

**SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA**



**FACTORS INFLUENCING ADOLESCENT UTILIZATION OF
ANTENATAL CARE SERVICES IN AMENFI WEST DISTRICT
OF THE WESTERN REGION**

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AWARD OF MASTER OF PUBLIC HEALTH DEGREE**

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DECLARATION

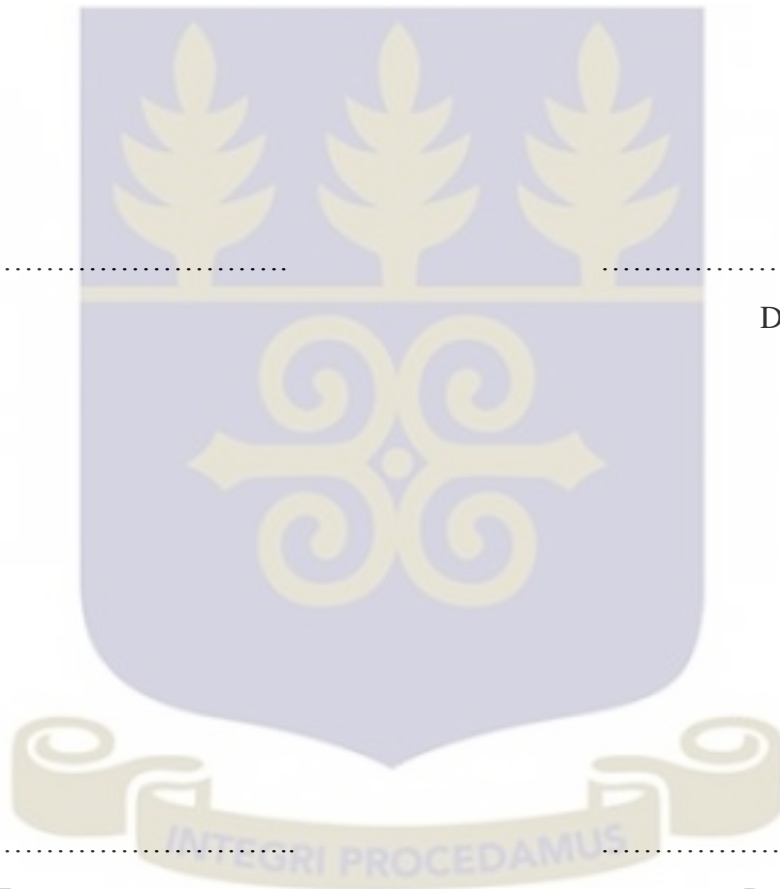
I, Felix Kparu hereby declare that apart from references to other people's works which have been duly acknowledged, this proposal has been written independently by me and has not been submitted for the award of any degree in any institution

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Date



DEDICATION

I dedicate this work to my dearest wife Doris Dongviel Dapila and my lovely children
Oswell Kparu and David Kparu for their sacrifice and prayers during the period of my
study.



ACKNOWLEDGEMENT

I am grateful to God for the strength, knowledge, guidance and protection throughout my life. My heartfelt gratitude also goes to my Academic Supervisors, Prof. Kwesi Torpey and Dr. Margate Atuahene for their great support and encouragement given me. To all my lecturers, I bow in your honour for the time, energy you used for me during this period of training. I am indeed grateful to the District Director of Health Services and the District Public health nurse in the Amenfi West for their support. My heartfelt gratitude also goes to management of Father Thomas Allan Rooney Memorial Hospital and SAX Timber Hospital for all the help, guidance and encouragement given me during my research work and allowing their facilities to be used for this research. Finally to my family for their sacrifice and been there for me throughout my study.

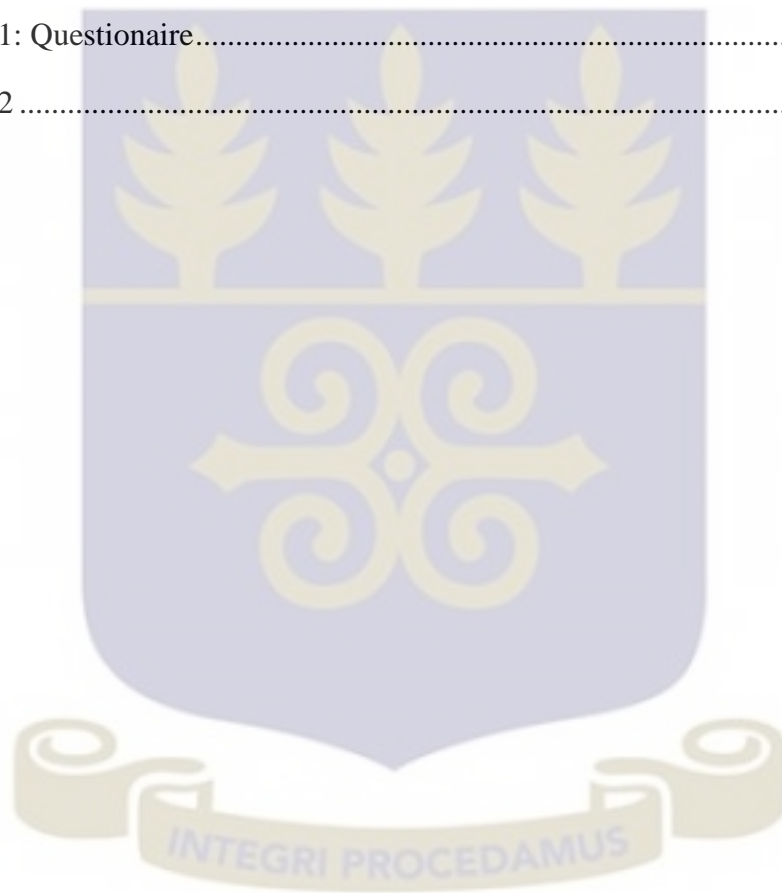


TABLE OF CONTENT

DECLARATION	i
DEDICATION	ii
ACKNOWLEDGEMENT	iii
TABLE OF CONTENT	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
ABSTRACT	ix
LIST OF ABBREVIATIONS	xi
DEFINITION OF TERMS.....	xii
CHAPTER ONE	1
1.1. Background	1
1.2 Conceptual Framework	3
1.3 Statement of the Problem	4
1.3 Justification of the Study	7
1.5 Research Questions	7
1.6. Aims and Objectives	7
CHAPTER TWO	8
2.0 LITERATURE REVIEW	8
2.1 Adolescence.....	8
2.2 Antenatal Care Coverage in Ghana	9
2.3 Maternal mortality	11
2.4 Factor Influencing ANC Utilization.....	12
2.4.1 Socio-economic and demographic Factors	15
2.4.2 Knowledge about the Importance of ANC	16

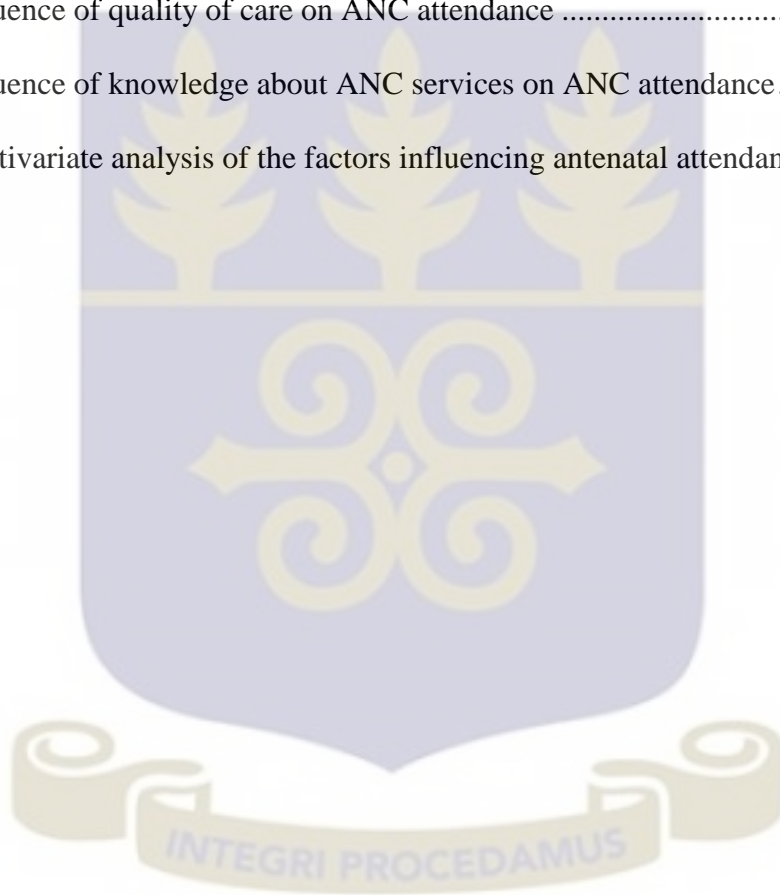
2.4.3 Quality of antenatal care factor.....	17
2.4.4 Access factors	19
CHAPTER THREE.....	20
3.0 METHODS	20
3.1 Study design	20
3.2 Study area	20
3.3 Population.....	22
3.4 Sampling.....	22
3.5 Data collection.....	24
3.6 Analysis of Data	24
3.7 Ethics and Human Subject Issues.....	25
CHAPTER FOUR.....	27
4.0 RESULTS	27
4.1 Socio-economic and demographic characteristics of respondents	27
4.2 Proportion of ANC attendance	29
4.3 Influence of socio-economic and demographic factors on antenatal clinic visit.....	29
4.4 Quality of care factor influencing ANC attendance	33
4.5 Knowledge about antenatal care and its influence on ANC attendance.....	35
CHAPTER FIVE.....	38
5.0 DISCUSSION	38
5.1 Introduction	38
5.2 Socio-economic and demographic factors.....	38
5.3 Knowledge about antenatal care.....	41
5.4 Quality of care factor.....	42

CHAPTER SIX	44
6.0 CONCLUSION AND RECOMMENDATION	44
6.1 Conclusion.....	44
6.2 Recommendation.....	45
REFERENCES.....	46
APPENDICES	50
Appendix 1: Questionnaire.....	50
Appendix 2	56



LIST OF TABLES

Table 1: Socio-economic and demographic characteristic of respondents	28
Table 2: Influence of Socio-economic and demographic factors on antenatal clinic attendance.....	31
Table 3: Influence of socioeconomic and demographic factors on antenatal clinic attendance (continuation).....	33
Table 4: Influence of quality of care on ANC attendance	35
Table 5: Influence of knowledge about ANC services on ANC attendance.....	36
Table 6: Multivariate analysis of the factors influencing antenatal attendance	37



LIST OF FIGURES

Figure 1: Conceptual framework of factors influencing antenatal clinic attendance among adolescents in Amenfi West District	4
Figure 2: District map of Amenfi West	21
Figure 3: Number of ANC attendance	29



ABSTRACT

Introduction: Adolescent pregnancies are high risk obstetric occurrences. Antenatal care (ANC) provides opportunities to recognize and treat obstetric complications, enhancing the pregnancy outcomes for mothers and babies.

Objective: The purpose of the study is to identify factors influencing adolescents' utilization of ANC services in Amenfi West.

Methods: A quantitative, cross-sectional, descriptive research design was adopted, using structured questionnaire to collect data. Purposive, non-probability sampling was used to collect data from 180 pregnant adolescents' and adolescent nursing mothers from antenatal clinics and postnatal clinics. Factors such as socio-economic and demographic, knowledge about ANC, quality of ANC services, were examined to ascertain if they influence adolescent mothers' utilization of ANC. Data analysis was carried out using STATA and results presented in a form of tables, graphs chart. A Chi- square test was done between the independent variable and the dependent variable. The P value is interpreted based on a 95% confidence level.

Results: The findings show that all respondents have visited antenatal clinic but only 97 (53.9%) made 4 or more ANC visit attendance. There was a significant association between staff attitude and antenatal clinic attendance ($p < 0.05 = 0.003$). Factors influencing antenatal clinic attendance included: unplanned pregnancy, financial constraints, and distance to ANC service points. Majority of the respondents 123 (68.3%) had their first ANC attendance in their second trimester. Out of this number about 69 (56.1%) had 4 or more ANC visits as compared to only 28 (49.1%) in those who visited ANC in their first trimester.

Conclusion: All respondents had at least one ANC visit. Attitude of staff in Amenfi West District toward adolescent pregnant women was adjudged as poor. Most of the adolescents also attributed the poor utilization of the services to the poor attitude of staff or midwives towards them. Most adolescent stay far away from service points and would have to walk a distance to get there. Others pay not less than 1 GH cedis for transportation and the source of money for transportation is provided by the adolescent themselves.



LIST OF ABBREVIATIONS

ANC: Antenatal care

CHW: Community health workers

HIV: Human Immuno-deficiency Virus

IPTp: Intermittent prevention of malaria in pregnancy

LMIC: Low and middle-income countries

MDG: Millennium Development Goal

MNCH: Maternal and child health

PHC: Primary health care

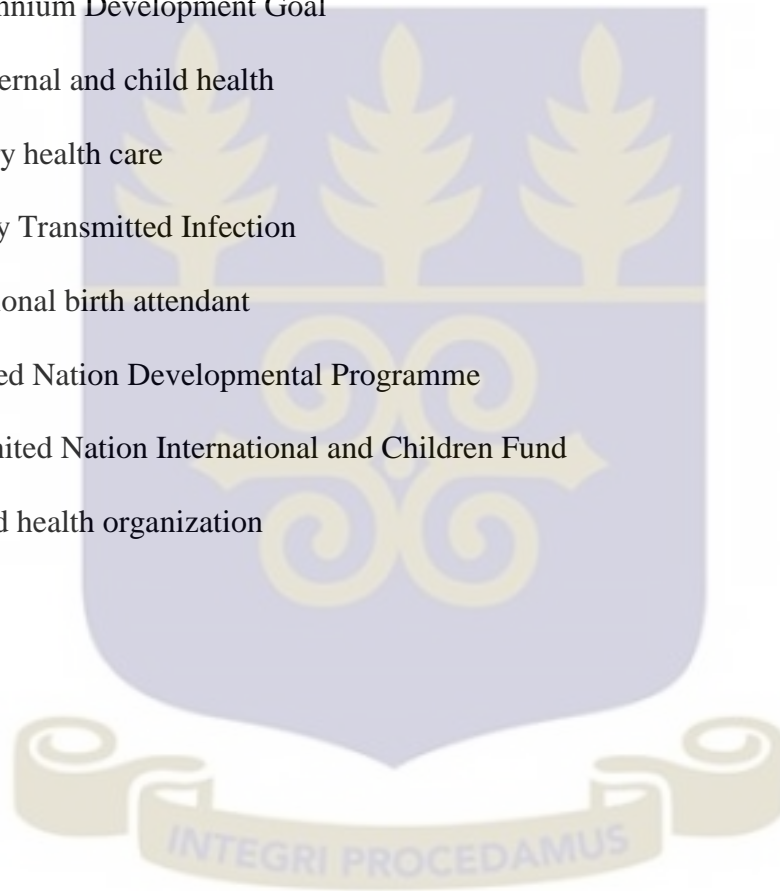
STI: Sexually Transmitted Infection

TBA: Traditional birth attendant

UNDP: United Nation Developmental Programme

UNICEF: United Nation International and Children Fund

WHO: World health organization



DEFINITION OF TERMS

Adolescence

Adolescence is defined as a transition from childhood to adulthood. They are between the ages of 10 – 19 years.

Adolescent mother

In this study adolescent mother refers to any woman 19 years or younger who has given birth irrespective of gravida, parity, neonatal outcome or marital status.

Antenatal care

Antenatal care (ANC) is seen as an umbrella term that is used to describe the health care procedures and care administered during pregnancy.

Utilization

This is the ability to attend ANC four or more times and receiving all the services required by a pregnant woman at the ANC such as immunization, screening etc.



CHAPTER ONE

1.1. Background

Antenatal care is an essential tool used to detect risk factors of pregnancy and its outcomes. Follow-ups during pregnancy afford us the opportunity to effectively manage and promote maternal and foetal health. Antenatal care involves a series of care geared toward maternal and foetal wellbeing, allowing appropriate actions aimed at facilitating women to survive their pregnancy and delivery in a positive and enhance manner, limiting the uncertainties of delivery and puerperal complications (Fernanda et al., 2015). Antenatal care is also a time that gives the opportunity for health workers to present to pregnant women a number of interventions that may be relevant to their health and wellbeing and that of their infant (Fife, 2010).

Essential interventions in ANC include early identification and management of obstetric complications such as pre- eclampsia, identification and management of infections such as HIV, syphilis and other sexually transmitted infections (STIs) tetanus toxoid immunization, intermittent preventive treatment for malaria during pregnancy (IPTp). Antenatal care is also an occasion for service providers to encourage the use of professional attendance at birth and healthy behaviours which include breastfeeding, early antenatal care, and planning for optimal spacing of pregnancy.

Many pregnant women persistently miss these opportunities provided by antenatal care, regardless of the fact that over half of pregnant women received at least one prenatal visit (Lincetto, Mothebesoane-anoh, Gomez, & Munjanja, 2013). There is no much variation in the utilization of maternal and child health care according to mother's age. Evidence in five of the 15 countries, shows that women aged 18 or younger were less likely than

women aged 19–23 to use either antenatal care or delivery care, or both (Reynolds, Wong, & Tucker, 2006).

An estimated 16 million women aged 15–19 years deliver each year and a further million become mothers before age 15 years (Nove, Matthews, Neal, & Camacho, 2014).. In most countries, these births among adolescents are mostly found among the poorer, less educated women, and early motherhood further compounds by disorganizing school attendance and restraining future livelihood opportunities (Nove, Matthews, Neal, & Camacho, 2014). Adolescents' pregnancies and child-birth episodes are major public health problems worldwide, largely in sub-Saharan Africa (Ebeigbe & Gharoro, 2007:79). There is a five percent increase in maternal death among females younger than 16 years as compared to females in their twenties (Mlangeni, 2003 in Grobler, Botha, Jacobs & Nel, 2007:32). Adequate use of antenatal care (ANC) services by adolescents could lower pregnancy and childbirth complications, and increase the outcomes for mothers and babies.

Adolescents' non-utilisation of ANC services poses danger to the health of the mother and the baby and is linked with poor birth outcomes (Chaibva, Roos, & Ehlers, 2009a). The chance that a 15 year old woman will ultimately die from a maternal cause is 1:3700 in developed countries, versus 1:160 in low-income countries (WHO, 2013). About 800 women died daily as a result pregnancy and child birth related complications in 2013. Almost all of these deaths took place in low-resource settings, and a lot of these deaths could have been prevented. The main causes of these deaths are excessive bleeding, persistent increase in blood pressure, infections, and secondary causes, usually due to association between pre-existing medical disorders and pregnancy (Lenters, L., Hackett, K., Barwick, M., 2015). About 500 out of the 800 deaths occurred in sub-Saharan Africa and 190 occurred in Southern Asia, and 6 occurring in advance countries (Lenters, L.,

Hackett, K., Barwick, M., 2015). A woman in an emerging country is 23 times higher at risk of dying from a maternal-related cause during her lifetime as likened to a woman living in an advanced country (Lenters, L., Hackett, K., Barwick, M., 2015). Maternal mortality is a health index that displays very extensive gaps between rich and poor, urban and rural areas, both amidst countries and within them.

Improving antenatal care (ANC) attendance is a crucial part of the efforts to enhance the health and wellbeing of those residing in low and middle income countries (LMICs). For adolescent mothers, this is particularly significant given the risk associated with this developmental stage and their increased chance for obstetric complications (Lenters, L., Hackett, K., Barwick, M., 2015)

1.2 Conceptual Framework

The conceptual framework below describes the influence of several factors on antenatal clinic attendance. The outcome variable is antenatal clinic attendance. The decision to visit Antenatal clinic can be influenced either directly or indirectly by an individual socio-cultural and demographic factors, quality of care at the ANC, and level of knowledge about ANC

One of the most critical factors that can influence ANC attendance is the socio-cultural and demographic characteristic of the individual such as age, marital status, occupation, educational status, person lived with, and source of income. Age is a factor that can suggest a person's physical and mental ability to comprehend issues relating to pregnancy and antenatal care. These factors are the demographic characteristics. In addition, there is the socio-economic factors that can influence antenatal care attendance such as source of

income, distance to health facility, cost of service, means of transport and its cost, accessibility, source of motivation.

Quality of care rendered at the ANC can have an influence on adolescent ANC attendance. The variables assessed under quality of care includes, number of midwives attending to pregnant adolescent, attitude of the staff, use of words of encouragement, type of services rendered at the ANC.

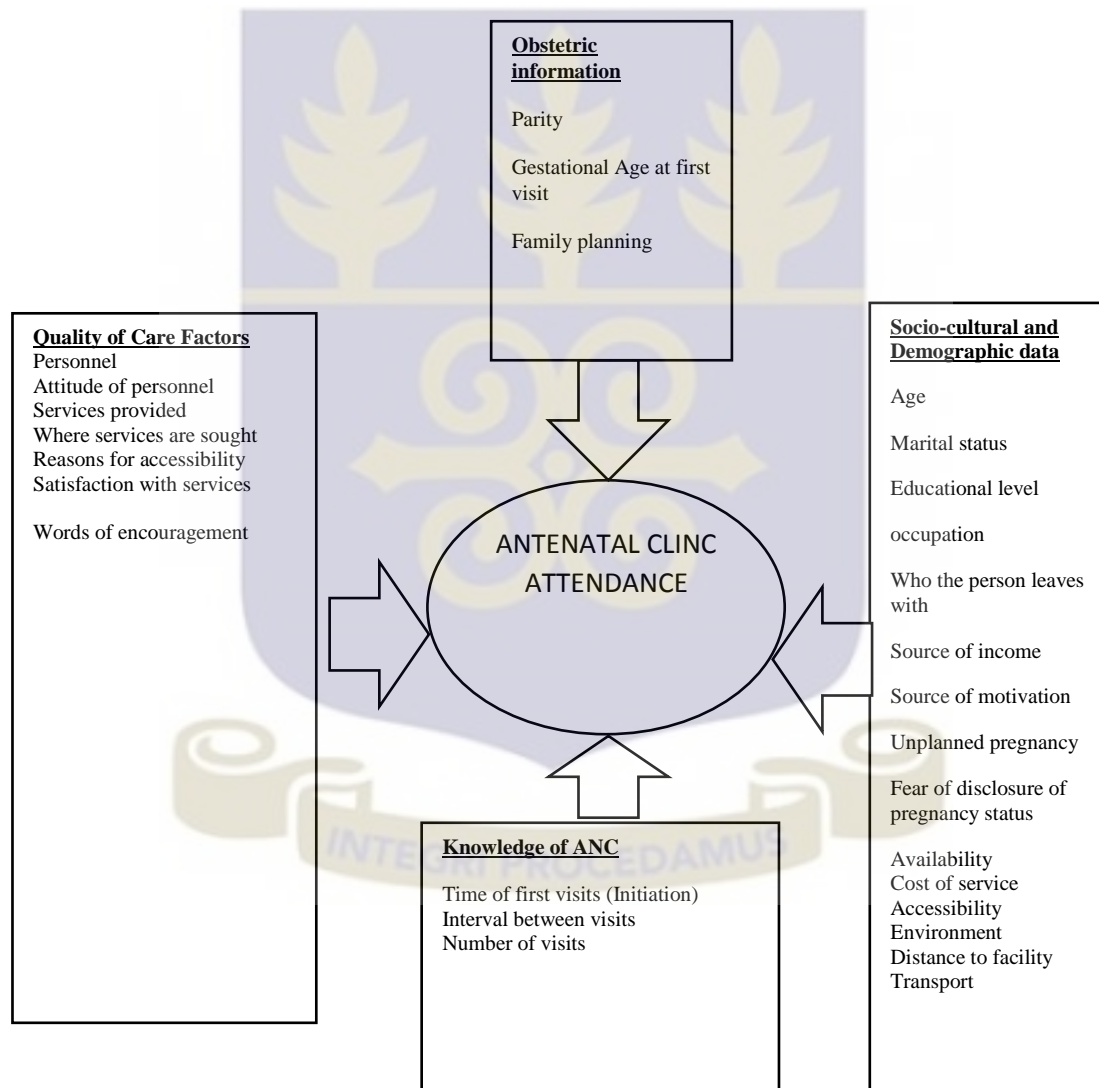


Figure 1: Conceptual framework of factors influencing antenatal clinic attendance among adolescents in Amenfi West District

1.3 Statement of the Problem

Antenatal care services are one of the essential services aimed at enhancing maternal health and preventing fetal mortality. Every health facility in Ghana has been equipped to provide antenatal care services therefore making the services available to every pregnant woman. It is therefore extremely important for every pregnant woman to seek antenatal care service most especially adolescent between the ages of 10-19year because they are considered a vulnerable group. Adolescent pregnancy which is defined as pregnancy in girls aged 10–19 years and represents an important public health issue based on the adverse maternal and child outcomes linked with adolescent pregnancy, and the limitations imposed on their future and that of their children. (Kingston, Heaman, Fell, & Chalmers, 2012) . It is estimated that adolescents aged 15–19 years contribute about 11% of births world-wide, and above 90% of these births happen in low- and middle-income countries (WHO, 2010). Adolescent giving birth does not only expose her to risks factor for adverse delivery outcome, but also has a negative effect on the future health status of the mother and infant (Ganchimeg et al., 2014). The main problems associated with adolescent pregnancy are preterm labor, hypertensive disease, anemia, and more severe forms of malaria, obstructed labor in very young girls in some regions, poor maternal nutrition and poor breastfeeding. In many regions HIV infection is an important problem. The infants of adolescent mothers are more prone to low birth weight and increased neonatal mortality and morbidity. Antenatal care is often inadequate. The most important problem is the increased incidence of preterm labor and delivery, the youngest age groups running the highest risk (Treffers, Olukoya, Ferguson, & Liljestrand, 2001). Utilization of antenatal care service will help identify most of the risk associated with pregnancy and measures put in place to mitigate any complications arising during labour. Government of Ghana in an attempt to reduce maternal mortality has introduced the free maternal health

service system to break financial barriers of access to maternal care services. Despite this, facility-based deliveries continue to be low due partly to poor quality of antenatal care that prevents pregnant women from giving birth in hospitals (Atinga & Baku, 2013). Despite the availability and benefits of antenatal service provide, it is most at time underutilize due to non- compliance to the recommended four visits proposed by WHO. According to the national demographic health survey (2014) about 97 percent of women who delivered in the five years before the survey received antenatal care from a skilled provider at least once for their last birth (DHS, 2014).

Antenatal care coverage is an indicator of access and utilization of care during pregnancy. It measures the proportion of women who receive care at least once during pregnancy within a given year. Antenatal coverage decreased from 98.2% in 2011 to 92.2% in 2012 and further decreased to 90% in 2013 in Ghana (GHS, 2013). The consistent decrease in antenatal care coverage needs to be investigated for necessary measures to be put in place to reverse the trend (GHS, 2013).

Researchers have made an attempt to investigate into the decreased in antenatal coverage by assessing the factors influencing antenatal attendance. This was focused on all pregnant women and not much attention was given to pregnant adolescent who are vulnerable and are at risk of dying as a result of pregnancy and labour complications. Failure of adolescents to use ANC services put them at risk of poor birth outcome and the health of the mother (Chaibva et al., 2009a). It is therefore necessary to determine the factors influencing adolescent utilization of antenatal care services.

1.3 Justification of the Study

The study is meant to identify the factors that influence adolescent utilization of antenatal services in Amenfi West District as a way of improving overall adolescent maternal health and making available a systematic body of knowledge that can be used for appropriate policy formulation, act as an eye opener and reminder to both the state and civil society to always incorporate Reproductive Health needs of adolescents.

1.5 Research Questions

- What proportion of adolescent use antenatal care services?
- What are the Socio-economic and demographic factors influencing ANC attendance?
- What is the knowledge level of adolescent about Antenatal Services?
- What are the quality of care factors influencing antenatal clinic attendance?

1.6. Aims and Objectives

To determine the factors influencing the utilization of antenatal care services among adolescents in Wassu Amenfi West of the Western Region of Ghana

Specific objective

- To determine the proportion of adolescents attending antenatal clinics
- To assess the socio-economic and demographic factors influencing ANC attendance
- Assess the level of adolescent knowledge about antenatal care services
- To determine the quality of care factors influencing antenatal clinic attendance.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Adolescence

Adolescence are regarded as a group of young people who are within the ages 10-19 years (WHO, 2014). Adolescence is also considered as the intermediate life stage between childhood and adulthood, characterized by quick physical and social development. This is a single period which demands adjusted support services, especially for pregnant adolescent women, who face intensified biological consequences associated with early pregnancy and childbirth. The Countdown to the United Nations 2015 Millennium Development Goals puts a global emphasis on adolescent health and increasing women's uptake of ANC services in LMICs (Lenters, L., Hackett, K., Barwick, M., 2015). The increased biological risk associated with early pregnancy among adolescent requires that skilled health workers be able to provide a series of services in outpatient and other clinical areas that will help save the lives of pregnant mothers and their babies. Even though the significant of these services is much the same for adolescent mothers and older mothers, health professionals need to have the skills to be able to work with adolescents and know how to manage their specific health needs.

They should be able:

- to furnish adolescents with an early beginning to antenatal care and provide options for continuing or terminating the pregnancy – adolescents tend to delay in search of abortion care but rather turn to the use of less skilled providers, and also employ the use more risky methods and seeking care for complications very late;
- to be attentive to special problems that need to be given particular attention among adolescents, such as anaemia, poor nutritional status, malaria, HIV and other

- sexually transmitted infections and grant them access to services for avoiding the mother to child transmission of HIV;
- to prepare for deliveries with the adolescent and her family such as place of birth transportation and cost involved.
 - to offer extraordinary attention to adolescents less than 16 years during obstetric care since they are mostly at risk of adverse effect and death; and
 - support during infant feeding and to ensure that information is made available, skills and services such as adequate counselling, to prevent subsequent pregnancies (WHO, 2015)

2.2 Antenatal Care Coverage in Ghana

World Health Organization (WHO) has generated a focused ANC package that involve only counseling, examinations, and tests that fulfill immediate purposes and have tested health benefit (WHO, 2013).

The new approach to ANC stresses on the quality of care instead of quantity. WHO has recommended only four antenatal visits for routine pregnancies. The main aim of focused antenatal care is to assist women keep up normal pregnancies through:

- Identification of pre-existing health conditions
- Timely detection of drawbacks emanating during the pregnancy
- Health promotion and disease prevention
- Preparation for labour and planning for complication during labour

Antenatal care coverage is a marker of access and utilization of care during pregnancy. It measures the proportion of women who receive care at least once during pregnancy within

a given year. Antenatal care (ANC) coverage is in the ascendency in Africa, since over half of pregnant women (69 percent) have a minimum of one ANC contact (Lincetto et al., 2013). However, to attain the full life-saving prospective that ANC guarantee for women and babies, four visits that present essential evidence based interventions is recommended. There are several essential intervention services provided at the antenatal clinic, some of which include: identification and management of obstetric complications such as pre-eclampsia, intermittent preventive treatment for malaria during pregnancy (IPTp), immunization with tetanus toxoid and recognition and management of infections including HIV, syphilis and other sexually transmitted infections (STIs) (Lincetto et al., 2013). ANC is also an occasion used to promote the use of skilled attendance at birth and healthy behaviours such as breastfeeding, untimely postnatal care, and planning for optimal pregnancy spacing (Lincetto et al., 2013). According to Fife (2010) antenatal care is also a period that provides pregnant women with a number of interventions that may be important to their health and welfare and that of their infants. It also provides an opportunity to supply information on birth spacing, which is regarded as an important factor in enhancing infant survival. Tetanus immunization during pregnancy can be life-saving measure for both mother and infant. The prevention and treatment of malaria among pregnant women, management of anaemia in pregnancy and treatment of sexually transmitted infection (STIs) can largely improve foetal life and augment the health of the mother.

The government of Ghana in an attempt to increase access to and ensure utilization of antenatal services introduced an exemption policy of maternal care at all public health facilities in 2007. The exemption policy is to ensure financial barrier to the use and access to maternal health services are eliminated leading to a reduction in maternal and neonatal deaths (Witter, Arhinful, Kusi, & Zakariah-Akoto, 2007).

ANC coverage in Ghana has decreased to a large extent from 98.2% in 2011 through 92.2% in 2012 to 90.8% in 2013 and 87% in 2014 with adolescent pregnancy forming 12.1% in 2014. The overall achieved ANC coverage in 2014 uncovered that, despite the consistent decrease over the last three years, clients making at least four visits increased over the same period. This is significant because it indicates that an increased number of women were reached with the basic interventions such as Prevention of transmission of HIV from mother to child, Intermittent Preventive Treatment of malaria in pregnancy, among others (GHS, 2014). The consistent decrease in antenatal care coverage needs to be investigated for necessary measures to be put in place to reverse the trend. Coverage of antenatal care in the western region varies from one district to another. The regional coverage of antenatal care is 93.5% with adolescent forming 13.6%.and 77.4% as district coverage for the adolescent. The percentage of pregnant women able to make four (4) or more ANC visit is 74.8% (GHS, 2014).

Antenatal care is essential in recognizing risk factors for poor pregnancy outcomes and follow-up during pregnancy. It enables effective management in order to promote maternal and foetal health (Fife, 2010).

2.3 Maternal mortality

The high proportion of maternal deaths in some parts of the world shows unfairness in access to health services, and brings to bear the disparity between the rich and poor. Almost all maternal deaths (99%) are found in developing countries. More than half of these deaths happen in sub-Saharan Africa and approximately one third occur in South Asia (WHO, 2013).

The fraction of maternal mortality in developing countries is 230 per 100 000 live births versus 16 per 100 000 live births in developed countries in 2013. There are large disparities between countries, with few countries having unimaginably high maternal death ratios around 1000 per 100 000 live births. There are also large disparities within countries, between women with low and high incomes and between women living in rural and urban areas (Fife, 2010).

The risk of maternal mortality is most for adolescent girls under 15 years old and complications in pregnancy and childbirth are the leading cause of death among adolescent girls in developing countries. The probability that a 15 year old woman will eventually die from a maternal cause – is 1:3700 in developed countries, versus 1:160 in developing countries (WHO, 2013)

2.4 Factor Influencing ANC Utilization

Antenatal care service is a service every woman must make sure to seek and must be made accessible to all. This is extremely relevant considering the benefits derived from antenatal services. It is a period used to assess the pregnant woman to rule out any complication that may result during pregnancy or delivery protecting the well-being of the mother and the baby. Others using the services are not able to attend the WHO recommended 4 visits during pregnancy. Despite the health benefit of antenatal care services, many women still fail to use the service. This may be due to several factors. For instance, financially challenged women in rural areas are likely not to receive adequate health care. This is most particularly true for area with low numbers of professional health workers, such as sub-Saharan Africa and South Asia. Despite the increase in the level of antenatal care in

several part of the world during the last decade, 46% of women in poor countries enjoy skilled care during childbirth (WHO, 2012).

In developed countries, almost all women have visited antenatal at least 4 times, and are being handled by a skilled health worker during childbirth and receive postpartum care but only over a third of pregnant women have had the recommended 4 antenatal care visit in developing countries (WHO, 2013).

Whereas millions of women are deprived of access to maternal health care including antenatal care that would save their lives during pregnancy and lesson disability during child birth, tens of thousands of women, who have access to the care turn up late, make lesser medical contacts and a larger number of expectant women do not seek the service for various reasons (Simkhada et al., 2008; Kisuule et al., 2013). It is reported that, 49% of Zimbabwe's pregnant adolescents who attended prenatal clinics commenced doing so after 28 weeks of gestation and 28% never attended prenatal clinics (MOHCW, 2005). Bulawayo's Director of Health Services reported an overall prenatal clinic attendance coverage of 52% in 2005, but 40% of these pregnant women commenced their prenatal clinic attendance after 16 weeks of gestation (Chaibva et al., 2010).

Some factors have been found to influence the utilization of ANC. Some of the factors identified by WHO that deter women from receiving or seeking care during pregnancy and childbirth are:

- poverty
- distance
- absence of information
- insufficient services

- Cultural practices (WHO,2013)

Results in India also indicate individual/household-level factors, community and district-level factors as factors that have largely influenced the trend of maternal health care services utilization (Singh, Kumar, Rai, & Singh, 2014). At the community level, the odds of maternal healthcare utilization were seen as small in rural areas and in communities largely made up of women who are poor and uneducated. However, the average population coverage of primary health centres (PHCs), availability of delivery room in PHC and proportion of registered pregnancies were enough factors at the district level that affect the use of maternal care services. The study also found a strong correlation between the extent of previous use of maternal healthcare and its effect on subsequent usage patterns (Singh, Kumar, Rai, & Singh, 2014). It has also been identified by Lincetto et al (2013) that conflict or poor communication among skilled health care providers, traditional birth attendants (TBA) and other CHWs may be the cause of low use of ANC services in certain communities. In general, pregnancy is usually viewed as an expected process of life, as such women, families and communities may undervalue the significance of ANC. In addition, many simply lack knowledge about danger signs in pregnancy and will not know how to seek care when a complication occurs during pregnancy. Finally, a lack of awareness exists with regard to the level and effect of traditional household and community beliefs and customs, such as suboptimal maternal nutrition and infant feeding practices. This may negatively influence the use of ANC as well as MNCH services at large (Lincetto et al., 2013).

It is extremely important that obstacles that hinder access to quality of maternal health services are recognized and managed at all levels of the health care system if the health of the mother is to be improved.

2.4.1 Socio-economic and demographic Factors

ANC utilization is lower among women who require it the most like the destitutes, those with lower education, and resides in rural areas. A significant obstacle is the lack of financial capacity to pay for ANC or the treatment given in ANC (Lincetto et al., 2013).

Women who are economically sound have a higher probability making more ANC visits than women who are economically challenged. We can therefore deduce that despite the fact that the service is rendered freely, some cost may be incurred either directly or indirectly. Generally, it can be concluded that wealth, which explain the financial standing of the individual is still a challenge in the utilization maternal health services in Ghana even though these services are provided free in Ghana. It still hampers the rate of utilization; pregnant mothers may still use the services, but not enough as recommended by the WHO (in the area of ANC at least four visits prior to delivery) to ward off any health effects of child birth and hence to reduce the rate of maternal and child deaths through delivery (Arthur, 2012).

Teenage mothers are more likely than older mothers to be blacks, poor, less well educated, and unmarried, and are less likely to have received early antenatal care (Fraser, Brockert, & Ward, 1995). Most pregnant adolescent are usually between the ages of 17 and 19 years and they are more likely to delay or not attend ANC (C N Chaibva et al., 2009a). In a study to identify the factors affecting the utilization of ANC by adolescents in Bulawayo in Malawi, it was indicated that most of the respondents (n=47; 90.4%) agreed that age strongly influences pregnant adolescents' decision on whether to utilize ANC, Forty-four respondents also agreed that parity influences this decision. Likewise, the majority (n=41; 78.8%) of the respondents also agreed that marital status could influence pregnant adolescents' decisions to utilize ANC services. Socio-cultural and religious factors were perceived by 48 (92.2%) of the respondents to influence pregnant adolescents' decisions.

A large percentage of the respondents (n=49; 94.2%) were of the opinion that financial constraints could be a limiting factor to utilization of ANC services in Bulawayo. Adolescents' fear of disclosing their pregnancies to their parents was viewed as a factor that could lead ANC utilization by most adolescents according to the midwives (n=47; 90.4%) (Mlilo-Chaibva, 2007). A pregnant adolescent interviewed in Lesotho indicated that denial of the pregnancy by the boyfriend, and the fact that sex outside of marriage in Lesotho is still taboo and structural variables related to service provision as factors that delay their utilization of ANC (Phafoli, Aswegen, & Alberts, 2007). In a similar study carried out to ascertain the factors influencing the utilization of antenatal health services in the Bosomtwe district it was revealed that most adolescents fail to attend antenatal clinics because they believe that certain ailments were spiritual and could not be treated in a hospital (41%). It was also shown that poor utilization of ANC services was associated with low socio-economic factors (58.7%) and attitude of some health staff (Oppong Gyamfi Kwaku, 2008)

2.4.2 Knowledge about the Importance of ANC

There are several factors that adolescents may consider before making a decision to attend an antenatal clinic. Knowledge has been identified as a major factor that could influence the decision on whether to utilize ANC services among adolescents (Mlilo-Chaibva, 2007). Research has shown that poor education of women on ANC (20.7%) services influence their utilization of ANC (Oppong Gyamfi Kwaku, 2008),

Studies have shown that the literacy of women plays an important role in determining women's utilization of antenatal care. In a study to assess the factors influencing adolescent utilization of ANC, Knowledge was identified as the major structural variable that could

affect adolescents' utilization of ANC services. Most of the respondents agreed that ANC provides increased knowledge about reproductive health, while a few disagreed with this statement. Almost all respondents agreed that seeking ANC early enhances the wellbeing of the mother and the baby and that ANC helps to identify and manage complications related to pregnancy and child birth; ANC provides learning opportunities enabling one to identify potential complications and seek help. Only a small percentage of respondents disagreed with the preceding statements (Chaibva, Roos, & Ehlers, 2009b)

Pregnant adolescents interviewed in Lesotho shows that delay in booking ANC is as a result of lack of knowledge concerning the significance of early attendance (Phafoli et al., 2007)(Phafoli et al., 2007)(Phafoli et al., 2007)(Phafoli et al., 2007). A study conducted in Ghana and Tanzania to find out antenatal care experiences among adolescents showed that adolescent mothers understood that their young age meant they have greater chance developing obstetric complications and see ANC services as a means of decreasing pregnancy-related risks. Their behaviour towards ANC differs, with some mothers declaring absolute belief in its significance and others expressing greater contradiction (Lenters, L., Hackett, K., Barwick, M., 2015).

2.4.3 Quality of antenatal care factor

The provision of and access to quality healthcare for expectant mothers has been a complicated problem, especially in the developing world. Inadequate numbers of skilled birth attendants and medical resources, the social status of women as well as limited communication and transportation facilities tend to mask the provision of appropriate quality of maternal healthcare (Chamberlain et al., 2007). The consequence of this has been high rates of maternal deaths and insecurity for expectant mothers.

Everybody has his or her own conception of the possibility of experiencing a condition that would negatively affect their health. People are different in their impression of vulnerability to a condition, and the quality and severity of these perceptions may largely influence their willingness to take preventive actions (Mlilo-Chaibva, 2007). The attitudes and behaviour of health care providers in ANC clinics compound this problem by failing to respect the privacy, confidentiality, and traditional beliefs of the women (Lincetto et al., 2013).. For women to continue to make use of prenatal care, health workers must commit themselves to behave positively towards them. Analogous to service industry clients, pregnant mothers will hesitantly seek care in health facilities where their earlier experience with health professionals is negative (Kruk et al., 2009; Magoma et al., 2010). Bad word of mouth – feeling of being abandoned and feeling of not being gladly accepted largely explain why pregnant women are not utilizing maternal health care service (Kowalewski et al., 2000; Asuquo et al., 2000; Kruk et al., 2009). The quality of antenatal care is also reliant on a number of supply-side factors, which include supplies and logistics (drugs and non-drugs), medical equipment, appropriate technology and ability to handle maternity cases (Donnell, 2007)

In a study to identify the factors affecting the utilization of ANC by adolescents in Bulawayo in Malawi indicated that thirty-seven respondents agreed that health workers' attitudes could influence decisions to utilize or not utilize ANC services in Bulawayo but some respondents disagreed (Mlilo-Chaibva, 2007). A study assessing quality of ANC services in Nkwanta South District of Ghana shows that, majority of the respondents were “willing to come back to the ANC clinics before delivery”. The results further show that, most of the respondents perceived the care they received as “quality” while almost equal number said they were generally satisfied with ANC services (Dedley, 2013)

2.4.4 Access factors

Access to health care can be defined in a variety of ways. In its most narrow sense, it refers to geographic availability. A far wider definition recognizes four areas of access: availability, accessibility, affordability, and acceptability. Other also define access as the opportunity to use health care; others draw no distinction between access and use (Donnell, 2007). The World Summit for Children goal calls for “access” to antenatal care, but access is a multifactorial concept that is very challenging to monitor. Most special correspondents recognize at least five different aspect of access, this include visible services available, distance and/or time to a facility, economic and other costs related to use of services, cultural and social factors that may impede access, and quality of services offered (Fife, 2010)

The distance to a health facility and the time taken to reach the facility are important determinants of antenatal care.



CHAPTER THREE

3.0 METHODS

3.1 Study design

The study was conducted using a cross sectional study design. The study used both a community and health facility based study. Antenatal attendance records of adolescent pregnant women were collected at the facility and those at the community level to assess their level of utilization.

3.2 Study area

Amenfi West (formerly Wassa Amenfi West) District forms part of twenty two (22) Metropolitan, Municipalities and Districts in the Western Region of Ghana. The Administrative capital of the District is Asankrangwa. The District shares boundaries with Aowin District to the west, to the east with Waasa East District, to the north with Bibiani-Anhwiaso-Bekwai and to the south with Amenfi Central District (Ghanadistrict.Com, 2006).

The population of Amenfi West District is 92,152 representing 3.8 percent of the region's total population. Males constitute 51.4 percent and females represent 48.6 percent. There are more people living in the rural (59.72%) areas.

The Total Fertility Rate for the district is 3.7. The General Fertility Rate is 107.9 births per 1000 women aged 15-49 years. The Crude Birth Rate (CBR) is 25.9 per 1000 population. The crude death rate for the district is 5.8 per 1000. From age 5 to age 59 years, more female deaths are observed than males.

About 71.1 percent of the populations aged 15 years and older are economically active while 28.9 percent are economically not active. Of the economically active population,

95.9 percent are employed while 4.1 percent are unemployed. For those who are economically not active, a larger percentage of them are students (54.2%), 27.1% perform household duties and 3.3 percent are disabled or too sick to work

There are 22 health facilities in the Amenfi West District offering ANC services.

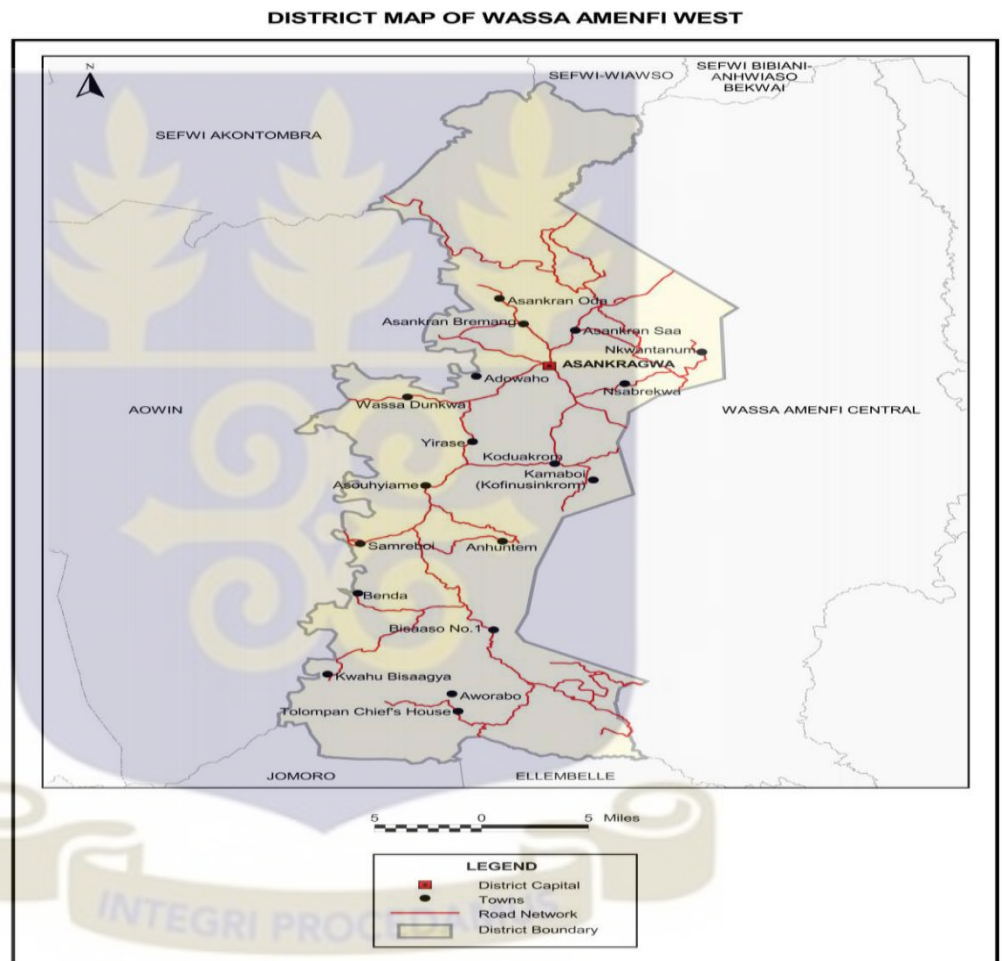


Figure 2: District map of Amenfi West

3.3 Population

The study would be for a population of 10,475 female adolescents age between 10-19 years who are either pregnant or nursing a baby less than 12 months old in the Amenfi West District.

3.4 Sampling

The sample was selected from the accessible population of adolescents in Amenfi West who had delivered their babies in government primary health care (PHC) clinics and hospitals without attending ANC and pregnant adolescent attending ANC. Purposive sampling of adolescent mothers and pregnant adolescent was employed. This method of sampling was chosen based on the low coverage of pregnant adolescent in the district. The number of participants are selected based on the following criteria: recruiting five adolescent mothers from each of the 16 moderately busy clinics ($5 \times 16 = 80$) and ten pregnant adolescent ($10 \times 4 = 40$) from the four very busy clinics and ($30 \times 2 = 60$) from the two hospitals.

Non-probability purposive sampling was used to select adolescent mothers who met the following inclusion criteria'

- aged 19 or younger
- delivered their babies without attending ANC regardless of parity and mode of delivery
- Delivered their babies at one of the participating clinics or hospitals during the time of data collection
- consented to being interviewed, and if younger than 18 years of age, their parents/guardians also had to give consent

- were willing to be interviewed in the postnatal ward after being discharged before going home, implying that they would be interviewed after they had received all the required postnatal treatments and health information and that they had obtained some rest after delivering their babies.

$$N = Z^2pq/e^2$$

Where

N = the sample size

Z = the reliability co-efficient for 95% confidence level set at 1.96

P = proportion using antenatal care (86.5%)

q = proportion not using Antenatal care

e = degree of freedom

$$N = 1.96^2 \times 0.774(1-0.774) / (0.05)^2$$

$$\square 268.7$$

Assuming a 5% non-responsiveness

$$268.7 \times 0.05 = 13.4$$

$$268.7 + 13.4 = 282$$

A sample size of 270 respondents will be used for the study.

3.5 Data collection

Data was collected on adolescents who are pregnant and adolescents who have delivered less than a year using a well-structured questionnaire which include both open-ended and close-ended questions. Items measuring quality are rated on a scale. Items on attitude of midwives are on a scale of 1 to 8. 1 to 4 is classified as poor and 5 to 8 as good. Relevant statistical data such as district maternal mortality rate, number of health facilities in the district, antenatal coverage were collected from the district health directorate and also from the medical directors of the hospitals, the head of the maternal and child health clinic at the hospitals. Data collection personnel who are made up of health officers from the various health institutions across the district were recruited to help administer the questionnaire. In a case of language barrier, the question was interpreted to respondent's language of preference.

3.6 Analysis of Data

Data collected from the structured questionnaire from adolescent mothers and pregnant adolescents on utilization of ANC was coded and entered into the statistical software STATA.

Chi-square test was used for categorical variables for bivariate analysis of cross-tabulation to measure crude odds ratios with 95 percent confidence intervals to identify associations with antenatal attendance and explanatory variables. Multivariate logistic regression was carried out to assess the combined effect of multiple factors influencing the utilization of antenatal clinic, adjusting for confounding variables, to assess the knowledge about antenatal care among women who received and did not receive antenatal care.. The criterion for inclusion of factors in the multivariate analysis was to offer all variables with

a p-value of <0.05 , along with variables of known biological significance considering a 95% confidence level.

3.7 Ethics and Human Subject Issues

The purpose and benefits of the study, as well as issues of confidentiality, voluntary participation, privacy and anonymity was discussed prior to each interview.

Permission was sought from the heads of the participating health facilities and district health director and Ghana Health Service Ethical Review Committee, Informed consent was obtained from the respondents (and their guardians for those under 18 years). Respondents were assured about the confidentiality and anonymity of the information. The information only remains with the research team and not relayed to any other party. The data collected was coded and stored by the principal researcher in a soft copy and answered questionnaire and related documents were kept under lock and key.

Respondents were briefed on the research topic and its relevance. They were informed that the research is meant to assess the factors that influence their utilization of antenatal care services and the reasons for non-utilization. The results may help policy makers to focus more resources to cater for pregnant adolescent in the district and the nation at large.

The respondent were informed that the research will not pose any health risk to them but rather will help improve the health of pregnant adolescent women through improved adolescent health policies. The research may also help improve the quality of antenatal services rendered at the various antenatal clinics in the district. This is aimed at increasing antenatal coverage for adolescent in the district which would help in reducing maternal mortality.

Respondent were also informed that participation was voluntary and that there would be no financial benefit for participation neither will there be victimization for non-participation. Participants can withdraw voluntarily from the study as and when they want and are not under any pressure to participate. They was no personal benefit in conducting this research but purely an academic exercise and this research will not be used anywhere for financial benefit.

Adolescents (and their guardians for those younger than 18) were asked to sign a consent form and an assent form and kept separately from the answered questionnaire to ensure anonymity during the interview. In this way no anonymously completed interview schedule was linked to any signed consent form. The completed interview schedules were kept in a separate container to which only the researchers and the statistician have access.



CHAPTER FOUR

4.0 RESULTS

A total of 282 was calculated to be the sample size for the study. However a total of 270 respondents were interviewed and used for the analysis.

4.1 Socio-economic and demographic characteristics of respondents

Results in table 1 shows that majority 128 (71.1%) of the respondents are between the ages of 16 to 19 years and 52 (28.9%) are 15 years and below. The marital status of respondents indicate that most of the respondents 112 (62.2%) are single, 37 (20.6%), cohabiting and 31 (17.2%) married. Sixty two percent of the respondents live with their friends and 68 (37.8%) live with their spouse parents.



Table 1: Socio-economic and demographic characteristic of respondents

Variable	Frequency	Percentage
Age		
15 years or less	52	28.9
16 to 19 years	128	71.1
Marital status		
Married	31	17.2
Cohabiting	37	20.6
Single	112	62.2
Person lived with		
parents	68	37.8
Friends/spouse	112	62.2
Educational status		
Tertiary	37	20.6
Secondary	91	50.6
Primary	52	28.9
Occupation		
Student	89	49.4
Apprentice	54	30.0
Trading	37	20.6
Source of income		
Self	38	21.1
Spouse	90	50.0
Parent/guardian	52	28.9
Parity		
No child	143	79.4
1 or more	37	20.6
Gestational age at first visit		
16wks or less	57	31.7
17 to 28wks	123	68.3
Method of family planning used before pregnancy		
Pill	16	8.9
Condom	37	20.6
Nothing	127	70.6

4.2 Proportion of ANC attendance

Figure 4 presents results of respondent's number of antenatal clinic visit. Respondents are almost balanced with regard to their ANC visit. Majority of the respondent 97 (53.9%) have made 4 or more visit with only 83 (46.1%) making less than 4 ANC visit.

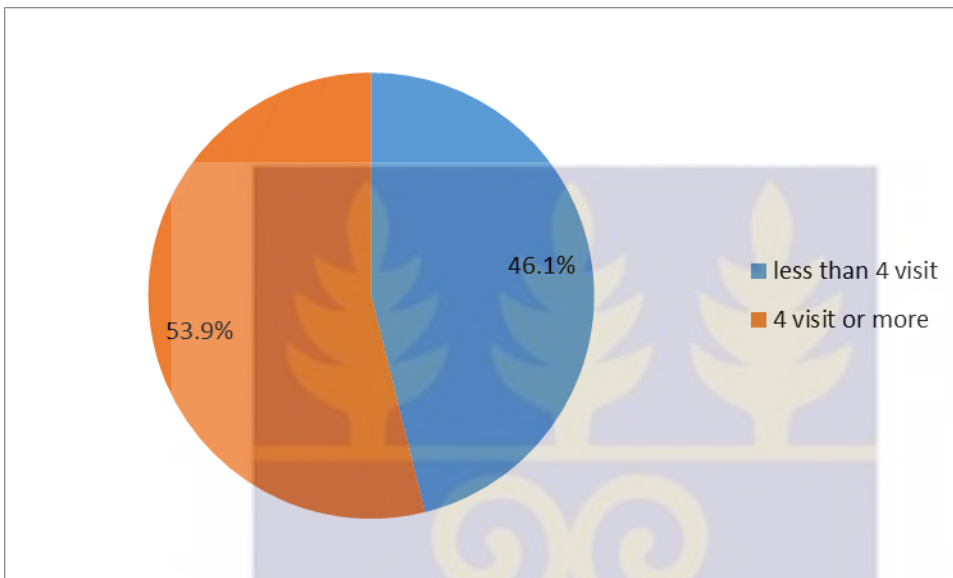


Figure 3: Number of ANC attendance

4.3 Influence of socio-economic and demographic factors on antenatal clinic visit

Results in table 1 shows that most 128 of respondents are between the ages of 16 to 19 years and table 2 shows that out of this number, about 74 (57.8%) attended antenatal clinic 4 times or more and 54 (42.1%) less than 4 times and with those less than 15 years of age only 23 (44.2%) attended ANC 4 times or more. Majority of the respondents 112 (62.2%) are single, 58 (20.7%) cohabiting and only 48 (17.1%) married. Comparing marital status and number of ANC visit has revealed that about 66 (58.9%) of adolescent who are single makes ANC visit of 4 times or more, cohabiting 16 (43.2%), married 15 (48.4%). There is no significant association between marital status and ANC attendance ($p < 0.05 = 0.201$). Most of the respondents stay with their friends/spouse and about 70

(62.5%) out of this group attended ANC 4 times or more and about 68 (37.8%) stay with the spouse parents with only few of them 27 (39.7%) attending ANC 4 times or more. Most of the respondents 91 (50.6%), experienced secondary education, 52 (28.9%) primary education and 37 (20.6%) tertiary. Out of respondents with secondary education, 54 (59.3%) attended ANC 4 times or more, those with primary education 23 (44.2%) had ANC visit of 4 or more and tertiary education, 20 (54.1%) had 4 or more ANC visit. Most of the respondents 89 (49.4%), 54 (30.0%) are apprentice and 37 (20.6%) are involved in petty trading. Respondents in the apprentice category attended the WHO recommended 4 or more visit than students (43 (48.3%)), traders 16 (43.2%). Results regarding gestation during first ANC visit revealed that majority 123 (68.3%) of the respondents had their first ANC visit in the second trimester (17-28wks) and 57 (31.7%) in the first trimester (16wks or less), out of those with a gestation of 17-28wks, about 69 (56.1%) had ANC visit of 4 or more times and only 28 (49.1%) out of the those with a gestation of 16wks or less reported 4 or more ANC visits. There is no significant association between gestation during first ANC visit and the number of ANC visit ($p > 0.05 = 0.383$). There is however a significant association between respondents family planning method used before pregnancy and antenatal clinic attendance ($p < 0.05 = 0.009$). Most of the respondents 127 (70.6%) were not using any method of contraception before pregnancy and majority of this number 77 (60.6%) attended ANC 4 or more times, 16 (8.9%) were using pills, 37 (20.6%) using condom.

Table 2: Influence of Socio-economic and demographic factors on antenatal clinic attendance

Variable	ANC VISITS		P (values)
	Less than 4 visit	4 visit or more	
Age			
15 or below	29 (55.8%)	54(42.2%)	0.098
16 to 19	23 (44.2%)	74 (57.8%)	
Marital status			
Married	16 (51.6%)	15 (48.4%)	0.201
Cohabiting	21 (56.8%)	16 (43.2%)	
Single	46 (41.1%)	66 (58.9%)	
Person lived with			
parents	41 (60.3%)	27 (39.7%)	0.003
Friends/Spouse	42 (37.5%)	70 (62.5%)	
Educational status			
Tertiary	17 (45.9 5)	20 (54.1%)	0.219
Secondary	37 (40.7%)	54 (59.3%)	
Primary	29 (55.8%)	23 (44.2%)	
Occupation			
Student	4 (51.7%)	43 (48.3%)	0.013
Apprentice	16 (29.6%)	38 (70.4%)	
Trader	21 (56.8%)	16 (43.2%)	
Source of income			
Self	4 (10.5%)	34 (89.5%)	0.001
Spouse	50 (55.6%)	40 (44.4%)	
Parents/guardian	29 (55.8%)	23 (44.2%)	
Parity			
No child	62 (43.4%)	81 (56.6%)	0.145
1 child	21 (56.8%)	16 (43.2%)	
Gestation during first ANC visit			
16wks or less	23 (50.9%)	28 (49.1%)	0.383
17-18wks	54 (43.9%)	69 (56.1%)	
Method of contraceptive used			
Pills	12 (75.0%)	4 (25.0%)	0.009
Condom	21 (56.8%)	16 (43.2%)	
Nothing	50 (39.4%)	77 (60.6%)	

There is significant association between respondents source of income and antenatal care attendance ($p < 0.05 = 0.001$). Results show that majority of the respondents 90 (50.0%) receive money from their spouse or boyfriends, 52 (28.9%) from their parents/guardian and 38 (21.1%) from the respondents themselves. About eighty nine percent of

respondents who finance ANC services by themselves attended ANC 4 times or more while those who received money from their partners or spouse about 40 (44.4%) only attended ANC 4 times or more.

Method of contraceptive used before pregnancy shows significant association with $p < 0.05 = 0.009$). Most of the respondents (79.4%) have never had a child. Mothers who have no child had attended ANC more than those with at least a child. Majority of the respondents 123 (68.3%) had their first ANC attendance in their second trimester. Out of this number about 69 (56.1%) had 4 or more ANC visits as compared to only 28 (49.1%) in those who visited ANC in their first trimester. There is no significant association between gestation of first antenatal visit and antenatal attendance ($p > 0.05 = 0.383$).

Accessibility to ANC services is found not to have significant influence on antenatal clinic attendance ($p > 0.05 = 0.145$). About 143 (97.4%) of the respondents said ANC is physically available and about 81 (56.6%) of those who said it is accessible actually had 4 or more visits as compared to 16 (43.2%) of those who think it is not accessible. Only about 20 (34.5%) of those who walk to ANC attend ANC 4 times or more while about 77 (63.1%) of those who use vehicle attended ANC 4 times or more. Means of transport to ANC is found to be statistically significant ($p < 0.05 = 0.001$). Most of the respondents 106 (58.9%) say they pay 1 cedis or more as cost of transportation while 74 (41.1%) pay less than 1 cedis. For those who pay 1 cedis or more, 73 (68.9%) attended ANC 4 times or more while 24 (32.4%) of those paying less than 1 cedis attended ANC 4 times or more. With regard to paying for the services at ANC, majority of the respondents 164 (91.1%) said they pay for the service and 16 (8.9%) said they do not pay. For those who pay, 85 (51.8%) made 4 or more ANC visits as against 12 (75.0%) of those who do not pay. Results show that 106 (58.9%) of respondents pay more than 5 GH cedis for services while 58 (32.1%) pay less than 5 GH cedis. About 69 (65.1%) of those who pay more than 5 GH

cedis visited ANC 4 times or more while 16 (27.6%) of those paying less than 5 GH cedis attended ANC 4 times or more. Cost of ANC services is significantly associated with respondents attendance of ANC ($p < 0.05 = 0.001$). Respondents identified limited knowledge about ANC 15 (8.3%), financial constraints 53 (29.4%), distance from health facility 37 (20.6%), fear of disclosing pregnancy 75 (41.7%) as some of the factors that could influence their decision to attend ANC ($p = 0.001$)

Table 3: Influence of socioeconomic and demographic factors on antenatal clinic attendance (continuation)

VARIABLE	ANC VISITS		P (value)
	Less than 4 visits N (%)	4 visits or more N (%)	
Accessibility of ANC services			
Yes	62 (43.4%)	81 (56.6%)	0.145
No	21 (56.8%)	16 (43.2%)	
Means of transport			
Walking	38 (65.5%)	20 (34.5%)	0.001
Vehicle	45 (36.9%)	77 (63.1%)	
Cost of transportation			
Less than 1 cedis	50 (67.8%)	24 (32.4%)	0.001
1 cedis or more	33 (31.1%)	73 (68.9%)	
Paid for ANC services			
Yes	79 (48.2%)	85 (51.8%)	0.076
No	4 (25.0%)	12 (75.0%)	
Cost of ANC services			
No cost	4 (25.0%)	12 (75.0%)	0.001
Less than 5 cedis	42 (72.4%)	16 (27.6%)	
5 cedis or more	37 (34.9%)	69 (65.1%)	
Source of motivation for ANC			
Spouse	33 (62.3%)	20 (37.7%)	0.001
Parent/guardian	46 (51.7%)	43 (48.3%)	
peers	4 (10.5%)	34 (89.5%)	
Determining factor for ANC attendance			
Limited knowledge	4 (26.7%)	11 (73.3%)	0.065
Financial constraints	29 (54.7%)	24 (45.3%)	
Distance from health center	21 (56.8%)	16 (43.2%)	
Fear of disclosing pregnancy	29 (38.7%)	46 (61.3%)	

4.4 Quality of care factor influencing ANC attendance

Table 4 shows the relationship between qualities of care rendered at the antenatal clinic and respondents desire to attend antenatal clinic. Results show that a large proportion 107 (59.4%) of the respondents are attended to by 3 to 4 midwives which is considered poor and 73 (40.6%) attended to by 1 to 2 midwife classified as good. Those attended to by 3 to 4 midwives had more ANC visit than those attended to by 1 to 2 midwives. The number of midwife attendants is significantly related to antenatal visits ($p < 0.05 = 0.011$). Attitude of staff towards respondents is significantly associated with antenatal clinic visits ($P < 0.05 = 0.003$). However majority 112 (62.2%) of the respondents rated the attitude of staff as poor and 68 (37.8%) rated attitude as good. Respondents who rated attitude as poor rather had a large percentage 70 (62.5%) attending ANC 4 times or more than those who rated attitude as good 27 (39.7%). Most of the respondents 128 (71.1%) also said staff/midwife do not use words of encouragement when attending to them while 52 (28.9%) think otherwise. This how ever does not have an influence on respondents decision to attend ANC ($P > 0.05 = 0.098$). Some of the services rendered at the ANC according to respondents are: screening 37 (20.6%), management of minor ailment 33 (18.3%), immunization 58 (32.2%) and health education 52 (28.9%). The type of services been rendered at the ANC is found to be statistically significant with ANC attendance ($p < 0.05 = 0.001$). The site where ANC is rendered and the waiting time for ANC services are found not to be statistically significant with antenatal clinic attendance with p values 0.145 and 0.326 respectively.

Table 4: Influence of quality of care on ANC attendance

variable	ANC VISIT		P (value)
	Less than 4 visits	4 visits or more	
Number of midwife attending to client			
1 to 2= good	42 (57.3%)	31 (42.5%)	0.011
3 to 4=poor	41 (38.3%)	66 (61.7%)	
Attitude of midwife ratings			
1 to 4=good	42 (37.5%)	70 (62.5%)	0.003
5 to 8=poor	41 (60.1%)	27 (39.7%)	
Use of words of encouragement			
Yes	29 (55.8%)	23 (44.2%)	0.098
No	54 (42.2%)	74 (57.8%)	
Services rendered at ANC			
Screening	17 (45.9%)	20 (54.1%)	0.001
Management of minor ailment	17 (51.5%)	16 (48.5%)	
Immunization	12 (20.7%)	46 (79.3%)	
Health education	37 (71.2%)	15 (28.9%)	
Referral			
Yes	62 (43.4%)	81 (56.6%)	0.145
No	21 (56.8%)	16 (43.2%)	
Place ANC services are rendered			
Room built for antenatal	62 (43.4%)	81 (56.6%)	0.145
Under a tree	21 (56.8%)	16 (43.2%)	
Waiting time at ANC			
40 minutes or less	21 (40.4%)	32 (59.6%)	0.326
More than 40 minutes	62 (48.4%)	66 (51.6%)	
Rating of quality of care at ANC			
Very good	33 (80.5%)	8 (19.5%)	0.0.001
Good	29 (28.4%)	73 (71.6%)	
Poor	21 (56.8%)	16 (43.2%)	

4.5 Knowledge about antenatal care and its influence on ANC attendance

Knowledge about antenatal service is an important factor when deciding to attend antenatal clinic. Table 3 presents results of respondent's knowledge about antenatal care and how it influences their antenatal clinic attendance. From table 3, most of the respondents agreed that antenatal clinic should be accessed during the first trimester. Results however showed that those who agree only about 47 (44.8%) attended ANC 4

times or more. For those who disagreed, 50 (66.7%) had 4 or more ANC visits. The results show that there is a significant association between knowledge on when to first seek ANC and number of ANC visits ($p < 0.05 = 0.004$). about 138 (76.7%) agree that ANC increases knowledge on reproductive health while 42 (23.3%) disagree. Out of those who agree, 63 (45.7%) made ANC visit of 4 or more times and majority 75 (54.4%) made less than 4 visit. Majority 143 (79.4%) agree that early ANC booking enhances wellbeing while 37 (20.6%) disagree.. 85 (59.4%) of those who agree made 4 ANC visit as compared to 12 (32.4%) for those who disagree. Early booking is found to be statistically significant ($p < 0.05 = 0.003$)

Table 5: Influence of knowledge about ANC services on ANC attendance

Variable	ANC VISITS		P (value)
	Less than 4 visit	4 visit or more	
ANC should be accessed in the first trimester			
Yes	58 (55.2%)	47 (44.8%)	0.004
No	25 (33.3%)	50 (66.7%)	
ANC provides increased knowledge about reproductive health			
Yes	75 (54.4%)	63 (45.7%)	0.001
No	8 (19.1%)	34 (80.9%)	
Early ANC booking enhances wellbeing			
Yes	58 (40.6%)	85 (59.4%)	0.003
No	25 (67.6%)	12 (32.4%)	
ANC provides the opportunity to detect and manage complications			
Yes	58 (45.3%)	70 (54.7%)	0.736
No	25 (48.1%)	27 (51.9%)	
ANC provides a learning opportunity			
Yes	75 (54.4%)	63 (45.7%)	0.001
No	8 (19.1%)	34 (80.9%)	
ANC empowers one to be able to identify danger signs and act promptly			
Yes	54 (42.2%)	74 (57.8%)	0.098
No	29 (55.8%)	23 (44.2%)	
ANC provides an opportunity to learn about STI, HIV and PMTCT			
Yes	62 (59.1%)	43 (40.9%)	0.001
No	21 (28.0%)	54 (72.0%)	

Table 6: Multivariate analysis of the factors influencing antenatal attendance

COVARIATE	UNIVARIATE OR(95%CI)P	MULTIVARIATE OR(95%CI)P
Person lived with		
Spouse parent	Reference	Reference
Friends	2.5(1.363762- 4.696767)0.003	6.82e+14, 0.987
Occupation		
Student	Reference	Reference
Apprentice	2.5(1.240458 5.203838)0.011	3.52e-08, 0.998
Trader	0.8(.3766591 1.763728)0.604	7.21e-23, 0.989
Source of income		
Self	<i>Reference</i>	Reference
Spouse	0.93(.0308213 .287403)0.001	0.3327632, 0.999
Parent/guardian	0.093(.0289106 .3011375)0.001	
Means of transport		
Walk	<i>Reference</i>	Reference
Vehicle	3.25(1.689546 6.255956)0.001	6.93e+14,0.987
Quality rating		
Poor	<i>Reference</i>	Reference
Good	10.38(4.289219 25.13735)0.001	6.73e-08, 0.993
ANC provides increased knowledge about reproductive health		
Yes	<i>Reference</i>	<i>Reference</i>
No	2.47(1.334101 4.565955)0.004	1.29e-07, 0.995

Table 6 presents results of a multivariate analysis. After adjusting for odds ratio, none of the variables was found to be statistically significant. However they were found to be significant using crude odd ratio. The significance could be caused by other confounding variable either than the ones captured in the analysis.

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

This chapter discusses the result of the study in relation to the objectives, literature review and key variables of the research.

5.2 Socio-economic and demographic factors

The current study was designed to determine the factors influencing adolescent utilization of antenatal clinic in the Amenfi West district of Ghana. We found that all the women in the study had received at least antenatal care but with varied number of attendance.

The study revealed that majority 128 of the pregnant adolescents are between the ages of 16 to 19 years and this age group are more likely to visit ANC services as compared to adolescents of younger ages since a large percentage of this age group had four or more ANC visits. This could be as a result of the level of education this group of adolescent would have received. Age is found not to be statistically significant which contradict a finding by Chaibva et al., (2009) which stated that age strongly influences pregnant adolescents' decision on whether to utilize ANC.

Majority of the adolescent 112 (62.2%) were single, and others cohabiting and only few of them married. Comparing marital status and number of ANC visit revealed that ANC visit is high among the unmarried adolescents than those who are married. There is no significant association between marital status and ANC attendance. The marital status of the adolescent does not have influence on their decision to visit ANC because the adolescents recognizes the importance of ANC as manifested in the level of their knowledge about ANC. Most of the respondents stay with their friends/spouse but most of

them managed to have more ANC visit than adolescent staying with parent indicating the importance adolescent attached to ANC. All the adolescents interviewed have attended school with majority experiencing secondary education and a few of them experiencing tertiary education. This explains their level of knowledge about antenatal and recognition of the need to visit ANC. Antenatal clinic visit is high among those with secondary and tertiary education. Tertiary and secondary education provides the opportunity for adolescent to learn about reproductive health. Level of education is therefore an important determinant of ANC attendance. There is a significant association between respondents occupation and the number of antenatal clinic visits ($p < 0.05 = 0.013$). Unfortunately most of the adolescent are students who dropped out of school because of the pregnancy and are not employed and are still considered students. However a few of them are apprentices learning one trade or the other and others involve in petty trading. The study revealed that most of the adolescent visited ANC for the first time in their second trimester (16-24wks) which contradicts WHO recommended visit in the first trimester (<16wks). Despite reporting late for ANC, high ANC visit of 4 or more time is recorded as compared to those who reported early. Gestation of first ANC visit however is found not to have a significant influence on a adolescent decision to use ANC. This is manifested in the finding that indicated that adolescent who reported late for ANC rather had more ANC visit than those reporting early. There is however a significant association between respondents family planning method used before pregnancy and antenatal clinic attendance ($p < 0.05 = 0.009$). The use of a family planning method will prevent pregnancy from occurring which will necessitate the use of ANC. Therefore family planning use is a major determinant for antenatal attendance. The study revealed that a majority of the respondents were not using any method of family planning and for those who used, condom was mostly used and most of the adolescents are getting pregnant for the first time and had never had any child.

The study also revealed that significant association exist between respondents source of income and antenatal care attendance ($p < 0.05 = 0.001$). The findings show that majority of the adolescents are not engage in any meaningful employment but would have to pay for transport and ANC services. This come as a cost to the adolescent and if not supported financially may not be able to access ANC services. Hence adolescent source of income can determine if an adolescent would attend ANC services or not. The findings indicated that majority of the adolescent receive money from their spouse or boyfriends and from their parents/guardian and if this source is interrupted can affect ANC visit despite results showing a high ANC attendance among those adolescents financing ANC services themselves.

The study found out that there is physical availability of antenatal clinics designated across the district but some of them are situated far away from the adolescent such that they have to pay more than 1 GH cedis to get to the ANC service point. Access to ANC is a very important determinant for ANC attendance, however the findings show that there is no significant association between accessibility of ANC and attendance. However means of transport and cost of transport to the health facility is significantly associated with antenatal attendance since the majority of the respondent use vehicle as a means of transport and pay more than 1 GH cedis as cost of transport. This can affect the adolescent decision to attend ANC since the cost of transport would have to be solicited from parents or spouse and if it fails the adolescent may not visit the clinic. ANC visit of 4 times or more is rather recorded high among those paying more than one Ghana cedis as compared to those paying less than that. A significant number of adolescent pay for ANC services but this found not to be statistically significant. Payment of ANC does not have an influence on adolescent decision not to attend ANC. The findings revealed that majority of the adolescents pay not less than 5 GH cedis for services and yet majority of those paying

this amount recorded high ANC visit of 4 times or more as compared of those paying less than less than 5 GH cedis. Cost of ANC services is significantly associated with respondents attendance of ANC ($p < 0.05 = 0.001$). The cost of service did not deter the adolescent visiting the ANC because the amount charge may be insignificant considering their source of income and how they consider ANC relevant to their health and the health of the fetus. Some may also consider this amount as high and can prevent them from attending ANC. This finding supports a study by Lincetto et. al. (2013) that reported a significant obstacle to ANC attendance as the incapacity to pay for ANC or the treatment given in ANC, and where women are asked to pay for services rendered and safety net meant for the poor are not made available. The adolescents identified limited knowledge about ANC, financial constraints, distance from health facility, and fear of disclosing pregnancy as some of the factors that could influence their decision to attend ANC

5.3 Knowledge about antenatal care

Knowledge about antenatal service is an important factor when deciding to attend antenatal clinic. Knowledge of the adolescent about ANC is found to be statistically significant. The knowledge level of adolescent was found to be high with majority knowing that ANC should be visited in the first trimester. These however did not reflect in their attitude towards ANC since most of them actually made their first visit in the second trimester. Those who seemed to disagree rather had high ANC turn-up. The adolescent also knew that attending ANC provides them the opportunity to learn about reproductive health issues and about their health and that early ANC booking enhances their wellbeing and that of the fetus.. Pregnant adolescents interviewed in Lesotho show that delay in booking ANC is as a result of lack of knowledge concerning the significance of early attendance (Phafoli et al., 2007)(Phafoli et al., 2007)(Phafoli et al., 2007)(Phafoli et al.,

2007). Therefore it is important intensify education on early booking to prevent delays in ANC attendance. Adolescent knew that a visit to ANC will provide them the opportunity to detect and manage complication and that ANC is a forum that provides learning opportunities. The adolescent also agree that the knowledge gained at ANC will empower them to be able to identify danger signs and act promptly and that ANC is also provides them with the opportunity to learn about STI, HIV and PMTCT. If adolescent knowledge about ANC is high, she is likely to seek ANC early. It is therefore important to work towards educating adolescent women about the importance of ANC so as to empower them to be responsible for their own health when they get pregnant.

5.4 Quality of care factor

Quality of care rendered at the antenatal care has a greater impact on the health of the pregnant woman and the fetus. It is therefore important that health workers especially midwives bring their professional expertise to bare to ensure the attendees reap the maximum benefit of ANC. Focused antenatal care is aimed at ensuring that one midwife attends to the needs of the pregnant woman during ANC visits, but the findings of this study revealed that majority of adolescents are attended to by 3 to 4 midwives which poor based on the standard mentioned above. These adolescents however reported a high ANC visit of 4 times or more. The finding shows that number of midwives attending to a pregnant woman at ANC is statistically significant and likely to influence adolescent choice of ANC attendance ($p < 0.05 = 0.011$). The findings also indicate that attitude of staff towards respondents is significantly associated with antenatal clinic visits ($P < 0.05 = 0.003$). Adolescents rated the attitude of midwife 5 to 8 on a scale of 1-8 which is poor. This is likely to deter adolescents from attending ANC. A high number of ANC visit is reported among those who rated attitude as poor. This may be so because the adolescent

may not have a choice either than to keep attending for the sake of her health the fetus. The use of words of encouragement according to adolescents, were not used by midwife and this do not motivate them to want to attend ANC. This however is not statistically significant and does not exert much influence on ANC attendance. This is in contrast a study in Bulawayo in Malawi in which the adolescent said that health workers' attitudes could influence their decisions to utilize or not utilize ANC services (Mlilo-Chaibva, 2007). Some of the services rendered at the ANC services include: screening, management of minor ailment, immunization and health education. The type of services been rendered at the ANC is found to be statistically significant with ANC attendance ($p < 0.05 = 0.001$). If adolescent seeks service at an ANC and do not get, may decide not to attend because the ANC do not address her needs. ANC services in the district are rendered in a room built for the purpose of ANC and in exceptional cases under trees during outreach programs. This do no prevent adolescent from using the service. The findings revealed that most adolescent spend a long time (more than 40minutes) at the ANC before they are eventually attended to. This does not really promote quality of care that is aimed at reducing the waiting time at health facility. The adolescent finally rated the general quality of care at ANC as good which is in agreement with a finding in Nkwanta south District of Ghana where ANC service were perceived to be as quality (Dedley, 2013)

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The study has revealed that ANC services are not fully utilized by Adolescents in the District. It is therefore concluded that the factors that lead to the underutilization of the service are:

1. All pregnant adolescent have attended ANC during pregnancy but most of them have not made the recommended 4 or more ANC visit during pregnancy.
2. The study revealed that adolescent who get pregnant stayed with their peers and spouse parents which can affect their utilisation of ANC
3. The educational level of respondents is low with majority of them with primary education yet their level of knowledge about antenatal care is relatively high and their adherence to ANC is also found to be high with majority making ANC visit of 4 times or more.
4. Majority of respondents are still students and are not employed. They find it difficult to afford the cost of ANC services. Some are engaged in petty trading and that affect their attendance to ANC.
5. Attitude of staff was found to have an influence on the adolescent utilization of ANC services. Attitude of staff in Amenfi West District toward adolescent pregnant women was adjudged as poor. Most of the adolescents also attributed the poor utilization of the services to the poor attitude of staff or midwives towards them.
6. Most adolescent stay far away from service points and would have to walk a distance to get there. Others pay not less than 1 GH cedi for transportation and the source of money for transportation is provided by the adolescent themselves.

7. Lack of knowledge about ANC, distance to health facility, financial constraints and fear of disclosing pregnancy were some of the factors influencing utilization of ANC.

6.2 Recommendation

The study findings unveiled a number of factors in the provision of antenatal care services leading to utilization. The following are therefore recommended based on the findings.

- The DHMT should review and strengthen reproductive health programmes and ensure that they are friendly and are need focused.
- Adequate reproductive health education should be targeted at the adolescents with special emphasis on prenatal education
- Adequate supervision and monitoring at all levels of health care should be ensured by the DHMT to improve quality antenatal care services at the delivery points
- The NHIS in the Districts should be reimbursed with the funds so that all pregnant women would benefit from the free ANC services.
- Encourage focused antenatal care in the service delivery points to ensure one nurse to pregnant adolescent
- Continuous disseminating of information by the DHMT on antenatal care, delivery and postnatal care services to enhance accessibility by every pregnant woman.

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APPENDICES

Appendix 1: Questionnaire

INTERVIEW SCHEDULE FOR PREGNANT ADOLESCENTS ATTENDING ANC IN AMENFI WEST

SECTION A

(i) Socio-demographic data

1. Age

Ans

2. Marital Status

a. Married

b. Cohabiting

c. Single

3. Whom do you live with?

a. Spouse Parent(s)

b. Friend (s)/ spouse

c. Other (specify).....

4. Educational level

a. Tertiary

b. Secondary

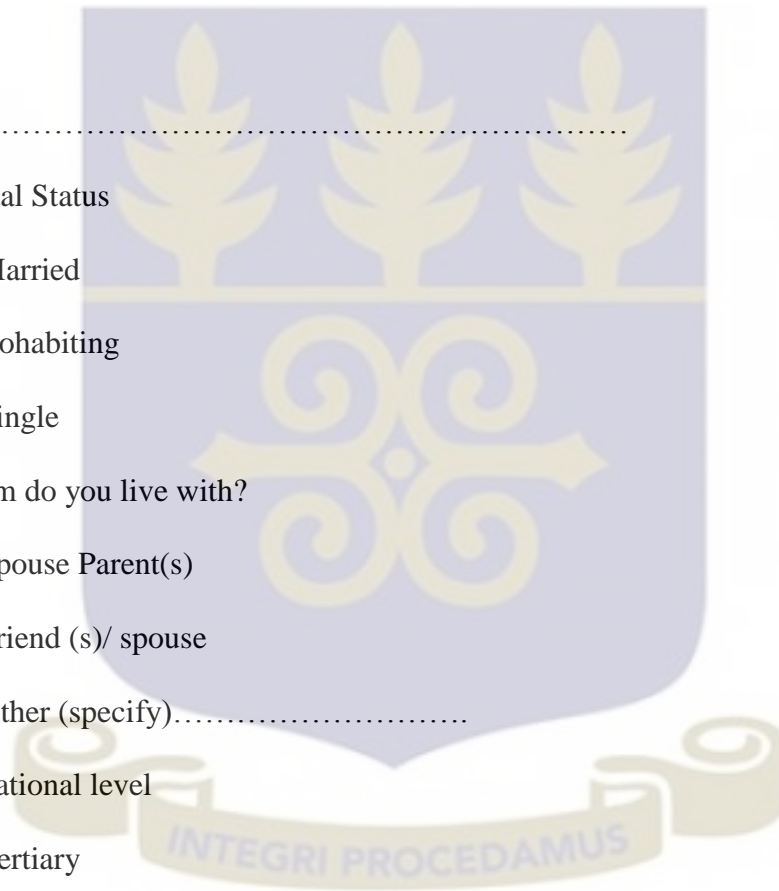
c. Primary

d. Others

5. Occupation

a. student

b. apprentice



- c. trading
 - d. Not working
6. Source of income
- a. Self
 - b. Spouse
 - c. Parents/guardian
 - d. Other (specify).....
7. How many times have you visited ANC
- a. Once
 - b. Twice
 - c. Three time
 - d. Four times
- (ii) Obstetric information
8. Parity
9. What was the gestation (age) of your pregnancy when you made your first ANC visit?
-
10. What family planning method did you use before you fell pregnant?
-
11. Is the Antenatal Care Service accessible?
- a. Yes
 - b. No
12. What means of transport do you use when accessing Antenatal Care Services?
- a. Walk

- b. Public means
 - c. Others (Specify)
13. How much do you pay for transport to and from the services?
.....
14. Do you pay for the Antenatal Care Services?
-
15. How much do you pay of the Antenatal Care Services?
-
16. Who among the following people motivated you to book for ANC?
- a. Spouse
 - b. Parents/guardian
 - c. Peers
 - d. Media Other (specify).....
17. Which of these factors do you think could prevent you from attending ANC services?
- a. Unplanned pregnancy
 - b. Limited Knowledge about ANC
 - c. Cultural/ religious factors
 - d. Financial constraints
 - e. Distance from the health center
 - f. Fear of disclosing pregnancy
 - g. Other (specify).....

SECTION B

Quality of antenatal care services

18. How many people attend to you when you access Antenatal Care Services?
- a. 1 person – excellent
 - b. 2 people – good
 - c. 3 people – fair
 - d. 4 people – poor
19. How would you described / rate the attitude of service providers towards pregnant women?
- a. 1 – 2 poor
 - b. 3 – 4 fair
 - c. 5 – 6 good
 - d. 7 – 8 excellent
20. Do Midwives use words of encouragement?
- a. Yes
 - b. No
21. Which of the following services do they render at the Antenatal Care Services?
- a. Screening
 - b. Management of minor ailment
 - c. Immunization
 - d. Health education
 - e. Others (specify)
22. Are you always referred in case of health problem?
23. Where is Antenatal Care Services rendered?

- a. Room built for Antenatal
- b. Under a tree
- c. On a veranda

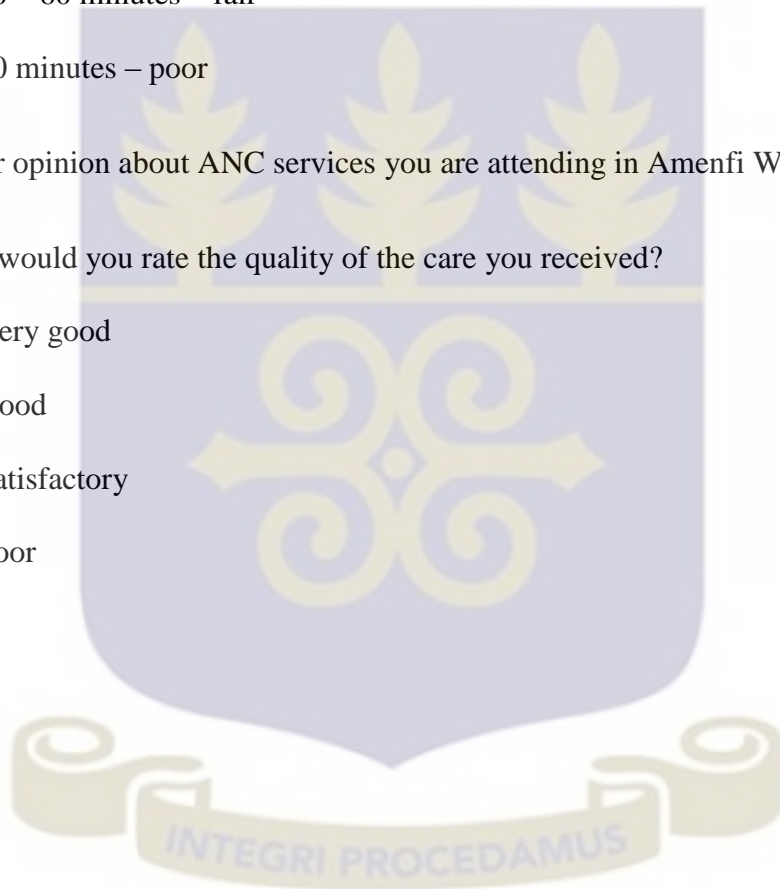
24. How long does it take to access Antenatal Care Service?

- a. 1 – 20 minutes – excellent
- b. 20 – 40 minutes – good
- c. 40 – 60 minutes – fair
- d. 60 minutes – poor

Tick your opinion about ANC services you are attending in Amenfi West

25. How would you rate the quality of the care you received?

- a. Very good
- b. Good
- c. Satisfactory
- d. Poor



SECTION C

Knowledge about ANC

Knowledge items	Definitely Yes	yes	Definitely No	No
22. ANC should be accessed in the first trimester				
23. ANC provides increased knowledge about Reproductive health.				
24. Early ANC booking enhances well-being				
25. ANC provides the opportunity to detect and manage complications				
26. ANC provides a learning opportunity				
27. ANC empowers one to be able to identify danger signs and act promptly				
28. ANC provides an opportunity to learn about STI, HIV and PMTCT				

Appendix 2

INTRODUCTION OF STUDY

The main investigator is Felix Kparu, a student at the School of Public Health, Legon and conducting a study on Factors influencing utilization of antenatal care services among adolescents in the Amenfi West District. This study is for academic purposes and a requirement for the award of Master in Public Health and supervised by Prof. Kwesi Torpey and Dr. Margerate Atuahene, lecturers of School of Public Health, University of Ghana, Legon.

Procedure:

Structured questionnaires will be used to conduct the interview. The questions would be posed either in English or Twi as the choice of respondents. There would be no recording of names and everything we say should remain here. There is no right or wrong answer everybody is free to share his/her mind. You are at liberty to object to 00-

at any time but if you accept to start I will encourage you to stay on till we finish. It would take about 15minutes of your time



APPENDIX 1A: CONSENT FORM FOR STUDY PARTICIPANTS 18 YEARS AND ABOVE

Project Title: Factors influencing adolescents utilization of antenatal care services in the Amenfi West District.

Institution of affiliation: School of Public Health, University of Ghana, Legon.

Purpose of Research

My name is Felix Kparu, a master of public health student at the school of public health, University of Ghana. I am conducting a study on Factors influencing adolescents utilization of antenatal care services in the Amenfi West District. I am interested in understanding the level of knowledge of antenatal care services among adolescents in the Amenfi West, do adolescents in the Amenfi West use antenatal care services. I also want to know the factors that influence the adolescent utilization of antenatal care services in the Amenfi West District. I would greatly appreciate your participation in my study. Your insight will assist me in understanding the reasons behind utilization or non-utilization of antenatal care services among pregnancy adolescents.

Research procedure:

If you agree to be in this study, you will be asked to answer questions about yourself as well as questions about the factors that influence antenatal care services utilization among adolescents. These questions will be asked in a form of individual interview using an interviewer administered structured questionnaire. The interview will take about 10 – 15 minutes.

Risks and benefits: There are minimum or no risks if you take part in this study. There are also no incentives but the information you provide will help you improve on your health and that of your loved ones.

Voluntary nature of participation:

If you decide to participate in this study, you are free to answer the questions with much or as little details as you wish and feel comfortable to explain. You are also at liberty not to answer particular questions or withdraw from the study at any time for any reason with no penalty.

Compensation

There is no monetary compensation or incentive for this study. Participation is voluntary

Confidentiality

You are assured of strict anonymity and confidentiality on any information you give. Only the research team will have access to the answered questionnaires. Confidentiality and privacy will be maintained by keeping all materials under lock and key. Your name will not be recorded. Instead, all data files will be coded and stored in randomly selected identification number making it impossible to identify you or your answers in anything written about this study.

Contact and Questions

If you have any further information or questions about the study, you may contact the principal investigator, **Felix Kparu** on phone number: **0545451698/0207599861**

Or email: kparu8@gmail.com

Your rights as a Participant: This research has been reviewed and approved by the Ethical Review Committee of the Ghana Health Service. If you have any questions about your rights as a research participant you can contact the ERC administrator Ms. Hannah Frimpong on 0243235225 or 0507041223 between the hours of 9am – 4pm on Monday to Friday.

Statement of Consent

I have read the information above, or it has been read to me. I consent voluntarily to be a participant in this study

Name of Participant:

Signature or Thumb print of Participant:

Date:

Thank you for agreeing to participate

Name of witness:

Signature or Thumb print of witness:

Date:

I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Name of Researcher or Principal investigator:

Signature of Researcher:

Date:



APPENDIX 1B: ASSENT FORM FOR STUDY PARTICIPANTS BELOW 18 YEARS

Project Title: Factors influencing utilization of antenatal care services among adolescents in the Amenfi West District.

Institution of affiliation: School of Public Health, University of Ghana, Legon.

Purpose of Research

My name is Felix Kparu a master of public health student at the school of public health, University of Ghana. I am conducting a study on Factors influencing utilization of antenatal care services among adolescents in the Amenfi West District. I am interested in understanding the level of knowledge of antenatal care services among adolescents in the Amenfi West, do adolescents in the Amenfi West District use antenatal care services?. I also want to know the factors that influence utilization of antenatal care services among adolescents in the Amenfi West. I would greatly appreciate your participation in my study. Your insight will assist me in understanding the reasons behind the utilization and non-utilization of antenatal care services among pregnant adolescents.

Research Procedure

If you agree to be in this study, you will be asked to answer questions about yourself as well as questions about the factors that influence utilization of antenatal care services. These questions will be asked in a form of individual interview using an interviewer administered structured questionnaire. The interview will take about 10 – 15 minutes

Risks and benefits: There are minimum or no risks if you take part in this study. There are also no incentives but the information you provide will help you improve on your health and that of your loved ones.

Voluntary Nature of Participation

If you decide to participate in this study, you are free to answer the questions with much or as little details as you wish and feel comfortable to explain. You are also at liberty not to answer particular questions or withdraw from the study at any time for any reason with no penalty.

Compensation

There is no monetary compensation or incentive for this study. Participation is voluntary.

Confidentiality

You are assured of strict anonymity and confidentiality on any information you give. Only the research team will have access to the answered questionnaires. Confidentiality and privacy will be maintained by keeping all materials under lock and key. Your name will not be recorded. Instead, all data files will be coded and stored in randomly selected identification number making it impossible to identify you or your answers in anything written about this study.

Contact and Questions

If you have any further information or questions about the study, you may contact the principal investigator, **Felix Kparu** on phone number: **0545451698/027599861**

Or email: kparu8@gmail.com

Your rights as a Participant: This research has been reviewed and approved by the Ethical Review Committee of the Ghana Health Service. If you have any questions about your rights as a research participant you can contact the ERC administrator Ms. Hannah Frimpong on 0243235225 or 0507041223 between the hours of 9am – 4pm on Monday to Friday.

Statement of Consent

I have read the information above, or it has been read to me. I consent voluntarily to be a participant in this study

Name of Participant:

Signature or Thumb print of Participant:

Date:

Thank you for agreeing to participate

Name of witness:

Signature or Thumb print of witness:

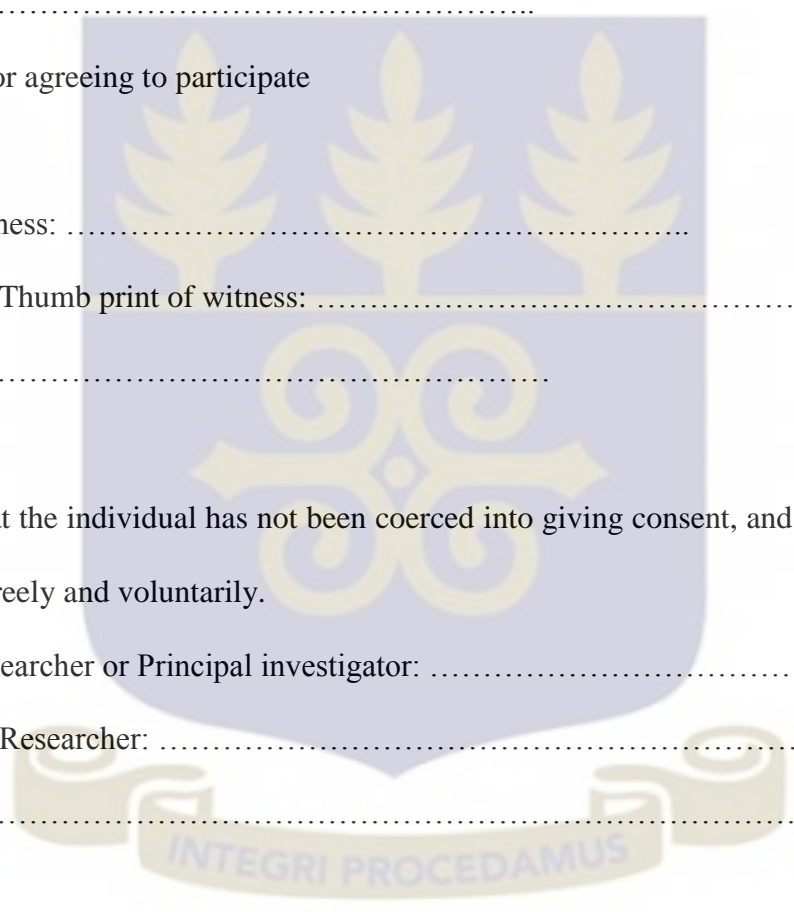
Date:

I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Name of Researcher or Principal investigator:

Signature of Researcher:

Date:



APPENDIX 1C: CONSENT FORM FOR PARENT OR GUARDIAN OF PARTICIPANTS BELOW 18 YEARS

Project Title: Factors influencing utilization of antenatal care services among adolescents in the Amenfi West District

Institution of affiliation: School of Public Health, University of Ghana, Legon.

Purpose of Research

My name is Felix Kparu, a master of public health student at the school of public health, University of Ghana. I am conducting a study on Factors influencing utilization of antenatal care services among adolescents in the Amenfi West District. I am interested in understanding the level of knowledge of antenatal care services utilization among adolescents in the Amenfi West District do adolescents in the Amenfi West District use antenatal care services. I also want to know the factors that influence the utilization of antenatal care services among adolescents in the Amenfi West District. I would greatly appreciate your child/guardian participation in my study. The insight of your child/guardian will assist me in understanding the reasons behind utilization and non-utilization of antenatal care services among adolescents.

Procedure:

If your child/guardian agrees to be in this study, they will be asked to answer questions about themselves as well as questions about the factors that influence utilization of antenatal care services among adolescent. These questions will be asked in a form of individual interview using an interviewer administered structured questionnaire. The interview will take about 10 – 15minutes.

Risks and benefits:

In this study there will be questions concerning level of knowledge, sexual behaviour and attitudes that may be embarrassing and or unusual. However, the risk of participation will be no greater than those encountered on day –to-day basis. Minimal or no risk is associated with this study.

The result of the study will be disseminated. This may benefit your child/guardian and the whole community in dealing with the issue of antenatal care service utilization. The study would help health providers to plan how to curb the incidence of maternal death in the district.

Voluntary Nature of Participation

If your child/guardian decides to participate in this study, they are free to answer the questions with much or as little details as they wish and feel comfortable to explain. They are also at liberty not to answer particular questions or withdraw from the study at any time for any reason with no penalty.

Compensation

There is no monetary compensation or incentive for this study.

Confidentiality

You are assured of strict anonymity and confidentiality on any information your child/guardian gives. Only the research team will have access to the answered questionnaires. Confidentiality and privacy will be maintained by keeping all materials under lock and key. Their names will not be recorded. Instead, all data files will be coded and stored in randomly selected identification number making it impossible to identify them or the answers they give in this study.

Contact and Questions

If you have any further information or questions about the study, you may contact the principal investigator, **Felix Kparuon** phone number: **0545451698**

Or email: kparu8@gmail.com

Your rights as a Parent or Guardian

This research has been reviewed and approved by the Ethical Review Committee of the Ghana Health Service. If you have any questions about the rights of your child/ guardian as a research participant you can contact the ERC administrator Ms. Hannah Frimpong on 0243235225 or 0507041223 between the hours of 9am – 4pm on Monday to Friday.

Statement of Consent

I have read the information above, or it has been read to me. The study has been explained to me and my questions have been answered. I consent voluntarily for my child to be a participant in this study

Name of Parent or Guardian:

Signature or Thumbprint of Participant:

Date:

Thank you for agreeing for your child to participate

Name of Researcher or Principal investigator:

Signature of Researcher:

Date:

