AWARENESS OF PHYSIOTHERAPY INTERVENTIONS AMONG PREGNANT FEMALES IN ANTENATAL CLINICS, BUFFALO CITY MUNICIPALITY, EASTERN CAPE, SOUTH AFRICA

UNIVERSITY *of the*
WESTERN CAPE

MERLY SAJAN

Student number: 3073907

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SUPERVISOR: Prof. Julie Phillips

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KEYWORDS

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Maternal health

ABSTRACT

Background: Maternal health is one of the main global health challenges and reduction of the maternal mortality ratios by three quarters by 2015 is the target for the Millennium Development Goal 5. The health force has been identified as the key to effective health services. Socio economic circumstances and educational levels are some of the factors for not accessing services rendered at hospitals. A key focus of maternal health policy is improving the health status of women by adequate referrals to other health teams and social support systems. **Aim:** The aim of the study was to to explore women's awareness and use of antenatal services at Cecilia Makiwane Hospital. **Objectives:** The specific objectives were to determine the awareness of physiotherapy interventions among pregnant women attending antenatal clinic as well as the health professional's knowledge about physiotherapy in the antenatal clinic. **Methodology:** A concurrent mixed method study design was used to collect data. A self-administered close ended questionnaire was used to collect quantitative data from 258 pregnant mothers out of a possible 290. Qualitative data was collected through in-depth interviews from 3 doctors and 3 nurses working in the antenatal clinic respectively. Quantitative data was analysed using the SPSS version 21.0. Descriptive data was presented in the form of percentages, means, standard deviations, and frequencies using tables, figures and graphs. A chi-square test of association was used to determine the factors influencing awareness and utilization of physiotherapy services in the antenatal clinic. Audiotaped interviews were transcribed, verbatim and expressed ideas were read several times, coded and reduced into categories and themes. Ethical considerations were ensured by means of privacy, anonymity and confidentiality. Ethical clearance was granted by the University of the Western Cape and permission from the Eastern Cape health department and Cecilia Makiwane Hospital manager were sought. **Results:** A response rate of 89% was obtained. The mean age of the pregnant mothers was 30.05 (SD=6.76). The majority of the mothers

(90%) who were aware of antenatal services offered at the clinic were not aware of physiotherapy antenatal services (64.5%). Only 35.5% knew about antenatal physiotherapy services. Maternal age was significantly associated with utilization of physiotherapy services in the antenatal clinic. (P=.021). Similarly there was a statistically significant relationship between the source of information from the antenatal clinics and utilization of physiotherapy services (P=.000). Poor utilization of physiotherapy services were related to lack of awareness, poor information and referral systems in the antenatal clinic. Furthermore, lack of knowledge on the importance of physiotherapy in the antenatal care was evident while interviewing the doctors. **Conclusion:** There is a need to increase awareness about physiotherapy interventions in the antenatal clinics among pregnant females as well as health professionals working there. Besides this, professional nurses and doctors must be able to refer pregnant mothers to physiotherapy for the appropriate musculoskeletal problems experienced during pregnancy. These can be achieved through awareness campaigns, physiotherapy health education and interaction with the health professionals.

DECLARATION

I hereby declare that **"The awareness of physiotherapy interventions among pregnant females in the antenatal clinic, Buffalo City Municipality, Eastern Cape"** is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources used or quoted have been indicated and acknowledged by complete references.

Signature……... November 2013

Merly Sajan

Witness: …… November 2013

Prof. Julie Phillips

DEDICATION

I dedicate this thesis to my parents, my husband and my two sons for their unreserved encouragement, love and sacrifice for my success. A special mention also goes beyond doubt to my brother and sister who also motivated me during each step of this thesis

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ABBREVIATIONS

ANC	Antenatal Care
ADLs	Activity of Daily Living
AIDS	Acquired Immunodeficiency Syndrome
APTA	American Physical Therapy Association
BANC	Basic Antenatal Care
CMH	Cecilia Makiwane Hospital
CAM	Complementary and Alternative Medicine
DOH	Department Of Health
ECDOH	Eastern Cape Department of Health
EmOC	Emergency Obstetric Care
FCOG	Fellow of College of Obstetrics and Gynecology
GPH	Gestational Proteinuria Hypertension
HTN	Hypertension
HIV	Human Immunodeficiency Virus
HPCSA	Health Professions Council of South Africa
ICPD	International Conference on Population and Development
MMR	Maternal Mortality Rate
MHCS	Maternal Health Care Services
MDG	Millennium Development Goal
NDOH	National Department of Health
OSD	Occupation Specific Dispensation
PND	Post Natal Depression
PMTCT	Prevention of Mother to Child Transmission

SAHR	South African Health Review
SADHS	South African Demographic Health Survey
SASP	South African Society of Physical Therapy
SBA	Skilled Birth Attendant
STIs	Sexually Transmitted Infections
SPSS	Statistical Package for Social Sciences
UNICEF	United Nations International Children's Emergency Fund
WHPG	Women's Health Physiotherapy Group
WCPT	World Confederation of Physiotherapy
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Introduction to the chapter

Maternal mortality rates are high in developing and middle income countries of Africa and Asia where the population is predominantly rural. According to Mudokwenyu-Rawdon (2001), African women of reproductive age have the highest risk of death from antenatal causes than any other women in the world. While Africa is home to 18% of the world's births, it accounts for 30% of maternal deaths. This chapter highlights maternal health as an important public health problem in South Africa. Furthermore, the statement of the problem, the study aims; the objectives and significance are outlined.

1.2 Background information

Nearly half a million women, most of them from developing countries die from complications of pregnancy and child birth (UNICEF, 2007). About half of these deaths occur in sub-Saharan Africa and one third in South Asia. In developed countries, most of these deaths are due to other causes like complications from anesthesia and C-sections. A WHO report on 'Trends in maternal mortality 1990-2010' revealed the global Maternal Mortality Rate (MMR) in 2010 as 210 maternal deaths per 100 000 live births. Sub-Saharan Africa had the highest MMR at 500 maternal deaths per 100 000 live births, while Eastern Asia had the lowest at 37 maternal deaths per 100 000 live births. Blauw and Penn-Kekana (2010) have noted that South Africa has a higher maternal mortality than any other middle income countries. Therefore maternal health is an important public health priority for South Africa.

The South African maternal mortality rate has doubled between 1990 and 2007 (SAHR, 2010). Maternal death is defined as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes (WHO, 2001). Maternal mortality rate (MMR) is defined as the number of maternal deaths in a given time period per 100,000 women of reproductive age. In South Africa, the MMR was 150 per 100,000 live births in 1998 but increased fourfold to 410 per 100,000 live births in 2007 (SADHS, 2010). The institutional MMR for South Africa for 2005-2007 was calculated as 153 maternal deaths per 100,000 live births (Blauuw & Penn Kekana 2010). These researchers are of the opinion that poor maternal health services are mainly due to HIV infections, quality gap in the provision of critical maternal health services and access to (EmOC) Emergency Obstetric Care. To this effect, Pattinson (2004) stated that the high proportion of still births in South Africa is reflective of poor antenatal care.

The Saving Mother's Report reports an increase in maternal deaths in certain provinces of South Africa despite good antenatal coverage. 46.2% of the maternal deaths were related to HIV during the period 2005-2007 as compared with 36% during 2002-2004 (Saving Mother's, Fourth Report 2005-2007). The main reasons attributed to maternal mortality statistics are HIV/AIDS, poor administrative and financial management, poor quality of care, and lack of accountability. The highest rate of HIV infected maternal deaths was noted in KwaZulu-Natal followed by Mpumalanga (SADHS, 2003). The United Nations estimates that 4500 women die each year in South Africa which could be prevented. The majority of these complications can be eliminated through preventive maternal health care services such as physiotherapy and health education.

Health care interventions are the key to reducing MMR. The appropriate interventions can largely prevent women from dying of pregnancy related complications. The Millennium

Development Goal (MDG) 5 calls for a reduction in the Maternal Mortality Rate by three quarters between 1990 and 2015. Thus the UN's aim of reducing the maternal mortality rates to 75% by 2015 needs to be re-emphasized through antenatal interventions. The Basic Antenatal Care (BANC) Package is a quality improvement training package based on the Integrated Management of Pregnancy and Childbirth program of the WHO (WHO, 2003). It is also a way of training and upgrading the knowledge and skills of all the midwives and doctors involved in antenatal care. It establishes the minimum care that all pregnant women should receive.

The National Guidelines for Maternity Care in South Africa lay down the principles for quality antenatal care. Researchers have however shown that access to safe motherhood services is more restricted in rural than in urban areas. The Global Policy Recommendation of WHO (2010) states that nearly half (46%) of South Africa's population live in rural areas with only 12% of doctors and 19% of nurses working there. Therefore despite South Africa's commitment to decrease maternal and child morbidity and mortality, the country is not close to reaching Millennium development Goal (MDG) 4 and 5.

All women, whether their pregnancies are complicated or not, need good quality maternal health services during pregnancy, delivery and within post-partum period to ensure the safety of the mother and child. Mphatswe et al (2012) observed that reliable and accurate public health information is important for improving the delivery of health-care services and programs. Antenatal care further can be viewed as the access point to all health services and the point at which all aspects of care for pregnant woman should be addressed and catered. Pattinson (2005) defines antenatal care as "the health care of pregnant women in the months and weeks before the birth of their babies". Antenatal services are amongst the major interventions aimed at reducing maternal and newborn deaths worldwide. Antenatal care services help pregnant women by identifying complications associated with pregnancy or

diseases that might inadvertently affect pregnancy (Abou-Zahr &Wardlow, 2003). Through antenatal visits, pregnant women benefits from various interventions, including counseling on diseases of lifestyles, and importance of post natal care (Titaley et al, 2010).

According to WHO (2003), the focus of antenatal care interventions should be to improve maternal health and health literacy given that health literacy is critical to empowerment. The WHO (1998) defined health literacy as the cognitive and social skills which determine motivation and the ability of the individual to gain access to, understand, and use information in ways which promote and maintain good health. In simple terms women should be able to read pamphlets and information. Antenatal Care also provides an excellent opportunity for a variety of preventive interventions during pregnancy, including tetanus toxoid injections, and educating women about nutrition, safe delivery and post-partum care (Govindasamy et al., 1993 & Aboud et al., 2002). It also allows for the identification of high risk pregnancies and the offering of advice on nutrition, importance of healthy lifestyle, addressing the common pregnancy related complaints and the significance of exercises etc.

Physiotherapy plays an important role in obstetrics both in the antenatal and postnatal periods. Manual techniques and education regarding posture, back care and modification of daily activities all help to ensure optimal postural alignment which minimizes joint stresses in pregnant women. Furthermore, physiotherapists can instruct in transversus abdominus, multifidus and pelvic floor co activation which strengthens core stability. This is beneficial in the prevention and treatment of back pain. Pelvic floor muscle training can also reduce the risk of early pelvic organ prolapse. A Physiotherapist with experience in this branch of practice can provide the skills needed to improve confidence during pregnancy. The antenatal classes would be focusing on the following: importance of weight reduction, pelvic floor exercises, breathing exercises, postural education, nutritional advice, identification of high risk pregnant females and back care amongst others. Physiotherapy as a profession is

concerned with identifying and maximizing the quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention, and rehabilitation (World Confederation of Physical Therapy, WCPT, 1999).

A report by the Human Rights Watch (2011) documents poor maternity care especially in the Eastern Cape Province. Pertinent issues related to maternal and child morbidity and mortality are addressed in the maternal and child health care policy (van Rensburg, 2004). Some of these are amongst other to reduce maternal mortality; treatment of mothers and children with dignity and respect; the promotion of universal literacy among women; the facilitation of health services at local, provincial and national levels for the benefit of child and mother services; and the promotion and encouragement of essential maternal and health research. No research has been conducted in the Eastern Cape Province, South Africa to explore women and health professional's awareness of antenatal services. This study will therefore aim to fill that gap with special reference to physiotherapy.

1.3 Problem Statement

Although sufficient evidence exists in international literature with regards to the role of physiotherapy in the antenatal period, very little is documented in South Africa. At Cecilia Makiwane Hospital (CMH), a large provincial referral hospital in the Eastern Cape, physiotherapy services in relation to antenatal care are hugely underutilized which raises questions regarding the role of physiotherapy and awareness of physiotherapy antenatal services. Therefore it is essential to investigate the factors causing the underutilization of physiotherapy antenatal services.

1.4 Research Question

The research question for this study is:

1. Are pregnant mothers aware of antenatal services including Physiotherapy in particular?

2. What are the perceptions of health professional about antenatal services at CMH?

1.5 Aim of the study

The overall aim of the study was to explore women's awareness and use of antenatal services at CMH.

1.6 Objectives

Objectives included were the following:

i. To determine pregnant women's awareness and utilization of antenatal services currently offered at the antenatal clinic at CMH.
ii. To determine factors influencing utilization of antenatal services at CMH.
iii. To explore health professional's awareness and knowledge of physiotherapy as a service during the antenatal period of pregnancy.

1.7 Significance of the study

There can be a myriad of problems related to pregnancy. Most common are the musculoskeletal problems with typical complaints like symphysis pubis dysfunction, sacro iliac joint dysfunction, low back pain, thoracic pain, knee joint pain etc. A physiotherapist can provide hands on treatment to address spinal and pelvic joint dysfunction, instruct in exercises to address muscle weakness and imbalance and provide guidance and instruction related to modification of Activities of Daily Living (ADLs) that may be insignificant during prenatal and postpartum phases.

Physiotherapists are involved in prevention, in promoting health, wellness, and fitness; and in performing screening activities (Physical therapy, 2001). Examples of prevention activities and fitness promotion activities include back schools, postural training, managing back pain, strengthening, stretching and endurance activities, exercise programs to prevent disability and dysfunction in women who are pregnant. These initiatives decrease costs by helping patients

achieve and restore optimal functional capacity, minimize impairments and maintain health. Antenatal care is therefore, a perfect example of preventive medicine and physiotherapists can intervene and work closely with other health professionals to promote antenatal care.

The results of this study will contribute towards establishing the relevance of incorporating physiotherapy in the antenatal period. Besides this, it will enhance the role of physiotherapists to render their service in the Antenatal clinics. Physiotherapists have an important role in promoting health education. In addition to the above, the findings might be help to promote physiotherapy services in the antenatal clinic. Antenatal classes are also a cost effective way of promoting health care among the community. The findings of this study may facilitate health professionals and policy makers to review and promote improvements in maternal policy guidelines.

1.8 Definition of terms

Antenatal services: Services that are provided to a pregnant woman at an antenatal clinic by health care workers during pregnancy (Simkhada et al., 2008).

Antenatal Care: It is the care before birth and includes education, counseling, screening and treatment to monitor and to promote the well-being of the mother and fetus (WHO, 2005).

Awareness: It refers to the understanding and appreciation of ANC services.

Knowledge: It is a dynamic process that includes synthesis, dissemination, exchange and ethically sound application of knowledge to improve health, provide more effective health services and products in order to strengthen the health care system (Straus et al., 2009). Here it refers to the state of awareness of antenatal services.

Physiotherapy: Physiotherapy is a dynamic profession with an established theoretical and scientific base and widespread clinical applications in the restoration, maintenance, and promotion of optimal physical function. (Guide to Physical therapist practice, 2001).

Health Professionals: "Health professional" or practitioner means any person, including a student registered with the council in a profession registration. (HPCSA, section 1 of Act 29/2007).

Maternal death: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes (WHO, 1992).

Maternal Mortality Rate: The number of women dying in a year for every 100,000 women in the same year aged 15-49 (World Health statistics, 2007).

Health literacy: The cognitive and social skills which determine motivation and the ability of the individual to gain access to, understand, and use information in ways which promote and maintain good health (Nutbeam, 2010).

1.9 Outline of the thesis

Chapter one provides the background of the study, the statement of the problem, aims of study, the research question and the significance of the study.

Chapter two presents the conceptual frame work and the literature review. The literature focuses on the factors influencing the utilization of maternal health services. It also includes the barriers limiting women from utilizing health services.

Chapter three describes the methodology used for the study. It also explains the research setting, the study design, sample size, the research instrument, the procedure followed in obtaining the information, analysis needed to interpret the information and the ethical issues.

Chapter four presents the results of the analysis. The results are summarized in tables and figures.

Chapter five discusses the results and compares it with other studies.

Chapter six presents the summary, conclusion of the study and recommendations based on the findings of the study are also provided.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, the conceptual framework and literature on the topic is reviewed. The conceptual framework is based on Andersen's and Newman's model (1973). The model focuses on the predisposing characteristics, enabling resources and the need for care as some of the factors influencing the utilization of health care services. Besides this, the literature emphasizes the role of health promotion activities and the role of physiotherapists as health promoters.

2.2 Literature search strategies

Publications and reports related to the study topic were searched for electronically using data bases from PUBMED, Science Direct, EBSCO, SCOPUS, CINAHL, and GOOGLE SCHOLAR. The websites of major international organizations working in the maternal/reproductive health, such as WHO, UNICEP were also searched. List of references from original research publications, reports, journal articles on maternal health at the East London Health Resource Library and online articles were also reviewed.

Several search terms were used in various combinations (Box 1) to narrow or expand the search. Publications available in English language were identified and the search criteria were limited to the period 1980-2013. Government websites were also accessed.

The literature review included:

- Women's perceptions about antenatal services
- Barriers to utilization of health services
- Health promotion

- Physiotherapy in women's health

BOX 1: Literature Search strategy
"maternal health" OR "maternal health care" OR "antenatal care" OR "antenatal clinics" OR "antenatal health care" OR "prenatal care" OR "postnatal care" OR "Obstetric care" OR "reproductive health" OR "women's health" OR "Factors affecting" OR "Factors influencing maternal health utilization" OR "underutilization of maternal services in developing countries" OR "Utilization of maternal health care in developing countries" OR "determinants of maternal health care" OR "Factors affecting maternal health care services" OR "Influence of " OR "determinants of" OR "Components of maternal health care" OR "influence of mother's age and health utilization" OR "educational attainment and health care utilization" OR "culture and health care utilization" OR "socio economic factors and health care utilization" OR "birth order and health utilization" OR "wealth and health care utilization" "health promotion" OR "Female employment and health care utilization" OR "poverty and health care utilization" OR "quality of maternal health services "OR "South African health care policies".

The literature search produced a large number of publications on maternal health. To improve precision of the search, combination of the terms mentioned above were used. The publications obtained were reviewed and titles relevant to the study were assessed.

2.3 Maternal health services

According to a report by Safe Motherhood (1998), the elements of maternal health care services include antenatal care, delivery care and post-partum care. The Department of Health in South Africa adopted the Safe Motherhood Pillars by the WHO (2000). The WHO

(2000:23) defines safe motherhood as 'the provision of high quality maternal health services in pregnancy, delivery and in the postpartum period to ensure the health of the mother and infant". All women, whether their pregnancies are complicated or not, need good quality maternal health services during pregnancy, delivery and within the postpartum period to ensure their health and that of infants. Therefore high quality maternal health services must be accessible, affordable, efficient, convenient, acceptable and appropriate to women who need them (WHO, 2001). According to Human Rights principles, the health care system must provide health care services that are affordable, free from discrimination and ensure the active participation of women in decision making. World Health Organization contends that the immediate cause of maternal deaths is the absence, inadequacy or underutilization of health care system (WHO, 2004b).

The following components are particularly important in reducing maternal mortality:

2.3.1 Antenatal care

Antenatal care (ANC) is named as one of the pillars of the Safe Motherhood Initiatives. It provides pregnant woman to interact to make appropriate choices and decisions that will contribute to optimum pregnancy outcome and care of the newborn. (Anya et al., 2008). Their studies concluded that often pregnant women are not equipped to make appropriate choices when faced with danger. So by offering information and services through ANC, the health of women and their infants improve remarkably (WHO & UNICEF 2003). Besides this, antenatal care during pregnancy improves the utilization of postnatal services (Chakraborty et al., 2003).

There are several complications that can occur during pregnancy. Hypertensive disorders are considered the most frequent causes of maternal mortality in South Africa (Moodley, 2008). Hypertensive disorders of pregnancy (HDP) represent a group of conditions associated with

high blood pressure during pregnancy, proteinuria and in some cases convulsions. Eclampsia is usually a consequence of pre-eclampsia consisting of central nervous system seizures, which often leaves the patient unconscious; if untreated it may lead to death. Pre-eclampsia is a pregnancy specific disorder characterized by hypertension and excess protein excretion in the urine (Pennington et al., 2012). Through the antenatal programme, detection and treatment of high blood pressure to prevent eclampsia which indirectly causes stroke greatly can be avoided (McCaw-Binns et al., 2004). Furthermore, opportunities for preventive health services, such as prophylactic treatment of malaria and immunization against tetanus are also provided (Babalola & Fatusi, 2009). Likewise, one of the antenatal interventions would be practicing BANC guidelines during pregnancy (Pattinson, 2005:4).

The National Department of Health (2002:18) states that the successful outcome of pregnancy depends on health care workers who make good decisions based on accurate and complete recorded information. However, Mokhondo (2010) states that there is a deficiency of knowledge from the part of midwives. Policy Project (2005:4) have noted that, "in most developing countries, access to safe motherhood services in rural areas is more limited than in urban areas. This issue is important for South Africa because nearly half of its population lives in rural areas and there is lack of skilled health professionals.

2.3.2 Skilled birth attendance

Skilled birth attendance is a term which includes the health professionals (midwives, doctors, nurses etc.) during delivery as well as an enabling environment where there is adequate equipment, drugs and other supplies for efficient management of pregnancy related complications (Bell et al., 2003). Skilled birth attendants are health professionals trained to recognize the signs of complications early enough to intervene and manage the situation or make quick referrals to higher levels of care (Mpembeni et al., 2007). The presence of Skilled

Birth Attendants at all birth is regarded as the single most critical intervention for reduced pregnancy related deaths and complications (Rai et al., 2012).

The Eastern Cape has struggled to retain skilled professionals. The 'brain drain" can be attributed to poor working conditions, lack of supervision, low morale and lack of infra-structure in the rural areas. A survey conducted by South African Demographic Health Survey (SADHS) concluded that doctors were more likely to assist deliveries in urban areas than the rural areas. The total number of skilled birth attendants in urban areas (93.4%) was higher than that of rural areas (75.5%). SADHS (2003) have revealed that a high proportion of deliveries were attended by medically trained persons (91%) and more than half of the deliveries were attended by a trained nurse or midwife and nearly a third of the deliveries were also attend by a doctor. This is why the proportions of births attended by a skilled health professional are used as one of the monitors for measuring progress in the achievement of MDG 5 (Mathai, 2011).

2.3.3 Postnatal care

Postnatal care is the time immediately after birth to 40 days. In developing countries, the most common causes of maternal deaths are postpartum hemorrhage, infections and hypertensive disorders (Khan et al., 2006 and Vink et al 2013). A majority of the maternal complications occur during delivery and the postpartum period. Hence it is necessary to increase the availability of services especially in the rural areas where they are limited (Policy Project, 2005). Some of these include emergency obstetric care, skilled birth attendants, and postpartum care and transportation facilities. Postpartum care include family planning services, immunization schedules, hygiene and sanitation, maternal and child nutrition, breast feeding, prevention of infections like HIV and Sexually Transmitted Infections (WHO, 1995). Several other services and other information can be offered during this period like counseling sessions and physiotherapy services. The impact of poorly controlled

hypertension can be avoided through early detection and cost effective management. Poorly treated hypertension contributes to cerebrovascular diseases, heart attack, kidney disease or failure, congestive cardiac failures (SADHS, 2003). Therefore an implementation of planned national policy to promote a healthy lifestyle and national guidelines for managing hypertension in the primary health care facilities is required. Research has also proved that by lowering salt in foods can also reduce blood pressure levels (Appel et al., 2006). Hence it is important to promote a healthy lifestyle by incorporating health promotion in the health care facilities.

2.4 Factors influencing the use of maternal health services

Literature suggests that the utilization of maternal health services in developing countries can be influenced by factors such as socio-demographic characteristics of women, culture and availability (Soltani et al., 1999; Chakraborty et al., 2003 and Ntambue et al 2012). Majority of the publications reviewed were quantitative studies seeking statistical associations between these factors and maternal health service utilization. Qualitative studies have assessed women's perceptions and barriers to health care usage. It emerged that transportation cost, poor road conditions, lack of awareness about the importance of services, limited availability of health services were some of the perceived barriers (Titaley et al., 2010). A discussion of the factors influencing utilization of maternal health services is given below.

The factors include age, birth order, education, education, employment and place of residence.

2.4.1 Age

A mother's age plays an important role in the utilization of maternal health services. Some studies like Abou Zahr and Wardlow (2003) as cited in Nangwanka (2008), noted a higher utilization of maternal services among younger women than older women. In contrast to the above, certain other studies like Navneetham and Dharmalingam (2002) have shown that

older women were more likely to utilize maternal health services. It was argued that older women were more confident and could have a higher decision making power than younger one (Reynolds, Wong & Tucker, 2006). Younger women are more likely to be experiencing first-order births which is in turn positively associated with maternal health service use, hence will appear to be using more services (Burgard, 2004).

2.4.2 Birth order

There is a strong relationship between birth order and utilization of maternal health services. (Chakraborty et al., 2003). These researchers showed that a larger number of children can negatively affecting maternal health utilization. A larger family puts a considerable amount of strain on a woman thereby limiting access to health services. Similar studies conducted by Ali et al. (2010) among Sudanese women confirmed low antenatal utilization among higher parity women. The authors reasoned that this could be because of time management, limited resources in the family and negative perceptions from previous pregnancies. It was also possible that multiparous women had greater experience and felt more confident during pregnancy and considered antenatal care less important. However certain other studies among Ethiopian women demonstrated that multiparous women often tend to use the services more than primiparous women (Simkhada, 2008). Education of women is a positive factor for utilization of antenatal services (Dhakal et al, 2007)

2.4.3 Education

Maternal education studies have proved that maternal education is positively associated with health care usage (Chakraborty et al., 2003). Low antenatal care utilization was also associated with limited maternal education amongst Sudanese women according to Ali et al. (2010) whereas the same study reports level of education to be significantly associated with use of antenatal care in Ethiopia. Highly qualified women have more chances of utilizing

maternal health services. Educated women are able to understand the importance of receiving antenatal care and are more likely to start ANC visits early than uneducated women.

2.4.4 Employment

The earning ability of a woman determines her decision to utilize health services. Women who were employed often started ANC in India earlier than those who were unemployed (Navneetham & Dharmalingam, 2002). Employment outside the home was a deciding factor in early initiation of ANC attendance, yet it was interesting to note that Pallikadavath et al. (2004) as cited in Simkhada (2008) studies that the ANC uptake was higher among unemployed.

2.4.5 Place of residence

The location and quality of services are also important factors that enable women to utilize health services. Proximity and nearness to a health facility affects the use of MHCS especially in rural areas (Chakraborty et al., 2003). For many, lack of transportation and the high transportation fees were mitigating factors and for others, it was more often poor quality service, long waiting times, opening and closing times, staff attitudes, availability of health workers (Chowdhry et al., 2003).

However, some researchers have also argued that other factors like socio economic constraints, physical accessibility, and husband's occupation (Gabrysch and Campbell, 2013), media penetration, cultural/traditional backgrounds (Bbaale, 2011) all play an important role in accessing maternal health services.

2.5 Health promotion and health literacy

One of the new concepts in health promotion is health literacy. Health education is directed towards improving health literacy. Therefore improving health literacy means transmitting information, developing skills to be able to read pamphlets and making appointments

successfully (Nutbeam, 2000). Therefore an individual with health literacy has the ability to take responsibility for one's own health, family health and community health (Sorensen et al, 2012).

The World Health Organization (WHO) defines health literacy as follows:
'Health literacy represents the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand, and use the information in ways which promote and maintain good health'. Health literacy means more than being able to read pamphlets and successfully make appointments by improving people's access to health information and their capacity to use it effectively, health literacy is critical to empowerment' (WHO, 1998). Therefore maternal health literacy can be defined as the cognitive and social skills which determine the motivation and ability of women to gain access to, understand, and use information in ways that promote and maintain their health and that of their children.

Campaigns in the early 1970s that were targeted on transmission of information failed to take into account the social and economic circumstances of individuals. Hence they were effective among the economically advantaged and educated class. The Ottawa Charter of Health for health promotion prioritizes health promotion programs. It is argued that health literacy is critical to empowerment. A community outreach educational programme seems to improve health literacy thereby enhancing independence and empowerment among individuals and the communities.

One of the most cited definitions presented in the Ottawa Charter for Health Promotion states that health promotion is 'the process of enabling people to increase control over, and to improve, their health' i.e. agents of health promotion are required to advocate, enable and mediate action. However some authors have argued for incorporating other strategies like community health promotion by incorporating social marketing, mass communication,

political action, community organization and organizational development (Merzel & Afflitti, 2003).

Health promotion should be the priority of hospitals. Health promoting hospitals is a concept envisioned by the WHO and the hospitals should promote the health of the patients, the staffs and the community in which they are located. According to WHO (1991), the aim of health promotion is to foster the attainment of the highest achievable levels of health. The hospitals should provide health promotional services in the community so as to empower women with the required knowledge so as to improve their health. A multidisciplinary approach is appropriate to enhance women's health.

Oakley et al. (2009) describes a multicomponent intervention-community antenatal care program-Omaha Health Start implemented in Nebraska, USA which was delivered by outreach workers, social workers and public health nurses. The aim of this project was to reduce the local racial disparities in birth outcomes. Similarly The Black Infant Health Program at California includes prenatal services to African American women to enable them with antenatal care. Health promotion programs targeted towards women among the rural Indonesian women increased the antenatal uptake (Titaley et al., 2010).

Multiple studies point out that male partner could play a proactive role in the maternal health and wellbeing (Sternbery & Hubley, 2004; Mullany et al., 2007). Men need to be educated regarding antenatal care and share the responsibility in maternal care. The International Conference on Population and Development (ICPD), which took place in Cairo in 1994, recognized men's crucial role in reproductive health promotion (Sternberg & Hubley, 2004). Mullany (2007) have proved that antenatal intervention involving men improved the postnatal care utilization among women compared with women who received antenatal education alone in Nepal. Men are key players in influencing the reproductive health

outcomes positively or negatively. Therefore, ensuring men's involvement in reproductive and maternal health matters can promote a better partnership between men and women in both the household and community at large. The International Conference on Population and Development (ICPD) held in Cairo in 1994 reminded people that good reproductive health is the right of all people, men and women alike, and that together they share responsibility of making decisions about reproductive matters.

2.6 Physiotherapy and health promotion

The scope of Physiotherapists is not only restricted to musculoskeletal injuries and ailments but also to the broader aspect of incorporating women's health. Physiotherapy is an independent self-regulated profession. Physiotherapy has been defined as "a healthcare profession concerned with human function and movement and maximizing potential". Today, it is usually understood as a practice that uses mainly physical approaches that intend to promote, maintain and restore physical, psychological and social well-being.

In the Canadian Physiotherapy Association's vision for Canadian health care system (2002), it is recognized that health care is broader than acute care and institutional services and must include self-care, health promotion, disease prevention, community support, and ambulatory primary care and rehabilitation services. Physiotherapy is an essential, core health service and contributes to all these components of health care.

According to Harro (1999), physical therapists have much to offer besides rehabilitation in terms of disease prevention and health promotion. The APTA (American Physical Therapy Association) Guide to Physical Therapist Practice, states that a part of physical therapists' practice is to provide prevention and promote health, wellness and fitness." Physical therapist's educational and practice guidelines have started emphasizing inclusion of health promotion. According to the APTA vision statement, by 2020, physical therapy services will be conducted by providers who are doctors of physical therapy and maybe board certified

specialists. Consumers will have direct access to physical therapists in all environments for patient/clients management, prevention and wellness services. Physical therapists will be practitioners of choice in patients'/clients' health networks and will hold all privileges of autonomous practice (APTA, 2009).Thus physiotherapists are called to adopt a health promotion philosophy (Davis, 1995).

Physiotherapists provide care and help reduce hospital costs (Dininny, 1995) as cited in Nangkwanga (2010). It is a relatively inexpensive treatment. Their expertise in assessment and treatment of musculoskeletal injuries has expanded the role for physiotherapists in many international jurisdictions. This low cost effective intervention in the antenatal clinics is what is emphasized through health education and promotion.

Physical therapists are called to be advocates (WCPT, 1999). Advocacy is a legal term which means the process of pleading for another person in court (Wheeler, 2000). The advocacy role of physiotherapists is mentioned in the Code of Conduct declaration for profession (Code of ethics, WCPT, 1995). Echsner, Gahimer and Morris (1999) advocate for the role of physiotherapy in community health education. They state that "adopting a community health education approach will expand the roles of physical therapists, improve effectiveness of physical therapy services, and positively influence patient outcomes".

Currently in South Africa there is a Women's Health Physiotherapy group (WHPG) and has 4 provincial branches namely Eastern Cape, KZN, Gauteng and the Western Cape. WHPG is a member of the international organization of physiotherapists in women's health. According to The South African Society of physiotherapy (SASP), physiotherapists should at all times act in the best interests of their patients and maintain the highest standards of personal conduct and integrity (Code of conduct, 2011). In terms of their commitment to social responsibility- they should

1. Use their knowledge and skills to promote and benefit humankind;
2. Promote health for all by sharing responsibility and fostering good relationships with stakeholders for the health and health education of the nation. Advocating that everyone has equal access to affordable quality health care, by

- promoting medical care to disadvantaged and vulnerable groups;
- promoting improved standards and quality of health services in the community;

Nankwanga (2008) and Britnell et al. (2005) studies have suggested that physiotherapists could contribute to women's health through health promotional programs. Pennick and Young (2007) have specified the importance of pregnancy specific exercises in order to relieve back and pelvic pain. Hence a physiotherapist plays a vital role in health promotion. Pierrault (2008) recommend linking health promotion in physiotherapy models. Instead of viewing health from a biomedical perspective, physiotherapist has been encouraged to view health from a bio psychosocial perspective. Mc Coma and Harris (1999) recommend physiotherapists to reconsider a model that includes the social, political and economic contexts of women. However, physiotherapists are not available in enough numbers and the geographical spread to provide the required access throughout the country. Besides the above, physiotherapists need to be aware of the challenges faced by pregnant mothers to access health care facility.

The role of physiotherapist in obstetrics and gynecology is specified in international literatures. Oduniaya et al. (2013) highlights inclusion of physiotherapy services in obstetrics and gynecology as pivotal to improving maternal service delivery. Their study that was designed among the obstetricians and gynecologists in Nigeria concluded underutilization of physiotherapy services due to their limited knowledge about the role of physiotherapy in delivery. The authors pointed out the need for better interaction and communication between

the physiotherapists and obstetricians and gynecologists through clinical meetings, seminars and workshops. They had limited awareness of the physiotherapy profession as compared with their counterparts in the west. On the light of the above, antenatal physiotherapy can be considered as the best intervention to promote health education in close collaboration with the other health professionals working in the ante natal clinic. Figure 2.1 depicts the role of health promotion and utilization of maternal services.

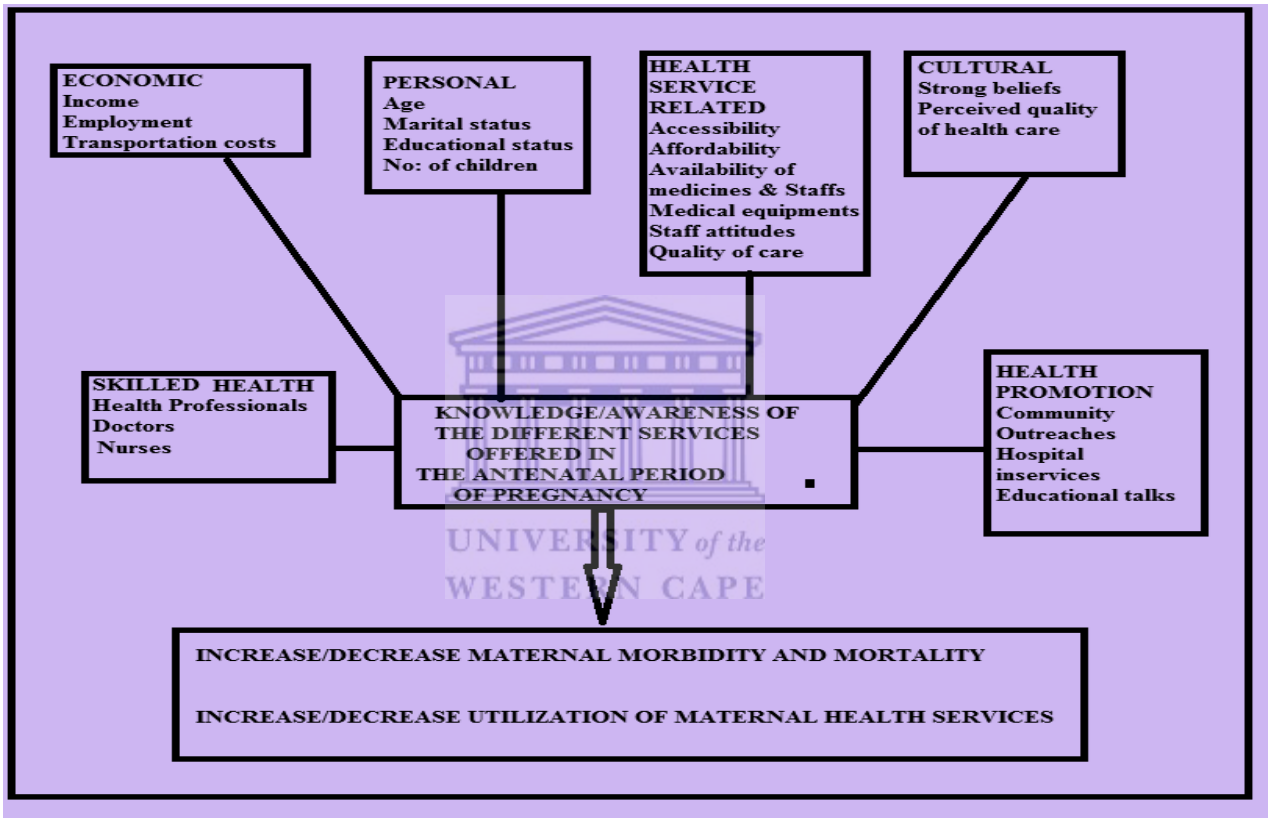

Figure: 2.1 Outline of utilization of Maternal Health Care Services and Role of Health Promotion

2.7 Exercise and pregnancy

Exercise is important for healthy living throughout a woman's life and health care professionals carefully promote the benefits (Hall, 2006). Attitudes towards exercises during pregnancy have significantly changed over the years. Exercises have beneficial effects besides staying fit (Hopkins & Cut field, 2011). A supervised aerobic exercise or pregnancy specific exercise can be designed in the antenatal class. Physiotherapists have many services

to offer to pregnant women which include providing postural reeducation, easing musculoskeletal ailments, teaching stress management etc. However, physical therapy is often underutilized because of lack of understanding of what physiotherapists can offer during pregnancy (Gleeson & Pauls, 1988).

2.7.1 Aerobic exercise program

Riberio and Milanez (2011) support exercising during pregnancy and identified better schooling to knowledge about physical exercise. Recent studies have revealed that in most cases, exercise is safe for both the mother and fetus during pregnancy. According to Hopkins and Cutfield (2011) regular aerobic exercise is essential for staying fit. The ACOG committee concludes that in less risky obstetric complications, 30 minutes of moderate exercise on most days can be recommended for pregnant women and in some cases the exercise programs can be modified. A study conducted by Montoya (2010) and coworkers concluded the health benefits of exercising where fifty women (16 to 20 week gestation) were subjected to a supervised aerobic exercise program. Therefore, a physiotherapist can design an antenatal class by following the essential guidelines and absolute contraindications to aerobic exercise during pregnancy

2.7.2 Pregnancy specific exercise program

In the antenatal classes, a physiotherapist can educate women on training of pelvic floor muscles and incorporate a back care class.

The bladder muscles, the detrusor tends to weaken with subsequent births and aging. Therefore, pelvic floor exercises, Kegel's exercises are very important to be emphasized even during the antenatal period. Price et al (2010) studies have also confirmed the beneficial effects of pelvic floor exercises in females with urinary incontinence. Similar studies concluded that antenatal pelvic floor exercises reduced the chances of urinary incontinence in late pregnancy and early post natal periods (Cooper & Cook, 2011). By increasing general

awareness about pelvic floor weakness in the antenatal classes through physiotherapy, women would seek assistance and utilize the available programs in the prevention and treatment of urinary incontinence.

Low back pain (LBP) is the most common musculoskeletal complaint during pregnancy. Kurup et al. (2012) identified the following risk factors for LBP which are increase in maternal age, decrease in height, increase in parity, gestational period and previous episodes of LBP. It is estimated that 50% of pregnant mothers will experience LBP at some time during pregnancy. Low back pain associated with pregnancy is not trivial, but literature suggests it is possible to reduce back pain with different conservative management strategies (Jain et al., 2006). The authors conclude that debilitating effects of symphysis pubis dysfunction (SPD) can be reduced if detected early in pregnancy. Pain in the joints at the front and back of the pelvis occurs commonly around 29-32 weeks. An elastic binder worn below the belly to support the pelvic joints while standing and walking provides significant relief. Women who have experienced back pain before pregnancy are at an increased risk of developing back pain during pregnancy. Therefore, physiotherapy is effective in the treatment of antenatal back and pelvic pain.

The social support offered is very essential during the antenatal period. Group interactions where problems are addressed in ANC classes helps to lower stress. A study done by Buultjens et al. (2013) identified depression as one of the key psychological risk factor due to poor relationship between the woman and her partner. Poor support from the male partner contributes to maternal depression. The authors recommend this new developing area valuable for new and expectant fathers. Numerous studies indicate that stress and mood disturbances during pregnancy are associated with a number of negative infant outcomes like low birth weight, preterm birth and lower Apgar scores. So a bio psychosocial approach is required to manage perinatal depression according to Kenyans (2011). Postnatal depression

(PND) begins in the early postpartum period. Recognition of PND and its treatment is highly essential for the well-being of the mother, baby and family. This area of social support is highlighted in literatures and recommends a priority for further research and interventions. The bio psychosocial model adopted by the WHO is helpful in understanding the health-related experience of a woman during the perinatal period.

2.8 Awareness of services in the antenatal period

WHO recommends four antenatal visits for low risk pregnancy. Antenatal visits can minimize maternal related deaths by identifying pregnancy related complication early. Bullough et al. (2005) reminds educating women on the danger signs experienced during pregnancy and to seek appropriate referrals to a maternity provider at the right time. Besides the routine fetal heart monitoring, urine analysis, assessment of maternal height and weight and measurement of fundal height, supplementation of iron and folic acid supplementation, screening for HIV. Kirkham et al. (2005) suggests offering counseling sessions about the risks of smoking and alcohol and drug use. Current U.K guidelines recommend that pregnant women should receive their booking appointment for antenatal care before 10 weeks. Cut off used to define late bookings range between 14-28 weeks. Therefore any effective interventions should be appropriate on the timing of initiation of antenatal care which includes 20 weeks gestation (Oakley et al., 2009).

Antenatal care utilization is regarded as the cornerstone of perinatal care (Pattinson, 2009). Attending antenatal clinic regularly will ensure a successful pregnancy. In addition, pregnant mothers need to be motivated about the importance of antenatal care. One of the most important factor underlying utilization of any services is the awareness and knowledge about a service. Several studies have pointed out that knowledge influenced utilization of a service. Women's utilization of health services depends on the knowledge they have about those services, their socio economic status and cultural beliefs. It is important as health

professionals to be aware of the barriers. Knowledge was identified as a major factor that could influence the decision on whether to utilize ANC services. Women need information about pregnancy and ANC services during their pre conception period so that they can make informed decisions when pregnant.

According to Igwesi-Chidobe (2012), physiotherapy is not very popular amongst the rural communities of Nigeria. Poor knowledge about the scope of physiotherapy among the health workers and unavailability of physiotherapy services in those rural areas were identified as some of the obstacles to utilizing physiotherapy. Similar studies conducted among the Anganwadi health workers in rural Karnataka, India reflected poor knowledge about physiotherapy (Johnsey et al., 2013).

Non-attendance of physiotherapy in antenatal clinics is related to lack of information and lack of awareness (Oduniaya et al, 2013). However, health professional's role in informing pregnant women on services offered at the antenatal clinic is also another contributing factor. Kunene et al. (2004) reports on health professionals giving inadequate information on reproductive health. As a result, health professionals have to address patient communication barriers and inform women in appropriate ways so they understand the need for such services.

Sometimes women and their families rely on the information they receive from the clinics. Therefore, all information should be accessible to illiterate women and health pamphlets should be designed in a language appropriate to the literacy levels (Singleton & Krause, 2009). Their studies conclude that nurses are ideal candidates to improve health outcomes for culturally diverse patients. Besides this, educational programs should be organized to empower women and family members.

Health education programmes during ANC services should inform the women about reproductive health, knowledge related to sexuality, pregnancy, nutrition, family planning, malaria, sexually transmitted infections and HIV (Barnet et al., 2003; Lesser et al., 2003). Information should indicate where these services are offered, including the requirements for attending ANC. In Ghana, ANC including family planning services is provided by both public and private health facilities. Due to lack of knowledge pregnant women are likely to have limited knowledge and experiences in seeking health care. Matua (2004) and Jewkes et al. (1998) cited lack of adequate knowledge and information about pregnancy, laboratory tests results and dangers of late bookings, as contributors to the poor utilization of ANC services.

Sakala and Cory (2008) recommend evidence based maternity care. According to them, a few underused interventions can be recommended which include the following utilization of midwives and family physicians, prenatal multivitamins for preventing congenital anomalies, smoking cessation interventions, ginger for nausea and vomiting during pregnancy, intervention for preventing preterm birth, external version to turn breeches at the end of pregnancy, fostering women satisfaction with child birth, measures to relieve pain and bring comfort and or promote progress during labor, nonsupine positions for giving birth, breast feeding interventions, psychological interventions to minimize perinatal depression, amongst a few to mention.

A recent health advancement is the use of Complementary and alternative medicine (CAM) which includes a broad group of health care systems, therapeutic practices and products-acupuncture, chiropractic, naturopathy, herbal medicine and yoga is gaining popularity around the world (Adams et al., 2011).Yet few maternal health professionals debate about its efficacy. So valuable insights need to be offered to the professionals thereby fostering inter-professional problem solving and decision making dynamics.

2.9 Barriers to accessing maternal health services in the antenatal period

Several studies have investigated the barriers to utilization of health care services. The Safe Motherhood (1998 a) has identified a few significant barriers that prevent women from utilizing maternal health care services which are the following: lengthy distances and lack of transport, high costs, poor information, low self-esteem, socio-cultural factors, unable to decide for themselves etc. Similar studies have been confirmed by other researchers like Cooper (2002), Ye et al. (2010). Another study acknowledges the need for improving community awareness and motivation among women in order to utilize the maternity health services (Chandhiok et al., 2006). Some of the few studies specifying the obstacles to utilization of health services have shown challenges such as: Socio economic factors (Kistiana, 2009), transportation problems (Shook, 2005), knowledge issue (Soltani et al., 1991), cultural and knowledge barriers (Ravelli et al., 2011) among others.

Rural areas have access problems compounded by transportation facilities, long distances from health care, understaffing, lack of skilled doctors etc. This makes women in rural areas underuse the available services due to lack of physical access. Non health sector activities, such as education, water and sanitation, roads and communication, agriculture and internal security are other factors influencing maternal outcomes.

Poorly financed and unaccountable health systems, including weak referral systems, are a key determinant of maternal outcome (Rogo et al., 2006). Another determinant is poor access to quality maternal health care services because of geographical terrain and poor roads. Poor quality of maternal health care services are reflected in terms of lack of skilled health providers, the providers having negative attitudes, treatment guidelines and protocols being inappropriate, and lack of essential drugs, equipment, and supplies.

A document on the contents of transforming maternity care addresses a few challenges amongst the health professionals which included insufficient knowledge and skills to prevent

complications, promote health and support during pregnancy, birth and early parenting among health professionals. It further noted that the health professional curricula also lacked sufficient content in the psychological aspect of pregnancy and birth, woman and family centered care, cultural competency, collaborative practice and shared decision making. Their education does not help them to work effectively together. The continuing education also does not reflect skilled based modalities resulting in poor practice patterns.

In most developing countries, access to safe motherhood services in rural areas is more limited than in urban areas. This issue is important for South Africa because 46% of its population live in rural areas. Lack of transportation is a major problem in the rural areas (DOH, 1999a). Majority of the South Africans depend on the public sector for health care. The Saving Mothers report for 2008-2010, shows that maternal mortality has increased compared to the previous reports of 1998, across all levels of health care. These deaths are mostly due to HIV and other non-pregnancy related infection (41%), obstetric hemorrhage (14%) and hypertension (14%).

Another predominant factor that is a barrier to accessing services in South Africa is the prevalence of the Human Immunodeficiency virus/Acquired Immune Deficiency Syndrome (AIDS). This is a serious threat to the reproductive health of a woman. The highest prevalence is among women age group of 20-30 years (DOH, 2000:5).

Poor working environment in the rural public hospitals was identified as one of the leading causes of staff dissatisfaction (Penn Kekana, 2005). However, there were other factors like demotivation, poor transportation facilities and lack of security that contributed to reluctance of staffs working in the rural hospitals. In order to tackle the huge exodus of health professionals to private and greener pastures, the SA government in 2007 introduced the OSD, a financial incentive strategy to retain health professionals in the public sector. The Eastern Cape is one of the poorest provinces in the country and the public hospitals have

shortages of skilled professionals which infact is more marked in rural areas of the Eastern Cape.

2.10 Quality of maternal health services in the antenatal clinics

Quality of services is essentially the patient-provider interaction. If this relationship is strained, the quality of health services will be poor. Poor quality of care in the antenatal clinic is partly related to low staff morale. Although many studies report that the patients are satisfied with the quality of ANC services, the same studies show that quality was problem. However, other factors such as staff shortages, undertraining and staff demotivation were noted as particular issues in the quality of maternal services (Garenne et al., 2001).

The WHO report (1995) pointed out that quality maternal health services include the following:

- Accessible and available health services as close as possible to a woman's place of residence that can provide the services safely and effectively
- Female health workers who are accustomed to the culture and social norms of patients, and who can deliver care in privacy with confidentiality
- Essential supplies and equipment that are readily available for care
- Comprehensive care and linkages to reproductive health services
- Continuity of care and follow up after delivery
- Sufficient staffing by technically competent healthcare providers who rely on clear guidelines for treatment
- Adequate staffing by workers who provide respectful and nonjudgmental care that is responsive to women's needs
- Provision of information and counseling for clients on their health needs
- Involvement of clients in decision making and as partners in healthcare and as active participants in protecting their own health; and

- Offering of economic and social support to health care providers to enable them to do the best possible job.

Women should also have the opportunity to make informed decisions about their health and treatment, usually in collaboration with the health professionals. Most often, relationship between health care providers and patients is strained due to poor communication and interaction styles. Mogren et al. (2010) suggest a team work among health professionals is emphasized. A closer collaboration is essential between health professionals such as midwives, obstetricians, physiotherapists and social workers within the maternal health care system to manage pelvic pain in women. Hence good communication between health care professionals and women is highly essential (Lyndon et al., 2011).

Other underlying factors might be rude and uncaring health professional attitudes, chronic shortages of drugs and supplies and inefficient health facility staffs. According to Mogren and coworkers (2010) trust is an important concept for caring disciplines such as nursing and medicine. Their studies analyzed the expectation of ANC services among Swedish women and majority of them reported being satisfied (87.6%) with the overall ANC received, but less so with its emotional component (76.9%).Therefore it is a prime objective of hospitals to strive on improving quality of health services to the patients. When hospitals strive to improve the quality of services they provide, it will enhance the consumers to utilize the services.

According to the District Health Information system, 97% of the pregnant women in South Africa utilized antenatal care during 2009 (Department of Health, 2010), yet the alarming fourfold increase in maternal mortality indicates the poor quality of antenatal care and this area needs to be researched. It is posited that the utilization of maternal health services are affected by such factors: socio-economic status, barriers to health services, quality of

maternal services, satisfaction of maternal services, and HIV status of women. Despite some advancement in maternal health research in South Africa, little detailed information is available about the distribution of access to maternal health services across South Africa. There is a need to focus on the factors that impact the utilization of physiotherapy services in the antenatal clinics of Eastern Cape. The study tests the postulation that: there is a relationship between utilization of physiotherapy services and awareness of physiotherapy in the antenatal clinics.

2.11 The conceptual framework

This framework is based on Andersen and Newman's model (2005). It is also referred to as the Health Services Utilization Model. This model is depicted in Figure 2.2. The model represents the factors to consider when studying the use of health services. The initial behavioral model was used to analyze why families access health services. It is considered to be a valuable tool to identify and sequence the relevant variables in the process of health services use (Schepper et al., 2006). According to Anderson and Newman (2005), utilization of health services can be regarded as a type of individual behavior. This model analyses differences in health care utilization from a socio-demographic perspective. This tallies with the objectives of this study; hence, the study was conducted based on Andersen's model and is explained below.

According to Andersen and Newman, there are predominantly three predictive factors that allow an individual to access health services. They are mainly the following: (1) Predisposing factors; (2) Enabling factors and (3) Need factors.

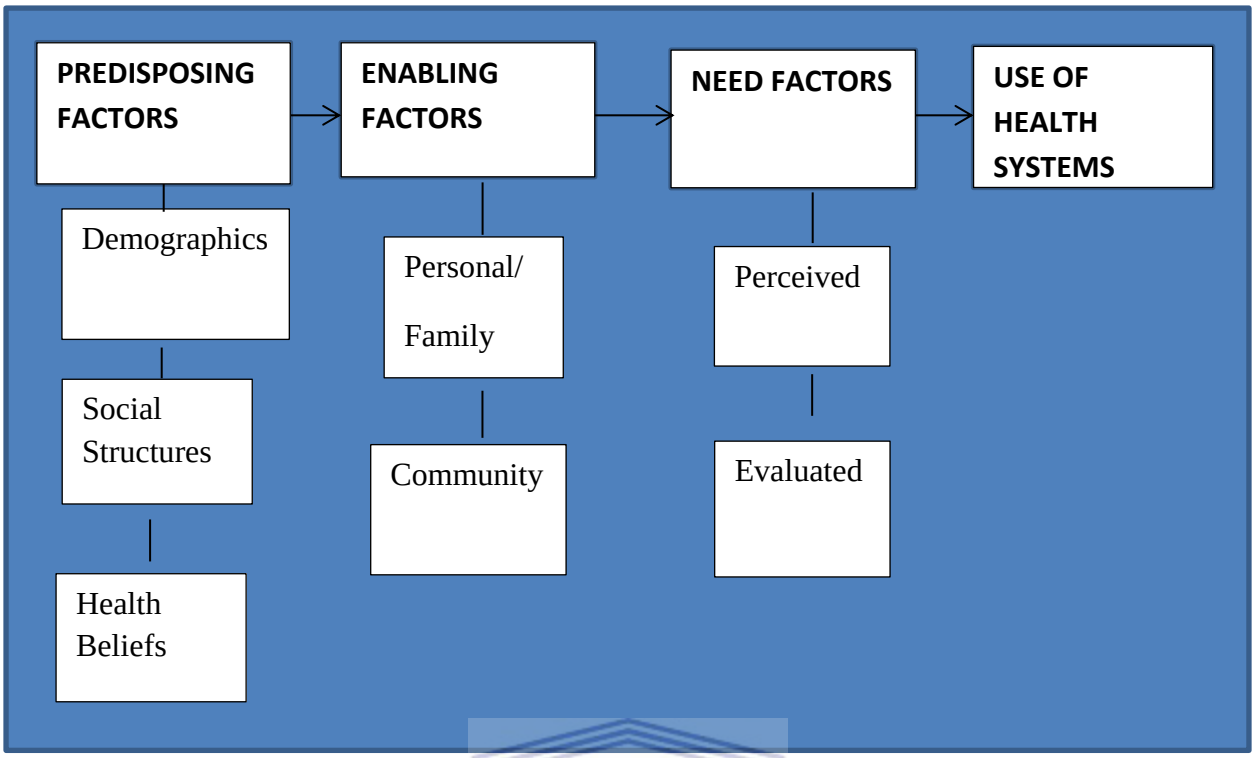

Figure 2.2: The initial behavioral model (1960s) Adapted from Andersen and Newman (2005)

Predisposing characteristics comprises of social structure mainly education, occupation, social networks and culture, health beliefs and attitudes and values, knowledge about health and demographics i.e. age and gender; This means that an individual is more or less likely to utilize health services based on demographics, position within the social structure and beliefs of health care service benefits; (2) Enabling factors include the personal means to access health service, having the health insurance to access, access to a vehicle, and the availability of health personnel, facilities and the waiting period. Included among these, are genetic and psychological factors; (3) Need factors. In order for a health service to be used, there must first be a need for that service to be used, otherwise it will be fruitless. This again depends on two variables; perceived needs which means how people view their own health and evaluated needs which includes the professional judgment about people's health status and need for medical attention.

Andersen and Newman expanded the behavioral model by including the health care system. Consumer satisfaction was also included as an outcome of health services. This is depicted in Figure 2.3. According to them, the need factor is the most immediate cause of health care service. Need represents the most immediate cause of health care usage. This means that a woman must perceive the seriousness of the disease in order to seek early medical attention and hence believe that treatment will provide better benefits (Chakraborty, 2003).

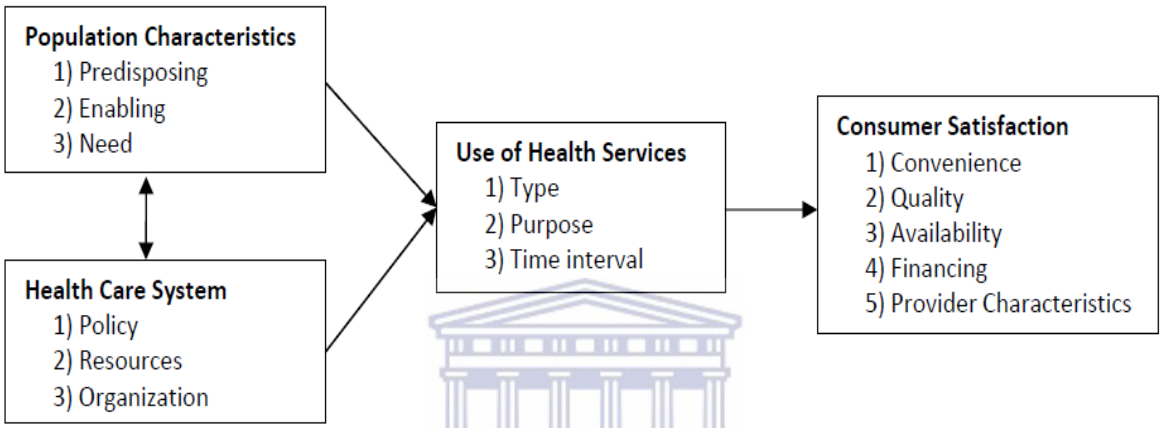

Figure 2.3: **Andersen's model of Health Care Utilization (adapted from Andersen and Newman, 2005)**

Amongst the predisposing characteristics, demographic factors like age represent the biological essentials which require the need for accessing health care services (Nankwanga, 2008). For example, younger women have a more positive approach towards health care than older women (Chakraborty et.al, 2003).This could be attributed to modernization and improvement in educational opportunities for women. It is also argued that better educated women are more likely to utilize health services at their expense.

Social structure encompasses a comprehensive group of factors like women's status in society, ability to cope with problems, ability to make choices regarding her health, available resources etc. Social structure relates to the level of position or socio-economic status. Education is likely to influence female autonomy. Bloom et al. (2001) demonstrated that women's autonomy was a significant factor of maternal health care utilization among urban

poor to middle- income women in a South Indian city. It is believed educated women are far likely to make informed choices. Thus increased educational level influences a woman's decision making dynamics and awareness of health services in society (Fotso et al., 2009). Poverty has a negative effect on the utilization of modern health care services. Finances relates to the monetary resources. So it is a barrier to service. Without money, women cannot make independent choices about their health or even seek medical attention. Poverty is widely recognized as a major element of poor health. Bloch et al. (2011) identified higher rates of morbidity due to chronic illnesses among people living on low income levels. Women usually take up the responsibility of household chores like cooking, washing laundry, caring for aged etc. Women are particularly vulnerable during pregnancy and after childbirth to some of the infectious germs and diseases.

Health beliefs refer to attitudes such as values and knowledge that women have about health and health services. Thus individual health beliefs often play a significant role in important decisions such as starting a new medication or undergoing an invasive procedure or test. Even cultural traditions restrict women from freely mingling in society. Cultural restrictions are a significant barrier to mother's accessing health services. For example a study conducted by Deyo (2012) among Somalian women revealed deeply ingrained cultural and religious traditions thereby limiting them from accessing reproductive health services. Culture refers to the values, practices, meanings and beliefs. Cultural issues often play a role in patient's compliance. Culture is often considered as a barrier to utilization of services. Culture can influence knowledge and beliefs of illness as well as the course of treatment for illness. For example, certain cultures have taboos attached.

A key family member is consulted for important health related decisions. In many Indian cultures, married women cannot make independent decisions. The husband's or the mothers-in law's opinion constitute the main deciding factor. Married couples may be guided by the

customs and beliefs of the joint family system as to where the pregnant lady should deliver etc. In many traditional African cultures, the husbands are regarded as the head of the households and a married woman could not make independent decisions. Cultural restrictions on mobility are significant barriers as is noted among Pakistani women. Most women are forbidden from moving freely and socializing (Nissar & White 2003).

Women and their families are sometimes reluctant to seek health services from a skilled attendant, even when these services exist, because their own traditions are being ignored. Health professionals even ignore these traditions thus creating a potent barrier. Rural women and those from ethnic minorities often find themselves being discriminated by the health workers. Language acts as a barrier thus making it impossible to convey messages. Scheepper (2005) stresses the importance of good language skills. Poor language skills can affect the confidence level of the patient. It can cause additional stress and strain creating misunderstandings. It is also noted that ineffective communication exists between the patient and the practitioner. This coupled with language barrier leads to frustration and patients feeling neglected and detached. Scheeper et al (2005) recommend the presence of a professional interpreter to improve the quality of conversation.

Community and personal factors must be available to make use of a service. Health personnel's and facilities must be located where people live and work. This makes it easier for the people to access the services. Income, regular conveyance, transportation and waiting times are some of the other factors to be considered. For example, whether a service is accessible or inaccessible again depends on the distance and the location. Chandhiok et al. (2006) referred to a study conducted in Ethiopia to show that antenatal care was positively associated with living within 10km of the health facility. Distance can limit a person from gaining access to a health service. The farther a patient is from a health facility, the less likely to utilize the services. Transportation problems also would compound to the problem. For

instance, lack of transportation facilities in rural areas might prevent women from accessing health services. Fiagbe (2012) conducted a study in Ghana to reveal that good vehicle and road infrastructure are the key link between accessibility and utilization of maternal health services.

The need for services is an important element in the use of a health service. Another factor to be considered is the way how women view their health and how they experience symptoms of pain, illness and worries and whether they are able to seek medical care when it arises. The perceived need in the model considers the pathology of the disease significant enough to seek medical attention. In this case, it would refer to the way women are aware of the danger signals during pregnancy etc. This would mean being able to identify signs of thrombophlebitis, urinary incontinence, post-delivery back aches. A similar study conducted by Chandhiok et al. (2006) indicated that the perceptions about problems that occur during pregnancy were higher in women who attended antenatal services than those who did not.

Evaluated need refers to the professional's opinion about the women's health status and their recommendation to further up care. This again depends on the expertise and the skill of the health professional. A woman's prior experience to health professionals can create confidence in the health professional and acquaintance with health services. Frequent ANC visits can improve post natal visits too. Chimankari and Sahoo (2011) studies provide evidence of the relationship between antenatal care and utilization of post natal services. Their studies reported that women who received partial and full antenatal care are 1.7 and 2.9 times respectively more likely to go for postnatal checkup than those who did not receive any antenatal care.

Health seeking behavior is the result of interaction between characteristics of the individual, population and the surrounding environment. That means an individual seeks health only if

the resources allow him to and not just because of the severity of the illness. Thus, Andersen's model interprets access to services as a result of decisions made by an individual, which are hindered by their socio economic status and availability of health care services.

Health care utilization is complex and multi-faceted. Understanding which factors are most important to health care utilization can assist in disease prevention and through effective health campaigns, policies and health promotions. Hence with a better understanding of why people use or do not use health care services, health care organizations can promote measures to improve the quality of human life.

2.12 Conclusion

This chapter presented a literature review from different studies. All the studies reflect the prioritization of maternal healthcare services especially in developing countries. In South Africa, there is remarkable difference in maternal health care in the rural and urban settings due to socio-economic challenges. This chapter has addressed the possible factors influencing the utilization of physiotherapy services in the antenatal clinic. Chapter three will provide a detailed description of how the research was conducted. It will include an outline of the research design and methodology.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter provides an overview of the methods used to collect data for the study. The research setting, study sample and procedures are outlined. In addition the ethical issues are also outlined.

3.2 Research setting

The study was conducted in the antenatal clinic of Cecilia Makiwane Hospital, Buffalo City Metro Municipality, Eastern Cape, South Africa (see Figure 3.1). South Africa is located on the southernmost tip of Africa and is bordered by the Atlantic Ocean on the west, the Indian Ocean on the south and east. Along its northern border, from west to east, are Namibia, Botswana and Zimbabwe, and to the Northeast are Mozambique and Swaziland. According to the midyear population estimates (2013), South Africa has a population of approximately fifty two million and the African majority is composed of many different ethnic groups, the largest of which are Zulu, Xhosa, Tswana and Bapedi. There are 9 provinces and each province has districts and local municipalities.

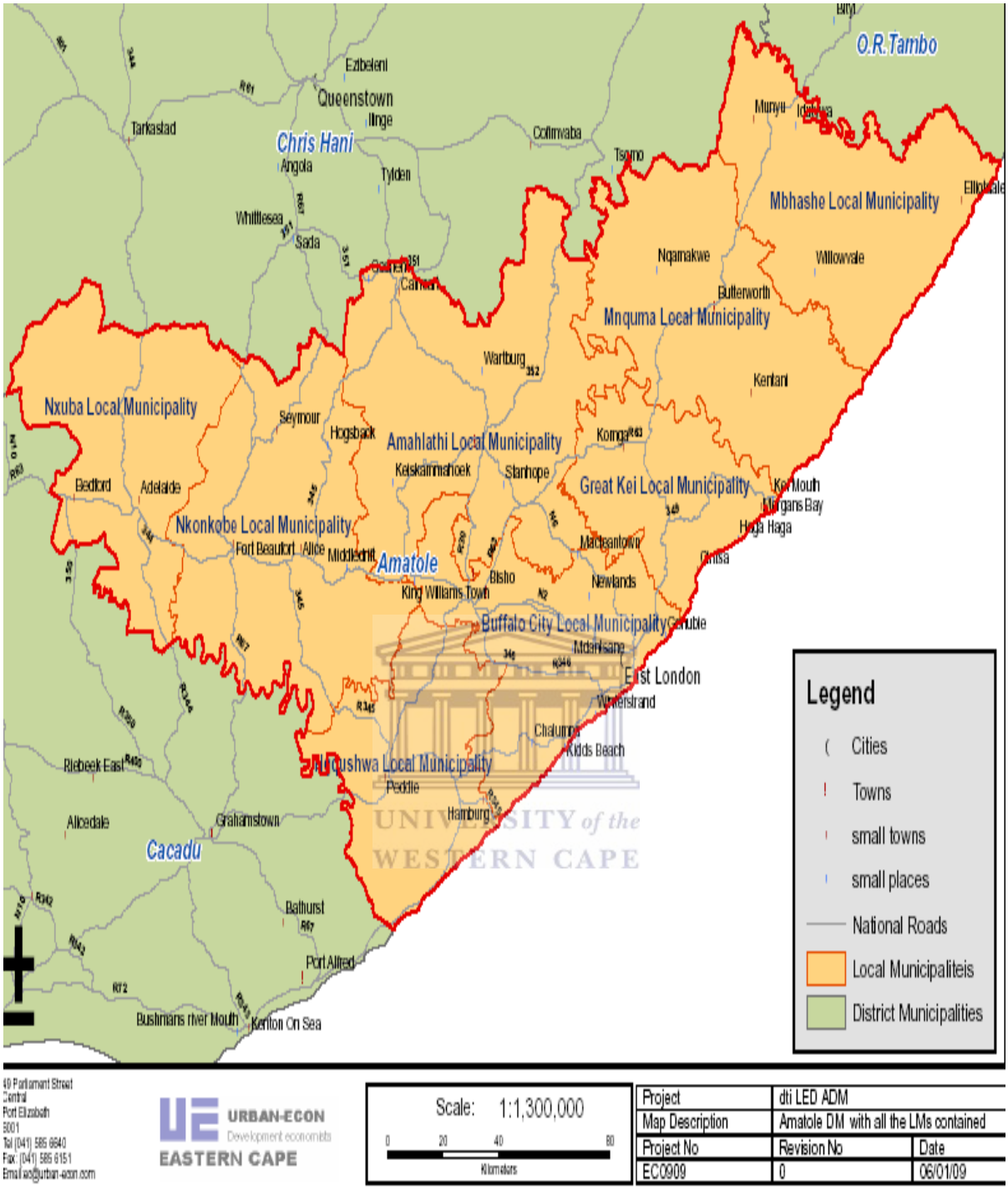

Fig 3.1*:* Map of Amathole District Municipality *Source: Urban-Econ Eastern Cape, 2009*

The Eastern Cape, lying on the South Eastern South African coast is the country's second largest province in terms of area and includes the former homelands of Transkei and Ciskei. The provincial estimates show that the Eastern Cape has roughly 15.5 million populations (Midyear population estimate, 2013). The Eastern Cape Province is divided into 37 local

municipalities, 2 metropolitan municipalities and 6 districts. The majority of the Amathole District population (42.8%) reside within the Buffalo City Municipality (Population distribution, ADM, 2009).

Cecilia Makiwane is a provincial 800 bedded, multidisciplinary referral hospital located in the township of Mdantsane, approximately 23 km from the center of East London. This hospital serves the population of the Amathole district, the greater East London, Border and the former Ciskei and Transkei homeland areas. Areas as far as approximately 700kms are referred to CMH for antenatal and postnatal care.

According to Statistics South Africa (Community survey, 2007), the population of the Amathole District was about 1,635,433 in 2007. As the majority of the people within Amathole district receive their hospital care at CMH, the study population consisted of all pregnant women attending antenatal clinic. It was anticipated that this hospital would provide the required sample size.

The Department of Gynecology and Obstetrics in the hospital yield the statistics for the number of live births for the district. Approximately 900 women deliver every month in this hospital (Hospital medical records).

3.3 Research design

This study employed a mixed method design. The qualitative phase of the study was cross sectional in nature and was used to determine mother's awareness and utilization of antenatal services at CMH. A cross sectional design is believed to be cost effective and time saving way to reach out to a large number of people. A quantitative research design was chosen in order to give a detailed description of the factors influencing the use of antenatal physiotherapy services. It also involved the systematic collection of numerical information and analysis of information using statistical procedures (Polit & Hungler 1995:15). The

qualitative approach was employed to gain an in depth account of the health professional's knowledge about antenatal services and its availability.

3.4 Methods of data collection

Data collection for the study was in two phases, i.e. quantitative and qualitative. The study sample and procedures will be discussed under these phases.

3.4.1 Quantitative phase

Population and sample

Polit and Hungler (1995:38) state that the term "population" refers to the aggregate or totality of all objects or members that conform to a set of specifications. The study population included all those pregnant females in the Buffalo City Municipality region attending the antenatal clinic of Cecilia Makiwane Hospital. As the majority of people within the Amatole district receive their hospital care at CMH, the study population consisted of all pregnant women attending antenatal clinic.

The WHO definition of antenatal coverage was implied here for the sample size selection. This included the percentage of pregnant women coming for at least one antenatal visit. It was estimated that an average of 900 pregnant females attended the antenatal clinic every month. (Cecilia Makiwane Hospital, Statistics Department, Maternity 2011/2012). Hence it was anticipated that the hospital would provide the required sample size for the study.

Sampling procedure

According to Burns and Grove (2003:385), sampling involves selecting a group of people, events, behavior, or other elements with which to study. It's a subset of the population selected for study. The selected sample would have the similar characteristics of the population under study.

The sample size was considered to be a representative of the entire study population, since the minimum sample size that can be generalized to this population was 267 according to Yamane's formula. According to Yamane (1967:886) sample size was calculated as follows:

$$n = \frac{N}{1+N(e)^2}$$

where n is the sample size, N is the study population and e is the level of precision set at 0.05 (Israel, 1992). So an estimated 267 participants were to be included in the study according to the formula. "Sampling" is referred to as the process of the selection of a portion of the population to represent the entire population in a study (Polit & Hungler, 1996:652) and the sampling method used was non-probability convenient method.

From the antenatal clinic of CMH, a random sample of 267 mothers was chosen over a brief period of two weeks commencing from November to December 2012. The respondents were chosen from the antenatal clinic. To make provision for refusals, 290 individuals were approached for participation but only 267 agreed to participate in the study.

The selection of the participants was based on the inclusion and exclusion criteria. According to Brink (2006:148), inclusion criteria are the characteristics that those people in sample should possess.

The inclusion criteria for this study involved

- Pregnant mothers age in the group above 15-45 years attending the Antenatal clinic at CMH

Brink (2006:148) described exclusion criteria as characteristics, which a participant may possess, that could adversely affect the accuracy of the results.

The exclusion criteria for this study were

- Those who come for non-reproductive health service at CMH.

- Pregnant women refusing to give informed consent

Data collection method

A self-administered questionnaire was used to collect data in this phase (see **Appendix E, F**). This instrument was used previously by Mckeith et al. (2001). Mckeith et al instrument was based on the Lusaka Women's friendly health services. This instrument was previously used in a study that evaluated the factors responsible for utilization of postnatal services in Mulago, Uganda (Nankwanga & Phillips, 2010). This was an instrument whose reliability and validity had been tested and retested amongst the postpartum mothers. Section one included questions on demographics, such as age, language, marital status, husband's occupation, distance to the hospital; section two requested information on the socio economic variables such as highest level of education, present occupation, fare to the hospital, fee payments for the antenatal services, difficulty in meeting the expense of coming to the hospital, provision of medical aid and number of pregnancies and number of children; section three requested information on awareness of antenatal services offered at the hospital, awareness of different types of services, source of information, number of visits made to the antenatal clinic, services received at the antenatal clinic, pregnancy related complaints, regular checkups, preferred method delivery; section four requested information on barriers to utilization of physiotherapy services such as mode of transportation, awareness of physiotherapists, awareness of physiotherapy interventions in pregnancy and attitude of health professionals (Refer to **Appendix E**).

Reliability deals with the accuracy and consistency of the measuring technique. The reliable instrument should therefore give the same results when measuring the same phenomena. Consistency in giving the same data over repeated questioning indicates the reliability. A reliable instrument reflects the true scores of items being measured (Burns & Grove 2007). The instrument (Mckeith et al) adapted has been already tested for reliability and validity.

Some new aspects were added to the instrument which varied the test-retest reliability of the instrument.

The questionnaire was translated into isiXhosa by an isiXhosa speaking Physiotherapist (see **Appendix F**). IsiXhosa is one of the main languages used in the Eastern Cape. In order to establish whether isiXhosa version relayed the same meaning in English, Xhosa speaking physiotherapists in the physiotherapy department with good English background assisted in back translation of these questionnaires into English. Further corrections were done after pilot studies.

A pilot study was conducted among 15 pregnant females within the antenatal clinic at CMH. The purpose of piloting the instrument was to obtain face validity of the instrument and the time taken to complete the questionnaire. Appropriate changes were made after piloting.

The purpose of the study was concisely explained in English as well as in Xhosa to the mothers (refers **Appendix A & B**). Both verbal and written consent was obtained before distributing the questionnaires, (see **Appendix C & D** for consent form Xhosa and for consent form English). Participants were assured of their freedom to withdraw, confidentiality and anonymity. Willing participants were provided with questionnaires to their preference of choice of language. The researcher was available to clarify any questions.

Data analysis

The data from the completed questionnaires were cleaned, recoded and entered into the Statistical Package for Social Sciences (SPSS) version 21 for analysis. Descriptive statistics were employed to summarize data and was expressed as means, standard deviations, frequencies and percentages. Inferential statistics were employed to test for associations between variables. Chi square tests were used to test for associations between categorical variables. Alpha level was set at $p<0.05$.

To ensure trustworthiness, data collected was cleaned and verified after capturing. This was reviewed by the researcher's supervisor who is an expert in the field and recommendations made can be considered trustworthy.

3.4.2 Qualitative phase:

Population and sample

The study population included all the doctors and nurses working at the antenatal clinic of CMH. A total of 13 health professionals work in the antenatal clinic and were approached for participation. A total of six agreed to participate in the study.

Data collection method

Qualitative data were collected using individual interviews. An interview guide was used to ensure that all the participants were posed with the same questions (see **Appendix H**). Interviews were scheduled for a convenient time for participants and at a venue convenient to them too. The interviews were done by the researcher and were tape recorded after written informed consent was given by the participants. The researcher made notes during the interview too.

Qualitative Analysis

The researcher transcribed all the tape recorded interviews verbatim. The transcripts were read and re-read word by word, sentence by sentence in the process of searching for themes or recurring regularities until the researcher was convinced that the data was interpreted correctly, thereafter themes generated.

Familiarization started during the verbatim transcription of the tape recorded on the interviews to initiate the process of data analysis. The researcher then read through all the transcribed data and field notes many times and listed the emerging themes.

Inducing themes refers to the extraction of significant words, phrases and statements from the text. A list of selected words and statements assisted the researcher to generate an overall idea of how these words and statements relate to each other. Those which were more predominant in responding to the research question were classified and clustered into possible themes and sub-themes, a process referred to as coding (Terre Blanche et al, 2006).

Through the process of elaboration, the researcher began to interpret the material with regard to the facts under investigation. This process involved making associations amongst newly emerging meanings. This involved repeatedly referring to the contexts in which the texts were created and the field notes, in order to understand the meanings of the themes. Interpretation and checking involved continued until it led to the identification and regrouping of the themes and statements.

Trustworthiness regarding qualitative data analysis was assured by peer examination during which the researcher solicited an independent researcher's help in examining the transcripts and field notes. The purpose of using peer was to determine whether they would identify the same categories and themes within the data as the researcher. This review helped to identify trends in the data which were not discovered by the researcher. It also helped to open new avenues for exploration and to reach consensus in categorizing themes.

Trustworthiness in qualitative research refers to validity and reliability. Rigor in qualitative research is demonstrated through the researcher's attention to and confirmation discovered. According to Speziale and Carpenter (2007) there are different terms to describe the process that contribute to scientific rigor in qualitative research like credibility, dependability, conformability and transferability.

In this study validity was ensured by employing a mixed research (questionnaires, interviews), selecting participants who met the criteria of the sampling technique and using a detailed description of the study and explanation of the research design.

To achieve credibility of the data, the interviewer verified data collected, as well as the conclusions drawn from the information collected during the interview with participants (health professionals) to ensure that the interpretations made were correct. The interviews were tape recorded to accurately capture the responses of the participants. The transcribed data was checked with the audio tapes from time to time for accuracy. The analysis of the data was further verified by supervisor and an expert of qualitative research. The researcher left an audit trail by documenting clearly all the steps involved in the study. The initial coding of the data was done by the researcher. It was later given to an expert of qualitative data analysis to review the categories and themes identified from coded data for validation. In this study sufficient information had been given about the characteristics of the sample for judgments to be made about the extent to which findings could be expected to apply more widely.

3.5 Ethical considerations

Written permission and ethical clearance to conduct the study were obtained from the Senate Research Grants and Study leave Committee at the University of the Western Cape, Eastern Cape Department of Health, and The Hospital Manager of Cecilia Makiwane Hospital and from the participants who participate in the study (see **Appendix L, K, and J**). The aims, objectives and relevance of the study were explained to the participants in an information sheet (refer to **Appendix A, B**). Research assistants were identified and trained. Participants were informed that there were no or minimal risks to participating in this study. They were also informed that refusing to participate would not affect the usual services they normally access at the hospital. It was made clear to participants that participation was voluntary and

was also informed of their right to withdraw from the study at any time. In addition, they were also assured of confidentiality and anonymity of the results. No names or personal identification numbers were reflected in the questionnaires except the numbering for the questionnaires. The benefits and potential risks of the study were explained to the participants. Informed and written consent were sought. (**Appendix C, D & H**). The information collected will be made accountable to all the relevant stake holders.

3.6 Summary of the chapter

This chapter summarizes mainly the research design and the methodology used. It discusses how the research and data gathering were conducted in two phases and also highlights the ethical issues pertaining to the study.

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter describes the results of the statistical analysis of the quantitative data and the thematic analysis of the qualitative data.

4.2 Quantitative phase

4.2.1 Description of study sample

A total of 290 mothers were approached to participate and 267 agreed. Of these 9 questionnaires were discarded because it was incomplete. Therefore the total number of participants was 258. The response rate of the study was 89%. Table 4.1 summarizes the socio-demographic characteristics of the sample.

Table 4.1 Socio-demographic characteristics of the study sample (n=258)

Variable	Frequency	Percentage (%)
Age (mean=30.05; SD=6.76)		
Categories		
15-19 years	13	5.0
20-24 years	51	19.8
25-29 years	60	23.3
30-34 years	62	24.0
35-39 years	48	18.6
40-44 years	22	8.5
45-49 years	2	0.8
Area of residence		
In Mdantsane	161	62.4
Outside Mdantsane	86	33.3
East London	11	4.3

Language spoken		
Xhosa	255	98.8
Afrikaans	2	0.8
Other*	1	0.4
Marital status		
Married	52	20.2
Single	160	62
Separated	1	0.4
Living with partner	41	15.9
Widow	4	1.6
Mother's education		
Primary	46	17.8
Secondary	186	72.1
High School	4	1.6
University	22	8.5
Mother's occupation		
None	147	57
Housewife	16	6.2
Self-employed	39	15.1
Government employed	8	3.1
Private employed	35	13.6
Others*	13	5
Partner/Husband's occupation		
None	125	48.4
Self-employed	60	23.3
Government employed	11	4.3
Private employed	49	19
Others	13	5
Medical aid		
Yes	14	5.5
No	242	94.5

*Other under the languages spoken includes all other languages spoken except Xhosa, Afrikaans and English.

*Other under partner's occupation includes any other work like part time work like car washing, food services assistant etc.

The majority of the women were from Mdantsane (62.4%), followed by 33.3% who lived outside Mdantsane and 4.3% were from East London. The mean age of the study sample were 30.01(SD=6.76).

The educational level of the participants ranged from primary to tertiary institutional level. Although three quarters of the mothers (72.1%) had secondary school versus 17.1% of primary level education, more than half of the mothers (57%) were unemployed living on either social or child grants, while the rest were self-employed or private employed.

Table 4.2 Pregnancy related information

Variable	Frequency	Percentage
Mean No of Live births = 1.10; SD = .857		
Mean No of pregnancy = 2; SD = .913		
Preferred method of delivery		
Normal	36	14.0
C section*	221	85.7
Previous mode of delivery		
Normal	14	5.4
C section	224	86.8
Assisted	17	6.6
N/a*	3	1.2

*N/a not applicable were the first time pregnant mothers
*C section is caesarean section

According to Table 4.2, the mean number of pregnancies of the study sample was 2.23 (SD=.913). The average number of live births was one or less.

4.2.2 Awareness of antenatal services

About 90% of the mothers were aware of antenatal services offered by the hospital as illustrated in Figure 4.1. The majority of the participants knew about family planning, PMTCT, counseling, breast feeding amongst others.

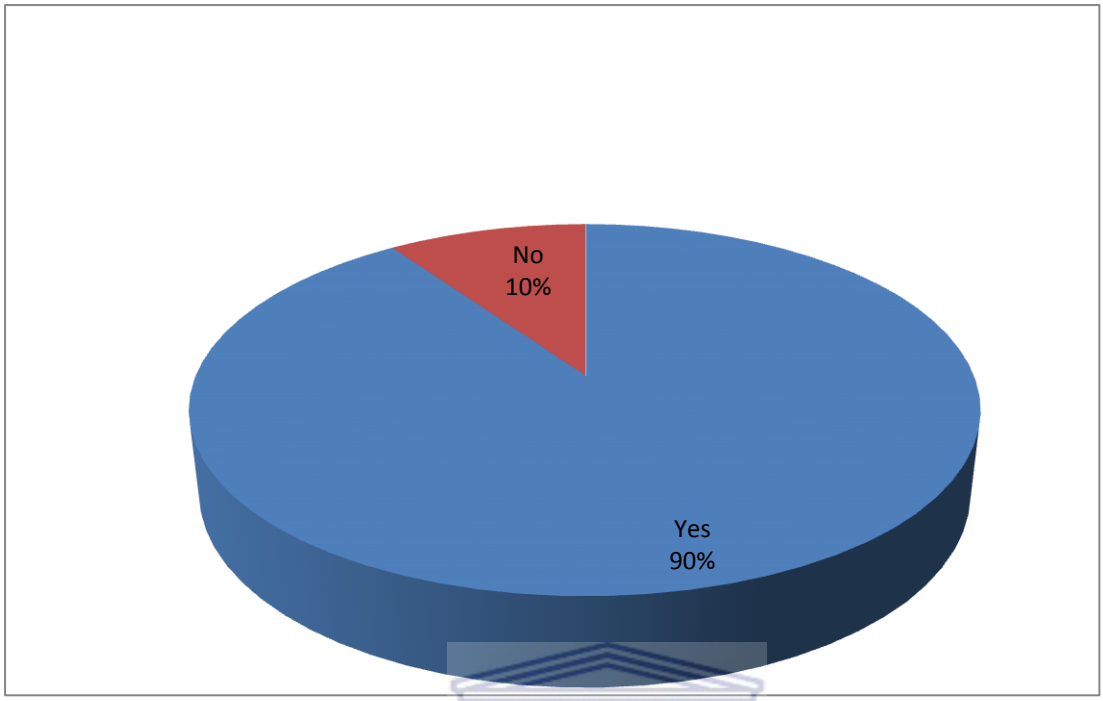

Figure 4.1: Awareness of antenatal services (n=258)

The number of participants who responded to being aware of the different antenatal services is depicted in Figure 4.2. More than one third (35.3%) of the participants were aware of physiotherapy in the antenatal period.

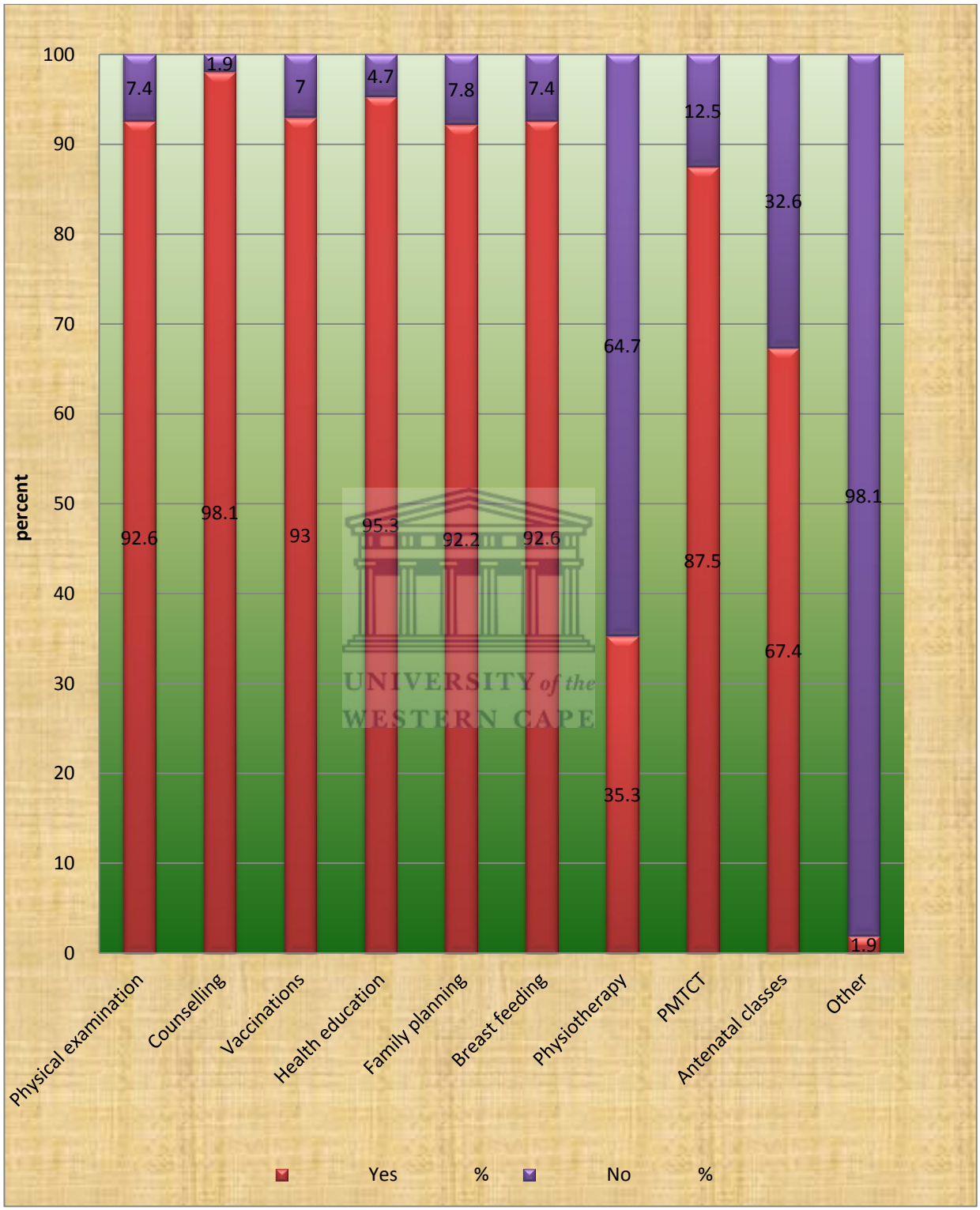

Figure 4.2: Awareness of the types of antenatal services

*PMTCT is Prevention of Mother to Child Transmission

The highest percentage of awareness of services among the participants was reported on counseling (98.1%), vaccinations (93%), family planning (92.2%), breast-feeding (92.6%), PMTCT (87.5%) and health education (95.3%). In figure 4.3, the most common source of information about antenatal services is illustrated to be the nurses (71.5%), followed by the midwives (24.9%) and doctors (3.2%). Other sources of information included family member, relatives and friends.

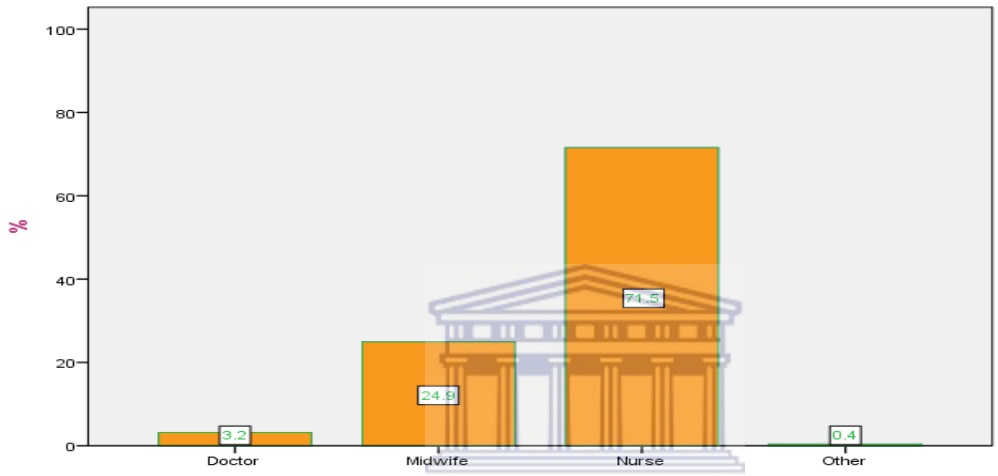

Figure 4.3: Source of information about Antenatal Care services (n=258)

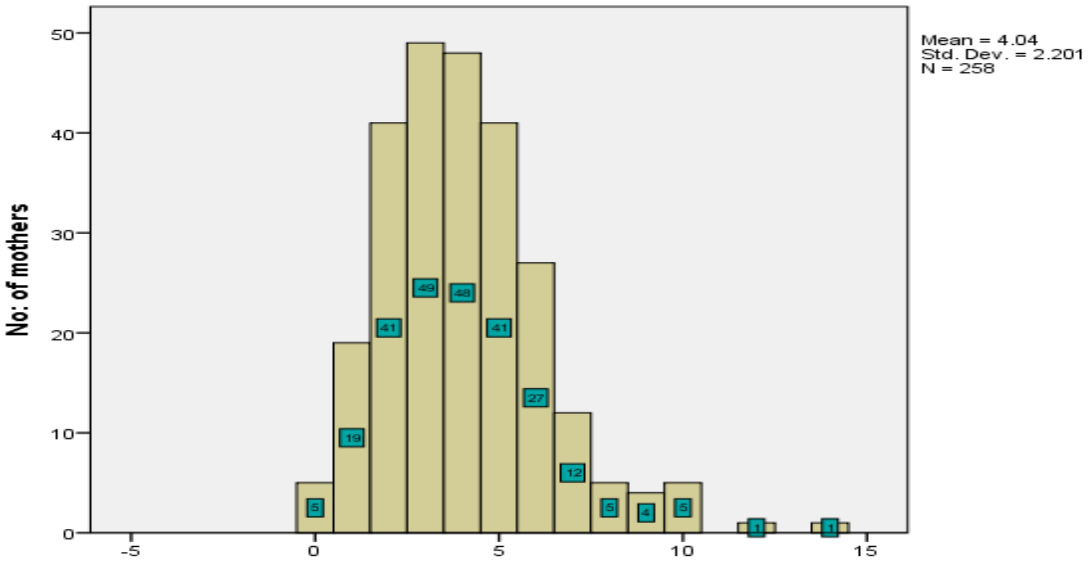

Figure 4.4: Frequencies of ANC visits (n=258)

The frequency of antenatal visits was high in the early stages of pregnancy as compared to the late stages as illustrated in Figure 4.4. The visits paid to the ANC were the highest during the 3rd antenatal visit and the numbers tapered with subsequent visits. The number mothers who paid ANC visits were comparatively high in the early trimesters of pregnancy. The maximum visit paid included 14 visits as reported by one mother. Figure 4.5 describes the mode of transport to the hospital. Majority of the mothers (86.8%) relied on public transportation whereas as some relied on private vehicles (3.5%) and walking (5.4%) to get to the hospital.

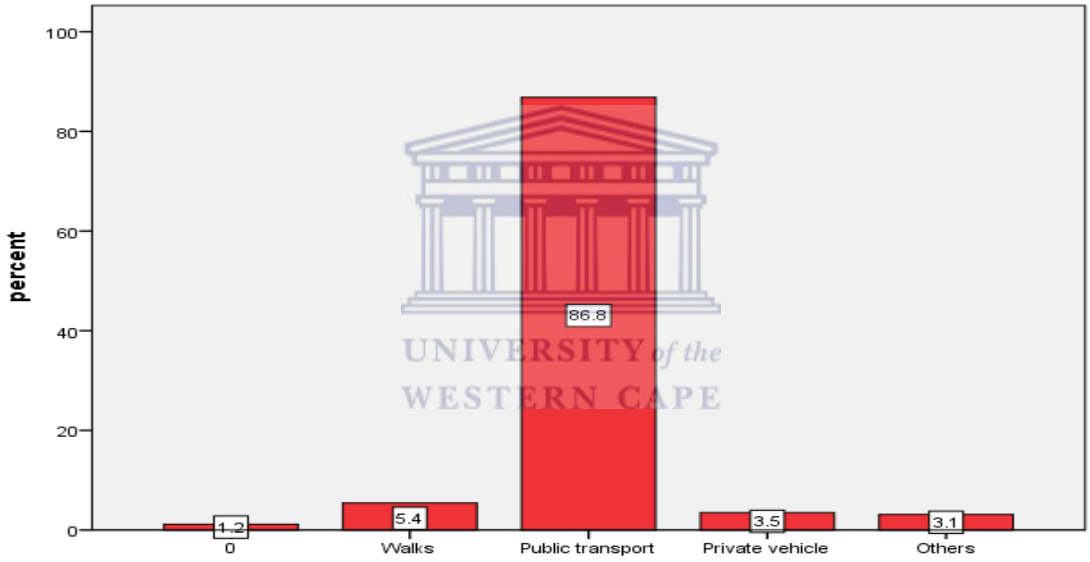

Figure 4.5: Transportation modes (n=258)

4.2.3 Utilization of antenatal services

Table 4.3 shows that a half of the participants attended ANC classes (53.9 %). Routine antenatal procedures like blood pressure testing, blood glucose level testing and urine testing were also reported by a large percentage of participants.

Table 4.3: Services attended/received among the pregnant mothers at the ANC clinic in the hospital (n=258)

Services attended	N	%
Antenatal classes	139	53.9
Health education	242	93.8
Folic acid/Iron tablets	238	92.2
Blood pressure test	207	80.2
Sugar test	211	81.8
Urine test	254	98.4
Height & weight measurement	226	87.6
Ultrasound scan	194	75.2
Pap smear test	43	16.7
PMTCT	217	84.1
Fundal height palpation	243	94.2

***PMTCT is Prevention of Mother to Child Transmission**

4.2.3.1 Attendance and awareness of physiotherapy

The results show that 79.1% of the pregnant mothers never attended physiotherapy services while 20.9% attended physiotherapy as depicted in Figure 4.6. Insufficient information and lack of awareness about physiotherapy services were identified as the main factors for poor utilization of antenatal physiotherapy. 70% of the mothers were not aware of the role of physiotherapists in the antenatal period as illustrated in figure 4.7.

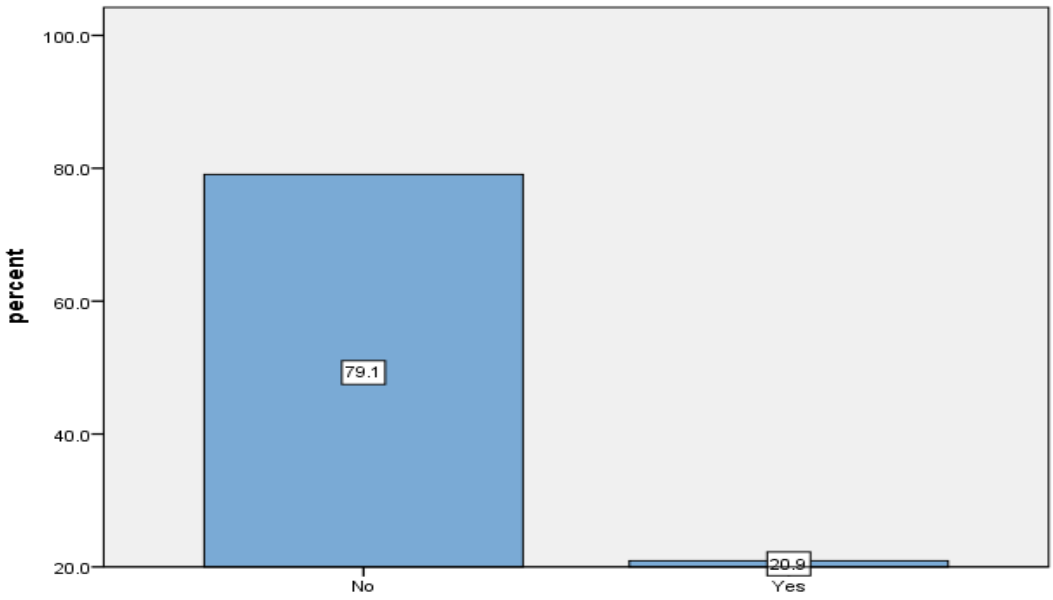

Figure 4.6: Percentage of mothers attending physiotherapy services (n=258)

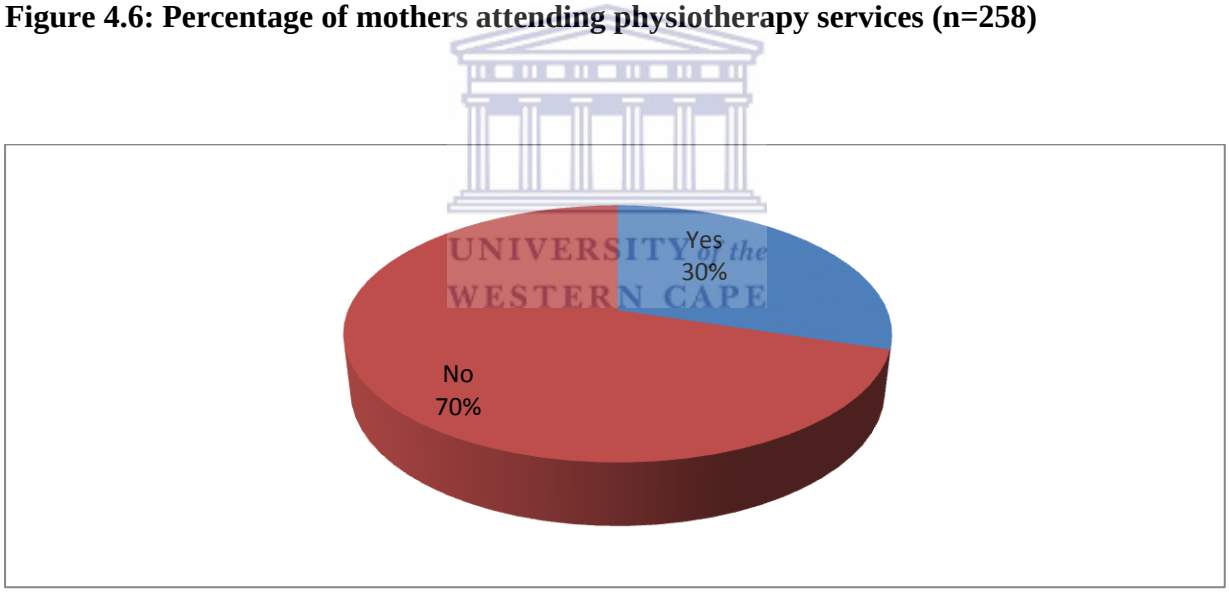

Figure 4.7: Awareness of the role of physiotherapy in ANC (n=258)

In addition, awareness of specific physiotherapy interventions during pregnancy was reported by the study sample. These results are illustrated in Figure 4.8. The specific interventions the participants were aware of included low back pain (29.8%), chest problems (25.9%) and neck pains (20.9%).

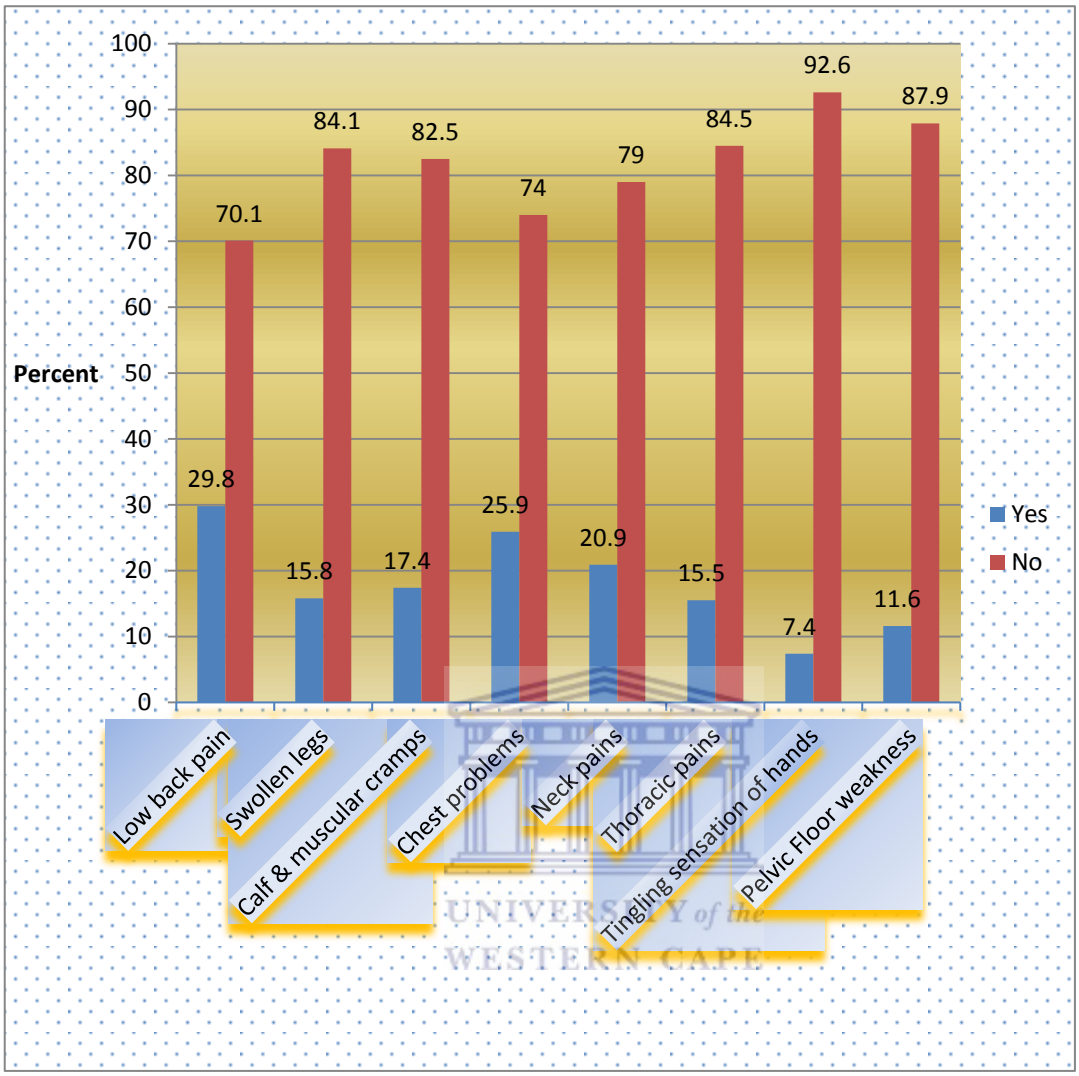

Figure 4.8: Awareness of physiotherapy intervention during pregnancy (n=258)

Some of the reasons for non-attendance of antenatal services in general in the antenatal clinic include mothers' grievances about health professionals, poor quality of maternal antenatal services, non-accessibility of services and poor referrals from the health professionals. These reasons are summarized in Figure 4.9.

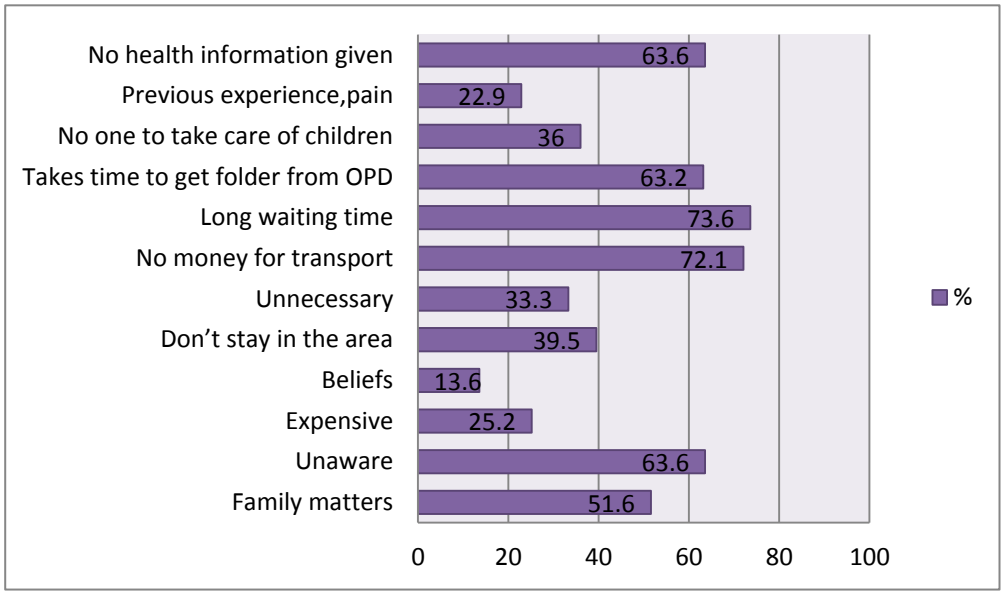

Figure 4.9: Reasons for non-attendance of physiotherapy (n=258)

The results indicate a wide range of reasons but some of the most common reasons stated by the participants included the following: lengthy waiting periods in the ANC (73.6%), transportation fares to the hospital (72.1%), inadequate health information (63.6%), being unaware of physiotherapy (63.6), the lengthy OPD folder retrieval procedures (63.2%) and priority to family matters (51.6%).

4.2.3.2 Quality of ANC services

The overall satisfaction levels among pregnant mothers were found to be high (62%) as illustrated in the Figure 4.10.

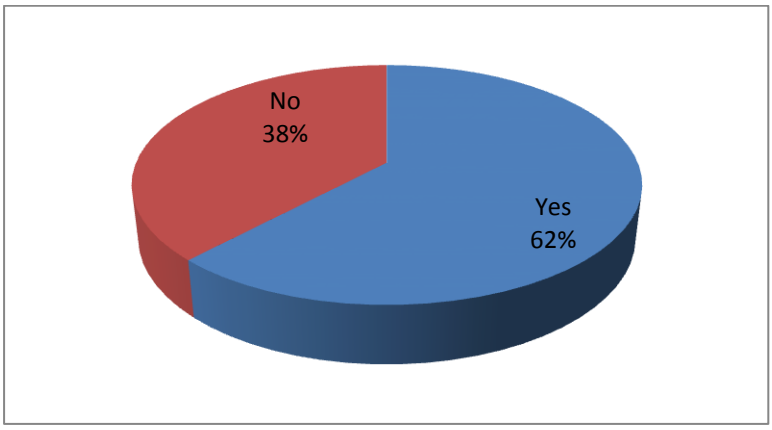

Figure 4.10: Satisfaction levels with Antenatal services (n=258)

Figure 4.11 gives an account on the grievances that mothers experienced with the health professionals in terms of attitude and treatment. Although half of the participants reported on good attitude, 18.2% of the participants felt that they were not educated well. 11.6 % felt that they were not catered to their needs whereas 7.4 % reported to being examined roughly. Rude behaviors accounted for 7.8%.

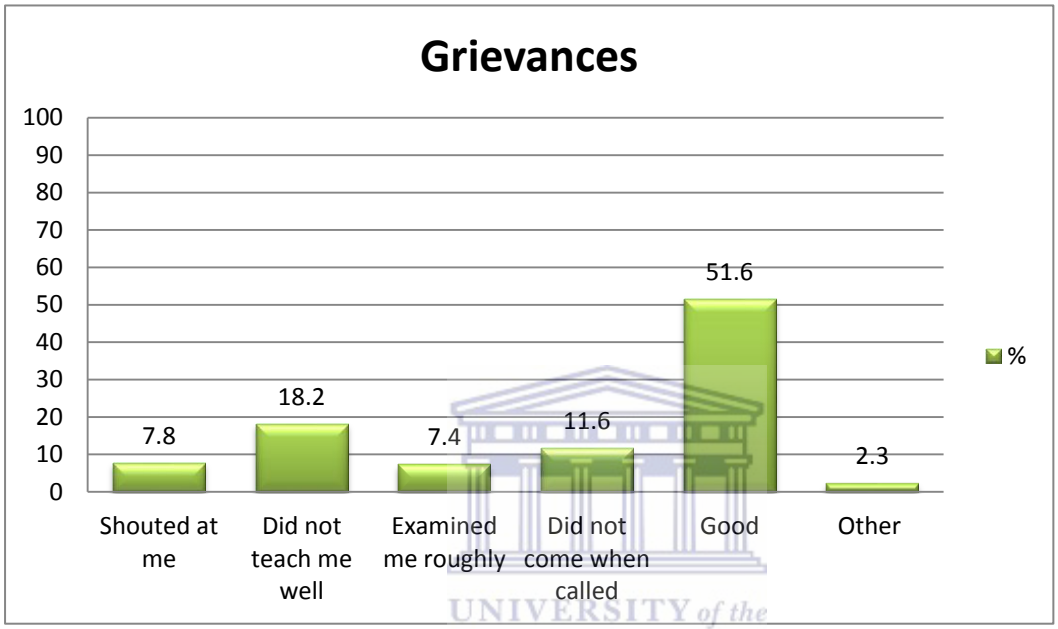

Figure 4.11: Grievances regarding staff (n=258)

Service delivery constituted a major problem as depicted in Figure 4.12. This accounted to 63.6%. Service delivery issues reflected by the participants were in terms of infrastructure, attitudes, transportation facilities and staff shortages. Poor infrastructure was rated at 8.1% whereas poor services at 16.7%. However, less than a quarter appreciated the good attitude (17.4%) and services (11.2%) offered at the antenatal clinic.

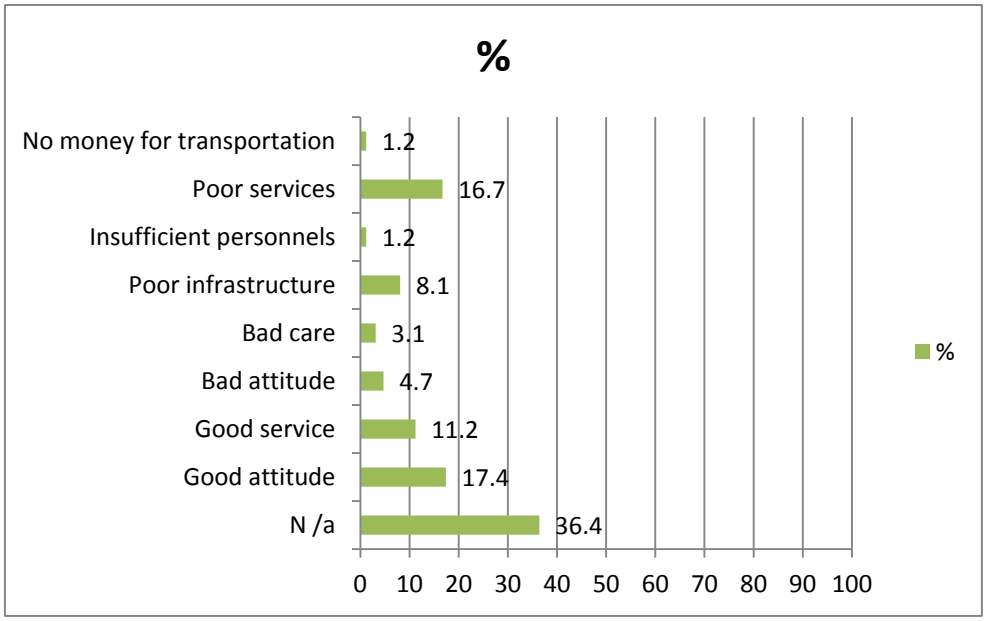

Figure 4.12: Service delivery comments (n=258)

In response to an open question, the participants stated the following:

"I think the room is small and it's overcrowded at times".

"I have been waiting for a long time and no doctors attending to us".

"The benches are not comfortable for sitting".

"They do not care for us".

4.2.3.3 Cultural influences and physiotherapy

Cultural practices and traditions influence the decisions to attend physiotherapy during pregnancy. The influence of culture is noted in figure 4.13. About 4% responded to cultural influence on antenatal physiotherapy service.

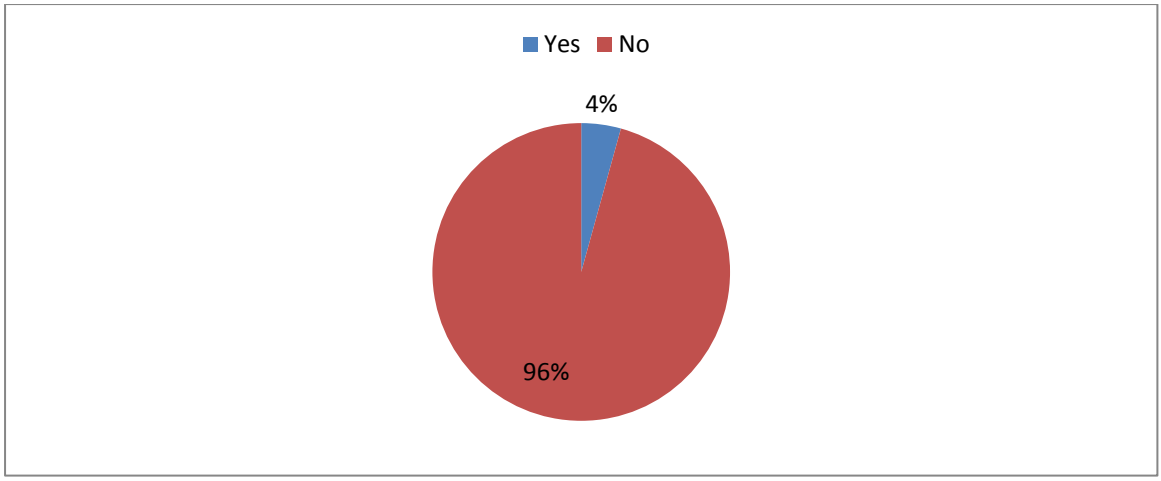

Figure 4.13: Cultural influence on physiotherapy (n=258)

4.2.3.4 Educational services

The impact of attending educational information is shown in figure 4.14. A large percentage of the participants (81%) did not have a chance to attend a physiotherapy educational talk class**.** Health information sharing and education services are the focus of health promotion.

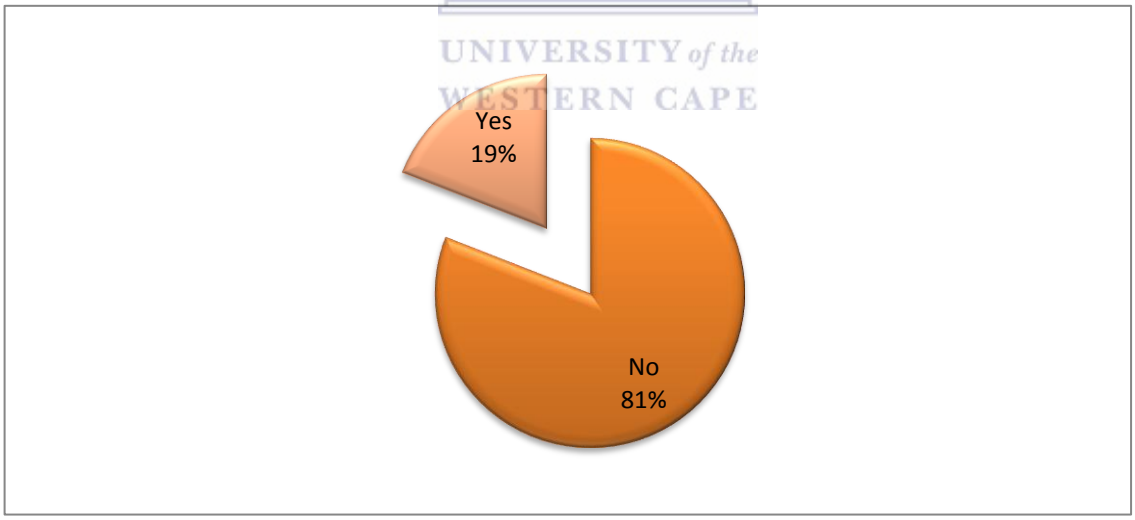

Figure 4.14: Attendance of ANC physiotherapy talks (n=258)

It was found that majority of the pregnant women did not attend antenatal physiotherapy education.

4.2.3.5 Access to physiotherapy

About one third of the participants can easily access physiotherapy services whereas about two thirds (70%) of the participants could not access physiotherapy. The services are either not in the vicinity or were not displayed appropriately Figure 4.15 shows that majority of the participants experienced problems with accessibility of physiotherapy services.

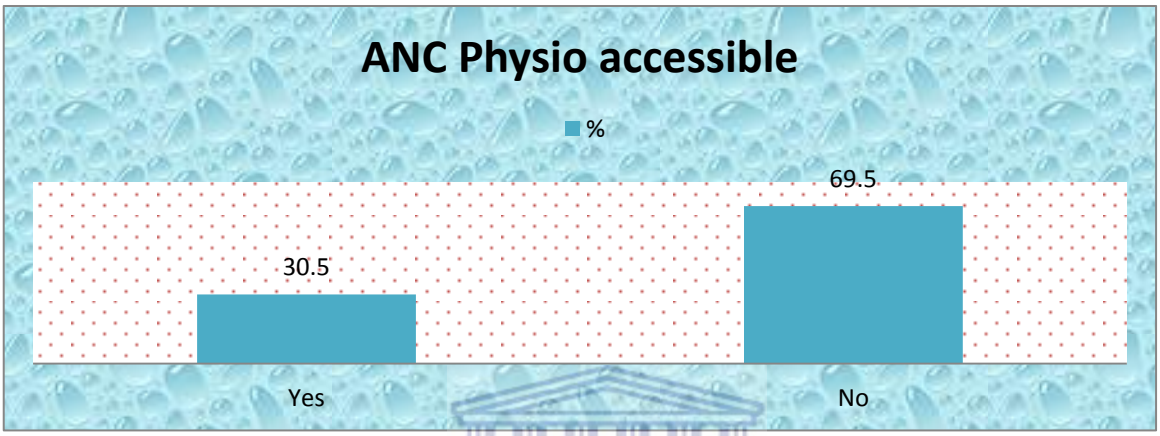

Figure 4.15: Access to physiotherapy (n=258)

4.2.3.6 Referrals to physiotherapy

Physiotherapy utilization is also influenced by the source of information as well as proper referral systems. Figure 4.16 clearly depicts about two thirds of the doctors and nurses (62.6%) are not specifying the importance of antenatal physiotherapy**.**

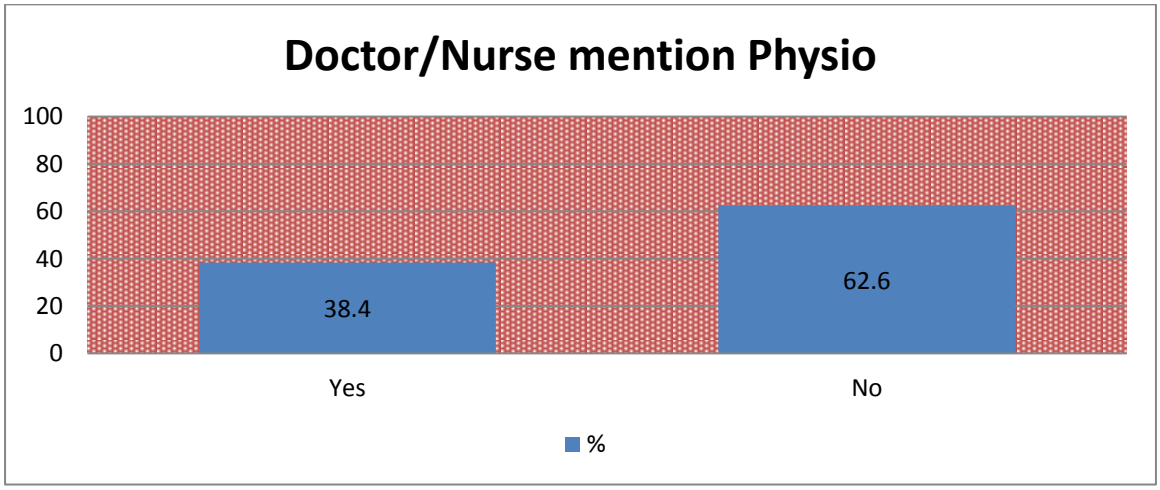

Figure 4.16: Information about ANC Physiotherapy (n=258)

A well-coordinated referral system is essential for promoting physiotherapy in the antenatal clinics. Figure 4.16 illustrates that the participants did not receive information regarding referral to physiotherapy.

4.2.4 Factors influencing awareness of antenatal physiotherapy services

Table 4.4 shows the association between socio-demographic characteristics of the participant and level of awareness of antenatal services. Chi square analysis shows that language (χ^2=13.165, *p* value=.001), marital status (χ^2=9.724, *p* value=.045), source of information (χ^2=11.253, *p* value=.010) and the awareness of the role of physiotherapist (χ^2=6.309, *p* value=.012) did show a significant statistical difference with respect to level of awareness of antenatal services location. However, other factors like distance from the hospital, age of the participant, educational level etc. did not reveal any statistical difference with respect to awareness of antenatal services.

Table 4.4: Factors influencing awareness of antenatal services (n=258)

Variables n (258)	**Awareness of antenatal services** Yes	No	Total	**Chi Square**	**P value**
	%	%			
Location					
Within Mdantsane	56.6	5.8	62.4		
Outside Mdantsane	29.8	3.5	33.3	.089	.956
East London	3.9	0.4	4.3		
Distance from Hospital					
>20km	38.0	4.3	42.2	.035	.852
<20km	52.3	5.4	57.8		
Age					
15-19	4.7	0.4	5.0		
20-24	15.9	3.9	19.8		
25-29	22.1	1.2	23.3	11.300	.080
30-34	23.3	0.8	24.0		
35-39	16.3	2.3	18.6		
40-44	7.4	1.2	8.5		
45-49	0.8	0.0	0.8		
Language					
Xhosa	89.9	8.9	98.8		

Afrikaans	0.4	0.4	0.8	13.165	.001
Other*	0.0	0.4	0.4		
Marital status					
Married	19.4	0.8	20.2		
Single	55.4	6.6	62.0	9.724	.045
Separated	0.4	0.0	0.4		
Living with partner	14.3	1.6	15.9		
Widow	0.8	0.8	1.6		
Educational level					
Primary	15.1	2.7	17.8		
Secondary	66.3	5.8	72.1	2.988	.393
University	7.4	1.2	8.5		
Other *	1.6	0.0	1.6		
Source of information					
Doctors	3.2	0.0	3.2	11.253	.010
Nurses	22.1	2.8	24.9		
Midwives	65.6	5.9	71.5		
Others*	0.0	0.4	0.4		
Aware of the role of physiotherapists					
Yes	29.1	61.2	29.8	6.309	.012
No	0.8	8.9	70.2		

Other * under language is Sipedi, under education level is Post high school and under information source is Family

Factors influencing utilization of physiotherapy

As illustrated in Table 4.5, there was a significant relationship between mother's age and utilization of physiotherapy services. The age group of participants was cross-tabulated against ever attended physiotherapy service. Similarly Table 4.5 also shows the chi square analysis between age and physiotherapy utilization. It showed a statistical difference between age and utilization of physiotherapy services in the antenatal clinic. (χ^2=14.894, *p* value=.021).

The non-attendance of physiotherapy services was the highest in the age group of 25-29. The older women (above 45 years old) least utilized the service whereas mothers in the age group of 25-34 attended physiotherapy the most (47.3%). The Chi-square test showed relationship between the age of the mother and attendance of physiotherapy services.

In addition to the above, there was also a statistically significant difference in awareness of the role of physiotherapy (χ^2=10.927, *p* value=.001), accessibility of physiotherapy services (χ^2=15.133, *p* value= .000), source of information like being referred from the doctors (χ^2=17.464, *p* value=.000) as well as attending a physiotherapy educational talk (χ^2=20.996, *p* value= .000).

Table 4.5: Association between socio-demographic characteristics and utilization of physiotherapy

Variables	Utilization of physiotherapy services			Chi Square	P value
	Yes	No	Total		
	(%)	(%)	(%)		
Age					
15-19	1.2	3.9	5.0		
20-24	3.9	15.9	19.8		
25-29	3.1	22.2	23.3	14.894	.021
30-34	8.9	15.1	24.0		
35-39	3.1	15.5	18.6		
40-44	0.8	7.8	8.5		
45-49	0.0	0.8	0.8		
Educational level					
Primary	3.5	14.3	17.8		
Secondary	16.3	55.8	72.1	2.261	.520
University	0.8	7.8	8.5		
Other *	0.4	1.2	1.6		
Occupation					
None	14.3	42.6	57.0		
Housewife	1.9	4.3	6.2		
Self-employed	1.6	13.6	15.1	9.136	.104
Government	0.8	2.3	3.1		
Private	2.3	11.2	13.6		
Other	0.0	5.0	5.0		
Distance from hospital					
>20km	9.7	32.6	42.2	.459	.498
<20km	11.2	46.5	57.8		
Aware of antenatal services					
Yes	20.2	70.2	90.3	2.797	.094
No	0.8	8.9	9.7		
Aware of the role of physiotherapists					
Yes	10.1	19.8	29.8	10.927	.001
No	10.9	59.3	70.2		
Physiotherapy services accessible					

Yes	10.9	19.4	30.2	15.133	.000
No	10.1	59.7	69.8		
Doctors/Nurses inform about physiotherapy					
Yes	13.2	25.2	38.4	17.464	.000
No	7.8	53.9	61.6		
Attended physiotherapy educational talk					
Yes	8.5	10.5	19.0	20.996	.000
No	12.4	68.6	81.0		

Other *(Post high school)

4.3 Qualitative phase

A total of 15 health professionals (Doctors and nurses) work/practice in the antenatal clinic along with few community service professionals rotating between health facilities and other after two months of posting. Six health professionals agreed to participate in the interview scheduled for them. Their demographic information is summarized in table 4.6.

Table 4.6 Profile of health professionals (n=6)

Variable	**Nurses**	**Doctors**
Years of experience	Mean = 14.6 (SD=9)	Mean = 5 (SD=2)
Highest level of qualification	Diploma	FCOG*

*Diploma in General Nursing, Midwifery and Community Sciences

*Fellow of Obstetrics and Gynaecology of South Africa

Themes that emerged

Data were presented according to clusters of themes that emerge from the transcripts of the interviews. This is presented in table 4.7.

The questions in the interview guide, were used to group themes as follows, namely,

1. Continuous professional development,
2. Challenges experienced while working in ANC,
3. Challenges experienced by mothers,

4. Pregnancy related complications,
5. Role of physiotherapy in ANC

Table 4.7 Summary of themes and subthemes

Themes	**Subthemes**
Continuous Professional Development	Skills Update knowledge
Challenges working in ANC	Staff shortage Lack of supervision Staff attitude Appointment failures HIV and GPH Communication barriers Lack of equipment
Pregnant mother's challenges	Economic issues Health issues Social issues Ignorance Communication problems Waiting periods
Pregnancy related complications	HIV GPH
Role of physiotherapy	Antenatal education Lack of knowledge

These themes and subthemes will now be discussed in the next section.

4.3.1 Continuous professional development

All the three nurses and doctors were in harmony to the fact that continuous professional development is highly valuable for they perceived it as a means of acquiring knowledge for skills development. The following are some of the verbatim quotes:

> "*I think it's very good because you grow in knowledge. You grow in all aspects of the profession and that helps your client*." (Nurse)

"*It's a good method for making sure that professionals keep up to date with changes in the profession and since we are forgetful we have to revise what we all need to know as well*." (Doctor)

"*I think we need continuous professional development, things are completely changing. So we need to equip ourselves all the time. There is also this litigation. So people need to be equipped all the time*." (Doctor)

4.3.2 ANC challenges experienced by health professionals

Various challenges were unearthed by the health professionals working in the ANC.

The challenges described by the health professionals ranged from issues pertaining to communication, administration, equipment, shortage of staffs, work load and health related issues of patients. There was lack of organization, patients not sticking to consultation timings, language barriers especially with patients, subordinates resisting supervision, high teenage pregnancies and high prevalence of HIV/AIDS among patients.

Subthemes emerged were as follows:

'Shortage of staff' was one of the issues highlighted by most of the nurses. At times doctors and nurses were overloaded with patients. The following statements affirm the above information.

"*Many challenges like shortage of doctors, also shortage of nurses, it's also a problem".*

"*You won't see any MOs, maybe for a week and I don't think that makes us work freely*". (Nurse)

"Like, we are less staffed". (Nurse)

"Shortage of staffing, doctor wise compared to the patient load. I think that's all about it". (Doctor)

"Mdantsane is itself a big referral hospital, all that, we are overloaded". (Nurse)

Other challenges dealt with **organizational problems** as illustrated by the following quote:

"*Ah…anyway as I was here, as such, we are not organised*". (Doctor)

"*it relates also to our disorganisation".* (Doctor)

Lack of supervision

"Since I am working as a supervisor, some of my subordinates are little bit giving problems. I think they are not used to being supervised strictly." (Doctor)

Staff attitude

The majority of the health professionals experienced staff attitude problems. Doctors had a problem with the nursing staff and vice versa too which is reflected in the following quotes:

"*Ai.. I 've experienced challenges with nursing, the nursing staff, between Doctors versus the nursing staff"*. (Doctor)

"*Ah…going to the nursing staff, also they are not, I think they just at some times compared to other places I've worked in". ya, I think it's an Eastern Cape Syndrome basically. People like to do what they like to do*". (Doctor)

One of the nurses reported on doctors' attitude:

"*and also problem of doctors. They will just leave with interns here and then it is us nurses dealing with those interns as if we are consultants".* (Nurse)

The other challenge highlighted was with regard to patient related issues unable to stick to appointment and follow up dates, HIV and GPH related complications and language barriers

Appointment failure

The doctors agreed that patients failed to stick to their appointment timings despite the booking them. This is illustrated by the following quotes:

> *"I'll say our patients as well, they don't stick to the time that we've allocated them on the days. Sometimes they don't come to, they don't come in time enough when they've got problems despite being informed that they can come to hospital anytime when you are not feeling well or your baby, you think the baby is not moving".* (Doctor)
>
> '*Hence if we were to introduce a booking system, it would have a challenge*". (Doctor)
>
> *"Some of them don't keep their follow up dates*". (Nurse)

HIV & Gestational Proteinuria Hypertension

The two common maladies described by the nurses were HIV and GPH that were prevalent in the patients.

> "*Yes, in our province, that is the Eastern Cape, we have got, I think a lot of GPH i.e., Gestational Proteinuria Hypertension*". (Nurse)
>
> *"There is more HIV now*". (Nurse)
>
> "*Especially HIV, PMTCT that is one group and the second one is hypertension in pregnancy*". (Doctor)

Communication and language barriers

Among the doctors, one of them expressed his problem of communicating with the patients.

> *"Communication, especially regional language barrier especially with patients. And not always a nurse is present to translate*" (Doctor)

Lack of equipment

"Equipment, it is shortage and disposal umm...note all kinds of consumables, all kinds" (Doctor)

4.3.3 Challenges experienced by mothers while attending ANC

Subthemes that emerged from challenges experienced by mothers were as follows: namely economic challenges, health challenges, social issues and ignorance. Lengthy waiting times and language barriers frustrated the mothers. There was an agreement among the health professionals that language could be seen as a barrier. A major challenge noted among one of the doctors was inability to articulate and convey in the same language as of the mothers i. e, Xhosa.

Economic challenges

Socio-economic challenges impact negatively on accessibility of services, mainly due to lack of or shortage of financial resources. Although PMTCT, ANC services are free for the pregnant mothers, majority of them are poor and solely depend on child grant for survival. There was some thematic analysis done and it was evident from the following quotes that poverty and unemployment was highlighted amongst other problems. Financial and transportation problems were also other compounding factors.

"*Maybe its financial problems, they will tell us that they didn't have money to come here*". (Nurse)

"Most of them are not working". (Nurse)

"*Some they have got to move a long distance to come here. We are a referral center both locally around Mdantsane and also in the region. People come as far as Queenstown and Strerkspruit to come here. So it is distance*". (Doctor)

Health issues

All the health professionals were in unison with the health issues of pregnant mothers. For example:

> "*As I have said so, Gestational Proteinuria Hypertension, Gestational Diabetes, HIV and of late we are getting most of the woman with psychotic disorders*". (Nurse)

Social issues

Social issues perceived included neglect and unwanted pregnancies. For example:

> "*Lots of social issues like unwanted pregnancies and neglect from either neglected patients or mothers neglecting their pregnancies and their babies".* (Doctor)
>
> "*It is the teenage pregnancy*". (Doctor)
>
> *"It is also the support from their family and spouses. I think it is a challenge for our patients".* (Doctor)

Ignorance

It was well established that lack of knowledge about health condition prevented women from accessing health centers.

> *"They don't have knowledge about their condition, maybe from the clinics they did not explain properly about their condition because they will be referred maybe for high BP and they will come after referral. So they don't have knowledge about their condition*". (Nurse)
>
> "*They don't think it is a need to come early*". (Doctor)

Waiting periods

Lengthy waiting times and the language barrier were identified as apparent problems.

> "*I mean they wait a long time*". (Doctor)
>
> "*The waiting time is long and they don't get maybe lunch or breakfast from the hospital whilst they are waiting*". (Nurse)

"I think they also get frustrated with the language barrier because they can't speak English and they getting irritated with us as we can't speak Xhosa." (Doctor)

4.3.4 Common pregnancy related complications in mothers

The common maladies noted following pregnancy related complications were gestational proteinuria, gestational diabetes and HIV. This is evident as reported by the nurses and doctors:

"*It is GPH i. e, gestational proteinuria hypertension which is a dangerous problem in pregnancy. This one and also diabetes".* (Nurse)

"*Yes, in our province, that is the Eastern Cape, we have got, I think a lot of GPH i. e, gestational proteinuria hypertension".* (Doctor)

"If we say hypertension, just hypertension in pregnancy, not the chronic ones but we just have got hypertension in pregnancy. Actually if we go to the antenatal ward, half of the patients have got hypertension". (Doctor)

4.3.5 Role of physiotherapy in ANC

The theme "role of physiotherapy in ANC" is about promoting physiotherapy as a service to the pregnant mothers attending the antenatal clinic. All three nurses asserted that exercise is very vital and should therefore be offered by the physiotherapists to the pregnant women. Examples of the statements:

"*Exercises during pregnancy are very good. The women who are exercising during pregnancy are easy to deliver because they know the exercise, the position, and as they are exercising, they can easily take in instructions during delivery, for example, when you say breathe in for a moment and push out for a long time*." (Nurse)

"*Another thing a woman who is not exercising, they have got a tendency of having cramps when they are on the lithotomy position than when a woman is exercising*." (Nurse)

"Some antenatal exercises which are good when the patients are delivering help them to because when they are delivering, they are using maybe legs, so those exercises will help then to those joints to stretch, yes stretch the joints". (Nurse)

However doctors were not knowledgeable about what physiotherapists could offer during ANC even though they were aware of Physiotherapists. For example:

"I think antenatal, there is not much that I think you can offer. Postnatally, though it may be, actually my lack of information about your profession". (Doctor)

"*Don't really know. I am well aware of what physios do and I don't know how appropriate it is in the setting. I haven't seen a practice here before and with this place being my only experience of antenatal clinic, ya it's never been suggested. I have never seen physios in the ANC".* (Doctor)

4.4 Conclusion

Cross tabulations, Pearson Chi-square were employed to determine the factors required for the use of physiotherapy antenatal services. The variables that were found to be significantly influencing utilization of antenatal physiotherapy services were the following: age of the mother, accessibility of the service, adequate source of information from the antenatal clinics, attendance of physiotherapy educational programs. This chapter outlined the results of the statistical analysis that attempted to answer the research objectives. These results will be discussed in the next chapter.

CHAPTER FIVE

DISCUSSION OF THE RESULTS

5.1 Introduction

Maternal mortality is a major challenge for developing countries. Most of these mortalities are preventable through access to and utilization of maternal health care services, as evidenced by many studies (Phafoli et al., 2007; Babalola & Fatusi, 2009). However, certain factors have been documented to affect access to and utilization of such services (Mekonnen & Mekonnen, 2002). In this study both qualitative and quantitative data were collected. This chapter discusses the findings of the study that was aimed at establishing mother's awareness of antenatal physiotherapy services and the factors influencing utilization of such services in the antenatal clinics of the Eastern Cape.

5.2 Awareness of antenatal services

The level of awareness of antenatal services in this study is very high (90%). It is in agreement with findings from the South African demographic health survey (SADHS, 2003). Women's lack of awareness pertains to issues around lack of knowledge about a particular service. In this study, most of the mothers (90%) were aware of antenatal services offered at the antenatal clinic. It is interesting to note that the majority of the mothers who were aware of antenatal services in general were not aware of physiotherapy services (35.5%). Again it is evident that those who were aware of the various services available in the antenatal clinic also utilized them. A similar study by Sangal et. al (2013) concluded that knowledge was related to utilization of services. Therefore knowledge about a service is a very vital factor in determining utilization.

The high rate of awareness about the various antenatal services in this study could possibly be due to the source of dissemination of information and educational programs offered at the antenatal clinics. The Philani Mentor Mother program is a project undertaken in the Eastern Cape with the hope of empowering rural women. Another program is the PMTCT counseling services which encourages mothers to go for screening, counseling and treatment sessions. The antenatal clinics around Mdantsane have implemented the (BANC) Basic Antenatal Care Package but its practice according to the BANC guidelines is questionable. Pattinson (2005) specifies that at each visit, pregnant women must be adequately ensured care and any problems identified are acted upon. Furthermore, the WHO is committed to achieving the Millennium Development Goal (MDG) of reducing by three quarters the number of maternal deaths during pregnancy and child mortality between 1990 and 2015 (WHO, 2004b). Since the declaration, the WHO has accelerated efforts in addressing the threats to maternal deaths. In line with meeting this goal, South Africa has the Safe Motherhood initiative.

Over one third of respondents (35.5%) were aware of physiotherapy services. Midwives and nurses were the main sources of information (31.13%) of antenatal services. This was followed by family or friends who make up 0.35% of the source of information. Previous findings (Oye-Adeniran et al., 2006) and Bbaale (2011) concluded the same. It was stressed that knowledge and positive attitudes towards an intervention or a new practice by a target group are among the key determinants for adoption (Lwelamira et al., 2012). When participants were asked if they are aware of physiotherapy in relation to antenatal care, overwhelming majority (64.5%) indicated not aware and over 35.5% were aware.

On the contrary, although the above mentioned programs are in place, it is evident in the results that accessibility, the level of lack of awareness of antenatal physiotherapy services was high (70%). The number of mothers that were not aware of Physiotherapy services was significantly associated with utilization. This definitely calls for concerted efforts with regard

to information sharing in rural areas. As part of the health sector reforms, the (ECDOH) Eastern Cape Department of Health has tried to ensure sufficient health professionals in the rural areas to improve service delivery. Unfortunately, although these are available, the confidential report by the integrated support team (2009) identified limited service delivery by the Eastern Cape health system with the district health system becoming fragmented and lacking energy (ECDOH: IST, 2009).

5.3 Factors influencing awareness of antenatal services

Moreover, awareness of the antenatal services was associated with the educational level of the mothers. All of the mothers with a tertiary qualification were aware of the antenatal services as compared to the 84.8% mothers who had primary education. This finding therefore highlights the need for awareness to be focused with mothers with lower educational levels.

Antenatal awareness about the different services was also associated with the source provided from the antenatal clinics. It is important for pregnant women to get health care information so that they know how to prevent complications and where to seek assistance in cases of emergency. Information in this study related to health practices during pregnancy like education on personal hygiene, relevance of exercises to mention a few. A notable high number of participants, 242 out of 258, agreed that they received health information on health practice. However, the majority of the mothers (81.0%) did not receive or attend a physiotherapy health educational talk. This could be attributed to the fact that only 13.2% of the mothers were informed about physiotherapy services. Therefore it was concluded that the health professionals working in the antenatal clinic were the main portals for the source of information.

5.4 Antenatal attendance

Although a very high proportion of participants (53.9%) attended antenatal classes and health educational talks (93.8%), the awareness of physiotherapy services highly influenced the utilization of antenatal physiotherapy services. This finding is in agreement with the study among obstetricians in Nigeria (Oduniya et al., 2013). The authors specify the inclusion of physiotherapy services in obstetrics and gynecology as pivotal to improving maternal service delivery.

However, it is important to educate mothers about the various antenatal services including physiotherapy while they attend the antenatal clinics in order to raise their awareness about physiotherapy. Similarly Pell et al. (2013) has argued that contact with health care professionals during pregnancy can increase women's likelihood of attendance of ANC. Health staffs providing antenatal classes have authority and women tend to place their trust in them. Therefore, messages about when to attend ANC communicated by health staff seemingly influence ANC attendance. In addition, a woman's positive previous experience with health care professionals can also create confidence in and acquaintance with health care services, so that they may be more likely to use maternal health services.

The WHO recommends that women have at least four antenatal visits, starting in the first three months of pregnancy. Women in the study made more than the required four targeted visits. The finding implies that more visits made, added more workload and wasted the already scarce resources as the other visits had no impact at all. However more than necessary visits by women may be due to lack of women orientation as the staff providing ANC was not oriented as well. According to the Safe motherhood project, the antenatal visits give health professionals the opportunity to educate women about their diet and healthy behaviors. Studies by van Eijk et al. (2006) in rural western Kenya, showed how few women (14%) attended a health talk and other essential topics such as delivery, making an individual

birth plan, family planning, malaria and HIV/AIDS prevention received little attention. Antenatal care should be utilized to inform mothers about the warning signs, importance of post natal services (Nankwanga, 2010).

5.5 Utilization of antenatal services

With proactive maternal services engaged in the rural communities, antenatal care can be addressed. Treatment during pregnancy entailed giving iron and folic acid tablets and others. 92.2% of the participants reported receiving iron tablets for pregnancy. The iron concentration falls naturally in mid-pregnancy. The use of iron tablets by pregnant women serves as prophylaxis to anemia. A WHO systematic review of causes of maternal deaths reported anemia as a direct cause of maternal deaths in 3.7 % of cases in Africa and 12.8% in Asia (Kongnyuy & van den Broek 2007).

Among the antenatal services (Immunization, family planning, health education, physiotherapy, treatment and physical examination of the mother) that were utilized by the women, physiotherapy was found to be the least utilized healthcare service (21%). The hospitals management and the physiotherapists themselves have to put in more effort to create awareness of physiotherapy, among the community so that this vital service could be utilized by many of the mothers. Therefore, maternal health requires prioritization in order to curb the maternal mortality rates. Therefore all health professionals have a primary goal in educating the communities about antenatal care.

Physiotherapists have a vital role in women's health promotion activities and programs some of which include back care programs and continence programs. The role of physiotherapists is defined not only in terms of curative, but preventive, restorative and rehabilitative aspects.

A community-based safe motherhood intervention has proved to be effective in promoting utilization of antenatal care (Munshi et al., 2010). According to the results of this study, 90%

of the participants attended antenatal services i.e., more mothers did utilize antenatal services from the hospital yet physiotherapy was found to be the least utilized service in the antenatal clinic. The role of physiotherapists in obstetrics and gynecology is pivotal as noted by Oduniya et. al (2013). However, utilization of their capabilities depends on the cooperation of other health professionals in discharging their services to patients.

This study found certain factors that could be regarded as barriers to utilization of antenatal services. One of the main reasons for non-attendance was highlighted by the mothers in this study as lack of awareness and lack of information. The other factors which influenced utilization will be discussed below.

As discussed in the literature review, the relationship between mother's age and utilization of antenatal services is often contradictory (Burgard, 2004). Studies in rural Bangladesh, have reported a significant association between age and MHCS utilization (Chakraborty et al., 2003, Ikeako et al., 2006). Others have shown no such association (Nissar, 2003, Chandhioek et al., 2006). This study found a curvilinear relationship between the two variables where women in the middle ages (24-34 years) are more likely to utilize antenatal physiotherapy services compared to women in early (<20 years) or late (>35 years) ages. The low level of utilization recorded among older women may be due to increased experience in pregnancy and childbearing whereas among the younger teenagers it may be due to the feeling of being neglected or even denial of being pregnant. This is also evident from the qualitative analysis where the doctors and nurses stated that teenage pregnancies were high and prevalent in the Eastern Cape. Another interesting reason stated was that of financial problems, despite the fact that antenatal care in the public sector has been provided free of charge in South Africa since 1995 (Sibeko & Moodley 2006).

Physical accessibility was an important variable that was found associated with utilization of maternal health service (Chakraborthy et al., 2002). In a study of determinants of the utilization of maternal and child health services in Jordan, physical accessibility was an important variable that was found to be associated with utilization of maternal and child health services (Chakraborty et al., 2002). Similarly this study, found a statistically significant relationship between distance and utilization of postnatal services. Phafoli et. al studies (2007) concur that distance to the health facility should be reasonable. A distance of about five to ten kilometers is recommended according to WHO standards.

There is a health benefit to mothers when they get access to written and oral information during pregnancy and delivery. Male participation also appears to have an important role during pregnancy and child birth in support for reproductive health activities was low and yet valued as important by women. Women having access to media were well informed as compared to their counterparts with no information. This is evidenced in a study in Uganda (Bbaale, 2011). A review of maternity skilled care showed that the increase of maternal care services provided by health professionals was more in urban areas as compared with rural areas (Mullany et al., 2007). So it is imperative for general practitioners to understand the role of antenatal care and to refer pregnant women appropriately (Sibeko & Moodley, 2006). Furthermore, the extent of utilization of physiotherapy services by the gynecologists depends on their knowledge and attitude towards physiotherapists. Odunaiya et. al (2011) points out that physiotherapy in Nigeria operates on a referral system, so the utilization depends on the attitudes of the physicians towards physiotherapy.

Poor care would be expected to negatively affect women's willingness to visit a health facility. Inadequate quality as a primary cause of women's underutilization of health services (Nankwanga, 2010). Pregnant women attending the antenatal clinic of CMH perceived the antenatal care as satisfactory. Although 98.1% of the respondents indicated that they were

satisfied with the overall maternity health services at the hospital, 2 % reported that they were dissatisfied. Those who were dissatisfied gave the following reasons: service delivery problems (63.6%), staff attitudes, lack of education (18.2%) and transportation problems. Service delivery problems were related to language barriers with health professionals, long waiting hours, complaints about overcrowding in the wards. The findings are consistent with SADHS (2013). Dissatisfaction with public hospitals and clinics are highest in the provinces of Gauteng and Eastern Cape. Although the findings in this study cannot be regarded as trivial, more attention should be paid to the quality of services provided.

According to Starfield (1992), as cited by Nankwanga (2010), patient satisfaction can be improved by more overall communication, especially by social conversation, positive feelings, partnership-building conversation and positive talks with the patients. There should be strategies to bridge the gap between the service providers and the mothers in the hospital, thus enhancing client's satisfaction as suggested by Starfield (1992) which include overall communication strategies, especially social conversation, positive feelings, partnership-building conversation and positive talks with the patients. Furthermore, the education will also improve women's access to care by increasing their access to information, thereby enhancing their self-esteem, and increasing their ability to adopt new health concepts and practices and participate as equals in client-provider interactions.

5.6 Health professional's awareness of physiotherapy

The qualitative analysis in this study revealed some of the challenges experienced while working in the antenatal clinic as health professionals. These were in terms of the time factor, the language barriers and shortage of staff, poor infrastructure in terms of equipment and dissatisfaction working in the public hospital. The key issue during childbirth is the attendance of a skilled birth attendant (SBA). According to WHO, "a skilled birth attendant" refers to a health professional such as a midwife, doctor or Nurse, who is trained and

competent in the skills needed to manage normal childbirth and the immediate postnatal period, and who can identify complications and, as necessary, provide emergency management and/or refer the case to a higher level of health care". The United Nations has called on all countries to increase their efforts toward skilled birth attendance and set targets of 80% coverage by 2005, 85% by 2010, and 90% by 2015. However, WHO suggests that in countries with very high MMR, the goal should be at least 40% of all births assisted by SBAs by 2005, 50% by 2010 and 60% by 2015. All the health professionals asserted the value of CPD (continuous professional development) in-service to keep updated with knowledge and skills. Maintenance of competence includes participation in ongoing professional development to maintain and improve knowledge, skills relevant to practice in a clinical setting. Ross et. al (2013) has argued that one of the key frustrations reported by nurses was the lack of appropriate and accessible professional education.

Another problem identified by the health professionals (HPs) were the difficulty perceived in managing some of the conditions of pregnancy like hypertension in pregnancy, HIV and Gestational Proteinuria Hypertension (GPH). This is one of the leading causes of death in S.A. The management of these conditions is provided in the guidelines for maternity care by the SA Department of Health (2002) as well as in the BANC handbook by Pattinson (2005). Hypertensive disorders are the most frequent direct causes of maternal mortality in S.A. This important fact should be remembered when pregnant women are provided with information and education during visits for antenatal care. Early detection and timely intervention is very essential to prevent maternal and perinatal mortality (Dept. of Health, 2002). HIV positive pregnant women require routine antenatal care, including counseling on infant feeding options, family planning and contraceptive measures. Some other some of the common pregnancy maladies identified were gestational hypertension, HIV infections and GPH. Surprisingly teenage pregnancies were also reported as being high and often the

psychological support from families was low resulting in psychosis. People who provided support (psychological) were the biological mothers and sisters of the single mothers and for the married mothers, the mother in law and husbands seemed to be the major sources of support. The support during pregnancy has been associated with positive pregnancy outcomes (Buultjens et al., 2013). It is noted that women with adequate coping resources, a supportive family and peer environment, a stable sympathetic partner, and access to well-designed intervention programs can resolve their problems and adjust better. It is therefore important that the health care system also provide support to these pregnant mothers by offering women friendly services like the Lusaka model, where mothers will be cared for by well-trained health professionals who will offer education and counseling which can erase their pain. As such, physiotherapists can intervene in the antenatal clinic.

Contrary to the survey findings, the qualitative data revealed a negative perception about the antenatal care. A shortage of human resources was cited by the health professionals as a major obstacle. This is a challenging problem that needs to be addressed. Lack of proper infrastructure for providing ANC compared to the standards was also cited. However the expressed satisfaction in the survey could either mean lack of knowledge by the pregnant women on what care they could expect at the antenatal clinic or are satisfied with care because they want to please the interviewer.

The quantitative analysis showed that the pregnant women had to wait in the antenatal clinic for a long time due to lack of proper structure within the health system. In agreement with the finding, studies in other countries like Malawi revealed that the quality of ANC in most public health facilities is affected by lack necessary equipment and resources compared to private facilities. (Mgawadere, n.d). Findings also revealed that there was no proper referral system of antenatal women. Majority of the doctors working in the antenatal clinic were

unsure of the role of physiotherapists in the antenatal clinic unlike the nurses who specified the importance of antenatal exercises.

5.7 Study limitations

The study was done in the antenatal clinic of CMH, Mdantsane, and can therefore not be generalised for other clinics and private hospitals. Moreover, the study was limited by the area of study (antenatal clinic, CMH) due to lack of sufficient funds to collect data in the rural areas of Eastern Cape.

5.8 Conclusion of the study

The utilization of physiotherapy services with regard to antenatal care in CMH, Mdantsane, was low. Only 35.5 % of the pregnant mothers availed the physiotherapy antenatal services. Antenatal physiotherapy services ranked the least among services offered at the antenatal clinic. The significant factors that were found to influence utilization of physiotherapy antenatal services in CMH include the following: awareness of the service among pregnant mothers, reproductive age of the mothers (15-45 years), accessibility of physiotherapy services and in general the source of information about the service. In addition to the above, knowledge and perceptions among the health professionals working in the antenatal clinics about the role of physiotherapy in antenatal care also contributed to the proper utilization of physiotherapy services in the antenatal clinic.

The role of physiotherapy was not fully understood in the context of pregnancy. In short, doctors were not referring such cases to the physiotherapists and nurses were not getting time to educate the mothers about the relevance of physiotherapy in pregnancy. Lack of knowledge on the importance of Physiotherapy in antenatal care in this study was evidenced while interviewing the doctors.

In summary, antenatal education through emphasis of exercises was the main recommendation as it repeatedly appeared in all the transcripts. Physiotherapists need to continue reinforcing the use of health advocacy and health education

CHAPTER SIX

RECOMMENDATIONS

6.1 Introduction

This chapter outlines the recommendations made to improve physiotherapy services in the antenatal period.

6.2 Recommendations

The study highlighted the poor utilization of physiotherapy services in the antenatal clinics of CMH. Only one third of the pregnant women (35.5%) received physiotherapy services. It is important to ascertain further why antenatal physiotherapy services are low. Antenatal physiotherapy ranked least among the antenatal services offered in the antenatal clinic. The significant factors that were found to poor utilisation of physiotherapy services in CMH hospital include: awareness of services; long distance from the health facilities; employment; education; quality of services; cultural beliefs; waiting time; lack of somebody to look after the children at home.

Awareness should be created in the community to motivate pregnant women to attend antenatal care as well as physiotherapy. However, physiotherapy services should be available in the rural areas. Underlying this is the need to uplift the socio economic status and literacy levels of women through community based education. In particular, there is need to increase education on nutritional issues, appropriate food, importance of exercises and recognising the danger signs in pregnancy.

Overall findings show that antenatal services were provided in CMH but there were gaps in terms of facilities, shortage of doctors and nurses, size of room, service delivery problems etc. These gaps need to be addressed in order to improve the quality of care rendered to

pregnant women. Improvement of facilities can be a strategy for retention of health professional staffs. Extensive recruitment of nursing and medical staff has to be done by the district health system to abate the shortage.

Based on the results of the study, the following recommendations for improving antenatal services were made

- **Establishment of awareness campaigns**

Awareness campaigns need to be conducted by multidisciplinary teams to promote women's health through outreach programmes, use of radio and broadcasting messages and educational sessions targeting the whole community. Husbands, families and communities also need to be empowered in the antenatal and postnatal care.

- **Improvement of staff resources and material**

The performance of newly qualified professional nurses as well as junior doctors was impacted negatively by staff shortages and shortage of medications. Therefore, the staff should be increased depending upon the work load and the opportunity for home visits should be enhanced. Antenatal clinic should be well equipped to render efficient quality services.

- **Criteria for physiotherapy referral system**

There must be established criteria for referral system. Professional nurses and doctors must be able to refer pregnant mothers for the appropriate musculoskeletal problems experienced during pregnancy. High risk mothers should be monitored frequently.

- **Strengthening of skills development**

All health professionals should be given all the necessary skills to execute a holistic approach. Staff should be encouraged to update their skills and knowledge through courses, in services, workshops, seminars and congresses.

- **Recommendation to the Department of Health (Eastern Cape)**

In order to improve maternal health services, a multidisciplinary health team including the doctors, midwives, nurses, social workers, physiotherapists, and dieticians should promote health education in the surrounding clinics and communities.

The health department has to make a comprehensive plan to overcome information related barriers by increasing the women's understanding and awareness of the need to antenatal care services. In addition, women should also be educated about the risks they face, signs of danger and their right and the need to have decision-making powers over their own health.

The health department should ensure that all health facilities offer high quality services. This requires health systems to have an adequate trained staff, a regular supply of drugs, equipment, and other supplies.

In addition to the above, the health department should enforce standards and protocols for service delivery by prioritising maternal education at least up to secondary level, providing opportunities for employment and poverty eradication measures

- **Recommendation to the hospital management**

The hospital authorities can ensure that services are provided with privacy, respect and responsive to women's needs, preferences, and cultural beliefs. This can be done through strengthening mechanisms to evaluate the quality of services through patient satisfaction surveys where both the clients and the providers are incorporated.

The physiotherapy department within the hospital should be providing antenatal physiotherapy services. This implies displaying educational information and guidelines on antenatal care and exercises. This would possibly and consequently boost the use of physiotherapy services in the antenatal clinics.

- **Recommendation for the health professionals**

The health professionals should inform pregnant mothers during their antenatal visits about physiotherapy and encourage them to avail the services. The health professionals need to provide information that is culturally appropriate in a plain and simple language. They will also need to respect the cultural and traditional values of the community.

Physiotherapists should have regular health educational talks in the antenatal clinics. In addition, educational materials, pamphlets should be distributed specifying the importance of antenatal care and exercises. Quality assurance meeting and quality circle meetings should be frequently organised where physiotherapists can provide valuable information and insight on pregnancy specific issues and back classes. Physiotherapists have to advocate health promotion programs and strife for promoting their profession. In doing so, it will enhance the quality of the services from the user's perspective.

Health promotion needs to be organised in the form of campaigns, educational talks and workshops. Community based out reaches in the form of mobile clinics can be advantageous for the rural and economically disadvantaged communities.

6.3 Further research

Further research can be done on the following aspects:

- A comparative study involving pregnant women in order to investigate their views about ante-natal care services and postnatal services
- A study of the same nature to be replicated in other regions of South Africa taking into consideration the private health sector.

6.4 Conclusions

This chapter has provided the possible recommendations that could be used by the Department of health, the hospitals' management and the health professionals to improve

physiotherapy in the antenatal clinic. It is important however for the health professionals to understand the barriers that hinder women from utilising such services. It also requires health professionals to take into account the bio psychosocial model of viewing women's health related problems.

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APPENDICES

Appendix A: ENGLISH INFORMATION SHEET

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
E-mail: mwarner@uwc.ac.za

INFORMATION SHEET

Dear Mother,

Project title: The awareness of Physiotherapy interventions among pregnant females in the antenatal clinic, Buffalo City Municipality, Eastern Cape, South Africa.

What is this study about?

This is a research project being conducted by **Mrs Merly Sajan** from the University of the Western Cape. We are inviting you to participate in this research because physiotherapy as a service seems to be underutilised during pregnancy. Physiotherapists have a very important role to play during the antenatal period of pregnancy. Physiotherapists can address issues with regard to low back pain, instruct in exercises to address weakness and muscle imbalance and provide guidance and instruction related to modifications of activities of daily living. The aim of this project is thus to explore the awareness of physiotherapy interventions among pregnant mothers, identify some of the reasons for nonattendance of physiotherapy and hence suggest measures to improve the service delivery of Physiotherapy service.

What shall I be asked to do if I participate?

The study will be carried out in the Ante natal clinic during November/December 2012 while waiting for the doctor's appointment call. Mothers will be asked to fill in a questionnaire depending on the language of preference: English or Xhosa. The maximum duration of this

survey will be 15-20 minutes. A few basic questions and general questions with regard to pregnancy and physiotherapy will be required.

Would my participation in this study be kept confidential?

We will do our best to keep your personal information confidential. Your confidentiality will be protected as your name will not appear on data capture sheet. If we write a report or article about this research project, your identity will be protected to the maximum extent possible.

What are the risks of this research?

There are no known risks associated with participating in this research project.

What are the benefits of this research?

The outcome of this research will prove valuable for the promotion of Physiotherapy as a service during pregnancy. In addition you will benefit from an exercise program designed for the antenatal class by a Physiotherapist.

Do I have to be in this research and stop participating at any time?

Your participation in this study is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you qualify to obtain.

What if I have questions?

This research is being conducted by Merly Sajan, Masters in Physiotherapy Student, at the University of the Western Cape. If you have any questions about the research itself, please contact:

Mrs. Merly Sajan @ Department of Physiotherapy, Cecilia Makiwane Hospital

Mobile: 0768139104

E-mail: merly77@yahoo.com

If you have any questions regarding this study and your rights as a research participant or you wish to report any problems that you have experienced related to the study, please contact:

Head of Physiotherapy Department: Prof Julie Phillips

Faculty of Community and Health Sciences

University of the Western Cape

Private Bag X 17,

Bellville 7535

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.

Appendix B. ISIXHOSA INFORMATION SHEET

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
E-mail: mwarner@uwc.ac.za

IPHEPHA LE NCUKACHA

Umama endimthandayo,

Igama le project: Ukwazisa amakhosikazi akhulelweyo ekliniki yabantu abalindele ukubeleka ngongenelelo physiotherapy (ukulolongwa komzimba), uMasipala we Buffalo City, Empuma Koloni, Mzantsi Afrika.

Esisifundo simayelana nantoni?

Oluphando lweproject eyenziwa ngu Nksk. Merly Sajan osuka eDyunivesiti yase Ntshona Koloni. Sinimema ukuba nithathe inxaxheba koluphando kuba iphysiotherapy ayisetyenziswa kubantu abakhulelweyo, bekumele iyasetyenziswa. Iiphysiotherapist (abalolongi bemizimba) banendima enkulu bayidlalayo kubantu ngexesha bakhulelweyo. Abalolongi bemizimba (physiotherapists) banceda kuzinqe ezibuhlungu, babonisa nemithambo(exercises) yemisipha nokubonisa imisebenzi esiyenza yonke imihla. Injongo yaleproject kukubonisa indima yephysiotherapy komama abakhulelweyo, ukujonga izizathu zokuba iphysiotherapy ingabikho. Kungoko sicebisa amanyathelo okuphucula iinkonzo zephysiotherapy.

Ndizakubuzwa ntoni ukuba ndithatha inxaxheba?

Oluphado luza kwenziwa ekliniki yomama bakhulelweyo ngoNovember/December 2012 xa nisalindele ukubizwa ngoo Gqirha. Omama bazakucelwa ukuba bagcwalise iphepha lemibuzo, kuxhomekeke kulwimi abazokulikhetha,Isixhosa okanye Isingesi. Ixesha

alizokugqitha kwimizuzu 15-20. Kuzobuzwa imibuzo embalwa mayelana nokukhulelwa kunye nephysiotherapy.

Ukuthatha kwam inxaxheba koluphando lungagcinwa luyimfihlo?

Sizakwenza ngako nkonke esinako ukugcina incukacha zakho ziyimfihlo. Igama lakho liyakukhuselwa, alizovela kuphepha ndaba,xa sizakubala iingxelo ngoluphando, igama lakho liyakukhuselwa ngako konke.

Yintoni umngcipheko ngoluphando?

Akukho mngcipheko onokuvela ekuthatheni inxaxheba koluphando.

Yintoni inzuzo koluphando?

Iziphumo zoluphando zizakuvezwa ukubaluleka kwephysiotherapy kubantu abakhulelweyo. Ukongeza uyakuzuza kwimithambo (exercises) eyenzelwe abantu abakhulelweyo elungiswe zi physiotherapists.

Ndanga ngenelela koluphando, ndiphinde ndiyeke nangaliphi ixesha?

Ukuthatha kwakho inxaxheba koluphando kukuzinikezela. Ungazikhethela ukungathathi ndawo. Ukuba ugqiba ekubeni ungathathi nxaxheba koluphando, ungayeka nanini na, okanye nangaliphi na ixesha, awuzukohlwaywa okanye ungafumani nzuzo obuzoyifumana.

Ukuba ndine mibuzo?

Oliphando lwenziwa ngu Merly Sajan, umfundi owenza imfundo enomsila kwiMasters, eDyunivesiti yase Ntshona Koloni. Ukuba unemibuzo mayelana noluphando, nceda qhakamshelana no Nksk. Merly Sajan kwisebe lephysiotherapy esibedlele eCecilia Makiwane Hospital.

Imfonomfono: 076 8139 104

Email: merly77@yahoo.com

Ukuba unemibuzo mayelana noluphando kunye namalungelo wakho njengomphandi othatha inxaxheba okanye ukwazisa nayiphina ingxaki ozifumeneyo mayelana noluphando, nceda qhakamshelana :

Umphathi oyintloko yesebe lephysiotherapy:

Prof Julie Philips

Iphondo leCommunity and Health Science

Dyunivesiti yase Ntshona Koloni

Private bag x17

Bellville

7535

Oluphando lupasisiwe yiDyunivesiti yase Ntshona Koloni, Senate Research Committee and Ethics committee.

Appendix C: CONSENT FORM: ENGLISH

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
E-mail: mwarner@uwc.ac.za

CONSENT FORM

Dear mother,

Title of the research Project: The awareness of Physiotherapy interventions among pregnant mothers in the antenatal clinics, Buffalo City Municipality, Eastern Cape, South Africa.

The study has been described to me in language that I understand and I freely and voluntary give consent to participate in the research project. My questions about study have been answered. I understand that my identity will not be disclosed and that I have the right to withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

Mother's name: ……
Mother's signature: …….
Date: ……..

If you have any questions regarding this study or wish to report any problems that you have experienced related to the study, please contact the study coordinator:

Study Coordinator's Name: Prof J. Philips
University of the Western Cape
Private Bag X 17, Bellville 7535
Telephone: (021)959-2542
E-mail: jphillips@uwc.ac.zav
Principal Researcher: Mrs. Merly Sajan
E-mail: merly77@yahoo.com
Postgraduate student, Physiotherapy Department

Appendix D: CONSENT FORM ISIXHOSA

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
E-mail: mwarner@uwc.ac.za

IPHEPHA LESIVUMELWANO

Mama endimthandayo

Igama le project: ukwazisa kwamakhosikazi akhulelweyo, iklinic yabantu abalindeleyo ukubeleka ngongenelelo lwe physiotherapy (ugrirha wokolula amalungu omzimba) kumasipali wase Buffalo City e Mpumakoloni e Mzantsi Africa.

Oluphando lichaziweyo kum ngolwimi endiluqondayo, yaye ndinika isivumelwano ngokukhululekileyo nokuzinikezela. Imibuzo yam mayela noluphando iphendulwe ndiyaqonda ukuthi amagama am akazovezwa, yaye ndinelungelo lokurhoxa ndinganikanga sizathu naninina. Yaye ayizokundichaphazela nangeyiphi indlela.

Igama lomama ……..

Ukutyikitya kamama ……

Umhla …….

Ukuba unemibuzo malungo noluphando okanye unqwenela ukuchaza ingxaki mayelana noluphando, nceda ugqangamshele:

Study Coordinator's Name: Prof J. Phillips

University of the Western Cape

Private Bag X 17, Bellville 7535

Telephone: (021)959-2542

E-mail: jphillips@uwc.ac.za

Principal Researcher: Mrs Merly Sajan

E-mail: merly77@yahoo.com

Postgraduate student, Physiotherapy Department

Appendix E: QUESTIONNAIRE: ENGLISH

QUESTIONNAIRE ON UTILISATION OF PHYSIOTHERAPY SERVICES DURING PREGNANCY

- This questionnaire is about utilisation of physiotherapy antenatal services.
- This questionnaire is **completely voluntary**. You may choose not to participate or not to answer any specific question. You may skip any question you are not comfortable in answering.
- This questionnaire is **completely anonymous**. Please make no marks of any kind on the survey which could identify you individually.
- Composite data will be used to develop a health promotion programme.

INSTRUCTIONS

- Select only one response, unless instructed otherwise.

- Please tick the appropriate answer e.g. ∨ or circle one correct answer when indicated.

Thank you very much for your co-operation

ID code……

THE FOLLOWING QUESTIONS WHICH ARE IN 4 SECTIONS ASKS ABOUT YOUR:

Section 1: Demographic characteristics

Q1. a). Where do you live?

□ Within Mdatsane □ Outside Mdatsane □ East London

b). How far is that from hospital?

□ > 20 Km □ < 20Km

Q2. How old are you?

Age…….

Q3. What language do you speak?

□ Xhosa □ English □ Afrikaans

□ Other ……

Q4. What is your present marital status?

□ Married □ Single □ Separated/divorced

□ Living with partner □ Widow

Q5. What is the present occupation of your husband/ partner, if present?

□ None □ Self-employed □ Government employee

□ Private employee □ others (specify)…… □ Don't know

Section 2: Socio-economic information

Q6. What is the highest educational level you attained?

□ None □ Primary □ Secondary

□ University/tertiary institution □ other (specify)……..

Q7. What is your present occupation?

□ None □ Housewife □ Self employed

□ Government employee □ Private employee □ Living on Social grants

□ Others (specify)……

Q8. How much does it cost you to get to hospital?

□ Amount ……

Q9. Did you have to pay any fee for the antenatal services provided in the hospital?

□ Yes □ No

Q10. How difficult was it for you to find money to meet the cost of coming to the hospital?

□ Very difficult □ Quite difficult □ Not difficult

□ I did not try to find the money

Q11. a).How many pregnancies have you had in total?

Number……..

b).How may live births altogether?

Number……

Q12. Are all your children still alive?

□ Not applicable □ Yes □ No

Q13. Do you have a medical aid?

□ Yes □ No

Section 3: Awareness of antenatal care

Q14. a). Do you know about the antenatal services offered here at the hospital?

□ Yes □ No □ Not Sure

b). Are you aware of the following services offered at the hospital?

1. **Physical examination** □ Yes □ No
2. **Counselling** □ Yes □ No
3. **Vaccinations** □ Yes □ No

4.	**Health education**	□ Yes	□ No
5.	**Family planning services**	□ Yes	□ No
6.	**Breast education**	□ Yes	□ No
7.	**Physiotherapy**	□ Yes	□ No
8.	**PMTCT**	□ Yes	□ No
9.	**Antenatal classes**	□ Yes	□ No
10.	**Other(specify)**	□ Yes	□ No

Q15. How did you get to know about the above services?

(More than one could be ticked)

□ Doctor □ Midwife □ Nurse

□ Others (specify)..……

Q16. How many visits have you made to the antenatal clinic excluding today?

□ Number of visits……..

Q17. Have you received any of the following services? You can tick for more than one services attended.

1.	Antenatal classes	□ Yes	□ No
2.	Health education talks	□ Yes	□ No
3.	Folic acid and iron tablets	□ Yes	□ No
4.	Blood pressure	□ Yes	□ No
5.	Blood sugar level testing	□ Yes	□ No
6.	Urine testing	□ Yes	□ No
7.	Height & weight measure	□ Yes	□ No
8.	Ultrasound testing	□ Yes	□ No
9.	PAP smear testing	□ Yes	□ No
10.	PMTCT	□ Yes	□ No
11.	Manual palpation of the fundal height	□ Yes	□ No

Q18. Do you frequently experience any of the following?

Tick for more than one condition if experiencing

1.	Low Back Pain	□ Yes	□ No
2.	Increase frequency of going to the toilet to urinate	□ Yes	□ No
3.	Leg pains	□ Yes	□ No
4.	Swelling and oedema of legs	□ Yes	□ No
5.	Swelling of hands	□ Yes	□ No
6.	Tingling sensations of hands	□ Yes	□ No
7.	Headaches	□ Yes	□ No
8.	Muscular cramps	□ Yes	□ No
9.	Light headedness and tiredness	□ Yes	□ No
10.	Nasal stuffiness and chest problems	□ Yes	□ No

Q19. Do you have regular check-ups at hospital when you were pregnant?

□ Yes □ No

Q20 a).By what method do you prefer to deliver?

□ Normal vaginal delivery □Caesarean section □ Assisted vaginal delivery

b).If you already have a child, what was the mode of delivery of your last child?

□ Normal vaginal delivery □ Caesarean section □ Not applicable

Section 4: Utilisation of Physiotherapy services

Q21. What means of transport do you use to get to the hospital?

□ Walks □ Public transports (Bus, taxi and coombe)

□ Private vehicle □ Others (specify) train…….

Q22. a). Are you aware of the role of Physiotherapists here in the hospital?

□ Yes □ No

b). Is the Physiotherapy service accessible?

□ Yes □ No

Q23. Are you aware that the following conditions can be treated by Physiotherapists?

1. Low back pain	□ Yes	□ No
2. Swollen legs	□ Yes	□ No
3. Calf and muscular cramps	□ Yes	□ No
4. Chest and coughs	□ Yes	□ No
5. Neck pains	□ Yes	□ No
6. Thoracic pains	□ Yes	□ No
7. Tingling sensations in hands	□ Yes	□ No
8. Pelvic floor muscle weakness	□ Yes	□ No

Q24. Has a Doctor/Nurse informed you of the role of Physiotherapy during pregnancy?

□ Yes □ No

Q25. Would you go for physiotherapy services if it were recommended?

□ Yes □ No

Q26. Have you ever attended or been referred by a Doctor to Physiotherapy for any of the physical problems experienced during pregnancy?

□ Yes □ No

Q27. If you have attended physiotherapy services, what was your opinion of the services?

□ Not reliable □ Reliable □ Painful

□ Long waiting times □ No education provided

Q28. If you have never attended physiotherapy services during your pregnancy, please tick if below were your reasons for non-attendance. You can tick more than one option.

1. Have to attend to other family matters	□ Yes	□ No
2. Not aware	□ Yes	□ No
3. It is expensive	□ Yes	□ No
4. Beliefs	□ Yes	□ No
5. Do not stay in the area	□ Yes	□ No
6. Do not think it is necessary	□ Yes	□ No
7. No money for transport	□ Yes	□ No
8. Waiting time is too long	□ Yes	□ No
9. Takes time to get the folder from OPD	□ Yes	□ No
10. Have no one to live the children with	□ Yes	□ No
11.Previous experience like pain, boring with exercises	□ Yes	□ No
12. No health information was given to me	□ Yes	□ No
13. Other (specify)	□ Yes	□ No

Q29. a). Have you ever attended an educational talk where a Physiotherapist gave you information?

□ Yes □ No

b). If so, did you find the information useful?

□ Yes □ No □ Not applicable

Q30. a). How would you describe the overall general maternity services at the Antenatal clinic?

□ Very good □ Good □ Bad

□ Very bad

b).What was the attitude of the health care professionals?

□ Shouted at me □ They did not teach me well □ Examined me roughly

□ Did not come when called □ Good □ Other

(specify)……..

Q31. a). Do you have any comments to make about the quality of maternity services of the hospital?

□ Yes □ No

b).What is you comment? …….

Q32. Are there any cultural factors that prevent you from attending services?

□ Yes □ No

THANKYOU

Appendix F: QUESTIONNAIRE: ISIXHOSA

IMIBUZO NGOKUSETYENZISWA KWE PHYSIOTHERAPY XA UKHULELWE

- Lemibuzo ingosetyenziswa kwenkonzo ze physiotherapy xa ukhulelwe

- Kulemibuzo ungaphendula ngokuzikhethela.Ungakhetha ungayithabathi inkxaxheba okanye ungaphenduli umbuzo othile.

  Ungawutsiba umbuzo ongakwaziyo ukuwuphendula.

- Lemibuzo ifihlakele.Ungabhali nto izochaza ukuba nguwe obhalileyo umzekelo igama lakho.

- Impendulo zokusetyenziswa uphuhlisa ulwazi ngempilo

IMIYALELO

- Khetha impendulo ibenye ngaphandle kokuba uyalelwe ukhethe ngaphezulu

- Tikisha/phawula kwimpendulo efanelekileyo,umzekelo okanye urhangqe impendulo xa kuchaziwe

Lemibuzo ilandelayo yohlulwe kane, ibuza ngo:

Ihlelo 1: Ngenkcukaca zakho

Ihlelo 2: Ngendlela yokuhla nezemali

Ihlelo 3: Ulwazi malunga nabakhulelweyo

Ihlelo 4: Usetyenziswa lweenkonzo ze Physiotherapy

Enkosi kakhulu ngenkxaxheba yakho

ID code…….

LEMIBUZO ILANDELAYO YOHLULWE KANE, UBUZA NGO:

Ihlelo 1:Ngenkcukaca zakho

Q1. a) Uhlalaphi?

□ Emdantsane □Ngaphandle eMdantsane □ Emonti

b) Ukude kangakanani esibhedlele?

□ ngaphezulu kwe 20 Km □ Ngaphantsi kwe 20Km

Q2. Mingaphi iminyaka yakho?

Iminyaka (yibhale)……..

Q3. Uthetha oluphi ulwimi?

□ Xhosa □ English □ Afrikaans

□ Olunye……..

Q4. Sithini isimo sakho sokutshata?

□ Utshatile □ Uwedwa □Uhlukene okanye/Udivosile naye

□Uhlalisana nomligani wakho □Ungumhlolokazi

Q5 .Wenza msebenzi wuphi umyeni okanye umlingani wakho ngoku ukuba unaye?

□Akenzi nto □ Uziqashile □ Uqashwe ngurhulumente

□Uqashwe kwi private □ Omnye(wuchaze)…… □ Andiyazi

Ihlelo 2: Ngendlela yokuhlala nezemali

Q6. Uphele kweliphi ibanga?

□ Awufundanga □ Kumabanga aphantsi □ Kumabanga aphezulu

□ Edyunivesithi/tertiary institution □ Enye (Chaza)……

Q7. Ngowuphi umsebenzi owenzayo ngoku?

□ Awusebenzi □ Ugcina indlu □ Uziqashile

□ Uqashwe ngurhulumente □ Uqashe kwi private

□ Uphila ngesibonelelo sikarhulumente

□ Enye (Chaza)……..

Q8. Kubiza malini ukuza esibhedlele?

□ Imali oyikhuphayo…….

Q9. Kuye kwafuneka ulubhatalele uncedo kwiinkonzo zokulula ezikhoyo esibhedlele?

□ Ewe □ Hayi

Q10. Kunzima kangakanani ukuzifumanela imali yokuba ukwazi ukuza esibhedlele?

□ Kunzima kakhulu □ Kunzinyana □ Akukho nzima

□ Andizamanga ukukhangela imali

Q11. a) Umithe kangaphi xa uzibala zonke?

Inombolo……

b) Bangaphi abaphilileyo bona?

Inombolo…….

Q12. Basaphila bonke abantwana bakho?

□ Ayindichaphazeli □ Ewe □ Hayi

Q13. Unayo na imedical aid?

□ Ewe □ Hayi

Ihlelo 3: Ulwazi malunga nabakhulelweyo

Q14. a) Uyazi ngecandelo Iwabakhulelweyo elikhoyo esibhedle?

□ Ewe □ Hayi

b) Chaza iinkonzo ozaziyo ngecandelo Iwabakhulelweyo?

1. Uvavanyo lomzimba	□ Ewe	□ Hayi
2. Iingcebiso	□ Ewe	□ Hayi
3. Ugonyo	□ Ewe	□ Hayi
4. Ufundo Iwezempilo	□ Ewe	□ Hayi
5. Iinkonzo zocwangciso ntsapho	□ Ewe	□ Hayi
6. Ufundo ngoncancisa abantwana	□ Ewe	□ Hayi
7. Ugqirha wokolula umzimba	□ Ewe	□ Hayi
8. Ukhuselo lomntana kumama logciwane	□ Ewe	□ Hayi
9. Indimbane yabantu abakhulelweyo abazohlukuhla	□ Ewe	□ Hayi
10.Enye (chaza)	□ Ewe	□ Hayi

Q15. Ngubani okuxelele ngezinkonzo?

(ungathikisha ngaphezulu kwenye)

□ Ugqirha □ Unesi obelekisayo □ Unesi

□ Omnye (chaza)……

Q16. Uhambele kangaphi kwinkonzo zokuhlukuhla ngaphandle kwananhlanje?

□ Bhala iintsuku ondwendwele ngazo……

Q17. Zeziphi ezinye iinkonzo ozifumanayo zichaze uthikishe ngaphezulu kwenye okhe waza kuzo

1. Indibano nabo zohlukuhla abakhulelweyo	□ Ewe	□ Hayi
2. Imfundiso Iwezempilo	□ Ewe	□ Hayi
3. Ipilisi zefolic acid ne iron	□ Ewe	□ Hayi

4. Ihigh-high □ Ewe □ Hayi
5. Uvavanyo Iwesifo Iwesekile □ Ewe □ Hayi
6. Uvavanyo lomchamo □ Ewe □ Hayi
7. Umlinganiso wobunzima nobude □ Ewe □ Hayi
8. Uvavanyo nge ultrasound □ Ewe □ Hayi
9. Uvavanyo nge PAP smear testing □ Ewe □ Hayi
10. Ukhuselo lomtana kumama Iwengculaza □ Ewe □ Hayi
11. Ukuviwa okanye uvavanyo lwesisu □ Ewe □ Hayi

Q18. Ukhe umane usiva ezizinto zilandelayo?ungakhetha ngaphezulu kwenye

1. Umqolo obuhlungu □ Ewe □ Hayi
2. Ukuya kaninzi ngasese uyokuchama □ Ewe □ Hayi
3. Umlenze obuhlungu □ Ewe □ Hayi
4. Ukudumba kwemilenze □ Ewe □ Hayi
5. Ukudumba kwezandla □ Ewe □ Hayi
6. Inkantsi ezandleni □ Ewe □ Hayi
7. Intloko ebuhlungu □ Ewe □ Hayi
8. Iicramps kwizihlunu □ Ewe □ Hayi
9. Ukudinwa nesiyezi □ Ewe □ Hayi
10. Uxinana kwempumlo neengxaki zesifuba □ Ewe □ Hayi

Q19.Uyalufumana rhoqo uvavanyo esibhedlele ngoku ubukhulelwe?

□ Ewe □ Hayi

Q20. a) Ukhetha eyiphi indlela yokubeleka?

(Khethe ibenye)

□ Ukubeleka ngesiqhelo □ Caesarean section

□ Ukubeleka ngesiqhelo uncediswa

b) Xa sele wabanaye umntana, wabeleka ngoluphi uhlobo kumntana wako wokugqibela?

□ Ukubeleka ngesiqhelo □ usikiwe

Ihlelo 4: **Usetyenziswa lweenkonzo ze Physiotherapy**

Q21.Usebenzisa esiphi isithuthi ukaza esibhedlele?

□ Uyahamba □ Isithuthi sika wonke-wonke(ibhasi,taxi,icombhi

□ Imoto yomntu/yakho □ Enye (Chaza) uloliwe.....

Q22. a) Unalo ulwazi ngendima edlalwa ngabantu abalulayo(Physiotherapists) apha esibhedlele?

□ Ewe □ Hayi

b) Ii physiotherapists kulula ukuzi fumana?

□ Ewe □ Hayi

Q23. Uyazi ngeemeko apho iphysiotherapy ingenelele kuyo?

1. Umqolo obuhlungu	□ Ewe	□ Hayi
2. Imilenze edumbileyo	□ Ewe	□ Hayi
3. Isiquluba esibuhlungu nenkantsi	□ Ewe	□ Hayi
4. Isifuba nokukhohlela	□ Ewe	□ Hayi
5. Intamo ebuhlungu	□ Ewe	□ Hayi
6. Imbambo ezibuhlungu	□ Ewe	□ Hayi
7. Inkantsi ezandleni	□ Ewe	□ Hayi
8. Iizuhlunu ezingase bunini bakho	□ Ewe	□ Hayi

Q24. Ugqirha okanye unesi uyaku xelela ngendima ye physiotherapy xa udibenenaye?

□ Ewe □ Hayi

Q25. Ungaya kwiphysiotherapy xa kuyimfuneko?

□ Ewe □ Hayi

Q26. Wakhe waya okanye wathunyelwa ngugqirha kwiphysiotherapy kwenye yeengxaaki ozifumanayo ka ukhulelwe?

□ Ewe □ Hayi

Q27. Ucinga ntoni ngeenkonzo zephysio (ukuba wakhe waya)

□ akuthemba kelanga □ Kulungile kwaye kuthembekile □ kubuhlungu

□ ndilinda ixesha elide □ Akukho mfundiso ndiyinikiweyo

Q28. Ungazichaza izizathu zokungakwazi ukuphumelela kwinkonzo zokolula kwabakhulelweyo ephysio?

1. Kufuneka ndihoye izonto zosapho □ Ewe □ Hayi
2. Andinalwazi □ Ewe □ Hayi
3. Kuyadura □ Ewe □ Hayi
4. Iinkolelo □ Ewe □ Hayi
5. Awuhlali kulendawo □ Ewe □ Hayi
6. Awukuboni kubalulekile □ Ewe □ Hayi
7. Awunamali yesithuthi □ Ewe □ Hayi
8. Ixesha lokulinda lide kakhulu □ Ewe □ Hayi
9. Kuthatha ixesha ukufumana ifolder e opd □ Ewe □ Hayi
10. Andinamntu wokushiya abatwana naye □ Ewe □ Hayi
11. Amava adlulileyo fana (neentlungu kunye nexercises ezidinayo) □ Ewe □ Hayi

12. Zange unikwe ngcukaca ngezempilo □ Ewe □ Hayi

13. Esinye isizathu (chaza) □ Ewe □ Hayi

Q29.a) Wakhe wayifuma ingcebiso ozinikwe yiphysiotherapist?

□ Ewe □ Hayi

b) Ukuba kunjalo, walu fumana luluncedo ulwazi?

□ Ewe □ Hayi

Q30.a) Ungayichaza njani iinkonzo zabahlukuhlayo jikelele?

□ Zilunge kakhulu □ Zilungile

□ Zimbi, azilunganga □ Zimbi kakhulu

b) Ibinjani impatho yabesenzi bezempilo?

□ Bandingxolisa □ Zange ndifundiswe kakuhle □ Bandivavanya rhabaxa

□ Zange bandihoye xa ndibabiza □ Enye(chaza)……

Q31.a) Unaso isincomo okanye isigxeko onosenza ngobunjani beenkonzo zokukhulelwa esibhedlele?

□ Ewe □ Hayi

b) Sithini?.....

Q32. Ingaba ngokwesiko nesithethe ikhona into ekuthintelayo ekuzeni kweziinkonzo?

□ Ewe □ Hayi

Enkosi ngenxaxheba yakho

Appendix G: INFORMED AND WRITTEN CONSENT HEALTH PROFESSIONALS

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
E-mail:

INFORMATION SHEET

Dear Participant (Health Professional)

Project title: The awareness of Physiotherapy interventions among pregnant females in the antenatal clinic, Buffalo City Municipality, Eastern Cape, South Africa.

I want to thank you for taking the time to meet with me today. My name is Merly Sajan and I am a Post graduate student of the School of Physiotherapy (Student No: 3073907), University of the Western Cape. As part of my masters in Physiotherapy, I am required to conduct research for my thesis. I am accountable to Prof J.Phillips who is contactable at 021 959 2542 or by email at **jphillips@uwc.ac.za.**

I will be focussing on the awareness of Physiotherapy interventions among pregnant females at the antenatal clinic here at Cecilia Makiwane Hospital. I am also expected to enquire the knowledge about Physiotherapy services among the Health professionals working in the ante natal clinic. The information will then be compiled into a report. The results obtained are believed to enhance the promotion of Physiotherapy as a service and thereby contribute to service delivery by realigning Physiotherapy into the maternal services.

The interview should take less than an hour. I will be taping the session because I don't want to miss any of your comments. Although I will be taking some notes during the session, I can't possibly write fast enough to get it all down. Because we're on tape, please be sure to

speak up so that we don't miss your comments. All responses will be kept confidential. This means that your interview responses will only be shared with research team members and we will ensure that any information we include in our report does not identify you as the respondent. At all times I will keep the source of information confidential. I shall keep the records of your participation locked away at all times and delete the recorded audio voices after the data has been collected. Remember, you don't have to talk about anything you don't want to and you may end the interview at any time. Are there any questions about what I have just explained?

Are you willing to participate in this interview?

_____	_____	_____
Interviewee	**Witness**	**Date**

Appendix H: INTERVIEW GUIDE HEALTH PROFESSIONALS

INTERVIEW GUIDE

Interview Guide 1: For the Doctors and the Nurses

1. What is your highest level of qualification?
2. How long have you been working here in the ANC?
3. What do you think of Continuous Professional development?
4. Tell me some of the challenges you have identified while working in the ANC?
5. As a Health Professional, what is the common pregnancy related complications in mothers you notice on a day to day basis?
6. Describe the challenges/problems you think these mothers experience while attending ANC?
7. What do you think Physiotherapists can offer to these pregnant mothers in the ANC?
8. Is there anything else that you would like to share with me that I might have missed?

Interview No:

Site:

Date:

Starting time:

Finishing time:

Total time:

PART A

Demographic Data:

Age:

Marital Status:

Gender:

Profession:

Period of employment:

Do you consent freely to this interview session?

PART B

Researcher:

1. What is your highest level of qualification?

   ---

2. How long have you been working here in the ANC?

   ---

3. What do you think of Continuous Professional development?

   ---

4. Tell me some of the challenges you have identified while working in the ANC?

   ---

5 As a Health Professional, what is the common pregnancy related complications in mothers you notice on a day to day basis?

---

6 Describe the challenges/problems you think these mothers experience while attending ANC?

---

7 What do you think Physiotherapists can offer to these pregnant mothers in the ANC?

---

8 Is there anything else that you would like to share with me that I might have missed?

Thank you for your participation

Appendix I: PERMISSION LETTER FROM HOSPITAL MANAGER

Mrs Merly Sajan
Physiotherapy department
CMH
04/01/2013

The CEO/Hospital Manager
Cecilia Makiwane hospital

Dear Sir,

Re: Request to carry out a research study at CMH Hospital

I am a Postgraduate student of Physiotherapy at the University of the Western Cape, South Africa. I intend to carry out a study on finding out the Factors influencing the antenatal services in the Eastern Cape.
The project title is "Awareness of Physiotherapy interventions among pregnant females in the Antenatal Clinic.
This study is part of the requirement for the award of a Master of Science degree in Physiotherapy.
The purpose of the letter is to request permission to carry out the study at the hospital in the month of December 2012/January 2013.The details about the study are contained in the abstract of the proposal attached. It is hoped that the results of the study will be useful in Physiotherapy as a service in health promotion of mothers in the Antenatal Clinic, CMH.
Attached along is the Ethical Clearance Letter from the University of the Western Cape, Ethical Clearance letter from Eastern Cape Health department and Ethical clearance Letter from the Hospital board.

Awaiting your positive response

Yours faithfully

Merly Sajan

Merly Sajan

M Sc Postgraduate student
(0768139104)

Approved: Please liaise with Nursing Services Manager as well as Acting MX O&G.
Cc Dr [illegible]
07/01/[illegible]

Appendix J: PERMISSION LETTER FROM HOSPITAL ETHICAL BOARD

Ethics Committee: E. L HOSPITAL COMPLEX

Postal Address :
C/o East London Health Resource Centre
PO Box 12882
Amalinda
5252
Telephone : 043 –709 2032 **Fax no.:** 043 – 7092386

Physical Address :
Cheltenham Road
East London
5201 South Africa

21st December 2012

Ms Merly Sajan
East London Hospital Complex
Amalinda
East London
5200

Dear

RE: Awareness of Physiotherapy interventions among pregnant females in antenatal clinics, Buffalo City Municipality, Eastern Cape Province, East London

We acknowledge receipt of the above mentioned proposal.

Having gone through your proposal, the committee has no ethical problems noted.

Please be advised that the committee has granted you the consent to do the research.

Yours sincerely

Dr P Alexander – Chairman Region C Ethics Committee
Ophthalmologist EL Hospital Complex

Appendix K: ETHICAL CLEARANCE FROM EASTERN CAPE DEPARTMENT OF HEALTH

Eastern Cape Department of Health

Enquiries:	Zonwabele Merile	Tel No:	083 378 1202
Date:	20th December 2012	Fax No:	043 642 1409
e-mail address:	zonwabele.merile@impilo.ecprov.gov.za		

Dear Ms Merly Sajan

Re: Awareness of physiotherapy interventions among pregnant females in antenatal clinics, Buffalo City Metro, Eastern Cape, South Africa

The Department of Health would like to inform you that your application for conducting a research on the abovementioned topic has been approved based on the following conditions:

1. During your study, you will follow the submitted protocol with ethical approval and can only deviate from it after having a written approval from the Department of Health in writing.
2. You will observe and respect the rights and culture of your research participants and maintain confidentiality of their identities and shall remove or not collect any information which can be used to link the participants. You will not impose or force individuals or possible research participants to participate in your study. Research participants have a right to withdraw anytime they want to.
3. The Department of Health expects you to provide a progress on your study every 3 months (from date you received this letter) in writing.
4. At the end of your study, you will be expected to send a full written report with your findings and implementable recommendations to the Epidemiological Research & Surveillance Management. You may be invited to the department to come and present your research findings with your implementable recommendations.
5. Your results on the Eastern Cape will not be presented anywhere unless you have shared them with the Department of Health as indicated above.

Your compliance in this regard will be highly appreciated.

DEPUTY DIRECTOR: EPIDEMIOLOGICAL RESEARCH & SURVEILLANCE MANAGEMENT

Ikamva eliqaqambileyo!

Appendix L: ETHICAL CLEARANCE FROM UWC SENATE

UNIVERSITY of the WESTERN CAPE

OFFICE OF THE DEAN
DEPARTMENT OF RESEARCH DEVELOPMENT

12 December 2012

To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape has approved the methodology and ethics of the following research project by:
Mrs M Sajan (Physiotherapy)

Research Project:	Factors influencing utilization of antenatal services in the Eastern Cape.
Registration no:	12/9/25

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

Private Bag X17, Bellville 7535, South Africa
T: +27 21 959 2988/2948 . F: +27 21 959 3170
E: pjosias@uwc.ac.za

www.uwc.ac.za

UNIVERSITY of the
WESTERN CAPE