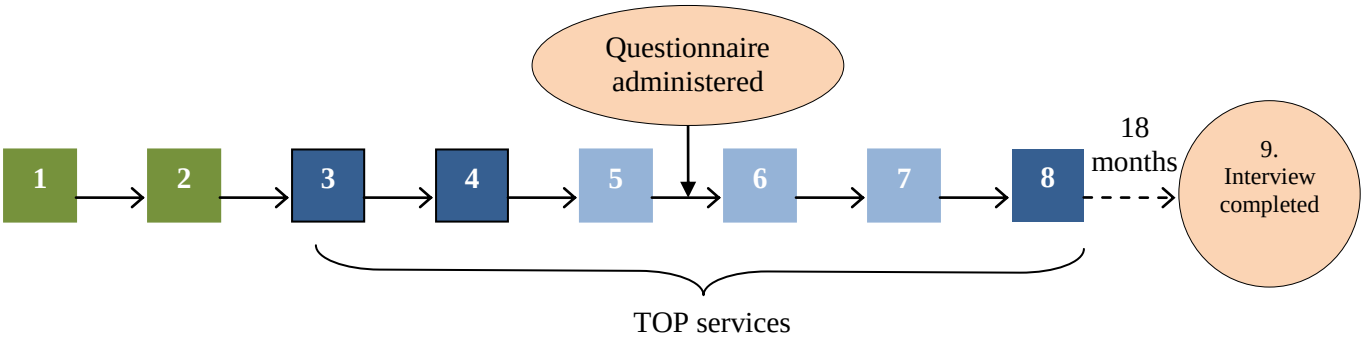


Figure 3.2: Flow of sequential events from diagnosis of pregnancy to follow-up of client

The sequential steps for a TOP client to pass from unwanted pregnancy to point of termination are outlined above. Each step is identified numerically and expanded upon below.

1. Woman discovers pregnancy
2. Woman decides that TOP may be an option
3. Sonar determines date of gestation
4. Book an appointment at the TOP clinic
5. On the return date of appointment counselling session is completed
6. Misoprostol administered - at the clinic/taken at home
7. Manual Vacuum aspirate - same day / subsequent day
8. Post-abortive care - follow-up date (clinical exam/post test abortion)

This flow diagram is developed into the following framework which will be referred to throughout this research report (Figure 3.3).

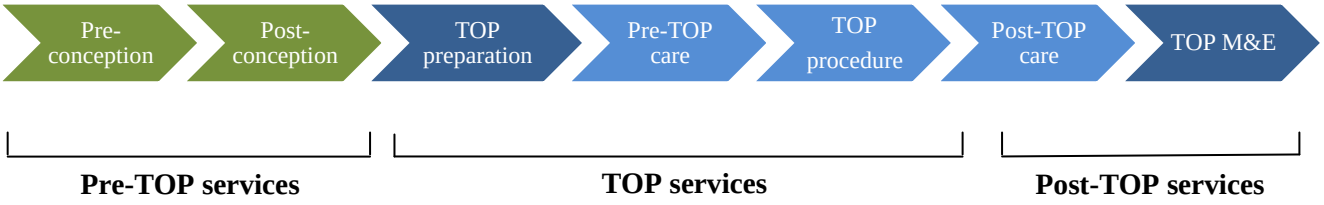


Figure 3.3: Framework of termination of pregnancy services process

The three main process steps are the pre-termination of pregnancy services, the termination of pregnancy services and the post-termination of pregnancy services, defined in the glossary.

Data Capture

The data obtained from the self-administered questionnaires (Tool II and III) were entered into EPI-Info (Version 3.4.1) (76).

Statistical Analysis

The statistical software used was Stata release 10.0 (StataCorp LP), for Microsoft Windows (77).

Descriptive Analysis

The continuous variables were tested for normality of distribution, skewness, and kurtosis. In the case of normally distributed data, means and standard deviations (SD) were used and non-normal distributed data, medians and with inter-quartile range (IQR) were reported (Table 3.4).

Table 3.4: Univariate analyses of data

Descriptive Analyses	Variable Type	Distribution	Description
Univariate	Categorical		Percentages, Proportions
	Continuous	Normal	Mean (SD)
		Non-normal	Median (IQR)

Comparative Analyses

The statistical tests utilised in testing association are listed in the table below (Table 3.5). Significant P-value set at the five percent level or $P \leq 0.05$. Multivariate analyses of the data were not completed as a result of sample size. Though unadjusted odds ratios were calculated using various statistical commands relevant to the sample size and study design. Continuous data were categorised into clinically relevant categories for analyses and when appropriate, age into two categories minor (< 18 years) and adult (≥ 18 years), as well as three age categories (≤ 24 years), (25-34 years), and (≥ 35years) (78). String or text data were encoded to numerical data when required for improved analyses.

Table 3.5: Bivariate and multivariate analyses of data

Analytical Analyses	Dependent Variable	Distribution	Statistical Test
Bivariate	Categorical	Chi-distribution	Pearson Chi-Square Test, Fisher's Exact Test
	Continuous	Non-normal	Mann-Whitney Test, Wilcoxon Rank-sum test, Kruskal-Wallis, Spearman Rank Correlation
		Normal	One-way ANOVA (Bonferroni correction)
Multivariate	Dichotomous		Logistic regression

The description of the statistical tests utilised in the study are expanded below (79-82).

Non-normal distribution (Non-parametric statistical tests)

The Pearson Chi-square Test was used in the study for frequency data as well as for larger contingency tables, a limitation with this particular test is known to occur when analysing larger contingencies tables with small sample sizes as underreporting of the association may occur.

The Fisher Exact Test was conducted when the 2x2 table was seen to be populated with small sample sizes.
Example: Section III: Null hypothesis, the proportion of employed TOP clients at recruitment was equal to the proportion at follow-up.

The Mann-Whitney-Wilcoxon Test was only used once the following assumptions were met: i) the two samples were independent and selected randomly from the populations, ii) the variable was continuous; iii) the populations only differed with respect to their medians. This test was conducted on variables *a priori.*
Example: Section III: Null hypothesis, the median of the gestations at time of TOP is equal between the group with complications and the group without complications.

The Wilcoxon Rank-sum Test was then utilised as a post-hoc test. This was required when the *a priori* testing yielded a significant P-value, and therefore it became necessary to determine which of the pairs were significantly associated.

The Kruskal-Wallis Test similar to the analysis of variance test conducted on normally distributed data was used when multiple comparisons were required for non-normally distributed data.
Example: Section II: Null hypothesis, the median waiting periods between the three municipalities are equal.

The Spearman Rank Correlation Coefficient was utilised for checking if multicollinearity existed during the multivariate logistic regression as it determined the tendency with which variable measurements changed together.

Normal distribution (Parametric statistical tests)

The analysis of variance (ANOVA) was performed when the response variable was normally distributed and the explanatory variable was categorical. The assumptions that needed to be met before its use were the following: i) the variances are homogenous; ii) normally distributed with equal variances data; iii) independent random sample.
Example: Section II: Null hypothesis, the mean age between the three municipalities' TOP clients is equal.

The Bonferroni Correction Adjustment is a post-hoc test, which was used to determine the significance between multiple comparisons.

The Cronbach's Alpha Coefficient determined the internal consistency and reliability of the TOP client rating of TOP service quality. Gliem proposed that researchers using Lickert-type scales calculate and therefore report the Cronbach's Alpha Coefficient (83).

Multivariate Logistic Regression Model- used to determine the odds ratio. The covariates (factors) identified during the univariate analysis at the 10% level ($P<0.1$) were used in the multivariate model. Manually, the non-essential, non-significant variables were eliminated. Specification error was determined using a statistical software command (*linktest*), which utilised predictors to rebuild the model; certain criteria need to be met for the model to be properly

specified (84). Log likelihood Chi-square goodness-of-fit and pseudo R-square (as a proportion of the log-likelihood rather than proportion of variance related to the model) were used to determine the fir of the model. The Hosmer and Lemeshow's goodness-of-fit (Pearson Chi-square test) completed to test the fit of the relevant model.

Variables in the regression models were statistically tested for multicollinearity using Spearman Correlation test. A correlation of coefficient of >0.7 between two independent variables within the model resulted in a variable being removed from the model (80; 84-86). The potential confounding variables were adjusted for in the model. Precision of estimate for odds ratio in the logistic regression models was defined as $P \leq 0.05$ significance level.

Influential observations were determined by creating a series of residuals (Pearson residual and deviance residual) and the Pregibon leverage residuals. These were plotted to determine the orientation of the residuals against the predicted values (84).

3.4. SECTION III: FOLLOW-UP INTERVIEWS

3.4.1. Study Design

A prospective longitudinal study design was adopted. The follow-up interviews collected quantitative and qualitative data. Multimethodology, or mixed methods approach was selected in order to enhance the research quality of the subject matter. The three sections I, II, and III were drawn upon to develop triangulation between the results obtained in the quantitative and qualitative sections, therefore adding value and robustness of the research findings (13;87-89).

3.4.2. Study Setting and Study Scope

The follow-up telephonic interviews were undertaken on the TOP clients from the Johannesburg Metropolitan Municipality whom volunteered their contact details on the self-administered questionnaire.

3.4.3. Study Population

The TOP clients from all health facilities in the Johannesburg Metropolitan Municipality that had been included in section II.

Inclusion criteria

- The clients that had been entered into the study by completing the self-administered questionnaire at the TOP facilities.
- The clients that had volunteered their telephone numbers in response to a question for further participation in a follow-up telephone interview at a future date.
- Telephone numbers that were still in existence at the time of the follow-up phone calls
- The clients that gave consent to participate in the follow-up interview.
- Adult participants were only considered for follow-up.

Benefits and Risks to the Participants

An opportunity will be offered to participants that are indentified to have emotional, psychological or physical consequences as a result of their termination of pregnancy or their involvement in this study. These participants will be referred to relevant health care workers as required, namely, psychology, social working or gynaecology, this for further management and care. The researchers were sensitive that questioning participants about their experiences related to the termination may indeed have negative consequences.

3.4.4. Sample Size and Sampling Strategy

Every client that volunteered their telephone number was contacted after eighteen months.

3.4.5. Study Period

The interviewing process commenced eighteen months after the enrolment date, the week was the 17th to the 21st May 2010.

3.4.6. Data Management

Study Tools

Tool IV was the interviewer-administered questionnaire developed for the interviews of the TOP clients. It consisted of both open and closed ended questions with opportunities for clients to respond freely.

Data Collection

This was the final opportunity where information was obtained from the TOP client.

- The client at enrolment volunteered their contact number if willing to discuss their experience in a follow-up study.
- After eighteen months these clients were contacted telephonically by the principle researcher, no identifiable details were evident except for the telephone number and pseudonyms were given to the client at the interview.
- Interviewer administered questionnaires were similar to the initial self-administered questionnaire except for enquiries regarding post-abortive care and experiences.
- An interview schedule, which consisted of two semi-directive open ended questions, was asked at the end of the interview. The clients were given the opportunity to freely answer the questions if they so wished.
- The interviewer noted the clients' responses verbatim and these were transcribed verbatim.

Study Variables

The variables of interest to the researcher are listed in the table below (Table 3.6):

Table 3.6: List of study variables and tools utilised in section III of this study

Specific Objectives	Tool utilised	Broad categories	Study Variables
TOP Clients			
Three	Tool IV	Demographic Profile	Age, Education
		Socio-Economic Status	Employment, Social Grant
		Medical History	Repeat Tops, Contraception,
		Family Planning	Pre-TOP
		Knowledge	Legislation, Legal T.O.P Gestation
		Perceptions	Quality Of Service, Challenges, Attitude of Provider Towards Clients
Four		Post-Abortive Services	Post-TOP Counselling, Complications

Data Capture

The interviewer-administered questionnaires (Tool IV) were entered into EPI-Info (Version 3.4.1). Qualitative data were typed out verbatim into the Microsoft Office Word document.

Statistical Analysis

Quantitative Analysis

The statistical software used was Stata release 10.0 (StataCorp LP), for Microsoft Windows. Table 3.3 describes the statistical tests utilised as dictated by type and distribution of data.

Descriptive Analysis

The continuous variables were tested for normality of distribution, skewness, and kurtosis. In the case of normally distributed data, means and standard deviations (SD) were used and non-normally distributed data, medians and inter-quartile range (IQR) were reported. Unadjusted odds ratios were calculated using various statistical commands relevant to the sample size and study design.

Qualitative Analysis

The statistical software for data storage, coding and theme construction was MAXQDA release version 10 (VERBI GmbH) (90). The steps that were followed in analysing the data included (89):

1. Preliminary exploration of the data by reading and writing notes and memos
2. The text was coded by labelling
3. The codes were verified by inter-coder agreement checks
4. Similar codes were aggregated to develop themes
5. Themes were interconnected and interrelated
6. Narrative was constructed using the themes

This research study was therefore comprised of three sections (Figure 3.4).

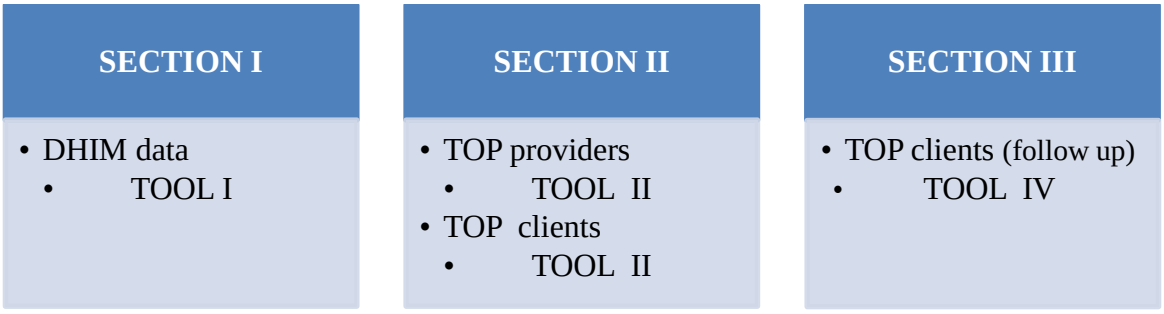


Figure 3.4: Summary of the three sections and the relevant study tools

Table 3.7 below tabulates the specific objectives with the appropriate tool utilised and the appendix reference.

Table 3.7: Summary of study objectives, study tools and appendices

Objective	Instrument	Source of data	Appendix
Objective 1	Tool I	DHIS	C
Objective 2	Tool II	Self-administered questionnaire	C
Objective 3	Tool III	Self-administered questionnaire	C
	Tool IV	Interviewer-administered questionnaire	C
Objective 4	Tool IV	Interviewer-administered questionnaire	C

3.5. ETHICAL CONSIDERATIONS

The study was approved by the University of the Witwatersrand Human Research Ethics Committee (WHREC), approval number M080838. Ethics approval was obtained for the three sections of the study. The district and health facility managers approved the study in their respective clinics.

Each participant was informed of the study and given an information sheet. The consent was for the study participants who completed and submitted the questionnaires. The anonymity of the participants was assured by the researchers with study numbers being the only identifiable detail of the cohort. Accesses to data were limited to the researcher only. The questionnaires were self-administered and the collection box was placed outside the clinic to ensure anonymity of the participants.

In the telephonic interviews pseudonyms were used. The clients were asked for permission to continue with interview at the commencement of the telephonic conversation to ensure participants that had changed their minds about participating were able to decline. At the end of the interview the clients were reassured that the study was now completed and their telephone numbers would be discarded.

A social worker was available for situations where the clients requested counselling.

CHAPTER FOUR

RESULTS

The following chapter will report the findings of the three sections as discussed in the methods chapter. Section I (DHIS data analysis), Section II (self-administered questionnaires of both TOP provider and client) and lastly, Section III (interviewer-administered questionnaire both quantitative and qualitative findings).

4.1. SECTION I: DISTRICT HEALTH INFORMATION MANAGEMENT SYSTEM DATA FOR JOHANNESBURG METROPOLITAN HEALTH DISTRICT

4.1.1. Total Number of Termination of Pregnancy Requests and Procedures Completed in Johannesburg

The DHIS showed a 61% increase in TOP requests from 9 919 in 2006 to 16 031 in 2009 at District facilities (Table 4.1) (Chi-square for trend; P=0.08). The number of first trimester procedures completed at all district facilities similarly increased by 33% from 4 004 in 2006 to 5 338 in 2009 (Chi-square for trend; P=0.17). The number of first trimester procedures performed addressed 40% of total requests in 2006 and 33% of total requests in 2009.

Table 4.1: Termination of pregnancy requests and procedures at primary health care facilities in the Johannesburg Metropolitan Municipality (2006 - 2009)

Year	District facilities	
	Total TOP requests N	First trimester performed n (% of requests)
2006	9919	4004 (40%)
2007	14169	5085 (36%)
2008	14683	4921 (34%)
2009	16031	5338 (33%)

The figure below demonstrates the quantity of first trimester termination of pregnancies performed monthly from 2006 to 2009, at all the district facilities in JHB (Figure 4.1). A trend

line (red linear line) demonstrates the decrease in TOPs performed in the Johannesburg Metropolitan Municipality.

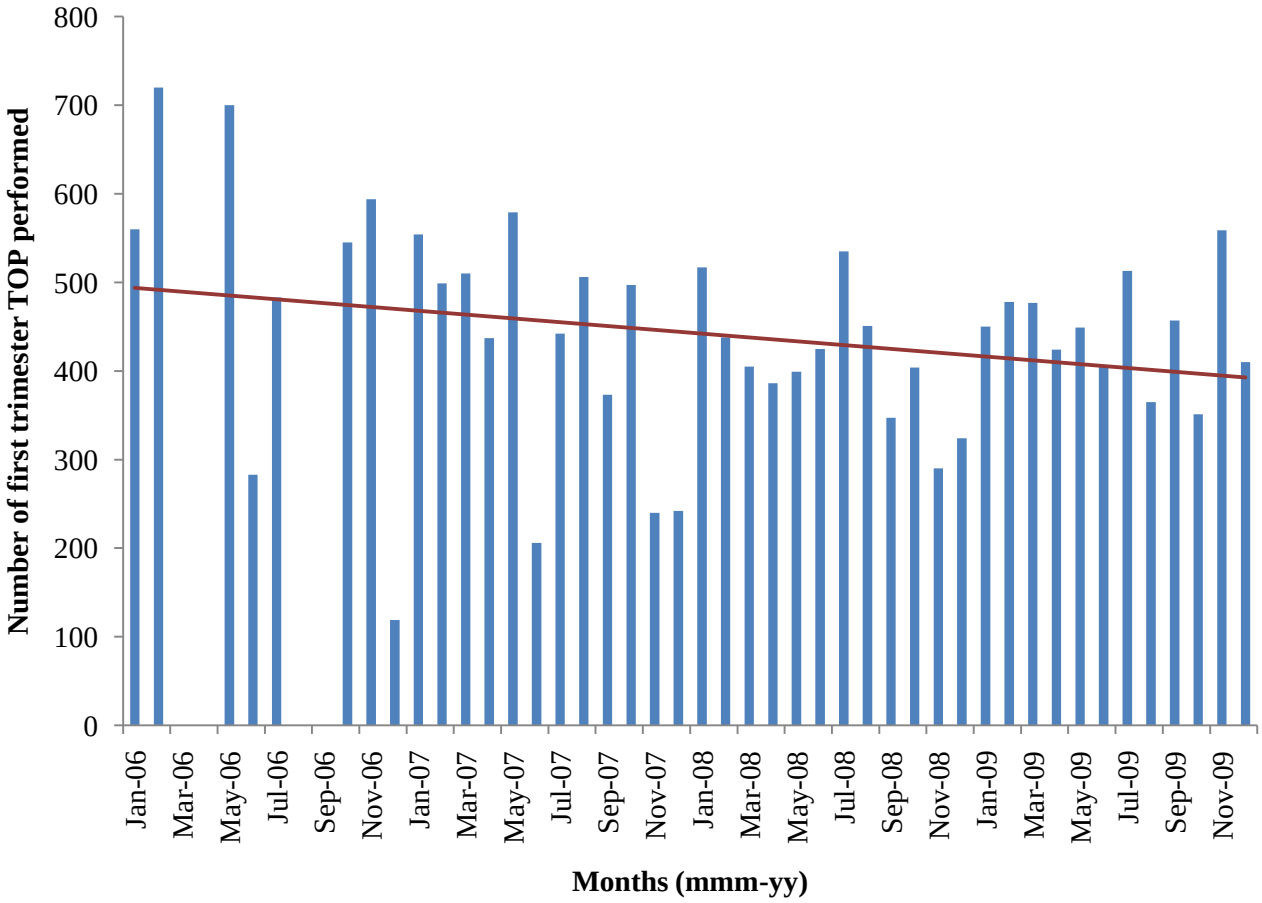


Figure 4.1: Number of first trimester termination of pregnancies performed in Johannesburg Metropolitan Municipality from January 2006 to December 2009

Table 4.2 demonstrates the 43% increase in the number of TOP requests received at the hospital facilities in JHB, 4 983 in 2006 to 7 103 in 2009 (Chi-square for trend; P=0.08). The total number of TOP procedures performed addressed 49% of total requests in 2006 and 52% in 2009.

Table 4.2: Termination of pregnancy requests and procedures at academic hospital facilities in the Johannesburg Metropolitan Municipality (2006 - 2009)

Year	Academic hospital facilities			
	TOP requests	First trimester performed	Second trimester performed	Total TOP performed
	N	n	n	n (% of requests)
2006	4983	1319	1116	2435 (49%)
2007	5878	1732	1612	3344 (57%)
2008	6049	1778	1920	3698 (61%)
2009	7103	1499	2158	3657 (52%)

Figure 4.2 illustrated the percentage of TOP procedures that met and addressed the TOP requests received at both the District and Academic Hospital facilities over the four consecutive years. The district attended to less than 40% of the TOP requests, and the academic hospitals approximately 60%.

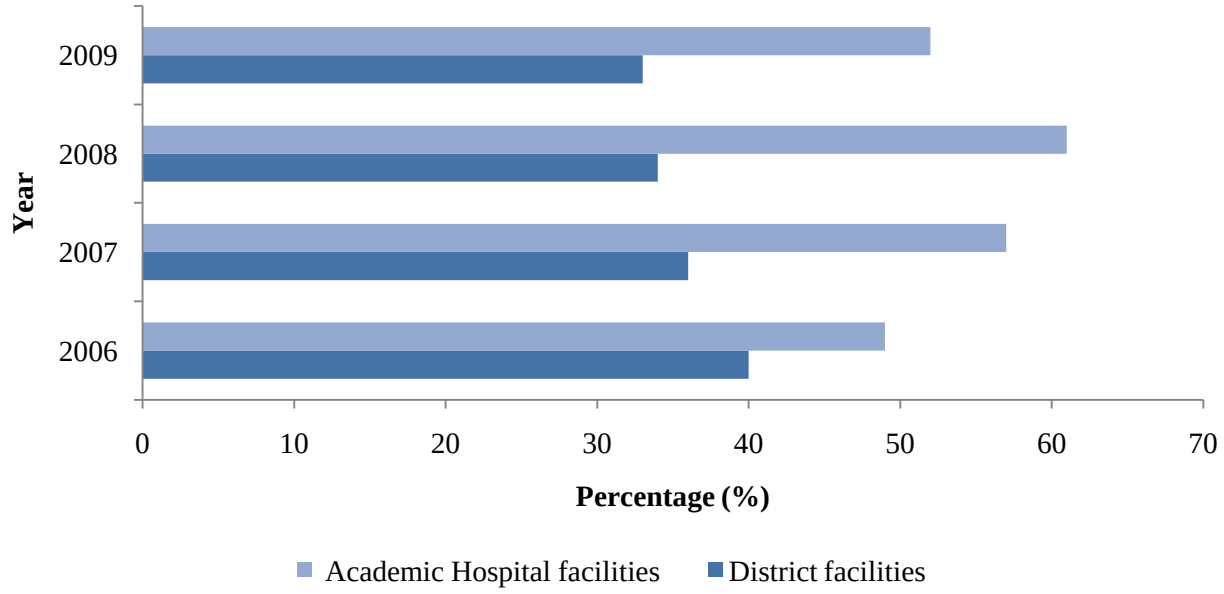


Figure 4.2: Total termination of pregnancies performed as percentage of termination of pregnancy requests at the primary health care facilities and the hospital facilities in the Johannesburg Metropolitan Municipality (2006-2009)

The DHIS data therefore allowed for the calculation of the total abortion rate for Johannesburg Metropolitan Municipality (Table 4.3). The abortion rate increased from 7 per 1000 in 2006 to 10 per 1000 in 2009 for women between 15 to 44 years of age. The total abortion request rate increased from 16 per 1000 in 2006 to 25 per 1000 in 2009.

Table 4.3: Total first and second trimester termination of pregnancy procedures performed and abortion rate for Johannesburg Metropolitan Municipality

Year	First trimester TOPs			Second trimester TOPs	Total TOPs	TOP Requests			Overall TOP request Rate / 1000¡	Overall Abortion Rate / 1000¡
	District	Academic	Total	Academic	Total	District	Academic	Total		
2006	4004	1319	5323	1116	6439	9919	4983	14902	16	7
2007	5085	1732	6817	1612	8429	14169	5878	20047	22	9
2008	4921	1778	6699	1920	8619	14683	6049	20732	23	9
2009	5338	1499	6837	2158	8995	16031	7103	23134	25	10

¡STATS-SA Mid-year population estimates (2001 census)

4.1.2. Age Distribution of Termination of Pregnancy Clients

The number of total adult (≥ 18 years) women undergoing TOP in JHB has decreased from 6 716 in 2006 to 6 126 in 2009 (Chi-square for trend; P=0.49) (Table 4.4). The number of minors (< 18years) increased by 73% from 1 742 in 2006 to 3 022 in 2009, though statistically insignificant (Chi-square for trend; P=0.17).

Table 4.4: Age distribution of termination of pregnancy clients accessing services at TOP Health facilities in Johannesburg Metropolitan Municipality (2006 - 2009)

Year	District facilities n (%)		Academic Hospital facilities n (%)		Total n		
	Minor	Adult	Minor	Adult	Minors	Adults	All Ages
2006	1271 (22%)	4480 (78%)	471 (17%)	2236 (83%)	1742	6716	8458
2007	1331 (23%)	4348 (77%)	388 (12%)	2827 (88%)	1719	7175	8894
2008	1269 (25%)	3892 (75%)	732 (20%)	2931 (80%)	2001	6823	8824
2009	1975 (36%)	3512 (64%)	1047 (29%)	2614 (71%)	3022	6126	9148

The increase in the minors over the years at both the district and the Academic Hospital facilities are demonstrated in Figure 4.3, this contrary to the apparent downward trend noticed in the numbers of adult clients accessing the service from 2006 to 2009.

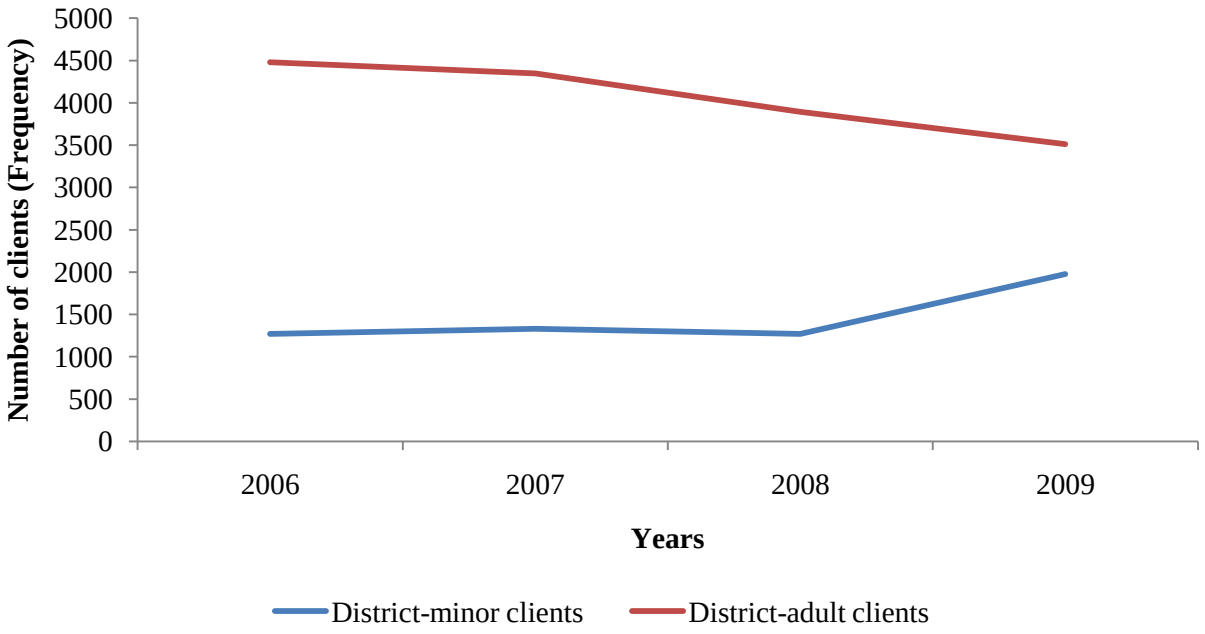


Figure 4.3a: District termination of pregnancy facilities

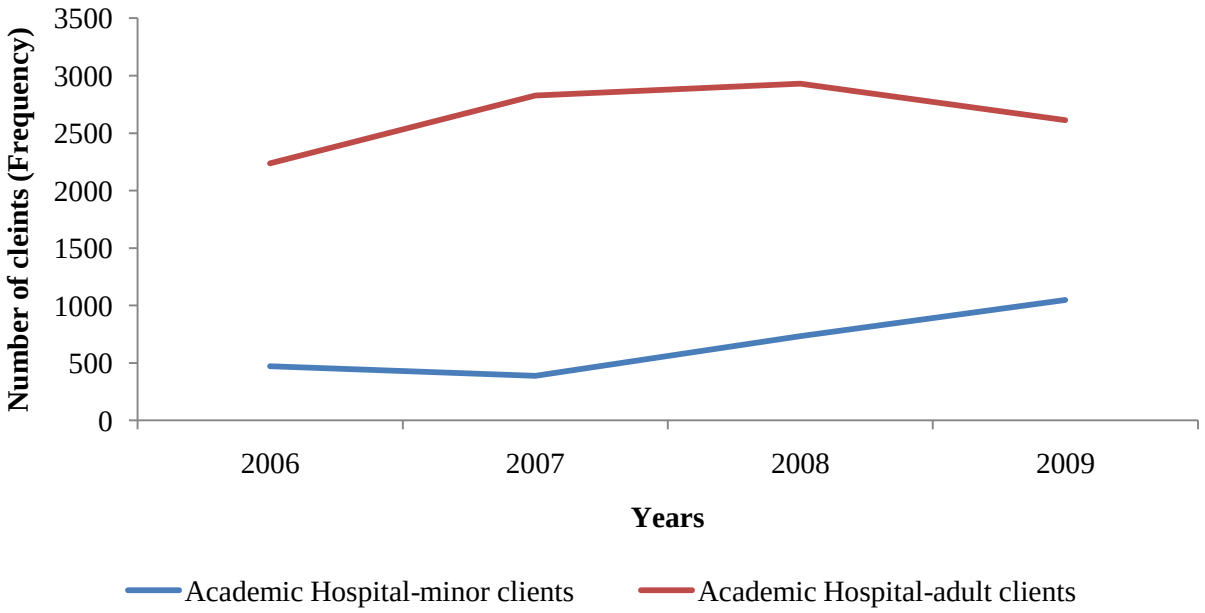


Figure 4.3b: Academic Hospital termination of pregnancy facilities

Figure 4.3: Line graphs of the numbers of adult and minor termination of pregnancy clients undergoing termination of pregnancies at district and academic hospital facilities in the Johannesburg Metropolitan Municipality (2006-2009)

The odds of minors undergoing a TOP compared to adults both at district and academic hospital facilities (Table 4.5) were increased. At the District facilities: a minor, compared to an adult, had higher odds of undergoing a TOP in 2008 (OR 1.15; 95% CI 1.05-1.26; P=0.002) and in 2009 (OR 1.98; 95% CI 1.82-2.15; P<0.001). Similarly, at the Academic Hospital facilities, a minor, compared to an adult, had higher odds of undergoing a TOP in 2008 (OR 1.19; 95% CI 1.04-1.35; P=0.01) and in 2009 (OR 1.90; 95% CI 1.68-2.15; P<0.001).

Table 4.5: Bivariate model of unadjusted odds ratios of minor termination of pregnancy clients undergoing first and second trimester termination of pregnancies compared to adult clients in Johannesburg Metropolitan Municipality (2006 - 2009)

Minor	First trimester TOP			Second trimester TOP		
	Unadjusted $^{\epsilon}$OR	95% CI	P-value	Unadjusted $^{\epsilon}$OR	95% CI	P-value
2007	1.08	0.99-1.18	0.09	0.65	0.56-0.75	<0.001*
2008	1.15	1.05-1.26	0.002*	1.19	1.04-1.35	0.01*
2009	1.98	1.82-2.15	<0.001*	1.90	1.68-2.15	<0.001*

$^{\epsilon}$Adult age category the reference group *P-value significant at the 5% level

The odds of a minor undergoing a TOP compared to an adult were increased when all TOP facilities in JHB and across the four years are considered (OR 1.25; 95% CI 1.21-1.28; P<0.0001).

4.1.3. Johannesburg Metropolitan District Termination of Pregnancy Caseload

Five TOP district facilities were functional from 2006 to 2009 (Table 4.6). A further two facilities identified for TOP service delivery, Edenvale Hospital and Zola Clinic, commenced their services the end of 2009 and beginning of 2010 respectively. Hillbrow and Chiawelo Community Health Centre (CHC) collectively completed approximately two-thirds of all TOP procedures in JHB year on year from 2006 to 2009.

Table 4.6: Termination of pregnancy health facilities in the Johannesburg Metropolitan Municipality, and number of first trimester TOP procedures completed (2006 - 2009)

Facilities	First Trimester TOP n (% of total TOP performed)							
	2006		2007		2008		2009	
Hillbrow	1503	(38%)	1702	(33%)	1815	(37%)	1640	(31%)
Chiawelo	1059	(26%)	1305	(26%)	1710	(35%)	2295	(43%)
Bophelong	966	(24%)	792	(16%)	134	(3%)	90	(2%)
South Rand	252	(6%)	418	(8%)	349	(7%)	724	(14%)
Lenasia South	190	(5%)	586	(12%)	477	(10%)	373	(7%)
Discoverers	34	(1%)	282	(6%)	436	(9%)	0	(0%)
Edenvale	0	(0%)	0	(0%)	0	(0%)	216	(4%)

From 2006 to 2009 only two TOP facilities increased the number of TOP performed year on year, namely Chiawelo CHC and South Rand District Hospital (Figure 4.4).

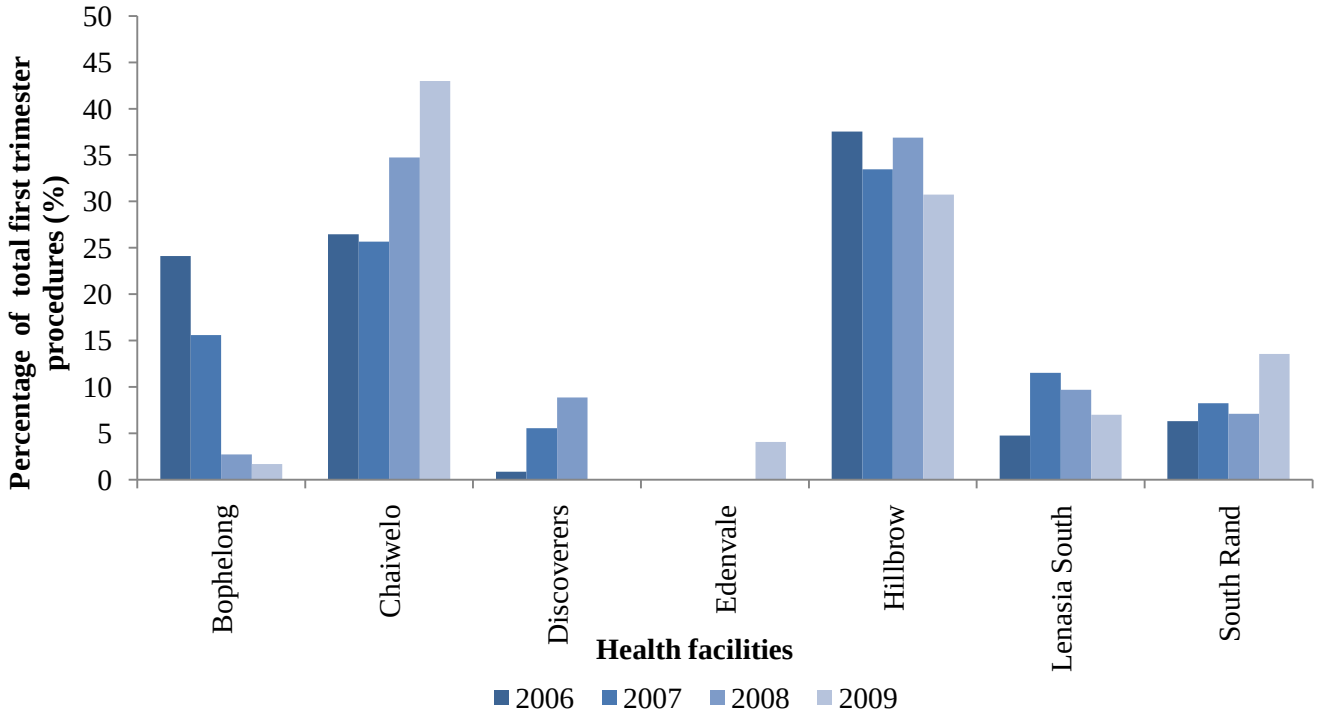


Figure 4.4: Percentage of first trimester termination of pregnancy procedures performed per health facility in Johannesburg Municipality 2006 to 2009

In 2006, 2008 and 2009 only Chris Hani Baragwanath Hospital (CHBH) and Charlotte Maxeke Johannesburg Academic Hospital (CMJAH) functioned (Figure 4.5). For a brief period in 2007 a

third hospital, Rahima Moosa Mother and Child Hospital (RM), also functioned as a TOP facility for first and second trimester TOPs. The CHBH competed approximately 80% of all first trimester procedures and approximately 60% of all second trimester procedures from 2006 to 2009.

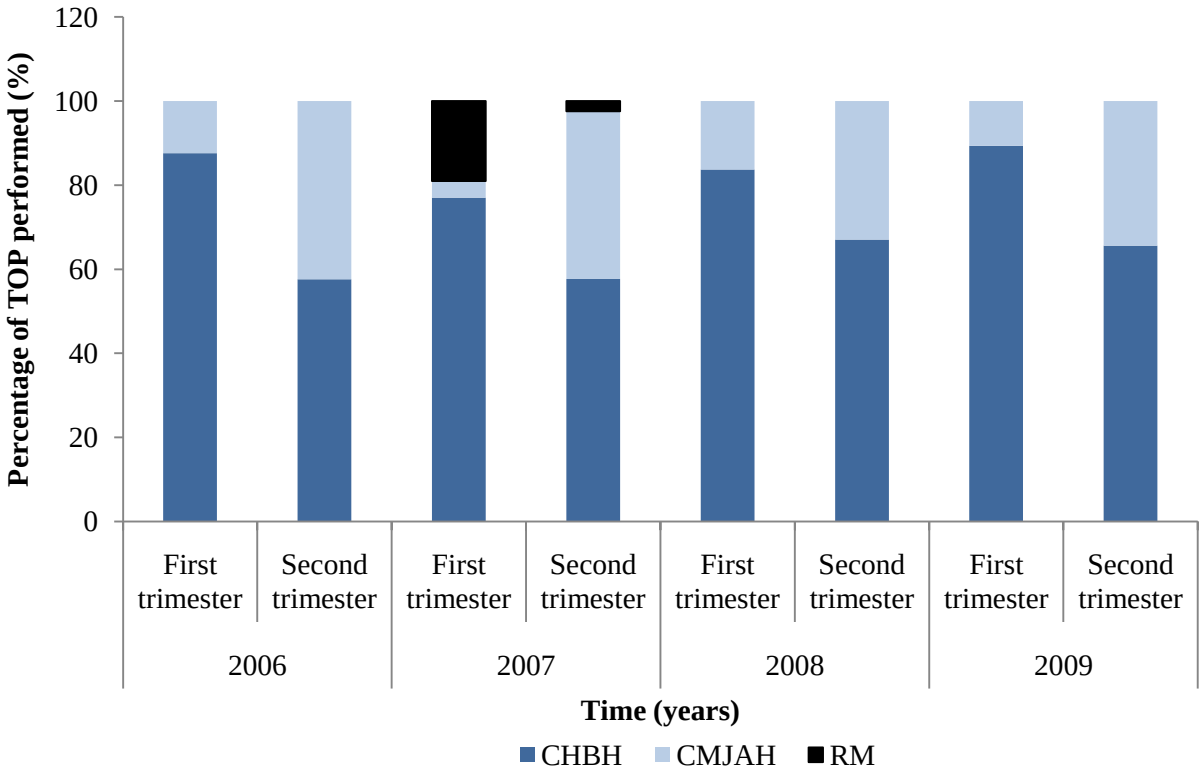


Figure 4.5: Percentage of first and second trimester termination of pregnancy procedures performed per hospital facility in Johannesburg Municipality 2006 to 2009

CHBH – Chris Hani Baragwanath Hospital; CMJAH – Charlotte Maxeke Johannesburg Academic Hospital; RM – Rahima Moosa Mother and Child Hospital

4.2. SECTION II: FINDINGS FROM SELF-ADMINISTERED QUESTIONNAIRES

This section will predominantly use data collected from the self-administered questionnaires from the TOP providers (n=13) and the TOP clients (n=152), where required the DHIS data will also be referred to.

4.2.1. Overview of Termination of Pregnancy Services in Johannesburg Metropolitan Municipality

The following section will highlight the number of days and hours the TOP services were available to clients. The PHC facilities from Johannesburg, Mangaung and Bela-Bela Municipalities will be considered from this section forward.

4.2.1.1. Termination of Pregnancy Service Availability

Johannesburg Metropolitan Municipality

Of the five facilities visited, one clinic offered TOP services two days a week; one offered services three days a week, and the final three facilities were operational five days a week. Clinics started services at 07h30 and concluded at 16h30. All facilities closed over the weekend. Therefore the services were available approximately 900 hours per week; 3600 hours per month (Table 4.7).

Table 4.7: Termination of pregnancy service hours available in the Johannesburg Metropolitan Municipality per week, Health facilities (n = 5)

Health facilities service availability	Total hours
Total hours/day services available	45 hrs
Total days/week services available	20 days
Total hours/week services available	45 hours x 20 days = 900 hours/week
Total hours/month services available	**^900 x 4 weeks = 3600 hours/month**

^A five day working week

Mangaung and Bela-Bela Sub-districts

In Mangaung the facility operated five days per week, total of 40 hours per week. Bela-Bela operated for four days per week, a total of 36 hours per week.

4.2.1.2. Termination of Pregnancy Service Effectiveness

Table 4.8 below utilised the DHIS data described in the previous section (Figure 4.1) to calculate the mean (±SD) number of first trimester procedures completed in Johannesburg TOP facilities for a one month period. The DHIS data for Mangaung and Bela-Bela were unavailable. The mean number of first trimester procedures, with the 95% confidence intervals and range are depicted pictorially in the box and whisker plot below (Figure 4.6).

Table 4.8: Total number of First Trimester TOP completed in the Study sites from District Health Information System data (2006 - 2009)

Health facility	First trimester procedures / month (DHIS data)	
	Mean	Standard deviation
Bophelong	58.29	±15.09
Chiawelo	148.12	±47.94
Hillbrow	151.36	±23.34
Lenasia South	41.69	±12.44
South Rand	40.53	±9.94
Total	439.73	±70.58

[#] P-value significant at the 5 % level

From 2006 to 2009, the mean number of first trimester procedures completed per month in the functional TOP facilities was approximately 440 (±70.58). Four-hundred and forty cases performed monthly over a total of 3600 operational hours (five district health facilities). Therefore, the clinics are requiring approximately eight hours of operational time per first trimester procedure performed.

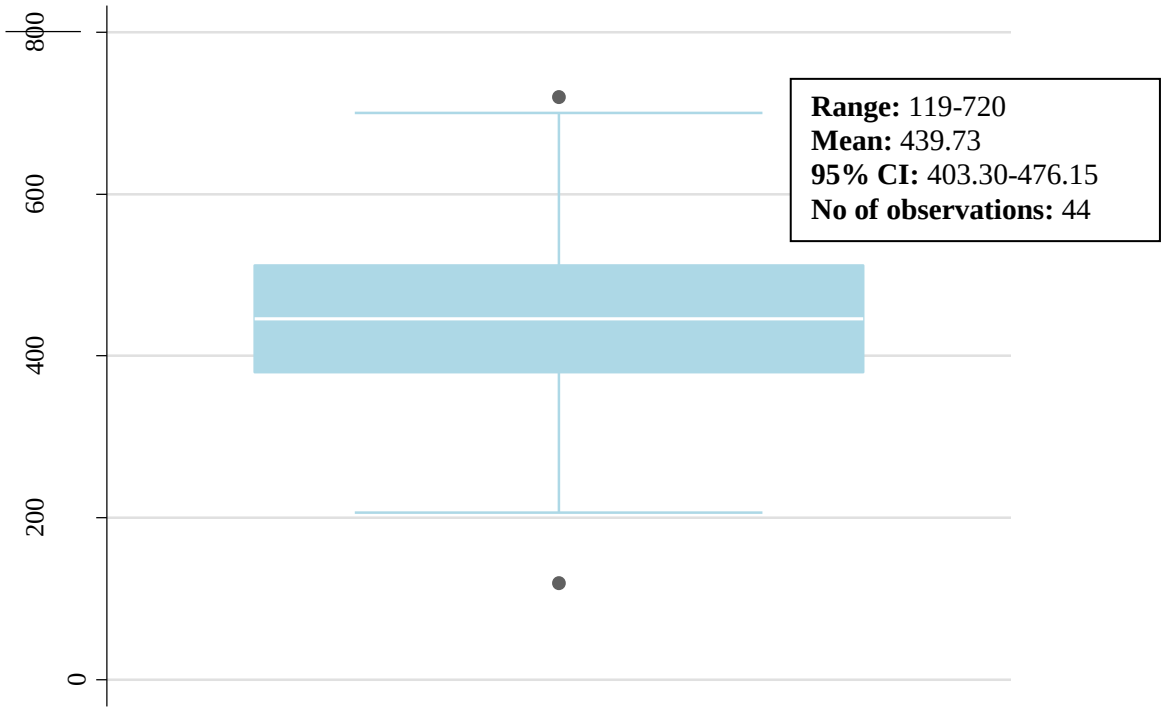


Figure 4.6: Box and Whisker plot of District Health Information Data for Johannesburg Metropolitan Municipality (2006 to 2009)

4.2.1.3. Time flow analysis

A time flow analysis was completed on the process tasks required in a termination of pregnancy service, the flow diagram describes the basic building blocks of a TOP services (Figure 4.7).

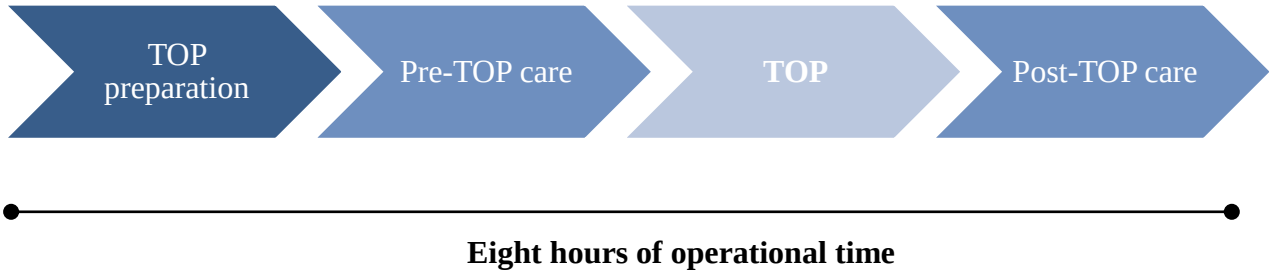


Figure 4.7: Termination of pregnancy process steps and time flow

The researcher observed ten cases completed at three facilities, Table 4.9 below lists the time required to complete each task.

Table 4.9: Duration of termination of pregnancy tasks as observed by researchers (n=10)

Task	Observed time	WHO technical guidance (30)
Pre-TOP counselling	30 min	Not specified
Preparation of Client (cervical ripening)	180 min (Misoprostol taken at clinic) 10 min (Misoprostol taken at home)	Not specified
TOP procedure (MVA)	20 min	10 min
Recovery	45 min	30 min
Cleaning and sterilisation	20 min	Not specified
Total time	**295 min**	**40 min**
Estimate time minus actual time	**480 min – 295 min**	
Unaccounted time period	**185 min (±3 hours)**	

4.2.1.4.Termination of Pregnancy Service Accessibility

The researcher did not identify a standardised client booking system. This influenced the time period clients waited for the TOP procedure (detailed findings appear later in Section II):

i. Gestation at booking determined the appointment date
ii. First come first serve
iii. First available appointment date regardless of gestation

Two of the TOP providers (15%) reported that transport to and from their respective TOP facility was a challenge.

4.2.2. Termination of Pregnancy Providers

The study population in this section included all TOP providers employed at the TOP facilities (n=7) in the three municipalities. Total number of TOP providers were fourteen (n=14). Thirteen providers were recruited, therefore amounting to a response rate of 93%.

Description of Termination of Pregnancy Providers

Eight of the thirteen providers (62%) had worked more than five years in nursing; there was no statistical difference between municipalities (Pearson Chi-square; P=0.16) (Table 4.10). Four of the twelve nurses (33%) had worked in TOP service for more than five years; similar work experience between municipalities (Pearson Chi-square; P=0.62). Five (38%) had managerial as well as clinical responsibilities at the TOP facilities; no differences reported in the municipalities (Pearson Chi-square; P=0.32).

Table 4.10: Description of termination of pregnancy providers across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=13)

Characteristics	Health facilities n (%)			P-value
	Johannesburg	Mangaung	Bela-Bela	
Female	9 (100%)	3 (100%)	1 (100%)	¤N
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	
Nursing service (years)				0.16
2 – 5 years	2 (22%)	2 (67%)		
6 – 9 years	3 (33%)			
≥ 10 years	4 (44%)		1 (100%)	
Not answered		1 (33%)		
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	
TOP trained (years)				0.62
0-1 years	2 (22%)			
2-4 years	3 (33%)	2 (67%)	1 (100%)	
5-9 years	3 (33%)			
≥10 years	1 (11%)			
Not answered		1 (33%)		
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	
TOP service (years)				0.62
0-1 years	1 (11%)			
2-4 years	4 (44%)	2 (67%)	1 (100%)	
5-9 years	3 (33%)			
≥10 years	1 (11%)			
Not answered		1 (33%)		
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	
Responsibility held at TOP clinic				0.32
Clinical	3 (33%)	3 (100%)	1 (100%)	
Managerial	1 (11%)			
Clinical and managerial	5 (56%)			
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	

*P-value significant at the 5 % level; ¤N-No significance testing completed

Providers Knowledge and Awareness of Termination of Pregnancy Legislation

The TOP providers were all aware of the CTOP Act and the Amendments, though only 30% (n=3) were familiar with the various gestations and stipulations of appropriate medical management, no statistical significance difference between municipalities (Pearson Chi-square; P=0.70) (Table 4.11).

Table 4.11: TOP Providers Knowledge of Termination on Pregnancy Legislation across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=13)

Characteristics	Health facilities n (%)			P-value
	Johannesburg	Mangaung	Bela-Bela	
CTOP Act Knowledge	9 (100%)	3 (100%)	1 (100%)	¤N
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	
Knowledge legal gestations	3 (30%)	-	0 (0)	0.70
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	
Perceived reasons for poor utilisation of contraception				0.56
Knowledge	4 (44%)			
Access/availability	2 (22%)			
Irresponsible	1 (11%)			
TOP as family plan	1 (11%)			
Reason Unknown	1 (11%)	3 (100%)	1 (100%)	
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	
Source of reproductive health information				0.40
Friends	6 (67%)			
Health Facility	1 (11%)		1 (100%)	
Media	1 (11%)			
Other	1 (11%)			
Reason Unknown		3 (100%)		
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	

*P-value significant at the 5 % level; ¤N-No significance testing completed

All providers perceived contraception use by the TOP clients to be poor. Thirty percent (n=4) perceived lack of knowledge as the principle reason for TOP clients' poor utilisation of contraception; a statistical difference did not exist between the municipalities (Pearson Chi-square; P=0.56). The various reasons that TOP providers gave are listed in Quote box 4.1.

Quote box 4.1: Reasons for not utilising family planning

Lack of Knowledge

- "Because of the problem illiteracy, women cannot look after themselves. They need to be educated."

Health System related

- "Accessibility of services clinics are not open on the weekends do not know about family planning, ignorant or they tell you about the disadvantages of the contraception method."
- "Lack of information, and also the nurses' attitude scares them away, they (clients) hear myths about the family planning, they (clients) are afraid."

Six of the thirteen (46%) TOP providers thought friends were the predominant source of reproductive health information for clients accessing the TOP services; the municipalities did not differ significantly (Pearson Chi-square; P=0.40).

Providers Perception Termination of Pregnancy Services

All providers reported the current TOP services needed improvement (Table 4.12). Six of ten providers, that responded, thought their treatment of TOP clients was above average; this was similar in all municipalities (Pearson Chi-square; P=0.30).

All respondents reported they were not coping with their duties in the TOP services (this included workload and other stressors associated with administering TOPs). The provinces addressed this with annual debriefing sessions available to the providers. However, all respondents thought more debriefing was required. Only two nurses of a total of eleven reported being comfortable with administering the TOP service (Pearson Chi-square; P=0.42) (Figure 4.8).

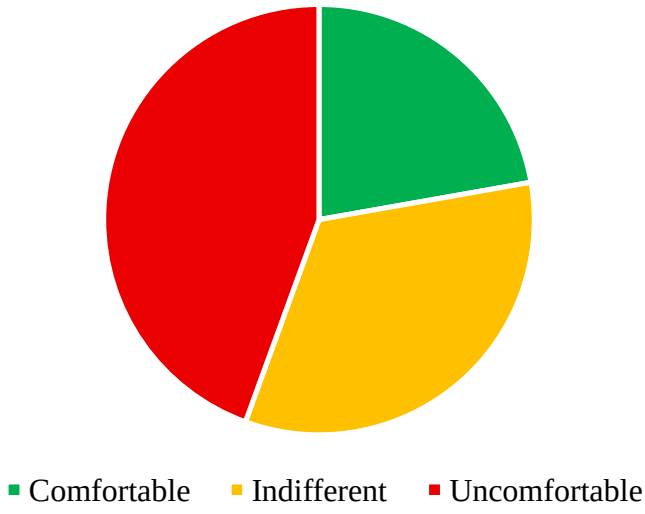


Figure 4.8: Pie chart of termination of pregnancy providers perception of administering the termination of pregnancy service Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=13)

Four providers (31%) were permitted to undergo training in disciplines other than TOP. Eight of the thirteen (62%) were permitted to rotate through clinical departments, but this was solely dependent on their position being filled in the TOP clinic by a willing and qualified nurse. There existed no significant differences between the municipalities. The TOP provider's quotes regarding the TOP services are listed in Quote box 4.2.

Quote box 4.2: Reasons for staying in TOP

- "If there is no one willing to work in the department, some patients will then go for backstreet abortions."
- "It is strenuous and I cannot cope - it's stressing and no one wants to work in TOP, so there no one to take over from me."
- "I am waiting for a replacement, I am wanting better opportunities."

Some of the challenges faced by TOP providers are reported below (Quote box 4.3).

Quote box 4.3: Challenges faced by TOP providers

- "The first problem is staffing, not easy to be replaced, the lack of managerial support is second, third is not enough counselling for us."
- "Poor management support; you get criticism from people and staff who are anti-TOP."
- "TOP providers are not paid for the service they provide, TOP is a scarce skill."
- "There are over 40 requests per day, TOP is a speciality and should be treated as such."
- "Attitude from the other staff, the poor support from the management."
- "Lack of support from management, negative attitude from other staff."
- "Clients are coming back for repeat TOPs more than once, there are language barriers."

In summary, TOP providers list the following as requirements for service improvement (Figure 4.9):

1. Increase number of TOP clinics or staff employed in current facilities.
2. Improve salaries (add scarce skills) and strengthen management support.
3. Increased management support, process of engagement with TOP providers and improve the interpersonal relationships between various cadres of health professionals.

Table 4.12: Termination of Pregnancy Providers' Perception of the Current Termination of Pregnancy Services across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=13)

Characteristics	Health facilities n (%)			P-value
	Johannesburg	Mangaung	Bela-Bela	
Treatment of TOP clients				0.10
Very Poor				
Poor			1 (100%)	
Average	3 (33%)			
Good	4 (44%)			
Very Good	2 (22%)			
Missing		3 (100%)	-	
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	
Overall quality services				0.30
Very good	2 (22%)		1 (100%)	
Good	2 (22%)			
Average	5 (56%)	2 (67%)		
Poor				
Very Poor		1 (33%)		
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	
Improvement required	9 (100%)	3 (100%)	1 (100%)	¤N
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	
Not coping	9 (100%)	2 (100%)	1 (100%)	¤N
Total	***9 (100%)***	***2 (100%)***	***1 (100%)***	
Debriefing insufficient	9 (100%)	2 (100%)	1 (100%)	¤N
Total	***9 (100%)***	***2 (100%)***	***1 (100%)***	
Administering TOPs				0.42
Comfortable	1 (11%)		1 (100%)	
Indifferent	3 (33%)			
Uncomfortable	3 (33%)	1 (33%)		
Did not respond	2 (22%)	2 (67%)		
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	
Training opportunities in other disciplines	4 (44%)	0 (0%)	0 (0%)	1.00
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	
Permitted rotation through other disciplines	5 (57%)	2 (67%)	1 (100%)	1.00
Total	***9 (100%)***	***3 (100%)***	***1 (100%)***	

*P-value significant at the 5 % level; £one respondent did not complete the question; ¤N-No significance testing completed

A schematic diagram consolidates the various perceptions and requirements proposed by the TOP providers and connection made to their suggestions and recommendations (Figure 4.9).

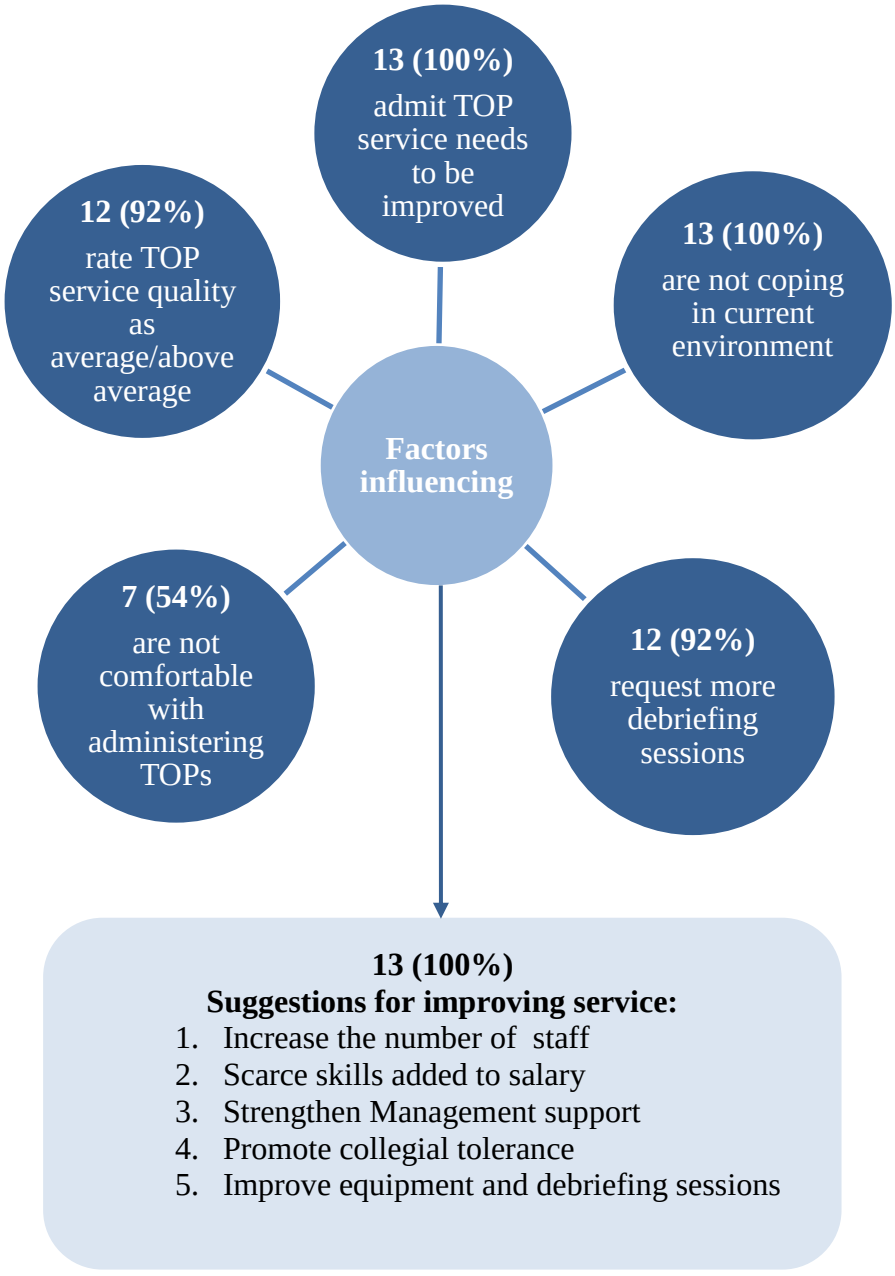


Figure 4.9: Flow diagram of termination of pregnancy providers' perception of the termination of pregnancy service

4.2.3. Termination of Pregnancy Clients

This section will present the data obtained from the TOP client participants. Firstly, the data obtained from the self-administered questionnaires will be presented; the P-values reported in the text relate to the significance testing across all facilities in all municipalities. The longitudinal component of the study is presented in the subsequent segment, namely Section III.

Description of the Termination of Pregnancy Clients

A total of one-hundred and fifty-two participants were recruited into the study. One hundred and sixty self-administered questionnaires were distributed to TOP clients throughout the seven facilities (Table 4.13). The response rate for this component of the study was 95%.

Table 4.13: Frequency and age distribution of termination of pregnancy clients across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

Health facility	**Total**	**Age**	
	n (%)	**Mean**	**(±SD)**
Johannesburg Metropolitan Municipality			
Bophelong Clinic	10 (7%)	25.00	(±5.52)
Chiawelo CHC	40 (26%)	24.72	(±6.10)
Hillbrow CHC	25 (16%)	26.64	(±6.71)
Lenasia CHC	22 (14%)	26.10	(±6.06)
South Rand District Hospital	15 (10%)	29.53	(±4.79)
Bela-Bela Municipality			
Warmbaths District Hospital	30 (20%)	26.10	(±5.74)
Mangaung Municipality			
Dr J.S. Moroka District Hospital	10 (7%)	24.60	(±6.26)
Total	***152***	***#26.00***	***(±6.03)***

#Mean (±SD)

Socio-demographic profile

The socio-demographic profile of the termination of pregnancy clients profile is described in Table 4.14.

The age dispersion was normally distributed (Kurtosis 2.43, Skewness 0.24). The mean age was 26.00 (±6.03) years (Figure 4.10).

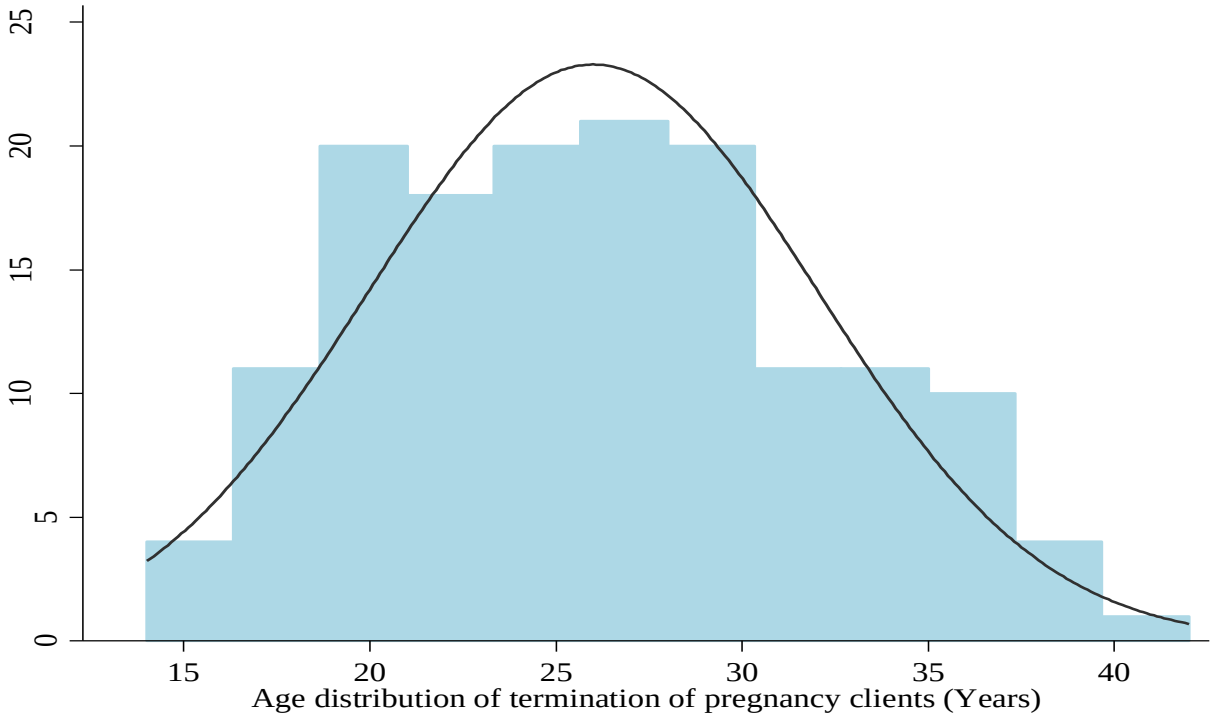


Figure 4.10: Histogram of overall age distribution of termination of pregnancy clients across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

The youngest participants attended the DR JS Moroka in Mangaung, Free State; mean age 24.60 (±6.26) years of age. South Rand District Hospital in JHB had the oldest participants 29.53 (±4.79) years of age; there was no significant difference across the municipalities (One-way ANOVA; P=0.75). Overall ten of the 152 (7%) respondents were minors (Figure 4.11).

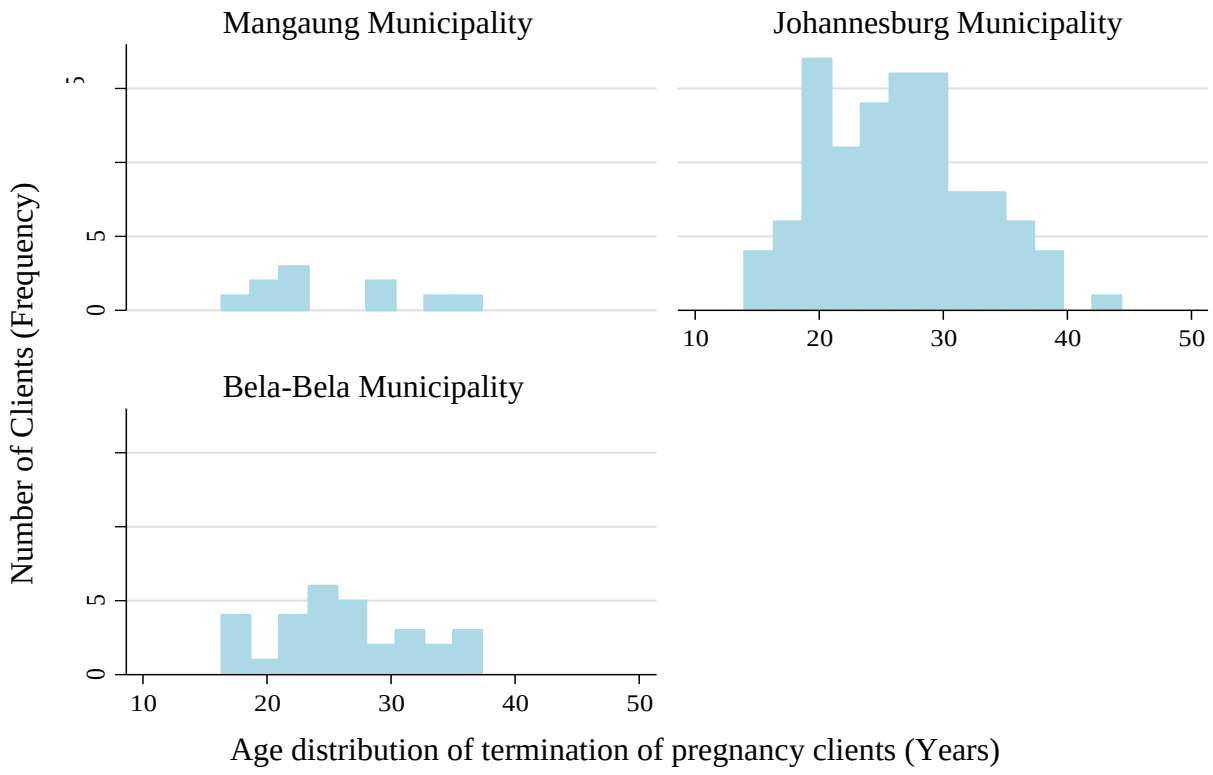


Figure 4.11: Histogram of age distribution of termination of pregnancy clients by the three municipalities Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

The majority (96%) of the clients were black Africans. Within JHB existed a statistically significant difference in numbers of non-south Africans accessing the service (Pearson Chi-square; P=0.01). Southrand District Hospital reported the highest percentage (40%; n=6); followed by Hillbrow CHC (36%; n=9) and Bophelong clinic (33%; n=3). The other facilities reported less than 20% were non-South African citizens.

One hundred and nineteen (78%) of TOP clients were single at the time of recruitment; similar statistic across municipalities (Pearson Chi-square; P=0.31). Thirty-two percent of clients (n=48) at the time of their visit to the TOP clinic were neither studying nor employed. Forty-four clients overall (29%) were receiving a government grant; no difference between municipalities (Pearson Chi-square; P=0.21), the majority (95%) were Child Care Grants (Table 4.14).

Table 4.14: Characteristics of termination of pregnancy clients across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

Characteristics	Health facility n (%) / Median (IQR)			P-value
	Johannesburg	Mangaung	Bela-Bela	
Age [#]	26.10 (±6.13)	24.6 (±6.25)	26.1 (±5.74)	0.75
Ethnicity				0.33
Black African	106 (96%)	10 (100%)	28 (94%)	
Coloured	5 (4%)		1 (3%)	
White			1 (3%)	
Total	***111 (100%)***	***10 (100%)***	***30 (100%)***	
Non-South African citizen	24 (21%)	0 (0%)	4 (13%)	0.17
Total	***112 (100%)***	***10 (100%)***	***30 (100%)***	
Studying & employment				0.29
Not studying & unemployed	48 (42%)			
Studying only	29 (26%)	5 (50%)	11 (37%)	
Employed only	29 (26%)	1 (10%)	14 (47%)	
Studying & employed	6 (6%)			
Missing		4 (40%)	5 (16%)	
Total	***112 (100%)***	***10 (100%)***	***30 (100%)***	
Marital status				0.11
Single	84 (75%)	8 (80%)	27 (90%)	
Cohabiting	15 (14%)			
Married	10 (9%)	1 (10%)	2 (7%)	
Divorced	2 (2%)		1 (3%)	
Widowed	1 (1%)	1 (10%)		
Total	***112 (100%)***	***10 (100%)***	***30 (100%)***	
Social grant	28 (25%)	4 (40%)	12 (40%)	0.41
Total	***112 (100%)***	***10 (100%)***	***30 (100%)***	

[¥] Median (IQR); [#]Mean (±SD); [*]P-value significant at the 5 % level

Previous Clinical History

There was not a significant statistical difference between the municipalities regarding clients with concurrent medical conditions (Pearson Chi-square; P=0.69) (Table 4.15). The self-reported HIV prevalence was four and seven percent for JHB and Bela-Bela respectively.

Table 4.15: Medial history of termination of pregnancy clients across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

Characteristics	**Health facility n/N (%)**			**P-value**
	Johannesburg	**Mangaung**	**Bela-Bela**	
Concurrent condition	12 (11%)	0 (0%)	2 (7%)	0.46
Total	***112(100%)***	***10(100%)***	***30(100%)***	
Reported Conditions				
HIV/HIV-related disease	5 (42%)		2 (100%)	
Hypertension	3 (25%)			
Respiratory conditions	3 (25%)			
Other	1 (8%)			
Total	*12 (100%)*	*0 (0%)*	*2 (100%)*	

Contraception and reason for termination of pregnancy

Overall, one hundred and sixteen (76%) women seeking abortion reported not using contraception during the month of conception; this was not significantly dissimilar between Mangaung, JHB and Bela-Bela (Pearson Chi-square; P=0.51) (Table 4.16). Twenty-six percent (n=28) cited their lack of knowledge around contraception as a reason for not using family planning; the statistical difference occurred between JHB and Bela-Bela sub-district (Bonferroni corrected-adjustment; P= 0.190). Thirty-nine percent (n=51) of participants reported financial constraints as the reason for undergoing a TOP; a reason that was similar across the three municipalities (Pearson Chi-square; P=0.08). Sixteen percent (n=25) women reported having had

a previous TOP, this was statistically similar throughout the municipalities (Pearson Chi-square; P=0.75).

Table 4.16: Medial history of termination of pregnancy clients across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

Characteristics	Health facility n/N (%)			P-value
	Johannesburg	Mangaung	Bela-Bela	
Utilising contraception	27 (24%)	1 (10%)	8 (27%)	0.55
Total	***112 (100%)***	***10 (100%)***	***30 (100%)***	
Reason not utilising contraception				0.03*
Knowledge	25 (33%)	1 (11%)	2 (9%)	
Adverse events	17 (23%)	2 (22%)	6 (27%)	
Personal preference	7 (13%)	1 (11%)	1 (5%)	
Unplanned intercourse	4 (7%)	1 (11%)		
Defaulted	2 (3%)		12 (5%)	
Not ready	1 (1%)			
Accessibility/Availability	3 (4%)	3 (33%)		
Conceive	1 (1%)		1 (5%)	
Condoms	14 (19%)	1 (11%)		
Not ready	1 (3%)			
Total	***75 (100%)***	***9 (100%)***	***22 (100%)***	
Previous abortion	18 (16%)	1 (10%)	6 (20%)	0.75
Total	***112 (100%)***	***10 (100%)***	***30 (100%)***	
Reason for TOP				0.08
Financial constraints	34 (36%)	3 (50%)	14 (47%)	
No desire for a child	28 (30%)		4 (13%)	
Relational-cultural	16 (17%)		5 (17%)	
Scholastic obligations	12 (13%)	2 (33%)	5 (17%)	
Health	4 (4%)		1 (3%)	
Rape	1 (1%)			
Reason unknown		1 (17%)	1 (3%)	
Total	***95 (100%)***	***6 (100%)***	***30 (100%)***	

¥ Median (IQR); #Mean (±SD); *P-value significant at the 5 % level

Current pregnancy and previous obstetrical history

Table 4.17 below tabulates the TOP clients' gynaecological and obstetrical history. Gravida (Kruskal-Wallis; P=0.52), previous miscarriages (Kruskal-Wallis; P=0.84), and number of children alive (Kruskal-Wallis; P=0.45), did not differ significantly between the three municipalities.

A statistical difference was found with the number of previous TOPs between the three municipalities (Kruskal-Wallis; P<0.0001). Those clients attending the health facilities in JHB were found to have significantly more TOPs than the clients attending the health facility in Mangaung (Post-hoc Wilcoxon Ranksum; P<0.0001) and Bela-Bela (Post-hoc Wilcoxon Ranksum; P<0.0001).

Table 4.17: Obstetrical and gynaecological history of termination of pregnancy clients across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

Characteristics	**Health facility Median (IQR)**						**P-value**
	Johannesburg		**Mangaung**		**Bela-Bela**		
Gravida	3	(2-3)	2	(1-3)	2	(2-4)	0.52
Number of living children	1	(0-2)	1	(0-1)	1	(0-2)	0.45
Number of previous miscarriages	1	(1-2)	0	(0-0)	0	(0-0)	0.84
Number of previous TOPs	1	(1-2)	0	(0-1)	0	(0-0)	<0.0001*
Gestation at first presentation (weeks)	7	(5-9)	8	(7-11)	7	(4-7)	0.09
Waiting period (days)	14	(6-28)	7	(4-12)	3	(1-6)	<0.0001*
Gestation at TOP (weeks)	9	(8-11)	8	(7-12)	7.50	(4-8)	<0.0001*
Total	***112 (100%)***		***10 (100%)***		***30 (100%)***		

¥ Median (IQR); *P-value significant at the 5 % level

The median gestation at which women first presented to the TOP clinic was 7 weeks (IQR; 5-8) (Figure 4.12). These gestations did not differ statistically between the municipalities (Kruskal-Wallis; P=0.09).

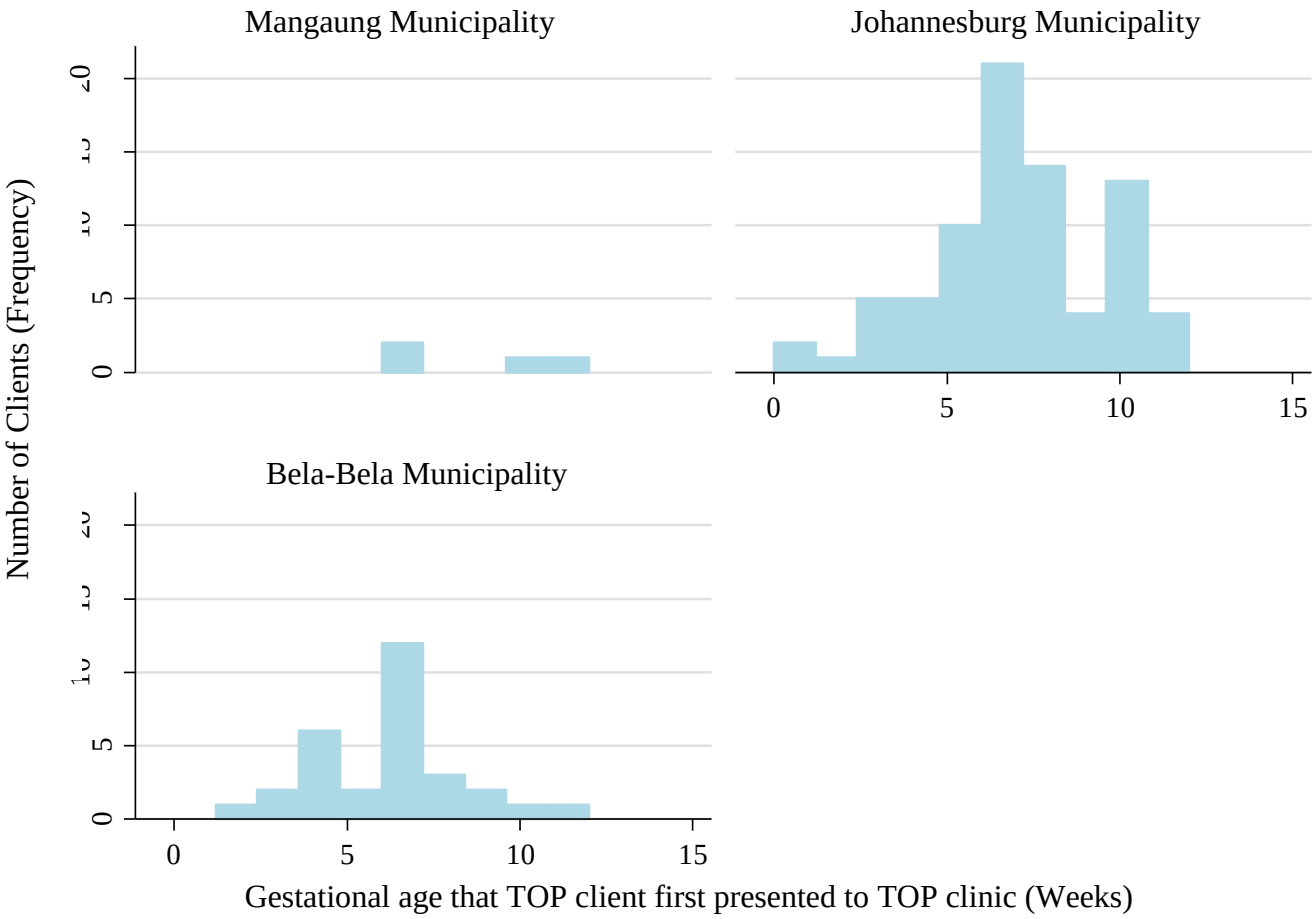


Figure 4.12: Graphs of gestation in weeks at which termination of pregnancy clients first presented to health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

The overall median time clients waited for their TOP procedure date was 7 days (IQR; 4-21). The range of waiting periods were zero days as in the case of the clinics that followed a "first come first serve policy," to 32 days (Figure 4.13). The number of days the TOP clients had to wait for the procedure from first presenting at the clinic did differ significantly between the municipalities (Kruskal-Wallis; P<0.0001). This significant difference resulted as JHB clients waited 14 days (IQR; 6-28) for their appointments contrary to Bela-Bela clients only waited 3 days (IQR; 1-6) (Post-hoc Wilcoxon- Ranksum; P<0.0001).

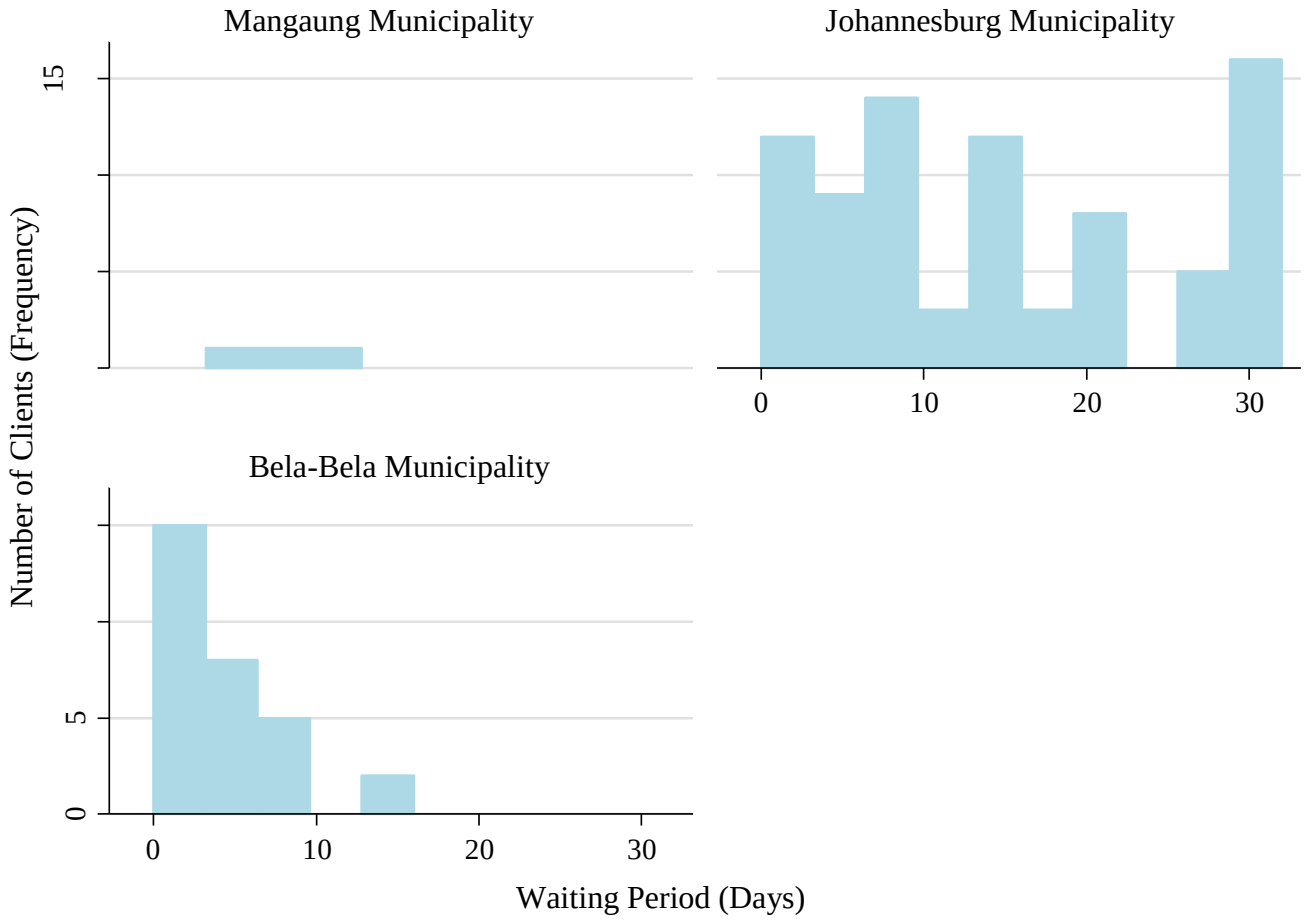


Figure 4.13: Graphs of waiting time in days for termination of pregnancy across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=139)

The subsequent visit for the TOP procedure was completed at a median gestation of 8 weeks (IQR; 7-10) (Figure 4.14). The gestation period was significantly different between the three municipalities (Kruskal-Wallis; P<0.0001). This difference existed as JHB clients presented at later median gestations of 9 weeks (IQR; 8-11) and significantly earlier in Bela-Bela clients at earlier gestations of 7.5 weeks (IQR;4-8) (Post-hoc Wilcoxon Ranksum; P<0.0001). The range of gestations extended from 4 weeks to 12 weeks. Overall thirty-six percent (n = 49) of the TOPs were performed at a gestations over 10 weeks.

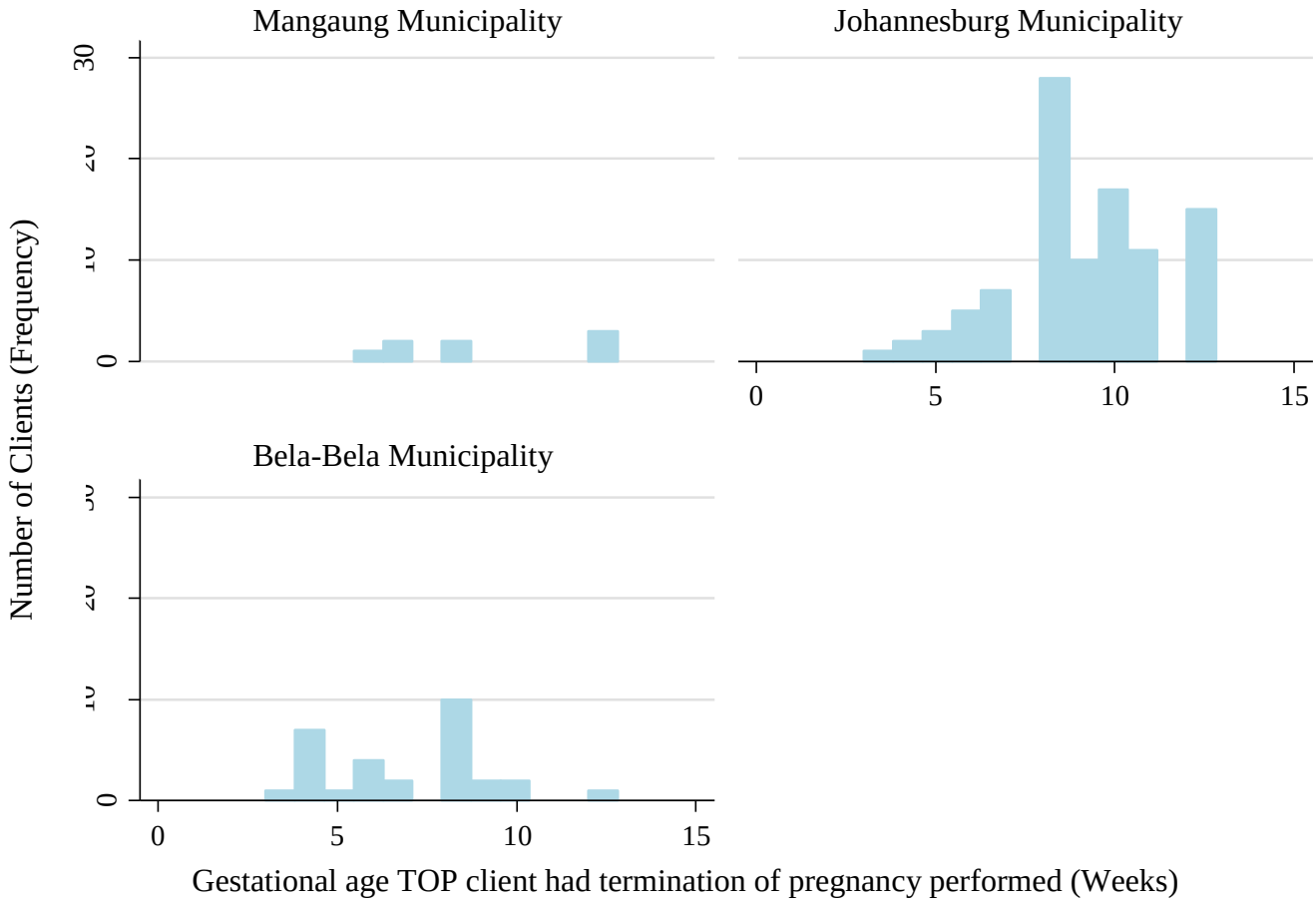


Figure 4.14: Graphs of gestation in weeks at which termination of clients undergo termination of pregnancies by the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=139)

Figure 4.15 is a summative line graph depicting the times of gestation that clients from the three municipalities first present at the clinic, the waiting time and then the subsequent visit to clinic for the TOP. The graph shows the prolonged waiting time the clients from JHB have compared to the other facilities. Figure 4.16 demonstrates the proportion of clients that were on contraception at conception. It depicts the clients' future decisions to commence contraception or not. The majority of women made the decision to start contraception and injectable contraceptive method was the most common choice.

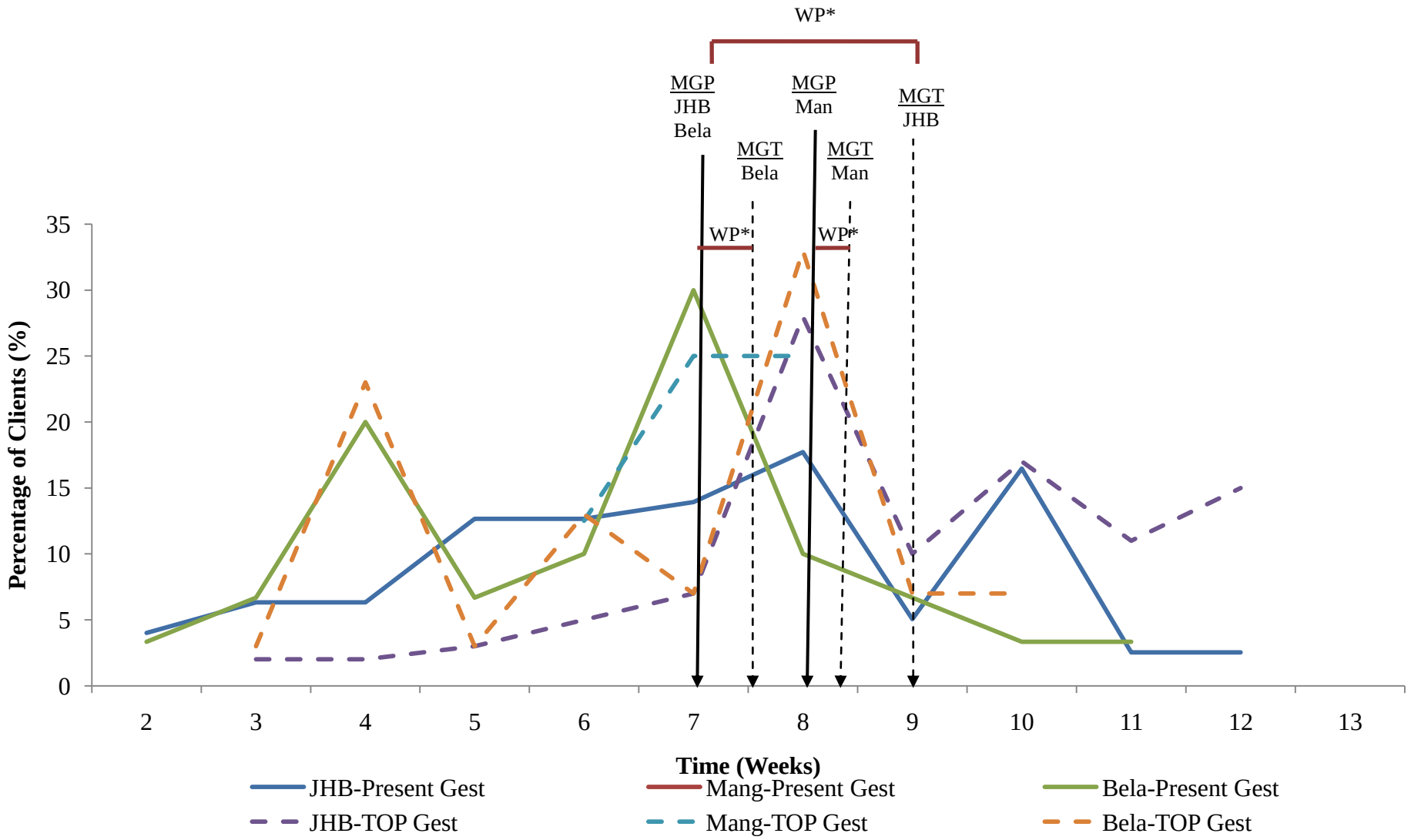


Figure 4.15: Line graph depicting gestation at first presentation and gestation at termination of pregnancy across three municipalities the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

Key: MGP- Median Gestation at first Presentation; MGT- Median Gestation of Termination of Pregnancy; WP*- Waiting Period
JHB- Johannesburg Municipality; Man- Mangaung Municipality; Bela- Bela-Bela Municipality

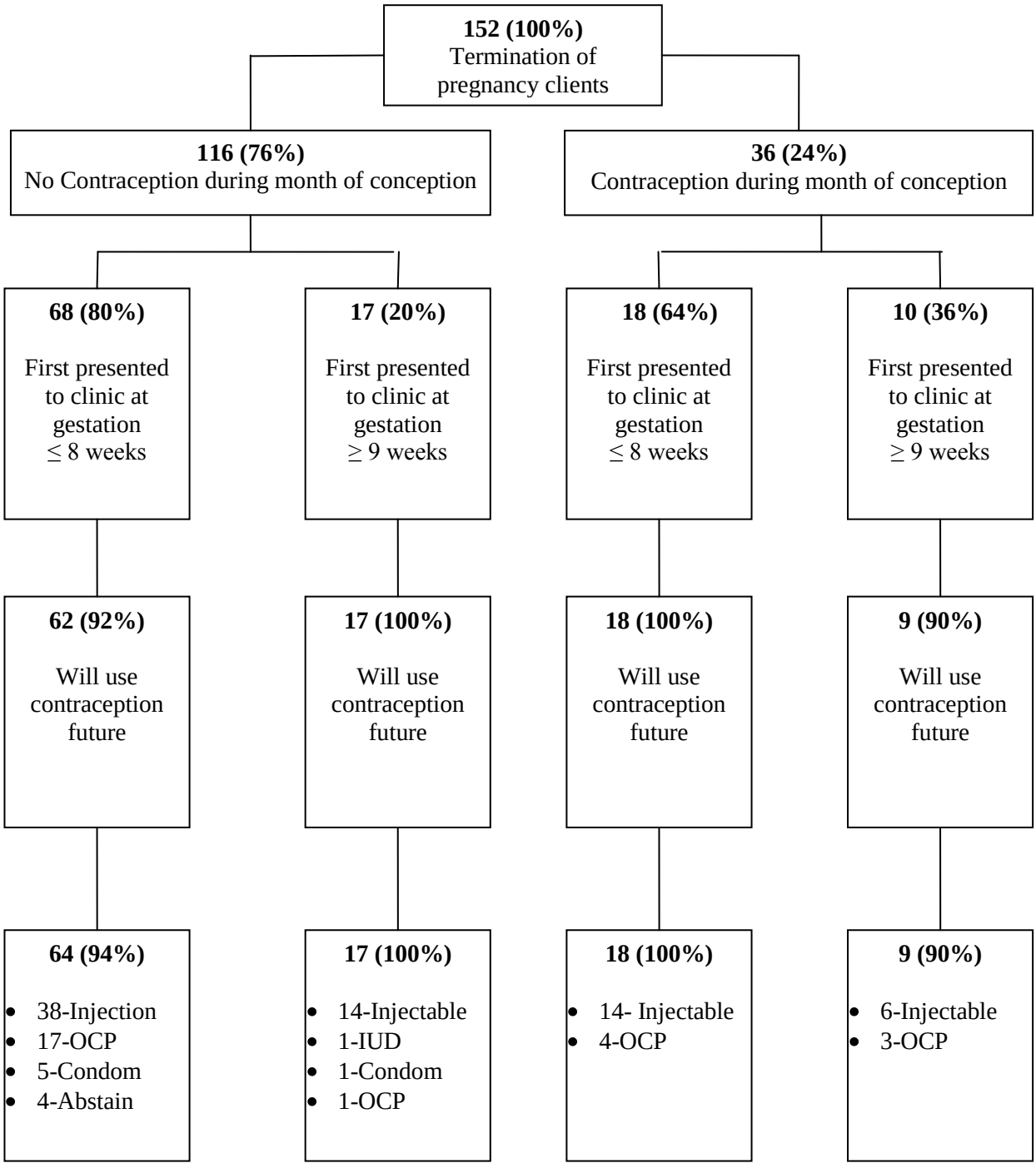


Figure 4.16: Flow chart describing contraceptive utilisation before and after the termination of pregnancy in termination of pregnancy clients across three municipalities the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010)(n=152)

Table 4.18: Bivariate and multivariate model of factors associated with previous abortion in termination of pregnancy clients accessing termination of pregnancy facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

Characteristics	Total	Univariate analysis			Multivariate analysis		
		Had previous TOP n (%)	Never had previous TOP n (%)	P-value	Adjusted odds ratio (95% CI)		P-value
Ethnicity							
Black African	144	22 (88%)	122 (97%)	0.04*	1.00		
Coloured	6	2 (8%)	4 (3%)		38.90	(1.78-850.44)	0.02*
White	1	1 (4%)			N¤		
Total	***151***	***25 (100%)***	***126 (100%)***				
CTOP knowledge							
Yes	108	22 (88%)	86 (69%)	0.04*	4.50	(0.49-41.38)	0.18
No	41	3 (12%)	38 (31%)		1.00		
Total	***149***	**25** ***(100%)***	**124** ***(100%)***				
Legislated gestation aware							
Yes	65	15 (60%)	50 (41%)	0.08	2.78	(0.73-10.59)	0.13
No	83	10 (40%)	73 (59%)		1.00		
Total	**148**	**25** ***(100%)***	**123** ***(100%)***				
Completed education							
Primary	2	1 (5%)	1 (1%)	0.06	12.48	(0.24-647.79)	0.21
Secondary	89	15 (75%)	74 (87%)		0.53	(0.40-6.87)	0.63
Tertiary	9	1 (5%)	8 (10%)		0.39	(0.01-13.28)	0.60
Certificate	5	3 (15%)	2 (2%)		1.00		
Total	**105**	***20 (100%)***	***85 (100%)***				
Gravida[¥]	150	4 (3-5)	2 (1-3)	<0.0001*	2.33	(1.36-4.00)	<0.001*
Number of miscarriages[¥]	148	0 (0-0)	0 (0-1)	0.08	0.96	(0.24-3.77)	0.95

[¥] Median (IQR); [#]Mean (±SD); [*]P-value significant at the 5 % level

Factors associated with previous abortion

Table 4.18 tabulates the factors significantly associated with previous abortion after completing the relevant bivariate statistical tests (Fisher's exact testing, Pearson Chi-square and Mann-Whitney Ranksum test) which had a significant P<0.1. These factors were:

- Ethnicity
- CTOP knowledge
- Knowledge of the legislated gestation
- Level of completed education
- Number of pregnancies
- Number of pregnancies

Multivariate analysis

In the multivariate model two independent factors were significantly associated with previous abortion.

Ethnicity was significant, as a coloured women had 38 times higher odds of having previously aborted than a black African (OR 38.90; 95% CI, 1.78-850.44; P=0.20). The number of pregnancies a client had also significantly associated with previous abortion; as pregnancy increased by one unit, the odds of previous abortion was two times higher (OR 2.33; 95% CI, 1.36-4.00;P<0.001) compared to women who never reported previous abortion.

Logistic regression diagnostics

The above model reported two independent variables to have a significant relationship with the response variable (previous termination of pregnancy). The model is believed to be in the most appropriate form. To confirm, the model was checked using a STATA command "Linktest", which uses the linear predicted values and the linear predicted values to build the model. The overall model was significant (P<0.0001) and the linear predicted values were significant (P<0.01). The best indication is that the current model is well specified.

Hosmer and Lemeshow suggest checking how well the model fits the outcome variable by checking for goodness-of-fit. Firstly, the pseudo-R^2 ,from the full model, the measure based on comparison with the predicted values d=from the fitted model to the model zero, in this case it is 0.3 which is low compared to linear regression R^2, Hosmer and Lemeshow report that this is common in logistic regression (85). Secondly, the Hosmer and Lemeshow's goodness of fit test, which models the predicted values to the observed values they need to be close to one another. The test reported the two values matched closely and hence a non-significant difference (Pearson Chi-square; P=0.79). This, therefore, further reported a good fit of the model. Next it was required to ascertain if any of the independent variable in the model is highly correlated with another, hence the test for multicollinearity is performed. The Spearman Rank correlation test determined that all variable pair patterns were below 0.50 correlation coefficient (Rho), hence not correlated.

Hosmer and Lemeshow suggest to always investigate that the model fits across all the variable patterns (85) . There exists a linear relationship between the residuals (standardised difference between the observed and predicted frequency) and the fitted values (Figure 4.20a). The plot of the standardised residuals were therefore completed to identify any outliers (86) . In Figure 4.17b below the residuals were plotted close to y-intercept=0; this shows that the observation values for each independent variable are close to the variables mean in the sample. The "Pregibon Dbeta" reported minimal influence on the parameter estimates of each individual observations as they were scattered against the observed values in the centre around the y-intercept=0 (86).

In conclusion the model is well specified, fits the outcome variable well and no multicollinearity between variable existed. The standardised residuals suggest the influential observations do not influence the model to a great extent. The predictor variable in the multivariate logistic regression model, tabulated in Table 4.17, with previous TOP as the response variable, fits well and is well specified.

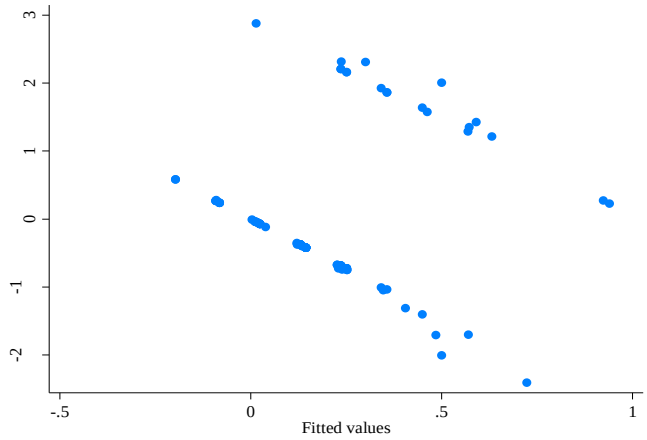


Figure 4.17a: Pearson standardised residuals plotted against fitted values

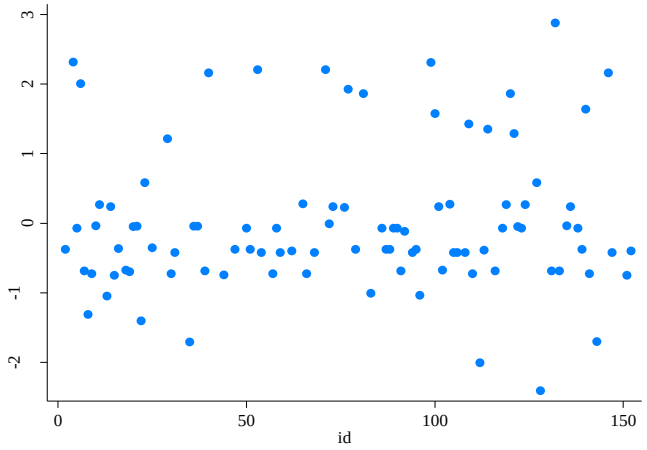


Figure 4.17b: Pearson standardised residuals plotted against observed values

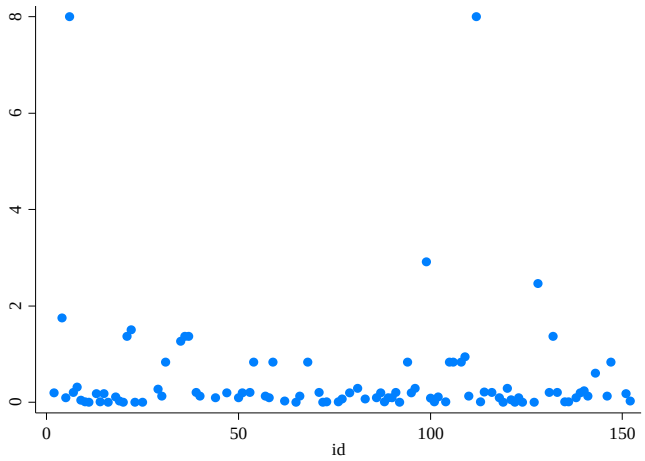


Figure 4.17c: Pregibon Dbeta residuals plotted against observed values

Figure 4.17: Logistic regression diagnostic scatter plots

Termination of Pregnancy Services

Seventy-eight per cent (n=112) of TOP clients had received pre-TOP counselling by the time the questionnaire was issued (questionnaires were distributed in waiting room before the TOP). This was marginally insignificant across the municipalities (Pearson Chi-square; P=0.05) (Table 4.19).

Three of one hundred and two respondents (3%) remarked that pre-TOP counselling was unhelpful and these clients were all from the JHB municipality (Pearson Chi-square; P<0.0001). A statistical difference was evident between JHB and Mangaung (Bonferroni-corrected adjustment; P<0.0001) and JHB and Bela-Bela (Bonferroni-corrected adjustment; P<0.0001).

At the time of the questionnaire, 23% of respondents in JHB and 57% in Mangaung were aware of a follow-up appointment compared to 100% of clients in Bela-Bela (Pearson Chi-square; P<0.0001). Significant differences regarding awareness of follow-up appointment existed between JHB and Bela-Bela (Bonferroni-corrected adjustment; P<0.0001) and Bela-Bela and Mangaung (Bonferroni-corrected adjustment; P<0.02).

The majority (n=108; 82%) of the clients that responded thought that the overall care and treatment up to the point of questionnaire was above average (Pearson Chi-square; P<0.0001). The municipalities that differed were JHB and Bela-Bela (Bonferroni-corrected adjustment; P<0.0001). Sixty-four percent of clients (n=99) rated the attitude of the providers to the clients as “Friendly” and “Very friendly”, though only clients from JHB rated attitude as “Unfriendly” (Pearson Chi-square; P<0.0001). Similarly, the distinction existed between Bela-Bela and JHB (Bonferroni-corrected adjustment; P<0.0001).

Table 4.19: Perception and experience of top clients accessing termination of pregnancy services across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

Characteristics	Health facility n (%)			P-value
	Johannesburg	Mangaung	Bela-Bela	
Received Pre-TOP Counselling	77 (73%)	8 (100%)	27 (90%)	0.05*
Total	***105 (100%)***	***8 (100%)***	***30 (100%)***	
Rating of pre-TOP counselling				<0.0001*
Very Helpful	57 (84%)	3 (43%)	18 (67%)	
Slightly Helpful	8 (12%)	4 (57%)	9 (33%)	
Not Helpful	3 (4%)			
Total	***68 (100%)***	***7 (100%)***	***27 (100%)***	
Aware of follow-up appointment	21 (23%)	4 (57%)	30 (100%)	<0.0001*
Total	***90 (100%)***	***7 (100%)***	***30 (100%)***	
Quality of the TOP services				<0.0001*
Very good	462 (50%)		17 (57%)	
Good	28 (30%)	5 (56%)	12 (40%)	
Average	11 (12%)	2 (22%)	1 (3%)	
Poor	6 (7%)			
Very Poor	1 (1%)	2 (22%)		
Total	***92 (100%)***	***9 (100%)***	***30 (100%)***	
Provider attitude to clients				<0.0001*
Very friendly	52 (56%)	3 (33%)	24/30 (80%)	
Friendly	9 (10%)	5 (56%)	6/30 (20%)	
Average	23 (25%)	1 (11%)		
Unfriendly	5 (5%)			
Very unfriendly	4 (4%)			
Total	***93 (100%)***	***9 (100%)***	***30 (100%)***	

¥ Median (IQR); #Mean (±SD); *P-value significant at the 5 % level

Knowledge and Awareness of Reproductive Health Services

The knowledge of the CTOP Act exceeded seventy percent across all three municipalities (Pearson Chi-square; P=0.83) (Table 4.20). The clients' knowledge of legal gestational age at which to request a TOP at a clinic varied between municipalities (Pearson Chi-square; P=0.01). A significant difference existed between Mangaung and JHB (Bonferroni-corrected adjustment; P=0.01) and Mangaung and Bela-Bela (Bonferroni-corrected adjustment; P<0.01). The TOP clients' knowledge of other TOP facilities differed significantly between Mangaung and Bela-Bela (Bonferroni-corrected adjustment; P<0.01) and also JHB and Bela-Bela (Bonferroni-corrected adjustment; P<0.0001). The TOP clients reported that health facilities were the sites accessed to obtain health information. This was contrary to the reported perception of TOP providers (shown earlier in chapter).

Table 4.20: Knowledge and awareness of reproductive health information of termination of pregnancy clients across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

Characteristics	Health facility n (%)						P-value
	Johannesburg		Mangaung		Bela-Bela		
CTOP Act awareness	79	(73%)	8	(80%)	210	(70%)	0.83
Total	***109***	***(100%)***	***10***	***(100%)***	***30***	***(100%)***	
Legal gestational age	46	(43%)	9	(90%)	100	(33%)	0.01*
Total	***108***	***(100%)***	***10***	***(100%)***	***30***	***(100%)***	
TOP facilities awareness	43	(40%)	5	(56%)	1	(3%)	<0.0001*
Total	***109***	***(100%)***	***9***	***(100%)***	***30***	***(100%)***	
Contraception information in past	63	(58%)	6	(75%)	21	(72%)	0.26
Total	***109***	***(100%)***	***8***	***(100%)***	***29***	***(100%)***	
Site of contraception information							0.002*
Clinic	36	(66%)	4	(80%)	19	(86%)	
School	11	(20%)			3	(14%)	
Home	4	(7%)					
Hospital	3	(6%)					
Media	1	(2%)	1	(20%)			
Total	***55***	***(100%)***	***5***	***(100%)***	***22***	***(100%)***	

¥ Median (IQR); #Mean (±SD); *P-value significant at the 5 % level

Reproductive health factors associated with age of TOP client

Teenage and adult termination of pregnancy clients

Bivariate analysis was conducted on TOP clients younger than 18 years of age (minors) and above and including 18 years of age (adults). The analysis showed that ten clients were minors (7%). Of these girls none were using contraception during the month of conception, compared to the adult women where seventy-five percent (n=106) were not (Fishers exact; P=0.07). One

hundred percent (n=10) of the minors reported that contraception would be used in the future compared to 93% (n=128) of adults, though a statistical difference did not exist between the age groups (Fisher's exact; P= 0.49).

Minors present to the clinic for the first times at a median gestational age of 6.5 (IQR; 4-8) weeks compared to adults 7 (IQR; 5-8); no statistical difference (Mann-Whitney Ranksum; P=0.63). The median waiting period did not differ statistically between minors' 11 (IQR; 6-14) weeks and adults' 7 (4-21) weeks, (Mann-Whitney Ranksum; P=0.89). Teenagers and adults underwent TOP at similar median gestational ages, 8 (IQR; 6-10) weeks and 8 (IQR; 7-10) weeks respectively, (Mann-Whitney Ranksum; P=0.52).

Three strata of age categories created and analysed: under-24 years, 25 to 34 and above-35 years.

In Table 4.21 the bivariate analyses showed significant differences between in the age groups, namely:

- The prevalence of contraception use during the month of conception was statistically higher in the 25-34 years age group and the prevalence lowest in the clients younger than 24 years of age (Pearson Chi-square; P<0.0001). Significant difference existed between Age ≤24 years and the Age 25-34 years (Bonferroni-correction adjustment; P<0.01) and Age ≤24 years and Age ≥35 years (Bonferroni-correction adjustment; P=0.02).
- The number of pregnancies increased statistically significantly with increase in age group category (Kruskal Wallis; P<0.0001).
- The women of the older age group had their TOP at later gestations (median 11 weeks (9-12)) than the younger age groups (Kruskal Wallis; P=0.01); the post-hoc testing demonstrated a significant difference existed between Age ≤24 years & Age ≥35 years (Wilcoxon Ranksum; P=0.01) and Age 25-34 years & Age ≥35 years (Wilcoxon Rank-sum; P=0.01).
- Interestingly, age was not associated with number previous TOP (Pearson Chi-square; P=0.34) or rating of the TOP services and provider attitude.

Table 4.21: Bivariate analysis of factors associated with age categories of Termination of Pregnancy clients across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

Variable	Total	Age ≤24 years		Age 25-34 years		Age ≥35 year		P-value
		n/median	(%)/(IQR)	n/median	(%)/(IQR)	n/median	(%)/(IQR)	
Contraception at Conception								<0.001*
Yes	35	5	(14%)	24	(69%)	6	(17%)	
No	116	56	(48%)	51	(44%)	9	(8%)	
Total	***151***	***61***	***(100%)***	***75***	***(100%)***	***15***	***(100%)***	
Future use of Contraception								0.11
Yes	138	55	(40%)	70	(51%)	13	(9%)	
No	10	5	(50%)	4	(40%)	1	(10%)	
Total	***148***	***60***	***(100%)***	***74***	***(100%)***	***14***	***(100%)***	
Number of pregnancies (including index pregnancy)¥	109	1	(1-2)	3	(2-4)	4	(3-6)	<0.0001*
Ever aborted								0.38
Yes	25	7	(28%)	15	(60%)	3	(12%)	
No	126	54	(43%)	60	(48%)	12	(10%)	
Total	***151***	***61***	***(100%)***	***75***	***(100%)***	***15***	***(100%)***	
Gestation first presentation (weeks) ¥	113	7	(5-8.5)	7	(5-8)	8	(7-11)	0.11
Gestation termination (weeks) ¥	138	8	(7-10)	8	(7-10)	11	(9-12)	0.01*
Waiting period (days) ¥	115	8	(6-18)	7	(2.5-9)	10	(2-30)	0.27

¥ Median (IQR); #Mean (±SD); *P-value significant at the 5% level

Table 4.21: Continued-Bivariate analysis of factors associated with age categories of Termination of Pregnancy clients across the health facilities in Johannesburg Metropolitan, Mangaung and Bela-Bela Municipalities, (2008 & 2010) (n=152)

	Total	Age ≤24 years		Age 25-34 years		Age ≥35 years		P-value
		n/median	(%)/(IQR)	n/median	(%)/(IQR)	n/median	(%)/(IQR)	
Reason for TOP								0.05*
No desire for this child		12	(21%)	17	(26%)	2	(22%)	
Economic		15	(27%)	31	(48%)	5	(56%)	
Health		1	(2%)	3	(5%)	1	(11%)	
Rape		0	(0%)	1	(2%)	0	(0%)	
Unstable relationship		11	(53%)	9	(14%)	1	(11%)	
Scholastic responsibility		16	(29%)	3	(5%)	0	(0%)	
No reason		1	(2%)	1	(2%)	0	(0%)	
Total	***130***	***56***	***(100%)***	***65***	***(100%)***	***9***	***(100%)***	
Client ratings								
Attitude Friendly/very friendly	131	40/55	(73%)	49/64	(77%)	10/12	(83%)	0.73
Quality Good/Very good	130	43/55	(78%)	56/63	(89%)	9/12	(75%)	0.31

¥ Median (IQR); #Mean (±SD); *P-value significant at the 5% level

4.3. SECTION III: FOLLOW-UP INTERVIEW

Seventy (63%) of the one hundred and twelve JHB based TOP clients volunteered to be interviewed eighteen months after initial recruitment. Twenty-five mobile telephone numbers were still operational at the follow-up period. Twenty-three TOP clients (33%) agreed to participate.

4.3.1. Quantitative Findings from Client Interview

Fifty-seven percent (n=13) of the study participants interviewed were Hillbrow and Chiawelo CHC TOP clients.

Description of the follow-up cohort

The age distribution in this cohort had a non-parametric distribution (Kurtosis 2.00 and Skewness 0.18); the median was 28 (IQR 22-34) years (Figure 4.18).

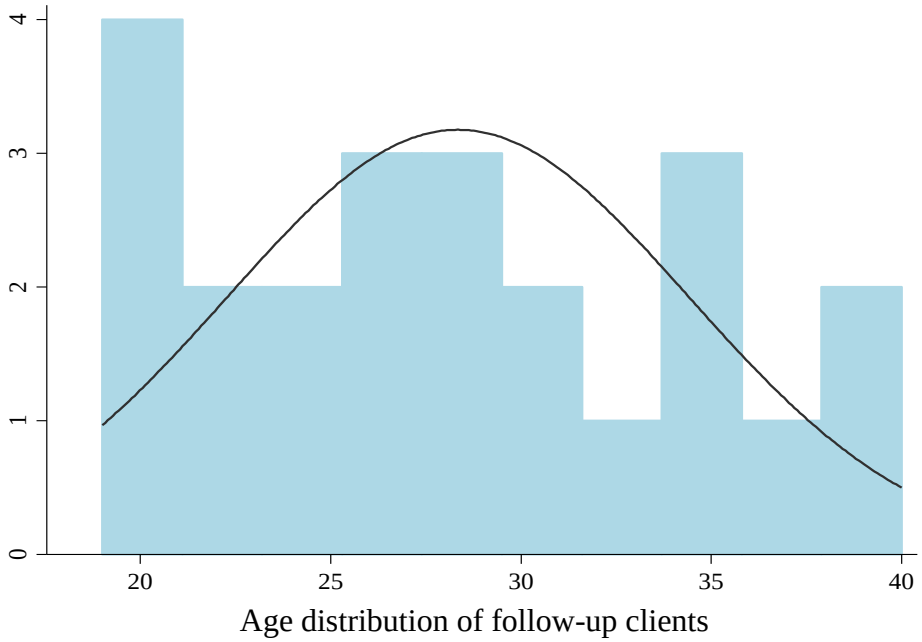


Figure 4.18: Age distribution of termination of pregnancy client in the Johannesburg Municipality (2010) (n=23)

Eighteen months after the initial recruitment date, a greater proportion of participants were employed, no significant statistical difference with the entire recruitment population (n=112) (Fisher's exact; P=0.66) (Table 4.22). A greater proportion of follow-up participants were married compared to the initial group (Fisher's exact; P=0.02).The participants who accessed social grants increased in number from seven to twelve; not significantly different compared to recruitment group (Fisher's exact; P=0.22).

Table 4.22: Characteristics of termination of pregnancy clients by study site at follow-up interviews (2010) (n=23)

Characteristics	n	(%)	P-value
Studying & Employment			0.66
Not studying & unemployed	6	(26%)	
Studying only	4	(17%)	
Employed only	11	(48%)	
Studying & employed	2	(9%)	
Total	***23***	***(100%)***	
Relationship status			0.02*
Single	17	(74%)	
Cohabiting	1	(4%)	
Married	5	(22%)	
Total	***23***	***(100%)***	
Social grant	12	(52%)	0.22
Total	***23***	***(100%)***	

¥ Median (IQR); #Mean (±SD); *P-value significant at the 5 % level

Clinical History related to Index Termination of Pregnancy

Three participants reported that they did not return to the clinic for the manual vacuum aspiration as directed, despite having taken the Misoprostol as directed by the TOP providers. Two pregnancies continued to full term and were safely delivered. The third choose to have TOP the day after Misoprostol at an unsafe abortionist in the central business district.

Thirty-nine percent (n=9) of participants interviewed reported experiencing a medical complication as a result of the TOP procedure (Table 4.23). Four of the nine (44.4%) required hospital admission for excessive bleeding or retained products of conception after an incomplete evacuation.

Table 4.23: Interviewed study participants' medical history related to the termination of pregnancy procedure and subsequent year (2010) (n=23)

Characteristics	**n**	**(%)**
Second (repeat) TOP since enrolment	3	(13%)
Total	***23***	***(100%)***
Would have another TOP	3	(13%)
Total	***23***	***(100%)***
Contraception during previous year	17	(74%)
Total	***23***	***(100%)***
Method of contraception		
Injectables	10	(59%)
Male condoms	4	(24%)
Oral contraceptive	2	(12%)
Intra-uterine device	1	(9%)
Total	***17***	***(100%)***
TOP complicated	9	(39%)
Total	***23***	***(100%)***
Type of complication		
MVA completed		
Excessive PV bleeding with hospital admission	2	(22%)
Excessive PV bleeding no hospital admission	1	(11%)
Incomplete evacuation with hospital admission	2	(22%)
Prolonged purulent discharge required medical management	1	(11%)
MVA not completed		
Excessive PV bleeding with hospital admission (MVA done at unsafe abortionist)	1	(11%)
Pregnancy continued	2	(22%)
Total	***9***	***(100%)***

Three (13%) participants from the follow-up cohort had undergone a second TOP in the year subsequent to the recruitment date (Figure 4.19). The same three (13%) participants were also the only from the 23 cohort who reported that they would indeed undergo a third TOP if necessary (Fisher's exact; P<0.001). Two thirds (n=15) of the cohort reported using contraception during the past eighteen months (Fisher's exact; P= 0.33).

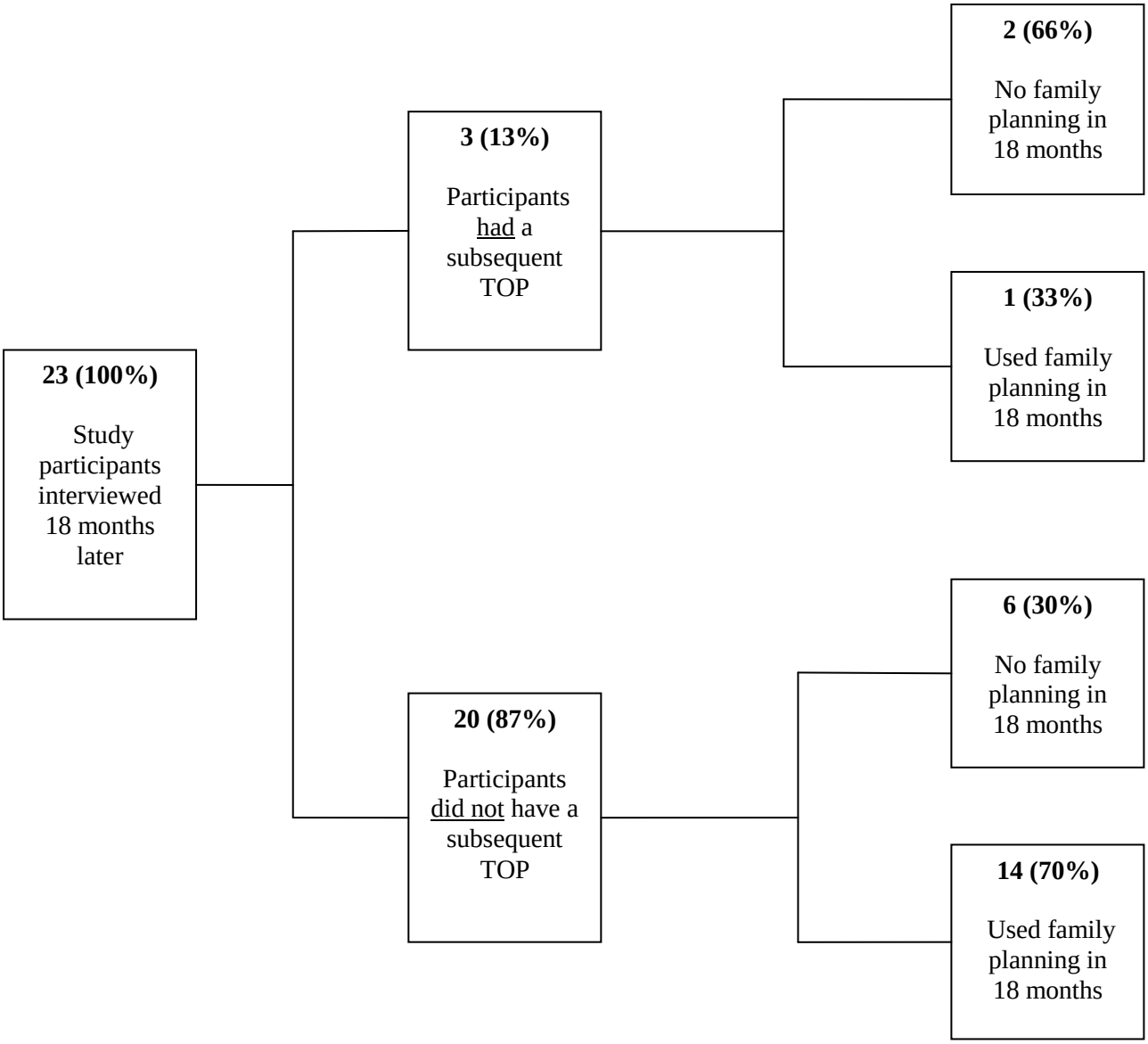


Figure 4.19: Schematic representation of the utilisation of contraception and repeat TOP within the 18 month follow-up period (2010) (n=23) (Fisher's Exact; P = 0.27)

Knowledge and Awareness of Reproductive Health Services

The knowledge and awareness of the CTOP Act and legal gestation increased to 100% (n=23) in the follow-up group compared to 97% (n=21) in the initial group. Approximately half (n=12) of these participants reported giving advice to others about TOP (not tabulated). Twenty (87%) participants in the cohort rated pre-TOP counselling as helpful (Table 4.24). Eight of 23 participants had received a follow-up date for a check-up visit after the TOP procedure. The overwhelming majority (87%) believed that a follow-up appointment was necessary and essential to the TOP process. The rating of the providers' attitudes to the clients remained predominantly positive, as 18 of the 23 clients (78%) thought that the nurses were "Friendly" or "Very friendly" (Fisher's exact; P= 0.15). Similar findings for overall quality of service 83% (n = 19) rated the TOP service as "Good" or "Very good" (Fisher's exact; P= 0.71).

Table 4.24: Perception and Rating of Termination of Pregnancy services by Study participants (Termination of Pregnancy clients) at follow-up interviews (2010) (n=23)

Characteristics	Total	n	(%)
Pre-TOP Counselling helpful	23	20	(87%)
Follow-up date received	23	8	(35%)
Follow-up attended	8	6	(75%)
Follow-up helpful	8	5	(83%)
Follow-up essential	23	20	(87%)
Attitude of providers to Clients	23		
Very friendly		10	(43%)
Friendly		8	(35%)
Average		4	(17%)
Unfriendly		1	(4%)
Very unfriendly			
Quality of the TOP services	23		
Very good		8	(35%)
Good		11	(48%)
Average		4	(17%)
Poor			
Very Poor			

*P-value significant at the 5 % level

Termination of Pregnancy Services

Figure 4.20 below depicts the distribution of post-TOP complication between health facilities. All the clients (n=7) interviewed from Chiawelo CHC reported a medical complication as a result of the TOP, Lenasia South CHC approximately 30% and Hillbrow CHC 15% (Fisher's exact; P<0.0001) .

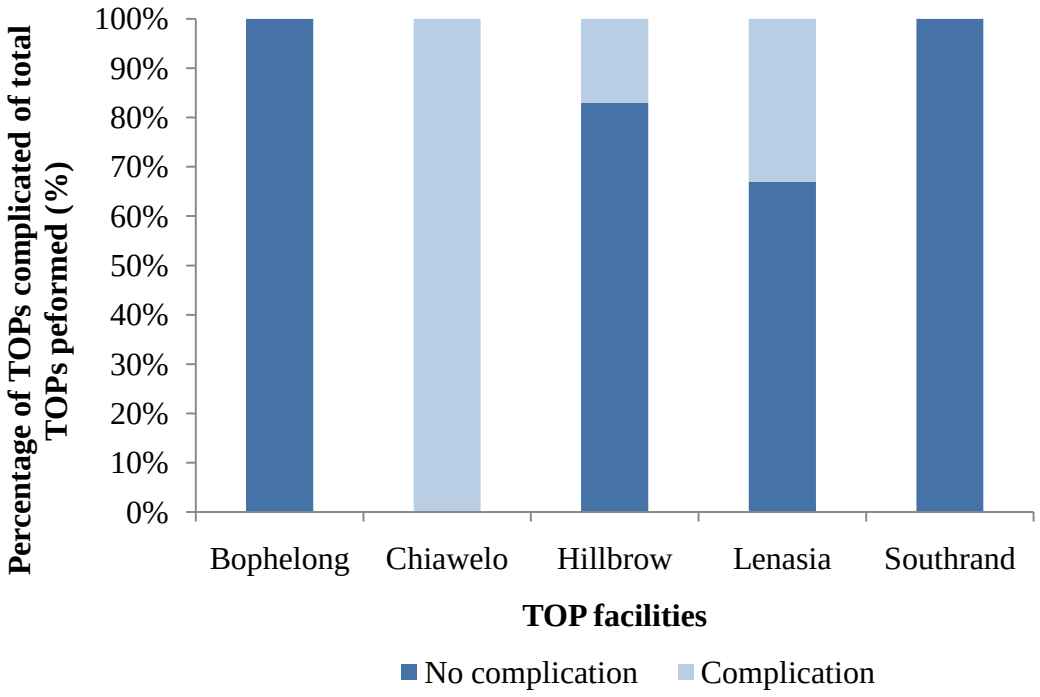


Figure 4.20: Distribution of self-reported complicated termination of pregnancy procedures by health facility (2010) (n=23) (Pearson Chi-square; P<0.001)

A bivariate analysis demonstrated the factors that were associated with complications (Table 4.25). Utilising a Fisher's exact test and Mann Whitney Rank-sum test were appropriate and using significance level of 5 percent, the following were significant with experiencing complication related to the TOP:

- Age at TOP
- Health facility attended
- Follow-up was received
- Knowledge of the CTOP Act

The unadjusted odds ratios for experiencing a post-TOP complication are presented in table 4.25. The older the TOP client was the less likely her odds of experiencing a complication (OR 0.86; 95% CI 0.73-1.02; P=0.08). A follow-up appointment offered some form of protection towards experiencing a complication (OR 0.12; 95% CI 0.02-1.51; P=0.02) compared to the clients that did not receive a follow-up appointment. The clients who were aware of the CTOP Act were less likely to experience a post-TOP complication (OR 0.11; 95% CI 0.01-2.08; P=0.06) than the clients who were not aware. The clients who had attended Lenasia South CHC had odds 8 times higher of experiencing a complication than clients who had presented to Bophelong clinic for their TOP procedures (OR 8.68; 95% CI 3.47 -21.7; P<0.0001).

Table 4.25: Bivariate Analysis of Potential Risk Factors for a Complicated Termination of Pregnancy, Johannesburg Metropolitan Municipality (2010) (n=23)

Variable	Total	Complicated TOP		Uncomplicated TOP		P-value	Unadjusted Odds Ratio (95% CI)		P-value
		n/Median	(%/IQR)	n/Median	(%/IQR)				
Age (Years) [¥]	23	24	(19 - 27)	29	(25-32)	0.040[*]	0.86	(0.73-1.02)	0.08
Health facility Attended	23					0.002[*]			
Bophelong	4			4	(29%)		1.00		
Chiawelo	7	7	(78%)				N		
Hillbrow	6	1	(11%)	5	(36%)		3.47	N	N
Lenasia South	3	1	(11%)	2	(14%)		8.68	(3.47 -21.7)	<0.0001[*]
Southrand	3			3	(21%)		N		
Total	***23***	***9***	***(100%)***	***14***	***(100%)***				
Gestation (Weeks)[¥]	22	10	(8-11)	8	(7-11)	0.587	N/S		
Waiting period (Days) [¥]	15	19	(14-21)	15.5	(10-30)	0.951	N/S		
Follow-up received						0.030[*]			
Yes	6			6	(43%)		0.12	(0.02-1.51)	0.02[*]
No	17	9	(100%)	8	(57%)		1.00		
Total	***23***	***9***	***(100%)***	***14***	***(100%)***				
Awareness CTOP Act									
Yes	19	5	(63%)	14	(100%)		0.11	(0.01-2.08)	0.06
No	3	3	(37%)			0.036[*]	1.00		
Total	**22**	**8**	**(100%)**	**14**	**(100%)**				

[¥] Median (IQR); [#]Mean (±SD); [*]P-value significant at the 5 % level; N/S-Factors not significant on univariate analysis (P>0.10); [¤]N-No significance testing completed

Inter-questionnaire reliability

The Cronbach's alpha estimate for internal validity was calculated for the following questions that set out to determine and rate the quality of TOP service:

i. Rate service overall,
ii. Rate the attitude for the staff to the clients,
iii. Rate the helpfulness of the pre-TOP counselling and
iv. Follow-up appointment given
v. Rate helpfulness of the follow-up of the appointment

The Cronbach's alpha was therefore estimated to be 0.70, which is a good measure for internal consistency (79; 82; 83).

4.3.2. Qualitative Findings from Client Interviews

Fourteen study participants contributed to the qualitative portion of the study. Their ages ranged from twenty to forty years.

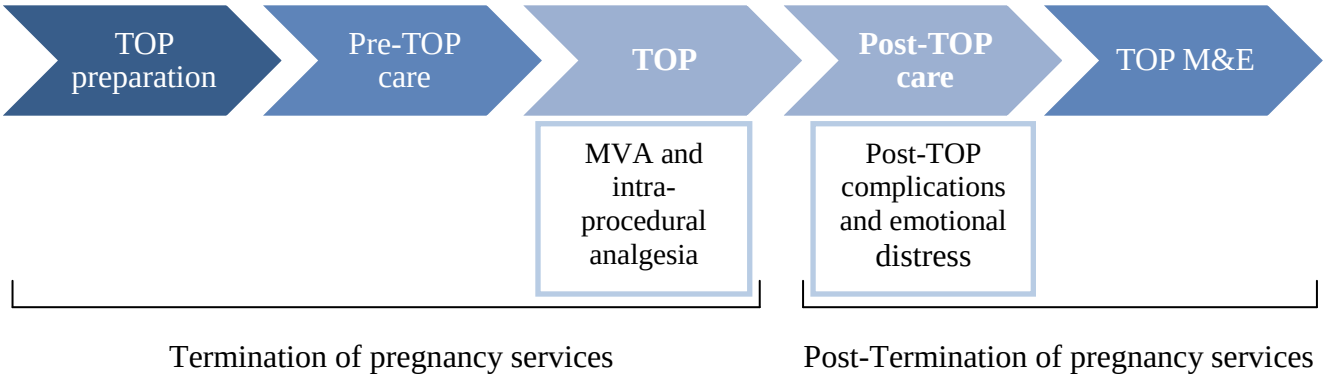


Figure 4.21: Framework of termination of pregnancy and post termination of pregnancy process model

The qualitative information explored the circumstances that resulted after the client did not return for manual vacuum aspiration. The narrations will be described using Figure 4.21 as a framework.

TERMINATION OF PRENANCY SERVICES

"I Decided Not To Go Back to the Clinic for the Abortion"

The interviews identified a few women who had consulted the nurses, taken the Misoprostol, and still decided not to complete the abortion process at the clinic.

A woman consulted at the government clinic and took the Misoprostol tablets and then sought the assistance of an illegal abortionist in the Johannesburg CBD.

"After my visit to the clinic, I was given two tablets I took the tablets and went home. I decided not to go back to the clinic for the abortion and went the Carlton centre." (Woman 4-20 years-Single-Unemployed)

Two women took the tablets and similarly did not return to have the MVA. These pregnancies were failed abortions, and continued to full term. These clients were not aware of any negative clinical outcomes associated with the deliveries or neonates.

"After the visiting the clinic I took the tablets but I did not return to the clinic. I had pain and could not stand up - I was taken to Bara - the misunderstanding was that I was having a miscarriage. I was admitted to the hospital for 5 days. The baby survived and was delivered at 9 months. I am happy happy and the baby is happy." (Woman 5-19 years-Single-Unemployed)

"I took the tablets that were given to me. I did not return to have the cleaning procedure done. I experienced discharge afterwards, but 9 months later I delivered a baby. The baby was healthy. I did not follow-up with the counselling or the check up." (Woman 14-29 years-Single-Employed)

Physical consequences related to the termination of pregnancy

"It Was Very Traumatic"

Women of all ages reported the pain felt during the termination of pregnancy procedure to be excessive. This contributed to at least one woman describing the procedure as very traumatic. Some noted that the analgesia was only administered to them after the procedure was over.

"There was a lot of pain during the procedure there was no pain killers given before the procedure. An injection was only given to me afterwards." (Woman 7-31 years-Single-Employed)

"No pain killers made it very painful." (Woman 12-21 years-Single-Unemployed)

"On the day of the abortion, the cleaning was very painful. I have never done another. The cleaning up was painful." (Woman 6-38 years-Single-Employed)

A forty-year old woman experienced the procedure firstly in the clinic for the initial termination and then again in the hospital as the initial TOP required further management. She believed the procedure done in the hospital was less painful as a result of the improved analgesia administered.

"The operation (at the hospital) was a lot less painful than at the clinics, they gave us analgesia." (Woman 40 years old unemployed and single)

POST-TERMINATION OF PREGNANCY SERVICES

Clinical complications associated with the termination of pregnancy

"The Clinic Did Not Clean Out Properly"

Women mentioned the adverse outcomes they endured as a result of the MVAs at the relevant clinics.

A woman required admission to a Johannesburg hospital for a repeat procedure immediately after the termination at the clinic. A 21-year-old woman experienced a similar complication and she required medical attention and a subsequent medical procedure one month later.

"I had to go to Baragwanath after the clinic because they did not clean - it was incomplete." (Woman 11-40 year-Single-Unemployed)

"The clinic did not clean out properly. I needed to have a D&C. They did not clean correctly I had experienced problems 1 month later." (Woman 12-21 years-Single-Unemployed)

A 25-year-old woman also experienced an injury to the uterus and required immediate referral to a hospital and surgical intervention.

"During the abortion, they injured the womb; I had to go to theatre the same day." (Woman 10-25 years-Married-Unemployed)

Emotional consequences associated with the termination of pregnancy

"I Still Cannot Forget About It"

The majority of women over the age of 26 years spoke about the emotional implications associated with the termination of pregnancy. They mentioned feelings of regret, guilt, and sadness. The younger women under the age of 25 years in their narrations did not make any mention of emotional distress as a result of the termination.

"No I will never have another abortion, I felt so guilty afterwards and I am always remembering about it." (Woman 7-31 years -Single- Employed)

"I will not have another abortion again, I still cannot forget about it. I have had a lot of psychological problems from it. I only told my friend" (Woman 3-27 years - Single –Temporary employment)

I did suffer with depression - I wondered how and thought about how old the child would be." (Woman 13-30 years - Single - Employed)

"This was for one year later. I am still having emotional problems. I have guilt about having the abortion." (Woman 9-35 years -Married-Unemployed)

"It has been a sad time. Having the abortion was a big mistake. When I look at a child of the same age, I think that could be my child. I don't want to talk about it anymore." (Woman 6-38 years-Single -Employed)

In one situation, a woman, 35-years-old and married, relayed her need to self-medicate and take pain and sleeping tablets after the termination.

"I needed medicine for the pain and needed medicine to sleep. This was for one year later. I am still having emotional problems. I have guilt about having the abortion." (Woman 9-35 years-Married-Unemployed)

"I Had Pain in My Womb"

Some of the women described current physical symptoms from the uro-genital system which they attributed to the abortion.

"I had a bladder problem after the abortion, my urine burns." (Woman 4-20 years- Single - Unemployed)

The symptoms described by some of the women were related to abnormalities with their menstrual cycle, dysmenorrhoea, miscarriage, or problems conceiving. They perceived these symptoms to be associated with the termination. Even in circumstances where symptoms had started almost one year after the termination.

"Since then the complication has been very painful before the periods. I get medication for that." (Woman 10-25 years -Married-Unemployed)

"I will never have another abortion; no, I will never have another abortion. I want to fall pregnant. Since the abortion I have had a miscarriage." (Woman 10-25 years -Married-Unemployed)

"The Counselling Before and After Should Be Improved"

Many women discussed their perceptions of the counselling given at the clinic. The views differed between them. Some thought the counselling needed to be substantially improved while others thought that is was informative but lacked in a few areas.

"There were no problems with the counselling but the counselling needs to be more filled in. There was a lot of pain during the procedure there was no pain killers given before the procedure… Deal with the fact you may not feel well afterwards, it tells you about the

complications that you will experience and some of the risks. But it does not deal with the issues about the regret that you feel and the guilt afterwards. I have been talking with friends to help me." (Woman 7-31 years - Single -Employed)

These three women described that the counselling needed to explain the psychological aspects of termination, possibly offer an opportunity for further counselling and support sometime after the termination.

"The counselling should touch on the psychological experience. So enhance the counselling." (Woman 12-21 years - Single - Unemployed)

"No support given to you by the clinic. There needs to be better counselling afterwards. You go home and you are all alone with the pain from the abortion. That is not so easy. The counselling should show girls that there are other solutions, not a good idea to rush into it. The girls should be given one day to decide." (Woman 12-21 years - Single -Unemployed)

In addition, a 40 year-old woman thought more health promotion material informing women of their reproductive health rights and choices be available to women visiting all clinics.

"The counselling before and after should be improved, one week after the procedure a check up visit was definitely needed. The counselling needs to be more about the process, it was too brief, and improve the education. I needed to tell me more about the complications on the internet and the studies. There need to be more pamphlets available on termination." (Woman 11-40 years - Single - Unemployed)

<u>Quality of care in the Private Sector</u>

A young woman of 20 years was of the opinion that better quality abortion services were available at private facilities, for those who could afford it.

"In 2009 I needed to have another abortion because of finances were a problem. When you have money, you can have an abortion at Marie Stopes but if you don't have money you have to have it at the clinic." (Woman 4-20 years-Single-Unemployed)

"The Clinic Is Dependent On the Nurses"

The opinion about the providers' treatment differed among the interviewed women. Some women in their late 20's and 30's had the perception the providers' treatment of clients was favourable and could be commended.

"The follow-up visit was good because the sisters can check you. More information about your health then too. The clinic is dependent on the nurses, there needs to be much more contraception education out there." (27 years old single and unemployed)

"On the day of the abortion it was on the 14 November 2008. At the clinic, the nurses told me about the procedure and asked if I had any questions." (27 years single temporary employed)

"The follow-up visit was good because the sisters can check you. More information about your health then too." (Woman 2-27 years - Single - Unemployed)

"The sisters were not judgemental." (30 years Single employed)

The younger women seemed to have different perception of the nurses' treatment of them and other clients at the TOP clinic. Their narratives included descriptions of nurses shouting at them and being impatient. They also talked about the inadequate information and counselling that they received.

"The sisters' were yelling at me" (Woman 4-20 years - Single - Unemployed)
"The abortion service must treat people right, there is not enough patience and some (nurses) are rude they must explain to the people more about the abortion." (Woman 5-19 years -Single-Unemployed)

One young woman described how the nurses' treatment depended on her compliance. Her experience was that if she did what she was told the nurses could be friendly.

"The sisters in the clinic were friendly but if you don't listen to them they are cheeky, some if you don't listen they are not as friendly. Some of the girls were scared of the sisters." (22 years single student)

"There were many reasons for nurses shouting at patients. One woman's narrative was about the reaction of the nurses to the complications that she experienced after an illegal abortion. The sisters' were yelling at me. I had to go and sleep at Bara hospital." (Woman 4-20 years-Single-Unemployed)

THEMES AND COMMON OCCURRENCES

1. Emotional difficulties linked to a painful physical experience

Emotional distress was frequently mentioned by women who had experienced negative physical consequences associated with the MVA, or clinical complications as a result of the TOP.

"I have had lots of problems after the abortion, a lot of pain at the time of my periods, until now. I take pain tablets now because of the pain at periods, I will not have another abortion again, I still cannot forget about it. I have had a lot of psychological problems from it. I only told my friend."

2. Experiences of emotional consequences linked to inadequate counselling

Similarly, women who may have perceived the termination to be stressful emotionally also made mention to the lack of counselling, or the need to improve the clinics counselling and support in the post-abortive services.

"The day of the abortion my boyfriend was not there for me. No support given to you by the clinic. There needs to be better counselling afterwards. You go home and you are all alone with the pain from the abortion. That is not so easy."

The traumatic experience was linked to women suggesting never to have a repeat abortion.

Women, who reported physical pain or complication as a result of the procedure, also were certain they would not undergo any further terminations in their future.

"I will never have another abortion; it (procedure) was very traumatic." (Woman 5-19years-Single-Unemployed)

CHAPTER FIVE

DISCUSSION

The following chapter discusses the pertinent findings reported in Chapter Four. Reference is made to local and international literature in order to determine the possible associations with these findings. Comparisons are made between Johannesburg Metropolitan Municipality (an urban municipality), Bela-Bela Municipality and Mangaung Municipality (rural municipalities). The three overarching sections of the study attempt to triangulate towards a clearer understanding of the quality of TOP services in South Africa, and are discussed in parallel.

The figure below is an amalgamation of Horga's framework and the five step process of the TOP service (Figure 5.1) (91) . The discussion follows this framework sequentially.

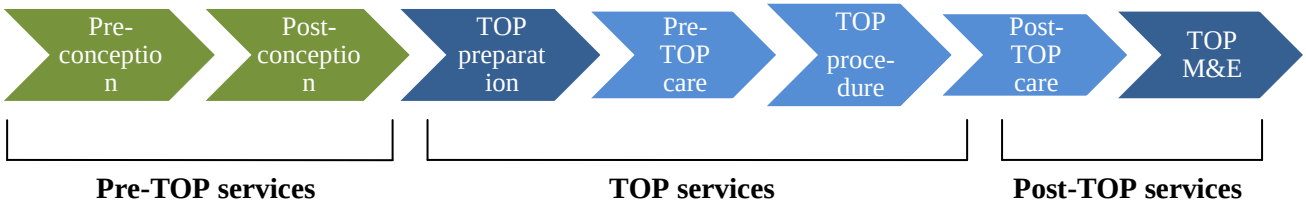


Figure 5.1: Framework of termination of pregnancy process expanded to include pre-termination of pregnancy, termination of pregnancy and post-termination of pregnancy services

5.1. PRE-TERMINATION OF PREGNANCY SERVICES

5.1.1. Socio-Demographic Profile of Clients

Age-group of termination of pregnancy clients

The mean age of TOP clients is 26 (±6.03) years. The age distribution did not differ significantly between the municipalities. This mean age is similar to studies conducted elsewhere in South Africa; in the Eastern Cape the mean age of TOP clients is 25 years (no standard deviation reported) (78), and in other parts of Africa a three hospital study in Nigeria , reported the mean age of TOP clients as 25.9 (± 6.6) years (92).

Section II of the study had fewer adolescent clients than reported in the DHIS data. The DHIS data shows a 73% increase in adolescents in just four years. Conversely, the numbers of adults are decreasing year on year at the district facilities. The South African Health Review from 2010, additively shows an increase in the percentage of ever-pregnant teenagers from 1998 to 2006 (16). Recently, the South African Institute of Race Relations (SAIRR) reported that the number of births per 1000 teenagers had decreased from 124 in 1989 to 58 in 2008. This decrease the SAIRR attributes to the increase in contraception utilisation among teenagers (93). Though it may be argued that in addition to increased contraceptive use, teenagers are utilising TOP services increasingly more frequently if the DHIS data are used as a point of reference. Further exploration is also needed to ascertain the reasons there is a decrease in the number of adults accessing the service.

As these data suggest, a greater proportion of TOP clients in the public sector are younger than 18 years of age and the services need to be more adolescent friendly to be relevant, patient-centred and vigilant regarding complications (94). Evidence shows the adolescent TOP seeker is at a higher risk of complication than her adult counterpart (29;94). In Sub-Saharan Africa the adolescent is usually the woman most at risk for complications after the TOP (95-98).

The anticipated need for safe adolescent friendly TOP services needs to be strengthened along with various interventions for health promotion. A Cochrane review of interventions to mitigate teenage unwanted pregnancy identified the importance of multiple interventions working together to meet the objective of preventing repeated unwanted pregnancies and repeated TOPs (99;100). The enhancement of post-TOP care and counselling play a role in ensuring the correct information and support are offered to minors (15;34). Teenage women are currently one-third of the total proportion of TOP clients accessing services in JHB.

Socio-economic

Approximately one in four clients is accessing a form of government social grant; the majority (95%) were child care grants. Single women predominated (78%), as is the case in the Bowes and Macleod study (78).

Medical history

HIV is reported by five percent of clients and is the most common concurrent medical condition. The South African National HIV prevalence, incidence, behaviour and communication survey, 2008 reported the prevalence of HIV to range from 6.7% for women 15-19 years, up to 16.3% in women 40-44 years of age. The highest prevalence (32.7%) documented in women 25-29 years (101). This study data suggest underreporting, or possibly poor awareness of HIV status.

5.1.2. Contraceptive Utilisation of Clients

Twenty-four percent of clients report utilising contraception the month of the current pregnancy's conception. This contraception prevalence is in keeping with studies conducted in similar settings (48;102;103). The reasons for the poor utilisation differed significantly between the municipalities. Johannesburg clients reported, most commonly, their lack of knowledge; Mangaung poor accessibility and Bela-Bela clients infrequent use of condoms. Adverse events related to the contraception were commonly reported throughout the municipalities. A number of articles in the literature describe the complexity of poor contraception use in women with no

intention of conceiving (104;105). In a Swedish study only 36% (n=186) were not utilising contraception at conception, and 44% (n=228) reported having one or more previous abortions, compared to just sixteen percent of the women in this study (106). Serbanescu, Stupp and Westoff were able to track a direct association between the increase in modern contraception and decrease in the abortion rate (107). This low prevalence may be explaining the increase in abortion rate and abortion request rate.

The utilisation of contraception increased in the follow-up interview. The injectable contraceptives seemed the preferred option. It is not clear if the post-abortive counselling and interaction with the TOP services promoted the use of contraception. A focus group discussion completed in urban and rural South Africa suggests that young women use contraception after the first pregnancy as they have then understood pregnancy, birth and its implications (108). The clinical concern relates to the magnitude of unprotected high-risk sexual behaviour occurring in this population group (109).

5.1.3. Gynaecological and Obstetric Profile

The gravida and number of living children are similar across the three municipalities. Sixteen percent of the TOP clients report having a previous TOP. The number of previous TOPs was statistically higher in the JHB group than the other municipalities. The overall proportion is higher than a study completed on a similar sample size in the Eastern Cape, where none of the clients had reported a previous TOP (78).

5.1.4. Gestational Age and Prolonged Waiting Times

The gestational age at which clients first present to the facility for TOP booking is similar throughout the municipalities at a median of 8 weeks or earlier.

Johannesburg clients are waiting the longest for TOP, a median 14 (6-28) days, compared to Mangaung 7(4-12) days and Bela-Bela clients 3 (1-6) days. Dickson-Tetteh reported that, in 1999, the majority of clients (52%) surveyed in South Africa waited between 1 and 7 days (62).

These prolonged waiting periods influence the gestation at which Johannesburg clients had their TOPs. The median gestation for JHB based clients was 9 (8-11) weeks. At Bela-Bela and Mangaung the median gestations are 7.5 (4-8) and 8 (7-12) respectively. The prolonged waiting period is unintentionally exposing JHB clients to higher risk TOPs as they are completed towards the end of the first trimester, contrary to what the British Pregnancy Association defines as good quality TOP service (51). The older clients, above 35 years of age, also undergo TOP at significantly later median gestations of 11 (9-12) weeks than the younger clients at 8 (7-10) weeks. The data suggest these older women are presenting at late gestational ages for their first booking appointments. The reasons for this requires exploration and are possibly related to late diagnosis of pregnancy and or a myriad of other determinants (110).

5.1.5. Reason for the Termination of Pregnancy

The evidence shows that despite women identifying one specific reason for the TOP, there are usually a host of contributory factors that lead to the decision to terminate (111-113). These may complicate strategies and interventions to promote women's capacity to continue with the pregnancy or follow avenues of adoption. Mundigo classifies the reasons for termination into two broad headings, proximate determinants and systemic determinants. Proximate determinants relate to the woman's use or misuse of contraception and possibly rape, while systemic determinants relate to the broader issues that influence her decision to terminate the pregnancy (110). Economic factors, social factors (relational and cultural), service factors and religious policy factors (110). This was well illustrated in a qualitative Cape Town based study in 2007 where some women were happy with the pregnancy but their socio-economic circumstances required that they reconsider the pregnancy (114).

This study highlighted the influence of systemic issues on the women's decision to terminate. Systemic issues dominate the women's responses as the most common reasons for TOP in this study related to financial constraints (39%). The second most common related to no desire to have a child (24%). The true determinants that led to this response are not explored in this study. Very few women (4%) identified a medical condition as the rationale to terminate.

A Turkish study reported that one-quarter of women cite economic constraints as the reason for TOP, and like South Africa , very few identified medical conditions (112;113). In developed countries, studies report the reasons to be similar, though inverse. The majority of women cite the pregnancy as mistimed or unwanted, and then secondly, socio-economic circumstances are mentioned (111;113).

Across various settings and contexts the larger majority of the reasons women cite relate to their responsibilities to others (cultural and relational), and economic stability of their families and other children, rather than their own needs (113). In this study the majority of women pose long term reasons more often than those of an immediate nature. Therefore, the opportunity for contraception needs to be emphasised in these circumstances as primary prevention strategies to prevent unwanted or mistimed pregnancies (112).

One woman (0.8%) reported rape as a reason for requiring a termination of the pregnancy. Fortunately the numbers of rape survivors in this study are few, but the impetus should still be on TOP services need to be cognisant of the needs of certain vulnerable women that access the service. This may include specialised counselling, screening and treatment of sexually transmitted infections and various other post-abortion care need, within these circumstances collaboration with other governmental sectors such as law enforcement and social development may enhance the type of service offered to these clients (115).

5.1.6. Knowledge of Legislation

The majority (72%) of clients know the CTOP Act this is similar to a study completed on female university students in KwaZulu-Natal where 83% (n=103) were aware of the CTOP Act (116). The concern is that far fewer women in JHB (43%) and Bela-Bela (33%) know the gestational age that women may request a TOP at a district facility. This lack of knowledge or awareness detracts from a woman's right to access the services available to her (61). Therefore, health promotion requires improvement as these clients have managed to access the TOP facility within the stipulated gestational age yet their knowledge is poor. A possibility exists that the knowledge may be poorer among women not accessing the service at all and the clients in the clinic

represent just the tip of the iceberg of women needing the service and accessing care in time for safe intervention. In a study in Ghana in 2007, approximately five years post-liberalisation of abortion, the majority of women (92%, n=271), admitted for induced-TOP complications, were not aware abortion is permitted in Ghana and hence exposed themselves to unsafe TOP practitioners or self-induction techniques (117).

The poor knowledge identified after pre-TOP counselling also raises concerns about the effectiveness of the current counselling in JHB and Bela-Bela. TOP providers become the essential step in disseminating correct information at this opportune time (118).

The majority of clients report that they obtain reproductive health information from the health facilities. This is contrary to the perceptions of the TOP providers which cited peers as the major source. Therefore, if this is the most popular and common source of essential reproductive health information and health promotion, the messages must be correct and poignant.

Also required is the dissemination of safe TOP health information at other easily accessible sites. Healthy women not utilising contraception will infrequently visit health facilities, but information regarding safe abortion must still be available. The clients at follow-up were more familiar with the legal gestational age. Half of the clients (52%) report being of assistance to relatives and friends with regards to offering advice and information on TOPs.

5.2. TERMINATION OF PREGNANCY SERVICES

5.2.1. Termination of Pregnancy Requests and Procedures Performed

The DHIS data demonstrate a 61% and 43% increase in TOP requests received at all district and academic hospital facilities in JHB respectively, since 2006. The marginal increase in procedures performed is currently not sufficient to meet this need. Approximately two-thirds of all requests are not being addressed at the district and half of the needs at the academic hospitals.

A South African study, conducted in 1999, remarked on the minimal variation in the numbers of TOP performed in the countries provinces since the CTOP Act enactment (55). The mean number of abortions performed in Gauteng at that time approximated 9.2/1000 (55). Almost ten years later the abortion rate calculated for Johannesburg is 10/1000. Despite the growth in number of requests, the system has been slow to increase the procedures performed. A concern is the potential avenues women with unmet TOP needs need to explore. The women requesting TOP at the academic hospitals commonly present at advanced gestational ages. The options for these women are limited (119). The allowed period for a legal TOP approaches its end and their risk of sustaining a complication increases with delay in TOP. This unavailability of services perpetuates the need for unsafe abortionists in a country with non-restrictive legislation (21; 38).

5.2.2. Distribution of Caseloads among Health Facilities

The number of TOP facilities functional in JHB was subject to change and variation annually. In 1999 the nationwide study reported that only 39% of designated facilities were functioning (55). The Department of Health 2009/2010 report again reported that only 25% of community health centres were functioning as TOP service providers. This limits the number of TOPs that can be performed for women who require the service. The distribution of facilities is predominantly in the southern regions of the Johannesburg Municipality. The service availability for women elsewhere in the municipality may be a challenge. The geographical inaccessibility of services acts as a further barrier to women accessing safe and free abortions (15).

Two CHCs in the district and two academic hospitals are performing more than two-thirds of the Metropolitan's total TOPs (yellow dots Figure 5.2). This occurs despite similar staff compliments as the other less busy facilities. This excessive work load on staff may be related to a high complication rate identified in section III of the study.

An increase in the number of functional facilities and TOP trained staff is paramount, especially in areas with larger catchment areas and higher population densities (120). Facilities that comply with the CTOP Amendment Act of 2008 are able to be enlisted for service (40).

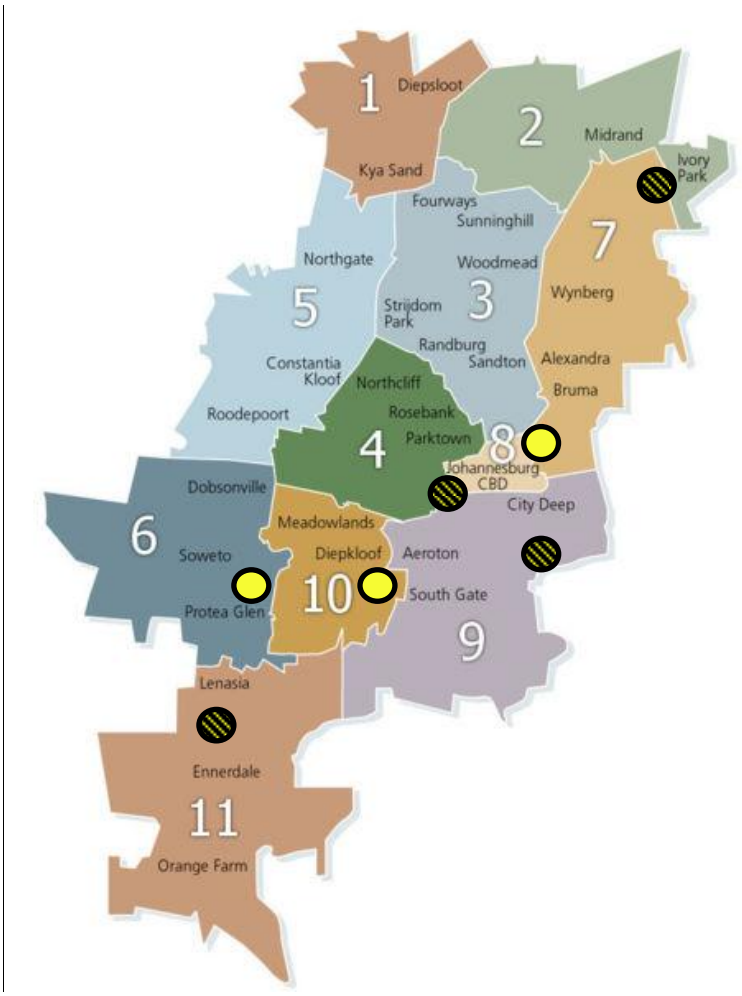


Figure 5.2: Distribution of high case load district facilities in the Johannesburg Metropolitan Municipality

Source: (74)

5.2.3. Service Effectiveness

The researcher's observations found that approximately three hours of the average eight hours used to complete one first trimester procedure is unaccounted for. Therefore further studies to determine the most effective manner in which to offer the service are appropriate. The World Health Organization postulates a MVA takes from 3 to 10 minutes to complete, and the recovery period for a first trimester procedure should be about 30 minutes (121). Using this as an indication a more effective service would increase the throughput of clients and therefore

decrease the burden of unattended requests. The lack of standards and norms for South Africa TOP services makes ascertaining the appropriate length of time for each component a challenge.

5.2.4. Service Availability

The clinics visited operate independently of one another. There is not a standardised booking system or protocol to determine criteria of client priorities for urgent bookings. The 1999 survey found, a similar situation where TOP facilities worked alone and separately from one another (62). A central appointment booking system with interfacility communication offers benefits to the client as well as the service providers, namely, timeous accommodation of advanced gestations, improved cost-efficiencies of the TOP service and equitable distribution of TOP within the system (51). The findings show that some facilities are overburdened while other facilities are less frequented and this may offer an opportunity for clients at advanced gestational ages to be accommodated rather than "turned away" as mentioned by TOP providers in the Dickson-Tetteh study (62).

Few facilities operate five days a week, and at the time of the study all closed over the weekends. The TOP clients that utilise the services are employees, job seekers or scholars and a service easily available and accessible at appropriate times would assist in remedying some of the barriers to accessibility (35).

5.2.5. Termination of Pregnancy Providers

<u>Experience, knowledge and training</u>

The experience among the TOP providers did not differ between the municipalities. The majority trained in TOP delivery for more than 2 years. A low proportion (30%) of providers in JHB were knowledgeable of the details regarding gestational age as stipulated in the CTOP Act. This inconsistent knowledge is not specific to this study, but also reported in the Free State province in 2000 and 2005. The TOP staff were found to have a poor knowledge of the pertinent details encompassed in the CTOP Act (118;122). Many studies show despite staff being well trained in

TOP administration there remains lack of knowledge about the details and barriers faced by TOP clients (38;123;124).

Perception of Service

The majority of the TOP providers rated the overall service offered as average but all agreed that the service required improvement. A great concern is the number of TOP providers admitting to not coping in the current work environment. A resonating request for more debriefing sessions was given by all the providers. One-third of the providers are no longer comfortable with offering the service and reasons given for not leaving the service include waiting for a TOP provider to replace them in their current position.

Staff shortages, poor career pathing, lack of management support, collegial intolerance and insufficient debriefing sessions are the challenges identified by this group of TOP providers in three municipalities in South Africa. These are similar to those experienced in other areas in South Africa. Inadequate human resources, poor infrastructure, equipment shortages, inconsistent management support and no support from colleagues and community members are mentioned (61; 66; 125). Maternal Health services are commonly under-resourced globally and health professionals in this setting commonly encounter challenges similar to those in TOP services (126). The dearth of suitable skilled staff available to perform abortions is a barrier to increased accessibility to TOP services. Strategies for TOP provider retention and recruitment are required (127; 128). Hongoro and McPake suggest retention strategies may include recruiting ancillary staff to assist with workload, monitoring strategies and improved management contexts and varied structures of reimbursement (127).The right to safe abortion is a legal requirement in South Africa and cannot be inhibited as a result of human resource challenges (129).

5.2.6. Informative Pre-Procedural Counselling

Pre-TOP counselling was more common in Mangaung (100%) and Bela-Bela (90%), but less in JHB (73%). All the respondents believed the counselling to be helpful. Engelbrecht, in 2004 in

the Free State, also found 85% of adult clients have access to pre-TOP counselling were satisfied (118). Information from the follow-up interviews highlights the need for improved counselling. Benson et al discussing TOP services in Lima, Peru, found information available for TOP clients to be scarce despite TOP clients requiring and welcoming it (130). The Dickson-Tetteh survey, in 1999, found the services then to be more capacitated to distribute educational material and reproductive health messages, as more than ninety per cent of TOP clients did receive these (62). In the qualitative portion of the study, a women who had made mention of poor counselling also were the same women with emotional distress subsequent to the TOP. Benson describes the necessity for counselling as it informs women of complications related to TOP including increasing their awareness of emotional distress that they may experience (130).

Twenty-four percent of clients in JHB were aware of the post-TOP counselling sessions at the time of interview. The follow-up study suggests that few women (35%) receive a follow-up and even fewer (26%) attend their appointment. Post-abortion counselling plays an invaluable role in advising women and promoting contraception use. Women are shown to be more receptive to reproductive health messages during the post-abortive period, obviously an opportune time for empowering and educating women (105). Dickson-Tetteh recommends that the post-abortive counselling be an opportunity to inform women about contraception and safe practice related to sexual and reproductive health (62). Larsson shows that women that have undergone previous abortions are at risk of terminating again (106). The post-abortion counselling may be an essential intervention to decrease high risk sexual behaviour, hence decreasing the numbers of subsequent unwanted pregnancies, abortions and sexually transmitted infections (131).

5.2.7. Manual Vacuum Aspiration

Three of the 23 women did not return for the MVA at the clinic on the subsequent day; their reasons were not comprehensively explored. Though one woman visited an unsafe abortionist to complete the MVA, she required hospitalisation after the procedure. Two women had a failed abortion and continued pregnancy to full term.

Strategies to mitigate avoidance of the manual vacuum aspiration may need further understanding. Adopting protocols where abortifacients (Misoprostol) and MVA are administered on the same day, may negate that loss to follow-up (132). The current evidence quantifying MVA default rate and hence failed abortion is scarce (133). Without these data the impetus to strengthen the availability of medical abortion in the public sector is still warranted. The TOP facilities without ultrasound may consider such an option (134). In addition to the increased acceptability for the TOP client it demonstrates lower complication rates making it a important public health intervention (135).

5.2.8. Intra-Procedural Analgesia

The women who took part in the qualitative session made mention of the severe pain incurred during the MVA. The analgesia, when administered, was only after the procedure. This despite the WHO Safe Abortion: Technical and Policy Guidance for Health Systems mentioning analgesia, with or without mild sedation, and even possibly local anaesthesia is required for an MVA (30). In Lima, Peru, TOP providers also did not administer pre-procedural analgesia and training had to promote staff awareness and importance of a pain free MVA (130).

5.3. POST-TERMINATION OF PREGNANCY SERVICES

5.3.1. Termination of Pregnancy Complications

Approximately one-quarter (n=6/23) of clients report a complication related to the MVA; all had medical treatment and four required hospital admission. This approximately equates to 26 complications per 100 clients. Findings from a study conducted in South Africa and Vietnamese private facilities report rates as low as 1.4 per 100 and 1.2 per 100 for mid-level workers, respectively (64). Acceptable global rates for complications that require medical care approximate 3 per 100 (136).

In this study one factor associated with sustaining a complication included the particular health facilities attended. One facility performing a very large proportion of the JHB terminations was

responsible for each client interviewed reporting a complication. This is of concern as the heavy workload may be negatively impacting on quality and safety of care and also a large population of women are at risk of serious complications if the quality is not rectified urgently. Pattison et al in a South African multisite study found that avoidable causes of severe acute maternal morbidity (SAMM) and maternal mortality was significantly caused by abortion and abortion related complications (120). The other associations found in the current study were failure to attend follow-up appointment (may have been a result of hospitalisation), poor awareness of the CTOP Act and the age of client, the younger women (≤24 years) were at higher risk than older women. A study in Uganda demonstrates that girls between the age of 15-19 years made up two-thirds of the abortion complications in a teaching hospital (137).

5.3.2. Supportive Post-Procedural Counselling

The qualitative portion of this study demonstrates its usefulness as clients' mention issues regarding emotional distress and inadequate counselling solely in this section. Emotional affects were mentioned exclusively by the older women. Psychological sequelae related to TOP are strongly associated with abnormalities pre-TOP; a limitation was the psychological status of these women were not assessed before the TOP (138; 139). A qualitative study focussed on Afrikaans middle aged women, showed the majority had experienced feelings of guilt and sadness after their TOPs but each dealt with it in their own way and most never regretted the decision (140), although no reference was made to the clinical experience of the abortion. In this study the clients that reported the emotional distress were also the clients that complained about the pain during the MVA. As already mentioned, the clients who perceived the counselling to require improvement also are the clients that reported the emotional distress (Figure 5.3). This further illustrates the necessity for improved post (and pre-) abortion counselling services. Broen et al reported that women that underwent TOPs as a result of external pressures and lack of partner support, and did not receive support later, were more likely to report negative psychological responses (141). A follow-up appointment and supportive counselling may mitigate this.

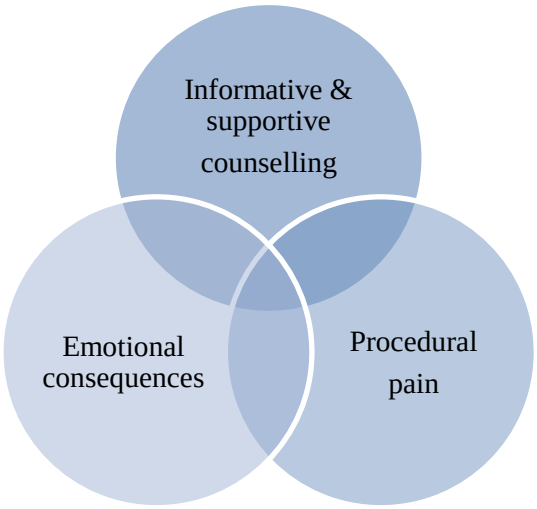


Figure 5.3: Overlap of pre and post-abortion counselling, procedural pain and emotional distress as reported by termination of pregnancy clients in Johannesburg (2010)

It is essential to improve the pre and post-TOP counselling. It has far reaching effects that may make clients more aware of the physical and emotional consequences of the TOP and possibly prepare them. The post-abortion services further emphasise this with support and counselling.

5.3.3. Monitoring and Evaluation of the Termination of Pregnancy Services

The majority of clients, rate the service quality received as above average and the attitude of TOP providers towards them as friendly. In local literature TOP provider rudeness and judgemental comments are well documented (38; 114). The qualitative portion of this study suggested that providers may treat older clients more favourably than the younger clients. This is corroborated by a study that describes the disapproval that Kenyan and Zambian nurse-midwives had towards adolescents with reproductive issues (67). The clients reported satisfaction despite the prolonged waiting periods and the high complication rate. TOP providers were also satisfied with the current services though they were not coping and all agreed the services needed improvement. Currently it is legislated that data on TOP at the facility level be collected (39;40) . These data along with crucial feedback from the TOP providers may help health facility managers monitor the services and hence improve quality of care (91). An evaluation process is able to assess the services effectiveness, safety and impact on the

community (91). This evaluation process may include periodic client satisfaction surveys in which post-abortion complications are reported, the clients' experience of staff attitude and their suggestions for improvement. Further, the more comprehensive evaluation would allow TOP providers to complete anonymous questionnaires and submit feedback regarding service improvement. District facilities may need to engage with referral hospitals to determine complications not otherwise reported or identified immediately after the TOP procedure.

Private sector termination of pregnancy facilities

There is currently a paucity of data from private TOP facilities. With the unmet need that the DHIS data has revealed, it is crucial to determine if clients are accessing private facilities. Private institutions have been known to try and assist with addressing the unmet need, delivering TOP service in provinces with scarce services (142). The need to quantify the complication rates for both sectors is crucial. This would allow for comprehensive dissemination of results to all relevant stakeholders.

5.4. PREVENTION OF RECURRENT UNINTENDED PREGNANCIES

These levels of prevention are adapted from a framework on preventing unsafe abortion issued by the WHO (41). The primary prevention of unintended pregnancy would include the increase in promotion and utilisation of family planning practices and modern contraception (36). Secondary prevention includes the timeous, appropriate and good quality management of unintended pregnancies. Tertiary prevention includes the timeous and appropriate treatment of complications and, if required, prompt referral to hospital to prevent the development of sequelae associated with increased risk for morbidity or mortality. Similarly, this would be delivered through comprehensive post-abortion services, informing the clients of warning signs for prompt presentation for medical management, as well as the necessity to utilise contraception and hence mitigate repeat unintended pregnancies (41).

5.5. PUBLIC HEALTH IMPORTANCE

The International Population and Development Conference in 1994 brought the importance of preventing unsafe abortion to the attention of global leaders and public health organisations (25).

Multisectoral collaboration

This is a multisectoral collaboration that is required to ensure that women are able to access safe TOP services when and where required. There needs to be more engagement with all stakeholders, TOP providers, senior and mid-level managers, TOP clients and the community (128).

Contraceptive utilisation and safe sexual practices

The growing number of pregnant women alludes to the poor utilisation of contraceptive and barrier methods. This further intensifies the need to address the health promotion at TOP clinics. Dehlendorf stresses that in the United States, women want to be principle decision makers around their reproductive choices; women need to be consulted by health care professionals if the correct outcome is to be attained (143) With adequate consultation and information sharing, women are better informed decision makers may be encouraged to make decisions that mitigate STI and HIV risk, subsequent unintended pregnancies and repeat abortions. These women fall within the realms of the highest at risk for HIV/AIDS in South Africa, and this age group has the highest prevalence and they are practicing unsafe sex (101). De Jongh et al reported that the approximately one-quarter of women presenting to a Pretoria TOP facility are infected with at least one STI (144) . Their interaction with the health system may be an important opportunity to deliver the message and correct management of reproductive health and healthy lifestyle.

Barriers to attaining safe and free abortions

South Africa boasts liberal termination of pregnancy legislation, the enactment of which saw a rapid decline in the maternal mortality ratio of 91% within four years. If South Africa is to make

advancements to meet the MDGs, it is essential that we continue to ensure that the CTOP Act continues to ensure abortions are safer (72). As the numbers of requests continue to increase, without the responsive increase in TOP procedures, those two-thirds of requests that do not find assistance at the public facilities may indeed seek the services of unsafe abortionists.

Despite the legalisation of TOP in South Africa, women still face barriers, including irregular booking systems, long waiting times, TOP performed at advanced gestations within the first trimester and high complication rates associated with the TOP. Surveillance systems for poor clinical outcomes may assist in regulating the implementation of the CTOP Act.

Monitoring and evaluation

The district information system illustrates the request/service delivery mismatch that may be forcing women to resort to unsafe abortionists for assistance. There will need to be an increase in the number of staff and operational facilities if the actual need of TOP requests is to be met.

Teenagers accessing the service

The proportion of younger women accessing the service puts an enormous responsibility on the health system. This requires that the health services become adolescent friendly (67). Teenagers are becoming a large proportion of the clients accessing various forms of health services in the country, and they too fall within the most at risk for HIV acquisition (94). These vulnerable girls are at high risk for complications associated with TOP and safe good quality services need to be accessible to them (145).

Women may be more receptive to reproductive health messages after a termination of pregnancy. These contacts points should not be missed opportunities but rather utilised for the integration of HIV counselling and testing, cervical screening, breast exams and a myriad of health practices and interventions known to assist with the Millennium Development Goals Three and Five (145). It is possible and beneficial to integrate reproductive and sexual health care.

Human resources for health

A cadre of health professionals have voiced their collective opinion on their current working environment it is therefore important to address these issues to ensure healthy employees and clients in the health system (127). To meet the growing need for TOPs there will have to be further investment in staff recruitment and retention (127).

The TOP services show signs of neglect and inertia. The lack of supervisory and management support is a challenge in all facilities (118). Care needs to be taken so that services are frequently monitored and evaluated for post-TOP clinical outcomes. Therefore, to determine if the overall impact of the service on the population is positive (146).

5.6. SUMMARY

A toolkit on monitoring health systems strengthening identifies specific areas of service delivery that if explored establish the quality of service. These areas include the relevance, client-centeredness, efficiency and effectiveness and safety of the service (147).

In summary TOP requests are increasing, though only one-third of this need is met at the district level. TOP providers are currently not coping in their current work environment. The TOP clients rate the TOP services as above average and TOP providers' attitude towards them as friendly. This despite prolonged waiting periods (in JHB). Approximately one-third do not receive pre-TOP counselling, and many clients report not receiving analgesia during the TOP. The complication rate is also alarmingly high, among the 23 women that were available for repeat interview (148).

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

This final and concluding chapter will summarise the findings according to the specific objectives listed in Chapter One. It explores the strengths and weakness of the study and lists a set of recommendations that are thought to be essential at the culmination of the study. The report concludes with ideas for further research.

6.1. CONCLUSIVE REMARKS

This study took place over two years. The first section was the analysis of the DHIS data and it contextualised the TOP services in public sector in JHB Municipality. Further, this study, the first of its kind in Johannesburg, Mangaung and Bela-Bela Municipalities, looks at both the TOP provider and the TOP client, in both the urban and rural divide simultaneously. The longitudinal element of the study follows TOP clients up to assess their reproductive health after their interaction with the TOP service; an evaluation to determine the impact of the TOP service on clientele and possibly attain their true experiences that could be documented with more honesty. More than a decade after the Choice on Termination of Pregnancy Act's enactment the timing for a study like this could not be more ideal.

6.1.1. Description of Johannesburg Metropolitan Municipality District Health Data

The DHIS plays an important role to identify the overview of TOP in the Johannesburg Metropolitan Municipality (149). The process of analysing and describing the district health information management system data show the current need for TOPs outstrips the number of TOP procedures being performed by almost two thirds. This unmet need may lead women to seek the assistance of unsafe abortionists if private providers are unaffordable. The majority of

TOPs being performed by just two district facilities for first trimester and one Academic Hospital for second trimesters. These findings may contribute to the long waiting periods identified in section II of the study. Therefore, this is impeding accessibility and availability of safe TOP in a country with unrestrictive legislation.

6.1.2. Knowledge Perception and Challenges of Termination of Pregnancy Providers

The study highlights some of the many challenges facing TOP providers employed at TOP facilities in South Africa. In an environment where the majority are not coping or comfortable administering the service, concerns should be about the future implications for employee wellness and quality of service delivery. The pressures that providers experience may need to be addressed before human resource capacity interferes with service provision. A few priority areas to focus on may be more frequent debriefing, capacity strengthening, increased support from management and supervisors, further employment of counsellors trained in reproductive health and social working to alleviate the workload. The need to continually reinforce and expand on TOP providers' knowledge of TOP services is important. Herbitter et al stress the importance of multi-site training exposing TOP providers to health systems issues faced by women and men seeking reproductive health care (150).

6.1.3. Profile Knowledge and Perception of Termination of Pregnancy Clients

The primary prevention strategies for unwanted pregnancies are not well implemented, with the prevalence of contraception use amongst the client remaining low in this study setting. The knowledge of the CTOP Act and the legal gestational age for termination is also lacking in certain municipalities. The JHB clients are waiting longer for their abortion dates than other clients; this therefore, translated into TOP being performed at later gestational ages. This is an increased risk for complication related TOPs.

The TOP clients in general were satisfied with the services provided at the clinic. The clients from facilities in JHB were the only TOP clients to rate TOP provider attitude as unfriendly. The proportion of teenage clients is growing and with their needs being different from their adult

counterparts; services need to adopt strategies that make them more accessible and friendly to adolescents (145). In many aspects a rural municipality may offer better service than the urban municipality, possibly due to lower client volumes, but these aspects were not investigated.

6.1.4. Post-Termination of Pregnancy Service Requirements

The post-abortion care services are brought into focus. A large proportion of clients did not undergo post-TOP counselling. The high proportion of complications, related to TOP, which required further medical assistance, requires further attention. The first trimester procedure can approximate the level of safety that a procedure of this standard should attain.

This study introduces the importance of passive surveillance in improving the quality of service delivery. This is only achieved when data collected is analysed and used to inform policy and service. The studies conducted in South Africa since the CTOP Act enactment, have demonstrated various challenges and areas for improvement. These findings were disseminated to stakeholders for discussion, consideration and informed action.

6.2. STRENGTHS AND LIMITATIONS

6.2.1. Strengths of the study

- This study is able to add to the discourse on TOP in South Africa. Findings from Johannesburg Metropolitan Municipality (urban municipality) and Mangaung and Bela-Bela Municipalities (rural municipalities) were important for comparative purposes.

- In Bela-Bela and Mangaung the research was a baseline study for a clearer understanding of the facilities.

- The high response rate for both TOP providers and TOP clients was beneficial in developing hypotheses about the termination of pregnancy services.

- The longitudinal study design offered an opportunity to follow clients up after a prolonged period (18 months) to describe the post-abortion services. It highlights the need for constant monitoring and evaluation of reproductive health services for improved quality of care.

- The self-administered questionnaires were anonymous, this to strengthen the credibility and accuracy of the clients' responses**.**

- Mixed methodology proved beneficial as the three sections confirm findings and develop an overall commonality of the study. New themes and ideas that require further investigations were discovered. Triangulation of findings between the different methodologies offers an increase to the robustness of the conclusions.

- The study may be generalisable to the rest of South Africa as it was based in a Metropolis and two rural municipalities. Caution should be taken when inferring these findings to private sector TOP facilities.

6.2.2. Limitations of the study

- Selection bias may have been introduced as regards the clients that had telephonic interviews. This resulted from the large proportion of non-functional contact numbers (146). This also resulted in a small sample size of clients in the follow-up cohort.

- Some issues raised in the qualitative portion of the interview were not addressed in the quantitative portion of the questionnaires, therefore unexplored ideas require further investigation.

- The psychological status of the TOP clients was not assessed before the TOP. This made it difficult to determine the temporality of the emotional distress as mentioned by the clients.

- The DHIS data for the rural municipalities would have offered valuable input in determining number of requests, actual procedures performed and the age distribution of clients.

6.3. LIST OF RECOMMENDATIONS

6.3.1. Pre-termination of pregnancy services

Education and health promotion

- The need to inform and promote the rights offered to women with the CTOP Act and its amendments:
    - Develop relevant health information materials accessible at sites beyond the health system.
    - Engage communities in the importance of safe abortion therefore dissipate the social stigma (151).
    - Assist women who are happy with the pregnancy but are in poor socio-economic situation to explore options that may be available to them other than a termination (114).

- Workshops with various cadres of health professionals and health facility managers to increase tolerability to the TOP services and the providers, even in the environment of conscientious objection (152). Harrison et al found that professional nurses were confused about their standpoint in their professional responsibilities (151). A platform is needed to mitigate the professional discontent and stigmatisation faced by providers and clients (153).

6.3.2. Termination of pregnancy services

Health system issues

- Removing the barriers to accessing the service by addressing the lengthy waiting period, increasing throughput with a more effective process and possibly reducing the number of visits required for the clients (123;154;155).

- Ensure a robust system is in place for referrals of complications to the facilities (154).

- The development of norms and standards that address the "essentials of good-quality abortion care" (72):

    - The essential equipment required at the facilities.
    - The essential drugs and medications.
    - The referral system and mechanism identified.
    - Protocols and guidelines in place for adolescents and other vulnerable groups.

- Insure that the services always remain cognisant of vulnerable women, women that are victims of gender-based violence and women with HIV/AIDS (72;123).

- The promotion of adolescents friendly reproductive health services including education and health promotion, counselling facilities as well as the promotion and emphasis on the development of economic opportunities (156).

- Improved implementation of medical abortion to alleviate caseloads, increase accessibility and possibly decrease the complications associated with failing to undergo the MVA (157).

6.3.3. Post-termination of pregnancy services

Post-abortive case

- The improvement of post-abortive services, which includes counselling, strengthened referral systems in place for addressing any complications, the institution follow-up appointments and ongoing supportive care if required. Ensure that STI screening and treatment is available for women whether symptomatic or asymptomatic (144).

Monitoring and evaluation

- Regular monitoring of the quality of services is essential. Further evaluative procedures that include client surveys and TOP provider feedback are integral to quality service provision (72). The TOP surveillance system, covering public and private TOP facilities, reporting

TOP-related complications could be integrated into the existing DHIS system (15;158). Ensure the data are utilised to improve services and ensure the quality of the DHIS data collected are accurate (149).

6.4. SUGGESTIONS FOR FURTHER RESEARCH

- A larger cohort of TOP clients followed up to determine clinical outcomes and the factors associated with repeat TOPs, and possibly utilisation of contraception.

- Identify the number of TOP clients that do not return for MVA or access unsafe abortion facilities for completion of TOP. Determine the factors associated with defaulting and complications associated with the practice.

Feedback to relevant stakeholders has occurred so this study may act as an example of action research and follow-up studies may show whether enhancements have had the desired impact on service quality and long term incidence of unwanted pregnancy.

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APPENDIX A: ETHICAL CLEARANCE CERTIFICATES

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Mendes

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER M080838**
PROJECT	Evaluations of the Termination of Pregnancy Services of Johannesburg Metro Health Distric in the Gauteng Province
INVESTIGATORS	Dr JF Mendes
DEPARTMENT	School of Public Health
DATE CONSIDERED	08.08.29
DECISION OF THE COMMITTEE*	

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE **CHAIRPERSON** .....
(Professor P E Cleaton Jones)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : Dr D Basu

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

University
of the Witwatersrand,
Johannesburg

Human Research Ethics Committee (Medical)
(formerly Committee for Research on Human Subjects (Medical)

Secretariat: Research Office, Room SH10005, 10th floor, Senate House • Telephone: +27 11 717-1234 • Fax: +27 11 339-5706
Private Bag 3, Wits 2050, South Africa

18 January 2010

Dr Jacqueline F Mendes
Public Health Medicine Registrar
School of Public Health
Medical School
University

Dear Dr Mendes

RE: Protocol M080838 'The Evaluation of Termination of Pregnancy Services in the Johannesburg Metro District'
Request for extension

This letter serves to confirm that the Chairman of the Human Research Ethics Committee (Medical) has reviewed and approved your request for an extension to include follow-up telephonic interviews on the abovementioned protocol.

Thank you for keeping us informed and updated

Yours sincerely,

Anisa Keshav
Secretary
Human Research Ethics Committee (Medical)

University
of the Witwatersrand,
Johannesburg

Human Research Ethics Committee (Medical)
(formerly Committee for Research on Human Subjects (Medical)

Secretariat: Research Office, Room SH10005, 10th floor, Senate House • Telephone: +27 11 717-1234 • Fax: +27 11 339-5708
Private Bag 3, Wits 2050, South Africa

29 March 2010

Dr JF Mendes

RE: Protocol M080838: 'The Evaluation of Termination of Pregnancy (TOP) Services in the Johannesburg Metro District' –Extension

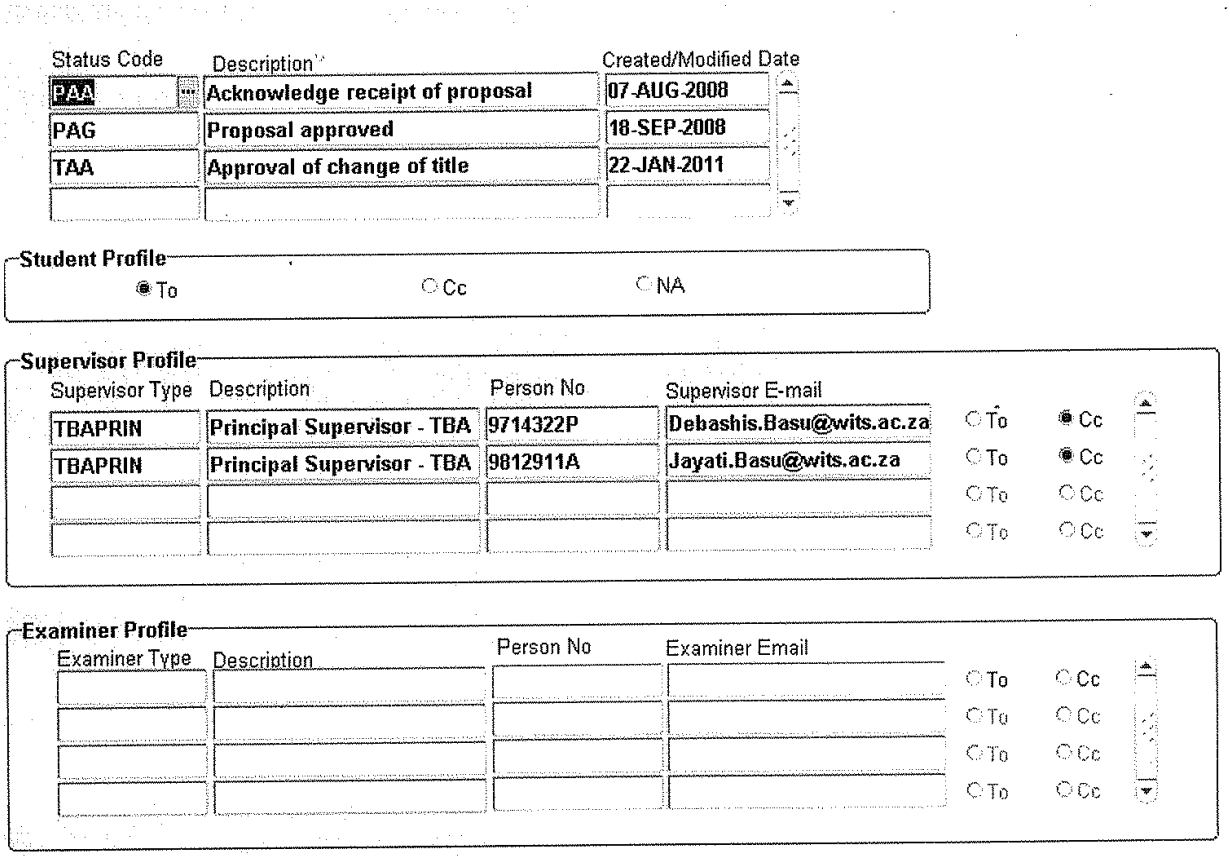
This letter serves to confirm that the Chairman of the Human Research Ethics Committee (Medical) has reviewed and approved your request to extend the abovementioned study to include the Free State and Limpopo Provinces as detailed in your letter dated 3 March 2010.

Thank you for keeping us informed and updated.

Yours sincerely,

Anisa Keshav
Secretary
Human Research Ethics Committee (Medical0

APPENDIX B: POSTGRADUATE APPROVAL DOCUMENTATION



Status Code	Description	Created/Modified Date
PAA	Acknowledge receipt of proposal	07-AUG-2008
PAG	Proposal approved	18-SEP-2008
TAA	Approval of change of title	22-JAN-2011

Student Profile

(•) To ( ) Cc ( ) NA

Supervisor Profile

Supervisor Type	Description	Person No	Supervisor E-mail		
TBAPRIN	Principal Supervisor - TBA	9714322P	Debashis.Basu@wits.ac.za	( ) To	(•) Cc
TBAPRIN	Principal Supervisor - TBA	9812911A	Jayati.Basu@wits.ac.za	( ) To	(•) Cc
				( ) To	( ) Cc
				( ) To	( ) Cc

Examiner Profile

Examiner Type	Description	Person No	Examiner Email		
				( ) To	( ) Cc
				( ) To	( ) Cc
				( ) To	( ) Cc
				( ) To	( ) Cc

APPENDIX C: DATA COLLECTION TOOLS

Instrument: Tool I

Facility:

Bophelong [01]	Chiawelo [02]	Discoverers [03]	Hillbrow [04]	Lenasia S [05]	Southrand [06]

Date:

y	y	m	m	d	d

DHIS DATA

Indicators	Year: 200_											
	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Number of patients under 18 years of age												
Number of patients 18 years or older												
Number of requests for TOP												
Number of TOPs done under 12 weeks												
Number of TOPs done over 12 weeks												

FIRST PAGE FOR RESEARCH ASSISTANT TO COMPLETE

Instrument: Tool II (Health Professionals)

First Page: To be separated from questionnaire at collection

Facility:

Bophelong [01]	Chiawelo [02]	Discoverers [03]	Hillbrow [04]	Lenasia S [05]	Southrand [06]	Warmbaths [07]	Dr JS Moroka [08]

Date:

y	y	m	m	d	d

Study number:

f	f	d	d	p	p

Where appropriate please mark the appropriate block **X**

A. Health professional profile							
1.	Gender	Male [1]		Female [2]			
2.	Length of employment as a Nursing Professional (years)	0 – 1 [1]	2 – 5 [2]	6 – 9 [3]	10 and above [4]		
3.	How long have you been trained in performing TOP (years)	0 – 1 [1]	2 – 4 [2]	5 – 9 [3]	10 and above [4]		
4.	How long have you been working in TOP services (years)	0 – 1 [1]	2 – 4 [2]	5– 9 [3]	10 and above [4]		
5.	Current position	Managerial [1]	Clinical [2]	Both [3]			

B. TOP client in your facility							
6.	Do you believe that the clients are using family planning at presentation?	**YES** [1]	**NO** [0]				
7.	If **NOT,** what do you think the reasons are?						
8.	Where are the clients getting most of their information about TOP/abortion?	Clinics/ Health Facility [1]	Media (TV/ Radio) [2]	Relatives [3]	Friends [4]	Other Specify: [5]	

C. T.O.P Service accessibility and availability in your facility				
9.	How many days are the TOP services available per week?		Days/week	
10.	How many hours are the TOP services available per day?		Hours/day	
11.	What is the average waiting period for a TOP appointment?		Weeks	
12.	Is transport a problem for clients accessing this facility?	**YES** [1]	**NO** [0]	
13.	What challenges have you identified with the TOP service delivery at this facility?			
14.	Do you think the TOP services currently offered to the clients can be improved?	**YES** [1]	**NO** [0]	
15.	How do you think we could improve the TOP service delivery at this facility?			

D. TOP Service						
16.	**Please rate your feelings towards performing TOPs**					
	1 Very Uncomfortable	2 Uncomfortable	3 Indifferent	4 Comfortable	5 Very Comfortable	
17.	Are you (staff) offered any debriefing or counselling sessions by your employer?		**YES** [1]	**NO** [0]		
18.	If **YES**, how regularly do the sessions occur?					
19.	Is the quantity of counselling/debriefing sufficient?		**YES** [1]	**NO** [0]		
20.	Are you coping with the current working conditions?		**YES** [1]	**NO** [0]		

21.	If **NO,** how can your work environment are improved to assist you to cope better?			
22.	Are you offered the opportunity to rotate through other clinical departments?	**YES** [1]	**NO** [0]	
23.	Are you offered the opportunity to attend any training or workshops? *(both in TOP and other clinical disciplines)*	**YES** [1]	**NO** [0]	
24.	If given the opportunity, would you stop your involvement in TOP services?	**YES** [1]	**NO** [0]	
25.	If **YES** what is preventing you from stopping your involvement in the TOP services?			

26.	**Rate the quality of TOP service offered to clients**					
	1 Very Poor	2 Poor	3 Average	4 Good	5 Very Good	

E. Knowledge Of Legislation				
27.	Are you aware of the Choice of Termination of Pregnancy Act of 1996?	**YES** [1]	**NO** [0]	
28.	Up to what gestation does a doctor or an appropriately trained nurse need to consult another health professional before performing a TOP?	**weeks**		

F. Perception of the TOP services							
29.	**Rate the attitude of the health professionals to the clients?**						
	1 Very unfriendly	2 Unfriendly	3 Average	4 Friendly	5 Very Friendly	6 Excellent	
30.	**Could you rate the overall quality of the TOP service at this facility?**						
	1 Very poor	2 Poor	3 Average	4 Good	5 Very Good	6 Excellent	
31.	Do you have any comments that you would like to make about the TOP services/clients or any experiences you believe that the researchers should be aware of.						

THANK YOU for your time and your honesty

Instrument: Tool III (TOP Clients)

FIRST PAGE FOR RESEARCH ASSISTANT TO COMPLETE

This first page to be removed from the questionnaire after information has been collected

Facility:

Bophelong [01]	Chiawelo [02]	Discoverers [03]	Hillbrow [04]	Lenasia S [05]	Southrand [06]	Warmbaths 07]	Dr JS Moroka [08]

Date:

y	y	m	m	d	d

Study number:

f	f	d	d	p	p

Where appropriate please mark the appropriate block | **X** |

A. Demographic History						
1.	What is your age?	years old				
2.	Date of Birth	yyyy/mm/dd _ _ _ _ / _ _ / _ _				
3.	Ethnicity	Black [1]	Coloured [2]	Indian [3]	White [4]	
4.	Are you a South African Citizen?	**YES** [1]	**NO** [0]			

5.	**Education:** Are you currently studying?	**YES** please answer question 5.2 [1]	**NO** please answer question 5.1 [0]		
5.1	If **NO,** at which level did you complete?	Secondary [1]	Tertiary [2]	Other [3]	
5.2	If **YES,** at which level are you?	Primary [1]	Secondary [2]	Tertiary [3]	
6.	**Employed:** Are you currently employed?	**YES** [1]	**NO** [0]		
6.1	If **YES,** please specify.	Temporary/casual [0]	Permanent [1]		

7.	Please describe your current Marital status/Relationship status.	**Single [1]**	**Living Together [2]**	**Divorced [3]**	**Widow [4]**	**Married [5]**	

B. Socio-economic History				
8.	Are you receiving any social/government grant?	**YES** [1]	**NO** [0]	
8.1	If **YES,** please specify.			

C. Medical/Clinical History							
9.	Do you have any medical conditions/illnesses?	**YES** [1]			**NO** [0]		
10.	If **YES,** please specify.						
11.	Are you currently taking any treatment/medication, including traditional medicines?	**YES** [1]			**NO** [0]		
12.	If **YES,** please specify.						
13.	The number of times you have been pregnant **including this pregnancy?**	1 [1]	2 [2]	3 [3]	4 [4]	5 [5]	
14.	Number of living children you have?	1 [1]	2 [2]	3 [3]	4 [4]	5 [5]	
15.	Number of miscarriages?	1 [1]	2	3	4 [4]	5 [5]	
16.	Have you ever had an abortion before?	**YES** [1]			**NO** [0]		
17.	If **YES,** please specify how many.	1 [1]	2 [2]	3 [3]	4 [4]	5 [5]	
18.	If **YES,** where did you go to have the abortion?						

19.	MAY we **call you back in a few months** time to check how you are doing – it will be a confidential call?	**YES** [1]	**NO** [0]	
20.	If **YES,** please write a telephone number where we could reach you.			

D. Contraception/Family Planning History					
21.	Were you using any **family planning** in the month you fell pregnant?		**YES** [1]	**NO** [0]	
22.	If **NO,** what were the reasons for not using family planning?				
23.	If **YES,** why do you think you still fell pregnant?				
24.	Have you used family planning in the past? If yes what method contraception have you used in the past?				
25.		Oral Contraceptive pill	[1]		
26.		Hormonal Injection	[2]		
27.		Male condom	[3]		
28.		Female condom	[4]		
29.		Intra-uterine Device (IUD)	[5]		
30.		Abstinence	[6]		
31.		Traditional methods or any other Please Specify:	[7]		
32.	Are you going to use family planning in the future?		**YES** (Please answer 26.2) [1]	**NO** (Please answer 26.1) [0]	
33.	If **NO** explain what has led you to decide not to use family planning?				
34.	If **YES** which method will you use? {You can TICK more than one answer}	**pill** [1]	**injection** [2]	**male condom** [3]	**female condom** [4]	**IUD** [5]	**abstinence** [6]

E. Information about this most recent pregnancy			
35.	When was your last menstrual period?		
36.	How many **weeks/months** were you pregnant?		
37.	Can you give the reasons, which you have decided to have an abortion?		
38.	How long did you have to wait for an appointment for your abortion (days)?		

F. Knowledge Of Legislation and Health Promotion				
39.	Do you know there is a South African law about abortion? (Choice of Termination Act of 1996)	**YES** [1]	**NO** [0]	
40.	Do you know until how many months pregnant a woman can still ask to have a legal abortion?	**YES** [1]	**NO** [0]	
41.	If **YES,** how many months?			
42.	Do you know of any other places that offer **LEGAL** abortions?	**YES** [1]	**NO** [0]	
43.	If **YES,** please specify			
44.	Have you ever received any education about contraception	**YES** [1]	**NO** [0]	
45.	If **YES,** from where and who?			
46.	Have you ever received any education about safe abortions?	**YES** [1]	**NO** [0]	
47.	If **YES,** from where and who?			

G. Counselling and Follow-up at this visit						
48.	Did you receive counselling **BEFORE** this abortion?		**Yes** [1]	**No** [0]		
49.	**Q1. if You did receive counselling please rate how helpful it was:**					
	1 Not helpful/ It made me feel worse	2 Not helpful/ did not talk about what I needed to know	3 Slightly Helpful	4 Very Helpful but I did not need it	5 Very Helpful Glad I had it	
50.	Would you advise someone to have counselling before an abortion?		**YES** [1]	**NO** [0]		
51.	Were you given a **to-come-back** after the abortion?		**YES** [1]	**NO** [0]		
	If **YES,** when is this date?					

H. Perception of the TOP services						
52.	**Q2. Could you please rate the attitude of the Health Professionals to you and other women?**					
	1 Very Unfriendly/ Uncaring	2 Unfriendly/ Uncaring	3 Average	4 Quite Friendly/ Caring	5 Very Friendly/ Caring	
53.	**Q3. Could you rate the overall quality of the TOP service at this facility?**					
	1 Very poor	2 Poor	3 Average	4 Good	5 Very Good	

THANK YOU for your time and your honesty –
It is greatly appreciated and highly valued

Instrument: Tool IV (TOP Clients follow-up interview)

TOP study: Johannesburg Metropolitan Municipality

Introduction		
Introduce myself		
Is this an appropriate time to talk	Yes	No
If no what would be an appropriate date and time	Date:	Time
Explain the details of the Information sheet	Yes	
Information sheet understood	Yes	No
Get verbal consent to continue with questioning	Yes	No
Details of previous encounter		
Date	November 2008 (14 months)	
Time		
Mobile number		
Facility		
Date of self administered questionnaire		
Number of abortions (including index):		
Had used contraception in the past		
Decided to use contraception in the future		

Questions

1.	**Education:** Are you currently studying?	**YES** [1]			**NO** [0]	
2.	**Employed:** Are you currently employed?	**YES** [1]			**NO** [0]	
a.	If **YES,** please specify.	Temporary/casual [0]			Permanent [1]	
3.	Please describe your current relationship status.	**Single** [1]	**Living Together** [2]	**Divorced** [3]	**Widow** [4]	**Married** [5]

4.	The number of times you have been pregnant	1 [1]	2 [2]	3 [3]	4 [4]	5 [5]
5.	Number of living children you have?	1 [1]	2 [2]	3 [3]	4 [4]	5 [5]
6.	Number of miscarriages?	1 [1]	2 [2]	3 [3]	4 [4]	5 [5]
7.	The total number of abortions?	1 [1]	2 [2]	3 [3]	4 [4]	5 [5]
8.	Where did you go to have the abortion?					

9.	What methods of family planning and contraception have you used in the past year? *{You can TICK more than one answer}*	
		Hormonal Injection
		Male condom
		Female condom
		Intra-uterine Device (IUD)
		Abstinence
		Traditional methods or any other - Please Specify:

10.	Are you going to use family planning in the future?			**YES** [1]	**NO** [0]		
a.	If **NO** explain what has led you to decide not to use family planning?						
b.	If **YES** which method will you use? *{You can TICK more than one answer1}*	**Pill**[1]	**injection**[2]	**male condom**[3]	**female condom**[4]	**IUD**[5]	**abstinence**[6]

11.	Do you know there is a South African law about abortion? (Choice of Termination Act of 1996)	**YES** [1]	**NO** [0]
12.	Do you know until how many months pregnant a woman can be, to go to a clinic and ask for a legal abortion?	**YES** [1]	**NO** [0]
a.	If **YES,** how many months?		
13.	Do you know of any other places that offer **LEGAL** abortions?	**YES** [1]	**NO** [0]
a.	If **YES,** please specify		
14.	Would you advise someone to have counselling before an abortion?	**YES** [1]	**NO** [0]

Interview Schedule

1. What were your experiences during the TOP?
2. What were your experiences after the TOP?

Thank you

Thank you for your time, your contribution was very valuable.

This is the final part of the study

APPENDIX D: STUDY PARTICIPANT INFORMATION SHEETS

Health Professional Information Sheet

This should be provided to the health professional/ manager to keep, whether or not he/she decides to take part in the study.

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Study title:

EVALUATION OF THE TERMINATION OF PREGNANCY SERVICES IN SOUTH AFRICA

Introduction:

My name is ……. *(Research assistant);* I am a Research assistant working with Dr Jacqueline Mendes and the School of Public Health at the University of the Witwatersrand, Johannesburg. We are conducting this study on the Termination of Pregnancy (abortion) facilities.

Purpose of the study:

The reason for the study is to evaluate the Termination of Pregnancy services in South Africa but specifically in the Johannesburg Metropolitan Municipality, Bela-Bela Municipality, and Mangaung Municipality. The study aims to identify challenges that patients and health professionals are encountering, so that measures can be put in place to rectify the problems and improve the service for patients and health professionals.

Study procedures:

We would need ten to fifteen minutes of your time today.

We will need to ask you questions about yourself, about the quality of health promotion and abortion legislation. We would like you to give your opinion about the quality of service. We urge you to be as honest as possible, as all your input will be highly valued and it is an integral part of the success of this study.

Confidentiality:

If you choose to complete the questionnaire it will be completely anonymous. No personal details or others forms of identification will be recorded on the questionnaire. This will hopefully ensure that all questions can be answered honestly.

Risks:

There are no risks involved. You will be included purely on a voluntary basis and anonymity will be ensured as mentioned above.

Benefits:

The benefit of a successfully completed project will be the identification of challenges that you are encountering, so that measures can be put in place to rectify the problems and improve the service for patients and health professionals in the TOP services.

Participation:

Your participation is totally voluntary; if you want to decline the request to participate there will be no penalty or loss of benefits. You may discontinue your participation at any time without penalty loss of benefits.

Reimbursements:

There will be no reimbursements or payment for your voluntary participation.

Contact details of researcher:

If you have any queries or need more information please contact

- Dr Jacqueline Mendes: 011 717 2613
- Dr Debashis Basu: 011 717 2616
- Dr Jayati Basu: 011 555 0353

If you are unhappy with the way research is conducted, you are welcome to contact the Chair of the Wits Human Ethics Committee Prof P Cleaton-Jones through his secretary Ms Anisa Keshav: 011 717 1234

Thank you

TOP Client Information Sheet

This should be provided to the patient to keep, whether or not she decides to take part in the study.

A copy may also be attached to the patient file.

Study title:
EVALUATION OF THE TERMINATION OF PREGNANCY SERVICES IN SOUTH AFRICA

Introduction:
My name is …… *(Research assistant);* I am a Research assistant working with Dr Jacqueline Mendes and the School of Public Health at the University of the Witwatersrand, Johannesburg. We are conducting this study on the Termination of Pregnancy (abortion) facilities.

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Study procedures:

We would need ten to fifteen minutes of your time today.

We will need to ask you questions about yourself, your general health, about this pregnancy and details about your family planning. We would like you to give your opinion about the quality of service. We will read through your patient records looking specifically at the treatment that you were given while in the health facility (clinic of hospital). We urge you to be as honest as possible, as all your input will be highly valued and it is an integral part of the success of this study.

Confidentiality:
If you choose to complete the questionnaire it will be completely anonymous. No personal details or others forms of identification will be recorded on the questionnaire. This will hopefully ensure that all questions can be answered honestly.

Risks:

There are no risks involved. You will be included purely on a voluntary basis and anonymity (confidentiality) will be ensured as mentioned above.

Benefits:

The benefit of a successfully completed project will be the identification of challenges that you are encountering, so that measures can be put in place to rectify the problems and improve the service for patients and health professionals in the TOP services.

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Thank you