LATE ANTENATAL CARE (ANC) BOOKING BY PREGNANT WOMEN AT SAKUBVA AND DANGAMVURA POLYCLINICS IN MUTARE CITY, MANICALAND PROVINCE FROM FEBRUARY TO MARCH 2012

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ABSTRACT

This study was conducted to find factors associated with late antenatal care booking by pregnant women attending Sakubva and Dangamvura polyclinics in Mutare, Zimbabwe. Pregnant women should book during the first trimester for early commencement of preventive services and ensure their vital signs are checked and monitored throughout the pregnancy in order to reduce complications. Women die from a wide range of complications which develop during pregnancy, childbirth or the postpartum period (WHO, 2005). Late ANC booking has been noted to be above 60% at Sakubva and Dangamvura polyclinics for the past three years. Despite efforts by health workers to promote early ANC booking, pregnant women continue to book late for antenatal services. The reasons for this late booking are unknown, hence the need to carry out this study.

An unmatched 1:1 case control study was carried out from February to March 2012 at Sakubva and Dangamvura polyclinics, Mutare Zimbabwe. The sample comprised 90 cases, 90 controls and 16 nurses as key informants. A case was defined as a pregnant woman booking at or after 16 weeks of gestation period. A control was defined as a pregnant woman booking below 16 weeks of gestation period. An interviewer administered questionnaire was used for the pregnant women and a self administered questionnaire was used for the nurses. Univariate, bivariate and multivariate analysis was done using Epi info version 3.5.3 Statistical package.

Pregnant women's knowledge on best time to book for ANC was found to be high but limited on benefits of early booking and complications of late ANC booking. Some of the health workers were reported to have negative attitudes towards antenatal care. Factors found to be significantly associated with late ANC booking were size of household (OR 0.43, CI 0.22-0.85, p-value 0.01) and cost of ANC services (OR 2.50, CI 1.23-5.09 p-value 0.01). Women coming from households with more than 4 people were found to be more likely to book late. Pregnant women with barriers in seeking antenatal care services were found to be 3.0 times more likely to book late for antenatal care at Sakubva and Dangamvura polyclinics while holding other variables constant.

While age and history of underlying medical conditions were initially found to be significant, they were found not to be statistically significant after logistic regression. The only two factors remaining significant barriers in seeking ANC services in Sakubva and Dangamvura were size of household, and cost of ANC services. It is therefore recommended that Mutare City Health Department implements community based health education interventions to create awareness on benefits of ANC, importance of early booking and complications of late ANC booking. The department should also review policies on user fees to make the services financially accessible to more clients.

DECLARATION

I, Agnes Mugumbate declare that except for the references to other people's work this work is a result of my own original research

Name……..…

Signature…….….

Date…….

Content supervisor's name……..

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List of abbreviations

AIDS Acquired Immune Deficiency Syndrome

ANC Antenatal Care

ART Anti-retroviral Therapy

EDD Expected Date of Delivery

FANC Focused Antenatal Care

Fe SO_4 Ferrous Sulphate

HIV Human Immune deficiency Virus

IDH Indonesia Demographic Health Survey

IPT Intermittent Presumptive Therapy

HC Mother and Child Health

MD Millennium Development Goals

MER More Efficacious Regiment

MOH&CW Ministry of Health and Child Welfare

PMTC Prevention of Mother to Child Transmission of Human Immune Virus

RBA Religious Birth Attendants

TBA Traditional Birth Attendants

PIH Pregnancy Induced Hypertension

PRECEDE Predisposing, Reinforcing, Enabling Constructs in Educational/Ecological Diagnosis and Evaluation

PROCEED Policy, Regulatory and Organizational Constructs, in Educational and Environmental Development

UNICEF United Nation Children's Emergency Funds

UN	United Nations
VCT	Voluntary Counselling and Testing
WCBA	Women of Child Bearing Age
W.H.O	World Health Organisation
ZEPI	Zimbabwe Expanded Programme on Immunization
ZMPMS	Zimbabwe Maternal and Perinatal Mortality Survey

Definitions

Early ANC booking: Booking done below 16 weeks of gestation age

Late ANC booking: Booking done at 16 weeks up to 27 weeks of gestation age.

Very late ANC booking: Booking done at 28 weeks and above.

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CHAPTER ONE

1.1 INTRODUCTION

Antenatal care is a tool in preventing maternal mortality. It is the key entry point for pregnant women to receive a broad range of health promotion and preventive services, screen pregnancy risks, give health education and monitor progression of the pregnancy and plan for delivery. Antenatal care helps in the prevention, early diagnosis and management of conditions and diseases related to pregnancy (Bergsjo, 1996). The ANC services constitute screening for health and socio-economic conditions likely to increase the possibility of specific adverse pregnancy outcomes, providing therapeutic interactions known to be effective and educating pregnant women about planning safe birth, emergencies during pregnancy and how to deal with the pregnancy (WHO, 2004). It helps to ensure healthy outcomes for women and the newborns (WHO, UNICEF, 2003). Modifiable pre-existing medical conditions that may influence the course and outcome of pregnancy such as cervical incompetence, chronic hypertension and diabetes mellitus are also detected (WHO, 2002). Antenatal care includes recording medical history, assessment of individual needs, advice and guidance on pregnancy and delivery, screening tests, education on self-care during pregnancy, identification of conditions detrimental to health during pregnancy, first-line management and referral if necessary (World Health Organisation, 2006).

1.1.1Purposes of antenatal care

The provision of antenatal care services is regarded as a cornerstone of maternal and perinatal health care and is expected to have a considerable impact on achieving the Millennium Development Goal 5 which aims to improve the health of the mother; a

large part of goal 4, which focuses on reducing child mortality; and part of goal 6, which seeks to combat AIDS, malaria and other diseases (WHO, 2004). The detection of high-risk pregnancies through antenatal care has been advocated for as a good strategy to reduce maternal mortality (in some cases by 60%) in developing countries. The antenatal care system in developing countries has been adapted from developed countries without formal evaluations of the impact of interventions in developing country settings (http:www.health-journal.com).

Provision of antenatal care helps maintain normal pregnancies, prevent complications and facilitate early detection and treatment of complications. The major goal of antenatal care is to help women maintain normal pregnancies through targeted assessment based on the woman's individual situation to ensure normal progress of the pregnancy and postpartum period and facilitate the early detection of and specialised care for complications, chronic conditions and other potential problems that can affect the mother and newborn (www.accesstohealth.org). Antenatal care prepares pregnant women and her family for the pregnancy, labour, peuperum lactation and subsequent care of the baby in all aspects of physical, spiritual and social health (Seller, 1997). The health of the mother and foetus are defined and their wellbeing is monitored. Antenatal care is aimed at improving the general health status of pregnant women, improving their knowledge of the prevention and treatment of infections like Syphilis, HIV, malaria, and tetanus and at ruling out any systematic problems. The provisions of Prevention of Parent to Child transmission of Human Immune deficiency Virus (PMTCT) and Antiretroviral (ARV) therapy for pregnant mothers are good reasons for pregnant women to seek

antenatal care (Myer and Harrison, 2010). Antenatal care provides opportunities for prevention services such as immunisation against tetanus, malaria prophylaxis through the use of Intermittent Presumptive Treatment (IPT), and HIV counselling and testing. Antenatal care services assist in detecting any medical conditions that may influence the course and outcome of pregnancy such as chronic hypertension and diabetes mellitus (WHO, 2002). The antenatal services therefore help in the prevention of causes of maternal deaths which include complications of abortion, obstetric complications such as haemorrhage, eclampsia, puerperal sepsis and systemic infections such as tuberculosis and HIV (http:www.reproductive-health-journal.com). The same article mentions that attendance at antenatal clinics (ANCs) and receipt of professional delivery care have been associated with a reduction in maternal deaths.

In Zimbabwe, the leading direct causes of maternal deaths are pregnancy induced hypertension, eclampsia, postpartum haemorrhage, puerperal sepsis, malaria, anaemia, and obstructed labour and HIV has also emerged as the leading indirect cause of maternal mortality which was at 25% in 2007 (ZMPMS).

During antenatal care services plans are then made for further care, referral, for management of any problems and for the delivery itself. According to Rowe and Garcia (2003), antenatal care is generally acknowledged as an effective method of preventing adverse outcomes in pregnant women and their babies. Antenatal care helps in the early detection of modifiable pre-existing medical conditions that may influence the course and outcome of pregnancy such as cervical incompetence, chronic hypertension and diabetes mellitus (WHO, 2002).

1.1.2 Definition of late ANC booking

Late ANC booking has been defined by Samuel (2005) as booking after sixteen (16) weeks gestation. Obstetricians suggest that booking after sixteen weeks is the latest desirable time (http://www.publichealthjournal.com). When a pregnant woman book after 16 weeks her vital signs may have been affected by the pregnancy and it becomes difficult to monitor them. According to Peacock et al (2001) and Daniels et al (2006) delayed antenatal care booking is the booking done after the first trimester. Late booking means the woman will not have vital signs taken before they are affected by the pregnancy. The pregnant woman will also have less antenatal care visits and this compromises the services that she is supposed to receive and can result in complications during pregnancy or delivery. Early booking, according to this study is booking done below 16 weeks of gestation age. Late ANC booking is booking done at 16 weeks up to 27 weeks of gestation age. Very late ANC booking is booking done at 28 weeks and above. This study will define late antenatal care booking as booking done after 16 weeks of gestation period. The World Health Organization Focused Antenatal care (FANC) recommends four antenatal care visits for women whose pregnancies are progressing normally, with the first visit in the first trimester (ideally before 12 weeks but not later than 16 weeks) and the second , third and fourth visits at 24 to 28 weeks, 32 weeks and 36 weeks respectively (Viller et al, 2001). It has however been noted that pregnant women in developing countries book later than recommended.

In Zimbabwe antenatal care services are guided by World Health Organisation guidelines. The Ministry of Health and Child Welfare in Zimbabwe adopted the Goal Oriented Antenatal Care Protocol (GOAP) model and initiated it in 2001.

According to the procedures the pregnant women are expected to book before 16 weeks of gestation period and have six antenatal visits. The country also adopted the Focussed Antenatal Care (FANC) model in 2009 but it took time for the model to be implemented within the system. The model was introduced in 2011 and its implementation is expected to be done this year (2012).The Focused Antenatal Care model also recommends pregnant women to book for antenatal care during the first trimester. Most guidelines recommend that the first antenatal care visit should occur during the first trimester, as it is at this early stage that risk factors for maternal and child morbidity and mortality can best be assessed (Mercy Hospital for Women, 2001).

According to Trinh and Rubin (2006), the World Health Organization (WHO) recommends that pregnant women in developing countries seek antenatal care within sixteen (16) of gestation period.

1.1.3 The aim of early booking

Early antenatal care booking allows for early commencement of health education and counselling on physiological changes, the normal course and possible complications of pregnancy, labour and puerperium (Ndidi and Oseremen, 2010). Early antenatal care also ensures that the pregnant women's vital signs are checked and laboratory findings are documented for early detection of anomalies. If a pregnant women books late the vital signs may have been affected by the pregnancy and it becomes difficult to monitor. Booking during the first trimester is recommended and requires timely initiation for it to be meaningful. However, late entry to antenatal care is still a

major problem. Pregnant women who do not have timely and appropriate care would be ill-equipped to make choices that will contribute to their own well-being and that of the unborn child. Booking early for ANC prevents a wide range of complications which develop during pregnancy, childbirth or the postpartum period (WHO, 2005). The four major causes of maternal deaths include severe bleeding; diseases aggravated by pregnancy (Malaria, anaemia and HIV); hypertensive disorders in pregnancy (eclampsia); and obstructed labour which can be due to foetus head too big compared to mother's pelvis {Cephalo-pelvic disproportion (CPD)} or baby being abnormally positioned (Heine, 2005). Globally, 80% of maternal deaths are due to these causes. According to Khan (2008) about 1500 women die every day from pregnancy or childbirth related complications and according to World Health Organisation (2005) such deaths are avoidable.

1.1.4 Importance of booking during the first trimester

Booking during the first trimester has advantages to the pregnant women as it is at this early stage that risk factors for maternal and child morbidity and mortality can best be assessed (Mercy Hospital for Women,2001). According to Trinh and Rubin, (2006), the World Health Organization (WHO) recommends that pregnant women in developing countries seek antenatal care within sixteen (16) weeks of gestation period. Assessment of magnitude and the factors associated with late initiation of antenatal care among pregnant women in antenatal clinics is helpful for future planning (Haileselassie and Fikre Enqueselassie**,** 2009).

1.1.5 Initial antenatal visit

During the first visit of antenatal care services in Zimbabwe, the pregnant women receive services which include history taking and readings of vital signs for

continuous monitoring during pregnancy. History taking includes demographic data name and surname, physical address, date of birth, and telephone number of the patient or her relative. An accurate menstrual history is taken to determine the expected date of delivery (EDD) (Fraser et al, 2006). The expected date of delivery is calculated using the last date of the last menstrual period (if the woman is sure of her dates).

Obstetric history is taken according to the following guidelines: number of pregnancies, year and duration of each pregnancy, type of delivery, baby's sex and birth weight, whether baby was alive or not and any antenatal intrapartum or postpartum complications such as haemorrhage. Information is obtained and recorded about previous contraception and future family planning method. The past childbearing experiences play an important part in predicting the possible outcomes of the current pregnancy (Fraser et al, 2006). Social history is important to assess the response of the whole family to the pregnancy and this includes who the woman lives with and the woman's employment status. Under medical history the data obtained includes presence of, pregnancy induced hypertension (PIH) and medical conditions like cardiac and renal disease, Diabetes Mellitus, epilepsy, asthma and tuberculosis contact. Smoking and alcohol consumption falls under general history. In case of alcohol consumption, the estimated quantity consumed weekly is obtained and recorded. If the woman is smoking, she is asked how many cigarettes she smokes daily.

Good habits are reinforced and advice is given when required (Fraser et al, 2006), for instance if too much alcohol is consumed. A family history of multiple pregnancies, diabetes; and congenital abnormalities is recorded (Fraser, et al, 2006).

A full physical examination is done to determine the pregnant women's general wellbeing, body mass, blood pressure, any presence of oedema, any abnormalities in the thyroid gland, breasts, heart, lungs and abdomen. Urine is tested for blood, proteins, glucose, nitrites, leucocytes and ketones and a vaginal examination is performed.

Palpation of the uterus is conducted and the results can also be used to estimate gestational age. In the case of a breech presentation, small or large for gestational age pregnancy, unstable lie, or a suspected multiple pregnancy; the women are booked for an ultrasound scan. Ultrasound scan is also done to localise placenta, estimate gestational age and diagnose congenital malformations (Class notes, 26/3/2011).

The examiner is responsible for providing health education to the pregnant woman about issues such as health, personal hygiene, breast care and advising her to report any problems to the clinic staff.

Blood samples are collected to screen for syphilis using rapid plasma reagin (RPR) test and HIV testing. Hemoglobin levels determine whether the pregnant mother is anemic or not. Prophylaxes given during this visit include Tetanus Toxoid (TT) and vaccination is given according to Zimbabwe Expanded Programme on Immunization (ZEPI); ferrous sulphate, Folic acid and Intermittent Preventive treatment (IPT) for malaria prophylaxis. The tetanus toxoid is repeated twice at four weekly intervals. In total, the pregnant women receive three ATT shots (Lavender, 2007).

In Zimbabwe, a pregnant mother is educated and counselled on PMTCT during the first antenatal care visit. Voluntary counselling or Provider Initiated counselling and testing is done to the pregnant mother. HIV testing can be done and if the pregnant mother is HIV positive preventive measures will be taken for example use of

protection during sexual intercourse and possible inclusion into the PMTCT programme, More Efficacious Regiment (MER) or antiretroviral therapy (ART). The pregnant mother's CD 4 count is tested and if it is above 350 the pregnant mother is commenced on More Efficacious Regiment (MER). If the CD4 count cell is below 350 the pregnant mother is commenced on Anti- Retroviral Therapy (ART).

The history and/or presence of any of the above are explained to the client. Any medications that the pregnant woman may be taking are recorded, surgical history is obtained and allergies are taken note of.

There are also supporting management protocols for identified problems during antenatal period. These protocols include STI management protocol, HIV in pregnancy, anaemia in pregnancy, Malaria in pregnancy; Pregnancy induced hypertension, Ante partum Haemorrhage (Ministry of Health and Child Welfare, 2001).

1.1.6 Follow-up visit

After each visit, including the first visit, women are given return dates for follow-up visits. The interval for follow-up visits is as follows: monthly when below 28 weeks gestation, then every two weeks up to 36 weeks gestation, and weekly from 36 weeks gestation to delivery.

The second and third visits are expected during the second trimester of 16 to 28 weeks gestation period where action is taken on abnormal laboratory results and the pregnant mother is given the second dose of tetanus toxoid (TT). At each visit the pregnant mother is taken weight measurement and urinalysis, blood pessure and foetal movements.

The risk for multiple pregnancy and signs of pregnancy induced hypertension (PIH) are also assessed.

The third trimester of 28 to 42 weeks is when the fourth, fifth and sixth visits are expected from the pregnant mother. The goals for these visits include checking on foetal growth, exclude anaemia, assess for signs of pregnancy induced hypertension and review delivery plan. The second and sixth visits are often considered "catch up" visits meant to cater for late bookings, discuss laboratory results and consequent management and manage the "Term or Post-Term" conditions, (Ministry of Health and Child Welfare, 2000).

Pregnant women who develop any pregnancy risk during antenatal care are referred to the next level for further management. Health education is part of antenatal care. Health education is given to pregnant women at every visit either as a group or individually during the check-ups. Health education includes issues about pregnancy and labour, nutrition, personal hygiene and exercise (both antenatal and postnatal).

The pregnant mother is also educated and counselled on Prevention of Mother to Child Transmission of HIV. According to the guidelines on Prevention of Mother to Child Transmission of HIV interventions in Zimbabwe, screening for HIV starts at 16 weeks. If the pregnant mother's CD4 count is above 350 she is put on More Efficacious Regiment (MER) and if the CD4 count cell is below 350 the pregnant mother is put on Anti- Retroviral Therapy (ART).

The factors associated with late Antenatal care booking can be related to various assumptions as described in the following conceptual framework.

1.2.1 PRECEDE- PROCEED Model

This study will borrow some of the constructs from the PRECEDE PROCEED model (Green & Kreuter, 1991)**.** PRECEDE is an acronym for *predisposing*, *reinforcement* and *enabling constructs* in *educational/ecological diagnosis* and *evaluation*. PROCEED stands for *policy*, *regulatory* and *organisational constructs* in *educational* and *environmental development*

The precede proceed work in tandem providing a continuous series of steps or phases in planning, implementation and evaluation. The identification of priorities in one phase of PRECEDE leads to quantitative objectives that become goals and targets in the implementation phase of PROCEED. The fourth phase of the framework which includes educational and ecological assessment on predisposing, reinforcement and enabling factors will be utilised. The study will be done using some of the constructs from the Precede Proceed model in assessing predisposing factors, reinforcing factors and enabling factors related to late antenatal care booking at Sakubva and Dangamvura polyclinics.

(Phase 4) Educational and Ecological assessment

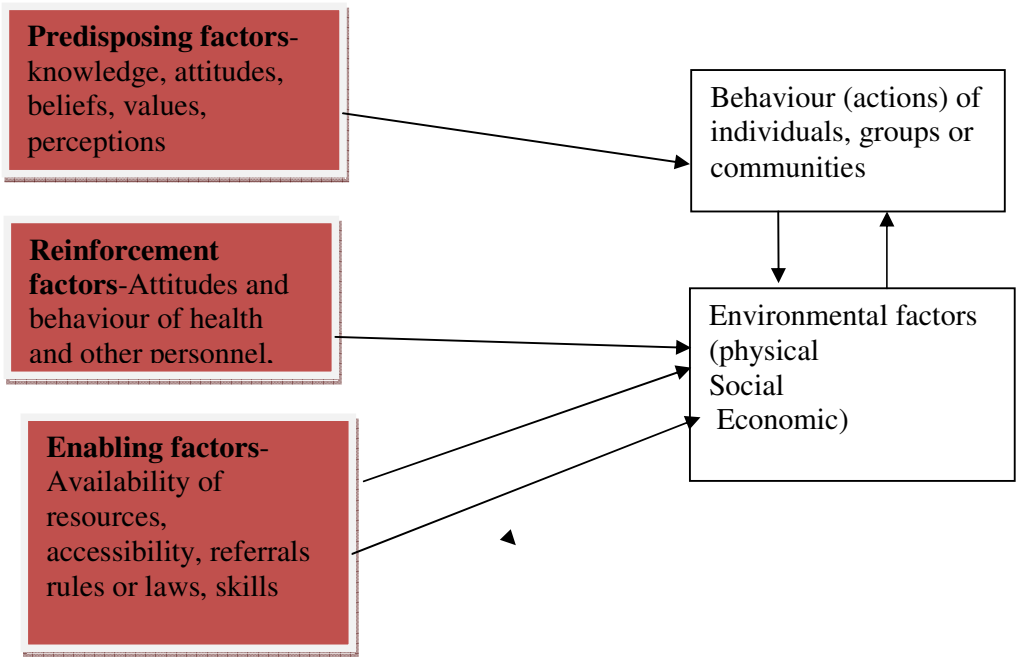

Figure 1: Constructs from PRECEED PRODEDE Model (Green and Kreuter, 1991)

1.2.2 CONCEPTUAL FRAMEWORK

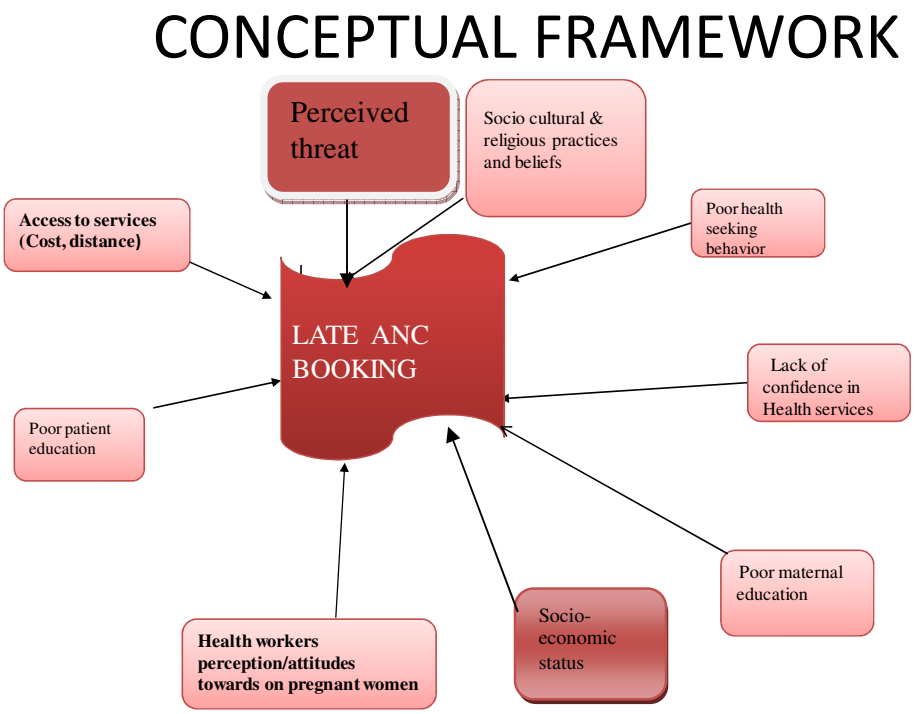

Figure 2: Proposed Conceptual Framework.

The above conceptual framework provides the assumed factors which contribute to late Antenatal care booking by pregnant women. The factors include demographic factors, cultural factors, religious, maternal education, and literacy, access to ANC services, perceived threat and health service factors. Factors from the PRECEDE PROCEED model and the conceptual framework include institutional factors and individual factors. The construct on perceived threat assumes that an individual should believe that his/her health is at risk. In other words does the pregnant woman perceive that her life is in danger if she does not book for antenatal care services

early? The threats include pregnancy related complications, infections and diseases. If the pregnant woman does not perceive the threats she would not book early for antenatal care. Perceived threat would make the pregnant woman book early for antenatal care services in order to prevent those risks. All the mentioned attributes will be looked at in the study

1.2.3 Background of study location

Mutare City is situated in the eastern border of the country. It is 263 kilometres from Harare. According to the city health statistics projection of 2011, the city has a population of 186 621 of which 41 056 are Women of Child Bearing Age (2002 census). Sakubva and Dangamvura are two of the high density suburbs in Mutare and have populations of 61830 and 43094 respectively. The population of expected pregnant women at Sakubva stands at 2553 and Dangamvura is at 1777. The City Health department is responsible for the implementation of the health delivery services to the urban population. The city has nine (9) health units which include three hospitals. Every suburb has a health facility which is located within the community and the residents are near to the health facilities. All the health facilities except Mutare Infectious Disease Hospital (MIDH) offer antenatal care services for the urban population. The pregnant mothers attend antenatal care services at their respective health facilities until their delivery period. The two clinics were selected because they are the major health facilities and have the largest populations. These clinics offer full obstetric services in Mutare urban. When the pregnant women are in labour they are admitted either at Sakubva maternity or Dangamvura polyclinic. If the pregnant woman develops complications, she is referred to Mutare Provincial Hospital for further management.

1.3 Problem Statement

Despite a number of efforts to encourage pregnant women to book for ANC before the 16th week of gestation, only less than 10% of the pregnant women in Sakubva and Dangamvura high density suburbs have been booking before 16 weeks of gestation for the past three years as shown in table 1 below. Some of the efforts include community education by community health nurses and National AIDS Council (NAC) on the importance of early ANC booking and Prevention of Mother to Child Transmission (PMTCT) of HIV infection.

Table 1: ANC bookings for Sakubva (2009-2011)

	Sakubva clinic			
	Booking below 16 wks	**16 to 27 wks**	**28 and above**	**Total**
2009	136(**7.5**)	859(**41%**)	935(**52%**)	1794(**100%**)
2010	92(**5.1%**)	733(**40.9%**)	1 058(**59.1%**)	1791(**100%**)
2011	123(**6%**)	919(**44.9%**)	1 005(**49.1%**)	2047(**100%**)

Table 2: ANC bookings for Dangamvura clinic (2009-2011)

	Dangamvura clinic			
	Booking below 16 wks	**16 to 27 wks**	**28 wks and above**	
2009	104(**8.9**)	416(**35%**)	654(**55%**)	1 174(
2010	72(**3.9%**)	643(**34.5**)	1 149(**61.6**)	1 864(
2011	51(**3.3%**)	500(**32.3%**)	999(**64.4%**)	1550(**1**

Further analysis of table 1, shows that more than fifty percent of the pregnant women booked at 28 weeks of gestation period and above and some of these reported to the clinic for the first time when they were already in labor.

Nurses at Sakubva and Dangamvura have been giving Health Education talks to pregnant women at every ANC visit on a daily basis. Unfortunately their massages are given to those who have already come not to the ones still to come. The reasons for late ANC booking at the two health facilities are unclear hence the need to carry out this study.

1.4 Justification

Late Antenatal care booking leads to complications during pregnancy. These complications can result in maternal deaths which can be avoided by early antenatal care booking and close monitoring of the pregnancy. It is thus imperative that a study be carried out to determine the factors associated with late ANC booking at Sakubva and Dangamvura polyclinics. The findings will be useful in promoting early ANC booking among pregnant women. These findings may also help the local authority in developing policies which promote early ANC booking and to plan for relevant interventions like Health Education activities to create awareness on benefits of early ANC booking.

1.5 Objectives

1.5.1 Broad Objectives

- To determine the factors associated with late ANC booking by pregnant women at Sakubva and Dangamvura Polyclinics

1.5.2 Specific Objectives

- To determine socio-demographic factors associated with late ANC booking by pregnant mothers at Sakubva and Dangamvura polyclinics.
- To establish the knowledge and attitudes associated with late ANC booking among pregnant women at Sakubva and Dangamvura polyclinics
- To examine the knowledge and practices on antenatal care among health workers at Sakubva and Dangamvura polyclinics
- To identify the accessibility and affordability factors on ANC services
- Determine the perceived threat on late antenatal care booking by the pregnant women

1.5.3. Research Questions

- Do demographic characteristics have an association with late ANC booking among pregnant women at Sakubva and Dangamvura polyclinics?
- What are the predisposing factors associated with late ANC booking?
- What are the reinforcing factors among health workers on antenatal care?
- Which enabling factors are available for the pregnant woman to access ANC services?
- Do pregnant woman perceive that her life is in danger if she does not book for antenatal care services in early?

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a discussion on literature related to late antenatal care booking and the factors related to late antenatal care booking at global, regional and local levels. The areas of discussion include demographic characteristics of pregnant women who book late for ANC; predisposing factors to ANC booking; reinforcing factors; enabling factors and perceived threat on late ANC booking by pregnant mothers.

In a study carried out by Mrisho et al, (2009) to find factors related to late ANC booking it was revealed that the majority of the pregnant women (73%) booked in the second trimester and 26% booked in the third trimester. Adeyemi et al,(2007) cited by Ndidi and Oseremen, (2010) found out that though most of the women in their study in south western Nigeria booked late, 57.3% felt women should book in the first trimester. According to Magadi et al, (2000) cited by Mrisho et al, (2009) such late ANC booking limits the amount and quality of care that a pregnant woman can receive. For example on HIV prevention during pregnancy, the prophylaxis should start at 14 weeks of gestation period and if a pregnant mother books later than that, the services will be compromised.

Available literature relates late antenatal care booking to a lot of factors which include demographic characteristics, pregnant women's knowledge and attitudes on antenatal care; health workers' attitudes and practices on antenatal care; access to ANC services and perceived threats by pregnant mothers on late antenatal care booking.

2.1 Demographic characteristics

Socio-demographic factors have an influence on people's health. According to Green and Kreuter (1991), late antenatal care booking is associated with socio-demographic characteristics. These include predisposing (socio demographics characteristics, knowledge, religious and cultural beliefs), reinforcing and enabling factors (access, affordability and availability) of antenatal services. Socio demographic factors such as socioeconomic status, age, ethnic group, and family size or history predispose health related behaviours through a variety of mechanisms (Green and Kreuter, 1991).

Economic factors which are influenced by employment and poverty can contribute to utilization of antenatal care services. A study done by Kausar et al (1999) ,

in India to explore the effects of poverty on access to maternal health services revealed that those living in poorer households had lower utilization of ANC services than those in higher socio-economic strata.

According to a study conducted by Andersen (1995) predisposing characteristics are factors that present preceding the ill health and need for care, such as demographic factors, social structures and health beliefs. Demographic factors like age have an influence on the likelihood of an individual to seek health services. Social structures contribute to an individual's status in the community. Factors that determine an individual's status include his or her ability to cope with and command the resources to deal with the health problems and how healthy and unhealthy the physical environment is likely to be in terms of education, occupation, and ethnicity.

A cohort study was carried out in Central Manchester to examine factors associated with late ANC booking. The findings revealed that teenage pregnancy,

unemployment in the household, moving during pregnancy, geographical area of residence and the opinion about the value of ante natal care were factors associated with late ante natal care booking . Delays in ANC booking were related to not knowing that one was pregnant and in some cases the pregnancy was unwelcome (Chisholm, 1989). Haque (2009) also found out that the size of household can influence late ANC booking and can have an impact on maternal health services. For example if household has more than four and above members, there might be challenges in meeting the needs of the family financially. This deprives the family's ability to meet expenses related to ANC booking. Studies from most developed countries have also established that socially disadvantaged women like teenagers, unmarried women and women with lower level of education and socioeconomic class are more likely to book late for antenatal care (Atuyambe et al, 2008).

In another study carried out by Adekanle and Isawumi (2008) to assess the prevalence of booking and factors related to it, maternal education and age were factors significantly associated with late ANC booking. Magadi et al (2000) conducted a comparison study on use of maternity services by teenagers and older women and the study found out that teenagers had poorer maternal health seeking behaviour than older women with similar background. The author mentioned that teenagers delay in seeking ANC services because the pregnancy might be unacceptable to the society. Some of the teenagers will have dropped out from school and they will be shy to make the pregnancy known.

Numerous studies in developing countries have shown that demographic factors such as age, parity and place of residence are associated with late antenatal care booking, (Sharma et al, 2007; Wong et al, 1987; Obermeyer, 1993). A study was

carried out in Ethiopia in 2008 to assess factors affecting late initiation of antenatal care services and utilisation of ANC services among pregnant women. The study found out that respondents' age, educational status, knowledge on the benefit of ANC to child health, lack of acceptance of pregnancy were found to be independent predictors of initiation time of antenatal care service utilization (Haileselasse and Enqueselassie 2009). In Indonesia according to a study by Sari (2009) it was found out that adolescent pregnancy was one of the factors which contributed to maternal deaths. According to IDHS 2007 of Indonesia, births to young women aged 15-19 years old, account for 9 percent of all births in Indonesia (Statistics Indonesia cited by Sari, 2009).

Similarly, in Thailand, one analysis showed that maternal education has a significant influence on the use of maternal health care services; the odds of using prenatal care and formal delivery assistance was found to be much greater for women with primary schooling, compared to women who had not gone to school at all. Women education, husband's education, women exposure to media, women's autonomy, and women's working status, were the independent variables, which were assumed to have positive or negative association with the utilization of maternal health care services (Sari, 2009).

Findings in a Peru study found out that formal education of women influences the use of maternal health care services (Elo 1992, cited by Sari, 2009).

2.2 Predisposing factors

These are factors related to knowledge, attitudes, beliefs, values and perceived needs which expose an individual to diseases or conditions (Green and Kreuter, 1991).

These can facilitate or hinder motivation for change in behaviour which is conducive to health.

2.2.1 Pregnant women's knowledge and attitudes towards ANC

The knowledge of an individual concerning a condition is an important factor that can predispose an individual towards the performance of specific health behaviour to promote health (Green and Kreuter, 1991). Maternal health knowledge and attitudes play an important part in making the pregnant mother attend antenatal care services and these are some of the maternal characteristics which have the strongest association with late antenatal care booking by pregnant women.

Literature has found out that attitudes, values and knowledge that people have about health and health care services influence their subsequent perceptions of need and use of health services (Sari, 2009). The same author mentioned that attitudes, values and knowledge that people have about health and health care services influence their subsequent perceptions of need and use of health services (Sari, 2009). Various studies have related formal education to maternal education where educated mothers are likely to have high level of knowledge on health matters. In Thailand again, one analysis showed that maternal education has a significant influence on the use of maternal health care services and is assumed to have positive or negative association with late antenatal care booking (Sari, 2009).

Ndidi and Oseremen, (2010) carried out a study on knowledge of pregnant women about the best recommended time to book for ANC and three quarters of the respondents felt the first three months of pregnancy was the best time to book for antenatal care, while 22.4% chose the second trimester and 4.3% the third trimester.

Tariq (2011) mentioned that women who initiate ANC beyond 13 weeks miss the opportunity of early screening for HIV (if they have not yet been diagnosed) and other conditions. The author mentioned that this may have adverse effects on obstetric and maternal health outcomes. The study recommended the need to increase awareness and the importance of early booking. Ndidi and Oseremen (2010) suggested that most women book late because they believe that there are no advantages in booking for antenatal care in the first three months of pregnancy. This seems to be because pregnant women do not know the advantages of booking early for antenatal care. The author suggested that women seem to believe that a woman can do without registering in early pregnancy since whatever symptoms women may have in early pregnancy are normal, mild or not serious enough to see a health worker. A study carried out by Gross et al (2012) showed that pregnant women did not know the health benefits of antenatal care hence booked late for antenatal services. Knowledge on the benefits of antenatal care can encourage pregnant women to book early for ANC.

Sources of information on health issues help in improving the knowledge of pregnant women on antenatal care. Such information could be from health workers or other sources. Information on health can be obtained from health workers, the media or peers. A study carried out in Kosovo revealed that pregnant women got information about new health conditions from each other and they did not get a lot of information from health professionals (Kudjesi et al, 2009). Deficiency in health knowledge can affect the health seeking behaviour of an individual. A study by Sultana and Shafia, 2001 found out that information on reproductive health was lacking among women

and the study recommended that ANC education should be included in primary school curricula and mass media.

According to Sari (2009), a person's attitude towards a specific behaviour is a result from performing the behaviour, for example a person's attitude in deciding whether to use health care based antenatal care services, or traditional services. If some pregnant women develop negative attitudes towards health care services they might decide to seek other services like traditional or religious services for antenatal.

2.3 Reinforcing factors

Reinforcing factors influence the continued access to antenatal services by pregnant women (Lavender, 2007). These can be mediated by the provision of cultural, emotional and physical safety; caring in the antenatal care; and credible staff with excellent communication and interpersonal skills. Reinforcing factors can be in form of family, peers, employees, health providers and feedback by health care providers. Rewards received like recognition or avoidance of cost can reinforce health behaviours (Green and Kreuter, 1991). Health workers' attitudes and influence of significant others were some of the reinforcing factors which were looked into in this study.

2.3.1 Health workers' attitudes and practices on ANC

Green and Kreuter (1991) mentioned that attitude is rather a constant feeling that is directed towards an object. In the case of late antenatal services, pregnant women can develop negative attitudes towards antenatal services or the health care workers and this can affect their health seeking behaviour on antenatal services. Attitudes have a strong relationship with behaviours. Literature shows that poor provider attitude; fear

of punishment by health care provider based on previous experiences or just gossip can lead to delays in the decision by pregnant women (Lavender, 2007). This means if health workers do not treat pregnant women well during antenatal services, or if they hear of ill treatment by health workers ,they will not be in a position to be encouraged to book early for antenatal care in future for fear of the health workers attitudes.

Health workers' friendliness can influence access to ANC services. For certain pregnant women, difficulties in registering at a health centre coupled with reluctance by some health workers to accept them can lead to delayed access to antenatal services (New, Manero & Truscott, 2006). Shaffer et al (2002) cited by Lavender et al (2007) mentioned that staff insensitivity can deter pregnant women from accessing antenatal care early and regularly. According to Lavender et al (2007) service provision issues that could maximise continuing service uptake included a perception that there was caring in the care-giving; that women, and their knowledge of themselves and of their particular life styles were respected; that they felt culturally, emotionally, and physically safe; and that staff were credible, and had excellent communication and interpersonal skills. Blooms (2004) also highlighted a universal human need to be treated with respect, irrespective of personal circumstances. Blooms found that a feeling of being judged by health professionals further undermined the confidence of already vulnerable groups like the homeless and discouraged uptake of antenatal services. Health workers' attitudes should be accommodative to pregnant women so that the pregnant women can access antenatal care services without any fear of threat. In a study conducted in Guinea Equatorial,

hospital workers, husbands and parents were found to be the greatest influence on ANC attendance (Jimoh, 2003).

If antenatal and prenatal care is provided on specific days in some communities it becomes a barrier in seeking antenatal services (Cham et al, 2005). This means if pregnant women come for antenatal services on the days when ANC services are not offered, this becomes a missed opportunity and discourages her from coming again. Literature shows that experience by pregnant women on health care system discourage women from seeking care (Cham et al, 2005).

A study on health workers' attitudes in Tanzania by Larsen et al (2005) found out that the attitude of health care workers and their perceived ill-mannered treatment of women was one of the most significant concerns raised by the women. According to United Kingdom National Institute for Health and Clinical Excellence (2008) pregnant women, their partners and their families should always be treated with kindness, respect and dignity. The views, beliefs and values of the woman, her partner and her family in relation to her care and that of her baby should be sought and respected at all times. These give encouragements on intended health behaviour. In the case of pregnant women these people around can encourage the pregnant women to book early and attend antenatal care services.

The other people around an individual, the significant others, can influence that person's behaviour, for example whether to go for antenatal care services or not, or whether the people in the society encourage pregnant women to go for antenatal care services or not.

2.4 Enabling factors

Enabling factors are the resources, and other factors that can influence behaviour change. This includes availability of resources, accessibility and affordability of services

2.4.1 Access to ANC services by pregnant women

Literature defines access to services in relation to availability of health resources and services, accessibility to services and affordability of the health services (Green and Kreuter, 1991).

According to Andersen (1995) cited by Sari (2009) enabling factors (availability, access and affordability of services) provide patients with means to make use of the services. The same author said the enabling factors include health personnel and facilities. The factors on access therefore include distance from a clinic, the cost of the ANC services, waiting time spent by pregnant women on ANC services and health workers' attitudes which could be barriers in accessing ANC services.

Quality of the antenatal care services can as well influence on accessibility of services. A study done by Oladapo et al (2001) in Nigeria to assess the quality of services revealed that the majority of the pregnant women expressed satisfaction on the quality of services. Quality of services can contribute to utilization of ANC services. The indicators for quality also include sanitary facilities and the number of skilled personnel offering ANC services.

According to Lavender, (2007) utilization of antenatal care services is influenced by pregnancy rejection or acceptance, personal capacity or incapacity. Rejection of pregnancy can be as a result of unwanted pregnancy by teenagers or in a family when the pregnant woman or families were not prepared for the pregnancy. Study

conducted by Dartnall, Ganguly & Baterham, 2005; New, Manero & Truscott (2006) cited by Lavender, (2009), indicated that in order for pregnant women to access ANC services continuously, the ANC services should be flexible, individualized and be presented in an accessible format. Flexible ANC services are services which allow the incorporation of other newly introduced services and addresses the pregnant women's health needs. These would be some of the perceived benefits for ANC services. The perceived benefits include creating a socially valued pregnancy, confidence, pride and knowledge mediated by cultural, emotional, physical safety, a health system which is caring, credible staff with excellent communication and interpersonal communication skills. Continued access can also be affected by weighing the losses in terms of stigma, powerlessness and broken confidence, mediated by cultural, emotional, physical safety, caring in the care, credible staff and respect for women self style knowledge. Losses can also be in terms of money and time where services are expensive to access care, and perception that the antenatal services provide no benefit and failure to benefit women's time (Lavender, 2007). The pregnant women weigh resources lost in terms of money which might be difficult to find, or antenatal services that are expensive in order to access care. The pregnant women might perceive that antenatal care services provide no benefit. There might be failure to value women's time in ANC services. Time spent by a pregnant women waiting for ANC services is very important whether it is short or long. If pregnant women spend much time waiting for services she might not be motivated to return next time (Lavender, 2007).

The Zimbabwean Ministry of Health and Child Welfare guidelines state that every person should be within eight to ten kilometer radiuses to a health facility. This promotes the access and use of health care facilities. In a study by Brown et al, (2008) on antenatal care and its perinatal outcome, an assessment was made to establish whether the pregnant woman was within a distance of 5 kilometers or above. Those within the 5 kilometer from a clinic were found to be utilizing ANC services more than those far away. A similar study was done in Indonesia on distance from the clinic and pregnant mothers reported distance as a major problem in accessing ANC services.

Lavender et al (2007) conducted a study and found out that women can fail to access antenatal care services due to lack of resources which include finances available directly to her to pay for the services or travel to care. Pregnant women can find it difficult to register for antenatal services because they should pay for the registration. Similar findings were reported in the study done in Kosovo where 20% of the pregnant women reported they could not deal with the cost of ANC services which included travel and service costs (Kudjesi et al, 2009). Murira et al (1997) reported on problems that limit access to ANC services and one of them was booking fees. According to WHO and UNICEF (2008), many pregnant women do not receive the care they need during pregnancy because they cannot afford to pay for the services and they do not like how care is provided or health services are not delivering high quality care. These authorities recommended the need to identify capacity gaps and quality of health systems and barriers and address these at all levels down to the community. Several studies have also found the factor of payment to be a significant

factor to late ANC booking (Conrad et al, 1998; Fullerton et al, 2004; Zaid et al, 1996 cited y Lavender, 2007).

Economic factors which are influenced by employment and poverty can contribute to utilization of antenatal care services. A study done by Kausar et al (1999) ,

in India to explore the effects of poverty on access to maternal health services revealed that those living in poorer households had lower utilization of ANC services than those in higher socio-economic strata.

World Health Organisation indicated that some pregnant women fail to access health services because they cannot afford to pay for the services and they do not like how care is provided or health services are not delivering high quality care. Quality of care can be affected by health workers' attitudes. These authorities recommended the need to identify capacity gaps and quality of health systems and barriers and address these at all levels down to the community.

In Zimbabwe the government launched a Health Transition Fund in partnership with international donor community and UNICEF. The funds seek to revitalize the health care system and reverse the alarmingly high maternal and child mortality. At the moment about 400 million has been set aside for the mother and child fees (including ANC services) and Family planning services. The intension is to scrap the user fees for these services and promote utilization of these services.

2.5 Perceived threat on late ANC booking by pregnant mothers

The construct on perceived threat suggests that an individual should be able to perceive her health status and should believe that her health is at risk before seeking health care. It is how people view their own general health and functional state, as

well as how they experience the symptoms of illness, and worries about their health and whether or not they judge their problems to be of sufficient importance and magnitude to seek professional health care (Andersen, 1995, cited by Sari, 2009). In other words does the pregnant woman perceive that her life is in danger if she does not book early for antenatal care services? The threats include pregnancy related complications and infectious diseases.

A South African study revealed that pregnant women do not perceive significant health threats during pregnancy and therefore view more than one antenatal care visit as unnecessary (Myer and Harisson, 2010). In contrast, women perceive labour and delivery as a time of significant health risks that require biomedical attention, and most women thus book late for antenatal care. The study findings indicated that most women in this setting do not perceive significant health threats during pregnancy, and in turn view more than one antenatal care visit as unnecessary. The same author mentioned that if the pregnant woman do not perceive the threats they would not book early for antenatal care and the aspects of personal health services such as diet, exercise and self care during pregnancy are not important to her. Such pregnant women would not consider more than one ANC visit as necessary.

On late antenatal care booking if pregnant women know anyone who died of pregnancy related complications, she will be in a position to perceive threat on booking late for antenatal care.

The preceding chapter looked at literature related to demographic characteristics, predisposing, reinforcing and enabling factors associated with late ANC booking.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter seeks to outline the methodology used for the study on factors associated with late ANC booking at Sakubva and Dangamvura polyclinics. The methodology includes the study design, study population, sample size calculations, sampling method, data collection tools and methods, and ethical considerations.

3.1 Study design

An unmatched case control study design was employed by comparing the pregnant women booking late for ANC and pregnant women booking early for ANC services to find factors contributing to late ANC booking. In this study **a case** was defined as a pregnant woman booking after 16 weeks of gestation period for antenatal care from February to March 2012 at Sakubva and Dangamvura polyclinics. **A control** was defined as a pregnant woman who booked before or at 16 weeks of gestation period for antenatal care from January to March 2012 at Sakubva and Dangamvura polyclinics

3.2 Study setting

The study was carried out at Sakubva and Dangamvura Polyclinics in Mutare urban antenatal care clinics. The criteria for selection were done in consideration that pregnant women were booking late for Ante natal care.

3.3 Study population

The population under study was in the following categories:

- 4 330 expected pregnant women attending antenatal care clinics at Sakubva and Dangamvura polyclinics

- Twenty five nurses (key informants) working at the two health facilities in Mutare city in the Mother and Child (MCH) and antenatal care (ANC) departments.
- Antenatal care register for the pregnant women' details.
- The pregnant women's ANC cards to verify information, for example on last menstrual period and expected date of delivery.

3.4 Sampling

3.4.1 Sample Size

Sample size of 90 cases and 90 controls was calculated using the Cochrane formula at 95% Confidence Interval (CI);

$$n = \frac{Z^2 p (1-p)}{d^2}$$

Z - Statistic for CI (1.96)

p - Expected prevalence of late ANC booking (6 %). This was according to literature review-Trihn and Rubin, 2006). (The prevalence was from review of clinic records and a pilot study carried out. The prevalence of late antenatal care booking was at 6% and this was used in this study.)

d - Error margin/ precision (0.05)

$$n = Z^2 p (1-p) / d^2$$

$$n = 2^2 \times 0.06 \times (1-0.06) / 0.05^2$$

$$n = 4 \times 0.06 \times (0.94)$$

$$0.0025$$

$$n = 90.4$$

$$= \textbf{90 cases} \text{ and } \textbf{90 controls}$$

The same study by Trihn and Rubin, (2006) had a return rate of 80% and this was used in this study.

$$n \text{ whose } 80\% \text{ is } 72$$

$$72 \times \frac{100}{80}$$

$$= 90$$

Calculation of the sample size by health facility was done as follows:

Number of pregnant women at each institution ÷Population at each clinic÷Total pop of two clinics × sample size

Sakubva population of pregnant women

2553÷4330×90=53 cases and 53 controls=106

Dangamvura population of pregnant women

1777÷4330×90=37 cases and 37 controls=74. Sakubva had 106 pregnant women interviewed (53 cases and 53 controls), Dangamvura 74 (37 cases and 37) pregnant women interviewed.

3.4.2 Sampling Procedure

Information concerning pregnant women was reviewed from August 2011 to March 2012. The ANC register was used to come up with a sampling frame for the cases and for the controls. The sample of 90 cases was sampled for the cases sampling frame of 1010 pregnant women. The first case was randomly selected and every 11^{th} pregnant woman was selected until the sample size was enough.

The sampling frame for the controls (pregnant women who booked early for antenatal care) had 270 participants. The first participant was randomly selected then every 3rd pregnant women was selected for the study. The sampling frames were designed from a population of 1280 pregnant women who were registered. Purposive sampling was done for the nurses (key informants) working in ANC departments at Sakubva and Dangamvura Poly clinics and the nurses who were on duty during the study were involved in the study. Questionnaires were given to the nurses who were on day duty and these were filled and returned the same day. For the nurses who were on night duty, the questionnaires were left and completed overnight. The forms were then collected the following day.

3.5 Inclusion criteria

Selected pregnant mothers booking after 16 weeks for antenatal services and pregnant mothers booking early for antenatal services who resided in Sakubva and Dangamvura and attending Sakubva and Dangamvura Poly clinics were included in the study. Pregnant women who were willing to be included in the study were interviewed.

3.6 Exclusion criteria

Pregnant women who were not feeling well were not included in the study. Pregnant women who were not willing to participate in the study were excluded.

3.7 Research Instrument

An interviewer administered questionnaire (Annex 1c - English; 1d - Shona) was developed for the pregnant women booking at 16 weeks or above for ANC services (cases) and those booking under 16 weeks (controls) for ANC services. The interview schedule was designed to solicit data from the pregnant women on their

demographic characteristics, knowledge and attitudes towards ANC, access to ANC services and any perceived threat on late ANC booking.

A self administered questionnaire (Annex 2b) was used for nurses working at Sakubva and Dangamvura polyclinics to solicit data on the nurses' attitudes and practices on ANC services as well as their perception on patient access to ANC services and the challenges faced in the provision of ANC services at the clinics.

For validity of the instrument, the pregnant women's questionnaire was translated into Shona then English and back into Shona to ensure that the questions retained their meaning after the translation.

3.8 Validity and Reliability

The study instrument was pre-tested at Fern valley clinic in Mutare city and this health facility was exempted from the study.

3.9 Data collection procedure

Data were collected between February and March 2012. A structured interview questionnaire was utilised for the pregnant women. No research assistants were used during the study. The researcher conducted the interviews with the pregnant women on her own. The pregnant women were first greeted in a friendly manner to establish trust and make them feel comfortable. Each interview lasted 20 to 25 minutes and was conducted in one of the consultation rooms in the antenatal clinic. This ensured privacy a comfortable environment and lack of interruptions for the pregnant women so that they could speak freely.

Review of records, which included the clinic register, was done to find information on the pregnant women's contact details which include the physical address.

Interviews were held with the pregnant women to solicit information on antenatal care. Self administered questionnaires were used for the nurses.

3.10 Data analysis

Data were entered into a computer and analyzed electronically using the of Epi Info version 5.3.1. Univariate, Bivariate and multivariate analysis were employed to establish the association between variables.

3.11 Permission to carry out study

Permission to carry out the study was obtained from the Provincial Medical Director (PMD), Manicaland (Annex 2d), and the local authority - Director of Health Services Mutare City (Annex 2e), Africa University Faculty of Health Sciences and the Medical Research Council of Zimbabwe (MRCZ) (Annex 2f).

3.12 Ethical considerations

The participants were requested to participate in the study voluntarily with no coercion or by force. The participants were assured that the study has no risks associated with it. The study would not have a direct benefit to the pregnant women. The local authority would put in place measures to improve the services for the pregnant women in future and these would benefit on the services.

Anonymity of the respondents was assured by not recording names of the respondents. The issue of privacy and confidentiality was also assured and this was assured by not releasing collected information to people not concerned. Interviews were done in a private environment. Written informed consent was sought from the participants before they were included in the study.

Written consent was sought from both the nurses and the pregnant women and confidentiality was assured to respondents. Information on the purpose of the study was included on the consent forms. The respondents were given consent forms to fill to show that they voluntarily participated in the study. Anonymity of clients was also ensured. Results of the findings were dissemination to Mutare City Health Department.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.0 Introduction

This chapter presents data collected from 90 cases and 90 controls of pregnant women attending Sakubva and Dangamvura polyclinics in the ratio of 59:41 according to the ratio of pregnant women from Sakubva (2553) and Dangamvura (1777) polyclinics. From Sakubva 53 (59%) cases and 53 controls were interviewed and from Dangamvura 37 (41%) cases and 37 controls were interviewed. The pregnant women's ANC cards were reviewed to verify information provided on interview. Of the 90 cases interviewed 20 (22.2%) booked at between 18 weeks and 20 weeks of gestation age, 27 booked between 24 to 27 weeks of gestation age, 43 booked at 28 weeks and above of gestation age. Of the 90 controls, 16(17.8%) booked at gestation age of 8 to less than 12 weeks, and 74 (82.2%) booked between 12 weeks and 16 weeks gestation age.

Of the twenty five nurses working in the MCH (ANC Maternity and well baby clinic) departments of the two clinics, 16 nurses were found on duty (ten from Sakubva and six from Dangamvura) during the period of data collection and these responded to the questionnaires as key informants.

4.1 Demographic characteristics of respondents

Table 3: Demographic data of pregnant women

Variable	Cases		Controls		p-value
Age	**n**	**(%)**	**N**	**%**	
15-20	18	20.0	11	12.2	0.01
21-49	72	80.0	79	86.7	
Marital status					
Single	5	5.6	86	95.6	_
Married	85	94.4	4	4.4	
Size of household			60	66.7	0.007
Below 3	43	47.8			
4 and above	47	52.2	30	33.3	
Level of education					
Never went to school	2	2.2	0	0.0	-
Primary	13	14.4	5	5.6	-
Secondary	64	71.1	77	85.6	-
Tertiary	11	12.2	8	8.9	-
Husband's education					
Primary	2	2.2	1	1.1	-
Secondary	65	76.5	62	71.3	-
Tertiary	18	21.2	24	27.6	-

The employment status of the respondents and their husbands was of no significance. More than 60% of both case and controls were unemployed and more than 80% of the husbands of cases and controls were employed.

Four of the cases and 5 controls stated that they had no income at all. Most of the respondents had household monthly income below $200. Thirty-nine percent of cases and 48% of controls had monthly household income more than $200. This however had no statistical significance. All cases and controls but two of the respondents claimed to be Christians. Age (OR1.8, CI 0.79-4.05, p-value 0.01) and size of household (OR 2.19, 95 % C.I .19-3.99 and p-value 0.001) emerged to be the statistically significant socio-demographic factors on late antenatal care booking. Factors including religion, marital status, and respondents' level of education, husband's level of education, occupation and income were found not to be statistically significant.

Table 4: Past obstetric history

Number of children	Cases		Controls		p-value
	N	%	N	%	
Below 3	87	96.7	60	66.7	
4 and above	3	33	3	3.3	0.6
Previous deliveries					
0	24	26.7	33	36.7	-
1	22	24.4	36	40.0	
2	29	32.2	13	14.4	
3	12	13.3	5	5.6	
4 and above	3	3.3	3	3.0	
No. Delivered in hospital					
0	24	26.7	35	38.9	-
1	22	24.4	34	37.8	
2	29	32.2	14	15.6	
3	12	13.3	4	4.4	
4 and above	3	3.3	3	3.3	

Nine cases and three controls mentioned they had underlying medical condition during their previous pregnancies which included hypertension and heart disease and this was statistical significant (OR 3.43,CI 0.8-13.14 p-value 0.05). Four cases and two controls indicated they had uneventful deliveries and one case and two controls had history of obstetric complications. Fourteen cases and 7 controls had history of home deliveries. Two cases and three controls lost babies during delivery, ten cases and eight controls had miscarriages. All these factors had no statistical significance to late ANC booking. Fifty one cases and six controls had not planned for their pregnancies. Out of these four cases and two controls had fallen pregnant while using contraceptives. This had no statistical significance towards late antenatal care booking.

4.2 Predisposing factors to antenatal care

The study assessed attitudes and practices of pregnant women. These can facilitate or hinder motivation for behavior change.

4.2.1 Pregnant women's knowledge and attitudes on antenatal care

The predisposing factors which were looked at included knowledge and attitudes towards antenatal care. The pregnant women were assessed on their knowledge of the recommended gestational age to book for antenatal care.

The majority of the cases, 58 (64.4%) and 82 (91.1%) controls mentioned that booking should be done during the first three months of pregnancy. Thirty two cases and 8 controls did not know the best time to book for antenatal care. Eight cases indicated that pregnant women can book after 16 weeks and 24 indicated booking can be done during the third trimester. Three controls indicated ANC booking can be done during the second trimester and five mentioned booking can be done during the third trimester.

The pregnant women were asked on the benefits of antenatal care. None of the cases and controls mentioned the control of underlying medical conditions such as heart disease, diabetes mellitus, prevention and control of malaria as the benefits of ANC yet they are important benefits.

On the assessment of knowledge on complications, the responses did not mention the possible complications of late ANC booking such as anaemia, Ante partum hemorrhage (APH), post partum hemorrhage (PPH), and pregnancy induced hypertension (PIH). Instead the pregnant women indicated that the benefits of ANC were prevention HIV and malaria which are not necessarily complications but can be

worsened by pregnancy. Ninety nine percent of the cases and controls mentioned that the HIV and malaria can be prevented.

The pregnant women indicated that health workers had talked to them about: nutrition in pregnancy (58 cases and 53 controls), HIV prevention during (85 cases and 85 controls) and malaria in pregnancy (12 cases and 26 controls).

Table 5: Type of information received from health workers

	Cases	Controls
Nutrition in pregnancy	**Yes** 58(**64.5)**	53(**58.9)**
	No 32(**35.5)**	37(**41.1)**
HIV in pregnancy	**Yes** 85(**94.5**)	85(**94.5)**
	No 5(**5.5)**	5(**5.5)**
Malaria in pregnancy	**Yes** 12(**13.3**)	26(**28.9**)
	No 78(**86.7)**	64(**71.1)**

On the knowledge about PMTCT, the pregnant women had limited knowledge on the programme in place for the HIV positive mother. More than half of the cases and controls mentioned that the mother is given a tablet. The name of the tablet was not mentioned. Seven cases and 6 controls mentioned the HIV positive pregnant mother was given antiretroviral and Nevirapine. Sixteen (17.8%) of the cases mentioned that the programme in place was the Prevention of Mother to Child Transmission of HIV.

Eighty eight (97.8%) cases and eighty nine (98.9%) controls indicated that they would want to learn more about antenatal care. The mentioned topics were HIV/AIDS, 78 (86.7%) and 12(13.3%), nutrition in pregnancy 7 (7.8) cases and 5 (5.6%) controls, pregnancy induced hypertension 6 (6.7%) controls. The preferred media were given as health workers, 58 cases and 68 controls; pamphlets, 20 cases and 37 controls and booklets, 14 cases and 15 controls.

The parameters for pregnant mothers' attitudes were put on a likket scale. The responses on each scale were tabulated on a 2x2 table and the findings were as follows: Eighty two cases and 4 controls agreed to the statement that ANC services were not flexible whilst 82 cases and 86 controls indicated the services were flexible (OR 2.10, CI 0.54-8.66).The responses who were in agreement of the statement that one ANC visit is enough were 16cases and 7 controls whilst 74 cases and 83 controls indicated one ANC visit was not enough (OR 2.56, CI 0.93-7.32).

The pregnant women were asked whether they believed that traditional birth attendants offer better ANC services. Two cases and 3 controls agreed to the statement whilst 88 cases and 87 controls the respondents indicated that did not believe in that (OR 0.66, CI 0.07-5.00).

On the issue of religious birth attendants offering better ANC services than modern health care, the pregnant mothers 4 cases and 1 control indicated that RBA offer better ANC services whilst 86 cases and 89 controls did not agree with the statement(OR 4.19, CI0.43-100.3).

The pregnant women were asked whether ANC services were individualized or not. Fourteen cases and 13 controls mentioned the ANC services were not individualised whilst 74 cases and 81 controls indicated the ANC services were individualized (OR

1.95, CI 0.75-5.11).Seventy four cases and 81 controls indicated they were afraid of being judged by nurses whilst 74 cases and 81 controls indicated they were not afraid of being judged by nurses. All the factors had no statistical significance to late ANC booking.

4.3 Reinforcing factors

Health workers' attitudes and practices were the factors assessed as reinforcing factors. The pregnant women's family support was also assessed as reinforcing factors.

4.3.1 Health workers' attitudes towards ANC and practices on ANC

Table 6: Health workers' attitudes and practices on ANC

Variable	S D	S A	A	D
It is not necessary for pregnant women to book early for ANC	15	1	0	0
Process of initial ANC takes too long	2	9	5	0
Pregnant women are difficult to deal with	8	7	1	0
Continuous health education is necessary for pregnant women	0	0	4	12

SD= Strongly disagree **SA=** Strongly agree **A=** Agree **D** = Disagree

The nurses strongly disagreed to the statement that it is not necessary for pregnant women to book early meaning the nurses indicated that pregnant women should book

early for ANC. The finding also revealed that more than half of the nurses14 (87.5%) agreed that the process of initial ANC visit was too long. Half of the nurses also indicated that pregnant women were difficult to deal with.

Health workers practices on ANC services

The nurses indicated that continuous health education was necessary for the pregnant women and health education is given during every antenatal care visit. The ANC services were said to be offered everyday Monday to Friday. Health education topics given include HIV in pregnancy, importance of early booking, and breast feeding, nutrition, Family planning, and personal hygiene, drug use during pregnancy, immunisation and exercises. The initial ANC bookings were said to be done every Monday and Thursday (Sakubva) and other days were for subsequent visits. Dangamvura polyclinic was reported to offer initial ANC booking services on Wednesday and the other days were for subsequent ANC visits.

The majority of the cases (87) and controls (88) indicated that they were not expected by their families to visit traditional healers for antenatal services or deliver at religious birth attendant. Both cases, 87(96.7%) and 89(98.9) mentioned that the health workers were very supportive on antenatal care services.

4.4Enabling Factor

Enabling factors are those factors that can help or hinder behaviour change. These include availability of resources, accessibility and affordability of services. The enabling factors considered in this study were distance, cost and health workers' attitudes and these could be barriers in accessing ANC services.

4.4.1 Access to ANC services

Barriers which were noted by the nurses which might hinder pregnant women to seek ANC services were mentioned as distance for example some of the clients attending Dangamvura could be coming from the neighboring peri-urban areas of Dora. Some of the barriers were mentioned as lack of money to book, ignorance on importance of early booking, health workers' attitudes and fear of HIV testing by the pregnant women. Some nurses indicated that some of the nurses were rude to pregnant mothers.

Seventy three (81.1%) cases and 76(84.4%) controls reported they lived a distance of between 1 and 5 kilometers from the clinic. These findings were different from those found in a study in Indonesia where the majority of pregnant women cited distance as a major problem in accessing ANC services (Dibley and Roberts, 2007).

The cost of ANC services at all the city clinics including Sakubva and Dangamvura were $15 and this had to be paid in cash even for those on Medical Aid. Forty nine (54.4%) cases and 23(25.6%) controls indicated that the ANC services were expensive. Cost of the ANC services had statistical significance to late ANC booking (OR 3.48, CI 1.85-6.53, and p-value 0.0001). Thirteen (14.4%) cases and 7(7.8%) controls mentioned they were on medical aid although they cannot use it for antenatal care services. Seventy seven (85.6%) cases and 83(92.2%) indicated were not on medical aid. No statistical significance was established between having medical aid and late antenatal care booking. On quality of ANC services, the majority of the pregnant women reported satisfaction on the services and the nurses were reported to be skilled to offer ANC services. These findings were in agreement

with the findings in a study done in India by Oladapo et al, (2001) where the majority of the pregnant women expressed satisfaction with the ANC services and technical competence of nurses.

The pregnant women were asked their views on waiting time. Fifty percent of the cases and 58 percent the controls mentioned that they were comfortable with the time while the rest indicated it was too long. Sixty one (67.8%) cases and 40(44.4) controls reported they spend more than an hour waiting for antenatal care services. The nurses also reported that waiting time was long especially for those being tested for HIV. This was said to be caused by shortage of staff. For example the nurse who does HIV testing and counselling also does other duties. Waiting time and distance from clinic had no significant associations with late antenatal care booking.

Health workers' friendliness can influence access to ANC services and this was assessed. Health workers' friendliness was rated as fair by 12 cases and 9 controls, good by 78 cases and 81 controls. All the cases and controls mentioned that they were satisfied with the antenatal care services they received from the health facilities. On the question of family support, 86 percent of the cases and 94 percent of the controls indicated that they got support from family (OR 0.38, CI 0.13-1.13, p-value 0.06). The factor of family support had a protective effect on late ANC booking. More than fifty percent mentioned they got financial support from their families. The mostly mentioned family member who gave support was the husband (72% cases and 77% controls). These factors had no statistical significance to late ANC booking.

Forty three cases indicated that they had barriers in seeking antenatal services whilst forty seven cases had no barriers. Eighty percent (72) controls had no barriers in seeking antenatal services whilst twenty percent of the controls had some barriers. Of

the forty seven cases that indicated had barriers, thirty seven had no money to book for antenatal care (OR 3.6, CI 1.89-7.09, p-value0.0001).

4.5 Perceived threat on late ANC booking

On when pregnant women are likely to have problems, 28(31.1%) cases and 55(61.1%) controls, mentioned that pregnant women were likely to have problems any time during pregnancy. The majority of the cases (almost 70%) did not perceive the risk of complications during pregnancy. Fifteen cases and six controls indicated that problems in pregnancy can be encountered during labour and delivery. More than fifty percent of the controls (61.1%) indicated that pregnant women were likely to have problems which need the hospital anytime during pregnancy. The controls perceived the risk of complications during labour unlike the cases.

Thirty five (38.9%) cases and 40(44.4%) controls mentioned they knew someone who had died of pregnancy related complications. This factor had no statistical significance to late antenatal care booking. Nine cases and three controls mentioned they had medical conditions such as hypertension and heart disease during their pregnancies and four cases and two controls indicated they had uneventful deliveries despite their medical conditions. One case and two controls had history of obstetric complications which included caesarean section and pregnancy induced hypertension (PIH). Fourteen cases and 7 controls had history of home deliveries and none of these had subsequent complications. Ten cases and eight controls had fresh still births during home deliveries. Ten cases and eight controls had abortions. Ninety cases and ninety controls did not smoke. Two cases drank alcohol whilst all controls

did not drink alcohol (OR undefined 0.16 CI 0.02-1.3, p-value 0.05).Eighty six cases and all controls perceived the risk of smoking.

Logistic regression was done on the factors which were found to be statistically significant. These included age, number in household, barriers in seeking antenatal care services and cost of services.

Table 7: Logistic regression

Variable	OR	CI	p-value
Age(15-20)	0.44	0.18	0.06
Barriers in seeking ANC services	2.77	1.31-5.86	0.007
Payment for ANC services (Cost)	2.50	1.23—5.09	0.01
Size of people in household	0.43	0.22-0.85	0.01
History of medical condition	4.17	0.98-17.43	0.05

According to Logistic regression carried out, three factors of barriers in seeking ANC services, size of household, history of medical history and cost of ANC services were found to be statistically significant to late ANC booking. Pregnant women with

barriers in seeking antenatal care services were found to be 3.0 times more likely to book late for antenatal care at Sakubva and Dangamvura poly clinics while holding other variables constant. The cost of antenatal services was found to be significantly associated with late ANC booking by pregnant women at Sakubva and Dangamvura polyclinics.

CHAPTER FIVE

DISCUSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a discussion on the summary of the findings of the study, the conclusions and recommendations. The discussions were linked to the findings presented in chapter four as well as related literature in chapter two. The discussion covers the objectives as given in chapter one (Section 1.5.2). The booking status of the cases and controls revealed that of the 90 cases interviewed 20 booked between 18 weeks and 20 weeks of gestation age, while 27 booked between 24 to 27 weeks of gestational age and more than half of the cases,(43) booked at 28 weeks and above of gestation age. These cases were very late bookers. Of the 90 controls, 16 (17.8%) booked at gestation age of 8 to less than 12 weeks, and 74 (82.2%) booked between 12 weeks and 16 weeks gestation age. Various literature show that many pregnant women book late for antenatal care. A study carried out by Mrisho et al (2009) to find factors related to late ANC booking revealed that three quarters of the pregnant women booked in the second trimester and a quarter (26%) booked in the third trimester . In this study 17.8% of the pregnant women booked at the recommended gestation age of less than 12 weeks and this were a very small percentage. It is a cause of concern that more than half (43 cases) booked very late at more than 28 weeks gestation. Some of the cases booked as late as 32 to 36 weeks. This means such cases will not be able to attend at least two ANC visits before delivery. There will be no time to investigate for example anaemia and such cases will be prone to post partum haemorrhage. Medical conditions like diabetes mellitus and heart problems cannot be assessed in time and by that time of late booking complications

could have develop which could be irreversible. The pregnant women booking late would not get the full package of the antenatal care and vital signs would have changed

According to Magadi et al, (2000) cited by Mrisho et al, (2009) such late ANC booking limits the amount and quality of care that a pregnant woman can receive. For example on HIV prevention during pregnancy, the prophylaxis should start at 14 weeks of gestation period and if a pregnant mother books later than that, the quality of services will be compromised (FANC, 2011).

5.1 Demographic characteristics

Socio-demographic factors have an influence on people's health. According to Green and Kreuter (1991), late antenatal care booking is associated with certain socio-demographic characteristics. The socio-demographic factors which were looked at in this study included age, marital status, education levels of respondents and their husbands, number of children and people in the household. According to Green and Kreuter (1991) socio demographic factors such as socioeconomic status, age, ethnic group, and family size or bad obstetric history were found to predispose health related behaviors through a variety of mechanisms, while factors including religion, marital status, respondents' level of education, husband's level of education, occupation and income were found not to be statistically significant.

The findings on economic status show that more than half of the pregnant women were unemployed. Economic factors which include employment and poverty can contribute to utilization of antenatal care services. A study done by Kausar et al (1999), in India to explore the effects of poverty on access to maternal health

services revealed that those living in poorer households had lower utilization of ANC services than those in higher socio-economic strata.

Socio-demographic characteristics which were found to be associated with late antenatal care booking at Sakubva and Dangamvura polyclinics were age (OR 1.8,CI 0.79-4.05,p-value 0.001) and size of household (OR 2.19, 95 % C.I.9-3.99 and p-value 0.01). The findings on the size of household having significance to late antenatal care were similar to the findings in the study by Haque,2009 who also found out that the size of a family had a significant impact on maternal health services like ANC utilisation.

The comparison study on use of maternity services by teenagers and older women by Magadi et al, 2000 also found out that teenagers had poorer maternal health seeking behaviour than older women with similar background. Numerous studies in developing countries have shown that demographic factors such as age, parity and place of residence are associated with late antenatal care booking (Sharma et al, (2007); Wong et al, (1987); Obermeyer, (1993).

A similar study by Ebeigbe and Igberase, (2005) found out that socio-demographics like age, women's education, income and obstetric factors did not appear to be responsible for late initiation of antenatal care in Niger Delta; Nigeria. Adekanle, and Isawumi, (2008) assessed the prevalence of booking and factors related to it and age was also found to be a significant factor associated with late ANC booking.

One analysis of a similar study in Thailand showed that maternal education has a significant influence on the use of maternal health care services. Women education, husband's education, women exposure to media, women's autonomy, and women's working status; husband's occupation had negative association with late antenatal

care booking (Sari, 2009). The findings in Thailand were similar to those of studies by Adekanle and Isawumi (2008), Haileselasse and Enqueselassie (2009) in which maternal education, and a planned pregnancy, were found to be independent predictors of initiation time of antenatal care service utilization. Studies from most developed countries have also established that socially disadvantaged women like teenagers, unmarried women and women with lower level of education and socioeconomic class are more likely to book late for antenatal care (Atuyambe et al, 2008, Sari, 2009, IDHS 2007).The findings on age show similarity in the findings with the Sakubva and Dangamvura study. The studies found out that teenage pregnancy contributed to maternal deaths

Similarly, in a study to assess factors associated with late antenatal care booking in Central Manchester, it was revealed that teenage pregnancy was a factor associated with late antenatal care booking. Numerous studies in developing countries have shown that demographic factors such as age, parity and place of residence are associated with late antenatal care booking (Sharma et al, 2007; Wong et al, 1987; Obermeyer, 1993). These findings were similar to the Sakubva and Dangamvura study on age as a significant factor associated with late antenatal care booking but differ on the other factors of parity and place of residence. Teenage pregnancy is often associated with unwanted pregnancy where some of them would have fallen pregnant while going to school. In such cases the teenagers will be hiding the pregnancy and do not want to make the pregnancy public hence coming to late for antenatal care booking.

Other factors which include unemployment in the household, moving during pregnancy, geographical area of residence and the opinion about the value of ante

natal care were factors associated with late ante natal care booking in the Manchester study which were different from the Sakubva and Dangamvura study.

The influence of history of underlying medical conditions such as hypertension and heart disease (9 cases and 3 controls) had a statistical significance (OR 3.43, CI 0.8-13.14 p-value 0.05). The other factors which include history of past obstetric complications (1 case and 2 controls); history of home deliveries (14cases and 7 controls); lost babies during delivery (2 cases and 3 controls), (10 cases and8 controls) had no statistical significance to late ANC booking. There seem not to be emphasis put on health education on monitoring these before the interference of pregnancy. These findings were in contradiction with the findings on the study by Ebeigbe and Igberase (2005) who found out those obstetric factors did not appear to be responsible for late ANC utilization in Niger Delta, Nigeria.

5.2 Predisposing factors to ANC

Predisposing factors are the factors which are related to knowledge, attitudes, values, perceived needs which exposes an individual to diseases or conditions (Green and Kreuter, 1991). These factors can facilitate or hinder motivation for behaviour change.

5.2.1 Pregnant women's knowledge and attitudes on ANC

Green and Kreuter, (1991) indicated that knowledge of an individual concerning a condition is an important factor that can predispose an individual towards the performance of specific health behaviour to promote health. Knowledge and attitudes play an important role on the use of antenatal services by pregnant women and these are some of the maternal characteristics which have the strongest association with late antenatal care booking. Literature has found out that attitudes, values and

knowledge that people have about health and health care services influence their subsequent perceptions of need and use of health services (Sari, 2009).

The findings on the recommended time to book revealed that although the majority (58 cases and 82 controls) knew when to book for ANC, they did not actually book at the periods they mentioned. For example 46 cases booked at 18 weeks to 24 weeks and 44 booked at 28 weeks and above. These findings are in agreement with the findings of Ndidi and Oseremen (2010), where three quarters of the respondents felt the first three months of pregnancy was the best time to book for antenatal care, yet more than half of the pregnant women booked after the first trimester.

The study revealed that knowledge on when to book did not relate to their formal education. Various studies have related formal education to maternal education where educated mothers are likely to be knowledgeable on health matters. In this study findings on the education factor revealed that more than half of the pregnant women (71% cases and 85% controls) and their husbands (76% cases and 71% controls) had secondary level education. Educational level has been known to have an influence on knowledge of antenatal care. This can be so because educated women can seek information on health matters for example from the internet unlike uneducated women. A study done in Peru found out that formal education and maternal education of women influences the use of maternal health care services (Elo 1992, cited by Sari, 2009).

The odds of using prenatal care and formal delivery assistance was found to be much greater for women with primary schooling, compared to women who had not gone to school at all. Women education, husband's education, women exposure to media, women's autonomy, and women's working status, were the independent variables,

which were assumed to have positive or negative association with the utilization of maternal health care services (Sari, 2009). According to this study 75 cases and 85 controls had secondary and tertiary education but according to the expected health knowledge this did not tally since the respondents demonstrated limited knowledge on antenatal care. Various studies have related formal education to maternal education where educated mothers are likely to be knowledgeable on health matters. The findings on booking period were similar to the findings in the study done Mrisho et al (2009) where the majority of the pregnant women (73%) booked in the second trimester, 26% booked in the third trimester yet they mentioned that ANC booking should be done during the first trimester. The late booking by pregnant women, according to Magadi et al (2000), cited by Mrisho et al (2009) limits the amount and quality of care that a pregnant woman can receive. These studies have recommended the need to increase awareness and the importance of early booking.

Adeyemi et al (2007) cited by Ndidi and Oseremen, (2010) found out that though most of the women in their study in south western Nigeria booked late, 57.3% felt women should book in the first trimester. The same study by Ndidi and Oseremen (2010), also suggested that most women book late because they believe that there are no advantages in booking for antenatal care in the first three months of pregnancy. This seems to be because antenatal care is viewed primarily as curative rather than preventive in the study population. Education was found to have the most powerful influence on the maternal health. Findings from the Sakubva and Dangamvura study revealed that pregnant women had limited knowledge on antenatal care. According to Zhao (2009), health knowledge not only transforms but empowers women and improves their health and self esteem. It is expected that educated women are more

likely to be aware of their health status and seek health knowledge. Furthermore educated women may have a greater decision making power on health related matters. The findings from Sakubva and Dangamvura study showed that the pregnant women's limited knowledge does not allow them to make decisions concerning their health for example on booking early for antenatal care.

A study in Paraguay reported that maternal health knowledge would be improved with wide application of community-based antenatal care programme to meet the needs of those who are functionally illiterate (Ohnishi et al (2005), cited by Zhao (2009).

On benefits of antenatal care the responses of the pregnant women revealed that they had limited knowledge on that. None of the cases and controls mentioned the benefit of the control of underlying medical conditions such as heart disease, diabetes mellitus, prevention and control of malaria yet these are important benefits. According to ANC guidelines the benefits of ANC include recording and taking note of the vital signs like blood pressure and haemoglobin levels; testing urine; monitoring and controlling the vital signs during pregnancy. When the vital signs are recorded late in pregnancy it becomes difficult to identify and control them and pregnancy may have influenced their status. The findings of this study revealed that the nurses were not emphasizing the important benefits of booking early for antenatal care which is essential in preventing complications related to late ANC booking. The study done by Gross et al (2012), showed that pregnant women did not know the health benefits of antenatal care hence booking late for antenatal services.

Knowledge on the benefits of antenatal care can encourage pregnant women to book early for ANC.

On the assessment of knowledge on complications the responses did not mention the possible complications of late ANC booking such as anaemia, ante partum haemorrhage (APH), postpartum haemorrhage (PPH), pregnancy induced hypertension (PIH). Instead the pregnant women indicated the prevention of HIV and malaria which are not necessarily complications but can be worsened by pregnancy. Ninety nine percent of the cases and controls mentioned that the HIV and malaria can be prevented.

On the knowledge about PMTCT, the pregnant women had limited knowledge on the programme in place for the HIV positive mother. More than half of the cases and controls mentioned that the mother is given a tablet. The name of the tablet was not mentioned. Seven cases and 6 controls mentioned the HIV positive pregnant mother was given antiretroviral and Nevirapine. Sixteen (17.8%) of the cases mentioned that the programme in place was the Prevention of Mother to Child Transmission of HIV. This small percentage on knowledge on the PMTCT programme is a cause of concern considering the period since the PMTCT programme has been introduced for implementation and also the advantages attached to the programme in reducing HIV transmission. The health workers were giving health education yet the knowledge levels are low. However it appears the methods being used were not effective. There is need to check on the understanding of the pregnant women. Maybe the method of group education is not effective or the pregnant women might not be in a receptive mood of learning. The waiting time the pregnant women spent as well could influence on lack of concentration on education being given.

The findings on health education the pregnant women indicated that health workers had talked to them about: nutrition in pregnancy (50 cases and 53 controls), HIV prevention during pregnancy (85 cases and 76 controls) and malaria in pregnancy (12 cases and 26 controls). It could be that the health workers were focusing on HIV and malaria at the expense of the other relevant information for example benefits of antenatal care. The Sakubva and Dangamvura study revealed that the pregnant women got health education from nurses unlike the study which was done in Kosovo where pregnant women tended to inform each other about new health conditions and they did not get a lot of information from health professionals (Kudjesi et al, 2009). Deficiency in health knowledge can affect the health seeking behaviour of an individual. A study by Sultana and Shafia (2001) recommended that ANC education should be included in primary school curricula and mass media where the target groups for antenatal care could be extended to women of child bearing age and when these women fall pregnant they will be having information on antenatal care already. Attitudes of pregnant women were also assessed. Issues regarding flexibility and individualisation of antenatal care services were looked into. The findings revealed that the majority of pregnant women (82 cases and 86 controls) mentioned that antenatal care services were flexible and individualized. Flexibility and individualization of services can influence attitudes towards services. These findings were similar to the findings by Dartnall, Ganguly & Baterham, 2005; New, Manero & Truscott (2006) cited by Lavender, (2009), which found out in their study that the ANC services were flexible, individualized and presented in an accessible format.

The pregnant women were asked whether one ANC visit was enough for ANC services. The majority of the pregnant women mentioned that one ANC visit was not enough. According to the Goal Oriented Antenatal care Protocol about four to six ANC visits are recommended.

The pregnant women's beliefs and attitudes towards traditional and religious birth attendants were assessed. Most pregnant women did not believe in traditional birth attendants and religious birth attendants except 6 cases and 4 controls. This means the pregnant women have confidence in the health care service. The pregnant women (74 cases and 81 controls indicated that the ANC services were individualised. Some pregnant women can be afraid of being judged by health workers. For example some health workers can give judgmental comments to pregnant mothers which can make the pregnant women develop a negative attitude towards antenatal services.

5.3 Reinforcing factor

Reinforcing factors can be in form of family, peers, employees, health care providers and feedback by health workers (Green and Kreuter, 1991). Health workers attitudes and their practices were assessed as reinforcing factors which can influence continued access to services.

5.3.1 Health workers' attitudes and practices on ANC

Reinforcing factors influence the continued access to antenatal services by pregnant women (Lavender, 2009). These can be mediated by the provision of cultural, emotional and physical safety; caring in the antenatal care; and credible staff with excellent communication and interpersonal skills.

The findings from this study revealed that more than half of the nurses (87.5%) agreed that the process of ANC was too long. Half of the nurses also indicated that

pregnant women were difficult to deal with. This shows that health workers with such an attitude will not treat pregnant women with a positive mind. Once a pregnant woman experiences such attitudes she will not be motivated to book early for ANC in future. Literature shows that poor provider attitude; fear of punishment by health care provider based on previous experiences or just gossip can lead to delays in the decision by pregnant women (Lavender, 2007).

Some of the health workers' attitudes can have an impact on pregnant women and can cause emotional harm to the pregnant women. Larsen et al (2005) did a study on health workers' attitudes and found out that some of the health workers gave comments to pregnant women which are not reassuring but cause anxiety. For example some of the comments like "You have gestational diabetes", "You are anemic", "You are 18 and teenage pregnancy is associated with specific risk". Such comments can impact on the emotional state of the pregnant women. The author stated that health workers should have a positive attitude towards ANC and pregnant women and protect the emotional state of women. Information obtained from the nurses also revealed that some of the nurses had a negative attitude towards pregnant women and some acknowledged that their colleagues were sometimes rude to pregnant women. Such attitudes will not encourage the pregnant women to come for ANC services. Shaffer et al (2002) cited by Lavender et al (2007) mentioned that staff insensitivity can deter pregnant women from accessing antenatal care early and regularly.

According to Lavender et al (2007) service provision issues that could maximise continuing service uptake included a perception that there was caring in the care-giving; that women, and their knowledge of themselves and of their particular life

styles were respected; that they felt culturally, emotionally, and physically safe; and that staff were credible, and had excellent communication and interpersonal skills. Blooms (2004) also highlighted a universal human need to be treated with respect, irrespective of personal circumstances. She found that a feeling of being judged by health professionals further undermined the confidence of already vulnerable groups like the homeless and discouraged uptake of antenatal services. Health workers' attitudes should be accommodative to pregnant women for the pregnant women to access antenatal care services without any fear of threat.

The practices by the nurses revealed that health education was given routinely, every day to pregnant mothers which is a good practice required for antenatal care. The topics discussed included HIV in pregnancy, importance of early booking, and breast feeding, nutrition, Family planning, and personal hygiene, drug use during pregnancy, immunisation and exercises. This was noted as a good practice in improving the health knowledge of pregnant women.

Practices of the nurses can be affected by challenges in the health system. For example shortage of staff and equipment to use can hinder the implementation of quality nursing care. Reports from the nurses indicated that there was shortage of nurses and equipment like BP machines, bathroom scales, glucometer reagents. Some proposed making CD4 count machines available at testing centres like the clinic. Space for antenatal care was also indicated as a concern by the nurses. Similar findings were reported in a study done in Kosovo which revealed that equipment and its deficiency were affecting the implementation of ANC services. Information collected from Kosovo health workers also highlighted the challenge of working space which was limited. These findings were the same with what was highlighted

by nurses from Sakubva and Dangamvura. The World Health Organisation and UNICEF, (2008) recommended the need to identify capacity gaps and quality of health systems and barriers and address these at all levels down to the community. The same findings were revealed by Murira (1997) in Harare where challenges in the infrastructure were identified. The identified challenges included inadequate numbers of midwives, privacy concerns and insufficient seating in the waiting rooms. The study concluded that improvements in the satisfaction of ANC may require infrastructural rather than programmatic changes.

The same author mentioned that a person's attitude towards a specific behaviour is a result from performing the behaviour, for example a person's attitude in deciding whether to use health care based antenatal care services. The other people around an individual can influence that person's behaviour for example whether to go for antenatal care services or not, or whether the people in the society promote pregnant women to go for antenatal care services or not. In this study pregnant women had significant others (husband, mother in law and relatives) who supported them in seeking antenatal care services as reinforcing factors. These influenced the pregnant mothers in seeking antenatal care services. Studies done have shown that support from partners and family/friends has often been shown to be an important factor in achieving behaviour change (Thompson et al (2002).

5.4 Enabling Factors

Enabling factors are the resources, barriers that can help or hinder behaviour change. This includes availability, accessibility and affordability of resources (Green and Kreuter, 1991). The access to services was related to distance, cost, health workers

attitudes and waiting time. According to Lavender (2009) reinforcing factors influence the continued access to antenatal services by pregnant women.

5.4.1 Pregnant mothers' access to ANC services

Access to services includes availability of health resources and services, accessibility to services and affordability of the health services (Green and Kreuter, 1991). Andersen, 1995, cited by Sari, 2009, also mentioned that enabling factors (availability, access and affordability of services) provide patients with means to make use of the services. The same author said this includes health personnel and facilities. The ANC services were available since both the suburbs have clinics which offer ANC services. The ANC services were reported to be offered on certain days of the week. Sakubva indicated offered booking services on Monday, and Thursday and other days were for subsequent visits. Dangamvura clinic offers ANC services on Wednesdays only. The selected days when ANC services are offered can be a barrier for some of the pregnant mothers. For example suppose the pregnant mother wants to book for ANC services and reports to the clinic when bookings are not done it can be a missed opportunity for the pregnant woman and results in delayed in booking. According to Cham et al (2005), pregnant women can be discouraged by their experience on health system. If pregnant women go to the clinic on days when ANC services are not offered and might be offered the following week, they might not be motivated to come again.

The Zimbabwean Ministry of Health and Child Welfare guidelines indicate that every person should be within five kilometre radius to a health facility. The interviewed nurses indicated that some of the barriers which might hinder some of the pregnant women to access ANC services were distance, for example some of the

clients attending Dangamvura could be coming from the neighboring peri-urban areas of Dora. The Sakubva and Dangamvura study found out that 81 % of the cases and 84% controls lived within a distance of between 1 and 5 kilometres from the clinic. These finding show that antenatal care services were accessible to the majority of pregnant women in terms of distance. In a study by Brown et al, 2008 on antenatal care and its perinatal outcome, measure of distance was used on whether the pregnant woman was within a distance of 5 kilometres or above. The findings were that those within 5 km attended ANC while those further had reduced ANC attendances.

The cost of ANC services at Sakubva and Dangamvura was $15 which covers registration for the ANC services, follow up visits, delivery, and six weeks post delivery services. The payment for ANC services had to be paid in cash even if one was on medical aid and in relation to the type of respondents the $15 is hard to come by. This meant if a pregnant woman does not have cash but was on medical aid they could not access the ANC services. The findings that more than half of the cases (54%) and twenty five percent of the controls indicated the cost of ANC services was expensive shows that the access to ANC services at Sakubva and Dangamvura was limited. Also the finding on employment status indicated more than half of the cases (65%) and controls (60%) were not employed which means the pregnant women do not have finances directly to themselves to pay for the ANC services. Cost of the ANC services had statistical significance to late ANC booking. The significance of cost to late ANC booking were similar to the findings by Lavender (2007) where cost was found to be of statistical significance to late antenatal care booking. The findings

in the Sakubva and Dangamvura study were in agreement with the same study findings (Lavender, 2007) who indicated that women can fail to access antenatal care services due to resources issues which include finances available directly to her to pay for the services or travel to care. Similar findings were reported in the study done in Kosovo where 20% of the pregnant women reported they could not deal with the cost of ANC services which included travel and service costs (Kudjesi et al, 2009).

Another study was carried out by Murira et al (1997) which revealed problems that limited the access to antenatal services. Limited user fees were stated as one of the problems. According to WHO and UNICEF (2008) many pregnant women do not receive the care they need during pregnancy because they cannot afford to pay for the services and they do not like how care is provided or health services are not delivering high quality care. These authorities recommended the need to identify capacity gaps and quality of health systems and barriers and address these at all levels down to the community.

Waiting time was reported with mixed feelings by the pregnant women. The waiting time varied from 20 to 3 hours. Initial visits last for 2 to 3 hours and the services include group health education screening tests and examinations. Subsequent visits usually take less time. Some indicated they were comfortable with the time (50% cases and 58% controls) considering the services and the number of pregnant women to be attended to and the others said the time was too long. Sixty one (67.8%) cases and 40 (44.4) controls reported they spend more than an hour waiting for antenatal care services. In some cases some of the pregnant women reported they come to Sakubva because it is near their work places. This means that pregnant women would

have spent time in travelling to and from the clinic for ANC and spends some more time again in the queue waiting to be served. Such pregnant women might find it difficult to concentrate for example on group education given because they will be expecting to be served early and return to work in time. Some of them could have used the lunch time for the ANC services.

The nurses also reported that waiting time was long especially for those being tested for HIV. This was said to be caused by shortage of staff. For example the nurse who does HIV testing and counselling also does other duties. The study findings were different from the Kosovo study where pregnant women do not usually wait long for ANC services (Kudjesi et al, 2009). Although waiting time had no statistical significance to late ANC booking it is important to address the issue so that pregnant women do not feel they waste time waiting.

Health workers' attitudes can as well influence access to ANC services by pregnant women. Interviews conducted with the nurses raised the concern of some of the health workers' attitudes. Some nurses indicated that some of the nurses were rude to pregnant mothers. According to literature the friendliness of health workers to clients can influence access to services. The majority of the respondents (78 cases and 81 controls) reported that the health workers were friendly and all the respondents reported they were satisfied with the antenatal care services they received from the health facilities.

5.5 Perceived threat on late ANC booking by pregnant mothers

The construct on perceived threat suggests that an individual should be able to perceive her health status and should believe that her health is at risk. It is how people view their own general health and functional state, as well as how they

experience the symptoms of illness, and worry about their health. It also depends whether or not they judge their problems to be of sufficient importance and magnitude to seek professional health care (Andersen, 1995, cited by Sari, 2009). In other words does the pregnant woman perceive that her life is in danger if she does not book early for antenatal care services? The threats include pregnancy related complications, infections and diseases. In this study perceived threat were assessed on knowing someone who died of pregnancy related complications, how the pregnant women perceive the need for early booking and perception on when pregnant women are likely to have problems which need to go to hospital. If the pregnant woman does not perceive the threats she would not book early for antenatal care and the aspects of personal health services such as diet, exercise and self care during pregnancy are not important to her. Such pregnant women would not consider more than one ANC visit as necessary. Perceived threat would make the pregnant woman book early for antenatal care services and take precautionary measures during pregnancy in order to prevent those risks.

In this study, thirty five (38.9%) cases and 40(44.4%) controls mentioned they knew someone who had died of pregnancy related complications (OR 0.79, CI 0.43-1.4, p-value 0.2). Knowing someone who had died of pregnancy related complications serves as a reminder of the seriousness of the condition regarding its complications.

Nine cases and three controls mentioned they had an underlying medical condition during their pregnancies, four cases and two controls indicated they had uneventful deliveries. Fourteen cases and 7 controls had history of home deliveries (OR 2.18, CI 0.84-5.67, and p-value 0.08). History of home deliveries had a protective effect

towards late antenatal care booking. In this study the majority of the cases (almost 70%) did not perceive the risk of complications during pregnancy. More than fifty percent of the controls (61.1%) indicated that pregnant women were likely to have problems which need the hospital anytime during pregnancy. The controls perceived the risk of complications during labour unlike the cases.

A study done in South Africa revealed that pregnant women do not perceive significant health threats during pregnancy and therefore view more than one antenatal care visit as unnecessary (Myer and Harisson,2010). In contrast, women perceive labour and delivery as a time of significant health risks that require biomedical attention, and most women thus book late for antenatal care. The study findings indicated that most women in this setting do not perceive significant health threats during pregnancy, and in turn view more than one antenatal care visit as unnecessary.

On the question of when pregnant women were likely to have problems, 31% of the cases and 61% of the controls mentioned that pregnant women were likely to have problems any time during pregnancy. Such pregnant women with this perception are likely to book early for antenatal care. The responses of concern were for those who said pregnant women were likely to encounter problems only during the second or third trimester or during labour and delivery. These pregnant women would relax and delay in booking for ANC and can develop pregnancy related complications.

These findings were the same as those by Ndidi and Oseremen (2010) who also found out that 33.3%, felt pregnant women were likely to have problems during the first three months, 32.5% of the cases mentioned during labour and 14.4% indicated

during labour and delivery. In relation to these findings, the author suggested that women seem to believe that a pregnant woman can do without registering in early pregnancy since whatever symptoms women may have in early pregnancy are normal, mild or not serious enough to see a health worker. Thus, antenatal care seems to be viewed by most of the women as curative rather than preventive which is in sharp contrast with the goals of antenatal care which are mainly preventive. The pregnant women do not perceive the threat of late antenatal care booking (Ndidi and Oseremen, 2010).

5.6 Limitations to the study

The study had some limitations which were related to limited time. The time was short considering the sample size of the cases and controls.

The study was also associated with issues of recall bias. The pregnant women were asked questions for example on past events which they could have forgotten.

5.7 Conclusions

The majority of the cases booked late starting from week twenty to week thirty two. The study revealed the demographic characteristics of age and size of household as being significantly associated with late antenatal care booking. The teenagers were found to be contributing to twenty percent of the population of the cases. Teenage pregnancy has the effects of increasing the risks of dying in child birth and making the wellbeing of mothers difficult.

More than half of the pregnant women knew that booking should be done during the first trimester and knowledge on other issues was limited among other pregnant

women. For example some pregnant women did not know the benefits of antenatal care and complications of late antenatal care booking. Knowledge gaps were noted on the HIV prevention programmes available for the HIV positive pregnant mother. Most of the pregnant women did not believe in traditional or religious birth attendants. These were mixed beliefs and misconceptions

More than half of the nurses agreed that the process of ANC was too long and they also indicated that pregnant women were difficult to deal with. It was mentioned by some nurses that nurses' negative attitudes might be barriers for pregnant women in seeking antenatal care. It was also mentioned that some nurses were rude to pregnant mothers.

The nurses indicated they give health education routinely to pregnant women every day which is a positive strength on their practices.

Most of the pregnant women lived within a distance of less than five kilometres and thus had access to services in terms of distance. Some of the pregnant women complained about the waiting time which was said to be too long. The pregnant women mentioned that some of the contributory factors were shortage of nurses and the nurses also highlighted this concern. Cost was also found to be a significant factor in accessing antenatal care services and many pregnant women indicated it was expensive. Medical aid facilities were not considered for payment for ANC services.

Most of the women in this setting did not perceive significant health threats during pregnancy, and in turn view more than one antenatal care visit as unnecessary. The

majority of the cases (almost 70%) did not perceive the risk of complications during pregnancy. More than fifty percent of the controls (61.1%) indicated that pregnant women were likely to have problems which need the hospital anytime during pregnancy. The controls perceived the risk of complications during labour unlike the cases.

Less than half (38.9%) of the cases and 44.4% of the controls mentioned they knew someone who had died of pregnancy related complications which act as a reminder to them to seek antenatal care services early.

5.8 Recommendations

5.8.1 Recommendations for the clinic nurse, Health Promotion Officer and Community Health Nurse

Clinic based education to pregnant mothers should continue and emphasis should be on the purposes of antenatal care(ANC), benefits of ANC, importance of early antenatal care booking, disadvantages of late ANC booking and benefits of HIV prevention programmes for pregnant mothers.

Community based health education programmes targeted for women of child bearing age and pregnant women are needed to correct the misconceptions about antenatal care.

The local authority should facilitate the implementation of educational campaigns for adolescents on sexual reproductive health in order to reduce teenage pregnancies.

5.8.2Recommendations for the Director City Health Department

User fees need to be reviewed and be adjusted to promote access to antenatal care services by pregnant women. This should be done in consultation with the

requirements of the government's Health Transition Fund for Mother and Child user fees.

Health workers attitudes should be addressed through trainings on Public Relations and Interpersonal communication skills.

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Annex 1a

AFRICA UNIVERSITY
ited Methodist-Related Institution)
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FACULTY OF HEALTH SCIENCES

P.O. BOX 1320, MUTARE, ZIMBABWE - OFF NYANGA ROAD, OLD MUTARE, ZIMBABWE
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CONSENT FORM FOR PREGNANT MOTHERS (English)

My name is Agnes Mugumbate. I am an MPH student at Africa University carrying out a study on late antenatal care booking by pregnant women at Sakubva and Dangamvura Poly clinics. You are kindly requested to respond to the following questions. The information on this study will be kept in strict confidence and will be used to come up with recommendations to improve antenatal services for Mutare city clinics. Participation in this study is voluntary and not by coercion. You are free to withdraw from the study if you do not feel comfortable in participating. No name will be written down on this Interview Schedule and you will be protected from being known.

CONSENT TO PARTICIPATE IN THE STUDY

The purpose of the study has been explained to me. I was given enough information on the study. I have understood that the data from the questionnaire will be kept anonymous and confidential and there will be no link of the information to my name.

I agree/disagree to participate in this antenatal study by answering the questions

Signature of participant.....

Date .....

Signature of witness (For the illiterate).....

Date.....

Signature of researcher.....

Date.....

Annex 1b

GWARO REMVUMO YEMADZIMAI AKAZVITAKURA (SHONA)

Zita rangu ndinonzi Agnes Mugumbate. Ndiri mudzidzi weMaster in Public Health paAfrica University. Ndiri kuita ongororo iri pamusoro pa vanamai vakazvitakura vanoonekwa pazvipatara zveSakubva neDangamvura avo varikunonoka kunonyoresa pamuviri. Ndinokumbirawo kumbokubvunzai mibvunzo pamusoro pezvamunoziva kana kufunga nezvenyaya iyi. Zvatinokurukura pamusoro penyaya iyi zviripakati pangu nemi. Zvinozongashandiswa pakubatsira kupa pfungwa itsva kune bazi reutano muno maMutare.Kupinda kwenyu muongororo iyi hamumanikidzirwi asi munongopinda maringe nekusununguka kwenyu.Makasununguka kungorega zvekare kuva muongororo iyi kana paine chisingakufadzei.Zita renyu harizotaurwi kana kunyorwa mumagwaro eongororo iyi uye mutemo unokuchengetedzai kuti zita renyu risabuda muongororo iyoyi.

Kana muchibvuma kupinda muongororo iyi makasununguka kuisa runyoro rwenyu papepa iri (siginecha)

Donzvo reongororo ratsanangurwa zvizere kwandiri. Ndaudzwa zvose zviripamusoro peongororo iyi, hapana zita richanyorwa rinozoonesa ukama panezvatinenge takurukura uye kuti zvatichakurukura zvichachengetedzwa zvisingazoudzwi vanhu vasinei nazvo.

Ndinobvuma kuti ndibvunzwe mibvunzo pamusoro penyaya iyi.

Siginecha(Signature) yamai varikubvunzwa.....

Zuva remwedzi.....

Siginecha yemunhu anomira semboo.....

Zuva remwedzi.....

Siginecha yemunhu arikubvunza.....

Zuva remwedzi.....

Annex 1c

QUESTIONNAIREFOR PREGNANT MOTHERS (English)

FACTORS ASSOCIATED WITH LATE ANTENATAL CARE BOOKING AT SAKUBVA AND DANGAMVURA POLY CLINICS- FEBRUARY TO MARCH 2012

Questionnare No…… Date…….. Name of Health centre.....

Case [ ] Control [ ]

PREDISPOSING FACTORS

Demographic characteristics

1. Age……

2. Marital status Single [ ] Married [ ] Divorced [ ] Widowed [ ] Cohabiting [ ]

3. Number of children.....

4. No of people in household……..

5. Religion…apostolic [ ] specify……. Pentecostal [ ] Orthodox [ ] Traditional [ ] other, specify.....

6. Race. African [ ] Caucasian [ ] Coloured [ ] Asian [ ] Other [ ]

7. Respondent's level of education

Never went to school [ ] Primary [ ] Secondary [ ] Tertiary [ ]

8. Husband's/ partner's level of education

Never went to school [ ] Primary [ ] Secondary [ ] Tertiary [ ]

9. Respondent's occupation

Not employed [ ] Informal [ ] Formal skilled [ ]

10. Husband's occupation

Not employed [ ] Informal [ ] Formal skilled [ ]

11. What is your household monthly income?

i. No income [ ] ii.Up to $50,00 [ ]

iii. $51,00 to $100,00 [ ] iv. $101,00 to $150,00 [ ]

v. $151,00 to $200,00 [ ] vi. Over $200,00 [ ]

12. Which suburb do you live?……

13a.How many times have you delivered before?

0 [ ] 1 [ ]

2 [ ] 3 [ ]

4 [ ] 5 [ ]

More than 6 [ ]

b. How many of them did you register in a hospital? .....

14 a. At what gestation period did you register for antenatal care in this pregnancy? (This needs to be verified physically against ANC card) .....months/weeks

CASES ONLY

b. Do you have any reasons for late ANC booking? Yes [ ] No [ ]

i) Fear of possible consequences [ ] ii) Did not want to make pregnancy public [ ]

iii) Ignorance [ ] iv) Fear of stigma in society [ ]

v) Registered in another hospital [ ] vi) Others, specify .....

KNOWLEDGE ON ANC

15. When should pregnant women register for antenatal care?

a) First 3 months [ ] b) Second 3 months [ ]

c) Any time during pregnancy [ ] d) During labour and delivery [ ]

e) After delivery [ ] f) Don't know [ ]

16. When are pregnant women likely to have problems during pregnancy which need to go to the clinic?.....

17. What are the benefits of antenatal care (ANC)?

.....

18a.What are the health risks associated with late antenatal care booking?

.....

.....

.....

b. Do you think these health risks can be prevented? Yes [ ] No [ ]

19a Has any health worker talked to you about Pregnancy related complications?

Yes [ ] No [ ]

b. If yes, what complications were discussed?.....

c. Has any HW discussed issues on Nutrition in pregnancy Yes [ ] No [ ]

d. If yes, what nutritional supplements are recommended in pregnancy?.....

e. Has any HW discussed issues on HIV and AIDS in pregnancy Yes [ ] No [ ]

f. If yes, which programmes are offered for the HIV pregnant mother?.....

20a. Would you like to learn/get more information about antenatal care (ANC)? Yes [ ] No [ ]

b. What specific information would you want to learn more about?

.....

c. Have you received any messages on antenatal care before(not from health workers)? Yes [ ] No [ ]

d. What was the source of the messages?.....

e. Which media are you exposed to? How frequently?

Read magazine Yes [ ] No [ ]

.....

Listen to the radio Yes [ ] No [ ]

.....

Watch television Yes [ ] No [ ]

.....

f. Does your family own a radio? Yes [ ] No [ ]

g. Does your family own a Television? Yes [ ] No [ ]

h. Which source would you prefer to get more information about antenatal care?

1. Pamphlet [ ] 2. Booklet [ ]

3. Health workers [ ] 5. Radio [ ]

6. TV [ ]

BELIEFS AND ATTITUDES

21a. ANC services are not flexible

Strongly disagree [ ] Disagree [ ] Not Sure [ ] Agree [ ] Strongly Agree [ ]

b. I feel it is not necessary to attend more than one ANC visit

Strongly disagree [ ] Disagree [ ] Not Sure [ ] Agree [ ] Strongly Agree [ ]

c. I believe traditional birth attendances offer better ANC services

Strongly disagree [ ] Disagree [ ] Not Sure [ ] Agree [ ] Strongly Agree [ ]

d. I believe religious traditional birth attendances offer better ANC services than modern health care

Strongly disagree [ ] Disagree [ ] Not Sure [ ] Agree [ ] Strongly Agree [ ]

e. Antenatal care services are not individualised

Strongly disagree [ ] Disagree [ ] Not Sure [ ] Agree [ ] Strongly Agree [ ]

f. I am afraid of being judged by nurses

Strongly disagree [ ] Disagree [ ] Not Sure [ ] Agree [ ] Strongly Agree [ ]

REINFORCING FACTORS

22a. Do you get any support from your family members on Antenatal care? Yes [ ]

No [ ]

b. Who gives you the support?

Husband [ ] Mother in law [ ]

Relative [ ] Other,

specify.....

c. What type of support do you get?.....

23a. Are there any barriers you have in seeking Antenatal care services Yes [ ]

No[ ]

b. If yes, what type of barriers did you

experience?.....

c. I am expected by my society/ family to visit the traditional healer for antenatal care?

Yes [ ] No [ ]

d. Does your church encourage you to deliver at a faith healer / attendant?

Yes [ ] No [ ]

e. My family encourages me to deliver at a religious birth attendant

Yes [ ] No [ ]

f. Health workers are supportive on antenatal services

Yes [ ] No [ ]

ENABLING FACTORS

24a. Is this the nearest clinic to your home Yes [ ] No [ ]

b. If no which is the nearest clinic to your home?

.....

c. Are antenatal services offered at your nearest clinic? Yes [ ] No [ ]

d. If yes, what reasons do you have in coming to this

clinic?.....

e. Do you think the ANC services offered here are of high quality? Yes [ ] No [ ]

f. If no, what do you think needs improvement? .....

g. Do you think Health Workers at your clinic are competent / experienced enough to do deliveries?

Yes [ ] No [ ]

If no, can you

explain.....

h. How far is this clinic from your home?

1 km away [ ] 1 to 5 kms away [ ]

6 to 10 kms away [ ] 11 to 15 kms away [ ]

15 to 20 kms [ ] More than 20 kms [ ]

i. Are the clinic opening times convenient for you? Yes [ ] No [ ]

What comments do you have on the opening days for antenatal care?

.....

j. How much time do you spent in the queue at the local clinic?

Less than 10 minutes [ ] 11to 20 minutes [ ]

21 to 30 minutes [ ] 31 to 40 minutes [ ]

41 to 50 [ ] 51to 60 minutes [ ]

More than 1 hr [ ]

k. Can you comment on the time you spent in the queue?

.....

25a.Have you paid for antenatal care services? Yes [ ] No [ ]

b. If yes, how much have you paid?.....

c. Do you think it is expensive? Yes [ ] No [ ]

d. Are you on Medical Aid? Yes [ ] No [ ]

e. Does the clinic accept Medical Aid? Yes [ ] No [ ]

PERCEIVED THREAT/RISKS

26a. Do you know of anyone who has died of pregnancy related complications?

Yes [ ] No [ ]

b. If yes, who? Relative [ ] Close friend [ ] Neighbour [ ]

27a. Have you had any Medical condition during your pregnancy?

Yes [ ] No [ ]

If yes, please explain.....

b. Have you had an uneventful delivery before?

Yes [ ] No [ ]

c. History of an obstetric complication?

Yes [ ] No [ ]

d. History of home delivery?

Yes [ ] No [ ]

e. Have you lost a baby during delivery?

Yes [ ] No [ ]

f. Have you suffered a miscarriage in the past?

Yes [ ] No [ ]

28a Did you use contraceptives before you fell pregnant?

Yes [ ] No [ ]

b. Do you smoke?

Yes [ ] No [ ]

c). Do you drink alcohol? Yes [ ] No [ ]

d) Do you think there are any dangers of consuming alcohol when pregnant?

Yes [ ] No [ ]

e. Do you think there are any risks in smoking when pregnant?

Yes [ ] No [ ]

29a Can you rate the quality of antenatal services that you receive from this health facility?

1. Poor [ ] 2. Good [ ] 3. Very good [ ] 4. Excellent [ ]

b. How do you rate the friendliness of the health workers at the health facility?

1. Poor [ ] 2. Good [ ] 3. Fair [ ] 4 Excellent [ ]

c. Are you satisfied with the ANC services you get from your clinic? Yes [ ] No [ ]

Thank you for your time

Annex 1d

GWARO REONGORORO YEMADZIMAIAKAZVITAKURA/ANE PAMUVIRI MUSORO WENYAYA (SHONA)

Zvinokonzera kuti madzimai ane pamuviri anonoke kunoyoresa kuchipatara nenguv a dzinotarisirwa nezve utano(Mumwedzi waKukadzi na Kurume-2012

Mai vakanonoka kunyoresa pamuviri **[ ]**Mai vakanyoresa pamuviri nenguva [ ]

Zviripamusoro pamai(Demographic characteristics

1. Mune makore mangani okuberekwa……

2. Makaroorwa here kana kuti kwete?

Kwete handisati ndaroorwa [ ]

Hongu [ ]

Ndakasiyana nemurume [ ]

Ndakafirwa nemurume [ ]

3. Mune vana vangani?.....

4.Munogara murivangani mumba menyu?……..

5. Munotenda chitendero chipi?.....

6. Muri werudzi rupi?

7. Makadzidza kusvika mudanho ripi?

Handina kuenda kuchikoro [ ] Danho repraimari[ ] Ndakasvika fomu 4[ ] Ndakasvika danho reku koregi [ ]

8.Murume wenyu akadzidza kusvika padanho ripi?

9. Munoshanda here? Hongu [ ] Kwete [ ]

Kana muchishanda munoita basa rei? .....

10. Murume wenyu anoita basa rei?

11. Mumhuri menyu munowana mari yakawanda sei pamwedzi wege wega?

Hatina mari yatinowana [ ]

Tinowana insvika $50,00 [ ]

Tinowana inotangira pa $51,00 kusvika $100,00 [ ]

Tinowana inotangira pa $101,00 kusvika $150,00 [ ]

Tinowana inotangira pa $151,00 kusvika $200,00 [ ]

Tinowana inodarika $200,00 [ ]

12. Munogara kupi?……

13.Pamuviri penyu ngepechingani?

Ngepekutanga [ ]

Ngepechipiri [ ]

Ngepechitatu [ ]

Ngepechina [ ]

Ngepechishanu [ ]

Ngepekudarika pechitanhatu [ ]

b.Inhumbu ngani dzamakanyoresa kuchipatara?.....

14 a. Pamuviri pamuinapo makanyoresa kuchipatara paine mwedzi mingani?.....

b. Mune chikonzero here chamakanonokera kunyoresa pamuviri penyu?

Hongu [ ] Kete [ ]

Kana iri hongu Mungave nezvikonzero zvinotevera here

i) Kutya zvinozoitika nokuda kwepamuviri [ ]

ii) Kusatoziva nguva dzinonyoreswa pamuviri [ ]

iii) Ndakange ndakanyoresa kune chimwe chipatara [ ]

iv) Zvimwewo zvikonzero, tsanangurai .....

15. Mai vakazvitakura vanofanira kunyoresa pamuviri paine mwedzi mingani? Pindurai pane zvakanyorwa

a)Mwedzi mitatu yekutanga [ ]

b) Mumwedzi mitanhatu yekuzvitakura [ ]

c) Chero nguva yekuzvitakura [ ]

d) Kana mimba yave kurwadza ave kuda kusununguka [ ]

e) Kana vapedza kusununguka/kubatsirwa [ ]

f.Handina ruzivo [ ]

16. Mai vane pamuviri vanoita matambudziko anoda kuti vaende kuchipatara panguva ipi?

.....

17a.Zvakanakireiko kunyoresa pamuviri?

.....

.....

18a. Ngedzipi njodzi dziripo kana mai vakanonoka kunyoresa pamuviri?

.....

.....

.....

.....

b. Munofunga here kuti njodzi idzi dzinodzivirika?

Hongu [ ] Kwete [ ]

19a. Vana mukoti vakambokurukura nemi here pamusoro pematambudziko anosanganikwa novo kana mai vakanonoka kunyoresa pamuviri? Hongu [ ] Kwete [ ]

b.Kana mhinduro yenyu iri hongu, Ngezvipi zvidzidzo zvamunodzidziswa?

.....

c. Vana mukoti vakambokurukura nemi here pamusoro pezvekudya zvinovaka muviri zvinofanira kudyiwa namai vakazvitakura? ? Hongu [ ] Kwete [ ]

c.Mungade kudzidza zvimwe zvakawanda here zviri pamusoro pamai vakazvitakura? Hongu [ ] Kwete [ ]

d.Kana mhinduro yenyu iri hongu, Ngezvipi zvidzidzo zvamunodzidziswa?

.....

e. Vana mukoti vakambokurukura nemi here pamusoro pehutachiwana hwe HIV na mai vakazvitakura? [ ] Kwete [ ]

f. Kana mhinduro yenyu iri hongu, Ngezvipi zvirongwa zviripo pamusoro pe HIV ne AIDS pana mai vane hutachiwana hwe HIV?

.....

20a.Mungade kudzidza zvimwe here pamusoro pa mai vakazvitakura?

Hongu [ ] Kwete [ ]

b.Mungade kudzidza kubva kuna ani?

Zvinyorwa [ ]

Vashandi vezve utano [ ]

c. Kubva munhepfenyuro(Radio) [ ]

d.Mudzipi nhepfenyuro dzamunowana?

Kuwerenga pepa nhau Hongu [ ] Kwete [ ]

Kuteerera kunhepfenyuro Hongu [ ] Kwete [ ]

Kutarisa terevizheni Hongu [ ] Kwete [ ]

e. Munechidzimu dzangara here semhuri? Hongu [ ] Kwete [ ]

f.Mune terevizheni here semhuri? Hongu [ ] Kwete [ ]

21 a.Kuongororwa pamuviri hakutarisimaringe nezvinodikanwa nemunhu.

Ndinotenderana nazvo zvakanyanya[ ] Ndinobvumirana nazvo [ ] Handizivi [ ] Handibvumirani nazvo [ ] Handibvumirani nazvo zvakanyanya [ ]

b.Handioni zvichinyanya kubatsira kundoongororwa pamuviri.

Ndinotenderana nazvo zvakanyanya[ ] Ndinobvumirana nazvo [ ] Handizivi [ ] Handibvumirani nazvo [ ] Handibvumirani nazvo zvakanyanya [ ]

c. Ndinotenda kuti vana mbuya nyamukuta vanobatsira vakazvitakura zvirinane pane chipatara.I believe traditional birth attendances offer better ANC services

Ndinotenderana nazvo zvakanyanya[ ] Ndinobvumirana nazvo [ ] Handizivi [ ] Handibvumirani nazvo [ ] Handibvumirani nazvo zvakanyanya [ ]

d. Ndinotenda kuti vana mbuya vekuchechi vanobatsira zvirinane pane chipatara.I believe religious traditional birth attendances offer better ANC services than modern health care

Ndinotenderana nazvo zvakanyanya[ ] Ndinobvumirana nazvo [ ] Handizivi [ ] Handibvumirani nazvo [ ] Handibvumirani nazvo zvakanyanya [ ]

e. Kuongororwa pamuviri hakutariswe sedunga munhu

Ndinotenderana nazvo zvakanyanya[ ] Ndinobvumirana nazvo [ ] Handizivi [ ] Handibvumirani nazvo [ ] Handibvumirani nazvo zvakanyanya [ ]

f.Ndinotya kuti vanamukoti vanonditongera zvandisiri

Ndinotenderana nazvo zvakanyanya[ ] Ndinobvumirana nazvo [ ] Handizivi [ ] Handibvumirani nazvo [ ] Handibvumirani nazvo zvakanyanya [ ]

22a.Munowana rutsigiro here kubva kumhuri yenyu pamusoro pekuzvitakura kwenyu?

Hongu [ ] Kwete [ ]

b.Ndiani anokutsigirai?

Murume wangu [ ] Vamwene [ ]

Hama [ ] Vamwe, tsanangurai.....

Hongu [ ] Kwete [ ]

c. Munowana rutsigiro rwakaita sei?.....

Pane zvimhingamupinyi zvamunosangana nazvo here mukuongororwa makazvitakura?

Hongu [ ] Kwete [ ]

b. Kana mhinduro yenyu iri hongu, ndeapi matambudziko amunasangana navo?.....

c. Mhuri yangu inonditsigira kuti ndiende kuna mbuya nyamukuta weckuchechi.

Hongu [ ] Kwete [ ]

.....

Kana zviripo ngezvipi?.....

c.Ndinotarisirwa ne nharaunda kuti ndiende kuna mbuya nyamukuta kunotariswa pamuviri . Hongu [ ] Kwete [ ]

d.Chitenderano change chinonditendera kuendakuti ndinosunungukira kunambuya nyamukuta weku chichi. Hongu [ ] Kwete [ ]

e. Mhuri yangu inondikurudzira kuend kunosunungukira kuna mbuya nyamukuta

Hongu [ ] Kwete [ ]

F. Vana mukoti vanonditsigira zvakznyanya pakuongororwa pamuviri

Hongu [ ] Kwete [ ]

24a.Iyi ndiyo kiriniki iri pedyo nemi here Hongu [ ] Kwete [ ]

Kana mhinduro yenyu iri kwete ngeipi iri pedyo nemi.....

b. Kukiriniki kwenyu kunoonekwa vana mai vakazvitakura here? Hongu [ ] Kwete [ ]

c.Kubatsirwa kwamunoitwa pakuongororwa pamuviri ngekwe mhando yepamusoro here?

Hongu [ ] Kwete [ ]

Kana mhinduro yenyu iri kwete, ngezvipi zvamunofunga kuti zvinofanirwa kuitwa?.....

d.Vana mukoti vechipatara chino vane unyanzvi here pakuongorora vana mai vakazvitakura?

Hongu [ ] Kwete [ ]

Kana mhinduro yenyu iri kwete, ngezvipi zvamunofunga kuti zvinofanirwa kuitwa?.....

e. Munogara kure zvakadini ne chipatara?

Kiromita omwe chete [ ]

Kiromita imwe kusvika mashanu [ ]

Kiromita kusvika Matanhatu [ ]

Gumi neimwe yekiromita kusvika gumi nemashanu [ ]

Makiromita gumi nemashanu kusvika makumimairi [ ]

Kudarika makiromita makumi mairi [ ]

e. Munofadzwa here nenguva dzinovhura kiriniki yenyu? Hongu [ ] Kwete [ ]

f. Mune zvekutaura here pamusoro penguva yamunopedza musati maonekwa?.....

g. Munopedza nguva yakareba sei makamiriara kuonekwa?

Pasi pemaminitsi gumi [ ]

Maminitsi gumi neimwe kusvika gumi nema shaun [ ]

Maminetsi gumi nemashanu kusvika makumi mairi [ ]

Maminitsi makumi matatu kusvika makumi mana [ ]

Maminitsi makumi mana kusvika makumi mashanu [ ]

Maminitsi makumi mashanu nerimwe kusvika makumu matanhatu [ ]

Kudarika awa rimwe [ ]

h.Mune zvekutaura here pamusoro penguva yamunomira musati maonekwa?

25a. Munobhadhara mari here pakuonekwa kwamunoita? Hongu [ ] Kwete [ ]

b.Munobhadara mari yakawanda sei? Hongu [ ] Kwete [ ]

.....

c.Munofunga kuti zvinodhura here? Hongu [ ] Kwete [ ]

Munoonekwa ne "Medical aid" here? Hongu [ ] Kwete [ ]

d. Zvirinyore here kwamuri kubhadhara mari iyoyi? Hongu [ ] Kwete [ ]

26a.Pane vamunoziva here akafa munguva dzekuzvitakura kana paku sununguka?

Hongu [ ] Kwete [ ]

b. Kana mhinduro iri hongu ndiani wenyu?

Hama yepedyo [ ] Shamwari [ ] Muvakidzani [ ]

27a.Pane zvirwere zvamakamborapwa zvakaita se chirwere cheshuga, kana Bp?

Hongu [ ] Kwete [ ]

b. Makambozvara mwana akafa here muchisununguka? Hongu [ ] Kwete [ ]

c. Makamboita zvinetso here pakusununguka? Hongu [ ] Kwete [ ]

d.Makambosunungukira kumba here? Hongu [ ] Kwete [ ]

eMakambobva pamuviri here? Hongu [ ] Kwete [ ]

28a.Maishandisa mapiritsi ekuronga mhuri here musati maita pamuviri pamuinapo apa?

Hongu [ ] Kwete [ ]

b. Munoputa fodya here? Hongu [ ] Kwete [ ]

c. Munonwa doro here? Hongu [ ] Kwete [ ]

d.Munofunga kuti zvine njodzi here kunwa doro wakazvitakura? Hongu [ ] Kwete [ ]

e. Munofunga kuti zvine ngozi here kuputa fodya uine pamuviri? Hongu [ ] Kwete [ ]

29a Munoona rubatsiro rwamunopiwa ne veutano rwakaita sei?

1. Haruna kunaka [ ] 2. Rwakanaka [ ] 3. Rwakanaka chaizvo[ ] 4. Ngerwemhando yepamusoro [ ]

b.Vana mukoti vanoratidza hushamwari herekwamuri zvekuti muno sununguka kukurukura navo? Ratidzai hushamwari hwavainaw

1. Hushamwari hauna kunaka [ ] 2. Hushamwari hwakanaka [ ] 3. Hushamwari hwakanaka chaizvo[ ] 4. Ngehwemhando yepamusoro [ ]

c.Munogutsikana here ne mabatsirirwe amunoitwa pachipatara chino?

Hongu [ ] Kwete [ ]

Ndinotenda nenguva yamazvipira kukurukura neni.

Annex 2a

INFORMED CONSENT FORM FOR KEY INFORMANTS (NURSES)

My name is Agnes Mugumbate. I am an MPH student attached in Mutare district. I am carrying out a study on late Antenatal care booking for pregnant women at Sakubva and Dangamvura Poly clinics from February to March 2012. No name of participants will be written on this questionnaire and information collected will be treated with confidentiality. If you are willing to participate in the study please sign this form.

I agree to participate in the study

Signature of participant.....

Date .....

Signature of study personnel.....

Date.....

Annex 2b

QUESTIONNAIRE FOR KEY INFORMANTS

Factors associated with late ANC booking by pregnant women at Sakubva and Dangamvura Poly clinics

Questionnaire No .....

Name of Health centre.....

Demographic Data

1 .Age [ ]

2. Sex Male [ ] Female [ ]

3. Marital Status Single [ ] Married [ ] Divorced [ ] Widowed

4. Religion Tradition [ ] Christianity [ ] Moslem [ ] Hindu [ ]

5. Qualification RGMN [ ] SCMN [ ] RGN[ ] SCN [ ] PCN [ ]

6. Midwifery training

Yes [ ] No [ ]

7a.In which department do you work?.....

b. For how long have you been working in the Mother and Child/ANC department?

Less than 1 year [ ] 1-2 yrs [ ] 2-5 yrs [ ] >5 yrs [ ]

Knowledge on ANC

8a. Have you heard anything about ANC? Yes [ ] No [ ]

9.What does ANC stands for?.....

9b. What are the purposes of antenatal care?

.....

.....

.....

c. At what gestation are pregnant women supposed to book for

ANC?.....

Mention four complications associated with late ANC booking?

i).....

ii).....

iii).....

iv).....

11a. What is considered as late ANC booking?.....

b. Do you have pregnant women booking late for ANC

Yes [ ] No [ ]

c. How do you rate the problem of late ANC booking at your clinic?

Not a problem [ ] It is a big problem [ ] Very big problem [ ]

d. What do you suggest should be done for pregnant women to book early for antenatal care?

Health workers attitudes on ANC services

12. To what extent do you agree with the following statements?

a) It is not necessary for pregnant women to book early for ANC

1 Strongly disagree [ ] 2 Disagree [ ] 3 Agree [ ] 4 Strongly Agree]

b The process of ANC service takes a long time

1 Strongly disagree [ ] 2 Disagree [ ] Agree3 [ ] 4 Strongly Agree

c) Pregnant women are difficult to deal with

1.Strongly disagree [ ] 2 Disagree[ ] 3 Agree [ ] 4 Strongly agree [ ]

d) Continuous Health education is necessary to ANC mothers

Strongly disagree [ ] Disagree [ ] Agree [ ] Strongly agree [ ]

Practices on ANC

13a.Do you give health education to pregnant mothers? Yes [ ] No [ ]

b. Which topics do you include in Health Education

.....

.....

.....

14a . Assessment on pregnancy related condition/diseases is important. Yes [ ] No [ ]

b. Giving Health education to pregnant mothers on every ANC visit is important.

Yes [ ]

No [ ]

c. Do you encourage ANC mothers to register early for antenatal care services? Yes [ ] No[]]

Access to ANC services

15a**.** Do you think distance affect pregnant women in booking early for ANC?

Yes [ ] No [ ]

b. Do you know of any pregnant women who died because of late ANC booking ?

Yes [ ] No [ ]

c. Are there any barriers for pregnant women in receiving ANC services? Yes [ ]

No [ ]

d. If yes what were the reasons for not receiving the services?

.....

...

.....

e. What characteristics of HW can be a barrier to mothers booking early for

ANC?.....

f. If yes, what can be done about this?

.....

g. Do you think there are pregnant women in your catchment area who attend other

institutions for ANC services?

Yes [ ] No [ ]

h**.** If yes, which groups of people are these?

16a. Which institutions do you think the pregnant women go to for ANC services?

.....

b. Do you think there are groups in the community who do not accept ANC services?

Yes [ ] No [ ]

c**.** If yes, which groups of people are these?

.....

Availability of ANC services

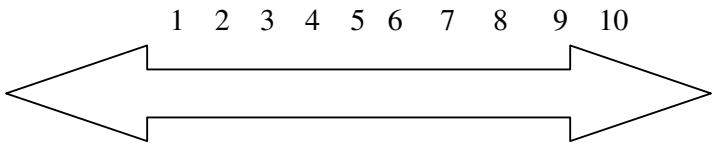
17a. Which day(s) of the week do you attend to pregnant

mothers?.....

.....

18 How do you rate antenatal services in the city health?

Scale



Worst [ ] Average [ ] Best [ ]

19. What challenges do you have in implementing Antenatal care services?

.....

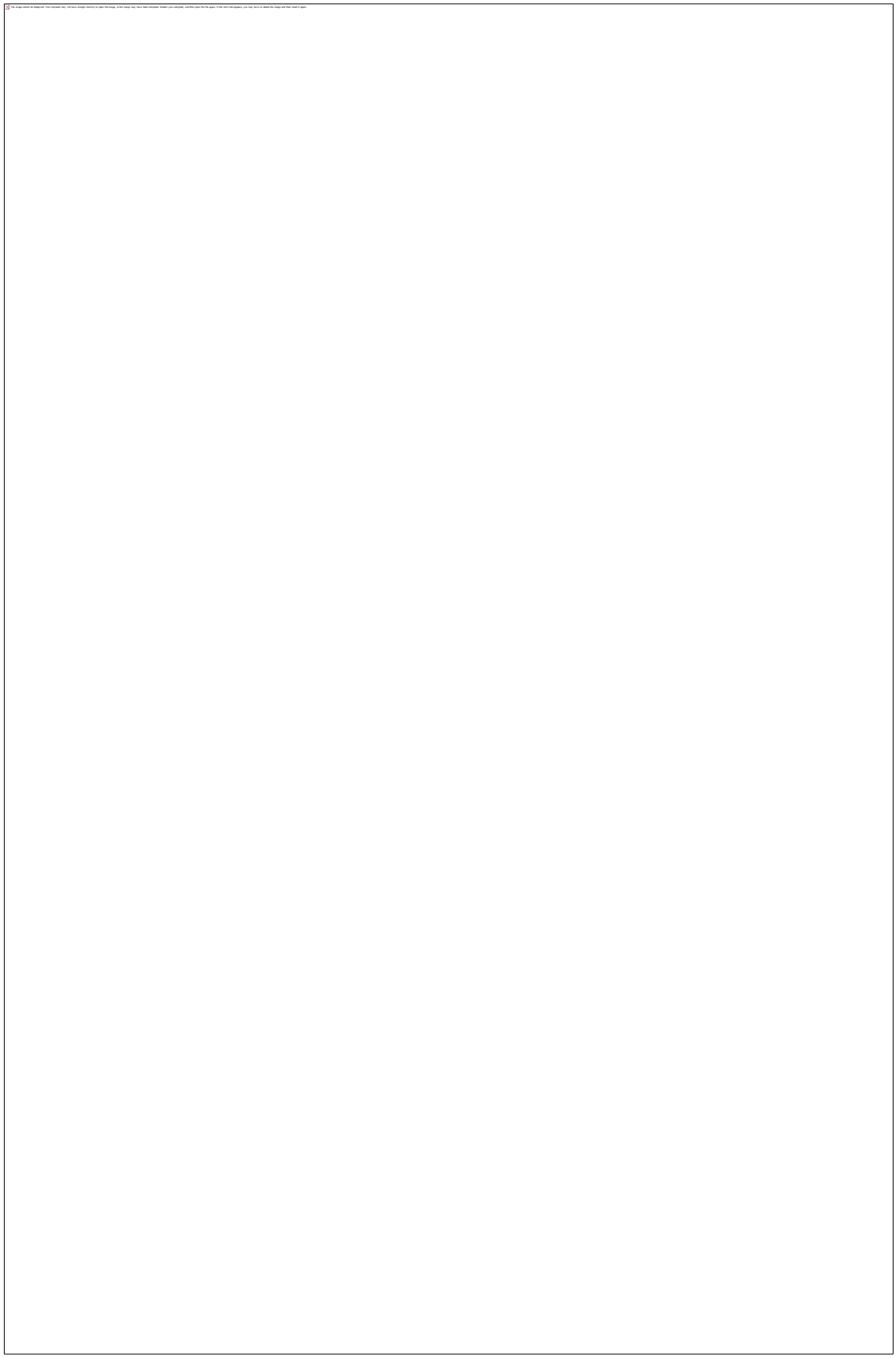
.....

.....

20**.** Do you have any comments on the improvement of the ANC services?

.....

Thank you for your time



Telephone: 791792/791193/792747
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E-mail: mrcz@mrczimshared.co.zw
Website:- www.mrcz.org.zw

Medical Research Council of Zimbabwe
Josiah Tongogara / Mazoe Street
P. O. Box CY 573
Causeway
Harare

MRCZ APPROVAL LETTER

Ref: MRCZ/B/295 **13 February, 2012**

Agnes Mugumbate
Africa University
Dpt Of Health Sciences
Mutare

RE:-Factors Associated With late Antenatal (ANC) Care Booking By Pregnant Women At Sakubva And Dangamvura Polyclinics in Mutare City, Manicaland Province From February to March 2012

Thank you for the above titled proposal that you submitted to the Medical Research Council of Zimbabwe (MRCZ) for review. Please be advised that the Medical Research Council of Zimbabwe has reviewed and approved your application to conduct the above titled study. This is based on the following :-

a) Study Protocol
b) Study Summary
c) Parental Informed Consent Form (English and Shona)
d) Survey Tools (English and Shona)

- **APPROVAL NUMBER** **:MRCZ/B/295**

The above details should be used on all correspondences, consent forms and documents as appropriate.

- **APPROVAL DATE** **: 13 February, 2012**
- **EXPIRATION DATE** **: 12 February, 2013**
- **TYPE OF MEETING** **: Expedited review**

After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the MRCZ Offices should be submitted one month before the expiration date for continuing review.

- **SERIOUS ADVERSE EVENT REPORTING:** All serious problems having to do with subject safety must be reported to the Institutional Ethical Review Committee (IERC) as well as the MRCZ within 3 working days using standard forms obtainable from the MRCZ Offices.
- **MODIFICATIONS:** Prior MRCZ and IERC approval using standard forms obtainable from the MRCZ Offices is required before implementing any changes in the Protocol (including changes in the consent documents).
- **TERMINATION OF STUDY:** On termination of a study, a report has to be submitted to the MRCZ using standard forms obtainable from the MRCZ Offices.
- **QUESTIONS**: Please contact the MRCZ on Telephone No. (04) 791792, 791193 or by e-mail on mrcz@mrczimshared.co.zw.

Other:

- Please be reminded to send in copies of your final research results for our records as well as for the Health Research Database
- You are also encouraged to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study.

Yours Faithfully

.....

MRCZ SECRETARIAT
FOR CHAIRPERSON
MEDICAL RESEARCH COUNCIL OF ZIMBABWE

MEDICAL RESEARCH COUNCIL OF ZIMBABWE
13 FEB 2012
APPROVED
P. O. BOX CY 573 CAUSEWAY, HARARE

PROMOTING THE ETHICAL CONDUCT OF HEALTH RESEARCH
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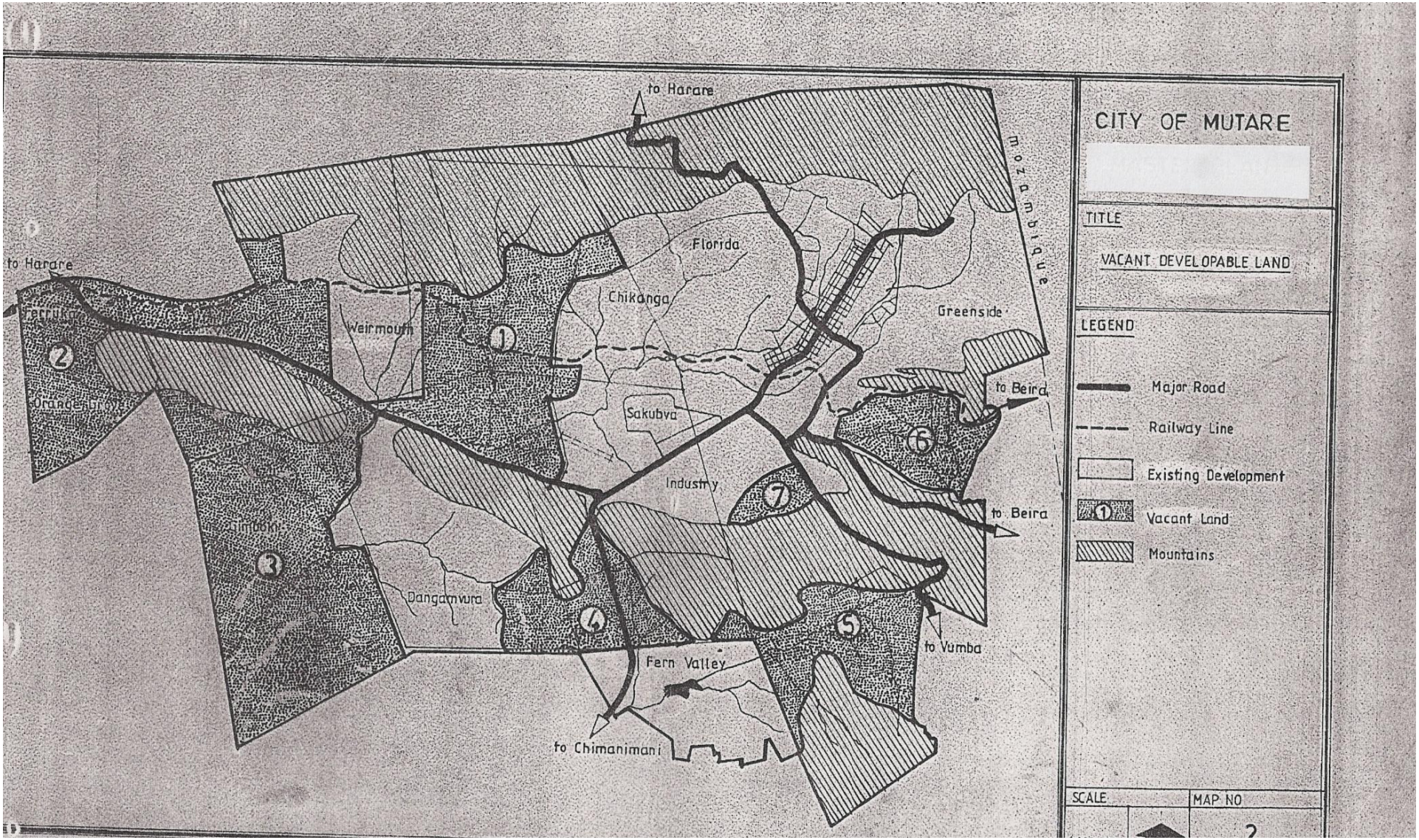
to Harare
to Harare
Ferrryka
Orangegrove
Weirmouth
Florida
Chikanga
Greenside
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to Beira
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Industry
to Beira
Dangamvura
to Vumba
Fern Valley
to Chimanimani
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