University of the Western Cape
Faculty of Community and Health Sciences
Mini Thesis Report

Title: Assessment of client satisfaction with the quality of antenatal healthcare received at health facilities and continued willingness to use ANC services in healthcare facilities among pregnant women in Lusaka district of Zambia

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ACRONYMS

ANC	Antenatal care
FBDs	Facility-based deliveries
DHO	District Health Office
MMR	Maternal Mortality Rate
MoH	Ministry of Health
NHRA	National Health Research Authority
OAU	Organization of African Unity
PMRC	Policy Monitoring and Research Centre
SBA	Skilled Birth Attendant
SES	Socioeconomic Status
SSA	Sub-Saharan Africa
UNICEF	United Nations International Children's Emergency Fund
UWCBMREC	University of the Western Cape Biomedical Research Ethics Committee
UNZABREC	University of Zambia Biomedical Research Ethics Committee
WHO	World Health Organization
ZDHS	Zambia Demographic Health Survey

ABSTRACT

BACKGROUND: Antenatal healthcare (ANC) has been a major input contributing to the reduction of maternal and neonatal deaths in developing countries. Satisfaction with ANC services and perception of quality of care are critical determinants of service utilization. Assessing the satisfaction of antenatal care is essential to improving maternal healthcare.

OBJECTIVE: To describe pregnant women's satisfaction with ANC and identify sociodemographic factors associated with satisfaction. The study also aimed to determine the proportion of pregnant women willing to continue using the facility if they fall pregnant again or willing to recommend the facility to relatives or friends.

METHOD: A cross-sectional study design involving 499 pregnant women in Lusaka district was done using stratified randomization. This allowed the researcher to assess exposure and status simultaneously among individuals of interest in a population.

RESULTS: The proportion of mothers who were fully satisfied varied: 54.3% - 57.9% for interpersonal aspects; 46.9% - 58.7% for technical aspects of care and were lowest for the physical environment (40.9 - 58.3%) and slightly higher for accessibility (55.9 - 60.9%). The following sociodemographic characteristics were statistically significant across different dimensions of care: husband's employment was significant on interpersonal aspects of care (p=0.013); household income was significant on the physical environmental aspects of care (p=0.035), time to reach a health facility was significant on two aspects of care, technical (p=0.041) and the physical environment aspects (p=0.016); gestational age was significant on the physical environment (p=0.012). Facility (clinic) type was significant on two categories under the physical environment (Mtendere, p=0.002 and N'gombe p=0.001).

CONCLUSION: The general satisfaction of women with antenatal care was low (58.5%). This study established that the low satisfaction of women with antenatal care was not directly correlated to the willingness of women to return or recommend the health facility to friends or relatives. In future, there is need a to address some interpersonal and physical aspects of care that were not satisfactory.

DECLARATION

I declare that the *Assessment of client satisfaction with the quality of antenatal healthcare received at health facilities and continued willingness to use ANC services in healthcare facilities among pregnant women in Lusaka district of Zambia* is my work, that has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Ladislas Hibusu March 2023

Signed: . . . . . .

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CHAPTER 1: INTRODUCTION

1.1 Background

Maternal mortality remains as one of the leading causes of death among women in low and middle-income countries (WHO, 2017a). The World Health Organization (WHO) defines maternal mortality as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes" (WHO, 2012: 55). Every day in 2017, approximately 810 women died from preventable causes related to pregnancy and childbirth (PAHO/WHO, 2018). Over 99% of the 303,000 maternal deaths which occurred due to complications of pregnancy and childbirth in 2015 were in developing countries (Wynne et al., 2020).

The WHO and the UN focused on improving access to maternity care until 2015, as the main method to reduce MMR in order to achieve the MDG-5. However, these goals were not met. Entering into the post-MDG era and in the context of the Sustainable Development Goals (SDG), the WHO shifted its focus from 'access to care' to 'quality of care' (Tuncalp, 2015).

To this end, the WHO recommended antenatal healthcare (ANC) as an effective intervention to improve maternal and child health outcomes (WHO, 2005). Antenatal healthcare is an umbrella term used to describe the medical care and procedures that are carried out to and for pregnant women (Mokhena *et al.*, 2018). It is the care that is rendered to the pregnant women throughout pregnancy until the child's birth and is aimed at detecting the already existing problems and/or problems that can develop during pregnancy, affecting the pregnant woman and/or her unborn child (Pattinson, 2007). The care includes various screening tests, diagnostic procedures, prophylactic treatments, some of which are done routinely, and others are provided to the women based on identified problems and risk factors (Mokhena et al., 2018).

Because of the poor implementation of the traditional ANC programs, in 2001, the WHO began to promote the Focused Antenatal Care (FANC) strategy which not only

reduced the number of ANC visits to four from the numerous 7-16 visits under the traditional ANC but emphasized on the quality of ANC, rather than the frequency of antenatal visits (Kyei, Chansa and Gabrysch, 2012; McHenga, Burger and Von Fintel, 2019). In 2016, the WHO updated its antenatal guidelines to include changes such as increasing the recommended number of ANC visits from four to eight contacts (Wynne *et al.*, 2020). Notice that within this model, the word "contact" has been used instead of "visit", as it implies an active connection between a pregnant woman and a health-care provider that is not implicit with the word "visit" (WHO, 2016b). Despite the WHO revision of ANC guidelines in 2016, FANC is the ANC model currently being practiced in most low and middle income settings including in Zambia with a few facilities utilizing the 2016 updated WHO guidelines (Chama-Chiliba and Koch, 2015).

Literature varies in terms of the preferred number of ANC visits. For instance, in the 2015 Cochrane review study, results showed that women in both low and high income settings were less satisfied with the reduced visit schedule in the FANC and perceived the gap between visits as too long (Dowswell *et al.*, 2015). Other findings however show that although the percentage of women attending ANC (for at least one visit) generally tends to be satisfactory in most low-income countries, fewer women complete the standard four ANC visits (now eight contacts), hence, maternal, and neonatal mortality remain high (Kyei, Chansa and Gabrysch, 2012). While 98% of the 4148 women in the Zambia DHS 2007 attended ANC at least once and 94% attended at least once and saw a skilled health worker, only 60% had the recommended four antenatal visits, and 58% received the recommended ANC of at least four visits with a skilled health worker (Kyei, Chansa and Gabrysch, 2012).

Previous research on the impact of ANC has been inconclusive. For instance, the WHO 2001 Trials conducted in Argentina, Cuba, Saudi Arabia, and Thailand showed that FANC is safe and a sustainable, comprehensive, and cost-effective ANC model (WHO 2002). In Kenya, the adoption of FANC led to improved detection of existing diseases in pregnancy during the first ANC visit, planning for birth, prevention of complications and postpartum counselling (Harriet Birungi & W. Onyango, 2006). In Ghana, FANC resulted in improved quality and continuity of care. However, in South Africa, FANC had no significant effect on the quality of ANC services (McHenga, Burger and Von Fintel, 2019).

In Zambia, maternal health indicators improved rapidly over the past three decades of implementing ANC (from 2001 to 2018) with MMR reducing from 729 to 252 per 100,000 live births, and infant mortality rate decreasing from 107 to 42 per 1,000 live births (from 1992 to 2018). However, progress has stagnated in the recent years toward reaching the Sustainable Development Goals despite high ANC attendance for at least one visit (97%) and a drastic drop on the recommended four ANC visits at only 64% (USAID, 2021; Central Statistical Office, 2018). Neonatal mortality, which declined from 34 to 27 per 1,000 live births from 2007 to 2018, has stagnated at an unacceptably high rate and accounts for half of infant deaths (USAID, 2021).

Evidence of a weak relationship between the number of people who receive at least one ANC visit and maternal and newborn survival has motivated recent calls to focus on the quality of antenatal care and patient satisfaction with ANC (WHO, 2015). According to (Mateji *et al.*, 2014; Chandra, Ward and Mohammadnezhad, 2019), satisfaction is a reflection of the patient's judgment of the extent to which they are satisfied with their experience of care on different domains of health care including technical, interpersonal, and organizational aspects. Sheffel *et al.*, (2019) and Galle *et al.*, (2015) states that the quality of antenatal care and experience of care improves health outcomes, determines return visits (continuity of care), adherence to treatment, and improves relationship with the providers. The WHO (2020) defines quality of care as the degree to which health services for individuals and populations increase the likelihood of desired health outcomes.

This is evidenced by Kim (2018a)'s research that found some of the reasons women were not accessing antenatal care such as poor quality of healthcare facilities, mistreatment, abuse, and disrespect being common practices during ANC visits in many parts sub-Saharan Africa. Given the above, women's perceptions, opinions, expectations, and experiences of the quality antenatal care is increasingly being seen as an important measure in examining quality of health care hence achieving optimal maternal health (Donabedian 1988; Ross et al. 1993; Sitzia & Wood 1997). In practice, expectations refer to ideal health care, anticipated health care, or desired health care (Thompson, 1995). Christaens & Bracke (2007) demonstrated the positive correlation of expectations and satisfaction, with fulfillment of expectations being one of the most consistent predictors of satisfaction. As such, many researchers have come to an

agreement that women's satisfaction with antenatal care is determined by the interaction between their expectations and the characteristics of the healthcare they receive (Omar, 2001).

To this end, patient satisfaction has increasingly come to be used as an indicator of quality of care (Larsson, 2002). Yet, according to Afulani (2016), most women in LMICs do not receive quality antenatal healthcare during ANC visits, exposing them to risks of complications, stillbirths, and maternal deaths. For instance, in Zambia, research has shown that only 29% of women receive high-quality antenatal care (Kyei, Chansa and Gabrysch, 2012). This is despite Darmstadt (no date)'s findings that estimated that if 90% of women received quality ANC, then up to 9% of neonatal deaths in Africa can be prevented.

Existing studies further demonstrate that factors such as waiting time before consultation, interpersonal manner of care providers, technical quality of care, accessibility to care, finances, outcomes, continuity of care, availability of medical care resources, setting and physical environment all impact on women's satisfaction with antenatal care (Simkhada, 2008; & Senarath, Fernando and Rodrigo, 2006). A review by Sitzia and Wood (1997) highlighted the interpersonal behavior of care providers as the principal component of satisfaction. Mothers who are treated with respect, courtesy, and dignity, and have trusting relationships with their care providers are more likely to be satisfied with the obstetric care (Harriott et al. 2005).

According to Mateji *et al.*, (2014), satisfaction with the aforementioned aspects of care is strongly influenced and shaped by socio-demographic characteristics of women. Based on the above literature, it is abundantly clear that women's perception of ANC quality determines their willingness to comply and continue utilizing or seeking ANC services. Notably, measurement of quality of care has historically focused on facility inputs and provision of care (Kyei, Chansa and Gabrysch, 2012). This study highlights the importance of incorporating experience of care in assessing system performance specifically, antenatal care. By doing so, it aims to identify barriers and facilitating factors of practical use to policymakers, managers and governments in LMICs who aim to improve ANC service coverage and reduce maternal mortality.

1.2 Problem Statement

Satisfaction with the quality of antenatal healthcare being received by pregnant women in low and middle-income countries remain a critical factor in addressing maternal mortality. In Zambia, research has shown the quality of ANC received by pregnant women is low when compared to other countries in the region. The two studies that were conducted six years apart in Zambia by Kyei in 2012 and by Brave in 2018 still show that fewer pregnant women, 29% and 47.1% respectively received high quality of antenatal care at the health facilities (Kyei et al., 2012; Brave et al., 2018). This is a concern for a country like Zambia. Literature has also shown that the perception of quality antenatal care and experience of care has a bearing on satisfaction, hence in determining health outcomes, return visits (continuity of care), adherence to treatment, and in determining relationship with the providers. Given the low quality of care above, little is known about specific factors (facility-based and sociodemographic) that are associated with pregnant women's satisfaction with the quality of ANC. Furthermore, little is known whether the level of satisfaction has a bearing on the pregnant woman's willingness to return to the facility if she falls pregnant again, if she would return for the subsequent ANC schedules, or if she would recommend the health facility to relatives or friends. To avoid the negative consequences which may result from dissatisfaction as a result of poor ANC, it was important that this study is undertake to establish the proportion of pregnant women who were fully satisfied ANC as well as to identify factors that are associated with satisfaction of pregnant women with ANC among ANC health facilities in Lusaka district of Zambia.

1.3 Study Purpose

The purpose of this study was to contribute to knowledge and understanding of the extent to which pregnant women are satisfied with the quality of ANC they receive at various health facilities in Lusaka district of Zambia. In this vein, the study provides insights and recommendations to policy makers, policy enforcers, managers of health facilities and the implementers of antenatal healthcare on the need to improve the delivery of antenatal healthcare to pregnant women with the primary goal of advancing quality maternal health.

1.4 Study Aim

The study sought to assess the extent to which pregnant women were satisfied with the quality of antenatal healthcare they received at health facilities and to identify the factors that were associated with satisfaction or dissatisfaction. The study also sought to establish whether satisfaction was linked to the continued use of the health facility or whether pregnant women were still willing to recommend the facility to relatives or friend regardless of their satisfaction rating, among pregnant women in Lusaka.

1.5 Study Objectives

- To determine the proportion of pregnant women who were fully satisfied (or dissatisfied) with the different aspects of facility healthcare.
- To identify sociodemographic factors associated with pregnant women's satisfaction with ANC.
- To determine the proportion of pregnant women who were willing to continue using the same ANC facilities the next time they are pregnant.
- To determine the proportion of pregnant women who were willing to recommend the same ANC facilities to a pregnant relative or friend.
- To establish reasons why pregnant women would not want to return or would not recommend a health facility to a relative or friend.

1.6 Thesis Chapter Outline

This report is organized as follows: the first chapter provides the background, problem statement, research questions, and study rational. In chapter two, literature on maternal health, women satisfaction with antenatal care, and quality of antenatal care was provided. Chapter three presented the methodology of the study. The study design, setting, study population, sampling techniques, data collection and analysis are outlined. A research ethics statement is also included. Chapter four presents the results section which provides responses to the objectives and research questions and highlights key findings; the discussion section interprets results in the local and global context; and finally, Chapter five is the conclusions and recommendations section which summarizes the key findings and provide recommendations.

CHAPTER 2: LITERATURE REVIEW

In this chapter, the reader is briefly introduced to Zambia's healthcare system. Next, the chapter briefly describes the epidemiology of maternal mortality; the statistics, consequences, and causes of maternal deaths. The reader is then provided with a thorough review of literature on antenatal healthcare and the different aspects of facility-based care. Subsequently, this chapter examines quality of antenatal care in sub-Saharan Africa and Zambia and how it affects women's satisfaction; the chapter then review how satisfaction affects ANC return visits and overall outcomes of maternal health. Finally, this chapter describes the motivation for this study.

2.1 Background

Maternal mortality remains an important global health issue. Over 99% of the 303,000 maternal deaths which occurred due to complications of pregnancy and childbirth in 2015 were in developing countries (Wynne *et al.*, 2020). One contributing factor to this is poor quality antenatal care (ANC) (Wynne *et al.*, 2020). High quality universal ANC is essential to reduce maternal mortality (Ibid). ANC requires clinicians to monitor the health of pregnant women, identify and manage risks, and provide health education to prevent maternal and neonatal morbidity and mortality from treatable causes such hypertensive disorders of pregnancy and diabetes (Wynne *et al.*, 2020).

The World Health Organization (WHO) updated its antenatal guidelines in 2016 to include changes such as increasing the recommended number of antenatal contacts from four to eight (Wynne *et al.*, 2020). As these guidelines are disseminated, it is increasingly important to assess the delivery of ANC in areas with high maternal mortality ratios (MMR), particularly in developing regions of the world, to maximize the quality of ANC received. Previous literature has demonstrated dissatisfaction with quality of ANC services in Lusaka district (Katemba, 2017).

2.2 Brief History of Zambia's Healthcare System

Nearly a quarter of the population in Zambia live below the poverty line (24.3%), lower in urban than rural areas (CSO et al., 2014; World Bank Group, 2020). The unemployment rate is 11% (UNDP, GoZambia 2013). The 15–49-year literacy rate

among women and men in the province is 68% and 83% respectively (CSO et al., 2014). Health seeking behaviors are often influenced by cultural and religious beliefs and practices. For example, traditional healers are often visited before going to allopathic health providers and some religious sects do not allow their members to attend health care services, preferring spiritual healing through prayers. On the other hand, the presence of extended families and traditions can facilitate the community networks and interactions needed to organize health activities, particularly in the high density areas of Lusaka (Topp, Chipukuma and Hanefeld, 2015).

Zambia's health system is centralized with the Ministry of Health (MOH) responsible for all national health policies and for direct oversight of tertiary hospital operations (Topp, Chipukuma and Hanefeld, 2015). Responsibility for the network of 1500 first and second level health facilities (primary health centers and first and second level hospitals) lay with Provincial and District Health Offices (Topp, Chipukuma and Hanefeld, 2015). Primary health centers make up the majority (79%) of Zambia's health facilities, with approximately 29% located in urban areas. Officially, urban health centres serve a catchment population of 30 000 to 50 000, while rural health centres serve a population of up to 10 000 (Topp, Chipukuma and Hanefeld, 2015 quoting GRZ, 2007).

2.3 Epidemiology of Maternal Deaths

The International Classification of Diseases (ICD)010 defines maternal deaths as:

> "The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes" (WHO, 2012: 55).

Almost all maternal deaths (99%) occur in developing countries (Srivastava *et al.*, 2015) and more than half of these deaths occur in sub-Saharan Africa, and one third occur in South Asia (World Health Organization, 2015). In Zambia, maternal deaths account for 10% of all deaths among women aged 15-49 years and in 2017, complications during pregnancy and childbirth were the fourth leading cause of death among women of childbearing age (Gianetti *et al.*, 2019). In Zambia, the maternal mortality ratio for the 7-year period before the 2018 ZDHS is estimated at 252 maternal

deaths per 100,000 live births. However, according to the Zambia National Health Strategic Plan 2017-2021, the target is to reduce the maternal mortality ratio from 398 deaths per 100,000 live births in 2013-14 to 100 deaths per 100,000 live births by 2021 (MOH 2016) (Central Statistical Office, 2018).

2.4 Causes of Maternal deaths in sub-Saharan Africa

Maternal deaths are subdivided into direct or indirect deaths. Direct deaths are those that are caused by obstetric complications due to pregnancy, and iatrogenic complications during treatment, as well as abortions. It also includes deaths due to omission of treatment or provision of incorrect treatment. Indirect deaths are those resulting from previous conditions or conditions developed during pregnancy that are not obstetric in origin, but aggravated due to physiological changes of pregnancy (WHO, 2012).

The leading cause of maternal deaths is postpartum hemorrhage (Figure 2.2). The excessive loss of blood after giving birth can severely drop the mother's blood pressure and lead to shock and death. The second leading cause is related to hypertension. Chronic hypertension and gestational hypertension can lead to preeclampsia or, if severe, eclampsia that can result in seizures, coma, and death56. Other direct causes include unsafe abortion, sepsis due to infections, prolonged or obstructed labour, and complications from surgery. Common indirect causes of maternal deaths include malaria, anemia, AIDS, and diabetes (WHO, 2012).

While it is possible to prevent maternal deaths with appropriate care, many women do not seek proper maternal care during pregnancy and delivery. Access to healthcare facilities, especially during childbirth, is key in reducing the maternal mortality rate (MMR) (United Nations, 2015).

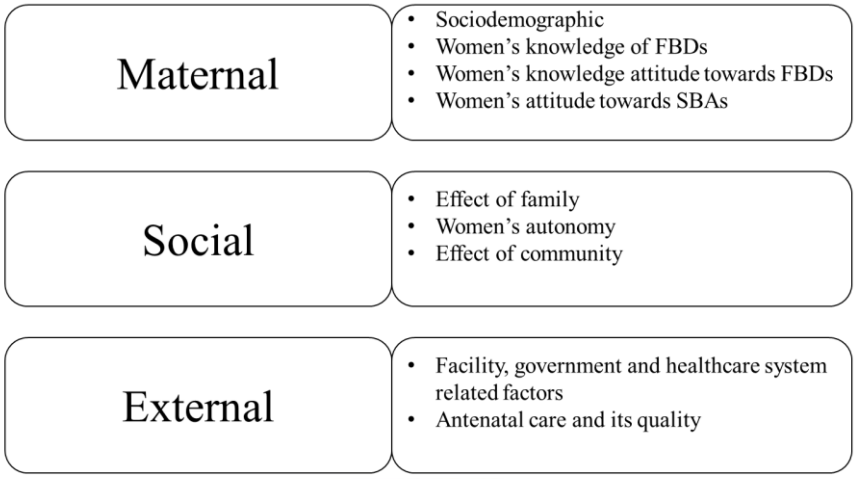
2.5 Facility-Based Deliveries (FBD)

2.5.1 Determinants of FBDs

Facility-based deliveries with an SBA has been recognized as the single most important factor in reducing maternal mortality (WHO, 1999). Since almost all FBDs are assisted by an SBA and almost all SBA-assisted births takes place in facilities, many studies have studied these two matters interchangeably (Moyer and Mustafa, 2013). Therefore,

this study will use evidence from studies that have looked at either FBDs or SBAs. The determinants of FBDs studied in sub- Saharan Africa can largely be categorized as maternal factors, social factors, and external factors. Sub-categories of the three factors are listed in the Figure below.

Figure 1: Categorization of Determinants of FBDs



Adapted from Moya CA, Mustafa A. Drivers and deterrents of facility delivery in sub-Saharan Africa: A systematic review

Previous studies have provided evidence around most of the factors above that affect women's use of FBDs. External factors, such as distance and cost are often the most common points of intervention. However, a large proportion of women are still choosing homebirths even after the removal of user fees for FBDs in most sub-Saharan Africa. This study seeks to investigate the possible factors that can shape women's perception toward facilities, providers, and FBDs (Kim, 2018a). Antenatal care, which almost all women in Zambia and sub-Saharan Africa receive during pregnancy is hypothesized to be a critical point of interaction shaping women's perceptions and willingness to demand for the services. Therefore, the quality of ANC is the focus of this thesis, and the literature around quality is reviewed in the next section.

2.5.2 Antenatal Care

Antenatal care is the care provided to expectant mothers throughout their pregnancy for the overall well-being of mothers and babies. The purpose of ANC is to prevent, detect, and manage complications that can arise during pregnancy or pre-existing conditions that worsen with pregnancy (The Partnership For Maternal & Child Health, 2010). It is also an opportunity to provide guidance to steer women away from unhealthy lifestyles

and to inform and promote healthcare seeking behaviors (The Partnership For Maternal & Child Health, 2010). The WHO recommends ANC for all pregnant women based on ample evidence of its positive effects (The Partnership For Maternal & Child Health, 2010). Receiving ANC can prevent and treat early pregnancy complications such as malaria, infections, and diarrhea.

The Zambia Demographic Health Survey (2018) further indicate that in the 5 years preceding the survey, majority of women (97%) age 15-49 who had a live birth in the 5 years preceding the survey received antenatal care (ANC) from a skilled provider during their most recent birth. Sixty-four percent had at least four ANC visits, while 33% of women had two to three ANC visits and 1% had one visit (Central Statistical Office, 2018). Another 1% of women had no ANC visit during their last pregnancy. Rural women were more likely to have at least four antenatal care visits (65%) than urban women (61%). Over 3 in 10 women (37%) had their first ANC visit during the first trimester of their pregnancy; 48% had their first visit during the fourth or fifth month of their pregnancy, while 13% received ANC during their sixth and seventh month of pregnancy (Central Statistical Office, 2018).

Despite the WHO revision of ANC guidelines in 2016 as shown in Figure 2, FANC is the ANC model currently being practiced in most low and middle income settings including in Zambia with a few facilities utilizing the 2016 updated WHO guidelines (Chama-Chiliba and Koch, 2015). Figure 2 below shows some differences between the two WHO ANC models below. The FANC model recommends four ANC visits to a health facility for a pregnant woman which not only reduced the number of ANC visits to four from the numerous 7-16 visits under the traditional ANC but emphasized on the quality of ANC, rather than the frequency of antenatal visits (Kyei, Chansa and Gabrysch, 2012; McHenga, Burger and Von Fintel, 2019).

The percentage of women who had at least four ANC visits in Zambia has fluctuated over the years. The percentage increased from 69% in 1992 to 71% in 1996 and 72% in 2001-02 and then decreased markedly to 60% in 2007 (Central Statistical Office, 2018). The percentage decreased again to 56% in 2013-14 before increasing to 64% in 2018 (Central Statistical Office, 2018). According to Darmstadt *et al.*, (no date), it is estimated that if 90% of women receive proper ANC, then up to 9% of neonatal deaths

in Africa can be prevented. Unfortunately most women do not receive quality care during ANC, exposing them to risks of complications, stillbirths, and maternal deaths even after receiving ANC (Afulani, 2016).

Figure 2: ANC schedule comparing WHO FANC & ANC Models

As shown in this figure, the 2016 WHO ANC model recommends a minimum of eight ANC contacts, with the first contact scheduled to take place in the first trimester (up to 12 weeks of gestation), two contacts scheduled in the second trimester (at 20 and 26 weeks of gestation) and five contacts scheduled in the third trimester (at 30, 34, 36, 38 and 40 weeks). Within this model, the word "contact" was used instead of "visit", as it implies an active connection between a pregnant woman and a health-care provider that is not implicit with the word "visit" (WHO, 2016b). In running the various analysis in this study, gestational age has been classified following the FANC model of four classes but slightly different although maintained the trimester classes categories (Below 12 weeks; 13-26 weeks; 27-32 weeks, and above 33 weeks).

Box 5: Comparing ANC schedules

WHO FANC model	2016 WHO ANC model
First trimester	
Visit 1: 8–12 weeks	Contact 1: up to 12 weeks
Second trimester	
Visit 2: 24–26 weeks	Contact 2: 20 weeks Contact 3: 26 weeks
Third trimester	
Visit 3: 32 weeks Visit 4: 36–38 weeks	Contact 4: 30 weeks Contact 5: 34 weeks Contact 6: 36 weeks Contact 7: 38 weeks Contact 8: 40 weeks
Return for delivery at 41 weeks if not given birth.	

Source: (WHO, 2016b)

2.5.3 Quality of Antenatal Care

The current definition of quality of care used by the WHO is: *"*The extent to which healthcare services provided to individuals and patient populations improve desired health outcomes. In order to achieve this, healthcare must be safe, effective, timely, efficient, equitable and people-centered" (WHO, 2017). The WHO further notes that between 5.7 and 8.4 million deaths are attributed to poor quality of care each year in low- and middle-income countries (LMICs), which represents up to 15% of overall deaths in these countries (WHO, 2020).

In a study conducted in Tanzania for instance, 70% of participants attested that they

received some form of disrespect or abuse while delivering at a facility (Sando et al., 2016). Greater than half of those participants in Tanzania stated that they experienced physical and verbal abuse, lack of visual and auditory privacy, and ignorance from healthcare providers (Sando et al., 2016). Thus, women's perception of healthcare quality is to a large extent shaped by both direct and indirect experiences of healthcare facilities. These include their previous birthing experience at a facility, their experience during their antenatal care (ANC) at a facility, as well as reports of other mothers who have received ANC or delivered at a facility in their neighborhoods (Ã, Ikeako and Iloabachie, 2006).

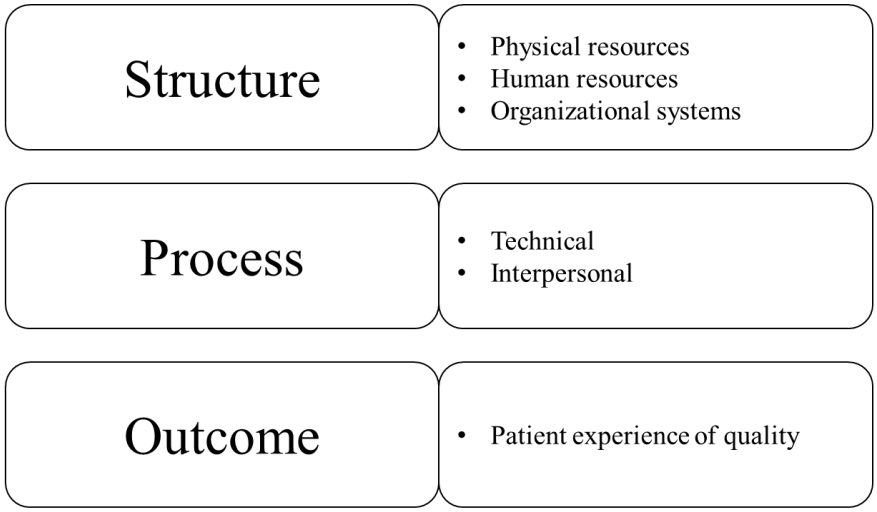
Thus, quality of maternal care is being emphasized as the next step for reducing global maternal mortality (WHO, 2017). Providing quality maternal care is known to bring better health outcomes for mothers and newborns (Bhutta *et al.*, 2014). However, the current quality of maternal care in most parts of sub-Saharan Africa is far below the recommended standards (Koblinsky *et al.*, 2016). Substandard quality of care expose mothers to risks, even in the presence of healthcare professionals (Koblinsky *et al.*, 2016). The WHO and the UN focused on improving access to maternity care until 2015, as the main method to reduce MMR in order to achieve the MDG-5. However, these goals were not met. Entering into the post-MDG era, the WHO has shifted its focus from 'access to care' to 'quality of care' (Tuncalp, 2015).

The shift is expected to bring positive movements to achieving the new Sustainable Development Goals-3 by 2030 which aims to reduce MMR to 70 per 100,000 live births and to provide safe, effective, and quality services (UNDP, 2016). Numerous researchers have taken various paths in assessing quality of care. Among them, the most established and foundational framework for quality assessment in healthcare provision is the framework proposed by Donabedian in 1966 (Donabedian, 2005). He proposed that quality of care can be conceptualized as structure, process, and outcome (Donabedian, 2005).

The structure below denotes the material resources, human resources, and the organizational structure of a facility while process denotes what is actually done when patients receive care (Donabedian, 2005). This accounts for both the patient's responsibilities in seeking and accepting care and the provider's responsibilities in

providing care. It includes technical aspects (making a diagnosis and providing evidence-based treatment), and interpersonal aspects (communicating with patients).

Figure 3: Categorization of Quality of Care



Adapted from Donabedian, A. (2005) 'Evaluating the Quality of Medical Care,' 83(4), pp. 691–729

The last category is the outcome, which includes medical improvements, an increase in health-related knowledge, a patient's experience or satisfaction and changes in a patient's behavior (Kim, 2018a). The WHO operationalized the Donabedian model and presented the Standards for Improving Quality of Maternal and Newborn Care in Health Facilities in 2016 as a guide to providing quality maternal care (WHO, 2016a). The guide utilizes Donabedian's structure, process, and outcome as the overarching conceptual framework (WHO, 2016a). It provides eight domains of quality in assessing maternal care at healthcare facilities: availability of essential physical resources; competent, motivated personnel; actionable information systems; functioning referral systems; respect and preservation of dignity; evidence-based practices for routine care and management of complications; effective communications and; emotional support (Kim, 2018a).

Measurement of quality of care has historically focused on facility inputs and provision of care (Sheffel *et al.*, 2019). This study seeks to measure the quality of ANC through the user's experience and perception of the received care. This follows several literature that have suggested that women's perception of ANC quality often determines their willingness to comply and continue utilizing or seeking the service (Montasser *et al.*,

2012). It is therefore critical to assess the satisfaction of antenatal healthcare to make it more responsive and culturally acceptable, ultimately leading to enhanced utilization and improved outcomes.

2.5.4 Women's Satisfaction with the Quality of Antenatal Care

While ANC has been recognized to help reduce maternal deaths, several women in sub-Saharan Africa still choose to deliver at home (Kim, 2018a). Several reasons have been cited for this, including poor quality of healthcare facilities (Kim, 2018a). According to Kim (2018a), women who chose not to deliver at a facility identified poor quality of the healthcare facility as one of their reasons. Mistreatment, abuse, and disrespect of women during childbirth are common practice in sub-Saharan Africa1(Kim, 2018a). As reported in Tanzania, 70% of participants attested that they received some form of disrespect or abuse while delivering at a facility (Kim, 2018a).

Greater than half of those participants in Tanzania experienced physical and verbal abuse, lack of visual and auditory privacy, and ignorance from healthcare providers (Sando *et al.*, 2016). A study done in rural Tanzania reported that women who had better perception of the quality of the facilities were 80% more likely to have FBD (Kruk, 2010). Women's perception of healthcare quality are shaped by both direct and indirect experiences of healthcare facilities. These include their previous birthing experience at a facility, their experience during their antenatal care (ANC) at a facility, as well as reports of other mothers who have received ANC or delivered at a facility in their neighborhoods (Ã, Ikeako and Iloabachie, 2006). These views are summarized by Sheffel *et al.*, (2019) who observed that the quality of ANC and experience of care is an important determinant of return visits to an ANC facility (Sheffel *et al.*, 2019).

According to Montasser *et al.*, (2012), client satisfaction with regards to the quality of care is the degree to which the client's desired expectations, goals and or preferences are met by the health care provider and or service (Debono and Travaglia, 2009). Douglas et al., (2007), notes that antenatal care-related expectations of pregnant women fall into four main categories: the wish to be provided with enough information, emotional support, general support in relation with representation of their interests, and the wish to be provided with professional care (Montasser *et al.*, 2012). Further, users who perceive the quality of care in a health center to be satisfactory, are more likely to

visit it again, thereby increasing demand for the service (Srivastava *et al.*, 2015).

Srivastava et al., (2015) further notes that understanding maternal perception of care and satisfaction with [ANC] services is important, as perceived quality is a key determinant of service utilization. Perceptions of care are influenced by the expectations of the person who uses care as well as actual nature of the care being received (Ware et al. 1983). According to Senarath, Fernando and Rodrigo, (2015) satisfaction with medical care concerns the interpersonal manner of care providers, technical quality of care, accessibility to care, finances, outcomes, continuity of care, physical environment and availability of medical care resources (Ware et al. 1983). A review by Sitzia and Wood (1997) highlighted the interpersonal behavior of care providers as the principal component of satisfaction. Several studies have described patient satisfaction with maternity care and its determinants in the hospital setting in developed countries (Brown & Lumley 1994; Finkelstein et al. 1998; Janssen et al. 2000; Smith 2001).

Mothers who are treated with respect, courtesy, and dignity, and have trusting relationships with their care providers are more likely to be satisfied with the obstetric care (Harriott et al. 2005). A Canadian study indicated that women with low-risk pregnancies were more satisfied with care provided by midwives than with care by doctors (Harvey et al. 2002). Older age and better self- perceived health status were identified as strong predictors of satisfaction both in obstetrical and non-obstetrical inpatient settings (Finkelstein et al. 1998; Thi et al. 2002). Resulting from the above, Senarath, Fernando and Rodrigo (2015) implored the need for developing countries to promote client-oriented health services by undertaking in-depth research on factors determining satisfaction in the respective culture such as this one. The authors further observed that some factors such as those related to practices in the hospital may be alterable by health managers and care providers. Recognition of non-modifiable factors such as patients' sociodemographic characteristics is also important for health managers to target patients at risk for worse experiences.

Women's intention for FBD in Zambia is reflected in the 2018 ZDHS. Findings from the 2018 Zambia Demographic Health Survey suggest that: the percentage of births delivered in a health facility decreases with increasing mother's age at birth; The higher

the birth order, the less likely a woman will deliver at a health facility: 92% of first-order births are delivered in a health facility, as compared with 75% of sixth- or higher-order births; Women in urban areas are more likely to deliver in a health facility (93%) than women in rural areas (79%); The percentage of births that take place in a health facility increases with increasing mother's education, from 66% among births to mothers with no education to 99% among births to mothers with a higher education. Similarly, the percentage of health facility deliveries increases with increasing household wealth, from 73% in the lowest wealth quintile to 96% in the highest quintile (Central Statistical Office, 2018).

While researchers have shown that women's preference for place of delivery is largely affected by their perception of those facilities and their staff (Fira, Ababulgu and Bekuma, 2011), no studies have examined quality of antenatal care (ANC) services, satisfaction and willingness of continued use among pregnant women in Lusaka district of Zambia. Therefore, this study seeks to examine the relationship between the quality of ANC received by expectant mothers, satisfaction, and willingness of return visits or continued use of the same ANC facility the next time a woman falls pregnant again.

2.5.5 How Women's Satisfaction Affect Access and Maternal Healthcare

There are mixed findings on research conducted regarding this subject. A study done in Burkina Faso by Nikiema did not find significant association between satisfaction and return visits for ANC (Nikiema *et al.*, 2010). However, studies conducted by Gage et al and Chukwuma found quite some significant findings. Gage's and Chukwuma study found a link between management practices at facilities and FBDs such that among women who attended ANC at least once, SBA retention was greater when women received higher quality of ANC (Gage, Ilombu and Akinyemi, 2016). Kim notes that the differences in the results may be due to the different methods each study used to assess quality of ANC and to determine women's use of FBDs (Kim, 2018a).

Nikiema and Gaga's studies measured the quality of ANC through direct observation, considered the gold standard for assessing quality based on the current standards of service provision (Kim, 2018a). However, Chukwuma's study based their quality of ANC assessment through mothers' recall of their receipt of ANC services in the past five years (Chukwuma *et al.*, 2017). The three studies also differed in how they assessed

FBDs and how they linked the use of FBDs to the quality of ANC data. Nikiema and Gaga studies estimated the effect of the quality of ANC on FBDs using aggregate data. They were not able to study the quality of ANC provided to each woman and its effects on her use of FBDs. Chukwuma's study did not face difficulties in linking quality of ANC and the use of FBDs since they were both self-reported by the participants.

The three studies by Nikiema, Gage, and Chukwuma suggest that quality of ANC has the potential to affect women's perceived quality of obstetric facilities and providers, thereby affecting women's use of facilities for delivery. Building on this theory, it is possible that the effect of quality may be more prominent if women intentionally choose to deliver at their ANC facility after receiving the good quality ANC.

2.5.6 Summary of Literature review

Previous studies demonstrate that women's satisfaction with the quality of the healthcare influences their future use of that healthcare system. Satisfied patients are more likely to take part in the decision-making process and to complete the required number of antennal care (ANC) which ultimately means receiving the right care, hence reducing maternal mortality. One of the important determinants of satisfaction is the perception of quality and fulfillment of expectations. This study aimed to assess pregnant women's satisfaction with antenatal care and to assess whether satisfaction influence willingness to return or to recommend a facility to friends and relatives.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter presents an overview of the methodology used in this study. The chapter starts with an explanation of the theoretical literature that explains the choice of variables used in the study. The chapter proceeds to provide a description of the aim and objectives, the study design, setting, population and sampling procedure, the study analysis, ethics considerations and the study limitations.

3.2 Theoretical Approach

The theoretical underpinnings of this study links linearly the various determinants of maternal satisfaction that emerge from the literature. In the case of this study, these determinants include the quality of ANC practices at the health facility and the sociodemographic characteristics of pregnant women accessing antenatal care at health facilities (Senarath, Fernando and Rodrigo, 2015). Senarath, Fernando and Rodrigo (2015) observed that factors such as those related to practices in the hospital and that may be alterable by health managers and care providers have a bearing on the satisfaction of pregnant women with regards to ANC.

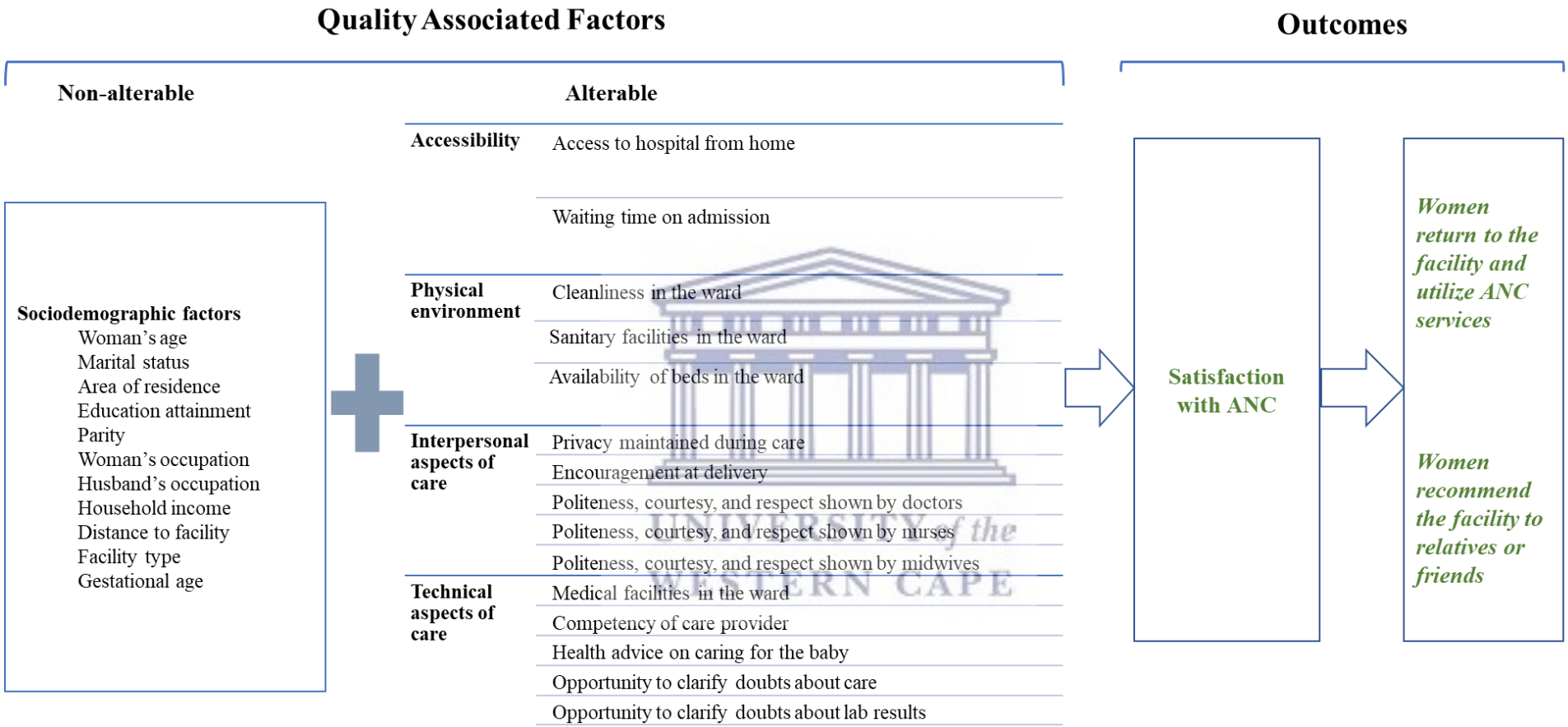
The patients' perception of the quality of the hospital-based perinatal have been extracted and organized thematically based on the classical Donabedian framework of dimension of care: involving structure, process, and outcome while Senarath, Fernando and Rodrigo (2015), Ware et al. (1983) and the WHO's Standards for Improving Quality of Maternal and Newborn Care in Health Facilities published in 2016 informed the classification of determinants across sub-themes. Structure denotes the attributes of the settings in which care occurs including the physical environment; process denotes what is actually done in giving and receiving care (interpersonal and technical aspects of care) while outcome denotes the effects of care on the health status of patients and populations (Donabedian, 1988). The author further suggests that the three-part approach to quality assessment is possible only because good structure increases the likelihood of good process, and good process increases the likelihood of a good outcome.

Further, recognition of non-modifiable factors such as patients' sociodemographic characteristics is also important for health managers to target patients at risk for worse experiences (Senarath, Fernando and Rodrigo, 2015). Thus, the framework in Figure 4 below is suggesting that the education level of a woman would either influence high or low quality of ANC directly or indirectly through influencing the number of ANC visits made (Kim, 2018a). Additionally, the birth order would also influence her ability to demand for certain services during ANC. Other risk factors that would affect quality of antenatal care would be the age of the woman, marital status, employment status and also the time taken to the health facility (Katemba, 2017). Women's age reflects their general demographics and maturity, and education reflects women's socioeconomic status. Having money available for delivery was a proxy measure for women's wealth and birth preparedness (Kim, 2018a).

First pregnancy reflected women's parity and how experienced they are in pregnancy. The gestational stage of women was found to affect women's intention for FBD and therefore, was assessed in this study by whether women were in their third trimester or not for their ANC visit. Completing all four ANC visits is known to increase FBD usage so the number of ANC visits to the same facility was included in the model as well (Kim, 2018a). Facility type was included in the model as this is known to affect both quality of ANC and use of FBDs (Kim, 2018a).

This study was measuring two outcomes as shown in Figure 4 below. Firstly, pregnant women's satisfaction with ANC at the facility, and, secondly, their willingness to return to the facility if they fall pregnant again, and lastly, their willingness to recommend the facility to relatives and friends as a result of perceived quality and satisfaction with ANC. As an overall assessment of patient experience, their satisfaction with the ANC visit was measured in this study. This measure was considered to best reflect women's personal perspective on the overall quality of ANC that they received.

Figure 4: Conceptual framework of factors that influence satisfaction with ANC. Adapted from Donabedian (1979)



3.3 Study Design

This study followed an epidemiological descriptive cross-sectional study design. A cross-sectional study design is one in which exposure and disease status are assessed simultaneously among individuals in a population (Hennekens and Buring, 2013). For instance, a group of people (community, suburb, district, province, or country) is assessed for the occurrence of a disease or disease at a point in time (or a period in time). The key use of this type of study is in assessing the prevalence of disease amongst a group of people or within sub-groups in the overall group of interest (University of the Western Cape, 2019). This study design was used because the study aimed to assess the proportion of pregnant women who express satisfaction (dissatisfaction) and to describe sociodemographic characteristics that were significant and statistically predict satisfaction of women with regards to satisfactory quality of ANC services received by expectant women in Lusaka district of Zambia. The study also sought to compare the findings to other studies done in other settings, such as in Peru, Uganda and Zambia.

3.4 Study Setting and Sampling

Study site. This research was conducted in Lusaka district. Lusaka district is found in Lusaka province, the capital city of Zambia. It is one of the smallest and yet the most highly populated urban townships in Zambia with an estimated total population of about 2.8 million people (Central Statistical Office, 2018). The estimated population of women of childbearing age (WCBA) in Lusaka district is 735,361 with about 100,919 expected pregnancies and about 100,545 expected deliveries in 2022 alone (Lusaka District, 2022).

Generally, the public sector dominates the delivery of health services. Public health facilities are organized under the Ministry of Health (MoH), the Ministry of Defense, the Ministry of Home Affairs and, more recently, the Ministry of Community Development, Maternal and Child Health (MCDMCH) (Rene L, Laurell AC, Hogstedt C, D'Ambruoso L, 2017). The MoH owns 80% of health centers. Private health services include faith-based providers and mission–owned facilities, mainly in rural areas. Health posts (HPs) and health centers (HCs) are found at community level, and refer to district hospitals, then to provincial and then national tertiary hospitals (Rene L, Laurell AC, Hogstedt C, D'Ambruoso L, 2017).

Lusaka district, being a capital city, has all levels of health services from health posts to the University Teaching Hospital, a tertiary facility. The mandate of LDHO, however, ends at district hospital level (Rene L, Laurell AC, Hogstedt C, D'Ambruoso L, 2017). Lusaka district has 59 documented public health facilities clustered in six sub-districts or zones (Chelstone, Chipata, Matero, Kanayama, Chawama, and Chilenje) (Lusaka District, 2022).

Out of this number, 39 public health facilities provide primary health care (Katemba *et al.*, 2018). In this study, eight public health facilities where selected (as shown in Table 1) where a sample of respondents was drawn. The health facilities where a mixture of with the smallest level being at Urban center (Chainda) up to the district hospital level (Chilenje and Kanyama). Chelstone, Chilenje, and Kanyama also serve as sub-district level centers, which in principle means they have higher standards to assume some administrative functions of overseeing other clinics within their zones. Although the population of N'gombe clinic seem to be small, the clinic serves a lot of people who come from the surrounding peri-urban townships (Annie Soko, Sister in-Charge, Chainda UC).

Table 1: Summary Statistics of Sampled Health Facilities

Name of Health Facility	Total population	Population-WCBA	Expected pregnancies
Chilenje First Level Hospital	132,229	35,280	4,825
Kabwata Urban Health Centre	126,781	33,827	4,625
Kalingalinga Urban Health Centre	107,489	28,680	3,922
Chelstone Urban Health Centre	97,606	26,043	3,561
Kanyama First Level Hospital	96,081	25,636	3,506
Mtendere Urban Health Centre	92,152	24,587	3,362
Chainda Urban Health Centre	63,391	16,913	2,313
Ng'ombe Urban Health Centre	56,115	14,971	2,047

Source: Lusaka District Health Office, 2022

Study population. Study participants where all pregnant women attending ANC at any stage of their pregnancy (first, second, third or fourth trimester) within Lusaka district. The following inclusion and exclusion criteria were applied in the study:

Inclusion criteria. The study included pregnant women who were attending ANC at the sampled health facilities and inclusion further involved:

- ≥ 18 years. Only women aged 18 years old and above will be included in the study.
- Speak known/common local language known to the researcher i.e., Nyanja, Bemba, Tonga or English
- Should be capable of giving informed consent.

Exclusion criteria. The study will exclude:

- Women who were attending emergency ANC on the day of potential recruitment were not considered.
- Women who were acquainted with the study research assistants (to respect confidentiality).
- Pregnant women that were less than 18 years old were excluded from the study as this required obtaining special permission (assent) from their guardians/parents to be interviewed.

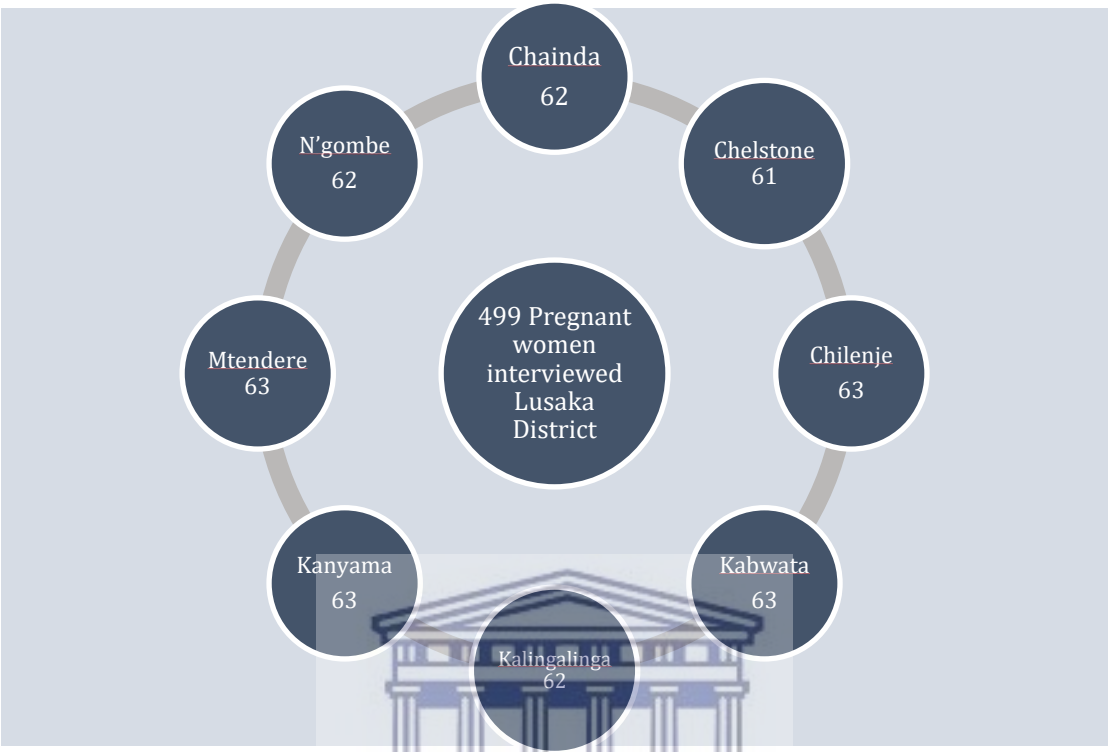
Women were provided with information about the study with the assistance of research assistants and were provided with a written, informed consent to participate.

Sampling Strategy/Procedure. A multi-stage sampling technique was used. This sampling method was adapted because this study required carrying out sampling in stages and allows any combination of random sampling techniques (Bruce, Pope and Stanistreet, 2008). In this study, the first stage involved a random sampling of eight health facilities that offer antenatal healthcare from the 39 identified facilities (MoH, 2013). The calculated sample size was uniformly distributed to the eight randomly selected health facilities.

In the second stage, a minimum of 60 pregnant women per selected health facility were systematically selected for exit interviews until the required sample size for a particular health facility was met (Bruce, Pope and Stanistreet, 2008). The process of systematic sampling involved the selection of one pregnant woman at a fixed starting point (first pregnant woman coming out of the observation room) and later selecting subsequent women using a constant interval established after dividing the expected number of

women in a month (obtained from the facility maternal health sister in-charge) by 60 (the target number of pregnant women per health facility). This procedure was repeated for each selected health facility shown in Figure 3 below.

Figure 3: Sampled health facilities and number of pregnant women interviewed



Sample size calculation. The sample size was calculated using Cochran (1977) formula below (Eebolawala, 2018).

$n=Z^2(deff)p/e^2$

Where n = the desired sample size

Z^2 (standard normal deviate at 95% confidence level) = 1.96

P= (proportion of overall client satisfaction with antenatal services from previous study in Lusaka found to be 0.29 or 29%) (Katemba *et al.*, 2018);

e= measure of precision. In this study, the margin of error was set at 0.05,

Deff= is the design effect set at 1.5, chosen arbitrarily because no literature was found on a similar study in Zambia. The estimated sample size therefore will become:

$$\mathbf{n = 1.96^2*0.29(1.5)\ (1\text{-}0.29)/\ 0.05^2 = 475}$$

To account for withdrawal and non-responses from the study, the sample size was adjusted as follows: Where nf is the final sample size, r is the response rate in decimals which was found to be 95/8% (0.958) for the 2018 Zambia Demographic Health Survey (Central Statistical Office, 2018).

nf=n/r; therefore, nf =475/0.958 = 495

Thus, required total sample size came to 495, which is deemed large enough to give reliable results.

3.5 Data Collection Tools, Procedures, and Methods

The tool was an adaption from the WHO pretested questionnaire, which was translated into Nyanja, a local language that is predominantly spoken in Lusaka district. The instrument for the study was a researcher administered questionnaire which was divided into various sections: Socio-demographic; rating of antenatal care services; willingness to come back to the same facility if they are pregnant again and if they would recommend the facility to a relative or a friend. Satisfaction was accessed using five-point response categories (fully dissatisfied, somewhat dissatisfied, neither satisfied nor dissatisfied, somewhat satisfied, fully satisfied) with 1 being fully dissatisfied and 5 being very satisfied similar to Montasser *et al.*, (2012).

Data was collected following exit interviews in selected health facilities as pregnant women go for regular follow up and followed the CDC Covid 19 protocols and guidelines. Before data was collected, there was need to seek ethical clearance and MoH approvals at various levels (as described below under 3.8 Ethical consideration). Once documentation of approvals was obtained, they were presented to the Facility Managers (FM) without which the study would not be permitted to commence. The Principal Investigator (PI) went round all the selected facilities to present the approval documentation of the study, the information sheet and to explain the purpose of the study to the facility managers (facility In-Charge). At that point, the PI also requested for information on the average number of pregnant women that attended ANC the previous month prior to the commencement of the study to help in the determination of the systematic sampling constant interval and agreed on the day to start the interviews.

On the interview day, the research assistants would go and meet the facility in-charge who would later introduce them to the Maternal Child Health (MCH) sister in-charge. Once women arrive at the facility for their routine check-ups, they were gathered for an education talk offered by the matrons on various topics, including on how to care for themselves and the unborn child during pregnancy. It is at this point that the MCH Sister In-Charge would briefly introduce the research team and the study before the

pregnant women. The research assistants would greet the women and briefly explained the purpose of the study without going into details.

The research assistants would also explain the expected duration of the interview and a brief explanation on the procedure, that only some women would be approached after exiting the observation room. The research assistants also explained that participation was voluntary and that those selected had the right to decline without any consequences. Entry into the observation room followed the order in which women arrived at the facility and so where the arrangement of the clinic cards that were being used to call women inside the observation room. Once the selected woman (based on the set interval) came out of the observation room, the research assistant approached and asked her to follow to a secure private space (this was regardless of the ANC visit the woman was attending). At that point, the research assistant explained the study in detail gave out the information sheet to read and carry with them. Once they agreed to participate, they were given a consent form to sign. Since there were three research assistants at the site, the other two kept watch of the interval and continued the procedure.

Threats to Validity and reliability

According to Mohajan (2017) and Weiss (1998), validity is defined as a measure of association that approximates the true or real situation. Reliability on the other hand refers to a measurement that supplies consistency, precision, repeatability, and trustworthiness of research results (Chakrabartty, 2013). In this study, potential threats to validity might have included:

- **Maturation** – an effect of the passing of time such that there might be differences between the experiences and perceptions of women in the first trimester and those advanced in gestational age. Differences might also be observed between first time pregnancy and those having been pregnant before and accessed ANC. This was minimized at the analysis stage by comparing experiences by stage of pregnancy.
- **Selection bias** - To ensure representation of study elements, health facilities were randomly selected, and participants were selected using systematic sampling. This further minimized bias by careful identification, selection respondents.
- **Instrument bias.** The instrument used in this study is an adaptation from World Health Organization (WHO), Senarath et al (2006) and Nwaeze *et al.*, (2013). The questionnaire was developed to obtain valid data on sociodemographic

characteristics, antenatal and perinatal care, maternal and neonatal clinical outcomes, mothers' knowledge on caring the newborns and client satisfaction. Thus, the tool measured two aspects of the study: client satisfaction and explanatory variables. Client satisfaction was measured by a 16-item instrument, which reported a high internal consistency (Cronbach's a $\alpha = 0.81$) in the previous study by (Senarath, Fernando and Rodrigo, 2015).

The items covered several key dimensions of client satisfaction: accessibility (two questions), interpersonal aspect of care (five questions), physical environment (three questions), technical aspects of care (four questions) and outcome of care (two questions). Mothers were questioned about the level of satisfaction in two stages: first, they were asked whether they were satisfied with the respective 'item' and then about their level of satisfaction or dissatisfaction. The responses were marked using a 5-point Likert scale (Likert 1932): (1) fully satisfied, (2) somewhat satisfied, (3) neither satisfied nor dissatisfied, (4) somewhat dissatisfied and (5) fully dissatisfied.

Explanatory variables mainly involved the sociodemographic characteristics of the pregnant women that participated in the study comprising of pregnant women's age; marital status; area of residence (whether the woman resided in a low, medium or high-density area); education attainment; parity (number of children); employment status of the women; employment status of the husband; household monthly income; time it took to reach the health facility (used to estimate the distance to the health facility); level of clinic/hospital; and gestational age (reported in weeks).

3.6 Data analysis plan

Data analyses were performed using STATA 17.0. In the analysis, first, the frequencies and percentages of both explanatory and client satisfaction items were calculated. In the investigation of factors associated with client satisfaction, three composite outcome variables were constructed, i.e., interpersonal aspects of care, technical aspects of care and physical environment. Satisfaction with interpersonal aspects was defined in a similar manner as done by (Senarath, Fernando and Rodrigo, 2015), being the proportion of respondents who reported 'fully satisfied', or 'Not fully satisfied'.

Similarly, satisfaction with technical aspects and the physical environment was derived from the respective variables. When running a logistic regression, not 'fully satisfied' was combined to encompass all other satisfaction levels other than 'fully satisfied' i.e., somewhat satisfied, neither satisfied nor dissatisfied, somewhat dissatisfied and fully dissatisfied.

A bivariate analysis was first performed by conducting cross-tabulations with inclusion of chi-square test to assess the association between satisfaction (the dependent variable) and several independent variables (sociodemographic variables also being referred here as explanatory variables). Sociodemographic variables with $P < 0.05$ were retained in the final model (multiple logistic regression) to identify the specific aspects of the independent variables that had associations between client satisfaction and relevant sociodemographic and health-care-related characteristics. This was also followed by running cross-tabulations between the sociodemographic variables and willingness to return to the health facility if a woman falls pregnant. Another cross tabulation was run between the sociodemographic variables and willingness to recommend the health facility to friends and relatives.

3.7 Ethical consideration

We sought and obtained written permission from the University of the Western Cape Biomedical Science Research Ethics Committee (UWC BMREC letter), and once this was granted, permission was obtained from the Ministry of Health of Zambia to undertake the research from the selected public health facilities in Lusaka District of Zambia that were providing ANC (Appendix IX). Further local ethical clearance was required for everyone undertaking research with a foreign university. Thus, we obtained the University of Zambia's Biomedical Science Research Ethics Committee clearance, approval letter attached (Appendix X) conditioned upon getting further clearance from the National Health Research Authority of Zambia (Appendix XI). The facilities also required that we seek subsequent permissions/clearance from the Lusaka District Health Office (Appendix XII) and the respective Sub-Districts/Zonal offices (XIII-XV) before commencing the study.

Confidentiality was maintained, such that mobile collecting devices were password

protected. The Participant Information Sheet and Consent forms which had been translated in Nyanja (Appendix 3, 4, 5, 6), contained information on the purpose of the study outlining the data collection process. The research assistants were trained to enable them to explain the principle of voluntary participation to participants and that participants could withdraw at any time without any repercussions. The principle of confidentiality was also explained, and only the researcher had access to the identifying key information. All participants were requested to sign an informed consent sheet that had been translated into Nyanja (Appendix 6) agreeing to participate in the study. All identification data was stored in a computer database that was accessible only to the researcher and is password protected.

CHAPTER 4: PRESENTATION OF FINDINGS

4.1 Characteristics of the Sample

Table 2 below shows the relevant sociodemographic and healthcare related characteristics of the pregnant women in the study sample. Of the 499 pregnant women interviewed, 42.7% were below 25 years with the mean age estimated at 26 years. A large proportion (n – 168, 33.7%) were within the age brackets 20-24 years. Majority (n = 361, 72.3%) were married while 27.7% were either single, divorced, living with stable partner, or widowed. Majority of the women (n = 315, 63.1%) resided in high density places (crowded settlements), while more than half of respondents had attained secondary level of education (n = 264, 52.9%). Majority (n= 356, 71.3%) already had a child or more and women employment status was relatively low (n = 138, 27.7%) while the husband's employment status was (n = 266, 53.3%). Most households earned a monthly income of less than three thousand kwacha (≤ ZWM 3000) (n = 392, 78.6%), and the majority took less than 30 minutes to reach a health facility (n = 361, 72.3%). In this study, the mean time to reach the health facility by majority of women was 28.3 minutes with a standard deviation (SD) of 22.7.

Table 2: Sociodemographic & economic characteristics of the sample (n = 499)

Variable	n	%
Women's age		
Below 20	45	9.0

20 - 24	168	33.7
25 - 29	146	29.3
30 - 34	91	18.2
35 - 39	37	7.4
40+	12	2.4
Mean age	**26.3**	**SD=5.7**
Marital status		
Single	138	27.7
Married	361	72.3
Area of residence		
Low density	36	7.2
Medium density	148	29.7
High density	315	63.1
Education attainment		
None	14	2.8
Primary	165	33.1
Secondary	264	52.9
Tertiary	56	11.2
Parity (no. children)		
Primiparae.	143	28.7
Multiparous	356	71.3
Mean parity	**1.5**	**SD=1.4**
Employment of mother		
Employed	138	27.7
Not employed	361	72.3
Husband's occupation*		
Employed	266	53.3
Not employed	233	46.7
HH income		
<= 3000	392	78.6
>3001 - <=6000	73	14.6
> 6000	34	6.8
Mean HH income	**28.3**	**SD=22.7**
Time to hospital		
< 30 mins	361	72.3
>= 30 mins	138	27.7
Mean time to clinic	**28.3**	**SD=22.7**
Level of hospital		
First Level Hospital	126	25.3
Urban Health Centre	373	74.7
Pregnancy (weeks)		
Below 12 weeks	44	8.8
13 - 26	243	48.7
27 - 32	181	36.3

Above 33 weeks	31	6.2

4.2 Percentage of client satisfaction

The proportion of mothers satisfied with each of the 16 items and the mean satisfaction score for each individual item are presented in Table 3. The 16 items were grouped into five categories: general, accessibility, interpersonal, technical, and physical environment aspects. The satisfaction score was constructed by giving a graded score where fully dissatisfied counts 1 to fully satisfied count with 5.

Results in Table 3 show that more than half of t he respondents (58.5%) were generally fully satisfied with antenatal healthcare they received from the health facilities. More than 55% of the respondents reported that they were fully satisfied with the accessibility to care, i.e., access to hospital from residence (60.9%) and the waiting time on admission (55.9%).

The percentage of women who were fully satisfied with interpersonal aspects of ANC ranged from 54.3% to 57.9% with politeness, courtesy and respect shown by midwives (54.3%) having been rated the lowest in this category. Mothers' satisfaction with the politeness, courtesy and respect shown by the care providers declined between doctors, nurses, and midwives. The highest rating was on maintenance of privacy during care (57.9%). Under the technical aspects of ANC, availability of medical facilities in the ward was the lowest ranked in this category (46.9%) with opportunity to clarify doubts about lab results (58.7%) having had the highest satisfaction rating in the category. Satisfaction with the physical environment in the wards was low when compared with other aspects of care; only 40.9% were fully satisfied with the sanitary facilities and 46.9% with the availability of beds.

Table 3: Satisfaction with facility-based factors (*n* = 499)

	Fully satisfied	Somewhat satisfied	Neither satisfied no dissatisfied	Somewhat dissatisfied	Fully dissatisfied	Mean satisfaction score
Outcome						
General satisfaction with ANC services received	58.5(292)	8.4(42)	32.3(161)	0.8(4)		4.25
Accessibility						
Access to hospital from residence	60.9(304)	7.0(35)	29.9(149)	2.2(11)		4.27
Waiting time on admission	55.9(279)	13.4(67)	28.3(141)	2.4(12)		4.23
Interpersonal aspects of care						
Privacy maintained during the care	57.9(289)	10.6(53)	30.7(153)	0.8(4)		4.26
Encouragement at delivery	56.9(284)	10.4(52)	31.9(159)	0.8(4)		4.23
Politeness, courtesy, and respect shown by doctors	56.1(280)	12.0(60)	31.1(155)	0.8(4)		4.23
Politeness, courtesy, and respect shown by nurses	56.1(280)	11.8(59)	31.1(155)	0.8(4)	0.2(1)	4.23
Politeness, courtesy, and respect shown by midwives	54.3(271)	13.4(67)	30.7(153)	1.4(7)	0.2(1)	4.20
Technical aspects of care						
Medical facilities in the ward	46.9(234)	14.6(73)	35.9(179)	2.2(11)	0.4(2)	4.05
Competency of care provider	58.3(291)	7.2(36)	33.9(169)	0.6(3)		4.23
Health advice on caring the new-born	56.9(284)	8.0(40)	33.9(169)	1.2(6)		4.21
Opportunity to clarify doubts about care	57.7(288)	6.6(33)	35.1(175)	0.6(3)		4.21
Opportunity to clarify doubts about lab results	58.7(293)	6.2(31)	34.3(171)	0.8(4)		4.23
Physical environment						
Cleanliness in the ward	58.3(291)	8.4(42)	31.3(156)	2.0(10)		4.23
Sanitary facilities in the ward	40.9(204)	10.8(54)	41.3(206)	3.6(18)	3.4(17)	3.82
Availability of beds in the ward	46.9(234)	12.2(61)	39.3(196)	1.6(8)		4.04

Satisfaction score were constructed by giving scores in the following manner: fully satisfied = 5; somewhat satisfied = 4; neither satisfied nor dissatisfied = 3; somewhat dissatisfied = 2; fully dissatisfied = 1

4.3 Sociodemographic factors associated with ANC satisfaction.

In this study, five variables describing patient and service characteristics were significant factors in at least one satisfaction dimension concerned in the multiple logistic regression shown in Table 4. These included, husband's employment, household income, time to hospital, gestational age, and the health facility (clinic) were significantly associated with satisfaction with ANC across different dimensions above having had p-values < 0.05. One factor (gestational age) demonstrated a consistent significant association across all three dimensions of care (interpersonal, technical and the physical environmental). However, women's age, marital status, area of residence, education attainment, parity, mother's employment, and level of hospital were not statistically significantly associated with ANC satisfaction. Their p-values were < 0.05.

Multiple logistic regression results presented in Table 4 indicated that women who were married to husbands, not in gainful employment predicted lesser satisfaction on interpersonal aspects of ANC care. Specifically, when compared to women who were married to husbands in employment, women who were married to husbands not in employment (OR=0.611, 95%CI = 0.413 – 0.903, P = .013), were 0.611 times less likely to be satisfied with the interpersonal aspects of antenatal care.

As regards to household income, the odds of satisfaction for pregnant women that reported more than six-thousand-kwacha household income were 1.5 times more likely to be satisfied across all aspects of care (although not statistically significant) than those that earned less. However, pregnant women from households that earned >3000 - ≤6000 significantly predicated satisfaction on the physical aspects of care (OR=0.480, 95%CI = 0.243 – 0.948, P = 0.035) such that these women were about 0.5 times less likely to be satisfied with ANC when compared with women that earned ≤3000 kwacha.

On the time women took to reach the health facility, pregnant women who took more than 30 minutes to reach the health facility significantly predicated satisfaction on two aspects of antenatal care: technical (OR = 1.557, 95%CI = 1.017 – 2.384, P = 0.041) and physical environmental (OR = 1.771, 95%CI = 1.112 – 2.819, P = 0.016). When compared with women who took less than 30 minutes to reach a health facility, women who took more than 30 minutes were 1.6 and 1.8 times more likely to be satisfied with

technical and physical environmental aspects of antenatal care respectively.

Regression analysis further shows that pregnant women whose pregnancy was above 27 weeks (gestational age) predicted higher satisfaction across all dimensions of care when compared to women whose pregnancy was below 26 weeks (First trimester) as shown in Table 4. However, only women who were in the third trimester (above 33 weeks) statistically significantly predicted satisfaction with the physical environmental aspects of antenatal care (OR=3.932, 95%CI = 1.349 – 11.466, P = 0.012) such that women in the third trimester were about 4.0 times more likely to be satisfied with the physical aspects of antenatal care when compared with women that were below 26 weeks pregnant.

The regression analysis also shows that the type of the health facility (in this case clinic) was a predictor of antenatal care satisfaction by pregnant women. Mtendere (OR = 0.236, 95% CI = 0.093 – 0.595, P = 0.002) and N'gombe (OR = 0.179, 95% CI = 0.064 – 0.504, P = 0.001) clinics statistically predicted association with the physical environmental aspects of antenatal care. When compared to Chainda (a lower-level clinic when compared to others included in this study – an urban center), women who sought antenatal care from Mtendere and N'gombe clinics were about 0.2 times less likely to be satisfied with the physical environmental aspects of care.

Table 4: Factors significantly associated with mother's satisfaction: logistic regression analysis (n = 499)

Characteristics	Interpersonal aspect OR (95% CI) p-value	Technical aspect OR (95% CI) p-value	Physical environment OR (95% CI) p-value
Husband's occupation			
Employed	1.000	1.000	1.000
Not employed	0.611 (0.413 - 0.903) * 0.013	0.743 (0.499 - 1.105) 0.142	0.878 (0.562 - 1.367) 0.562
Household Income			
≤ 3000	1.000	1.000	1.000
>3001 - ≤6000	0.655 (0.372 - 1.153) 0.143	0.663 (0.370 - 1.186) 0.166	0.480 (0.243 - 0.948) * 0.035
> 6000	2.063 (0.912 - 4.668) 0.082	1.822 (0.833 - 3.987) 0.133	1.880 (0.797 - 4.435) 0.149
Time to hospital			
≤ 30 mins	1.000	1.000	1.000
> 30 mins	1.441 (0.944 - 2.199) 0.090	1.557 (1.017 - 2.384) * 0.041	1.771 (1.112 - 2.819) * 0.016
Gestational (weeks)			
Below 12 weeks	1.000	1.000	1.000
13 – 26	0.583 (0.294 - 1.158) 0.123	0.609 (0.302 - 1.232) 0.168	0.553 (0.253 - 1.208) 0.137
27 – 32	1.235 (0.604 - 2.523) 0.563	1.388 (0.673 - 2.863) 0.375	1.887 (0.855 - 4.169) 0.116

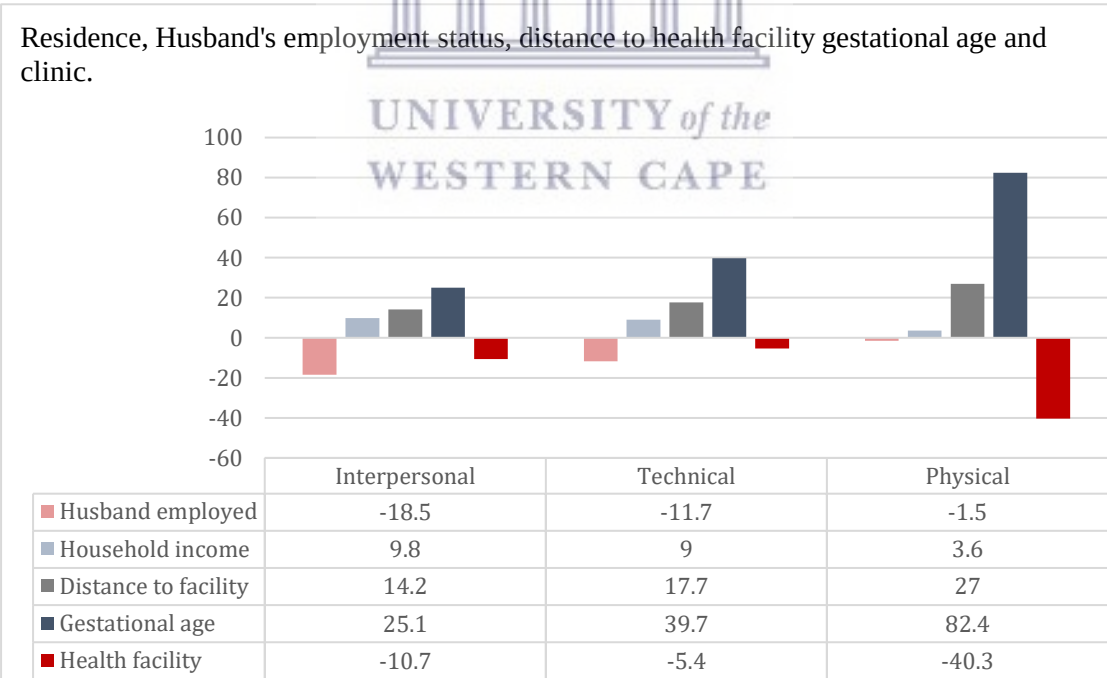
Above 33 weeks	1.438 (0.541 - 3.826) 0.466	1.841 (0.690 - 4.912) 0.223	3.932 (1.349 - 11.466) * 0.012
Clinics			
Chainda	1.000	1.000	1.000
Chelstone	0.959 (0.452 - 2.033) 0.913	1.345 (0.624 - 2.898) 0.449	1.641 (0.748 - 3.601) 0.217
Chilenje	1.300 (0.610 - 2.772) 0.497	1.260 (0.577 - 2.755) 0.562	0.495 (0.210 - 1.168) 0.108
Kabwata	1.527 (0.699 - 3.333) 0.288	2.137 (0.965 - 4.735) 0.061	1.349 (0.592 - 3.073) 0.477
Kalingalinga	1.044 (0.495 - 2.199) 0.911	0.926 (0.427 - 2.089) 0.845	0.836 (0.380 - 1.840) 0.657
Kanyama	0.686 (0.320 - 1.469) 0.332	1.306 (0.603 - 2.828) 0.498	0.858 (0.386 - 1.908) 0.707
Mtendere	0.671 (0.317 - 1.421) 0.297	1.113 (0.518 - 2.394) 0.783	0.236 (0.933 - 0.595) 0.002**
N'gombe	1.151 (0.548 - 2.416) 0.711	1.122 (0.517 - 2.434) 0.771	0.179 (0.064 - 0.504) 0.001**

*P <0.01, **P < 0.05, ***P < 0.001

The findings above are further clarified when a 1-standard deviation percentage change was plotted in a bar graph in Figure 5. The bar graph shows higher dissatisfaction on the health facility (clinic)'s physical environmental aspects of care negative 40.3% when compared to interpersonal (negative 10.7%) and technical aspects of care (negative 4.7%).

The graph also shows that husband's employment status had lower satisfaction. The odds of satisfaction with ANC for women who are married to husbands who are not employed were in the negatives: -18.5%, -11.7% and -1.5% lower than for the women married to husbands who are not employed for the dimensions interpersonal, technical, and physical aspects respectively. Household income and gestational age categories are shown to be quite comparable for each category; that having women whose household income is above six thousand Kwacha or having women whose gestational age is above 25 weeks old is a substantial factor to the odds of satisfaction with ANC. Figure 5 also shows that the longer pregnant women took to reach a clinic the higher the odds of satisfaction.

Figure 5: Percentage Change in the Odds of satisfaction with ANC



	Interpersonal	Technical	Physical
Husband employed	-18.5	-11.7	-1.5
Household income	9.8	9	3.6
Distance to facility	14.2	17.7	27
Gestational age	25.1	39.7	82.4
Health facility	-10.7	-5.4	-40.3

4.4 Willingness to return or to recommend a health facility.

Table 5 presents findings on pregnant women's willingness to return to the health facility if they fall pregnant again or their willingness to recommend the health facility to a relative or a friend. Ch-square tests were done with different sociodemographic and facility attributes to determine the percentages and statistical significance of the various variables.

Table 4 also shows that willingness to return to the same facility the next time the woman falls pregnant again ranged from 77.4% to 92.1%. The average willingness to return to the same facility was 89.0%. The lowest willingness to retune to the same facility was among respondents at N'gombe clinic (77.4%) and the highest willingness to return to the same facility was among respondents from Kabwata, Kalingalinga, and Chelstone at 92.1%, 91.9% and 91.8% respectively although health facility (clinics) was not statistically significant.

Sociodemographic characteristics that were significantly associated with the willingness to return to the health facility were the area of residence ($P < 0.05$) and women's highest education attainment ($P < 0.05$).

Willingness to recommend the health facility to relatives or friends ranged from 71.0% to 96.8% as shown on Table 4. Average willingness to recommend the health facility was 89.8%. The lowest willingness to recommend the facility was among the respondents at N'gombe clinic (71.0%) and the highest number of women willing to recommend the health facility were from Kalingalinga and Kanyama clinics at 96.7% and 96.8% respectively. Only clinic had statistical significance on willingness to recommend the health facility with ($P < 0.001$).

Table 5: Willingness to return or to recommend a health facility (n = 499)

	Willing to Return				Willing to Recommend			
Characteristics	*Yes*	*Maybe*	*No*	*p-value*	*Yes*	*Maybe*	*No*	*p-value*
Clinic	n(%)	n(%)	n(%)		n(%)	n(%)	n(%)	
Chainda	55(88.7)	2(3.2)	5(8.1)	0.113	59(95.2)	1(1.6)	2(3.2)	0.000***
Chelstone	56(91.8)	2(3.3)	3(4.9)		52(85.2)	7(11.5)	2(3.3)	
Chilenje	56(88.9)	4(6.3)	3(4.8)		54(88.5)	5(8.2)	2(3.3)	
Kabwata	58(92.1)	5(7.9)	0 (0)		57(95.0)	2(3.3)	1(1.7)	
Kalingalinga	57(91.9)	2(3.2)	3(4.8)		60(96.8)	2(3.2)	0 (0)	
Kanyama	57(90.5)	4(6.3)	2(3.2)		59(96.7)	1(1.6)	1(1.6)	
Mtendere	57(90.5)	2(3.2)	4(6.3)		57(90.5)	3(4.8)	3(4.8)	
N'gombe	48(77.4)	4(6.5)	10(16.1)		44(71.0)	11(17.7)	7(11.3)	
Total	**444(89.0)**	**25(5.0)**	**30(6.0)**		**442(89.8)**	**32(6.5)**	**18(3.7)**	
Women's age	n(%)	n(%)	n(%)		n(%)	n(%)		
Below 20	42(93.3)	1(2.2)	2(4.4)	0.751	42(93.3)	2(4.4)	1(2.2)	0.874
20 - 24	145(86.3)	11(6.6)	12(7.1)		146(89.6)	12(7.4)	5(3.1)	
25 - 29	133(91.1)	6(4.1)	7(4.8)		127(88.2)	12(8.3)	5(3.5)	
30 - 34	82(90.1)	4(4.4)	5(5.5)		81(89.0)	5(5.5)	5(5.5)	
35 - 39	32(86.5)	3(8.1)	2(5.4)		35(94.6)	1(2.7)	1(2.7)	
40+	10(83.3)	0(0.0)	3(16.7)		11(91.7)	0(0.0)	1(8.3)	
Total	**444(89.0)**	**25(5.0)**	**30(6.0)**		**442(89.8)**	**32(6.5)**	**18(3.7)**	
Marital status								
Single	121(87.7)	8(5.8)	9(6.5)	0.838	120(90.2)	8(6.0)	5(3.8)	0.963
Married	323(89.5)	17(4.7)	21(5.8)		322(89.7)	24(6.7)	13(3.6)	
Total	**444(89.0)**	**25(5.0)**	**30(6.0)**		**442(89.8)**	**32(6.5)**	**18(3.7)**	
Area of residence								

Low density	29(80.6)	1(2.8)	6(16.7)	0.018*	32(88.9)	2(5.6)	2(5.6)	0.563
Medium density	129(87.2)	12(8.1)	7(4.7)		124(86.7)	13(9.1)	6(4.2)	
High density	286(90.8)	12(3.8)	17(5.4)		286(91.4)	17(5.4)	10(3.2)	
Total	**444(89.0)**	**25(5.0)**	**30(6.0)**		**442(89.8)**	**32(6.5)**	**18(3.7)**	
Women's education attainment								
None	14(100)	0(0.0)	0(0.0)	0.007*	14(100.0)	0(0.0)	0(0.0)	0.172
Primary	148(89.7)	5(3.0)	12(7.3)		147(90.7)	9(5.6)	6(3.7)	
Secondary	240(90.9)	12(4.6)	12(4.6)		238(90.8)	15(5.7)	9(3.4)	
Tartiary	42(75.0)	8(14.3)	6(10.7)		43(79.6)	8(14.8)	3(5.6)	
Total	**444(89.0)**	**25(5.0)**	**30(6.0)**		**442(89.8)**	**32(6.5)**	**18(3.7)**	
Parity (no. children)								
Primiparae.	125(87.4)	8(5.6)	10(6.7)	0.356	125(89.9)	9(6.5)	5(3.6)	0.999
Multiparous	319(89.6)	17(4.8)	20(5.6)		317(89.8)	23(6.5)	13(3.7)	
Total	**444(89.0)**	**25(5.0)**	**30(6.0)**		**442(89.8)**	**32(6.5)**	**18(3.7)**	
Employment of mother								
Employed	72(83.7)	7(8.1)	7(8.1)	0.208	75(89.3)	7(8.3)	2(2.4)	0.614
Not employed	372(90.1)	18(4.4)	23(5.6)		367(90.0)	25(6.1)	16(3.9)	
Total	**444(89.0)**	**25(5.0)**	**30(6.0)**		**442(89.8)**	**32(6.5)**	**18(3.7)**	
Husband's employment								
Employed	236(88.7)	15(5.6)	15(5.6)	0.746	239(90.5)	17(6.4)	8(3.0)	0.091
Not employed	208(89.3)	10(4.3)	15(6.4)		203(89.0)	15(6.6)	10(4.4)	
Total	**444(89.0)**	**25(5.0)**	**30(6.0)**		**442(89.8)**	**32(6.5)**	**18(3.7)**	
Household income								
≤ 3000	348(88.8)	18(4.6)	26(6.6)	0.749	346(89.4)	24(6.2)	17(4.4)	0.324
> 3001 - ≤ 6000	65(89.0)	5(6.9)	3(4.1)		65(89.0)	7(9.6)	1(1.4)	
> 6000	31(91.2)	2(5.9)	1(2.9)		31(96.9)	1(3.1)	0(0.0)	
Total	**444(89.0)**	**25(5.0)**	**30(6.0)**		**442(89.8)**	**32(6.5)**	**18(3.7)**	
Time to hospital								
≤ 30 mins	327(90.6)	18(5.0)	16(4.4)	0.055	324(91.3)	20(5.6)	11(3.1)	0.238

> 30 mins	117(84.8)	7(5.1)	14(10.1)		118(86.1)	12(8.8)	7(5.1)	
Total	**444(89.0)**	**25(5.0)**	**30(6.0)**		**442(89.8)**	**32(6.5)**	**18(3.7)**	
Level of hospital								
First Level Hospital	113(89.7)	8(6.4)	5(4.0)	0.410	113(92.6)	6(4.9)	3(2.5)	0.495
Urban Health Centre	331(88.7)	17(4.6)	25(6.7)		329(88.9)	26(7.0)	15(4.0)	
Total	**444(89.0)**	**25(5.0)**	**30(6.0)**		**442(89.8)**	**32(6.5)**	**18(3.7)**	
Gestational age (weeks)								
Below 12 weeks	38(86.4)	4(9.1)	2(4.6)	0.295	38(88.4)	3(7.0)	2(4.6)	0.143
13 - 26	215(88.5)	16(6.6)	12(5.0)		209(86.7)	23(9.5)	5(3.9)	
27 - 32	163(90.1)	4(2.2)	14(7.7)		165(93.2)	5(2.8)	7(4.0)	
Above 33 weeks	28(90.3)	1(3.2)	2(6.5)		30(96.8)	1(3.2)	0(0.0)	
Total	**444(89.0)**	**25(5.0)**	**30(6.0)**		**442(89.8)**	**32(6.5)**	**18(3.7)**	

*P <0.01, **P < 0.05, ***P < 0.001

CHAPTER 5: DISCUSSION

5.5 Discussion Overview

The aim of the study was to assess pregnant women's satisfaction (dissatisfaction) with the quality of antenatal healthcare they received at health facilities. The study further sought to understand whether satisfaction informed willingness to return or recommend the facility to others. To do so, the study set four objectives. Firstly, the study sought to determine the proportion of pregnant women who were fully satisfied (or dissatisfied) with the different aspects of facility healthcare. Secondly, the study sought to identify the various sociodemographic characteristics that were associated with pregnant women's satisfaction with antenatal care. The study also sought to establish the proportion of pregnant women willing to continue using the same health facility if they fall pregnant again as well as to establish the proportion of women who were willing to recommend the facility to relatives or friends. Lastly, the study sought to establish the reasons pregnant women will give for or against returning/recommending the facility.

5.6 Women's Overall Satisfaction with Antenatal Care

The findings in this study suggest that the level of satisfaction with antenatal care may be influenced by the perception of the quality of care received. Findings in this study shows that only 58% of women were fully satisfied with the quality of antenatal care they received from a health facility. Srivastava *et al.*, (2015) undertook a systematic review of literature involving 54 studies which showed that in 24 studies, more than 75 percent of the women reported care to be satisfactory. In 10 studies the proportion ranged between 50-75 percent, while in only three studies, it was less than 50 percent (Srivastava *et al.*, 2015).

A further review of literature shows that pregnant women's satisfaction rating with regards to the quality of ANC in this study are far much lower when compared to several other studies elsewhere (Wynne *et al.*, 2020; Langer *et al.*, 2002; Galle *et al.*, 2015; Sholeye, Abosede and Jeminusi, 2013; Srivastava *et al.*, 2015). Kyei, Chansa and Gabrysch (2012) and Katemba *et al.*, (2018) confirm this finding through separately studies when they assessed the quality of ANC in Zambia following facility based ANC inputs and established that only 29% and 47% of mothers in Zambia received good

quality ANC respectively while this study measured quality of ANC through the users; the pregnant women.

The findings above have far reaching consequences in as so far as addressing maternal mortality is concerned. Majority of published accounts indicate that satisfaction with different aspects of received health care improves health outcomes, continuity of care, compliance, and the relationship with the provider (Mateji *et al.*, 2014). The findings from this study could partially provide an explanation found in the ZDHS 2013 that showed at least once ANC attendance at 94% with only 60% of women having attended the recommended four antenatal visits (Kyei, Chansa and Gabrysch, 2012). If the proportion of women who are not satisfied with ANC remains or decrease, pregnant women accessing the recommended four ANC visits might decrease as well which will result in continued stagnation of progress towards reaching the Sustainable Development Goals (USAID, 2021; Central Statistical Office, 2018). Some factors were identified in this study that were associated with pregnant women's satisfaction with antenatal care, the alterable factors and non-alterable as discussed below.

5.7 Factors Associated with Satisfaction

This study identified factors that drive ANC patients' satisfaction with care (measures of their judgement on quality of overall care experience) at government facilities. These factors included modifiable (alterable) factors i.e., those related to practices in the hospital and may be alterable by health managers and care providers, the structural factors (physical environment items in our model) and process of care factors (interpersonal and technical aspects of care items) and the non-modifiable (non-alterable) factors such as the patients' sociodemographic characteristics. The sociodemographic factors are important for health managers to target specific demographic segments of the population (Senarath, Fernando and Rodrigo, 2015; Onyeajam *et al.*, 2018).

Our study identified aspects of facility-based (modifiable) perinatal care that deserve greater attention for improvement generally across all items from all the themes. Under the physical environment, it's items such as lack of sanitary facilities in the ward, and lack of beds in the ward; under the technical aspect of care, it's the lack of medicines

at the facility; under the interpersonal aspect, it's the lack of politeness, courtesy, and respect from the midwives; and under accessibility, it's waiting time. These items are very similar to the findings by except for cleanliness (Senarath, Fernando and Rodrigo, 2015). In this study, the physical environment items were the lowest scored items. According to the systematic reviewed literature by Srivastava *et al.*, (2015) on ANC satisfaction, the most striking finding concerned the interpersonal behavior as the most widely reported determinant of satisfaction. The largest body of evidence generated in the review revolved around provider behavior in terms of courtesy and non-abuse.

Similar to findings by Senarath, Fernando and Rodrigo (2015), this study also established that the level of satisfaction with the courtesy of care providers indicated a clear difference between the type of care provider, with a higher satisfaction rate for physicians and nurses and lowest for midwives. A study conducted in Tanzania found that 15 % of respondents reported experiencing some form of disrespectful or abusive behavior when interviewed three to six hours postpartum. This number rose dramatically to 70 % when respondents were interviewed weeks later in their homes (Sando *et al.*, 2016). However, these results are in contrast with the evidence from the developed countries where the patients were more likely to be satisfied with care provided by midwives or nurse practitioners than physicians (Mateji *et al.*, 2014; Harvey et al. 2002; Roblin et al. 2004).

The findings above shows the importance women attach to being treated with courtesy and empathy, irrespective of socio-cultural or economic context (Srivastava *et al.*, 2015). Women identify 'being treated as a human being' as one of the bench- marks of high quality care. Across the world, women seek dignity and respect while undergoing maternity care. Provider behavior and attitudes are therefore major determinants of utilization of skilled maternity care (Srivastava *et al.*, 2015). Consistent with this study, Srivastava *et al.*, (2015) also established through a systematic review of the literature that one of the major structural determinant of maternal satisfaction that emerged from the review was 'the availability of drugs and equipment (Srivastava *et al.*, 2015). Other studies have also concluded that waiting time before consultation, continuity in seeing the same health care worker, communication with the health care worker, all impact on women's satisfaction with antenatal care (Galle *et al.*, 2015)

5.8 Sociodemographic Factors Associated Satisfaction

Higher satisfaction was found among individuals with higher income per capita, those that took more than 30 minutes to reach a health facility and among those with advanced gestational age (above 27 weeks). We also found lower satisfaction among women whose husbands were not employed, individuals whose household income was low and among individuals attending ANC at certain types of facilities.

5.8.1 Household Income

Household income was found to be a significant factor in predicting satisfaction on the physical environmental aspect of the health facility. The results show that women who earned >3000 - ≤6000 Zambian Kwacha (ZMW) (OR=0.480, 95%CI = 0.243 – 0.948, P = 0.035) were 0.5 times less likely to be satisfied with antenatal care when compared to those whose monthly household income was more than six thousand Kwacha and were almost twice more likely to be satisfied with the physical aspects of care when compared to those whose household income was ≤ 3000 although not statistically significant. Our results reveal differently from several findings of other studies that women with low income have lower expectations about the care they will hence are easier to fulfill and as a consequence they are likely to be more satisfied with the care they receive (Galle *et al.*, 2015).

Consensus about the influence of SES on satisfaction is lacking in the literature. It remains unclear if women with low SES are less or more satisfied with antenatal care (Galle *et al.*, 2015). In a study conducted in Zambia, Kaiser *et al.*, (2019) noted that antenatal care was particularly frustrating for women with low SES, due to experiences such as discrimination or stereotyping. This observation is supported by (Okedo-alex *et al.*, 2019) who noted that women of low-wealth status are usually unable to afford the medical and non-medical costs associated with using ANC (Okedo-alex *et al.*, 2019).

5.8.2 Husband's Employment Status

Both the bivariate and multiple logistic regression retained an association between satisfaction and the husband's employment status. A multiple logistic regression result for husband's employment status (OR=0.611, 95%CI = 0.413 – 0.903, P = .013) indicates that women whose husbands were not employed were 0.611 times less likely

to be satisfied with the interpersonal aspects of care.

This finding is similar to the findings of a study conducted by Kaiser *et al.*, (2019) that investigated how interpersonal relationships can delay care-seeking behaviors. The study concluded that husbands were important influencers during a woman's maternity period. Husbands were also seen as sources of maternal resources, especially for providing baby clothes, and other material requirements (Kaiser *et al.*, 2019). The authors also observed that women who presented to the health facility without the required items were faced with stigma from providers hence shunned going for ANC (Kim, 2018a). This could provide an explanation for some pregnant women who are married to husbands who are not in employment are less likely to be satisfied with interpersonal aspects of ANC for fear of victimization from healthcare providers (midwives) hence shun away from attending ANC, which is a risk to maternal health.

5.8.3 Distance to Health Facility

In this study, distance to health facility significantly predicted higher satisfaction with both the technical and physical aspects of care. Seeing that this study was conducted in Lusaka district, the capital also the most urban town in Zambia (Lusaka district 2022 sub district population, 2022), it was surprising to find that some pregnant women took more than 60 minutes to reach a health facility.

This result is surprising especially that several studies have established that distance to the facility is one of the greatest barriers (hence a potential source of dissatisfaction) to accessing healthcare among women (Kim, 2018b). This study found that for 138 (27.7%) of the respondents, the facilities they were interviewed from where not the nearest and the reasons they gave for accessing antenatal care from distant health facilities was due to their past experiences of antenatal care. The positive attitude of these mothers could reflect their more realistic expectations based on previous experiences with the health facility.

5.8.4 Gestational age

The odds of satisfaction if the pregnancy was 33+ weeks were high when compared to those whose pregnancy was less than 12 weeks. In this study, pregnant women whose

gestational age was 33+ years (OR = 3.932, 95%CI = 1.349 – 11.466, P = 0.012) were 3.9 times more like to be satisfied with the physical environmental aspects of care than those pregnant women whose pregnancy was less than 12 weeks. Lakew, Ankala and Jemal (2018); Emiru, Alene and Debelew, (2020); and Langer (2002) all concluded that women who made four or more antenatal visits were positively and significantly associated with high satisfactions suggesting that these women may have developed awareness through repeated visiting. Thus, repeated ANC visits following the advancing of the pregnancy has the potential to improve the relationship between providers and pregnant women in a positive direction.

This allows providers to understand the challenges and needs of the pregnant women, which in turn help them to provide targeted services and attention. Senarath, Fernando and Rodrigo (2015) also concluded that patients with more experience of hospitalization had more realistic expectations of care and therefore were likely to be more easily satisfied. These findings reinforce the suggestion from authors of a study in Sri Lanka, that more attention is needed to develop a better interpersonal relationship with pregnant women (Mateji *et al.*, 2014). However, this contrary to the conclusion made by Atindanbila (2014) that the period of patronage did not have any significant effect on overall general and specific satisfactions (Atindanbila *et al.*, 2014).

5.8.5 Clinic (Health Facility)

Table 4 also shows health facility (clinic) was statistically significant on the physical environment aspect of care. Thus, pregnant women who attended ANC from Mtendere clinic (OR = 0.236, 95%CI = 0.093 – 0.595, P = 0.002) and N'gombe clinic (OR = 0.179, 95%CI = 0.064 – 0.504, P = 0.001) were 0.236 and 0.179 less like to be satisfied with the physical environmental aspects of antenatal care when compared to Chainda clinic (the smallest Urban center clinic among the sampled clinics in the study).

The two clinics including Kanyama hospital are said to be high volume facilities following the short time it took to access the targeted number of participants at the three facilities and yet it took the research assistants more than a day to meet the targeted number of women participants. Moreover, while other facilities assigned one day in a week to conduct ANC, the three facilities conducted ANC from Monday to Friday.

Atindanbila *et al.*, (2014) found that hospital size was statistically significantly associated with patient satisfaction such that larger size was associated with lower satisfaction (Atindanbila *et al.*, 2014). This view is different from what Kim (2018a) found that women preferred to return to their ANC facility for delivery if it was a hospital, a health center, or a maternity when compared to a clinic or a dispensary concluding that higher-level facilities generally have better quality of ANC in sub-Saharan Africa (Kim, 2018a). Neither of these views could be confirmed in this study because satisfaction varied across all clinic sizes.

Although several studies have found significant association between pregnant women's satisfaction and her age and parity (Srivastava *et al.*, 2015), the present analysis did not find any association. Considering that women whose gestational age is above 25 weeks have statistical significance with the likelihood of satisfaction, one would have expected parity to have had the same effect in this study.

5.9 Willingness to Return or Recommend Health Facility

Patient satisfaction has traditionally been linked to the quality of services given and the extent to which specific needs are met and that satisfied patients are likely to come back for the services and recommend services to others (Nwaeze *et al.*, 2013). In this study, majority of the participants (89%) were willing to use the same facility in subsequent pregnancies. About 90% of the women also stated that they would recommend the facility to relatives and friends. It was however observed that the overall level of satisfaction (58%) was not in tandem with willingness to use the same facility in subsequent pregnancies or to recommend the facility. This suggests that women's satisfaction in this study had nothing to do with their willingness to return to the same facility if they fall pregnant again or their willingness to recommend the facility to relatives and friends.

Nwaeze *et al.*, (2013)'s study in Nigerian however did find this correlation between satisfaction and willingness to return to the facility for subsequent pregnancies or to recommend the facilities to relatives or friends.

Women were also asked to give their reasons for either response they gave. Participants

that said they were willing to return to the facility if they fell pregnant again or that they would recommend the facility to a relative or friend, gave several reasons such as good reception and services, nearness to the clinic, timely delivery of services, adequate information, nice/clean facilities. Some first-time pregnant women said they chose the facility because someone recommended the facility to them. For those who stated that the facility they went to was not their nearest, they cited that the nearest health facilities were providing poor antenatal healthcare. A similar conclusion was drawn by Meesala and Paul (2018) who found that patient's satisfaction is directly related to patients' loyalty to the hospital.

For the women that said they would not return or recommend a facility, they indicated rudeness of care providers, bad courtesy from care providers, lack of medicines at the pharmacy, bad services, poor sanitary facilities, distance, certain decisions by the clinic they did not agree with especially the manner in which referrals where being done, among other reasons.

5.10 Limitations and strengths of the study

The study has some limitations. Despite the high response rate, some selection bias could not be avoided as obviously women without any access to antenatal care were not reached. Also, women younger than 18 years old were excluded from the study for ethical reasons, they only can be interviewed with parental permission. Women in emergency settings, who would be more likely to experience different problems with care were also excluded. Thus, our findings may be only applicable to perinatal care of low-risk women.

Our study also included women irrespective of the number of antenatal clinic visits; this may limit interpretation because some women may not have had enough exposure to the clinic to enable them to make concrete judgments on perception and satisfaction. Some technical and analytic limitations may also have been present in the study including possibility of issues around the validity and reliability of the questionnaire. Lastly, face-to-face interviews are known to cause biases such as the response and the social desirability biases.

Despite these limitations, care was taken to address some of them. The research team was adequately trained to gather responses in an ethical manner from the respondents. The tool was programmed into Google forms which ensured that quality was maintained by including appropriate skip logic and ensured that no questions were skipped without getting a response, hence ensure that there was no missing data. Privacy was maintained by conducting the interviews in a separate room independent of healthcare providers and with adequate assurance of confidentiality of information. The instrument used in this study is an adaptation from World Health Organization (WHO) which reported a high internal consistency (Cronbach's a $\alpha = 0.81$) in the previous studies.

CHAPTER 6: CONCLUSION AND POLICY IMPLICATIONS

The level of satisfaction with ANC in this study was found to be low when compared to several literature on the satisfaction of pregnant women with ANC. Only 58.5% of the pregnant women who participated in this study were fully satisfied with the quality of ANC they received. This proportion is too low to achieve the full life saving potential that antenatal care could provide as found elsewhere. The study identified several facility-based practices that negatively impact on women's satisfaction with ANC that may be alterable by health managers and care providers such as lack of sanitary facilities, beds, medicines, courtesy, politeness or respect from the midwives, and long waiting time. Higher satisfaction was found among individuals with higher income per capita, those that took more than 30 minutes to reach a health facility and among those with advanced gestational age (above 27 weeks). Lower satisfaction was found among women whose husbands were not employed, low-income household income, and in some facilities. This study did not establish any correlation between satisfaction of women with ANC and willingness to return to the facility for their subsequent pregnancies nor to their willingness to recommend the health facilities to relatives and friends.

The policy implications of the study are to: equip health facilities with essential equipment and consumables, ensure provider adherence to national antenatal care guidelines. Institutions offering antenatal care should consider practical arrangements to remove some of the organizational barriers that affect the satisfaction of women including reduction of waiting times, improvement of interpersonal aspects of care especially among midwives and nurses. In summary, disrespect and abuse is an indicator of a health system in crisis (Sando *et al.*, 2016). Additional research and programming are needed to strengthen health systems to provide acceptable quality care—with the principles of respectful and dignified maternity care at the core of service delivery—in order to realize every woman's right to respectful care and to improve maternal health outcomes.

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APPENDICES

Appendix 1: Survey tool: (questionnaire)

Section A: Characteristics of the study population

1. What is your age?
2. What is your marital status: 1. Single 2. Married 3. Divorced
   4. Living with a stable partner 5. Other (specify)
3. Specify marital status if "Other" is selected
4. How old is your pregnancy (in weeks)?
5. How many children who are alive do you have?
6. How many times have you given birth to a child with a pregnancy of 6 months old or above (Parity)?
7. What is your occupation – 1. Employed 2. Not Employed 3. Other (specify)
   a. What kind of work do you do? (if respondent answers "employed" above)
   b. If other, what does that mean?
8. What does your husband do for a living? 1. Employed 2. Not Employed 3. Other (specify)
   a. What kind of work does he do? (if respondent answers "employed" above)
   b. If other, what does that mean?
9. How long does it take you to reach this clinic/hospital?
10. Is this the nearest clinic that offers ANC for you? 1. Yes 2. No 3. I don't know
    a. (If respondent selects no) Which one is the nearest clinic to you that offer the same services you have come for at this clinic?
    b. Why did you choose to be coming to this clinic and not the nearest clinic you just mentioned above?
11. Household estimated monthly income (in Zambian kwacha) – 1. <=ZMW1000
    2.>1000 - <=3000 3. >3000 - <=6000 4. >6000
12. What is your ethnic group?
13. What is your highest level of education completed – 1. None 2. Primary 3. Secondary
    4. Diploma 5. Degree 6. Above degree (Postgraduate degree) 7. Other (specify)
    a. Please ask the respondent to specify if they selected other
14. What is your town of residence

Section B: Levels of Satisfaction

15. Where you satisfied or dissatisfied with the items below: On a scale of between 1 to 5 with 1 being fully dissatisfied and 5 being very satisfied, how much where you satisfied (or dissatisfied) with the items below:
    1) Fully dissatisfied
    2) Somewhat dissatisfied
    3) Neither satisfied nor dissatisfied
    4) Somewhat satisfied
    5) Fully satisfied

How satisfied (or dissatisfied) are you with?	Fully dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Fully satisfied
Ability to reach the hospital from your residence					
Waiting time since arrival at the hospital until you were first registered in the ward					

How satisfied (or dissatisfied) are you with?	Fully dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Fully satisfied
Privacy maintained by the health staff during the care					
Encouragement at delivery by the health staff					
Politeness, courtesy and respect shown by doctors					
Politeness, courtesy and respect shown by nurses					
Politeness, courtesy and respect shown by midwives					
Medical facilities in the ward (drugs, equipment, etc.)					
Competency of the hospital health staff in providing care to both you and your baby					
Health advices given by the hospital health staff to look after the baby					
Opportunity given to you to clarify doubts about the care of the newborn					
Opportunity given to you to clarify doubts about the laboratory test results					
Cleanliness in the ward					
Availability of beds in the ward					
Sanitary facilities (water, toilets, bathrooms) in the ward					

Source: (Senarath, Fernando and Rodrigo, 2006)

Section C: Quality of Services

16. How do you rate the quality of the services below?

Perception of quality level	**Excellent**	**Good**	**Poor**	**Very Poor**
Clinic				
Attending doctor				
Attending nurse/midwife				
Laboratory services				
Pharmacy support				

Section D: Causes of satisfaction with antenatal care

17. Kindly confirm true or false your satisfaction with the following aspects of antenatal care

Causes of satisfaction with antenatal care	True	False
Reception by health staff is good		
Clear instructions given by the health providers		
Medical orderly available with doctor in ANC		
Good, clean clinic		
Good clinic arrangement		
Good laboratory services		
Satisfied with services of the clinic		
Timely work		

Section E: Causes of dissatisfaction among pregnant women

18. In your opinion, state whether the following items below are a cause of dissatisfaction to you.

Causes of dissatisfaction among pregnant women	True	False
Laboratory services		
Crowding clinic in the morning		
Non-availability of Arabic speaking doctor		
Health education services not good		
No explanation of antenatal clinic results		
Not listening to complaints of pregnant women		
Unavailability to see the doctor		
Long waiting time		
Disagree with some test results		
Not consulted on my opinion regarding actions being taken on the pregnancy i.e., natural or caesarean section		

Section F: Willingness to Return

19. If you get pregnant again would you come back to to this clinic for ANC check-ups? – 1. Yes 2. No 3. Maybe
    a. If yes to the above, why would you return?
    b. If no to the above, why would you not return?

Section G: Recommendation

20. Would you recommend this clinic to a relative or friend for their antenatal check-ups? – 1. Yes 2. No 3. Don't know
    a. If yes to the above, why would recommend this clinic for ANC services?
    b. If no to the above, why would you not recommend this clinic for ANC services?

Appendix II: Translated Questionnaire into Nyanja

MAKHALIDWE A ANTHU OWERENGERA

1. Zaka zanu ndi zingati
2. Kodi banja lanu ndi lotani? 1. Osakwatiwa 2. Okwatiliwa 3. Olekana 4. Kukhala ndi mnzanu wokhazikika
3. Mgwirizano
4. Nambala ya bana balimoyo
5. Nchito
6. Ndalama zomene mugwira pa mwedzi (Mu kwacha) – 1. <=ZMW1000 2. >1000 - <=3000 3. >3000 -<=6000 4. >6000
7. Nchito ya amuna anu
8. Mtundu
9. Mulingo wamaphunzilo yanu 1. Kulibe 2. Primary 3. Secondary 4. Diploma 5. Degree 6. Above degree (Postgraduate degree)
10. Mzinda
11. Kutalimpa kwa mimba

Section B

1. Ndimwe okondwela nangu osakondwe pali vili pa nyansi?
2. Pa skelo yama nambala yoyambila pa 1 kufika pa 5, elo 1 yilangiza kusakondwe kwambiri na 5 yilangiza kukondwera kwa mbiri, mwenze okondwera bwanji olo osakondwera pali vintu votantikiwa panyansi?
    1) Osakondwera maningi
    2) Osakondwera pangono
    3) Siniziwa bwino
    4) Okondwera maningi
    5) Okondwera pangono

Ndimwe okondwela nangu osakondwe pali vili pa nyansi?	Osakondwera maningi	Osakondwera pangono	Siniziwa bwino	Okondwera maningi	Okondwera pangono
Mphavu zofikira kuchipatala kuchokera komwe mumakhala					
Nthawi yomwe mumakhala kuyambira pomwe mwafika kuchipatala mpaka pomwe bazamipasani m'chipinda chogona					
Zachinsinsi zimasungidwa ndi azachipatala posamalira					
Chilimbikitso pakubereka kwa azachipatala					
Aulemu, ulemu ndi ulemu womwe akuwonetsa madotolo					

Ulemu, ulemu ndi ulemu zosonyezedwa ndi anamwino					
Ulemu, ulemu ndi ulemu zosonyeza azamba					
Malo azachipatala mu wadi (mankhwala osokoneza bongo, ndi zina zambiri)					
Kuchita bwino kwa ogwira ntchito kuchipatala posamalira inu ndi mwana wanu					
Malangizo azaumoyo operekedwa ndi ogwira ntchito kuchipatala kuti aziyang'anira mwanayo					
Mwayi wopatsidwa kwa inu kuti ufotokoze kukayikira za chisamaliro cha mwana wakhanda					
Mwayi womwe mwapatsidwa kuti mufotokozere kukayika pazotsatira za labotale					
Ukhondo mu mzinda wa chogonera					
Kupezeka kwa mabedi mu mzinda					
Malo yamuchipatala (madzi, zimbudzi, mabafa) mu ward					
Umoyo wanu					

Source: (Senarath, Fernando and Rodrigo, 2006)

3. Kodi mumawerengera bwanji ntchito zomwe zili pansipa?

Kuzindikira kwa mulingo wabwino	**Zabwino kwambiri**	**Zabwino**	**Osauka**	**Osauka Kwambiri**
Clinic				
Kupita kwa dokotala				
Kupita kwa namwino / mzamba				

Nthawi yakudikirira				
Ntchito zantchito				
Thandizo la Pharmacy				

4. Zomwe zimakhutiritsa chisamaliro chakubereka

ZOMWE ZIMAKHUTIRITSA CHISAMALIRO CHAKUBEREKA	ZOWONA	ZABODZA
Malangizo omveka bwino operekedwa ndi othandizira azaumoyo		
Malangizo omveka bwino operekedwa ndi othandizira azaumoyo		
Zachipatala mwadongosolo amapezeka ndi adokotala ku ANC		
Chipatala chabwino, choyera		
Kukonzekera bwino kwa chipatala		
Ntchito zabwino zasayansi		
Okondwera ndi ntchito		
Ntchito yake panthawi yake		

5. Mukuganiza kwanu, fotokozerani ngati zinthu zotsatirazi sizikusangalatsani

ZOMWE ZIMAYAMBITSA KUSAKHUTAIRA PAKATI PA AMAYI APAKAATI	**ZOWONA**	**ZABODZA**
Ntchito zantchito		
Kuchulukana kuchipatala m'mawa		
Kusapezeka kwa dokotala wolankhula Chiarabu		
Ntchito zophunzitsa zaumoyo sizabwino		
Palibe kufotokozera za zotsatira zakuchipatala		
Osamvera madandaulo a amayi apakati		
Kulephera kuwona dokotala		
Nthawi yayitali yoyembekezera		
Sindikugwirizana ndi zotsatira zina za mayeso		
Osandifunsa malingaliro anga okhudza zomwe zikuchitika pathupi monga, gawo lachilengedwe kapena la opaleshoni		

6. Nthawi yo mukakhala ndi pakati nafuti, mungabwerere ku chipatala ichi?
   1. Inde 2. Awe 3. Siniziwa
7. Kodi mungalangize za chipatala ichi kwa wachibale kapena mnzanu kuti akawone ngati ali ndi pakati?
   1. Inde 2. Awe 3. Siniziwa
8. kodi ndinu okondwera ndi ANC yomwe mwalandira kuchipatala pano ? –
   1. Okondwera Maningi 2. Okondwera 3. Osakondwera

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Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21 959 2809 Fax: 27 21 959 2872

E-mail: soph-comm@uwc.ac.za

Appendix 2: Information sheet

Project Title: Assessment of client satisfaction with the quality of antenatal healthcare received at health facilities and continued willingness to use ANC services in healthcare facilities among pregnant women in Lusaka district of Zambia

What is this study about?

This is a research project being conducted by Ladislas Hibusu at the University of the Western Cape. We are inviting you to participate in this research project because you are an expectant woman who could be faced with the issues that we are trying to address in this study. The purpose of this research project is to assess expectant women's levels of satisfaction with the quality of antenatal healthcare received at the health facilities and if they are willing to continue using antenatal care (ANC) services in healthcare facilities where they seek antenatal healthcare services within Lusaka district. The information that will be gathered from this study will likely managers and policy makers to address quality issues surrounding the provision of ANC services at primary healthcare.

What will I be asked to do if I agree to participate?

The study will involve a face-to-face researcher administered questionnaire which will be divided into various sections that ask on: socio-demographic and obstetric characteristics; services or procedures; amenities, content of health information & education, cost implication, attitude of health personnel, waiting time/total time spent, effective communication and overall rating of antenatal care services. The interview will require about 30 – 60 minutes of your time.

Also, the questionnaire will have questions that assess women's perception and satisfaction of antenatal care components around registration, examination (maternal and fetal), outcome of investigations such as laboratory test outcomes, immunization, health education, nutritional care, and social care as well as respondent's willingness to recommend services from the healthcare facilities.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity, (1) your name will not be included on the surveys and other collected data; (2) a code will be placed on the survey and other collected data; (3) through the use of an identification key, the researcher will be able to link your survey to your identity; and (4) only the researcher will have access to the identification key.

To ensure your confidentiality, using password-protected mobile data collection software will be used. If we write a report or article about this research project, your identity will be protected.

What are the risks of this research?

All human interactions and talking about self or others carry some amount of risks that are currently unforeseeable. We will nevertheless minimise such risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about your satisfaction on the quality of antenatal healthcare and your desire to continue seeking the services at primary healthcare facilities. We hope that, in the future, other people might benefit from this study through improved understanding of quality, satisfaction and continued use of ANC services.

Anticipated benefits to science or society expected from this research is that it will add to the evolving body of knowledge the perception of women on the quality of ANC services and their willingness to continually seek to use the services.

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

What if I have questions?
This research is being conducted by Ladislas Hibusu and Professor Prof. Olagoke Akintola and School of Public Health at the University of the Western Cape. If you have any questions about the research study itself, please contact Ladislas Hibusu at: +260977895412, or email any queries to: 4001380@myuwc.ac.za**.** Further, local contact details for Ladislas Hibusu, the principal investigator are found below.

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

The Chairman, The University of Zambia Biomedical Research Ethics Committee Ridgeway Campus P.O. Box 50110 Lusaka, Zambia Fax: + 260-1-250753 E-mail: unzarec@unza.zm	Ladislas Hibusu (PI) Survey Manager USAID/Zambia Monitoring, Evaluation and Learning Platform (Z-MELP) Subdivision 699/Stand 100, Ibex Hill Rd. Lusaka, ZM Mobile: +260-967-984-512 Email: tracykhibusu@yahoo.co.uk
Prof Uta Lehmann Head of Department: School of Public Health University of the Western Cape Private Bag X17 Bellville 7535 ulehmann@uwc.ac.za	Prof Anthea Rhoda Dean: Faculty of Community and Health Sciences University of the Western Cape Private Bag X17 Bellville 7535 chs-deansoffice@uwc.ac.za

This research has been approved by the University of the Western Cape's Biomedical Research Ethics Committee, the University of Zambia's Biomedical Research Ethics Committee, the Zambia National Health Research Authority and the Ministry of Health of Zambia.

Biomedical Research Ethics Committee
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NYANJA TRNSLATION OF INFORMATION SHEET

PEPALA LAZIDZIWITSO

Mutu wa Project: Kuwona kukhutira kwa kasitomala ndi mtundu wa chithandizo chamankhwala opatsirana omwe amalandiridwa kuzipatala ndikupitilizabe kufunitsitsa kugwiritsa ntchito ntchito za ANC m'malo azachipatala pakati pa amayi apakati m'boma la Lusaka ku Zambia

Kodi kafukufukuyu akukamba za chiyani?
Izi ndi ntchito yofufuza yomwe a Ladislas Hibusu aku University of Western Cape. Tikukupemphani kuti mutenge nawo mbali pulojekitiyi chifukwa ndinu mayi woyembekezera yemwe angakumane ndi mavuto omwe tikufuna kuthana nawo mu kafukufukuyu. Cholinga cha kafukufukuyu ndikuwunika amayi omwe akuyembekezeka kukhutira ndi mtundu wa chithandizo chamankhwala omwe amalandila kuchipatala komanso ngati ali ofunitsitsa kupitiliza kugwiritsa ntchito chithandizo chamankhwala kuchipatala komwe amafunikira chithandizo chamankhwala ku Lusaka chigawo. Zomwe zisonkhanitsidwe kuchokera ku kafukufukuyu zikuyenera kukhala oyang'anira ndi omwe amapanga mfundo kuti athane ndi mavuto omwe akukhudzana ndikupereka chithandizo cha ANC kuchipatala.

Kodi afunsidwa kuti ndichite chiyani ngati ndidzavomera kutenga nawo mbali?
Kafukufukuyu aphatikizira wofunsidwa mafunso amene adzayang'aniridwa pamasom'pamaso omwe adzagawidwe m'magawo osiyanasiyana omwe amafunsidwa: za chikhalidwe cha anthu komanso zikhalidwe zaubereki; ntchito kapena njira; zothandiza, zokhudzana ndi chidziwitso chaumoyo & maphunziro, mtengo wofunikira, malingaliro azachipatala, nthawi yodikirira / nthawi yonse yogwiritsidwa ntchito, kulumikizana moyenera komanso kuyerekezera kwantchito zosamalira amayi asanabadwe. Mafunso azantenga ntawu yokwana 30 minutes olo ola imozi.

Komanso, funsoli lidzakhala ndi mafunso omwe amafufuza momwe azimayi amaganizira ndikukhutira ndi magawo azisamba pakubereka, mayeso (azimayi ndi a fetus), zotsatira za kafukufuku monga zotsatira za mayeso a labotale, katemera, maphunziro azaumoyo, chisamaliro chaumoyo, chisamaliro chaumoyo komanso Kufunitsitsa kwa woyankha kuti athandizire kuchipatala.

Kodi kutenga nawo gawo phunziroli kungasungidwe chinsinsi?
Ofufuza amateteza kuti mudzidziwitse komanso zomwe mwapereka. Kuti muwonetsetse kuti simumadziwika, (1) dzina lanu siliphatikizidwa pazofufuza ndi zina zomwe zasonkhanitsidwa; (2) chikhomo chidzaikidwa pa kafukufukuyu ndi zina zomwe zasonkhanitsidwa; (3) pogwiritsa ntchito kiyi wodziwitsa, wofufuzayo atha kulumikiza kafukufuku wanu ndi dzina lanu; ndipo (4) wofufuzayo yekha ndi amene azikhala ndi mwayi wofufuza.

Kuonetsetsa kuti mukusunga chinsinsi, kugwiritsa ntchito pulogalamu yotetezedwa ndi ma foni achinsinsi. Ngati tilemba lipoti kapena nkhani yokhudza kafukufukuyu, dzina lanu lidzatetezedwa.

Kodi kuopsa kwa kafukufukuyu ndi kotani?
Kuyanjana konse kwa anthu ndikulankhula za iwowo kapena za ena kumakhala ndi zoopsa zina zomwe sizikuwonekeratu pakadali pano. Tidzachepetsa zoopsa zotere ndikuchitapo kanthu mwachangu kuti zikuthandizeni ngati mukukumana ndi zovuta zina, zamaganizidwe kapena zina mukamachita nawo kafukufukuyu. Pomwe pakufunika, kutumizidwa koyenera kudzaperekedwa kwa katswiri woyenera kuti athandizidwe kapena kuthandizidwa.

Ubwino wake ndikufufuza kotani?
Kafukufuku aka sikanapangidwe kuti akuthandizeni, koma zotsatira zake zitha kuthandiza wofufuza kuti adziwe zambiri zakukhutira kwanu ndi chithandizo chamankhwala ochepetsa kubereka komanso kufunitsitsa kwanu kupitiliza kufunafuna chithandizo kuchipatala choyambirira. Tikukhulupirira kuti, mtsogolomo, anthu ena atha kupindula ndi kafukufukuyu pomvetsetsa bwino za kukhutira, kukhutira ndikugwiritsabe ntchito ntchito za ANC. Ubwino woyembekezeredwa ku sayansi kapena gulu lomwe likuyembekezeredwa kuchokera ku kafukufukuyu ndikuti liziwonjezera kukulitsa chidziwitso cha azimayi pazabwino za ntchito za ANC komanso kufunitsitsa kwawo kugwiritsa ntchito ntchitozi.

Kodi ndiyenera kukhala nawo mu kafukufukuyu ndipo ndingaleke kutenga nawo gawo nthawi iliyonse?
Kutenga nawo gawo kwanu pakafukufukuyu ndi kodzipereka. Mutha kusankha kuti musatenge nawo gawo konse. Ngati mungaganize zokachita nawo kafukufukuyu, mutha kusiya kutenga nawo gawo nthawi iliyonse. Ngati mwasankha kusachita nawo kafukufukuyu kapena ngati mungasiye kuchita nawo nthawi iliyonse, simudzalangidwa kapena kutaya zabwino zilizonse zomwe mungayenerere.

Ndingatani ngati ndili ndi mafunso?
Kafukufuku kali kuchitidwa ndi a Ladislas Hibusu ndi Pulofesa Prof. Olagoke Akintola ndi Sukulu Yazaumoyo ku Yunivesite ya Western Cape. Ngati muli ndi mafunso okhudzana ndi kafukufukuyu, chonde lemberani a Ladislas Hibusu pa: + 260977895412, kapena tumizani imelo mafunso ku :4001380@myuwc.ac.za. Ngati mulina mafunso munga peze tandizo kusebenzensa ba Ladislas Hibusu mu Zambiya ku adilesa ilipansi apa.

Ngati mungakhale ndi mafunso okhudzana ndi kafukufukuyu komanso ufulu wanu wochita nawo kafukufukuyu kapena ngati mukufuna kufotokoza mavuto omwe mwakumana nawo okhudzana ndi kafukufukuyu, lemberani:

The Chairman, The University of Zambia Biomedical Research Ethics Committee Ridgeway Campus P.O. Box 50110 Lusaka, Zambia Fax: + 260-1-250753 E-mail: unzarec@unza.zm	Ladislas Hibusu (PI) Survey Manager USAID/Zambia Monitoring, Evaluation and Learning Platform (Z-MELP) Subdivision 699/Stand 100, Ibex Hill Rd. Lusaka, ZM Mobile: +260-967-984-512 Email: tracykhibusu@yahoo.co.uk
Prof Uta Lehmann Head of Department: School of Public Health University of the Western Cape Private Bag X17 Bellville 7535 ulehmann@uwc.ac.za	Prof Anthea Rhoda Dean: Faculty of Community and Health Sciences University of the Western Cape Private Bag X17 Bellville 7535 chs-deansoffice@uwc.ac.za

Kafukufukuyu wavomerezedwa ndi a University of the Western Cape's Biomedical Research Ethics Committee.

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Appendix 3: Consent form

Title of Research Project: Assessment of client satisfaction with the quality of antenatal healthcare received at health facilities and continued willingness to use ANC services in healthcare facilities among pregnant women in Lusaka district of Zambia

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits. I also understand that I am free to skip questions I deem personal or otherwise without penalty.

___ I agree to be **[**videotaped/audiotaped/photographed**]** during my participation in this study.
___ I do not agree to be **[**videotaped/audiotaped/photographed**]** during my participation in this study.

6.11

6.12 Participant's name……..

6.13 Participant's signature……

Date……

Thumb-print

Nyanja Translated consent form:

FOMU YOVOMEREZA

Mutu wa Kafukufuku: Kuwona kukhutira kwa kasitomala ndi mtundu wa chithandizo chamankhwala opatsirana omwe amalandiridwa kuzipatala ndikupitilizabe kufunitsitsa kugwiritsa ntchito ntchito za ANC m'malo azachipatala pakati pa amayi apakati mu boma la Lusaka ku Zambia

Phunziroli lafotokozedwa kwa ine mchilankhulo chomwe ndimamvetsetsa. Mafunso anga okhudza kafukufukuyu ayankhidwa. Ndikumvetsetsa zomwe kutenga nawo mbali ndikuphatikizira ndikuvomera kutenga nawo mbali mwakufuna kwanga komanso mwaufulu. Ndikumvetsetsa kuti dzina langa silidzaululidwa kwa aliyense. Ndikumvetsetsa kuti nditha kusiya kafukufukuyu nthawi iliyonse popanda kupereka chifukwa komanso mosaopa zotsatira zoyipa kapena kutaya phindu. Ndine osintikiza kuti ninga siye manfuso yamene sindikutikila nayo kopanda zondichitikila.

___ [kujambulidwa pavidiyo / kujambulidwa / kujambulidwa] nditatenga nawo gawo mu kafukufukuyu.

___ Sindikugwirizana kuti ndidzajambulidwa [kujambulidwa / kujambulidwa / kujambulidwa] nditatenga nawo gawo mu kafukufukuyu.

Dzina la wophunzira ……..

Siginecha ya wophunzira ……

Date……

Pofaka chikumo

Appendix 5: Ethical clearance BMREC

UNIVERSITY of the WESTERN CAPE
Department of Institutional Advancement
University of the Western Cape
Robert Sobukwe Road
Bellville 7535
Republic of South Africa

November 2021

Mr L Hibusu
School of Public Health
Faculty of Community and Health Sciences

Ethics Reference Number: BM21/10/27

Project Title: Assessment of client satisfaction with the quality of antenatal healthcare received at health facilities and continued willingness to use ANC services in healthcare facilities among pregnant women in Lusaka district of Zambia.

Approval Period: **30 November 2021 – 30 November 2024**

I hereby certify that the Biomedical Science Research Ethics Committee of the University of the Western Cape approved the scientific methodology and ethics of the above mentioned research project and the requested amendment to the project.

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

Please remember to submit a progress report annually by 30 November for the duration of the project.

For permission to conduct research using student and/or staff data or to distribute research surveys/questionnaires please apply via:
https://sites.google.com/uwc.ac.za/permissionresearch/home

The permission letter must then be submitted to BMREC for record keeping purposes.

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

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

Appendix VII: Letter Requesting for Permission to conduct study MoH Zambia

UNIVERSITY OF THE WESTERN CAPE
Private Bag X 17, Bellville 7535, South Africa
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E-mail: soph-comm@uwc.ac.za

30 September 2021

The Permanent Secretary,
Ministry of Health
Ndeke House
P.O Box 30205
LUSAKA

Dear Dr Sir/Madam,

RE: AUTHORIZATION TO CONDUCT RESEARCH AT SELECTED HEALTH FACILITIES THAT PROVIDE ANTENATAL HEALTHCARE SERVICES IN LUSAKA DISTRICT

My name is Ladislas Hibusu, I am a Public Health student at the University of Western Cape in Cape Town, South Africa. The research I wish to conduct for my master's dissertation involves Assessing women's satisfaction with the quality of antenatal healthcare received at health facilities and continued willingness to use ANC services in healthcare facilities among pregnant women in Lusaka district of Zambia. The project will be conducted under the supervision of Prof. Olagoke Akintola University Western Cape, South Africa.

I am hereby seeking your consent to conduct this research using data that will be collected from expectant women at selected antenatal healthcare facilities from the 8 zones in Lusaka district.
I have provided you with a copy of my dissertation proposal which includes a copy of the questionnaire as well as a copy of the approval letter which I received from the University of Western Cape Biomedical Research and Ethical Committee (BMREC). The Protection of Personal Information Act will be adhered to during data collection.

Upon completion of the study, I undertake to provide you with a bound copy of the full research report. If you require any further information, please do not hesitate to contact me on 0977895412 and 4001380@myuwc.ac.za. Thank you for your time and consideration in this matter.

Yours sincerely,

Ladislas Hibusu
University Western Cape

Biomedical Research Ethics Committee
University of the Western Cape
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Bellville
7535
Tel: 021 959 4111
E-mail: research-ethics@uwc.ac.za

Appendix 5: Ethical clearance UNZABREC

UNIVERSITY OF ZAMBIA
BIOMEDICAL RESEARCH ETHICS COMMITTEE

Telephone: +260 977925304 Ridgeway Campus
Telegrams: UNZA, LUSAKA P.O. Box 50110
Telex: UNZALU ZA 44370 Lusaka, Zambia
Fax: + 260-1-250753 E-mail: unzarec@unza.zm **Federal Assurance No. FWA00000338**
IRB00001131 of IORG0000774

9th March, 2022

Your REF. No. 2475-2021

Mr. Ladislas Hibusu,
University of Western Cape,
School of Public
Health, Community and

Health Sciences, **South Africa.**

Dear Mr. Hibusu,

RE: ASSESSMENT OF CLIENT SATISFACTION WITH THE QUALITY OF ANTENATAL HEALTHCARE RECEIVED AT HEALTH FACILITIES AND CONTINUED WILLINGNESS TO USE ANC SERVICES IN HEALTHCARE FACILITIES AMONG PREGNANT WOMEN IN LUSAKA DISTRICT OF ZAMBIA (REF. NO. 2475-2021)

The above-mentioned research proposal was presented to the Biomedical Research Ethics Committee on 7th March, 2022. The proposal is **approved**. The approval is based on the following documents that were submitted for review:

a) Study proposal

b) Questionnaires

c) Participant Consent Form

APPROVAL NUMBER : REF. 2475-2021

This number should be used on all correspondence, consent forms and documents as appropriate.

- **APPROVAL DATE : 9th March 2022**
- **TYPE OF APPROVAL : Standard**
- **EXPIRATION DATE OF APPROVAL : 8th March 2023**

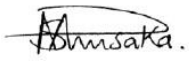
After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the UNZABREC Offices should be submitted one month before the expiration date for continuing review.

- **SERIOUS ADVERSE EVENT REPORTING**: All SAEs and any other serious challenges/problems having to do with participant welfare, participant safety and study

integrity must be reported to UNZABREC within 3 working days using standard forms obtainable from UNZABREC.

- **MODIFICATIONS**: Prior UNZABREC approval using standard forms obtainable from the UNZABREC 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 UNZABREC using standard forms obtainable from the UNZABREC Offices.
- **NHRA:** You are advised to obtain final study clearance and approval to conduct research in Zambia from the National Health Research Authority (NHRA) before commencing the research project.
- **QUESTIONS**: Please contact the UNZABREC on Telephone No. +260977925304 or by e-mail on unzarec@unza.zm.
- **OTHER**: Please be reminded to send in copies of your research findings/results for our records. You are also required to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study. Use the online portal: unza.rhinno.net for further submissions.

Yours sincerely,



Sody Mweetwa Munsaka, BSc., MSc., PhD
CHAIRPERSON
Tel: +260977925304
E-mail: s.munsaka@unza.zm

Appendix 6: Permission letter from Ministry of Health Zambia

All Correspondence sh01dd be addressed 10 //le Pennanen/
Telephone: +260 211 253040/5
Fax: +260 211 253344

MH/101/23/10

Secretary

In reply please quote;

No.....

REPUBLIC OF ZAMBIA

MINISTRY OF HEALTH NDEKE HOUSE

P. O. BOX 30205 LUSAKA

25 February, 2022

Mr. Ladislas Hibusu
University of the Western Cape
School of Public Health
SOUTH AFRICA

RE: SUPPORT TO CONDUCT RESEARCH STUDY

The Ministry of Health is in receipt of your request for support to conduct Research Study titled "Assessment of client satisfaction with the quality of antenatal healthcare received at health facilities and continued willingness to use ANC services in health facilities among pregnant women in Lusaka district of Zambia".

I wish to inform you that the Ministry of Health recommends and support the application for ethical clearance and National Health Research Authority approval to conduct the research study and information obtained will be used only for the intended purpose as stipulated in the request.

Prof. Lackson Kasonka
Permanent Secretary- (TS)
MINISTRY OF HEALTH

cc: PHD- Lusaka Province
cc: DHD- Lusaka District

Appendix 7: Permission letter from NHRA

NATIONAL HEALTH RESEARCH AUTHORITY
Paediatric Centre of Excellence, University Teaching Hospital, P.O. Box 30075, LUSAKA
Chalala Office Lot No. 18961/M, Off Kasama Road, P.O. Box 30075, LUSAKA

Tell: +260211 250309 | Email: znhrasec@nhra.org.zm | www.nhra.org.zm

Ref No: NHRA0000011/11/03/2022 **Date: 11th March, 2022**

The Principal Investigator,
Ladislas Hibusu,
University of the Western Cape,

Dear Ladislas Hibusu,

Re: Request for Authority to Conduct Research

The National Health Research Authority is in receipt of your request for authority to conduct research titled **"Assessment of Client Satisfaction with The Quality of Antenatal Healthcare Received at Health Facilities and Continued Willingness to Use ANC Services in Healthcare Facilities Among Pregnant Women in Lusaka District of Zambia."**

I wish to inform you that following submission of your request to the Authority, our review of the same and in view of the ethical clearance, this study has been **approved** on condition that:

1. The relevant Provincial and District Medical Officers where the study is being conducted are fully appraised;
2. Progress updates are provided to NHRA quarterly from the date of commencement of the study;
3. The final study report is cleared by the NHRA before any publication or dissemination within or outside the country;
4. After clearance for publication or dissemination by the NHRA, the final study report is shared with all relevant Provincial and District Directors of Health where the study was being conducted, University leadership, and all key respondents.

Yours sincerely,

Prof. Godfrey Biemba
Director/CEO
National Health Research Authority

No.:.....

Appendix 8: Permission letter from Lusaka District Health Office

Alf correspondence should beIn reply please quote:

addressed to the District Health
Director

Tel: +260-211-235554
Fax: +260-211-236429

REPUBLIC OF ZAMBIA

MINISTRY OF HEALTH

LUSAKA DISTRICT HEALTH OFFICE
P. O. BOX 50827
LUSAKA

30th March, 2022

Ladislas Hibusu (Mr)
University of the Western Cape
School of Public Health
SOUTH AFRICA

Dear Mr. Hibusu,

RE: AUTHORITY TO CONDUCT RESEARCH IN LUSAKA DISTRICT.

We are in receipt of your letter over the above subject.

Please be informed that Lusaka District Health Office has no objection for you to conduct research entitled" Assessment of client satisfaction with the quality of antenatal healthcare

received at Health Facilities and continued willingness to use ANC services in Ilealthcare Facilities among pregnant women in Lusaka District of Zam bia".

Ensure to share a copy of your findings with Lusaka District Health Office.

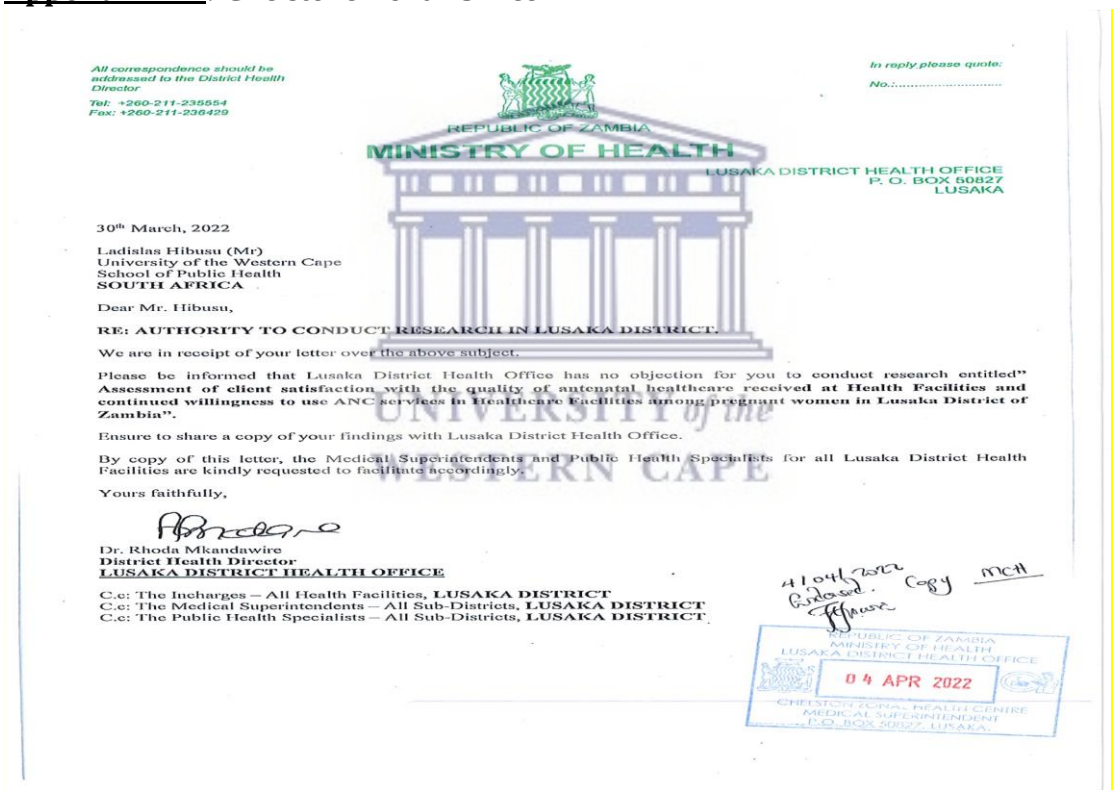
By copy of this letter, the Medical Superintendents and Public Health Specialists for all Lusaka District Health Facilities are kindly requested to facilitate accordingly.

Yours faithfully,

Dr. Rhoda Mkandawire
District Ilealth Director
LUSAKA DISTRICT HEALTH OFFICE

c.c: The Incharges - All Health Facilities, LUSAKA DISTRICT
c.c: The Medical Superintendents - All Sub-Districts, LUSAKA DISTRICT
c.c: The Public Health Specialists - All Sub-Districts, LUSAKA DISTRICT

Appendix XIII: **Chelstone Zonal Office**



All correspondence should be addressed to the District Health Director
Tel: +260-211-235554
Fax: +260-211-236429

In reply please quote:
No.:.....

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH
LUSAKA DISTRICT HEALTH OFFICE
P. O. BOX 50827
LUSAKA

30th March, 2022

Ladislas Hibusu (Mr)
University of the Western Cape
School of Public Health
SOUTH AFRICA

Dear Mr. Hibusu,

RE: AUTHORITY TO CONDUCT RESEARCH IN LUSAKA DISTRICT.

We are in receipt of your letter over the above subject.

Please be informed that Lusaka District Health Office has no objection for you to **conduct research entitled" Assessment of client satisfaction with the quality of antenatal healthcare received at Health Facilities and continued willingness to use ANC services in Healthcare Facilities among pregnant women in Lusaka District of Zambia".**

Ensure to share a copy of your findings with Lusaka District Health Office.

By copy of this letter, the Medical Superintendents and Public Health Specialists for all Lusaka District Health Facilities are kindly requested to facilitate accordingly.

Yours faithfully,

Dr. Rhoda Mkandawire
District Health Director
LUSAKA DISTRICT HEALTH OFFICE

C.c: The Incharges – All Health Facilities, **LUSAKA DISTRICT**
C.c: The Medical Superintendents – All Sub-Districts, **LUSAKA DISTRICT**
C.c: The Public Health Specialists – All Sub-Districts, **LUSAKA DISTRICT**

4/04/2022 Received. Copy MCH

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH
LUSAKA DISTRICT HEALTH OFFICE
04 APR 2022
CHELSTONE ZONAL HEALTH CENTRE
MEDICAL SUPERINTENDENT
P.O. BOX 50827, LUSAKA

Appendix XIV: Chipata General Hospital (Sub-District Office)

All correspondence should be addressed to the District Health Director
Tel: +260-211-235554
Fax: +260-211-236429

In reply please quote:
No.:.....

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH
LUSAKA DISTRICT HEALTH OFFICE
P. O. BOX 50827
LUSAKA

30th March, 2022

Ladislas Hibusu (Mr)
University of the Western Cape
School of Public Health
SOUTH AFRICA

Dear Mr. Hibusu,

RE: AUTHORITY TO CONDUCT RESEARCH IN LUSAKA DISTRICT.

We are in receipt of your letter over the above subject.

Please be informed that Lusaka District Health Office has no objection for you to conduct research entitled" **Assessment of client satisfaction with the quality of antenatal healthcare received at Health Facilities and continued willingness to use ANC services in Healthcare Facilities among pregnant women in Lusaka District of Zambia".**

Ensure to share a copy of your findings with Lusaka District Health Office.

By copy of this letter, the Medical Superintendents and Public Health Specialists for all Lusaka District Health Facilities are kindly requested to facilitate accordingly.

Yours faithfully,

Dr. Rhoda Mkandawire
District Health Director
LUSAKA DISTRICT HEALTH OFFICE

C.c: The Incharges – All Health Facilities, **LUSAKA DISTRICT**
C.c: The Medical Superintendents – All Sub-Districts, **LUSAKA DISTRICT**
C.c: The Public Health Specialists – All Sub-Districts, **LUSAKA DISTRICT**

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH
LUSAKA PROVINCIAL HEALTH OFFICE
29 MAR 2022
MEDICAL SUPERINTENDENT
CHIPATA GENERAL HOSPITAL
P.O. BOX 32573, LUSAKA-ZAMBIA

29/04/2022
noted. no objections.

Appendix XV: Chilenje Level One Hospital

All correspondence should be addressed to the District Health Director
Tel: +260-211-235554
Fax: +260-211-236429

In reply please quote:
No.:.....

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH
LUSAKA DISTRICT HEALTH OFFICE
P. O. BOX 50827
LUSAKA

30th March, 2022

Ladislas Hibusu (Mr)
University of the Western Cape
School of Public Health
SOUTH AFRICA

Dear Mr. Hibusu,

RE: AUTHORITY TO CONDUCT RESEARCH IN LUSAKA DISTRICT.

We are in receipt of your letter over the above subject.

Please be informed that Lusaka District Health Office has no objection for you to conduct research entitled" **Assessment of client satisfaction with the quality of antenatal healthcare received at Health Facilities and continued willingness to use ANC services in Healthcare Facilities among pregnant women in Lusaka District of Zambia".**

Ensure to share a copy of your findings with Lusaka District Health Office.

By copy of this letter, the Medical Superintendents and Public Health Specialists for all Lusaka District Health Facilities are kindly requested to facilitate accordingly.

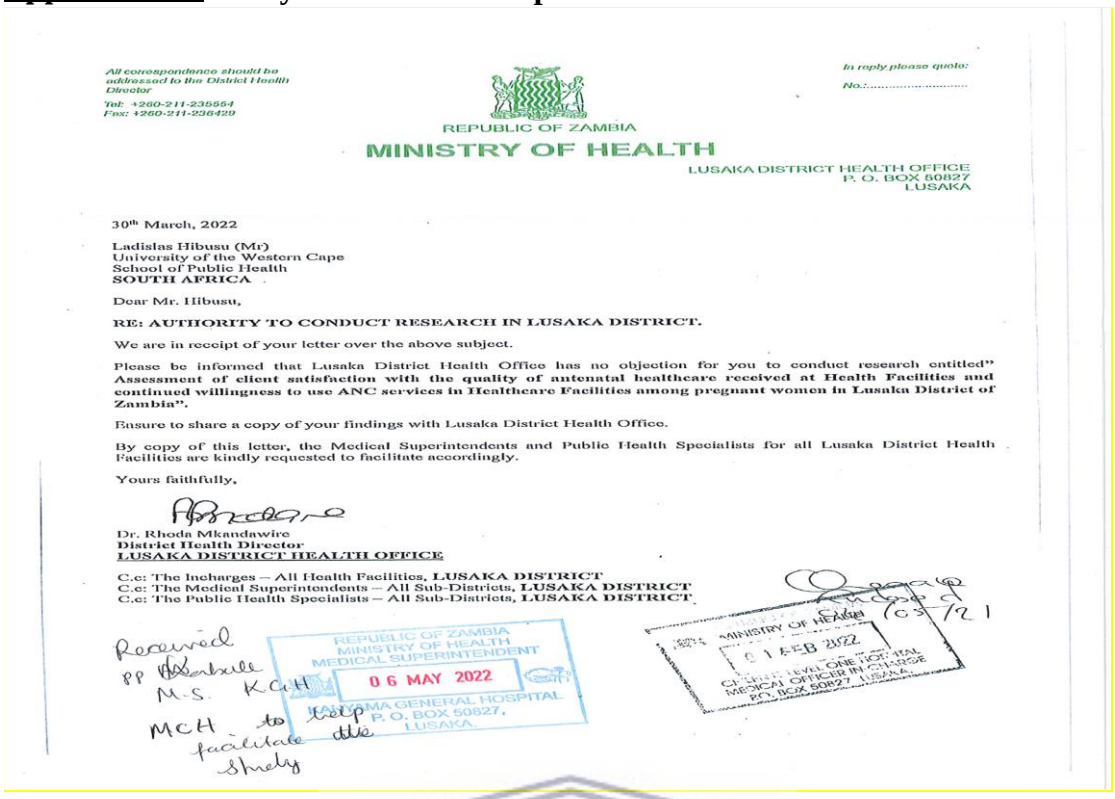
Yours faithfully,

Dr. Rhoda Mkandawire
District Health Director
LUSAKA DISTRICT HEALTH OFFICE

C.c: The Incharges – All Health Facilities, **LUSAKA DISTRICT**
C.c: The Medical Superintendents – All Sub-Districts, **LUSAKA DISTRICT**
C.c: The Public Health Specialists – All Sub-Districts, **LUSAKA DISTRICT**

MINISTRY OF HEALTH
01 FEB 2022
CHILENJE LEVEL ONE HOSPITAL
MEDICAL OFFICER IN CHARGE
P.O. BOX 50827, LUSAKA

<u>Appendix XVI</u>: Kanyama General Hospital



All correspondence should be addressed to the District Health Director
Tel: +260-211-235554
Fax: +260-211-236429

In reply please quote:
No.:.....

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH
LUSAKA DISTRICT HEALTH OFFICE
P. O. BOX 50827
LUSAKA

30th March, 2022

Ladislas Hibusu (Mr)
University of the Western Cape
School of Public Health
SOUTH AFRICA

Dear Mr. Hibusu,

RE: AUTHORITY TO CONDUCT RESEARCH IN LUSAKA DISTRICT.

We are in receipt of your letter over the above subject.

Please be informed that Lusaka District Health Office has no objection for you to conduct research entitled" Assessment of client satisfaction with the quality of antenatal healthcare received at Health Facilities and continued willingness to use ANC services in Healthcare Facilities among pregnant women in Lusaka District of Zambia".

Ensure to share a copy of your findings with Lusaka District Health Office.

By copy of this letter, the Medical Superintendents and Public Health Specialists for all Lusaka District Health Facilities are kindly requested to facilitate accordingly.

Yours faithfully,

Dr. Rhoda Mkandawire
District Health Director
LUSAKA DISTRICT HEALTH OFFICE

C.c: The Incharges – All Health Facilities, LUSAKA DISTRICT
C.c: The Medical Superintendents – All Sub-Districts, LUSAKA DISTRICT
C.c: The Public Health Specialists – All Sub-Districts, LUSAKA DISTRICT

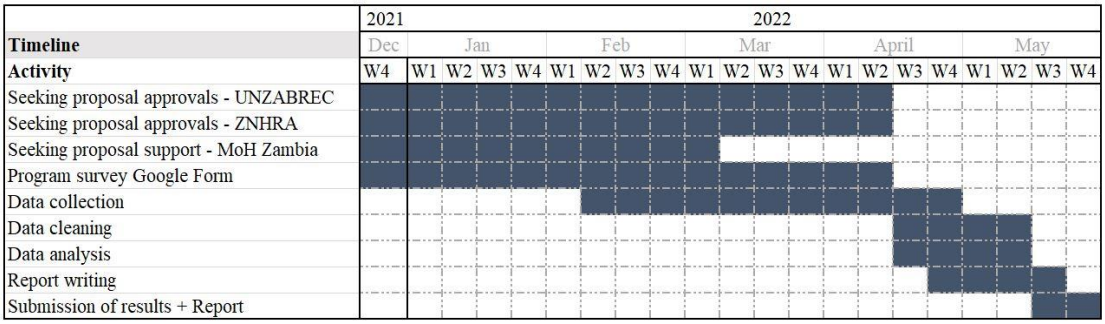
Received
pp
M.S. KGH
MCH to help facilitate the study

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH
MEDICAL SUPERINTENDENT
06 MAY 2022
KANYAMA GENERAL HOSPITAL
P. O. BOX 50827,
LUSAKA

MINISTRY OF HEALTH
01 FEB 2022
GENERAL LEVEL ONE HOSPITAL
OFFICER IN CHARGE
P.O. BOX 50827 LUSAKA

Appendix 9: Timeline and Budget

It is estimated that the whole activity will run until the end May 2022.



The total budget is estimated at seven thousand kwacha notwithstanding aspects around time.

Activity	Amount
UNZABREC ethics clearance	ZMW 1,000
Printing	ZMW 500
Snacks for participants	ZMW 1,000
Purchase of masks & hand sanitizers	ZMW 1,000
Payment for data collection	ZMW 6,000
Total	**ZMW 9,500**