SOCIO-CULTURAL DETERMINANTS OF FIRST TRIMESTER ANTENATAL CARE (ANC) VISITS IN KALABO DISTRICT ZAMBIA

By

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A dissertation submitted to the University of Zambia in partial fulfillment of the requirements for the degree of Master of Public Health in Population Studies

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DEDICATION

I dedicate this study to my children Kunda and Boyd, my husband Mbuyoti Sifaya, my dad Mr. Boyd Pumulo Mbaala and mum Mrs. Namatama Sinyinda Mbaala, my sisters, Dolly and Inonge, my brothers Sinyinda and Innocent who were of immeasurable support during my studies. This listing of my siblings makes me shed tears as it reminds me of my late brother Mbaala Mbaala who should have been part of it. I also wish to thank my brother in law, Mr Mulongwe Simukali for offering me support throughout my study program. I cannot imagine how the situation would have been without him and the wife. It was also challenging to combine my studies with the care for my family. My son Boyd Tumelo Sifaya was only one year 10 months when I embarked on this program which was so difficult for him because he required maximum care.

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CERTIFICATE OF COMPLETION OF DISSERTATION

I, **Miyaze Mbaala** do hereby certify that this dissertation is the product of my own work and, in submitting it for my MPH (Population Studies) programme further attest that it has not been submitted in part or in whole to another University

Signature……. Date…….

Supervisors

I, Dr. R.N Likwa having read this dissertation, I am satisfied that this is the original work of the author under whose name it is being presented. I, therefore, confirm that the work has been completed satisfactorily.

.Signature…… Date……..

Head of Department

Signature…… ….. Date……

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DECLARATION

I **MIYAZE MBAALA** do hereby declare that this dissertation is my original work. It has never been submitted to any university before.

APPROVAL

This dissertation of Miyaze Mbaala is approved as fulfilling the requirement for the award of the Degree of Masters of Public Health (Population Studies) by the University of Zambia.

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ABBREVIATIONS

ANC -	Antenatal care
CSO -	Central Statistical Office
FANC -	Focused Antenatal Care
HIV -	Human Immunodeficiency virus
HMIS-	Health Management Information System
MOH -	Ministry of Health
MTEF -	Medium Term Expenditure Framework
SMAGs -	Safe Motherhood Action Groups
STI -	Sexually Transmitted Infections
ZDHS -	Zambia Demographic Health Survey
WHO -	World Health Organization
CDC -	Centre for disease control
RBF -	Results Based Financing
TB -	Tuberculosis
UNICEF -	United Nations Children's fund

ABSTRACT

Globally, more than 50% of pregnant women attend antenatal care in the first trimester in most developed countries. However, in developing countries, less than 50% of pregnant women do so. Timing of the first antenatal care visit in the first trimester is important because it allows for sufficient time to identify and treat problems such as anemia, malaria, HIV and STIs. The objective of the study was to establish the socio-cultural determinants of first trimester antenatal care visits in Kalabo district of Western Province in Zambia.

We used a mixed-methods approach. The convergent parallel design was employed. A cross sectional study was used in the quantitative approach while the qualitative one used a case study. A sample of 454 pregnant women aged between 14 and 49 years were selected for interviews through multi-stage cluster sampling and three focus group discussions were held. The quantitative data was analyzed through multiple logistic regression using STATA version 14 while thematic analysis was used in the qualitative approach.

The first trimester antenatal care attendances are still very low at 34.6%. Socio-cultural determinants related to awareness of the right time to attend ANC (first trimester) and marital status were found to be highly associated with First trimester Antenatal care. Awareness was found two times more likely being associated with antenatal attendance in first trimester among women (AOR =2.03, CI=1.50—4.48, P-Value=0.004) and married women were 2 times more likely to attend ANC in the first trimester (AOR=2.59, CI=1.17-3.54, P Value=0.019). Women also described their not being sure about the existence of the pregnancy in the earliest stages as a factor hindering them to attend ANC early. Cultural beliefs and practices, lack of male involvement, fear of HIV testing, age, marital status, and age of partner, distance and health status, decision making challenges, economic problems were also described as barriers to first trimester ANC initiation.

The proportion of first trimester antenatal care attendances is still very low being affected by mostly the socio-cultural factors. The study has implications for strengthening health education on the timing of antenatal care and provision of community –based pregnancy test kits in rural communities.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER ONE

INTRODUCTION

1.1 Background

Timing of the first antenatal care (ANC) visit in the first trimester is important because it allows for sufficient time to identify and treat problems such as anemia, malaria, Human Immunodeficiency virus (HIV) and Sexually Transmitted Infections (Abou-Zahr et al., 2003) If pregnant women attend the antenatal clinics in the first trimester, HIV can be detected early and they can begin treatment also making it unlikely for their babies to contract HIV. It also helps to support their immune systems hence decreasing the chance for infections before or after birth. During the first trimester of pregnancy, it is a good opportunity for doctors to treat and manage other treatable health conditions that the mother to be may develop which include high blood pressure (Smith, 2016). Early ANC is also an opportunity to promote the use of skilled attendance at birth and healthy behaviors such as breast feeding, early postnatal care, and planning for optimal pregnancy spacing. An antenatal care visit in the first trimester can also potentially capture non-communicable diseases such as diabetes and provide guidance on modifiable lifestyle risks such as smoking, alcohol consumption, drug abuse, obesity, malnutrition and occupational exposures (Moller et al. 2017). Women who make it for antenatal in the first trimester have these benefits while their counterparts who fail to make it have a higher risk of these consequences.

Antenatal care (ANC) is care provided by skilled health care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy(World Health Organization, 2016).The new WHO antenatal care model recommends that the first antenatal visit takes place within the first trimester(Moller et al. 2017). Trimester means 3 months and a normal pregnancy has 9 months. The first trimester starts when a baby is conceived and runs through week 14 of pregnancy (Ministry of Health, 2017).

In Latin America and the Caribbean, and in North Africa/ West Asia/ Europe, more than 50% of pregnant women receive antenatal care in the first trimester. In Jordan, nine in ten women start antenatal care in the first trimester. South and south East Asia has lower figures, however. In four countries- India, Indonesia, the Philippines and

Vietnam-more than half of the women also receive antenatal care in the first trimester. Indonesia has the first percentage where 79 percent of women had their first antenatal visits in the first trimester of pregnancy (Wang Wenjuan et al.2011). In Sub-Saharan Africa, most women receive antenatal care. However, most of these women wait until the second or even the third trimester before making the first visit. The exception is Ghana where 57% of women had their first visit occurred during the first trimester of pregnancy (Wang Wenjuan et al. 2011)

In Zambia 96% of women received antenatal care during the seven-year period that preceded the 2013-2014 Demographic and health survey and only 24% of these pregnant women had their first antenatal visit in the first trimester (Central Statistical Office et al., 2014)This implies that the majority of the women (76%) miss out on the interventions offered in the first trimester. This is one of the reasons for the high maternal death ratio which stands at 398/100,000 (Central Statistical Office et al., 2014).

Studies conducted worldwide so far have identified factors associated with low attendance of antenatal care in the first trimester. This study sought to establish the socio-cultural determinants of first trimester antenatal care visits in Kalabo which is one of the rural districts in Zambia. These are customs, lifestyles and values that characterize a society or group. Cultural aspects include concepts of beauty, education, language, law and politics, religion, social organizations, technology and material culture, values and attitudes. Social factors include reference groups, family role and status in society, time and available resources (Larson, 2017)). The socio-cultural attitudes engaged in by a group of people not only influence their state of health but it also affects their entire affairs, diseases and health inclusive.

1.2 Statement of the Problem

The proportion of women attending antenatal care in the first trimester in Kalabo district is far much lower than the national target of 24% (Ministry of Health, 2016). In 2013, only 3% of pregnant women had first trimester antenatal visits. In 2014, the percentage slightly increased to 5% and remained static at 5% in 2015. The coverage again dropped to 4% in 2016(Kalabo District Health Office, 2016). Despite this low coverage of first trimester antenatal care, more than 50% of the pregnant women in the

district manage to have their first antenatal visit later in their second and third trimesters.

However, if women go for antenatal care in the second and third trimesters, there will be no sufficient time to detect problems and this may contribute to high maternal mortality ratio in the district. The maternal mortality ratio in Kalabo district is very high standing at 275 deaths per 100,000 live births in 2016(Kalabo District Health Office, 2016)

1.3 Justification of the study

Establishing the socio-cultural determinants of first trimester ANC attendance will help the Kalabo District Health Management Team (DHMT) and the Western Provincial Health Office identify high impact and specific strategies that may curb the problem of low first trimester antenatal coverage.

In addition, from review of literature, studies conducted in Zambia to determine the predictors of low first trimester antenatal attendances were quantitative in nature. A study conducted in 2015 based its analysis on secondary data from the 2013-2014 Zambia Demographic and Health survey (Sinyange et al., 2016). The other studies conducted in 2012 also used quantitative methods (Banda et al., 2012; Kyei et al., 2012). However, there is need to understand the beliefs and practices of pregnant women themselves through the qualitative aspect. This study therefore used a mixed methods approach that also explored the perceptions and experiences of pregnant women and Safe Motherhood Action Groups (SMAGs).

1.4 Research questions and objectives

1.4.1 Research questions

1. What is the proportion of first trimester antenatal care attendances in Kalabo District?
2. What are the socio-cultural factors influencing timing of antenatal care in the first trimester in Kalabo DIstrict?

1.4.2 Objectives

1.4.2.1 General Objective

To establish socio- cultural determinants of first trimester antenatal care visits among pregnant women in Kalabo rural District in the Western province

1.4.2.2 Specific Objectives

1. To determine the proportion of pregnant women attending antenatal care in the first trimester in Kalabo district
2. To establish the demographic characteristics associated with first trimester antenatal care attendances among pregnant women in Kalabo district
3. To establish socio-cultural and accessibility characteristics influencing timing of ANC in first trimester gestation period among pregnant women in Kalabo district
4. To explore the cultural factors influencing timing of ANC during the first trimester gestation period among pregnant women.

CHAPTER TWO

LITERATURE REVIEW

The proportion of women attending ANC in the first trimester is critical as it has an implication on the services that are offered to them and their wellbeing. Women who attend ANC in the first trimester have timely access to health education, identification and management of other risk factors. If a woman attends antenatal care in the first trimester, HIV can be detected early and they can begin treatment early hence unlikely that their babies will contract HIV (Smith, 2016). Early attendance of antenatal care also allows doctors to treat and manage other treatable health outcomes that the mother to be may develop which may include high blood pressure, and anaemia, which are also major risk factors for maternal deaths (Smith, 2016)

In developed countries, more than 50% of pregnant women are accessing ANC services in the first trimester of pregnancy. This is opposite of the developing countries including Sub-Saharan Africa, where less than 50% of pregnant women are accessing ANC in the first trimester(Wang Wenjuan et al., 2011). This is supported by other studies conducted in Nigeria and Tanzania where very small proportions of pregnant women are attending ANC in the first trimester (Abuka and Alemu, 2016; Gross et al., 2012)

In Zambia, a study conducted in the Copperbelt province found that less than 50% of pregnant women attend ANC in the first trimester (Banda et al., 2012). The demographic and health survey results also reveal that only 24% of pregnant women attend ANC in the first trimester in Zambia (Central Statistical Office et al., 2014). In Kalabo district, only 4% of pregnant women attend ANC in the first trimester(Kalabo District Health Office, 2016)This implies that 96% of the pregnant women in Kalabo miss the key opportunities offered in the first trimester.

Several studies have been conducted to determine the predictors of low prevalence of antenatal attendance in the first trimester. The studies have been conducted in both developed and developing countries including Zambia**.** The studies reveal a number of factors that influence timing of first antenatal visits. These can be grouped into

predisposing, enabling and need factors as this has been well illustrated in the conceptual framework

Studies have found that the age of a pregnant woman influences timing of the first antenatal are visit. (Gross et al., 2012). This study by Gross found that adolescents had a greater delay in ANC initiation than adult pregnant women despite being more likely to be single in South-Eastern Tanzania.

However maternal age was not associated with late antenatal care in Copperbelt province/ Zambia (Banda et al., 2012)

The number of children a woman has influences attendance of first trimester antenatal. For example, there was a tendency of initiating ANC late amongst women of high parity and gravidity in both rural and urban communities of Copperbelt province (Banda et al., 2012)

Marital status has also been found to be another factor influencing timing of first antenatal visit. From a study conducted by (Rowe et al., 2008), living without a husband was associated with late booking for antenatal care.

Place of residence (rural/ urban) and geographical location (region) affect the utilization of ANC services. Expectant mothers in urban areas tend to use more ANC compared to their counterparts in the rural areas (Arthur, 2012). This may be due to the distribution of facilities between urban and rural areas which are in favor of the urban dwellers, putting the rural dwellers at a disadvantage when it comes to availability and accessibility of services (Arthur, 2012). This factor may be valid in Kalabo district because of being rural.

It has also been found that urban residence increases both the likelihood and of both early ANC visit as well as delivery assisted by trained personnel (Doku et al., 2012). He attributed this to the disparities in the distribution of health care services in most developing countries to the disadvantage of those in rural settings and differences in the exposure to health information to the merits of urban women which could account for the rural- urban differences in antenatal care utilization

Some pregnant women initiate antenatal care late because they recognize pregnancy late. This is because of the use of long acting hormonal contraceptives in the form of

injections and also some women wait for quickening and women do not widely use pregnancy tests despite their availability (Gross et al., 2012).

Studies from Tanzania and other sub-Saharan countries have shown that late disclosures of the pregnancy due to local practices or beliefs such as witch craft is common and has negative influence on the timing of ANC attendance (Gross et al., 2012).

Racism and marital status have also been found to influence late booking at antenatal clinics. In the United Kingdom, blacks booked late for antenatal compared to whites (Rowe et al., 2008).
Women of maghereb origin compared with Belgian women or women with another origin had a lower likelihood of being in a higher CTP (Content and timing of antenatal care in Pregnancy) classification. More specifically, lower levels of education or the partner being of Maghereb origin were related to lower odds of attaining higher CTP than were having higher educational levels or partners of Belgian origin (Beeckman et al., 2013).

Education is one socio-economic factor that influences attendance of antenatal care in the first trimester. Women with secondary or higher educational levels were more likely to use adequate ANC compared to those without education in Ghana (Arthur, 2012). Thus, improving the education of the mother in Ghana would contribute greatly to the use of maternal and ANC services by women and this helps in reducing maternal and child mortality.

Wealth also influences attendance of antenatal care in the first trimester. According to (Arthur, 2012)In Ghana, women in higher wealth quintiles are more likely to make more ANC visits than women in the lowest wealth quintile. It is even noted that even when the antenatal care services are provided freely after change of policy from payment of fees for accessibility of health services, antenatal care still comes with costs either directly or indirectly and those with resources are more likely to afford it. Even where maternal health care services are rendered free of charge, wealth which signifies the financial position of the individual is still a challenge in the use of antenatal services. It still hindered the utilization rates of antenatal care (Arthur, 2012).

Lack of money in cash when attending ANC clinic and not receiving support from the husband/partner influence first ANC. Women who had no money challenges attended on average about one week later and women who felt not supported by their husband attended almost 3 weeks later than women who did receive support (Gross et al., 2012).

According to Bbaale (2011) maternal education especially at secondary and post-secondary levels is very pertinent in influencing the utilization of antenatal care content. He noted that although partner's education was important, maternal education was more pronounced in influencing the utilization of antenatal care content.

Women in higher wealth quintile, compared to those in the poorest, are more likely to use the antenatal care content (Bbaale, 2011). Beeckman et al., (2013)reports that absence of higher education and not being employed were associated with a lower likelihood of being in a CTP (content and timing of care in pregnancy) category in Europe.

The intention to get pregnant was an important factor in determining timing of antenatal care in Copperbelt province/ Zambia. In contrast to women who planned their pregnancy, women who fell pregnant unintentionally were more likely to start their ANC late (Banda et al., 2012).

Women in Nigeria booked late for antenatal due to misconception or ignorance of the purposes of and therefore the right time to commence antenatal care and not on physical or financial constraints (Ndidi and Oseremen, 2011). The attitudes seemed to be governed by a perception that antenatal care is primarily to detect or treat serious diseases. This explains the belief that women did not need to book early since they do not have any problems in early pregnancy that need a doctor's intervention or the pre-sumption that there is no benefit in booking in the first three months (Ndidi and Oseremen, 2011)There seemed to be an underlying belief that a woman can do without registering in early pregnancy since whatever symptoms women may have in early pregnancy are normal, mild or not serious enough to need a doctor's attention (Ndidi and Oseremen, 2011) Thus antenatal care seems viewed by most of the women as curative rather than preventive which is in sharp contrast with the goal of antenatal care which are mainly preventive (Ndidi and Oseremen, 2011) .

The few pregnant mothers who knew the right time of gestation at which they should come for the first visit had been taught in health facilities during health education in previous attendances for antenatal care (Ndidi and Oseremen, 2011). This means that it is less effective to give this health education only during antenatal care because the mother will already be late and worse still she may also come late on that particular day when health education has already been done. Further still a prime gravid who has never attended antenatal care before will not know this information. In addition, there are other people who influence pregnant women to attend antenatal care and once these people are also not informed, then pregnant women will not make informed decisions (Ndidi and Oseremen, 2011). .

Media penetration among the masses is one of the influencing factors of antenatal content. Mothers with access to media are more informed than their counterparts about the usefulness of attending antenatal care and also using all the recommended contents like timing of first antenatal care visit. Informed mothers are empowered to ask their antenatal care providers for some services should there be a delay in the provision of such services (Bbaale, 2011).

Pregnant women in rural areas of Copperbelt province/ Zambia reported that availability and accessibility of health facilities could be the cause of late ANC attendance. However, the claim was not found to be significantly associated with late attendance in urban communities (Banda et al., 2012)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Conceptual Framework

Figure 1 is a conceptual framework grouping factors influencing first trimester antenatal visits or timely booking into three categories. Amongst these factors, it is clear that socio-cultural factors also determine the attendance of antenatal care in the first trimester. These include educational status, occupation, ethnicity, marital status, distance, income, decision making, male involvement.

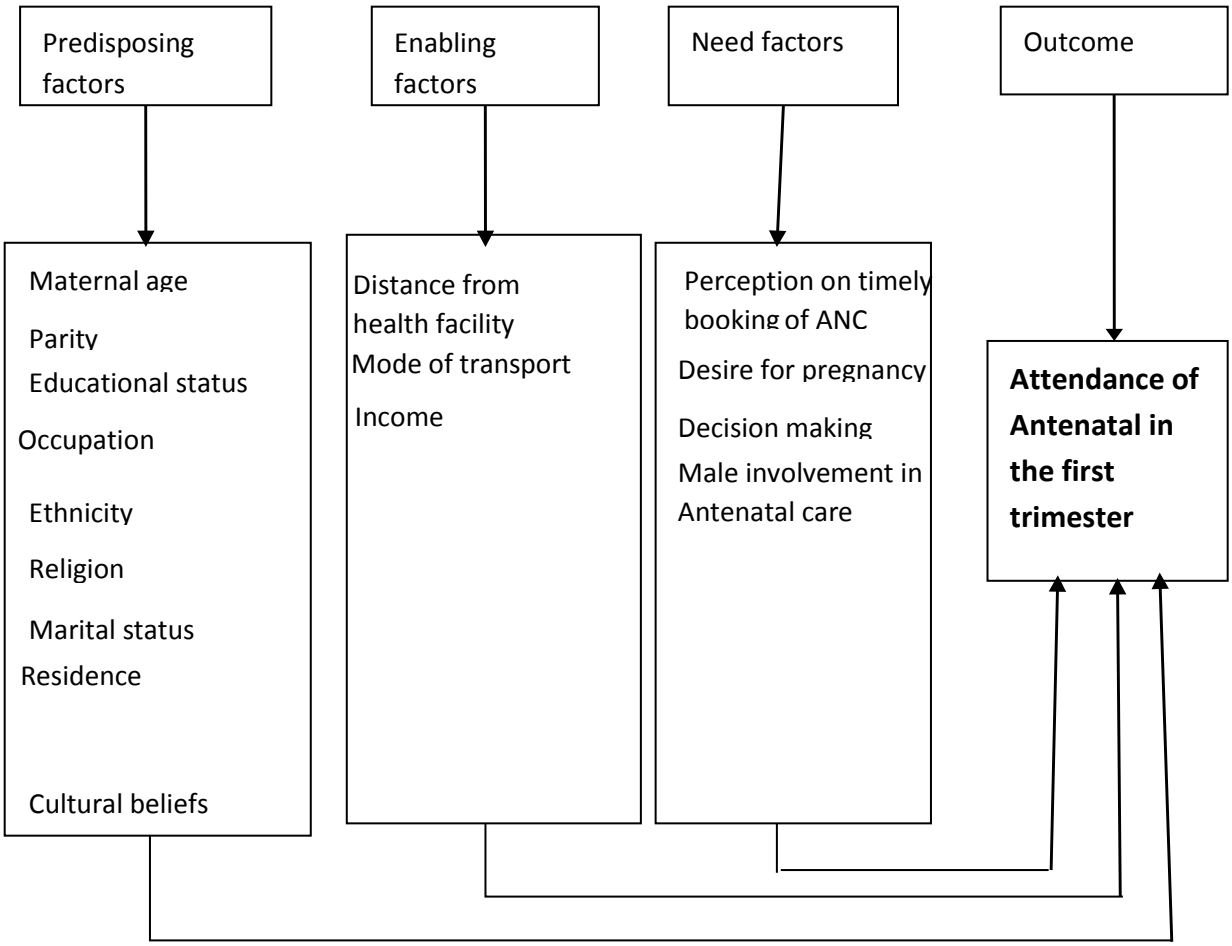

Figure1: Conceptual framework of factors influencing first trimester antenatal care

Conceptual framework for timely use of ANC (adapted from Balayneh. T, Adefris. M and Andargie, 2014) which was also adapted from Anderson, 1995.

3.2 Study Variables

Table 1 provides a summary of operational indicators and measurements. The dependent variable was – Timing of ANC during first trimester period. The independent variables were: age, education, marital status, parity, ethnicity, income, occupation, distance, male involvement and decision making

Table 1: Variables

Variable	Operational definition	Indicators	Variable measurement
Dependent variable			
Timing of first antenatal visit	The period within which a pregnant woman attends the first antenatal care during the current pregnancy	1. Within first trimester 2. After first trimester	Binary
Independent variables			
1. Demographic characteristics			
Age	The number of years of life completed in a person's life	Age at last birth day in years	Continuous
Educational status	The level of education of a pregnant woman	1. No education 2. Primary 3. Secondary 4. Tertiary	Ordinal
Marital status	The state of being married or not married	1. Single 2. Married 3. Separated/ widowed divorced	Nominal
Parity	The number of live births or babies to a female so far	The number of children reported by a pregnant woman	Continuous

2. Socio-cultural characteristics			
Distance	The lengthy of space between 2 points	1. Short distance(<5km) 2. Long distance(>5km)	Binary
Income status	House hold monthly income for basic needs	1. Low income (less than K1000) 2. Middle income (Between K1000 and K2000) 3.High income (Above K2000)	Ordinal Nominal
Occupation status	What one does to earn a living	1.Employed 2.Business 3.Farming 4. Not employed	Nominal
Male involvement	Pregnant woman accompanied by partner during the first antenatal visit.	1.Yes 2.No	Binary
Decision making	The process of making choices by identifying a decision, gathering information and assessing alternative resolutions	1.Pregnant woman 2.Partner 3.Health worker 4.SMAG member	Nominal

3.3 Study design

The study used a mixed method design where the researcher collected, analyzed and integrated both quantitative and qualitative data in a single study or in a sustained long-term program of inquiry to address the research questions(Creswell, 2013). The study employed the convergent parallel design. This implies that two strands of quantitative and qualitative data was collected and analyzed at the same time in a single phase. The results of the two were mixed during interpretation.

3.3.1 Quantitative approach

The quantitative design was a cross sectional study that determined the coverage and sociocultural factors influencing first trimester antenatal care visits(Mann, 2003).

3.3.1.1 Study setting

This study was conducted in Kalabo district in Western province Zambia and figure 2 shows the location of Kalabo district. Kalabo District lies 66 km west of Mongu across the Zambezi plains. It has a population of 94,692 and pregnant women account for 5.4% of this total population (projected CSO figures from 2010 census). Kalabo has district boundaries with Sikongo in the West, Mongu in the east, Lukulu in the northeast, Senanga and Shang'ombo in the south. In the west it has an international boundary with Angola.

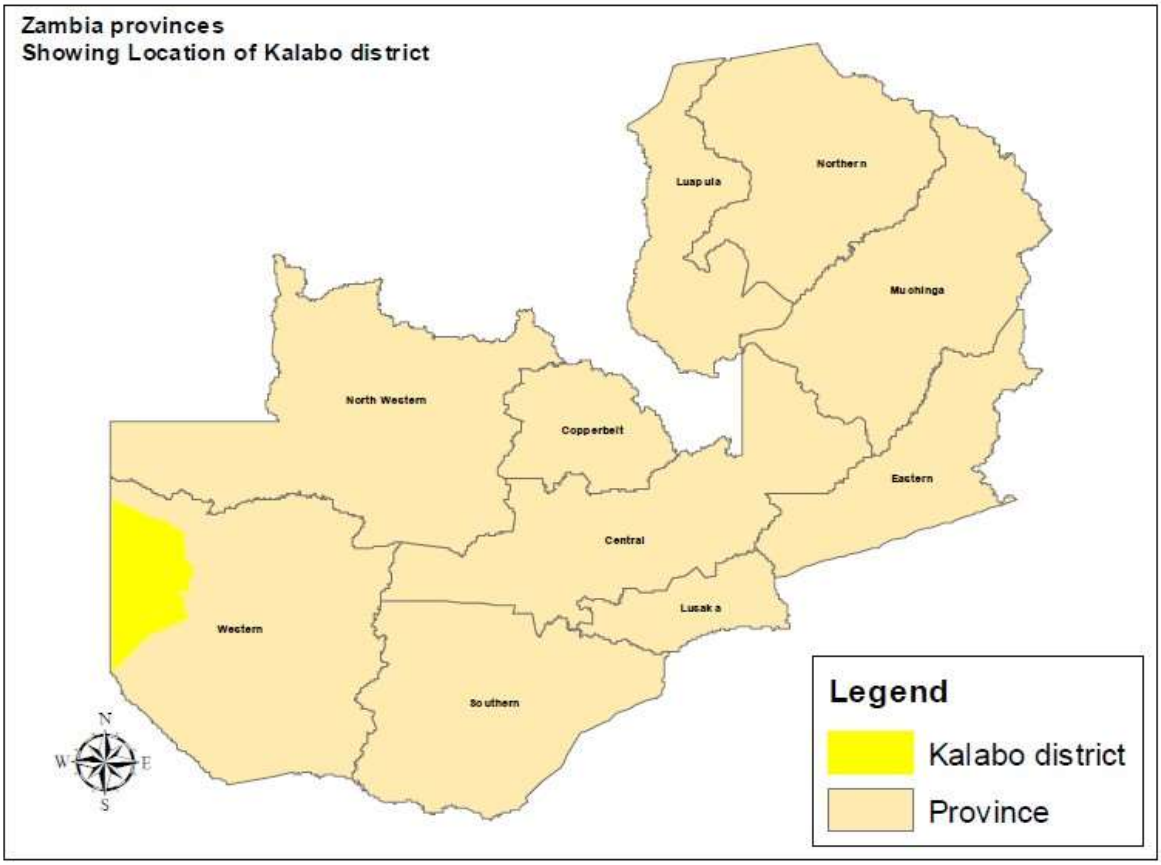

Figure 2: **Location of Kalabo district**

Source: CSO

KALABO DISTRICT MAP

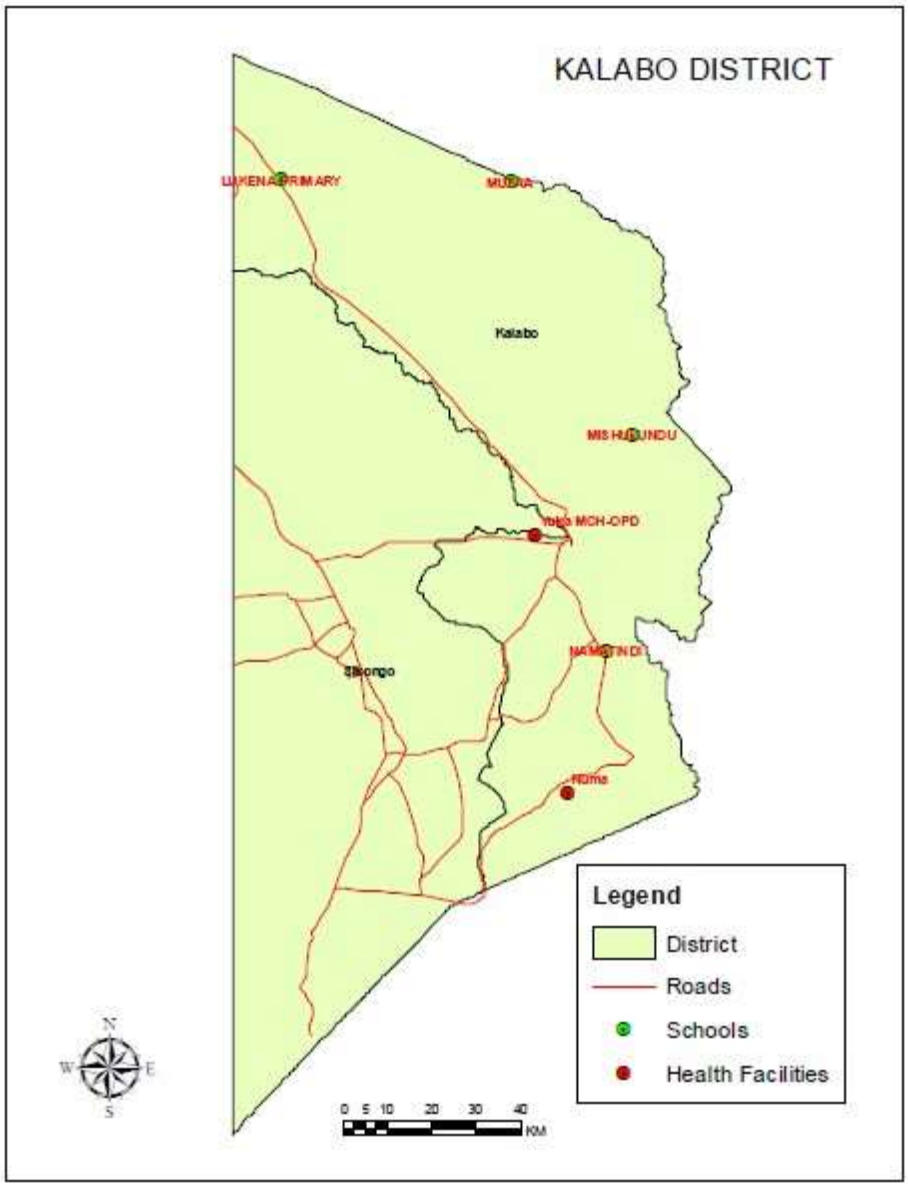

Figure 3: Location of health facilities in Kalabo district.

Source: CSO

3.3.1.2 Study population

The targeted pregnant women were those who attended antenatal care at health facilities during the course of the study.

3.3.1.3 Inclusion Criteria

The study included pregnant women who presented for antenatal at the health facility and consented to participate in the study. The other criterion was only women who had information on the gestational weeks during first antenatal visit**.**

3.3.1.4 Exclusion criteria

Pregnant women without information on the gestational weeks during first antenatal visit were excluded from the study.

3.3.1.5 Sample size determination

Sample size was calculated using the formula for prevalence study. It used the proportion of first trimester antenatal care visits in Kalabo district in 2016 which was 4% (Kalabo HMIS, 2016) as follows:

$$n = \frac{Z^2 \times P(1-P)}{e_2}$$

n= sample size

Z= 1.96 (5% significance level)

P=0.04 prevalence to be detected which is prevalence of first trimester antenatal care

e=0.02, desired absolute precision at confidence interval of ± 2%

The calculation gave a sample of 369. Since cluster sampling was used the sample was multiplied with a design effect of 1.2. This was also multiplied with a non-response rate of 10%.
This gave:

369x 1.2= 443

=443x 10% (non-response) =44

The final sample was therefore 443+44= 487

3.3.1.6 Sampling Methods

The sample was selected using multi-stage cluster sampling. The first stage units were health facilities where as the second stage units were pregnant women. Both health facilities and pregnant women were selected through systematic sampling. The district had 28 facilities and catchment areas. A total of 8 clusters were selected.

28 facilities were divided by 8 which gave an interval of 3. Following an ordered list, the following facilities were selected as clusters: Lukena, Mutaa, Yuka MCH, Namatindi, N'uma, Namundale, Mishulundu and Mitwi.

The study used probability proportional to size (PPS) to determine the number of pregnant women who participated in the study due to size variations of the clusters. The total population of pregnant women in the district in 2017 was 1,760. The table below highlights selected clusters with their total populations of pregnant women and the probability proportional to size populations using the calculated required sample of 487.

Table 2: Clusters and their sample estimates

The table highlights the clusters selected and the number of pregnant women selected per cluster.

Cluster name	**Population of pregnant women**	**Probability proportional to size sample**
Lukena	175	48
Mutaa	63	17
Yuka MCH	455	127
Namatindi	410	114
N'uma	315	87
Namundale	153	42
Mishulundu	120	33
Mitwi	69	19
Total	**1,760**	**487**

As already alluded to, systematic sampling was used to select the pregnant women for participation in the study. Intervals were calculated in each cluster and were used to pick the women for participation in the study. The interval of 3 was found in all the 8 clusters.

3.3.1.7 Data Collection tools

Data was collected using a semi structured questionnaire. Information on when a pregnant woman had her first antenatal care visit was verified from antenatal registers and antenatal cards. The data collection tools were translated into Lozi for easy administration by the research assistants.

3.3.1.8 Data collection personnel

Research assistants were trained to collect data in the selected clusters or health facilities.

3.3.1.9 Data Management and Analysis

Questionnaires were numbered. A total of 33(7%) questionnaires were not analyzed because they had a lot of missing values and most of them were from Lukena health facility. This means that 93% of the questionnaires were analyzed. Data from questionnaires was coded, checked and cleaned before entering it in an excel sheet. The data was then imported into Stata version 14 for analysis. Descriptive statistics were done first to observe the characteristics of the variables. Frequencies and percentages were reported for categorical variables. A chi-square test of independence was also performed to test for associations between the dependent variable and independent variables

Because the outcome variable in the study was binary or categorical, logistic regression analysis was used to estimate Odds ratios. Simple logistic regression was used to determine associations between the dependent variable and independent variables. Multiple logistic regression analysis was performed to identify the effect of the exposure variables on timing of antenatal care after adjustment for other variables. Backward step wise regression was used where all variables were included in the model and removed unimportant variables at a time until significant ones remained. The significance level used was 0.05 and 95% Confidence intervals.

3.3.2 Qualitative approach

3.3.2.1 Study design

The qualitative design employed the case study approach where small geographic areas of very limited number of pregnant women as the subjects of study were selected.

3.3.2.2 Study setting.

The qualitative part was done in two clusters of the quantitative study and these were Mutaa and Namatindi health facilities.

3.3.2.3 Study population

This approach targeted pregnant women and Safe Motherhood Action Group (SMAG members). SMAGs have a role to accomplish in maternal health. It is their voluntary role to ensure that pregnant women go for antenatal in the first trimester (Nikita et al, 2014). As such, it is believed that they have information on the reasons why most pregnant women go for antenatal care after the first trimester.

3.3.2.4 Sampling and Sample size

Three focus group discussions were conducted in two clusters of Namatindi and Mutaa health facilities. Two focus group discussions were held with pregnant women and one was held with SMAGs. The focus group held with pregnant women in Namatindi had 9 participants and the one with SMAGs had 10 participants. The focus group discussion held in Mutaa had 6 participants making a total of 25 in all the FDGs. The study employed what is called maximum variation sampling where the researcher identifies cases with different characters to maximize diversity in the sample, usually to get the widest range of views possible. This means that pregnant women of different characteristics of age, marital status, residence, educational levels were employed in the focus group discussions.

3.3.2.5 Inclusion Criteria

The study included pregnant women who volunteered to take part and active SMAGs with support and guidance from the health facilities where they belonged. These were SMAGs who consented to participate in the study whether male or female.

3.3.2.6 Exclusion criteria

The study excluded pregnant women and SMAGs who did consent to participate in the study.

3.3.2.7 Data Collection tools

The study used interviews and a topic guide was used. The interviews were conducted sensitively and flexibly allowing follow up of points of interest to either interviewer or interviewee.

The interviews were audio recorded using digital voice recorders. Interviews took place at the health facility after an appointment was made. Note books were also used to record information from participants.

3.3.2.8 Data collection personnel

The researcher and a research assistant conducted the interview. An interpreter was also employed since different languages are spoken in Kalabo (Lozi, Mbunda, Nyengo, Luyana, Simakoma, Simwenyi etc).

3.3.2.9 Data Analysis

Analysis of data was done manually. It was done in line with Mary Carolan's and Loris Cassar's, understanding of thematic analysis. Summary of the interview was made immediately after the interview (Carolan and Cassar, 2010). Repeated reading of notes and summary to obtain a sense of the content followed. The researcher made notes and memos on general findings. The researcher then employed coding and outlining categories. Categories were then grouped together under higher coding. Similar headings were removed and categories were collapsed to produce a final theme list. Transcripts were reviewed again and alternate explanations were sought. Each transcript was coded according to the list of themes and each coded section was moved to the theme where it belonged.

3.4 Research Ethical Considerations

Ethical clearance was obtained from the University of Zambia, Biomedical Research Ethics Committee (UNZA BREC). Authority to conduct the study was also sought from Western Provincial Health and Kalabo district health offices.

Respondents were informed about the objectives of the study and participation was voluntary. In the case of minors, as the study encountered teenage pregnant mothers, consent was sought from parents. Those not willing were not forced or enticed to take part in the study. Issues of privacy and confidentiality were also practiced. No recording of names was done hence and questionnaires were assigned numbers.

Consent was sought from participants before recording of the interview in the qualitative approach. The researcher adhered to approved research methodology in the proposal. The answers and views of participants were exactly what was taken note of.

3.5 Limitations

This study has a number of limitations and they include the following:

1. The data analyzed for all the variables except timing of the first antenatal visit was self-reported and therefore subjecting to social desirability and recall bias.
2. The study did not exhaust all the variables associated with first trimester ANC from literature review. There are so many factors associated with first trimester ANC. However, this study only selected some variables.
3. Only three out of the four planned focus group discussions were held. The other selected cluster for focus group discussion (Mutaa) had no SMAGs

3.6 Strengths

The data on whether a pregnant woman attended her first antenatal care visit in the first trimester or after was collected from registers and antenatal care cards. Research assistants were also thoroughly trained in the data collection tools.

CHAPTER FOUR

FINDINGS

This chapter indicates the research findings. The descriptive statistics showing the characteristics of the participants are presented first. The chapter goes ahead to show the proportion of pregnant women going for antenatal care in the first trimester. It then highlights the demographic characteristics associated with timing of antenatal in the first trimester. This is followed by the socio-cultural characteristics associated with timing of antenatal care in the first trimester. Lastly but not the least the chapter highlights the qualitative findings on the perceptions, beliefs and practices of pregnant women on the timing of antenatal care in the first trimester.

4.1 Quantitative Findings

4.1.1 Demographic and socio-cultural characteristics of study participants

In table 3, most pregnant women (54.19%) were aged below 24. The majority (63.66) had also only attained primary education. In terms of their marital status about half (50.22%) were married. In terms of their parity, the majority (44.71%) had one child and considering their ethnicity, again about half (56.61%) were Lozi. More than half of the pregnant women (53.96%) also lived outside 5km radius of the health facilities. Most of the women (59.69%) also reported that they were accompanied by the partners to the first antenatal visit at the health facility. In terms of awareness about timing of antenatal care in the first trimester, slightly more than half (52.86%) said they were not aware. And on their occupation, the majority (64.32%) were involved in farming. The majority (72.47%) also reported that they decided to go for the first ANC visit on their own meaning no one influenced them. Considering their income status, the majority (96.48%) reported that they had a monthly income below K1000.

Table 3: Demographic and socio-cultural characteristics of study participants

Variable name	Number, n=454	Percentage (%)
Age		
<24	246	54.19
24-34	141	31.06
35+	67	14.76
Educational status		
Never been to school	36	7.93
Primary	289	63.66
Secondary	126	27.75
Tertiary	3	0.66
Marital status		
Single	171	37.67
Married	228	50.22
Divorced/Separated /Widowed	55	12.11
Parity		
1	203	44.71
2	58	12.78
3	53	11.67
4+	140	30.84
Ethnicity		
Lozi	257	56.61
Mbunda	129	28.41
Any other	68	14.98
Distance		
<5km	209	46.04
>5km	245	53.96
Male involvement		
Yes	271	59.69
No	183	40.31
Awareness		
Yes	214	47.14
No	240	52.86
Occupation		
Employed	4	0.88
Business	45	9.91
Farming	292	64.32
Not employed	113	24.89
Decision making		
Myself	329	72.47

Partner	72	15.86
Health worker	23	5.07
SMAG member	30	6.61
Income status		
Low (Below 1000)	438	96.48
Middle (Between 1000 and 2000)	5	1.10
High (Above 2000)	11	2.42

4.1.2 Timing of the first Antenatal Care Visit in Kalabo district

The first objective in this study was to determine the coverage of pregnant women having their first antenatal visits in the first trimester. Figure 4 shows that the majority pregnant women (65.4%) are still timing their ANC after the first trimester of pregnancy. A smaller proportion of 34.6% pregnant women are timing their first antenatal visit in the first trimester gestation period.

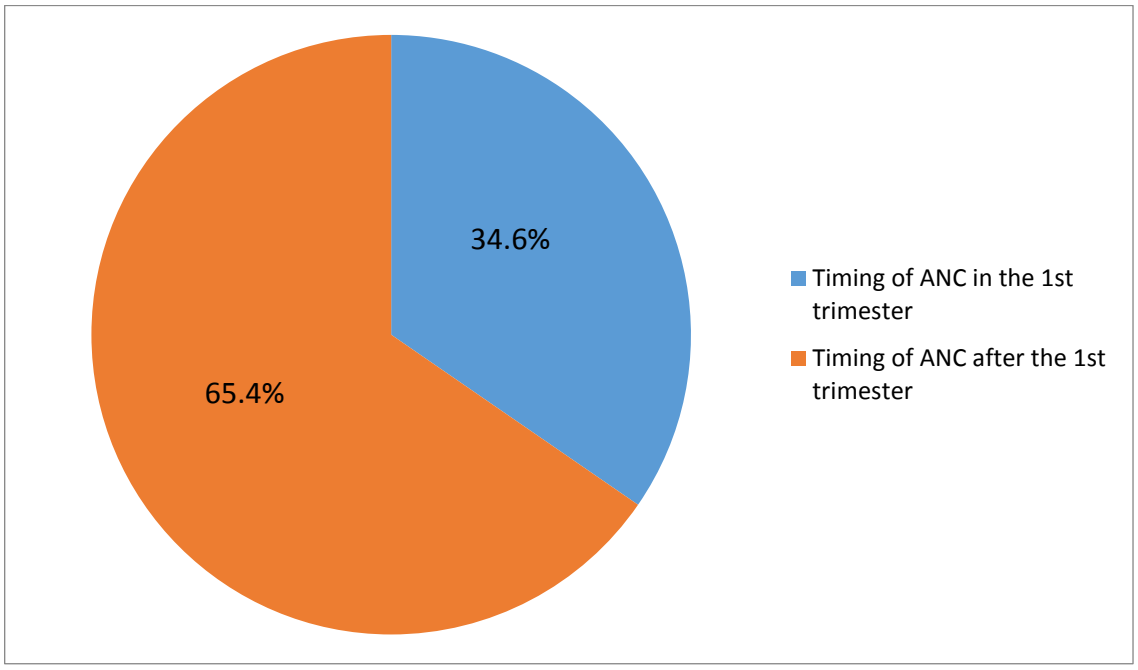

Figure 4: Timing of the first Antenatal Care Visit in Kalabo district

4.1.3 Cross tabulation of participants' characteristics and timing of ANC

A chi-square test of independence was used to test for association between the dependent variable and each of the independent variables. Table 4 indicates statistically significant associations between first trimester ANC and marital status (PV< 0.001) male involvement (PV=0.004), awareness (PV= 0.001) and decision maker (PV=0.003).

Table 4: Cross tabulation of participants' characteristics and timing of ANC

Characteristic	Within first trimester ANC n (%)	After first trimester ANC n (%)	P-value
Age			
<24	89(36.18)	157(63.82)	0.209
25-34	41(29.08)	100(70.92)	
35+	27(40.30)	40(59.70)	
Parity			
1	66(67.49)	137(67.49)	0.735
2	19(32.76))	39(67.24)	
3	21(39.62)	32(60.38)	
4+	51(36.45)	89(63.51)	
Marital status			
Single	39(22.81)	132(77.19)	**<0.001***
Married	97(42.54)	131(57.46)	
Divorced/Separated /Widowed	21(38.18)	34(61.82)	
Educational status			
Never been to school	13(36.11)	23(63.89)	0.989
Primary	100(34.60)	189(65.40)	
Secondary	43(34.13)	83(65.87)	
Tertiary	1(33.33)	2(66.67)	
Ethnicity			
Lozi	99(38.52)	158(61.48)	0.131
Mbunda	38(29.46)	91(70.54)	
Any other	20(29.46)	48(70.59)	
Distance <5 KM			
	77(31.43)	168(68.57)	0.126
>5 KM	80(38.28)	129(61.72)	
Male Involvement			
Yes	108(39.85)	163(60.15)	**0.004***

No	49(26.78)	134(73.22)	
Awareness			
Yes	91(42.52)	123(57.48)	**0.001***
No	66(27.50)	174(72.50)	
Occupation			
Employed	2(50.00)	2(50.00)	0.178
Business	18(40.00)	27(60.00)	
Farming	91(31.16)	201(68.84)	
Fishing	46(40.71)	67(59.29)	
Decision maker			
Myself	111(33.74)	218(66.26)	**0.003***
Partner	17(23.61)	55(76.39)	
Health worker	11(47.83)	12(52.17)	
SMAG member	18(60.00)	12(40.00)	
Income Status			
Below 1000	151(34.47)	287(65.53)	0.629
Between 1000-2000	1(20.00)	4(80.00)	
Above 2000	5(45.45)	6(54.55)	

Where Pearson Chi2 assumptions were not satisfied, Fishers exact P values were obtained.

4.1.4 Demographic characteristics and their association with timing of ANC in the first trimester

Table 5 shows the demographic characteristics and their association with first trimester antenatal care at both simple and multiple logistic regression. At simple logistic regression analysis married women were 2 times more likely to initiate antenatal care in the first trimester than single women **(OR 2.59, CI 1.37-4.59, and PV 0.009**). Similar findings were also observed at multiple logistic regression where married women were still 2 times more likely to initiate antenatal care in the first trimester than single pregnant women **(AOR 2.59, CI 1.50-4.48, PV 0.004)**. No statistically significant associations were observed with the other variables, parity, educational status and ethnicity at both simple and multiple logistic regression.

Table 5: Demographic characteristics and their association with timing of ANC in the first trimester- Logistic regression, simple and multiple

Characteristic	Crudes Odds ratio (CI)	P-value	Adjusted-Odds ratio (CI)	P-value
Age				
<24	**Ref**			
25-34	0.73(0.39-1.33)	0.248		
35+	1.19(0.67-2.11)	0.494		
Marital status				
Single	**Ref**			
Married	2.51(1.37-4.59)	**0.009**	**2.59(1.50-4.48)**	**0.004**
Divorced widowed/Separated	2.09(0.86-5.07)	0.09	**2.24(0.91-5.50)**	**0.072**
Parity				
1	**Ref**			
2	0.72(0.30-1.74)	0.413		
3	0.90(0.39-2.05)	0.764		
4+	1.10(0.52-2.31)	0.781		
Educational Status				
Never been to school	**Ref**			
Primary	0.94(0.48-1.82)	0.821		
Secondary	0.92(0.36-2.31	0.834		
Tertiary	0.88(0.03-31.12	0.937		
Ethnicity				
Lozi	**Ref**			
Mbunda	0.67(0.35-1.28)	0.184		
Any other tribe	0.66(0.24-1.82)	0.370		

4.1.5 Socio-cultural and accessibility characteristics associated with timing of ANC in the first trimester

From table 6, it is clear that at simple logistic regression, a statistically significant association was observed between awareness and timing of antenatal care visits. The pregnant women who said they were aware of the initiation of ANC in the first trimester were 2 times more likely to initiate ANC in the first trimester than those who were not aware (**OR 1.95, CI 1.13-3.38, PV 0.024)**. Similar findings were again

observed at multiple logistic regression where pregnant women who said they were aware of the initiation of ANC in the first trimester were still 2 times more likely to initiate ANC in the first trimester than those who were not aware **(AOR 2.03, CI 1.17-3.54, P= 0.019).** No association was also observed with the other variables, distance, male involvement, occupation, income status, decision maker at both simple and multiple logistic regression.

Table 6: Socio-cultural and accessibility characteristics associated with timing of ANC in the first trimester- Multiple Logistic regression

Characteristic	Crudes Odds ratio (CI)	P-value	Adjusted Odds ratio (CI)	P-value
Distance				
Short distance(<5KM)	Ref			
Long distance(>5KM)	0.71(0.40-1.26)	0.200		
Male Involvement				
No	Ref			
Yes	1.81(0.88-3.74)	0.094		
Awareness				
No	Ref			
Yes	1.95(1.13-3.38)	**0.024**	**2.03(1.17-3.54)**	**0.019**
Occupation				
Employed	Ref			
Business	0.67(0.04-11.62)	0.747		
Farming	0.45(0.03-8.02)	0.535		
Not employed	0.69(0.05-10.08)	0.750		
Income Status				
Low (<1000)	Ref			
Middle (1000 and 2000)	0.47(0.04-5.97)	0.509		
High (Above 2000)	1.58(0.33-7.55)	0.509		
Decision maker/Influence Myself	Ref			
Partner	0.61(0.29-1.26)	0.149		
Health worker	1.80(0.67-4.87)	0.205		
SMAG member	2.95(0.53-16.52)	0.182		

4.2 Qualitative Findings

The fourth objective of the study was to explore the cultural factors influencing pregnant women to attend ANC in the first trimester gestation period. Three focus group discussions were held in two health facilities, Namatindi and Mutaa. Two discussions were held with pregnant women and one was held with SMAG members in Namatindi. The purpose of the focus group discussions was to understand the experiences and perceptions of pregnant women and SMAGs on first trimester ANC including why most women initiate their first ANC visit after the first trimester. Participants in each discussion were assigned codes. For pregnant women, one group had 9 participants and the other one had 6. For the discussion with SMAGs 10 participated. This is highlighted in table 7.

Table 7: Demographic characteristics of Participants

FDG no.	Location	Number of participants	No. of females	No. of males	Age Range	Educational status range	Marital status	
							Married	Not married
1	Namatindi	9	9	0	14-40	1-9	6	3
2	Mutaa	6	6	0	14-38	1-9	3	3
3	Namatindi	10	6	4	24-52	1-12	7	3

The minimum age of the pregnant women was 14 and the maximum was 40. Nine were married and 6 were not. In terms of educational status, all participants were between grade 1 and 12. For SMAGS, 6 were females while 4 were males. Two SMAGs lived within 5km distance from the health facility while four lived outside 5km distance from the health facility.

Pregnant women and SMAGs mentioned a number of things that prevented them from attending antenatal care as early as possible at health facilities.

These are shown in table 8 below.

Table 8: Themes emerging from the Focus Group Discussion

Themes emerging from the discussion	
Pregnant woman	**SMAG member**
Not sure about the existence of pregnancy	Misconception about pregnancy
Not aware of the right time to initiate the first ANC visit	Economic challenges
Cultural beliefs and practices	Not aware of the right time to initiate the first ANC visit
Male involvement and fear of HIV testing	
Age	
Marital status and Age of partner	
Distance and health status	
Decision making	

4.2.1 Not sure about the existence of pregnancy

Pregnant women failed to attend the first ANC visit in the first trimester because they were not sure if the pregnancy really existed or not. They felt that not having menses was not only as a result of pregnancy but also factors like family planning. Pregnant women feared punishment from the partner's family in cases where they rushed to go for first ANC and then the pregnancy does not grow. They also reported that they had no other means or methods of knowing for sure that they were pregnant. Some women experienced situations where they could not have menses for two months and then have them back in the third month. They felt that there was need for them to start experiencing some movements in the abdomen for them to be sure of the pregnancy.

Some SMAG members also alluded to the fact that they also had no proper ways of being sure that a woman is pregnant especially with the mushrooming of bleaching lotions as in the past these women could be identified through changes in their complexion. A pregnant woman had this to say:

"We wait to see the pregnancy grow because just missing my period does not necessarily mean I am pregnant and there are no other methods of knowing for sure that I am pregnant."
(Pregnant woman, FGD 2, Namatindi)

A SMAG member also mentioned this in line with the same:

"As SMAGs we are also somehow failing to advise these women to initiate ANC early because we are confused. I say so because in the past it was so easy to identify pregnant women because of complexion, nowadays it is very difficult because of bleaching lotions making it very difficult to segregate between those who are really pregnant and those who have changed complexion because of bleaching lotions". (SMAG member, FGD 3, Namatindi)

4.2.2 Cultural beliefs and practices

Pregnant women alluded to the bead called '**Kanyumbwe**' that is worn around the neck or on the hand like a wrist watch during their pregnancy. Without the bead a pregnant woman is not allowed to publicize the pregnancy or go for ANC. Pregnant women have to wait for the in laws to dress them in this bead that is when they are free to publicize the pregnancy and go for ANC. There was also a belief that the pregnancy can disappear if revealed before it grows.

To those women who find it a challenge to conceive and helped by witch doctors, they are not allowed to take the pregnancy to the health facility before the witch doctor accomplishes his work. A pregnant woman and SMAG member had this to say:

"We delay to go for ANC because we wait for the pregnancy to protrude and then you are dressed in a bead called Kanyumbwe. Kanyumbwe is a bead which is worn around the neck. Our culture then can allow one to go to the clinic for ANC after this has happened." (Pregnant woman, FGD 2, Namatindi)

"It is very difficult for some women to fall pregnant. They have to be helped by witch doctors in order to fall pregnant. As such

these witch doctors do not allow them to take these pregnancies to the health facility as early as possible before they accomplish their goals" (SMAG member, FGD 3, Namatindi)

4.2.3 Lack of male Involvement and fear of HIV testing

The issue of male involvement and fear of HIV testing was indicated as a hindrance to first trimester ANC. Men leave their partners when the pregnancies are still very small. They migrate to other settlements in search of livelihood for example, fishing. In such cases pregnant women have to wait for their partners to come back that is when they can proceed with ANC. Sometimes partners just refuse to accompany the women to health facilities fearing HIV testing. They come to accept when the pregnancy has really grown.

"We normally wait for our partners to be around if they had gone for fishing when the pregnancy was still very small at one or two months. This is a very big issue in our villages because going against it will lead to concerns on who the owner of the pregnancy is" (Pregnant woman, FGD 1, Namatindi)

"We delay to go for ANC because our husbands refuse to accompany us fearing that they will be tested for HIV. So you may really be willing to go as a woman but if your husband has issues there is nothing you can do apart from looking at him" (Pregnant woman, FGD 1, Namatindi)

4.2.4 Age

Some women felt shy to go for ANC early because they were old while some felt they were young and people would be disappointed to see them pregnant.

"*Sometimes we delay to go for ANC because of shyness due to being above the so-called child bearing age."* (Pregnant woman, FGD 2, Mutaa)

One major issue that contributes to our going late for antenatal care is being young. We fear that if I go early for ANC people will be disappointed and shocked that young people of nowadays get

pregnant at a tender age. It hurts and really feels bad". Pregnant woman

4.2.5 Marital status and age of partner

Some women indicated that the marital status of being single played a role in delaying women to go for ANC. The owner of the pregnancy might be older and married.

> *"Sometimes the person who has impregnated you is far much older than you and married. May be his children are far much older than you, you feel shy to go for ANC early for fear of being laughed at. (Pregnant woman, FGD 2, Mutaa)*

4.2.6 Distance and health status

Distance was indicated as another reason hindering women to attend ANC early. As such women would go for ANC only when they are sick.

> *"Because of the distance to the health facility, in this case walking for four hours, we only go to the clinic when we are seriously sick and sometimes one can be pregnant and not fall seriously sick for a number of months. In such cases we do not see the need of going to the clinic early if at all the pregnancy does not give any health problems". (Pregnant woman, FGD 2, Mutaa)*

4.2.7 Decision making

In some cases, some women were being influenced by parents who never attended ANC at all and therefore could not see the need why their pregnant children should rush or go for ANC early.

> *"My parents told me that they never went to the clinic when they were pregnant with me so they do not see the urgency for coming early or at all to the clinic" (Pregnant woman, FGD 2, Mutaa)*

4.2.8 Misconceptions about pregnancy

There are still misconceptions about pregnancy. For example, it is believed that palpating at an early stage of pregnancy may kill the baby in the womb.

> *"Palpating at an early stage of pregnancy may kill the baby in the womb. This makes some pregnant women to delay for ANC." (SMAG member, FGD 3, Namatindi)*

4.2.9 Economic challenges

Some women have economic challenges that make them fail to go for ANC early. Sometimes they do not even have maternity dresses and they have to wait for their husbands to look for the dresses. By the time the dresses are acquired, the women are already late for ANC.

> *"I have seen a number of women failing to go for ANC early because of lack of maternity dresses. The husband or partner has to go for fishing in order to raise money for a maternity dress. By the time he comes back the pregnancy is already very big." (SMAG member, FGD 3, Namatindi)*

4.2.10 Lack of awareness

Some women still do not have the right information concerning the right timing of the first ANC visit and why it is important for them to go during that time. When they were asked about the right timing of the ffirst antenatal care visit, most of them said three months and above. From the discussions it was clear that they have to wait until when their pregnancy is three and above. Some of them expressed total ignorance about the right timing of the first ANC visit.

> *"We are supposed to go for ANC at 3 months" (Pregnant woman, FGD 1, Namatindi)*

> *"Some women initiate ANC late because of lack of awareness. To tell you the truth most women in these villages do not really know the right time that they should have their first ANC visit. Us SMAG members have a lot of work to accomplish in this area. It*

is only now that peoples mind sets are changing because of what we are busy doing." (SMAG member,
FGD 3, Namatindi)

CHAPTER FOUR

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

5.1.1 Timing of antenatal care in the first trimester

The results of this study indicate that the proportion of pregnant women having their first antenatal visit in the first trimester is still very low at 34.6%. This supports the findings of Wang that only less than 50% of women in most developing countries attend ANC in their first trimester gestation period (Wang Wenjuan et al., 2011). A close proportion of 28% was found in selected rural and urban communities of the Copperbelt province(Banda et al., 2012) . A study conducted on timing of antenatal care for adolescent and adult pregnant women in South-eastern Tanzania also found a similar proportion of 29% (Gross et al., 2012). A very similar proportion of 35.4% was also noted in a study that was assessing the timing of first trimester antenatal care booking and associated factors among pregnant women who attended antenatal care at health facilities in Dilla town, Gedeo zone, Southern nations, nationalities and peoples' region Nigeria (Abuka and Alemu, 2016). However, the proportion in this study is higher than the reported 4% in 2016. The increase is attributed to the implementation of the Results Based Financing RBF that has promoted the creation of various strategies to improve first trimester antenatal care. The strategies include strengthening the sensitizations to pregnant women and the community at large.

5.1.2 Awareness of ANC in the first trimester

The finding of this study also supports the finding that awareness about the right timing of first antenatal care visit is associated with timing of ANC in the first trimester. Women who know the right timing of ANC have their first visit in the first trimester. It was noted that women started their antenatal care late due to lack of adequate information on the content and schedule of antenatal care visits in Congo (Ntambule et al., 2012). Many pregnant women do not know the right time of gestation at which they should start seeking antenatal care and partly explains why they report late for the first antenatal care visit (Kisuule et al., 2013). A similar finding that women with adequate knowledge were more likely to initiate ANC early compared to those without knowledge was also noted in the Copperbelt province in Zambia(Banda et al., 2012). In

the qualitative study component, pregnant women and SMAGs described lack of awareness on the right timing to ANC as one of the reasons for failure to attend ANC in the first trimester. Some women reported 6 months as the time that a woman should have her first antenatal care visit. This indicates that most women still do not have the right information on first trimester antenatal care visits.

5.1.3 Marital status and timing of ANC in the first trimester

The study also found that married women were 2 times more likely to attend ANC in the first trimester than their counterparts who are single. This supports the findings of a study conducted in Kenya that women who were not married timed their ANC late compared to those who were married (Ochako and Gichuhi, 2016). In England, women living without a husband or partner were more likely to initiate late ANC compared with women living with a husband or partner(Rowe et al., 2008). Women who participated in a qualitative study in Malawi described single marital status as a hinderance in seeking early antenatal care in cases where they were ashamed of their pregnancy or current relationship (Manda-Taylor et al., 2017)

5.1.4 Education status and timing of ANC in the first trimester

The association between education and timing of ANC was not significant. This is very contrary to the findings of many studies that education influences ANC and the educated are more likely to time the first visit in the first trimester However, a study conducted in Mathare informal settlements Nairobi also did not find any significant association between education and use of ANC services (Makii, 2015). This finding is attributed to the fact that the study was conducted in a rural setting here levels of education are still very low**.**

5.1.5 Distance and timing of ANC in the first trimester

There was no significant relationship between distance and timing of the first antenatal care visit. The findings of this study support the evidence found in the Zambia Demographic Health Survey of no association between distance and attending of antenatal care in the first trimester (Kyei et al., 2012). However, a number of studies have found significant associations between the two variables (Banda et al., 2012; Turyasiima et al., 2014). However pregnant women in the qualitative component described distance as a challenge making it difficult for them to initiate ANC early. As

such, they resorted to only go for ANC when they were not feeling well or sick. This finding is similar to the findings of a study conducted in the remotest districts of Zambia where women also described distance as a barrier to ANC attendance and that they viewed ANC attendance as an opportunity to confirm if they are pregnant and to check their own health status and that of the baby(Jacobs et al., 2018). Therefore, in cases where women felt they were in good health status they saw no need of walking long distances to attend ANC early.

5.1.6 Fear of HIV testing and timing of ANC in the first trimester

Pregnant women interviewed in this study described the fear of HIV testing being one of the hindrances to attending ANC in the first trimester. In some cases, some men refuse to accompany them to ANC clinics due to fear of HIV testing. The findings support those of a study conducted in South Africa that fear of HIV testing delayed women from attending early prenatal care(Haddad et al., 2016). The findings are also consistent with those of a study conducted in the Eastern Cape, South Africa where women described fear of HIV as a factor influencing delay for antenatal(Kaswa et al., 2018).

5.1.7 Failure to confirm pregnancy and timing of ANC in the first trimester

This study reports a theme on not being sure about the existence of a pregnancy as a reason for some pregnant women failing to attend their first ANC visit in the first trimester gestation period. Women in South York shine, United Kingdom also reported they had not known they were pregnant for weeks or some months which delayed them accessing care(Haddrill et al., 2014).There is therefore need for health workers at the health facility and community to intensity health education on the signs and symptoms of pregnancy. The issue of pregnancy test kits should also be revisited so that they can be made available even at house hold level to improve the confirmation of pregnancy.

5.1.8 Culture and timing of ANC in the first trimester

Women in the study also described culture as one of the factors or hindrances to timing the first antenatal care visit in the first trimester. One issue cited was the Sifaha (bead) which is worn by a pregnant woman around the neck by the in-laws. It Is a sign that the pregnancy has been accepted by the in-laws. Without it a pregnant woman will delay to go for ANC. This finding is very consistent with the one where women in Eastern

Cape, South Africa described that if the partner and family accept the pregnancy then they attend ANC early (Kaswa et al., 2018).

The practice of witch doctors to prevent pregnant women from going to ANC clinics because they facilitated the pregnancy was highlighted by pregnant women and SMAGs as challenges. It was reported that some women had challenges in conceiving and were helped by witch doctors. This finding is similar to that of Centenary (2010)that many women were going to traditional healers and this hindered their planning for early ANC and facility-based delivery.

5.1.9 Wealth quintile and timing of ANC in the first trimester

The association between first trimester antenatal care visit and the two wealth quintile measures or indicators (occupation and income status) was not significant in the quantitative arm. However, the SMAG members in the qualitative study described economic challenges as a hinderance for pregnant women to attend antenatal care in the first trimester. A similar finding is reported in a study by Maano and Tuwilika (2017)that women in their study indicated lack of money for transport to the ANC as a hindrance to attending timey antenatal care.

5.2 Conclusion

The proportion of women attending antenatal care in the first trimester is still very low though higher than the national coverage. This increase is due to the Results Based Financing (RBF) strategy being implemented by health facilities in the district. The RBF strategy was embarked on towards the end of 2016. Socio-cultural factors including marital status and awareness of the importance to attend antenatal care in the first trimester are associated with attendance of antenatal care in the first trimester. Practices and beliefs of pregnant women also influence the timing of antenatal care in the first trimester as these were alluded to in the focus group discussions. It therefore calls for concerted efforts both by health institutions and communities to curb the problem through intensified health education.

5.3 Recommendations

The following are the recommendations of the study:

1. Health institutions and SMAGs in Kalabo district should intensify health education on the right timing and importance of first antenatal care visits.
2. Health facilities in Kalabo district should consider availing pregnancy test kits to SMAGs and pregnant women to reduce the problem of late recognition of pregnancies
3. Health institutions, SMAGs and communities in Kalabo district should strengthen the implementation of adolescent reproductive health strategies for example family planning and health education.
4. Health facilities in Kalabo district should continue taking RBF seriously as it has the capacity to improve the number of women attending ANC in the first trimester.
5. A study should be carried out to evaluate Results Based Financing in Western Province

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APPENDICES

Appendix I: Pregnant woman's questionnaire

THE UNIVERSITY OF ZAMBIA

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF GLOBAL HEALTH

ORAL SCRIPT

Dear Respondent,

My name is …… I am a student at the University of Zambia. I am collecting information on socio-cultural determinants of first trimester antenatal attendances in your community. This information will be used for academic purposes; it will help me write a thesis which is a requirement for the award of a Masters' degree in Public Health-Population studies at from the University of Zambia. You have been randomly selected to provide information on this topic. However, participation into this study is entirely voluntary, and as such you may wish to refuse or stop the interview at any time or refuse to answer a question that you may not be comfortable with. I would also like to assure you that whatever information you may provide in this study will be confidential; it will not be shared with anyone.

This interview will last about 15 to 20 minutes. At this point I would like to know if you have any question or we can go ahead with the interview.

Agreed

Refused

Cluster number

Date of interview

Cluster number

Date of interview

Timing of antenatal care and demographic characteristics

NO	QUESTIONS AND FILTERS	CODING CATEGORIES
1	How old were you on your last birth day (Age in completed years) ……..	
2	What is your marital status?	Single…… ……. 1 Married…… 2 Divorced/Separated/widowed…… 3
3	Do you have any children of your own?	Yes…….. 1 No…….. 2
4	If yes in question 3, how many children are alive …….	
5	How many children died…….……	
6	What is your highest level of education?	Never been to school…… 0 Primary……1 Secondary……2 Tertiary……3
7.	What is your ethnicity or tribe?	Lozi…… 1 Mbunda…… 2 Any other……. 3

Section B: Timing of antenatal

8.	When was your first antenatal care visit ?	Within 14 weeks of pregnancy……1 After 14 weeks of pregnancy……..0

Section C: Timing of antenatal care visit and socio-economic factors

9. Are you aware of the right time that a pregnant woman should go for her first antenatal visit? Yes…… 1

No…… 0

10. If your answer in question 13 is yes, when is a pregnant woman supposed to have her first antenatal visit ……..……..

11. How far is your home from this facility? Within 5km…… 1

Beyond 5km…… 2

12. What is your occupation?.....

13. Did your partner accompany you for the first antenatal care visit in this pregnancy? Yes…… 1

No…… 0

14. Were you influenced by anyone to come for the first Antenatal care visit?

Yes……. 1

No…… 0

15. If your answer is yes in 19, who influenced you?

Partner……..… 1

Health worker…….. …… 2

SMAG member……..…. 3

16. What is your estimated monthly income in Zambian Kwacha?

Below 1000……. 1

1000-2000 …….. 2

Above 3000 ……. 3

Appendix II: Translated Lozi questionnaire

THE UNIVERSITY OF ZAMBIA

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF GLOBAL HEALTH

Ku mualabi,

Libizo laka kina Miyaze Mbaala. Ni muituti kwa sikolo sesi pahami sa University of Zambia. Ni batisisa mabaka atisa kuli basali babanani milwalo baye kwa sipimo kakuitahanela kamba kakuliyeha. Patisiso ikatisa kuli sona sikolo se sa University of Zambia sinife masters degree. Muketilwe kuli mube babanwi baba kaalaba lipuzo kuamana nit aba ye. Kono kualaba lizo ze, kuitingile kumina. Mwakona kuketa kualaba kamba nya. Kono hape nimizibisa kuli ze kaambolwa kaufela kizaluna fela lubababeli. Halina kubulelelwa mutu ufi kamba ufi

Ngambolo yaluna ikanga mizuzu ye lishumi kayeketa lizoho.

Nilumezi Kuambola nimina……

Nihanile kuambola nimina……

Sipatela

Lizazi

Kalulo ya pili: Nako yeo musali aya kwa sipimo kamo liswalisanela ni muinelo wa hae

No.	Lipuzo	Likalulo za likalabo	
1	Munani lilimo ze kai za kupepwa?	…… Lilimo kakutala	
2	Mu nyezwi?	Nalikuba ninyalwe……	[1]
		Eni…… ……	[2]
		Lukauhani/ Nishwezi	[3]
3	Kana munani bana bamina ba kuipepela?	Eni…… ……..…..	[1]
		Batili…… …….	[2]
4	Eba kalabo yamina mwa puzo yabu 3 ki eni, kibabakai bana baba pila?	…… …….	
5	Kibabakai bana bamina baba timezi?	…….	
6	Muitutile kufita kai	Hanisikakena sikolo…… ….	[0]
		Litopa za 1kuisa 7……	[2]
		Litopa za 8 kuisa 12	[3]
		Kwa likolo ze pahami	[4]
7	Mumashobo mani?	Lozi…… ……	[1]
		Mbunda……	[2]
		Mushobo osiyo fa……	[3]

Kalulo ya bubeli:Nako ya musali yanani mulwalo ya kuya kwa sipimo lwapili

No	Lipuzo	Likalulo za likalabo	
8	Musipili wa mina wapili wakutaha kwa sipimo fa mulwalo wo ubile lili?	Mwalisunda zelishumi ka zeene(14 weeks za pili fa mulwalo wo.	[1]
		Hamulaho walisunda zelishumi ka zeena za pili fa mulwalo wo.	[2]

Kalulo ya bulalu: Kamo mupilelo ni muinelo wa basali babanani milwalo liamana ni nako yeo baya kwa sipimo

9	Kana mwa ziba nako yeo musali yanani mulwalo a swanela kuya kwa sipimo lwapili?	Eni……	[1]
		Batili……	[2]
10	Eba kuli kalabo yamina mwa puzo yabu 13 ki eni, ki nako mani yeo musali yanani mulwalo a swanela kuya kwa sipimo lwapili?	……	
11	Ko muina kikwahule cwani nikapatela kaka inzi bukaufi kakufitisisa?	Mwa Km a 5……	[1]
		Kufitelela ma Km a 5……	[2]
12	Mueza likamani mwabupilo……		
13	Kana bakumina neba kile ba taha nimina kwa sipimo lwapili mwa mulwalo woo?	Eni……	[1]
		Batili……	[2]
14	Kana kunani yanami bulelezi kuli mutahe kwa sipimo lwa pili?	Eni……	[1]
		Batili……	[2]
15	Eba kuli kalabo yamina ki eni mwa puzo ya 21, ki bomani benebami bulelezi kuli mutahe kwa sipimo?	Bakuluna……	[1]
		Mualafi kwa sipatela……	[2]
		SMAG……	[3]
16	Mubanga ni masheleni a fita fa bukai kakweli	Mwatasa K1000……	[1]
		Mwahala K1000 ni K2, 000……	[2]
		Kufitelela K2000……	[3]

……..

Appendix III: Focus group discussion guide with SMAGS

1. When do you think women should have their first antenatal care visit at the health facility?
2. Are there any cultural issues attached to antenatal care attendance and what are the other issues?
3. What are the challenges that prevent women from attending antenatal care in the first trimester?

Appendix IV: Focus group discussion guide with pregnant women

1. Do you have any idea about timing of first antenatal visit?
2. What do you think are the reasons why a pregnant woman should be particular about timing of first antenatal visit?
3. Generally, why are women coming late for antenatal care?
4. Are there any cultural values, beliefs and practices that relate to pregnancy in your area?

Appendix V: Information sheet

Introduction and Purpose

My name is Miyaze Mbaala, a student from the University of Zambia in the school of Public Health. I am carrying out a research on the Socio-cultural determinants of first trimester antenatal care visits in Kalabo district. The findings of this study will assist District Health Office to put in place specific and high impact interventions that can curb the problem of low first trimester antenatal coverage.

Procedure

The purpose of my visit is to ask you questions in relation to timing of first antenatal visit in the first trimester. Other questions will require telling me about you. The discussion will last for about 30 minutes I have a questionnaire with me which I will refer to and record your answers.

Benefits

As already alluded to, your views on this topic will help the District Health Office put in place high impact and specific interventions to address this matter. You will also be provided with a drink, snack and mineral water.

Risks

The risk in this study is that some questions may be embarrassing and also the interview may disturb your other programs

Selection criteria

It is important to inform you how you have been selected to participate in this study. A sampling method called systematic sampling was actually used to select you in order to have a representative sample. This entails that your participation in this study is only by chance and not something else.

Voluntary participation

Participation is voluntary and there are no consequences for refusing to participate. Before deciding about participation, you are therefore at liberty to ask questions on what has been said.

If you consent to participate, you will be asked to sign or thumbprint this form to show that the study has been explained to you and you have agreed to take part. In case you want to decline the interview because of not being comfortable, you are free to do so**.**

Appendix VI: Translated information sheet- manzwi ku mualabi

Makalelo a likande

Libizo laka kina Miyaze Mbaala. Nimuituti kwa sikolo sesipahami sa University of Zambia koo niituta kaza makete. Patisiso yaka kikuli kanti kikabakalan'i basali babanani milwalo habalieha kuya kwa sipimo? Patisiso ye ikanitusa kufiwa pampili ye bizwa master of public health in population studies. Hape ikutusa yona ofisi yetalima zamakete mwa Kalabo kuziba mihato ye swanela kungiwa kuamana ni butata bo.

Kacwalo mukabuziwa lipuzo kuamana ni nako yeo basali ba banani milwalo baya kwa sipimo. Mane lipuzo zemu lika ama mupilelo ni muinelo wa mina. Ngambolo ye ikanga mizuzu ye 30 ili 30 minutes ka sikuwa. Ninani mukoloko wa lipuzo zeo muka buziwa.

Bunde bwa patisiso ye

Sina hase kubulezwi mubonelo wa mina kuamana ni nako yeo basali babanani milwalo baya kwa sipimo lwapili ikatusa ofisi ya makete mwa Kalabo kunga mihato ya kukusufaza butata bwa kulieha kwa sipimo. Hape muka fiwa botela ya drink ni biscuit.

Butata bwa kuabana mwa patisiso ye

Mwendi lipuzo zemu likaswana za za miutwisa maswabi. Mane hape ona ngambolo ye ikaswana yami palelwisa kueza lika zemu ze ne muswanela kueza kanako ya cwale.

Kamo muketezwi kuabana mwa patisiso ye

Mu ketilwe feela kuaba mwa patisiso ye kusina neba libaka lifi kapa lifi.

Kuabana kwa mina mwa patisiso ye

Kwabana kwa mina mwa patisiso ye kuitingile kumina. Akuna ze kona kuezehala eba muhana kuabana. Kono musikafa kale mayemo amina fa kuabana kapa nya, mwendi munani lipuzo? Eba mulumela kuabana, muka saina pampili nyana ili kubonisa kuli mutaluselizwe ka za patisiso ye mi mulumezi kuabana mwa teni.

Appendix VII: Consent form

Participant's consent

Dear participant having explained the nature and purpose of the study, risks and confidentiality, you may answer a few questions, and sign below to declare your participation as voluntary and not forced

Respondent's Declaration

	YES	NO
I have been given an opportunity to ask any questions I may have, and all such questions or inquiries have been answered to my satisfaction. I have been informed orally and in writing of whom to contact in case I have questions.		
I give my consent to participate in this study		
I agree to participate in a recorded interview		
I give permission to include my information, without my name, in your research findings, which will be shared and published		

Sign/Thumbprint..... Date.....

Witness (Name) …… Sign……

Appendix VIII-Translated consent form -Pampili ya tumelelamo

Kulumela kwa mualabi

Hasemubulelezwi kaza patisiso ye, bunde ni bumaswe , mwakona kualaba lipuzo zetatama. Muka saina sina hanekubulezwi ili kubonisa kuli amusikahapelezwa kuabana mwa patisiso mo kono mweza cwalo ka tato yamina.

	Eni	Batili
Nifilwe nako ya kubuza lipuzo zeneninani kaufela mi lialabilwe hande kakutala. Nibulelezwi batu bao niswanela kubonana nibona kapa kulizeza phone eba ninani lipuzo zemu.		
Nilumezi kuabana mwa patisiso ye.		
Nilumezi kuli zeka ambolwa kaufela, kaku sabeya libizo laka libeiwe mwa patisiso mo.		

Amusaine/Thumbprint..... Lizazi.....

Paki (Libizo)……... Amusaine……..

Appendix IX: Guardian's consent

Dear participant having explained the nature and purpose of the study, risks and confidentiality, you may answer a few questions, and sign below to declare your participation as voluntary.

Respondent's Declaration

	YES	NO
I have been given an opportunity to ask any questions I may have, and all such questions or inquiries have been answered to my satisfaction. I have been informed orally and in writing of whom to contact in case I have questions.		
I give my consent to participate in this study		
I agree that my child participates in this study		
I give permission to include my information, without my name, in your research findings, which will be shared and published		

Sign/Thumbprint..... Date.....

Witness (Name)…… Sign…….……

Appendix X: Translated consent form for gurdians-pampili ya tumelelano ni mushemi

Kulumela kwa mushemi

Hasemubulelezwi kaza patisiso ye, bunde ni bumaswe , mwakona kualaba lipuzo zetatama. Muka saina sina hanekubulezwi ili kubonisa kuli mulumelelize mwana amina kuabana mwa patisiso mo.

	Eni	Batili
Nifilwe nako ya kubuza lipuzo zeneninani kaufela mi lialabilwe hande kakutala. Nibulelezwi batu bao niswanela kubonana nibona kapa kulizeza phone eba ninani lipuzo zemu.		
Nilumezi kuli mwanaka abane mwa patisiso ye.		
Nilumezi kuli zeka ambolwa kaufela, kaku sabeya libizo mwanaka libeiwe mwa patisiso mo.		

Amusaine/Thumbprint..... Lizazi.....

Paki (Libizo) …… Amusaine……

Appendix XI: Approval letter from Ethics committee

THE UNIVERSITY OF ZAMBIA

BIOMEDICAL RESEARCH ETHICS COMMITTEE

Telephone: 260-1-256067
Telegrams: UNZA, LUSAKA
Telex: UNZALU ZA 44370
Fax: + 260-1-250753
E-mail: unzarec@unza.zm
Assurance No. FWA00000338
IRB00001131 of IORG0000774

Ridgeway Campus
P.O. Box 50110
Lusak-a, Zambia-

8th December, 2017.

Your Ref: 047-06-17.

Mr/Mrs/Ms Miyaze Mbaala
The University of Zambia,
School of Public Health,
Department of Global Health,
P.O. Box 50110,
Lusaka.

Dear Mr/Mrs/Ms Mbaala.

RE: RESUBMITTED RESEARCH PROPOSAL: **"SOCIO-CULTURAL DETERMINANTS OF FIRST TRIMESTER ANTENATAL CARE VISITS IN KALABO DISTRICTS" (Ref. No. 047-06-17)**

The above-mentioned research proposal was reviewed on 8th December, 2017. The proposal is **approved.**

CONDITIONS:

- This approval is based strictly on your submitted proposal. Should there be need for you to modify or change the study design or methodology, you will need to seek clearance from the Research Ethics Committee.
- If you have need for further clarification please consult this office. Please note that it is mandatory that you submit a detailed progress report of your study to this Committee every six months and a final copy of your report at the end of the study.
- Any serious adverse events must be reported at once to this Committee.
- Please note that when your approval expires you may need to request for renewal. The request should be accompanied by a Progress Report (Progress Report Forms can be obtained from the Secretariat).
- Apply in writing to National Health Research Authority for permission before you embark on the study.
- **Ensure that a final copy of the results is submitted to this Committee.**

Yours sincerely,

Dr. S. H Nzala PhD
VICE-CHAIRPERSON

Date of approval: 8th December 2017. **Date of expiry:** 7th December, 2018.

Appendix XII: Authority from National Health Research Authority

THE NATIONAL HEALTH RESEARCH AUTHORITY
Paediatrics Centre of Excellence
University Teaching Hospital
P.O Box 30075
LUSAKA

02nd February, 2018

Miyaze Mbaala

The University of Zambia

School of Public Health

P.O Box 50110

LUSAKA

Received
M. Mbaala
19/02/2018

Re: Request for Authority to Conduct Research

The National Health Research Authority is in receipt of your request for authority to conduct research titled **"Socio-Cultural Determinants of First Trimester Antenatal Care Visits in Kalabo Districts"**.

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 to carry out the above mentioned exercise on condition that:

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

Yours sincerely,

Dr. Godfrey Biemba
CEO/Director
National Health Research Authority

REPUBLIC OF ZAMBIA
NATIONAL HEALTH RESEARCH AUTHORITY
- 2 FEB 2018
OFFICE OF THE DIRECTOR/CEO
P.O. BOX 30075
LUSAKA

Appendix XIII: Authority from Western Provincial Health Office

All correspondences should be addressed to the Provincial Medical Officer

Tel: 0217 - 221246 / 221381
Fax: 0217 - 221428

In reply please quote

No. MH / WP

REPUBLIC OF ZAMBIA

MINISTRY OF HEALTH

PROVINCIAL MEDICAL OFFICE
P.O . BOX 910022
Plot No. 4503
Independence Road
MONGU - ZAMBIA

13th February, 2018

Ms Miyaze Mbaala
University of Zambia
School of Public Health
Department of Global Health
LUSAKA

RE: PERMISSION TO CONDUCT ACADEMIC RESEARCH

We are in receipt of your request and appropriate ethical clearance to conduct research in Kalabo District, Western Province entitled "Socio-economic determinants of first trimester antenatal care visits in Kalabo district/Zambia".

Western Provincial Health Office is pleased to grant you permission following your satisfactory attainment of pre-conditions for your research. You are further advised to submit a copy of your protocol and upon completion, a copy of your research report to the Public Health Specialist – PHO for our record. This letter will serve as introductory correspondence to Kalabo District Health Office.

Dr Jacob Sakala
Public Health Specialist
For/Provincial Health Director
WESTERN PROVINCE