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Investigating Factors Influencing Low Levels of Utilisation of Antenatal Services Among Pregnant Women at Matero First Level Hospital - Lusaka District, Zambia

Regina Chansa
Cavendish University Zambia

Selina Naomi Kasikili

ABSTRACT

The study aim was to investigate factors influencing low levels of utilization of antenatal services among pregnant women at Matero first level hospital in Lusaka district of Zambia. Health care service utilization is a key proximate determinant of maternal and infant outcomes. It is evident that well-timed ANC utilization is an opportunity to prevent the direct cause of maternal and neonatal deaths related to obstetric complication and can improve certain outcomes of pregnancy complications. To date, the importance of maternal health care services in reducing maternal mortality and morbidity has received a significant recognition. However, implementing and assuring utilization of effective maternity care in the initial stages (Antenatal Period) for women in the developing world is not an easy task. A cross-sectional method was used whose target population were pregnant women in the child bearing age of between 15 years and 49 years. A simple random sampling was used to select participants for the study and 220 questionnaires were administered with the use of quantitative and descriptive methods. The findings were that 84% of the women met the WHO recommended visits of eight (8) and most of them were in the age group between 20 to 29 years at 51.4%. Furthermore, the results showed that 51% attained secondary education, while 33% of the women were running their private owned businesses and those who lived within the catchment area represented 57%. For transport to get to facility for the services 68% were using public buses. Most women were married representing 72% and 98% were Christians. 83.6% represents respondents who made adequate visits of 5 to 7 (the visits were adequate according to them). On the other hand, the study identified some major factors that contributed in the initial stages to low utilization of ANC services at the facility to be tradition, culture, attitude, environment of population (how big or small populations are in residential areas) representing 76.4%, long distances representing 15.0%, long ques at the hospital representing 4.6% as well as lack of transport representing 4.0%. In conclusion, results of this study indicate that 84% of the respondents utilize antenatal care services adequately at Matero level 1 hospital and this is mainly because the facility was upgraded to a level 1 hospital and as such it offers all ANC services.

Keywords: Antenatal Care Services, Maternal and Child Health, utilization, ANC: Antenatal Care Services, AIDS: Acquired immune deficiency Syndrome, CBD: Central Business District, CSO: Central Statistics Office, FANC: Focused Antenatal Care, HIV: Human Immunodeficiency Virus, MCH: Maternal and Child Health, MDGs: Millennium

Development Goals, MoH: Ministry of Health Zambia, MMR: Maternal mortality rat, UNICEF: United Nations Children's Fun, WHO: World Health Organization, ZDHS: Zambia Demographic and Health Survey.

INTRODUCTION

Health care service utilization is a key proximate determinant of maternal and infant outcomes. It is evident that well-timed ANC utilization is an opportunity to prevent the direct cause of maternal and neonatal deaths related to obstetric complication and can improve certain outcomes of pregnancy complications Dubale et al, (2017). To date, the importance of maternal health care services in reducing maternal mortality and morbidity has received a significant recognition. However, implementing and assuring utilization of effective maternity care in the initial stages (Antenatal Period) for women in the developing world is not an easy task (ibid).

Antenatal care (ANC) is one of the services offered in the initial stages of pregnancy following conception. It refers to a range of interventions that women receive during pregnancy which helps to ensure healthy outcomes for women and newborns WHO, (2019). ANC is a vital component of reducing maternal and infant morbidity and mortality during pregnancy and birth by treating and monitoring complications WHO, (2019). Antenatal interventions such as detection and treatment of anemia and management of sexually transmitted infections (STIs) offer improvements in health, Dubale et al, (2017).

The new guidance for ANC therefore, recommends a minimum of eight (8) contacts from the previous four, between the pregnant woman and the healthcare providers. The new model recommends pregnant women should have their first contact during the first 12 weeks' gestation, with following contacts at 20, 26, 30, 34-, 36-, 38- and 40-weeks' gestation. Increasing maternal and foetal assessments to detect complications, improving support and communication between healthcare providers and pregnant women increases the likelihood of positive pregnancy outcomes, UNICEF (2017).

Background Information

The provision of special care for women during pregnancy through the public health services was a relatively late development in modern obstetrics. Not until the late 1930s did the United Kingdom of Great Britain and Northern Ireland authorities decide that all women should be offered regular check-ups during pregnancy as an integral part of maternity care, some 30 years after the introduction of formalized labor and delivery care. This development was stimulated by the realization that maternal mortality due to puerperal sepsis, hemorrhage and obstructed labor had declined substantially during the early years of the 20th century.

According to Hadden (2018), globally, 500,000 women die every year as a result of complications arising during pregnancy and childbirth. Most of these deaths are preventable but in much of the developing world, where 99% of them occur, the resources and skills needed to treat relatively straightforward conditions are inadequate. In 2015, an estimated 303, 000 women worldwide died due to complications during pregnancy and childbirth which translates into a maternal mortality ratio of 216 per 100,000 live births globally. To achieve the global target of less than 70 maternal deaths per 100,000 live births by 2030, a global annual rate of reduction of at least 7.5 percent is required UN (2021).

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Maternal mortality could be attributed to poor socio-economic conditions, low quality of care, lack of well-trained healthcare professionals, lack of proper infrastructure, and barriers to accessing medical facilities. Insecurity and scarce resources are additional critical issues to maternal healthcare accessibility for women living in conflict zones and fragile settings, UN (2020). These factors could contribute to high risk of maternal bleeding, complications, and infections during childbirth and unsafe abortions. Evidence suggests that reducing global maternal mortality and providing equitable access to healthcare can have many benefits for societies, including increased productivity and higher educational attainment, UN (2020).

However, this can only occur if antenatal interventions such as detection and treatment of anemia, management of sexually transmitted infections (STIs) as well as other conditions that may compromise the pregnancy or birth and to offer improvements in health are carried out with the urgency that is needed (ibid).

Before and into the 20th century, the WHO recommended women to have at least four ANC appointments with the first appointment occurring within the first 4 months of pregnancy; however, in 2016 WHO recommended that pregnant women should attend ANC 8 times; meaning that pregnant women should visit ANC monthly. However, many women globally are not offered, or do not attend, this level of care, with less than two thirds having at least four appointments. These figures are much lower in developing regions, with only 68% ever attending care, and just 39% meeting the target of four or more appointments. Although almost all women attend one appointment, there is a particular issue with women not booking follow up appointments or missing booked appointments WHO (2016).

Antenatal care (ANC) provides a stand for central healthcare tasks, including health promotion, screening and diagnosis, and disease prevention. It remains to be a vital health care tool to reduce the risk of stillbirths, preterm labor and pregnancy complications, (ibid).

Health care service utilization is a key proximate determinant of maternal and infant outcomes. It is evident that well-timed ANC utilization is an opportunity to prevent the direct cause of maternal and neonatal deaths related to obstetric complication and can improve certain outcomes of pregnancy complications, Dubale et al, (2017).

The importance of maternal health care services in reducing maternal mortality and morbidity has received a significant recognition until now. However, implementing and assuring utilization of effective maternity care for women in the developing world is not an easy task, (ibid).

The provision of special care for women during pregnancy through the public health services was a relatively late development in modern obstetrics. Not until the late 1930s did the United Kingdom of Great Britain and Northern Ireland authorities decided that all women should be offered regular check-ups during pregnancy as an integral part of maternity care, some 30 years after the introduction of formalized labor and delivery care. This development was stimulated by the realization that whereas maternal mortality due to puerperal sepsis, hemorrhage and obstructed labor had declined substantially during the early years of the 20th century, this was not the case for deaths associated with eclampsia. If these eclampsia-related deaths were to be averted, it was supposed, interventions would be needed earlier during the pregnancy, to

measure blood pressure, identify women at risk of eclamptic convulsions, and take measures to reduce blood pressure whenever possible WHO, (1999).

During the second half of the 20th century, international awareness grew of the dimensions of the tragedy of maternal mortality; national governments collaborated with technical assistance and donor agencies to ensure that pregnant women in developing countries also had access to maternity care. However, providing access for all pregnant women to care during the short period of labor and delivery is logistically and operationally a much more complex endeavor than making services available during the much longer and less unpredictable antenatal period. As a result, many programs focused attention on providing antenatal care rather than delivery care. Today we have better evidence about what works and what does not work to reduce maternal mortality, and the role that antenatal care can play, (ibid).

Globally, some emerging evidence suggests that an increase in the number of ANC care contacts seem to be associated with an increase in maternal satisfaction compared with fewer ANC contacts WHO, (2018). WHO recommends that pregnant women should initiate early prenatal care as ANC initiated in the first trimester is fundamental, WHO (2019).

Thousands of women and infants globally are at the risk of dying due to complications related to pregnancy and delivery of babies. For instance, approximately, 303, 000 women died and 2.6 million stillbirths occurred in 2015 due to complications associated with pregnancy and labor. Although considerable progress has been made over the last two decades still there is need to improve access to quality care during pregnancy, labor, and delivery to reduce preventable deaths among women Aziz et al, (2020). Furthermore, WHO has advocated various approaches to prevent pregnancy related problems such as the FANC model of WHO which emphasizes that a pregnant woman should have comprehensive ANC visits and be screened and treated for anemia, malaria, HIV/ AIDS, and also be immunized against tetanus.

In the regions, Sub-Saharan Africa and South Asia, studies indicated that most women do not initiate ANC in the first trimester as recommended by the WHO. The National Demographic Health Surveys in Sub- Saharan Africa and South Asia of women aged 15–49 years revealed that 53% and 49% at least managed four ANC visits, UNICEF (2019).

The new guidance for ANC therefore, recommends a minimum of eight (8) contacts from the previous four, between the pregnant woman and the healthcare providers. The new model recommends that pregnant women should have their first contact during the first 12 weeks of gestation, with following contacts at 20, 26, 30, 34, 36, 38 and 40 weeks' gestation. Increasing maternal and foetal assessments to detect complications, improving support and communication between healthcare providers and pregnant women increases the likelihood of positive pregnancy outcomes, (ibid).

Although maternal and newborn mortality is largely preventable, newborn and maternal health in Zambia remains poor. The remote and poorest populations are the most vulnerable and marginalized communities. In rural Zambia, mothers often face suboptimal care and underutilization of maternal health services. According to the 2018 Zambia Demographic Health Survey (DHS), rural mothers were slightly more likely to have attended four or more ANC visits than urban mothers, Biemba et al (2021).

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The quality of ANC that pregnant women receive in Zambia continues to be poor despite several interventions. Research has shown that only 29% of women in Zambia receive high quality antenatal care. Currently, Zambia is one of the countries whose Maternal Mortality rates are unacceptably high with 323–474 maternal deaths per 100,000 live births in 2014. The maternal mortality rate for Lusaka province has been increasing since 2013 with over 70% of maternal deaths in the province being recorded in Lusaka District. The quality of ANC in Zambia requires attention as maternal and neonatal mortality rates are still unacceptably high with Lusaka district not being left out of the problem.

The quality of ANC care received by pregnant women in Lusaka is low. Efforts to improve the delivery of basic ANC services such as blood and urine testing is required to be continued to improve the quality of healthcare services provided by medical personnel at all levels, according to a study by Brave et al (2018). Despite interventions to promote maternal care, few women utilize ANC in Zambia, and maternal mortality rates remain high. While nearly all women have at least one ANC visit, fewer than 50% have the four or more visits recommended by WHO.

Considering that child bearing age begins at adolescent stage, therefore there are several adolescent pregnancies in low- and middle-income countries where Zambia is not exceptional and these adolescent pregnancies pose a serious health risk to the adolescents. Meanwhile, many of these adolescents have difficulties in accessing ANC services and comprehensive strategies to address these challenges need to be strengthened even more in order to encourage adequate utilization of ANC to reduce on pregnancy complications and maternal deaths. According to the study conducted by Bwalya et al, (2018) in Matero on exploring the challenges and positive issues that adolescents aged between 12 to 19 years face, found barriers to accessing health services which included poor attitudes and behavior of some older pregnant women and health care providers towards the adolescents, the opening hours for health facilities being unfavorable to most adolescents, lack of specific rooms or spaces for adolescents as well as inadequate privacy and confidentiality (ibid).

Problem Statement

A pregnant woman should utilize ANC services from the moment she discovers she is pregnant; this will help health care providers advise appropriately and on time in case of any complication. Tests are also done such as HIV, urinary tract infections which can be treated to protect both the mother and the unborn child. As per WHO (2016) recommendations, pregnant women should visit health centers for ANC at least 8 times before they deliver.

In Matero Township, a study revealed that 120 maternal deaths occurred on a total of 2,471 live births in the period 2015 and 2019; knowledge on the danger signs of pregnancy among pregnant women was still limited especially among teenagers between 15 to 19 years, Stekelenburg and Roosmalen (2018). This is also evident today as most women start ANC visits when they are already five months pregnant.

Unfortunately, most pregnant women do not visit ANC services as per WHO recommendations, some only visit twice or three times which is not enough time to provide help in case of any complications. Mostly pregnant women start visiting ANC services when they are already advanced. Since it was introduced that pregnant woman should be accompanied by their

partners for the initial antenatal visit so that both can undergo tests such as STIs, HIV, many more pregnant women are not visiting ANC clinics. Very few pregnant women manage to make 8 visits according to WHO recommendations and this could lead to serious consequences such as lose of pregnancies, miscarriages and even death from complications such as eclampsia. Therefore, the so reason this study was conducted to investigate factors influencing low levels of utilization of ANC services by pregnant women at Matero Level One Hospital in Lusaka district and come up with strategies to raise awareness to increase the level of attendance. This will help reduce on maternal mortality and morbidity and inform policy makers to come up with policies to help solve the problem.

Evidence for the Problem Statement

Year	# Of women who made 2 visits	# Of women who made 3 visits	# Of women who made 4 – 7 visits	# Of women who made 8+ visits
2021	2,826	2,861	3,711	609
2022	3,412	3,189	6,449	214

In 2022 Matero Level One Hospital, data base, out of 28,370 population in child bearing age, 10 % of pregnant women utilized ANC services, majority managed 4 to 7 visits and others 3 visits. See table above.

Objectives

General Objective:

To investigate factors influencing low level of utilization of antenatal services among pregnant women at Matero Level One Hospital in Lusaka district.

Specific Objectives:

1. To determine social demographics associated with low level utilization of ANC services utilization among pregnant women at Matero Level One Hospital
2. To establish factors that influence low levels of utilization of ANC by pregnant women at Matero Level One hospital
3. To determine when pregnant women in child bearing age between
4. 15 to 49 years make their first ANC visit at Matero Level One Hospital
5. To ascertain the number of times pregnant women make visits to antenatal clinic at Matero Level One hospital

Research Questions

1. What social demographics influence low level utilization of ANC services among pregnant women at Matero Level One Hospital?
2. What factors influence low levels of utilization of ANC by most pregnant women?
3. When do pregnant women make their first visit to ANC?
4. How many times do pregnant women visit antenatal clinic at Matero Level One Hospital

Scope of the Study

This study confined itself to pregnant women utilizing ANC services at Matero First Level Hospital

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Theoretical Framework

The theoretical framework for this study was anchored on Andersen Health Seeking Behavior Model that assumes that health seeking behavior results from the interaction between characteristics of individuals, population and the surrounding environment Trinh & Rubin (2016:2). The theory examines the effect of individual and health management factors on the utilization of ANC, Anderson, (2018).

Components derived from this theoretical framework include:

Health seeking behavior resulting from the interaction between characteristics of individuals; characteristics include **attitude, level of education** and **understanding** as well as **cultural factors**. Some people do not seek health services due to the negative attitude they have towards health services. Furthermore, the poor health seeking behavior by most people is sometimes influenced by culture and tradition. Some cultures do not seek health services. Meanwhile some people are just lazy and negligent; they would rather get drugs from the market than seeking health services. For some people it is because they are shy to be seen seeking health services especially in cases of HIV/AIDS. Level of education also contributes towards poor health seeking behavior especially when the education is very low; hence understanding the importance of seeking health services is a challenge for such people as they do not even know that they have the right to good health.

Population: As the population grows, more people tend to seek health services and as such long queues characterize health facilities especially in urban and peri-urban areas which are congested due to industrial migration from rural areas. Long processes also are inevitable and so some people would rather get medicines from drug stores than queuing up at health facilities. This factor contributes significantly towards people having poor health seeking behavior.

Surrounding environment: Depending on the area one lives especially in rural areas where mostly people believe so much in just plucking herbs from the bushes when they are sick. In the recent past, women in these areas delivered babies in homes and it has taken some time to convince them to seek health services from health facilities. Even though sensitization has been done, some people are still delivering babies in their homes. Others live very far from health centers which deters them from seeking health services. Therefore, this theoretical frame work will be applied in this study in form of questions on the questionnaire in order to better understand the factors causing poor health seeking behavior by most pregnant women in the child bearing age at Matero Level One Hospital which is leading to low utilization of ANC.

Table 1: Cut off points for the variables

Variable	Operational Variable	Cut Off Point	Indicators	QTNS
Dependent	Delayed first ANC visit,	Should at least Start ANC at three months	Increased registration for the first ANC visits at three months	
	Reduced number of ANC visits	Should at least visit ANC 6 times	Increased number of visits to ANC clinic	
	Increased maternal mortality,	At least 1 maternal death per month	Reduced labor complications	

	Increased maternal morbidity,	At least 1 antenatal complication per month	Reduced antenatal complications	3 and 4
	Distance and transport to the health facility	90% of pregnant women affording to visit ANC clinic	Increased number of pregnant women visiting ANC clinic	
	Type of place of residence	90% of pregnant women visiting ANC regardless of the type of residence	Increased number of pregnant women visiting ANC clinic from all areas	
	Education, wealth, occupation	90% of pregnant women to visit ANC irrespective of their occupation	Increased number of pregnant women visiting ANC whether educated, wealthy, working or not	
	Age with focus on teenagers aged 15 to 19 years old	80% of adolescents should be free to visit ANC clinic	Creating user friendly environment and ANC services for the pregnant adolescents to achieve increased attendance	
	Marital status focusing on unmarried women	At least 70% of unmarried women should be able to visit ANC clinic	Encouraging unmarried women to visit ANC clinic when they are pregnant by not sending them away	
	Characteristics of individuals, population and the surrounding environment	90% of pregnant women should be able to visit ANC clinic and utilize the services fully regardless	Discouraging wrong attitude in pregnant women towards ANC, increasing health personnel to manage large populations and sensitizing the public on the importance of utilizing ANC regardless of the environment	

LITERATURE REVIEW

Introduction

High quality ANC has been shown to promote maternal and fetal wellbeing; ANC is central to the continuum of medical care that is necessary before and during pregnancy, at childbirth, and postpartum, WHO (2018).

Maternal mortality continues to be a major public health concern both locally and globally. Many countries worldwide are working hard in order to reduce these numbers. It is estimated that 303,000 women die during pregnancy and childbirth every year in the world and that most of these deaths occur in developing economies Phiri et al (2019 – 2020).

WHO (2016) revised its recommended minimum number of ANC visits from four to eight contacts following recent evidence that increased number of contacts between a pregnant woman and a skilled health provider reduced perinatal mortality and improved women's experience of care. Early ANC initiation in the first trimester of pregnancy and receiving the required services is emphasized in the revised guideline. In spite of this, global reports in 2017 showed that only three in five women utilized at least four antenatal visits. In regions with the

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highest rates of maternal mortality, such as Sub-Sahara Africa, only 52% of women utilized at least four ANC visits, (WHO, 2017).

Literature review is therefore anchored on the following objectives:

Social Demographics Associated with Low Level Utilization of ANC Services Utilization Among Pregnant Women at Matero Level One Hospital

Globally, maternal deaths due to pregnancy and childbirth remain the leading cause of death among women of reproductive age in low-income countries. It is evident that initiation of ANC on time and delivery differences in the utilization of maternal health care services has been reported in many low- and middleincome countries, in most cases because of financial or socioeconomic barriers. There were inequities in the utilization of maternal health care services in some countries in Asia such as Vietnam, Bangladesh, and Nepal. Evident socioeconomic differences which are defined by wealth and level of education were shown to be related with maternal health care services in previous studies. A study was conducted in the Yangon Region of Myanmar and no evidence of inequity in the utilization of ANC was found but the utilization of at least one ANC visit was more common among women in the richest quintile, particularly those aged less than 20 years, Aye Nyein et al (2018).

A systematic literature review found factors that can influence ANC utilization by pregnant women as being the educational status of users of ANC services, health education and information giving, age, Cost, mother who lives with the nuclear family, Nita et al (2019)

Pakistan demographic health survey (2012 to 2013) also shows that 89.4% of the pregnant women utilize ANC at least once in urban areas as compared to 69.6% in the rural areas, which is a comparatively lower proportion than urban areas of the same country. It was found that women knowing of ANC were more likely to utilize ANC services as compared to those who did not know about ANC services. Having knowledge about health enables women to be aware of their health status in order to seek appropriate health services on time, Sumera et al (2020).

Nita et al (2019) conducted a systematic literature review and brought up factors that can increase the utilization of ANC by pregnant women worldwide and they include service provider compliance with ANC visit guidelines, good counselling, continuous upbringing, Women's interpersonal relationships with good officers, availability of health facilities, Socio-economic and demographic support., distance to health facilities, parity, media exposure received by the mother, quality of service and ANC service providers, ANC Visit, autonomy and maternal health status.

In Africa, though the number of women and girls dying due to pregnancy related complications and childbirth decreased by nearly 50% from 1990 to 2013 globally, the number of deaths within the West African region remains unacceptably high with Maternal Mortality Ratio of 679 deaths per 100,000 live births in 2015. According to the 2017 Ghana Maternal Health Survey, the Maternal Mortality Rate in Ghana stands at 310 per 100,000 live births, which still remains unacceptably high. According to the study carried out in Ghana, 69.0% reported utilising ANC services at least four or more times with the significant associated determinants being age, educational level and insured with National Health Insurance Scheme, Afaya et al (2020).

Meanwhile, the negatively associating determinants with the utilisation of four or more ANC services included not married and divorced, (ibid)

According to research conducted in Ghana, it was established that there was low utilization of ANC due to age where young mothers were more likely to utilize ANC less than older women. The level of education was also another factor, women with higher level of education utilized ANC more than those with low level of education. Long distance to the health facility as well as superstition where pregnant women feared wizards and witches of terminating their pregnancy when they were seen going for antenatal clinic, hence the delay, Kennedy et al (2020).

A study in Sub-Saharan Africa established determinants of women who did not meet the recommended ANC utilization as being rural residence, illiterate, low education level, had no occupation, low women autonomy, low socioeconomic status, not exposed to media, a big problem to access health care, unplanned pregnancy, non-use of contraceptives. There is need therefore for special attention to improve health accessibility, utilization and quality of maternal health services (Tessema et al 2021).

According to the results obtained from the study in Nigeria, it was concluded that economic and non - economic factors such as wealth, employment status, distance and transport to health facilities, insurance status, no provider and no female provider, education, region, residence, religion, age and birth order are significant in ANC utilization in Nigeria, Nghargbu and Olaniyan (2019).

A study conducted in Zambia illustrate that women who attained secondary education were more likely to receive high quality ANC compared to those that attained primary education. Another study conducted in Kenya, Malawi, and Nigeria showed that women's education level has an effect on the quality of ANC. Educated women were more knowledgeable about the procedures expected during ANC and so they were more likely to request for such procedures than women with low education. Meanwhile a study conducted in South Asia suggested that education brings up new values and attitudes which increases the chances of a pregnant woman desiring skilled ANC and empowers them to access such quality ANC services, Biemba et al (2021).

According to a secondary analysis conducted on data from a cross-sectional household survey study in two rural districts of Zambia, financial challenges are among the major hindrances for women in low-income countries to access reproductive health services. The analysis shows that pregnant women did not save money for their baby delivery because they did not initiate early ANC. There discussions and teachings offered at the health facilities by health volunteers that help women to better understand issues pertaining to pregnancy and delivery, Lee (2021)

Factors that Influence Low Levels of Utilization of ANC by Pregnant Women at Matero Level One Hospital

Many women globally do not attain the recommended level of ANC. A study in Saudi Arabia shows that over a quarter of women did not attend appointments because they believed that pregnancy was just a normal event and so needed no additional care. Other factors include lack

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of transport as women depend on their men for their movements as well as long waiting time at the clinics, Alanazy and Brown, (2020).

Researchers in Pakistan and Australia conducted a literature review which identifies multiple socio-demographic, reproductive and access related factors that influence the utilization of ANC among pregnant women in different countries. The literature review revealed that several studies conducted in different countries have shown that factors such as maternal age, number of children alive, education, socioeconomic status, previous bad obstetrical history, support from spouse, quality of care and distance from health care facility are major factors affecting the use of antenatal care, Ali et al (2018).

According to a study conducted in tribal area of Madhya Pradesh, India, factors including education of a mother, occupation of a mother, income, education of a husband, knowledge of a mother about the needs of ANC and early ANC registration were found to be attributing factors to full utilization of ANC services. The study also established that education of a mother and knowledge of a mother about the things needed for ANC were important factors that contribute greatly towards the full utilization of ANC services in tribal area. The education is in relation with the economic status, awareness of mothers about utilizing health services, empowerment and decision-making capacity of mothers. Sharma et al (2019).

In Africa, a study conducted in Zimbabwe rural established factors leading to low utilization of ANC and they included maternal healthcare system, maternal healthcare user, and social support system and belief systems. Women felt not being treated with respect and long waiting times were deterrents to accessing healthcare. Even though maternity care is free in Zimbabwe, women in the study did not perceive maternal healthcare to be free as they had to pay out of their pocket for various healthcare related services; besides women have to provide their own food when they use maternity waiting facilities, Mutowo et al (2021).

The study also established that because of the presence of male midwives, some pregnant women were reluctant to seek maternal healthcare services in case they were asked by male midwives to undress to examine them. Some women had low educational levels and did not know the importance of regular ANC visits, could not read review dates which negatively affected the ANC utilization. Lack of awareness on the importance of HIV testing may be one of the reasons why women fear HIV testing which was a barrier to the use of ANC services in the study; furthermore, women who are not aware of their HIV status and do not attend ANC are more likely not to access prevention of mother to child transmission. Healthcare providers revealed that women were skeptical to use healthcare services because they were shy and embarrassed about unplanned pregnancies. They also revealed that sometimes pregnant women were just lazy, procrastinated in seeking medical attention and had an attitude that suggested they know it all, (ibid).

Research conducted to determine the barriers to utilization of FANC among pregnant women in Ntchisi District in Malawi demonstrated that, a negative trend in the proportion of women utilizing FANC services was recorded at below 30%, which had not been improving over the years, Banda (2018).

According to Sulaimon and Sanni, (2020), in the sub-Saharan region, only 52% of women received at least four ANC visits and study has also shown that apart from socioeconomic and demographic factors, other factors that influence ANC utilization include getting permission to visit health facility, unwillingness to visit health facility alone and distance to health facility. Further, records indicate that among the 15 countries that were considered as hot spots of maternal mortality, 8 were from sub-Saharan Africa and these countries include Somalia, Central Africa Republic, Democratic Republic of Congo, Chad, Guinea, Zimbabwe, Nigeria and Ethiopia. ANC utilization among women in sub-Saharan Africa has been below the global rate.

The low utilization of ANC has been linked to factors such as unplanned pregnancy, previous pregnancy complications, poor autonomy, lack of husband's support, increased distance to health facility, not having health insurance and high costs of services. There is a need to address the poor utilization of ANC by developing a maternal health service utilization model which would consider the different factors (ibid).

According to Mulondo (2020), a study in Limpopo province if South Africa revealed various sociocultural factors that contribute to under-utilization of ANC services and these are unplanned pregnancies because women in childbearing age are reluctant to use contraceptives for child spacing, high parity among women because of their belief in their own experience regarding pregnancy and childbirth, fear which is common amongst childbearing women who do not want to undergo permanent family planning methods such as tubal-ligation, culture and beliefs that prevent pregnant women from disclosing their pregnancy and making informed decisions regarding early initiation of ANC services.

According to Tadesse (2020), 303,000 maternal deaths occur globally due to pregnancy and childbirth related complications every year with 99% of them occurring in sub-Saharan Africa and Southern Asia. In low-income countries, the impact of containment and preparedness policies on maternal and new born health could be more pronounced. High quality and timely maternal health care services were unavailable, inaccessible and unaffordable for millions of women even before the emergence of COVID-19.

A study carried out in Ethiopia showed that fear of COVID-19 infection was significantly associated with an 87% reduction in full utilization of ANC. Many women were anxious about contracting the coronavirus and feared going to prenatal checks and some pregnant women stayed away from the services altogether (ibid).

According to Vork et al. (2017), ANC promotes the health of pregnant women and has been found to reduce the risk of adverse pregnancy outcomes, prenatal and infant mortality and morbidity. It also encourages skilled birth attendance for delivery and postnatal care as women who utilize ANC are more likely to use these services than the non-utilizers. Studies have used a variety of indicators to assess ANC utilization. This includes at least one visit, at least four visits, trimester timing of ANC visits, services received during ANC utilization and care provider type visited, however the quantity of contacts remains commonly used. Recently, indicators to enable the progressive realization of ANC targets have been proposed especially for low and middle-income country contexts like countries in sub-Sahara Africa (ibid).

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In Zambia, the past few decades have seen considerable progress towards the reduction of maternal and neonatal mortality. However, the mortality rates still remain considerably high with maternal mortality estimated at 398 deaths per 100,000 live births, neonatal mortality of 24 deaths per 1000 live births with factors such as limited access to, low utilization of skilled birth attendants being identified as contributing factors. Other factors that contribute to poor Maternal and Neonatal Health outcomes include delays in seeking care, delays in reaching care and delays in receiving adequate care, Banda (2017).

Therefore, the Government through the Ministry of Health has committed to scaling up interventions aimed at improving maternal and neonatal outcomes. It envisions a situation in which every pregnant woman will receive quality care throughout the pregnancy, childbirth and the postnatal period. The plan is to achieve this through a continuum of reproductive care and ANC strategy that provides a defined package of services across all levels of the health delivery system stratum. This will also include the strengthening of referral systems and feedback mechanisms between health facilities to improve continuum of care (ibid).

Access to quality nursing and midwifery care is essential to promote maternal and new born health and improve survival but underutilization of maternal healthcare services in limited resource settings is partly responsible for maternal deaths during pregnancy, childbirth or within a few weeks of giving birth. Although global progress in reducing maternal mortality is being made, immediate action is needed to eliminate preventable maternal mortality Biemba et al (2021).

Maternal mortality in Zambia is estimated at 183 deaths per 100,000 live births. Although the rates of maternal mortality seem to have reduced slightly compared to the findings of a similar study in 2018, maternal deaths are still relatively high in Zambia. Monthly data revealed that an average of 52 mothers died every month from August 2019 to June 2020, Phiri et al (2019 – 2020)

Particular emphasis is being laid on ANC as it is important for monitoring pregnancy and the reduction of the risk of morbidity and mortality for the mother and baby during pregnancy, delivery and the immediate postpartum period. This is based on the recognition that the pregnancy and antenatal period presents an opportunity in which focused care and interventions can be implemented to safeguard the health and wellbeing of the mother and the baby, Banda (2017).

The antenatal period is therefore ideal for the provision of integrated services that will contribute to better ANC designs and health systems strengthening; thus, improving maternal and neonatal outcomes in Zambia, WHO (2018).

A comprehensive guideline on routine ANC for pregnant women and adolescent girls lays emphasis on providing effective communication about psychological, biomedical, behavioral and socio-cultural issues, effective support including social, cultural, emotional and psychological support to pregnant women and adolescent girls in a respectful way. The development of these guidelines has been informed by extensive stakeholder consultations and research that revealed that a woman's experience of care is the key to transforming ANC and creating thriving families and communities. Therefore, the aim of these guidelines is to redesign

and realign health systems to provide pregnant women and adolescents with a positive pregnancy experience (ibd).

Despite the benefits of ANC care, younger pregnant women are less likely to use ANC services compared to older women. This has attributed to high deaths in Matero Township. According to the study conducted by ZAHSP (2016), it is indicated that the cause of maternal deaths among the pregnant women in Matero Township include, low utilization of ANC services and lack of knowledge among the pregnant women. There is also fear of humiliation and having to respond to unpleasant questions and procedures during ANC care especially among the pregnant teenagers, ZAHSP, (2016). A study conducted by Stekelenburg and Roosmalen (2018) indicated that there were 177 maternal deaths in Matero Township between the period of 2015 to 2019 The quality of ANC that pregnant women receive in Zambia continues to be poor despite several interventions. Research has shown that only 29% of women in Zambia receive high quality ANC. Low ANC quality has serious adverse effects on the health of pregnant women and contributes to the high number of maternal deaths. Zambia currently remains one of the countries with unacceptably high Maternal Mortality rates with 323 to 474 maternal deaths per 100,000 live births in 2014. The maternal mortality rate for Lusaka province has been increasing since 2013 with over 70% of maternal deaths in the province being recorded in Lusaka District Katemba et al (2018).

Although maternal and new born mortality is largely preventable, new born and maternal health in Zambia still remain poor with the remote and poorest populations being the most vulnerable and marginalized communities. In the Zambian rural, mothers usually face suboptimal care and underutilization of maternal health services; however, slow progress is being made to improve maternal and new born survival. Maternal mortality rate in Zambia decreased from 232 to 213 per 100,000 live births and infant mortality decreased from 45 to 42 per 1,000 live births in the period 2015 to 2017, Biemba et al (2021).

According to Yousra A. (2018), Zambia reported one of the highest maternal mortality rates in the world. The crude mortality rate was at 6.63 per 1000 people as of the year 2017 with a very high maternal mortality rate which was standing at 213 deaths per 100000 live births in the same year. The leading causes of these deaths were found to be excessive bleeding and indirect causes which led to the development of indirect health complications that ended in to death.

A study conducted found that factors such as type of place of residence, education, wealth, occupation, health insurance coverage, prenatal with doctor, midwife or nurse are associated with utilization of basic ANC in Zambia among women aged 15 to 49. Every pregnancy is unique on its own and has many potential risks that come with it. Maternal deaths can be avoided by providing good quality care to expectant mothers (ibid).

Choolwe et al (2017) conducted a multilevel analysis in the remote and poor rural marginalized populations of Zambia and it was found out that utilization of ANC by women in these communities was very low than averages at national level, which in tells the importance of contact with a skilled health provider even just once.

Most women in rural areas under utilize ANC services and maternity waiting homes provided for them to wait for delivery. Waiting homes are aimed at improving access to facility based

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skilled delivery. A study in rural Zambia indicate that most women appreciated the importance of waiting homes for them to be encouraged to access skilled birth attendance; however, factors such as women's lack of decision-making autonomy, prevalent gender inequalities, low socioeconomic status and socio-cultural norms inhibit them from utilizing maternal health services. Further, lack of funds to buy requirements for both the baby and themselves during delivery at the clinic, worries about who to remain with children at home, inadequate basic social and health care at waiting homes such as beddings, sleeping space, water, sanitary facilities as well as food and preparation of food prevent them even more from utilizing skilled maternal health services, Sialubanje et al (2015).

Meanwhile the same study was conducted in Kalomo district and a number of factors that positively contribute to low utilization of maternal health services were established and they included longer distances to nearest health centres, higher number of ANC visits, higher proportions of complications during ANC and women's perceptions of benefits they gain from staying in waiting homes for delivery, Sialubanje et al (2017).

In the same vein, another study was conducted in Chawama, kanyama and George health centres in Lusaka where it was found out that the utilization levels of labour and delivery were at 89% while non-utilization was at 11%. It was therefore, recommended that health providers continue to sensitise women on the importance of making early ANC bookings and complete their ANC visits so that they are helped on how to prepare for baby deliver, Banda (2016).

Pregnant Women in Child Bearing Age Make First ANC Visit at Matero Level One Hospital
Globally, a study in Peru indicates that antenatal cards revealed that 52.9% of pregnant women began their ANC in the first trimester. Compared to national guidelines only 42.1% attended appointments as per recommended gestational ages and none of the pregnant women received all recommended ANC services. Most women were informed about identifying complications in pregnancy and health and lifestyle topics. More 85% of women reported satisfaction with their ANC, Wynne et al (2020).

A study conducted in four countries including China on the utilization of ANC revealed that the majority of the women started ANC in the second and third trimester of their pregnancy as follows; 35.2% began ANC in the first trimester, 44.2% in the second trimester, and 20.6% in the last trimester, Ye et al (2019).

Meanwhile in India, a study evaluated factors associated with utilization of ANC services among adolescent pregnant women as well as adult pregnant women and further explored the determinants of ANC service utilization among pregnant adolescent women. It was indicated by the study that about 8 in 10 pregnant women registered their pregnancy, however only half of the women registered the pregnancy in the first trimester and received counselling from health providers. While in some rural parts of India such as Assam, the registration of pregnancy was as high as 80 %; registration in the first trimester was 50–60%. It was further observed that ANC utilization among pregnant adolescents was far much better than adult pregnant women, Fulpagare et al (2019).

Furthermore, other studies have reported that no difference has been noted between adolescents and adult pregnant women regarding the utilization of ANC services. The study

illustrated that education, wealth, utilization of socioeconomic support services, knowledge of family planning, and decisionmaking power by women are greatly associated with utilization of ANC services and favour pregnant adolescents, (ibid)

According to a study in Bangladesh, the percentage of pregnant women who attended the first ANC visit timely was 59%. While the ones that made four timely ANC visits were at 4.2%. Pregnant women from all socio-economic groups slowly changed from using public health facilities to private health facilities as they advanced. Women who made the first timely ANC visit were over 30 years of age, Pervin et al (2021).

In Africa, a cross-sectional descriptive study carried out in Kassala, Eastern Sudan identified that of the 90% of the women who participated in the study, 40.5% initiated ANC late and 37.4% initiated ANC in the second trimester, while 3.1% in the third trimester, Ali, Osman & Adam (2020).

A Systematic review by Ijeoma et al (2008 – 2018) on data for 74 studies in subSaharan Africa indicated that most studies revealed that socioeconomic status, urban residence, old age, low parity, being educated and having an educated partner, being employed, being married and Christian religion as factors influencing the attendance of ANC timely.

It was discovered in a study that was carried out in Sunyani municipality in Ghana that 77.1% of pregnant women started attending their ANC in their first trimester. Furthermore, the study found out some factors that influence low utilization of ANC as being marital status, knowledge about ANC and poor involvement of husbands ANC services in the area. Stephen (2021)

In Tigray's region of Ethiopia, timely initiation of ANC by pregnant women was as low as 27.5%. The study showed that pregnant women start their ANC visits after 16 weeks in to pregnancy which is very late, Gebresilassie (2019).

Despite having given ANC a significant recognition in reducing maternal mortality and morbidity, a number of pregnant women in sub-Saharan Africa still tend to start ANC late, UN (2018). The Ethiopia's demographic health survey for 2011 results showed that only 34 percent of women received ANC care from a trained health professional at least once for their last birth. As a result, each year large number of women in the child bearing ages (15-49 years) was dying from complications associated with pregnancy and childbirth.

In Zambia, the Central Statistical office (CSO, 2019) reported that mortality rates have remained so high in the recent years due to low first trimester ANC usage or incomplete ANC follow ups. According to the Zambia Demographic and Health Survey (ZDHS, 2013-2014), ANC coverage was higher in urban areas (99 %) than rural areas (94 %).

A study conducted to assess the influence of distance and level of service provision on ANC care utilization in rural Zambia revealed that while 1461 of 2405 rural mothers (61%) attended the recommended four or more visits, only 414 rural mothers (17%) attended ANC in the first trimester of pregnancy Kyei et al, (2019).

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According to Phiri (2020), doctors recommend that pregnant women make at least four ANC visits, unfortunately 64% only manage four visits. They also recommend that pregnant women start their ANC visits as soon as they discover that they are pregnant. It is further reported that bleeding is one of the major causes of maternal mortality in Zambia and pregnant women should not be reluctant to access ANC despite having had successful pregnancies before.
Nyambe et al (2016) conducted a ZDHS and it is explained in their study that most Zambian pregnant women make their first ANC visit late even though early ANC is very important. Results of the study showed proportions of late ANC bookings as 81% between 4th and 9th month, 56% between 4th and 5th month and 19% between 6th and 9th month. Most of the pregnant women who booked late for ANC were expecting their last-born children.

A study that was conducted in Tanzania and Zambia showed that Zambia has little more pregnant women of about 64% making four ANC visits at least than Tanzania. Out of 64%, 37% of women make their first ANC visit in the first trimester. Research that was carried out recently indicates that pregnant women in rural areas believed that healthcare providers would disrespect their beliefs and traditions which contribute to them being skeptical to utilize health services, Laisser (2022).

Number of Times Pregnant Women, Make Visits to Antenatal Clinic at Matero Level One Hospital

Globally, although the proportion of women attending ANC once during pregnancy has increased to 83% for the period 2007 to 2014, only 64% of pregnant women received the recommended minimum number of ANC visits worldwide. In Africa, over two - third of women (69%) have at least one ANC visit during pregnancy but majority do not attend the required minimum number of visits WHO (2015).

Globally, pregnancy and childbirth are significant events for women and their families even though they represent a period of heightened vulnerability for both women and their unborn babies (WHO, 2018). A study conducted in Nepal to explore the factors that influence ANC visit dropout at Government Health Facilities in Dhanusha District showed that 71.90% of respondents confirmed the availability of health staffs during time of ANC visit. But this was not enough to encourage pregnant women to complete at least 4 ANC visits during pregnancy, Devendra Raj Singh, and Trishna Jha, (2016).

In Africa, countries in Sub - Saharan Africa and Southern Asia cover approximately 86% (254000) of the estimated global maternal deaths in 2017, with sub - Saharan Africa alone accounting for about 66% (196000) and Southern Asia accounted for nearly 20% (58000). Results of a study conducted in Sub – Saharan Africa showed the prevalence of recommended ANC utilization of 58.53% with the highest recommended ANC utilization in the Southern Region of Africa of 78.86% and the low recommended ANC utilization in Eastern Regions of Africa at 53.39%, Tessema et al (2021).

According to Afaya et al (2020), 2017 Ghana Maternal Health Survey established that even though the majority of the women had good knowledge of ANC services, a good number of them did not complete the recommended number of ANC visits during a normal pregnancy.

Furthermore, in Africa, maternal mortality rates continue to be high, with many deaths as a result of complications related to pregnancy and childbirth Ronsmans and Graham (2016). While 85% of pregnant women received ANC care at least once with skilled health care providers worldwide, only 59% received at least four ANC visits in Sub-Saharan Africa, UNICEF (2019).

Maternal deaths are continuing to be significant in developing countries due to lack of health care service utilization during pregnancy and child birth, WHO and UNICEF (2018). Further, many women are prone to injuries associated with pregnancy and delivery, which may result in adverse consequences for both themselves and their families, Serdar et al (2018). According to Tadele and Abebaw, (2017), developing countries continued to account for 99% of global maternal deaths, in sub-Saharan Africa and South Asia alone accounting for 87%. Sub-Saharan Africa accounted for the highest maternal mortality ratio (MMR) than other regions representing 542 maternal deaths per 100,000 live births, Reuben et al. (2021). Kenya was among the 11 countries that accounted for 65% of maternal deaths that year, Chou et al. (2010).

In sub-Saharan Africa, maternal mortality levels have continued to remain unacceptably high although by 2015 maternal mortality had decreased by over 40% from the 1990 levels, UNICEF, (2017). Every day, preventable causes related to pregnancy and childbirth lead to deaths of over 800 women with 99% of these maternal deaths occurring in low and lower middle-income countries like Africa. Inadequate access to quality ANC contributes significantly to these preventable maternal deaths. As part of reproductive healthcare, ANC presents a unique and lifesaving opportunity for health promotion, disease prevention, early diagnosis and treatment of illnesses in pregnancy using evidence-based practices. Ali, Osman & Adam (2020). Women in developing countries have continued to die while giving birth mainly due inadequate utilization of ANC. The trend of maternal mortality in developing countries has been increasing and various international organizations have reported that an important factor related to maternal and infant mortality has been linked to lack of ANC Villar, et al, (2019).

In Nigeria, the utilization of ANC is still very low especially in the rural areas and the northern part of the country, majority of women who attend ANC do not attain the required number of visits recommended by WHO. This has resulted in high maternal mortality rate of over 500 per 100,000 live births accounting for 13% of the global maternal deaths as well as over 36,000 women die in pregnancy or at child birth each year, Nghargbu and Olaniyan (2019).

Furthermore, only a quarter of pregnant women-initiated ANC contacts in the first trimester with wider disparities across Nigerian states and across the background characteristics of the pregnant women. The level of achievement towards WHO recommendations to initiate ANC contacts during the first trimester was poor and was influenced by a number of factors. The main factors of the timeliness of ANC initiation include maternal age and education, spouse education, household wealth, the region of residence, ethnicity, and religion and birth order, Fagbamigbe et al (2021).

On the contrary, another research article in Makurdi, Benue State in Nigeria revealed that the level of utilization of ANC care and health facility delivery is actually higher than findings from many previous studies in resource constraint settings, Ishaku (2021).

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Following the Meta – analysis of articles on the effect of ANC utilization on postnatal care services utilization in African countries such as Ethiopia, Sudan and Zambia results revealed that the pooled estimate odds ratio of ANC found was statistically associated with postnatal care service use. Women who had utilized ANC for 1.53 times were more likely to have postnatal care service use compared with those who had not utilized ANC. ANC utilization has a positive effect on postnatal care service utilization and therefore full utilization of ANC can help reduce both maternal and neonatal morbidity and mortality, Geremew, Boke MM, Yismaw, (2020).

In a study on trends of ANC utilization in Tanzania showed that there was an increase in pregnant women who made one to three ANC visits during millennium development goals while there was a reduction in ANC visits of four or more, Abdon et al (2020). Even though Rwanda adopted WHO 2016 guidelines for pregnant women to visit ANC four times, it was discovered from a study that only 46% managed to meet the guidelines while 54% did not, Rurangirwa et al. (2017).

A study to assess the knowledge and utilization of ANC services by pregnant women at a clinic in Ekurhuleni, South Africa revealed that most of the respondents discovered their pregnancy in the first or second month. The results of the study showed that 56.7% of the pregnant women started ANC after the first three months and only 43.3% initiated ANC in the first trimester Matyukira, (2020).

In Zambia, a study conducted to examine barriers to health care access and utilization of ANC revealed that very few Zambian women manage to complete at least 8 ANC visits while most of them manage to initiate early ANC. Getting permission to visit health facilities, getting money for treatment, distance to the health facility and not wanting to go alone were barriers established from the study, Bright et al (2018).

The Zambia Demographic Health Survey (ZDHS 2013-14) report indicated that despite 94% of pregnant women completing at least one ANC visit, Maternal Mortality Ratio only declined from 591 deaths per 100,000 live births in 2007 to 398 deaths per 100,000 live births during the seven year-period preceding the survey, Villar, et al, (2019).

Pregnant women generally are expected to attend an average of four antenatal visits during pregnancy, and they are supposed to schedule their first prenatal appointment as soon as they think they are pregnant. Prenatal tests can provide valuable information about the baby's health. Doctors might offer ultrasound, blood tests, or other screening tests to detect fetal abnormalities, which if not corrected may lead to complications later. However, many of the pregnant women do not attend ANC in the first trimester, Muyunda et al (2016)

In accordance with ZDHS 2018, women who attended four or more ANC visits accounted for 64% which is an increase from 56% recorded in 2013 – 2014 ZDHS. When the 2018 ZDHS was conducted, ANC was regarded to be not enough if a woman had three or less ANC visits or if they did not start in the first trimester, Buser JM, Munro-Karmer ML, Veliz PT, Zhang X, Lockhart N, Biemba et al (2021).

METHODOLOGY

Study Site

The study was conducted at Matero clinic in Lusaka district, Zambia.

Map of Matero Township

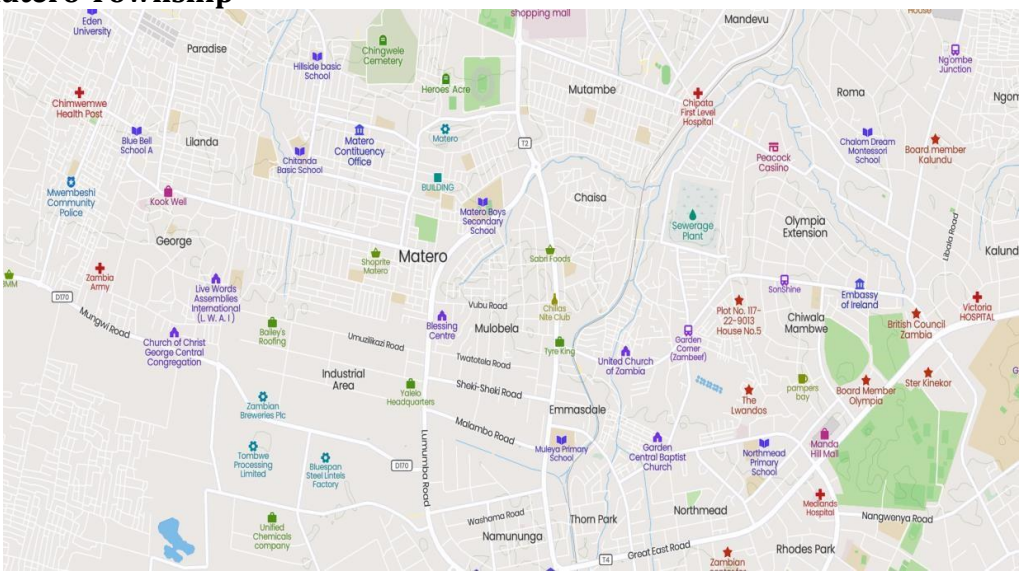

Figure 1: https://mapcarta.com/14160348/Map

Research Design

This was a facility based cross-sectional study carried out at Matero clinic in Lusaka District, Zambia. Quantitative and descriptive methods were used to generate information to describe the utilization of ANC among pregnant women at the health facility.

Source of Data

Data was collected from expectant women attending ANC the health facility.

Target Population

Matero clinic has an estimated 484 pregnant women in the year 2020. The sample for the study was calculated using the simple random sample size formula. From the target population of 484 pregnant women; the sample size was 219 and was rounded off to 220 pregnant women.

Sample Size

Matero clinic had an estimated 484 pregnant women in the year 2020 according to information that was obtained from the Lusaka District Health Office. The sample population for the study was calculated using the simple random sample size formula where ***N*** was the *population size*, ***n*** the *sample size* and ***e*** the *margin of sample error*, and 5% being the maximum accepted value. The margin of error is the amount of error one could expect to find, due to just chance, above or below the actual figure obtained in the study results. From the target population (N) of **484** pregnant. The sample size (n) was arrived at as follows:

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

$$\text{n} = 484 = 484/\ 1 + 484\ (0.0025) = 484/2.21 = \underline{\mathbf{219}}$$

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$$1 + (484)\ (0.05)^{2} \quad n = 220$$

Therefore, the sample size was rounded off to 220 pregnant women.

Sampling Method
Convenience sampling and non-probability sampling methods were used to identify research participants.

Inclusion and Exclusion Criteria
Only pregnant women seeking antenatal health care services were included in this study. Other women seeking others health services were excluded.

Research Instruments
Data for the study was collected using a questionnaire only and it contained mainly of close-ended questions and very few open-ended ones. The questionnaire was designed in the official language (English) for easy understanding by the research assistant. Each of the targeted participants were briefed about the purpose of the research and the free will to accept or object to participate in the study. Those who accepted were requested to sign a consent form before interview.

Ethical Consideration
Respondents were required to sign consent forms before data was collected after explaining the purpose of the study in details. Confidentiality of information was upheld, and respondents were not required to give out their names, thus it ensured anonymity of respondents. Customs and other traditional beliefs were taken into consideration, and respondents had rights to withdraw during the exercise. Ethic committee was taken into consideration to ensure that the study was within the principals of the committee.

Data Analysis
Data collected from the participants was analyzed using statistical package for social science version 25 (SPSS), and presented using descriptive statistics in form of percentages, charts etc.

PRESENTATION OF FINDINGS

Introduction
This chapter presents the findings of the study on establishing factors influencing low utilization of antenatal care services at Matero level one hospital of Lusaka District. The results have been presented tables and figures.

Response Rate

Table 2: Response rate

Items	Questionnaires Issued	Questionnaires Returned	Percentage
Pregnant women	220	220	100%
Total	220	220	100%

Therefore, the response rate was very good indicating 100%.

Age Groups

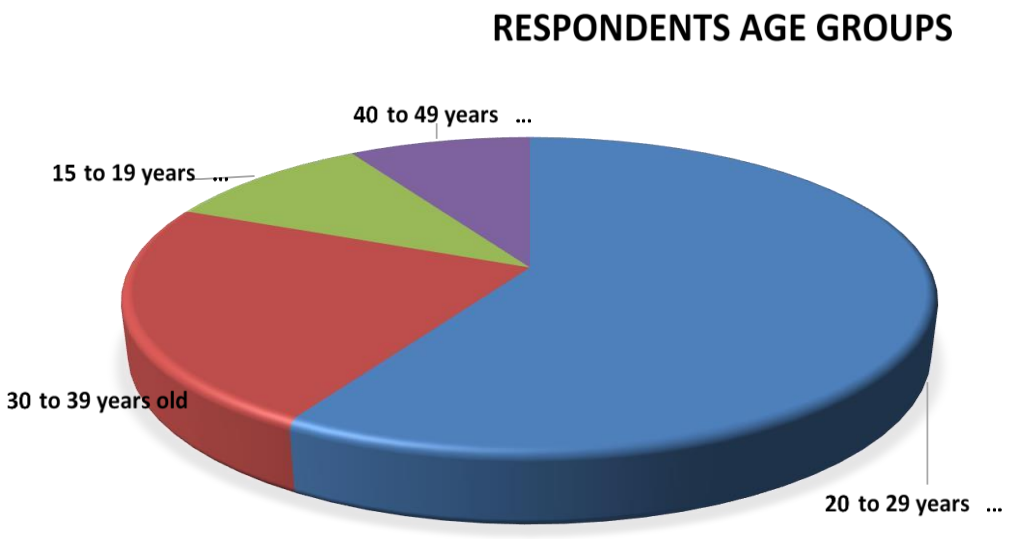

Figure 2: age groups

The figure shows that respondents in the age group 20 to 29 years old are represented by 51.4% representing 113 respondents. Age group 30 to 39 years old is represented by 26.4% representing 58 respondents, age group 15 to 19 years old is represented by 14.5 % representing 32 respondents and age group 40 to 49 years old is represented by 7.7% representing 17 respondents. The impression is that the age group between 20-29 years were the majority while the age group 40 to 49 years old were the minority.

Educational Background

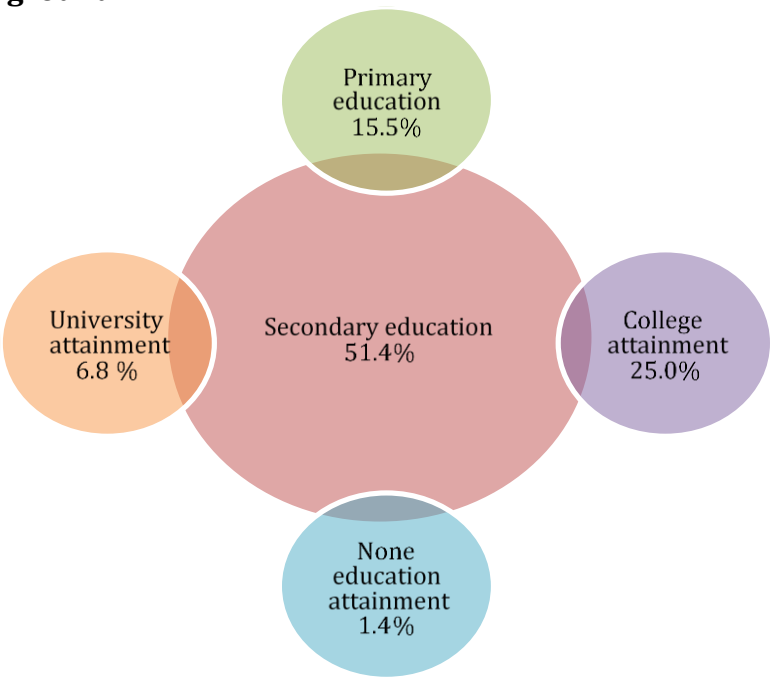

Figure 3: educational background

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Figure 2 shows secondary education attainment being represented by 51.4% representing 113 respondents, college attainment is represented by 25.0% representing 55 respondents, primary attainment is represented by 15.5% representing 34 respondents, university attainment is represented by 6.8% representing 15 respondents while those who have no any education background are represented by 1.4 % representing 3 respondents. The majority 51.4% attained secondary education while the minority had no educational background.

Occupation

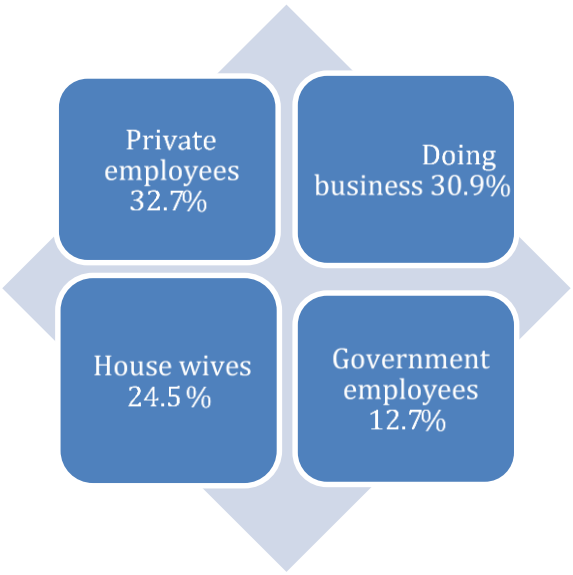

Figure 4: occupation

Respondents who are private employees are represented by 32.7% representing 72 respondents, those who are doing business are represented by 30.0% representing 66 respondents, house wives are represented by 24.5% representing 54 respondents and those that are government employees are represented by 12.7% representing 28 respondents. The majority were private employees while government employees were the minority.

Residential Area

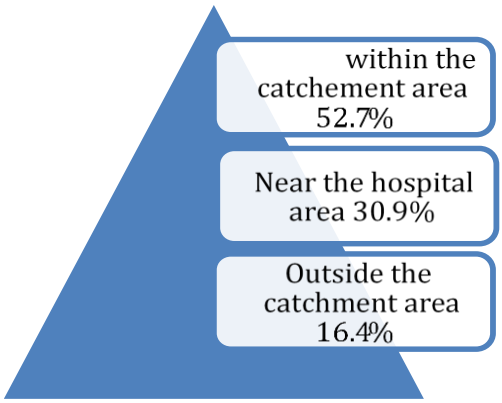

Figure 5: residential area

Respondents who stay within the catchment area are represented by 52.7% representing 116 respondents, near the hospital are represented by 30.9% representing 68 respondents and those who stay outside the catchment area are represented by 16.4% representing 36 respondents. Respondents within the catchment area were the majority and those who stay outside the catchment area were the minority.

Mode of Transport

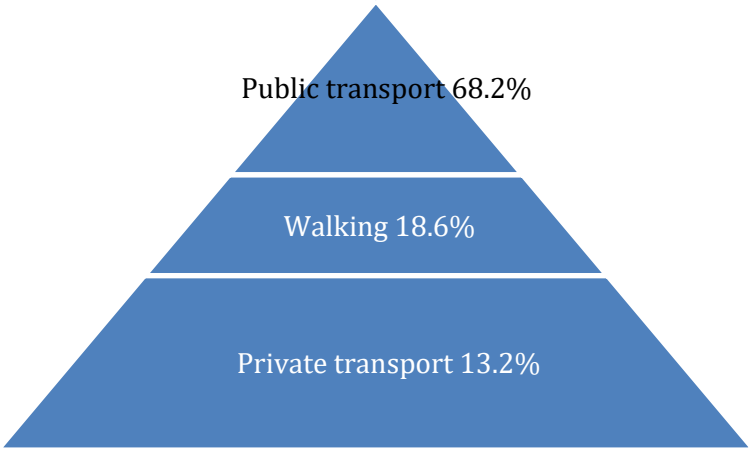

Figure 6: mode of transport

Respondents who use public transport to the hospital are represented by 68.2% representing 150 respondents, those who walk are represented by 18.6% representing 41 respondents and those who use private transport are represented by 13.2% representing 29 respondents. This demonstrates that majority of the respondents use public transport for them to get to the health facility and be able to utilize antenatal care services while the minority use private transport.

Marital Status

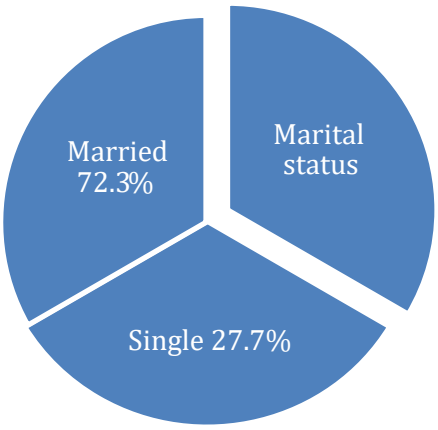

Figure 7: marital status

Respondents who are married are represented by 72.3% representing 159 respondents and those who are single are represented by 27.7% representing 61 respondents. Majority of the respondents were married.

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Religion

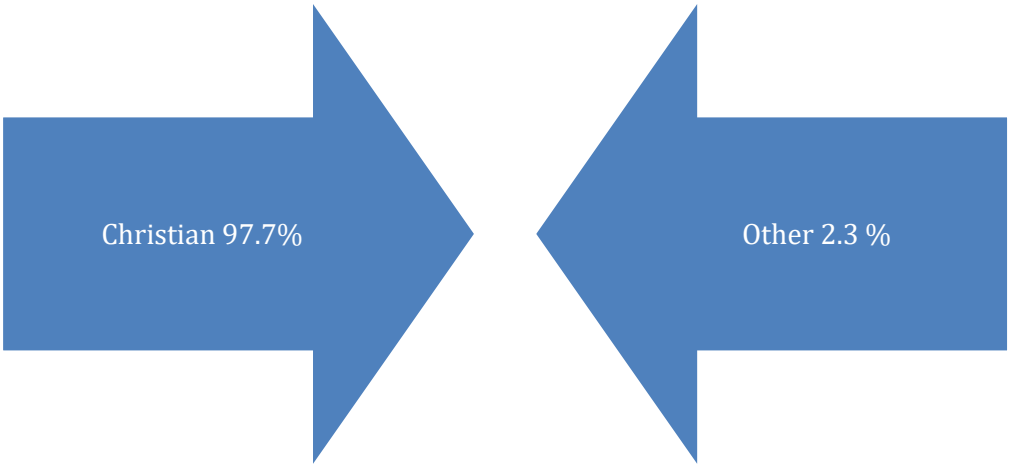

Figure 8: religion

Respondents in figure 7 who are Christians are represented by 97.7% representing 215 respondents while those of other religions are represented by 2.3% representing 5 respondents. As represented in the figure above, most respondents are Christian by religion which shows that most people are Christians and are not discouraged from utilizing antenatal care services as other religions would do.

Table 4.10: Number of previous pregnancies

No	Description	Frequency	Percentage
1	Never been pregnant	3	1.4
2	One Pregnancy	73	33.2
3	Two Pregnancies	63	28.6
4	Three Pregnancies	43	19.5
5	Four Pregnancies	23	10.5
6	Five Pregnancies	7	3.2
7	More than five Pregnancies	8	3.6

The table above shows the number of pregnancies respondents had previously with the highest being 73 respondents who had been pregnant once before as represented by 33.2%, followed by 63 respondents represented by 28.6% who had been pregnant twice before, followed by 43 respondents represented by 19.5% who had been pregnant three times before, then 23 respondents represented by10.5% who had been pregnant four time before, followed by 8 respondents represented by 3.6% who had been pregnant five times before, followed by 7 respondents represented by 3.2% who had been pregnant for more than five times before and 3 respondents represented by 1.4% who had never been pregnant before.

Table 4.11: Number of current pregnancy

Number of Pregnancy	Frequecny	Percentage
1	62	28.2
2	46	20.9
3	47	21.4
4	36	16.4

5	15	6.8
6	5	2.3
7	6	2.7
8	3	1.4

The table above indicates the number of current pregnancy each respondent was carrying at the time of data collection with 62 respondents being pregnant for the first time represented by 28.2%, followed by 47 respondents being pregnant for the third time represented by 21.4%, followed by 46 respondents being pregnant for the second time represented by 20.9%, followed by 36 respondents being pregnant for the fourth time represented by 16.4%, then followed by 15 respondents being pregnant for the fifth time represented by 6.8%, followed by 6 respondents being pregnant for the seventh time represented by 2.7%, followed by 5 respondents being pregnant for the sixth time represented by 2.3% and 3 respondents being pregnant for the eightieth time represented by 1.4%.

Utilizing Antenatal Care Clinic Adequately

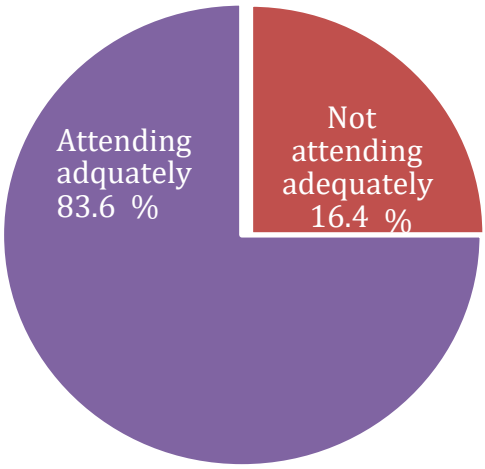

Figure 9: utilizing antenatal care clinic adequately

Respondents who utilize antenatal care services adequately are represented by 83.6% representing 184 respondents while respondents who do not utilize antenatal care services are represented by 16.4% representing 36 respondents.
This implies that most respondents do utilize antenatal care services adequately.

Table 4.13: Reasons why some respondents did not utilize ANC adequately

No	Description	Frequency	%
1	Pregnant for the first time	7	7.5
2	Had challenges with long distances to the facility	3	1.5
3	Feeling fine and thought it not necessary	2	1
4	Challenges with transport money	2	1
5	Had miscarriages	2	1
6	Busy with work	1	0.5
7	Was shy	1	0.5
8	Not yet used	1	0.5

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9	Lack of proper care from health providers	1	0.5
10	Attended only when she was not feeling well	1	0.5
11	Saw a herbalist most times	1	0.5

Table 4.14: Some respondents utilized ANC adequately

No	Description	Frequency	%
1	Utilized ANC adequately	198	85

In the table above, it is indicted that some respondents representing 15% did not utilize ANC adequately due to reasons established and they included: 7 respondents were pregnant for the first time representing 7.5%, three respondents had challenges with long distances to the facility representing 1.5%, two respondents were feeling fine and thought it not necessary representing 1%, two respondents had challenges with transport money representing 1%, two more respondents had miscarriages representing 1%, one respondent was busy with work representing 0.5%, one respondent was shy representing 0.5%, another one was not yet used representing 0.5%, one respondent did not attend ANC adequately due to lack of proper care from health providers representing 0.5%, another respondent only attended when she was not feeling well and one respondent saw a herbalist most times representing 0.5%. Meanwhile, table 4.14 shows other respondents who utilized ANC adequately representing 85%.

Were there Challenges in Utilizing ANC Adequately?

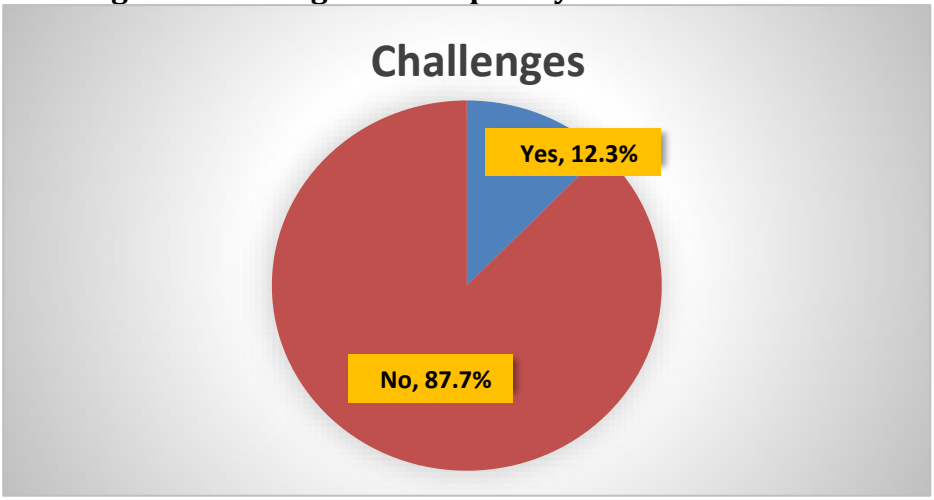

Figure 10: were there challenges in utilizing ANC adequately

Figure 10 demonstrates that 87.7% of respondents did not have challenges representing 193 respondents while 12.3% of respondents had challenges representing 27 respondents.

Table 4.16: Challenges for not utilizing ANC adequately by some respondents

No	Description	Frequency	%
1	Different challenges	16	8%
2	Transport challenges	4	1.9%
3	Challenges with long distances	3	0.5%
4	Was staying far from the hospital	1	0.5%

Table 4.17: Some respondents had no challenges

No	Description	Frequency	%
1	Had no challenges in utilizing ANC adequately	196	89.1

The table above shows 24 respondents who had challenges for not utilizing ANC adequately representing 10.9%. 16 respondents had different challenges each representing 8%. Challenges included fearing to test for HIV, lack of male involvement, some were young and scared, and so on. Four respondents had transport challenges representing 1.9%, three respondents had challenges with long distances to the hospital representing 1.5%. Table 4.17 shows respondents who had no challenges representing 89.1%.

Does Tradition, Culture, Attitude, Environment or Population Some of The Factors Causing Most Pregnant Women Not to Utilize Antenatal Clinic?

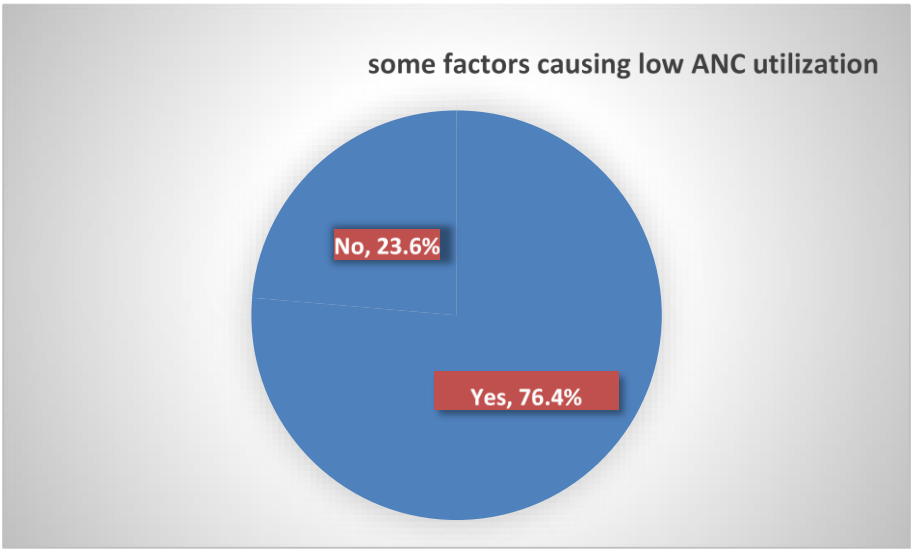

Figure 11: Does tradition, culture, attitude, environment or population some of the factors causing most pregnant women not to utilize antenatal clinic?

The figure above shows that 168 respondents agree that tradition, culture, environment or population are some of the factors causing most pregnant women not to attend ANC clinic representing 76.4% while 52 respondents do not think so representing 23.6%.

Table 4.19 In your own opinion, what do you think stops most pregnant women from utilizing antenatal adequately?

No	Description	Frequency	%
1	Avoiding long ques and congestion	25	12.5%
2	Afraid of tests and medication	30	15%
3	Bad attitude from health personnel	20	10%
4	Negative attitude towards hospitals	17	8.5%
5	Ashamed of their age (minors)	8	4%
6	Influence by traditions	14	7%
7	Lack of knowledge about antenatal	9	4.5%
8	Lack of male involvement	11	5.5%

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9	Lack of proper health facilities	10	5%
10	Myths and misconceptions	22	11%
11	Negative influence from the community	26	13%
12	Long distances to the facility and transport	28	14%

Table 4.19 above shows divergent opinions from respondents starting with those who said some pregnant women do not utilize ANC adequately due to fear of tests and medication, these were 30 respondents representing 15%, 28 respondents said because of long distances to the facility and transport representing 14%, 26 respondents said due to negative influence from the community representing 13%, 25 respondents said due to long ques and congestion at the hospital representing 12.5%, 22 respondents said it is because of Myths and misconceptions representing 11%, 20 respondents said because of bad attitude from health personnel representing 10%, 17 respondents said because of negative attitude towards hospitals representing 8.5%, 14 respondents said because of influence by traditions representing 7%, 11 respondents said because of lack of male involvement representing 5.5%, 10 respondents said because of lack of proper health facilities representing 5%, 9 respondents said because of lack of knowledge about antenatal representing 4.5% and 8 respondents said because of feeling ashamed of their age (minors) representing 4%.

When are you Supposed to Start Utilizing Antenatal Clinic?

Figure 12: When are you supposed to start utilizing antenatal clinic

The figure above presents responses by respondents, 206 respondents said pregnant women should start ANC in the first trimester representing 96.6% while 14 respondent said ANC should start in the second trimester representing 6.4%.

When did you Start Utilizing Antenatal Clinic?

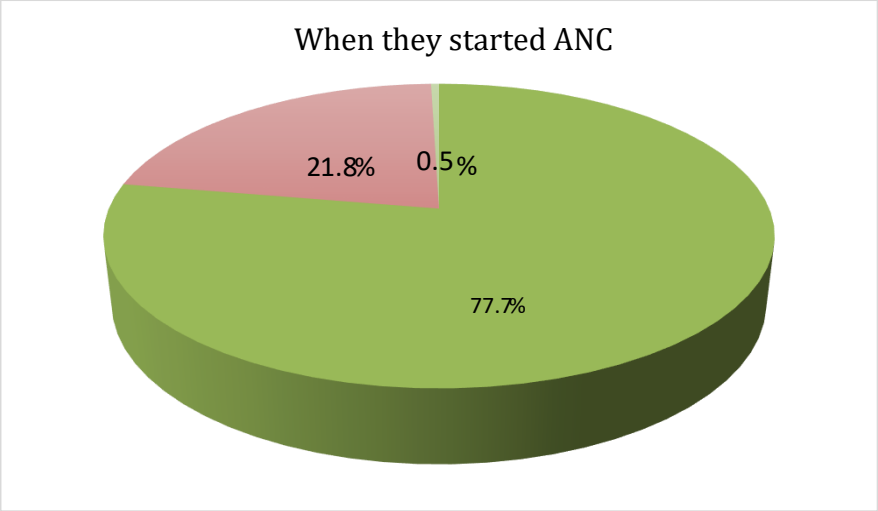

Figure 13: When did you start utilizing antenatal clinic

In figure 13, 171 respondents started ANC in the first trimester representing 77.7%, 48 respondents started ANC in the second trimester representing 21.8% and 1 respondent started ANC in the third trimester representing 0.5%.

From your Answer Above, Do You Think You Started at The Right Time?

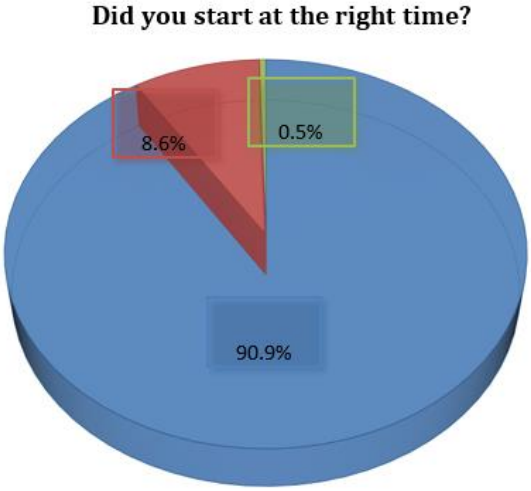

Figure 14: From your answer above, do you think you started at the right time

In figure 14, 200 respondents agreed that they started at the right time representing 90.9%, 19 respondents said they did not start at the right time representing 8.6% while 1 respondent was not sure representing 0.5%.

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If Not to Question 3, Why

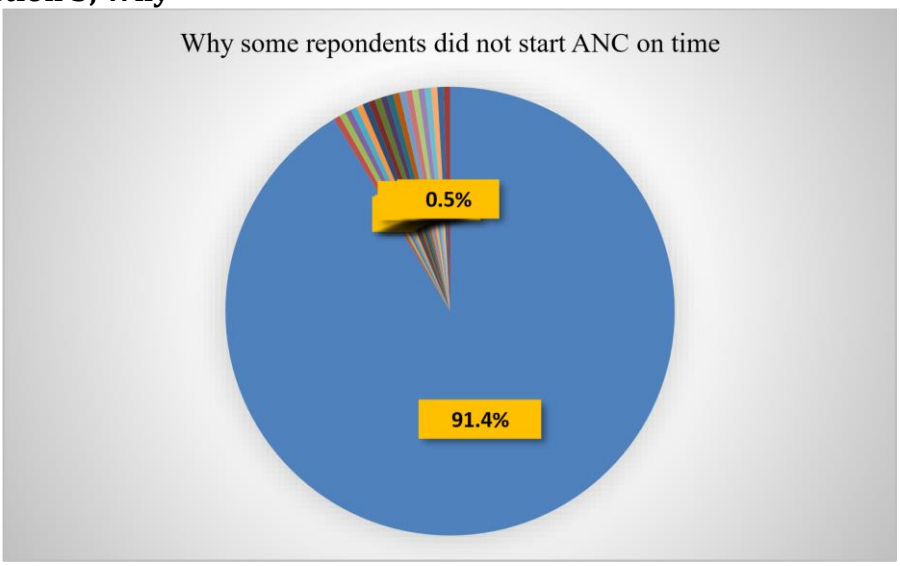

Figure 15: If not to question 3, why

In this figure, 201 respondents agreed that they started utilizing ANC on time representing 91.4% while 19 respondents said they did not utilize ANC on time due to different reasons such as one did not know she was pregnant, one lost her husband, one has travelled, one was not sure if she was pregnant, lack of information, busy at work and so on. These represent 0.5% each.

How Many Times are You Supposed to Utilize Antenatal Clinic?

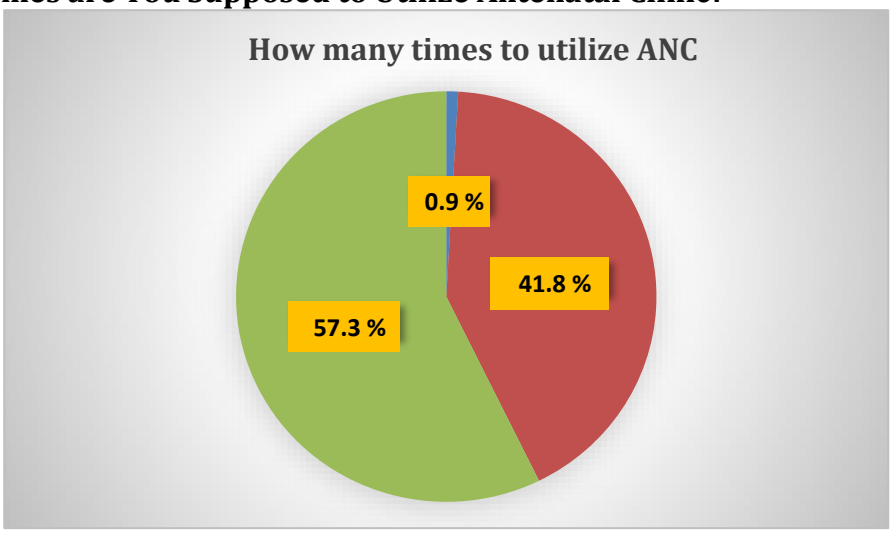

Figure 16: How many times are you supposed to utilize antenatal clinic

Figure 16 explains that 126 respondents said they are supposed to utilize ANC eight times representing 57.3%, 92 respondents said five times representing 41.8% and two respondents said three times representing 0.9%.

Table 4.25: How many times did you utilize ANC in your previous pregnancies

No	Frequency	No of Visits	Percentage

1	21	0	9.5
2	1	1	0.5
3	8	2	3.6
4	15	3	6.8
5	20	4	9.1
6	57	5	25.9
7	24	6	10.9
8	26	7	11.8
9	35	8	15.9
10	1	9	0.5
11	12	No response	5.5

In the table above, 57 respondents utilized ANC five times representing 25.9%, 35 respondents utilized eight times representing 15.9%,26 respondents utilized seven times representing 11.8%, 24 respondents utilized 6 times representing 10.9%, 21 respondents did not utilize representing 9.5%, 20 respondents utilized four times representing 9.1%, 15 respondents utilized three times representing 6.8%, 8 respondents utilized twice representing 3.6%, one respondent utilized nine times representing 0.5% and another respondent utilized once representing 0.5%. Meanwhile, 12 respondents did not respond representing 5.5%.

Table 4.26: How many times have you utilized ANC in your current pregnancy?

No	Frequency	No of Visits	Percentage
1	1	0	0.5
2	17	1	7.7
3	66	2	30.0
4	69	3	31.4
5	30	4	13.6
6	17	5	17.7
7	10	6	4.5
8	9	7	4.1
9	1	8	0.5

Table 4.26 illustrates that 69 respondents had utilized ANC three times at the time of data collection representing31.4%, 66 respondents utilized twice representing 30.0%, 30 respondents utilized four times representing 13.4%, 17 respondents utilized five times 17.7%, 17 other respondents utilized once representing 7.7%, 10 respondents utilized six times representing 4.5%, 9 respondents utilized seven times representing 4.1%, one respondent utilized 8 times representing 0.5% and another one respondent never utilized before representing 0.5%. According to the information gathered from Matero Level One Hospital, only about 10 % of pregnant women utilizing antenatal care services at the facility managed to make five visits while the rest only make three to four visits.

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Major Factors Established as Causes of Low Utilization of Antenatal Care Services at Matero Level One Hospital

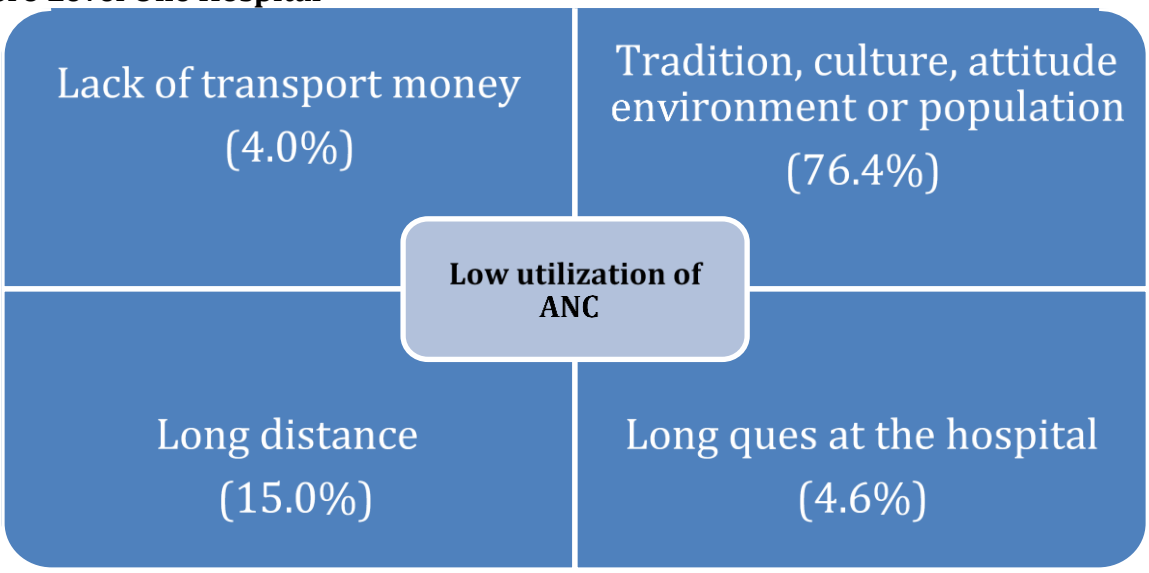

Figure 17: Major factors established as causes of low utilization of antenatal care services at Matero level one hospital

Figure 17 illustrates established major factors of low utilization of ANC as being tradition, culture, attitude, environment or population which is represented by 76.4% representing 169 respondents, long distance being represented by 15.0% representing 33 respondents, long ques at the hospital being represented by 4.6% representing 10 respondents, and lack of transport money being represented by 4.0% representing 8 respondents. The results indicate that there is more to do with tradition, culture, attitude, environment or population as to why some respondents do not utilize antenatal care services adequately.

Therefore, in comparison with the study objectives which include determining social demographics associated with low level utilization of ANC services among pregnant women at Matero Level One Hospital, establishing factors that influence low levels of utilization of ANC by pregnant women at Matero Level One hospital, determining when pregnant women in child bearing age between 15 to 49 years make their first ANC utilization at Matero Level One Hospital and ascertaining the number of times pregnant women make visits to antenatal clinic at Matero Level One hospital; lack of transport money, tradition, culture, attitude environment or population, long ques at the hospital and long distance to the hospital were established as major factors contributing to low utilization of ANC by some pregnant women. Meanwhile, as regards to when pregnant women make their first visit to ANC and how many times they visit ANC, it was established that most pregnant women utilize ANC adequately which implies that they start at the right time and make adequate utilization of ANC. It was also established that most pregnant women have managed to make 3 to 8 ANC visits before they deliver.

DISCUSSION OF THE FINDINGS

Introduction

The findings of this study are discussed in line with the objectives which include determining social demographics associated with low level utilization of ANC services among pregnant women at Matero Level One Hospital, establishing factors that influence low levels of utilization

of ANC by pregnant women at Matero Level One hospital, determining when pregnant women in child bearing age between 15 to 49 years make their utilization of ANC visit at Matero Level One Hospital and ascertaining the number of times pregnant women make visits to antenatal clinic at Matero Level One hospital.

This study established that the age group between 20-29 years were the majority at 51.4% while the age group 40 to 49 years old were the minority at 7.7%, probably because most women in this age group stop having children and so the few that fall pregnant feel out of place when they visit ANC. However, there was the 15 to 19 years old who were at 14.5% and the reasons established for not utilizing ANC were that they fear being bullied because they are teenagers, they are shy and they are not used to it. According to the study conducted by Bwalya et al, (2018) in Matero also found similar challenges that adolescents aged between 12 to 19 years face. They found barriers to accessing health services as being poor attitudes and behavior of some older pregnant women and health care providers towards the adolescents.

ZAHSP (2017) indicates that despite the benefits of ANC care, younger pregnant women are less likely to use ANC services compared to older women and this has attributed to high deaths in Matero Township. It is further indicated in the study that there is also fear of humiliation and having to respond to unpleasant questions and procedures during ANC care especially among the pregnant teenagers.

With regard to educational background, findings in figure 2 indicate that the majority of respondents 51.4% attained secondary education while the minority 1.4% had no educational background. This explains the reason why most pregnant women utilize ANC because they have some knowledge on health issues.

Some studies had found similar results on education as it being a contributing factor towards pregnant women utilizing ANC. A study in Sub-Saharan Africa established some determinants of women who did not meet the recommended ANC utilization and among them was low education levels, (Tessema et al 2021).

Other studies that show that education contributes to pregnant women utilizing ANC include a study conducted in Zambia according to Biemba et al (2021) which illustrates that women who attained secondary education were more likely to receive high quality ANC compared to those that attained primary education. Another study conducted in Kenya, Malawi, and Nigeria, Biemba et al (2021) showed that women's education level has an effect on the quality of ANC.

A study conducted in tribal area of Madhya Pradesh, India, established that education of a mother and knowledge of a mother about the things needed for ANC were important factors that contribute greatly towards the full utilization of ANC services in tribal area, Sharma et al (2019). According to Yousra A. (2020), a study conducted in Zambia found that factors such as education among others is associated with utilization of basic ANC among women aged 15 to 49.

Fulpagare et al (2019) reports that other studies have reported that no difference has been noted between adolescents and adult pregnant women regarding the utilization of ANC services. The study illustrated that factors such as education are greatly associated with

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utilization of ANC services and favour pregnant adolescents. This could be because both adolescents and adults face the same challenges and adolescents are favoured because they more vulnerable.

On occupation, figure 3 explains that the majority 32.7% were private employees while government employees were the minority at 12.7%. There were more house wives than government employees. A Systematic review by Ijeoma et al (2008 – 2018) on data for 74 studies in sub-Saharan Africa indicated that most studies revealed that socioeconomic status, being employed are factors influencing the attendance of ANC timely.

A study in rural Zambia reports that lack of funds to buy requirements for both the baby and themselves during delivery at the clinic is among contributing factors to lo utilization of ANC Sialubanje et al (2015). This shows that pregnant women in rural areas have no sources of income and cannot afford baby needs and hence they decide to deliver from their homes. Another study conducted found that factors such as wealth, occupation, are associated with utilization of basic ANC in Zambia among women aged 15 to 49 Yousra A. (2020). The low utilization of ANC has been linked to factors such as high costs of services, Sulaimon and Sanni, (2020). Health services maybe free but because the government is unable to fully provide all the medical supplies such as disinfectants, gloves, ambilocal code clumps, pregnant women have to provide for themselves. However, it becomes a challenge if pregnant women have no income to afford all the supplies needed for baby delivery. A study conducted in Zimbabwe rural established that even though maternity care is free in Zimbabwe, women in the study did not perceive maternal healthcare to be free as they had to pay out of their pocket for various healthcare related services; besides women have to provide their own food when they use maternity waiting facilities, Mutowo et al (2021).

However, occupation is one of the factors established that scored lowest in this study implying that it does not really influence low utilization of ANC by pregnant women at Matero level 1 hospital. This could be because most people are venturing into small businesses that sustain them even if they are not employed.

Furthermore, on social demographics, the majority of respondents represented by 52.7% resided within the catchment area while the minority of respondents represented by 16.4% resided outside the catchment areas. This is shown in figure 4. Figure 5 indicates that the majority of respondents used public transport represented by 68.2% and the minority used private transport represented by 13.2%. In figure 6, it is revealed that the majority of respondents being represented by 72.3% were married and the minority being represented by 27.7% were single.

Religion was also one of the social demographic factors established that scored highest in relation with pregnant women utilizing ANC. It was established that majority of respondents being represented by 97.7% were Christians which is known to encourage people utilize health services than other religions being represented by 2.3% as shown in figure 7. A Systematic review by Ijeoma et al (2008 – 2018) on data for 74 studies in sub-Saharan Africa also indicated that Christian religion is one of the factors influencing the attendance of ANC timely.

The second objective looked at establishing factors influencing low levels of ANC utilization at Matero hospital and this study firstly established how many pregnancies each respondent had previously as indicated below.

The majority of respondents were pregnant once while the minority were never pregnant before, others were pregnant for the eightieth time.

Some respondents utilized antenatal care services adequately while some did not and the reasons where that the majority were pregnant for the first time and the minority preferred to see a herbalist doctor most times.

Whether or not respondents had challenges that stopped them from utilizing ANC, the majority said they did not have challenges and the minority had challenges. These challenges included fearing to test for HIV, lack of male involvement, some were young and scared accounting for the majority. The minority had challenges with long distances to the hospital. Mutowo et al (2021) too found that lack of awareness on the importance of HIV testing may be one of the reasons why women fear HIV testing which is a barrier to the use of ANC services.

The majority of respondents agreed that tradition, culture, environment or population are some of the factors causing most pregnant women not to attend ANC clinic while the minority did not think so.

Furthermore, divergent opinions from respondents regarding why some pregnant women do not utilize ANC adequately said it is because of feeling ashamed of their age as they are minors. In Africa, a study conducted in Zimbabwe rural established factors leading to low utilization of ANC and they included maternal healthcare system, maternal healthcare user, and social support system and belief systems. Women felt not being treated with respect and long waiting times were deterrents to accessing healthcare, Mutowo et al (2021).

The third objective was looking at when do pregnant women make their first visit to the hospital to utilize ANC Responses by respondents regarding when they should start ANC, the majority said pregnant women should start ANC in the first trimester the minority said ANC should start in the second trimester.

Respondents were responding as to whether or not they started ANC at the right time and the majority agreed that they started at the right time while the minority were not sure.

Respondents were also answering to the question as to whether or not they started ANC on time in accordance with what they thought and majority of respondents agreed that they started ANC on time while the minority did not start on time.

This study established that most pregnant women started their first visit in the first trimester while others started in the second trimester and utilize ANC adequately which implies that they start at the right time and make adequate visits to ANC. This could be attributed to many strategies and interventions such as encouraging male involvement, compulsory testing for HIV and STIs, health talks at the health facilities, encouraging early initiation of ANC and so on, which our government has put in place to reach out to the people on the importance of utilizing

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ANC adequately and slowly peoples mind sets are changing towards appreciating these interventions. However, some respondents indicated that they did not utilize ANC adequately because they discovered late that they were pregnant. While others were pregnant for the first time and some were visiting ANC for the second and third time.

There are other studies that have been conducted in line with this objective and they include Sulaimon and Sanni, (2020) who found that in the sub-Saharan region, only 52% of women received at least four ANC visits. According to Wynne et al (2020), a study in Peru indicates that antenatal cards revealed that 52.9% of pregnant women began their ANC in the first trimester. Meanwhile in India, a study indicated that about 8 in 10 pregnant women registered their pregnancy, however only half of the women registered the pregnancy in the first trimester and registration in the first trimester was 50–60%, Fulpagare et al (2019).

According to Nyambe et al (2016), their study explains that most Zambian pregnant women make their first ANC visit late even though early ANC is very important. Results of the study showed proportions of late ANC bookings as 81% between 4th and 9th month, 56% between 4th and 5th month and 19% between 6th and 9th month. Most of the pregnant women who booked late for ANC were expecting their last-born children.

The fourth objective was looking at the number of times pregnant women visit the ANC Majority of respondents said they are supposed to visit ANC eight times and the minority 92 said three times.

Further, majority of respondents said they visited ANC five times while the minority visited once. Majority of Respondents had visited ANC in their current pregnancies three times while the minority had visited eight times.

This study therefore, established that the highest number of times respondents utilized ANC was 8 while the lowest was 3.

Other studies such as Laisser (2022), explains in a study that was conducted in Tanzania and Zambia that Zambia has little more pregnant women of about 64% making four ANC visits at least than Tanzania. Out of 64%, 37% of women make their first ANC visit in the first trimester. WHO (2015), states that although the proportion of women attending ANC once during pregnancy has increased to 83% for the period 2007 to 2014, only 64% of pregnant women received the recommended minimum number of ANC visits worldwide. It further explains that In Africa, over two - third of women (69%) have at least one ANC visit during pregnancy but majority do not attend the required minimum number of visits.

Other factors established to contribute to low utilization of ANC by pregnant women at the hospital included lack of support by spouses, fear of blood test, long processes at the hospital, lack of knowledge unfriendly treatment by health personnel and laziness. It was also established that most of the respondents stay within the catchment area and most of them use public transport to get to the hospital.

Other studies that have found similar factors influencing low ANC utilization as the ones mentioned above include a study in Nigeria by Nghargbu and Olaniyan (2019), which concluded

that factors such as distance and transport to health facilities, residence, religion, are significant in ANC utilization. Alanazy and Brown, (2020) report states that other factors include lack of transport as women depend on their men for their movements as well as long waiting time at the clinics, this confirms that there is need to address these issues. Kennedy et al (2020) in their study also found long distance to the health facility as one contributing factor influencing low ANC utilization.

CONCLUSION AND RECOMMENDATIONS

Conclusion

Results of this study show that 83.6% of the respondents utilize antenatal care services adequately at Matero level 1 hospital and according to the them utilizing antenatal care services adequately meant attending 6 visits. It was established during the study that in the past years, ANC utilization levels at the hospital were low with the highest number of ANC visits being at 5. This study's findings are that most pregnant women attended ANC 3,4 and 5 times centrally to WHO of 8 contacts.

ANC utilization has slightly increased ever since the facility was upgraded to a level one hospital and because it is a one stop center for all ANC services, pregnant women no longer go to small health facilities. This has drawn even pregnant women outside the catchment area to utilize ANC services at the hospital due to better and improved service offered. However, there is need to push some more so that most pregnant women can manage 8 ANC visits.

Therefore, according to this study, factors that contribute to low ANC utilization (non-completion of the recommended 8 visits) at Matero level one hospital were tradition, culture, attitude, environment or population, long distance, long ques at the hospital and lack of transport money.

Recommendations

1. Government should continue with information dissemination regarding ANC so that more people can change their mind set about tradition and cultural myths surrounding pregnancy.
2. Government should also consider increasing health personnel at antenatal section to better manage long ques at the hospital.
3. Furthermore, government should consider making CDF process less complicated so that many more people can benefit and have income generation to reduce issues of lack of transport money to the hospital.

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APPENDICES

[1] Plan of Work and Time Schedule

ACTIVITY	SEP 2022	OCT 2022	NOV 2022	DEC 2022	JAN 2022	FEB 2022	MAR 2022
Proposal writing.							
Proposal presentation and submission							
Ethical approval Cavendish							
Ethical application ethics committee of Zambia							
Data collection and Data analysis							
writing of thesis							
Submission, collection and proof reading							
Final Submission							

[2] Budget to Conduct A Study

CATEGORY/ITEM	COST(K)
Questionnaire printing	500
Data collectors' allowances (4)	4500
Stationary (pens, folder, ruler)	500
Transport	1500
Report printing	500
Contingency fund	700
GRAND TOTAL	**K8,900**

[3] National Health Research Authority
Lot No. 18961/M, off Kasama Road, Chalala, P.O. Box 30075, LUSAKA
Tell: +260211 250309 | Email: znhrasec@nhra.org.zm | www.nhra.org.zm

Ref No: NHRA000006/09/02/2023 Date:9th February 2023
The Principal Investigator,
Ms. Kasikili Selina Naomi
CAVENDISH,
Lusaka, Zambia.

Dear Ms Kasikili,
Re: Request for Authority to Conduct Research
The National Health Research Authority is in receipt of your request for ethical clearance and authority to conduct research titled **"Investigating Factors Influencing Low Levels of Utilisation of Antenatal Services Among Pregnant Women at Matero First Level Hospital - Lusaka District, 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 bi-annually 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,
National Health Research Authority
Ms. Sandra Chilengi-Sakala,
Acting Director/Chief Executive Officer

[4]. Participants' Information

SCHOOL OF MEDICINE

Address of ethical issues (rights, risks, benefits, compensation, confidentiality

Dear participants
My name is **Selina Naomi Kasikili.** I am a student at Cavendish University pursuing Masters in Public Health. I am conducting a study concerning Antenatal Care Services in Matero.

The purpose of this research is to investigating the level of utilization of antenatal care services among pregnant women at Matero clinic in Lusaka district, Zambia.

Do not feel pressured to respond, if you are uncomfortable to conduct this interview, you are free to decline.

Therefore, confidentiality of your information will be upheld, and you will not be required to give out your names, thereby ensuring anonymity. You have the right to withdraw during the exercise when not comfortable. Interviews will be discontinued immediately you feel uneasy to avoid tension and anxiety which could be risky for you.

- Do not provide your name
- Tick the code corresponding to your response
- Feel free to ask where you are not clear
- If the interview is against your religion, culture or tradition, feel free to discontinue with the interview.

[5]. Consent Form

Investigating Factors Influencing Low Levels of Utilisation of Antenatal Services Among Pregnant Women at Matero First Level Hospital - Lusaka District

Introduction
My name is **Selina Naomi Kasikili.** I am a student at Cavendish University pursuing Masters in Public Health. I am conducting a study concerning Antenatal Care Services in Matero.
The purpose of this research is to investigating the level of utilization of antenatal care services among pregnant women at Matero clinic in Lusaka district, Zambia.
Do not feel pressured to respond, if you are uncomfortable to conduct this interview, you are free to decline.
This is a pure academic project with utmost confidentiality and no names will be mentioned. I thus seek permission to interview you.
Respondent's Signature……

References

URL: http://dx.doi.org/10.14738/bjhr.1203.18565.

Research Ethics Committee
Address: Off Alick Nkhata road, Longacres, Lusaka
Telephone: +260 xxxxxxx
E-mail: ethics.cuz@cavendish.co.zm
Selina Naomi Kasikili
Telephone: +260977965334
Address: SLN_0052/234, Matero North E-mail: naomisoneka@gmail.com/ sn54091@students.cavendish.co.zm

[6]. Questionaire

Section A:

Social demographics influencing low level of utilization of ANC services among pregnant women at Matero Level One Hospital

1). Age group
   (a) 15 – 20
   (b) 20 – 30
   (c) 20 – 40
   (d) 40 – 49
2). Educational background
   (a) Primary
   (b) Secondary
   (c) College
   (d) University
   (e) None
3). Occupation
   (a) House wife
   (b) Government employee
   (c) Private employee
   (d) Doing business
4). Residential area
   (a) Near the hospital
   (b) Within the catchment area
   (c) Outside the catchment area
6). Mode of transportation
   (a) Public transport
   (b) Private transport
   (c) Walking
7). Marital status
   (a) Single
   (b) Married
8). Religion
   (a) Christian
   (b) Other (specify)

Section B:

Factors influencing low levels of utilization of ANC by most pregnant women

1). How many pregnancies have you had?
   a) 1 b) 2 c) 3 d) 4 e) 5 f) More than 5
2). what number is the pregnancy you are carrying……
3). Do you attend antenatal clinic adequately each time you are pregnant?
   a) Yes b) No
4). If not, why……
5). Have you had any challenges in attending antenatal clinic adequately?
   a) Yes b) No
6). If yes, what are the challenges……
7). Do you think tradition, culture, attitude, environment or population are factors causing most pregnant women not to attend antenatal clinic?

a) Yes b) No

8). In your own opinion, what do you think stops most pregnant women from attending antenatal adequately……..?

Section C:

When do pregnant women make their first visit to antenatal clinic

1). When are you supposed to start visiting antenatal clinic?
   (a) First trimester
   (b) Second trimester
   (c) Third trimester

2). When do you start visiting antenatal clinic?
   (a) First trimester
   (b) Second trimester
   (c) Third trimester

3). From your answer above, do you think you start at the right time?
   a) Yes b) No

4). If not to question 3, why……

Section D:

How many times do pregnant women visit antenatal clinic at Matero Level One Hospital?

1). How many times are you supposed to visit antenatal clinic?
   a) 3 b) 5 c) 8

2). How many times did you visit in your previous pregnancies……..?

3). How many times have you visited in your current pregnancy……..?

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