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FACTORS INFLUENCING PERINATAL OUTCOMES AMONG ADOLESCENT PREGNANCIES IN KASSENA NANKANA MUNICIPALITY, UPPER EAST REGION

BY

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By

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DECLARATION

I hereby declare that this submission is my own work towards the MPH, and that to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the university, except where due acknowledgement has been made in the text.

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LIST OF ABREVIATIONS

ANC: Antenatal Care

CWC: Child Welfare Clinic

BECOC: Basic Emergency Obstetric Care

CEOC: Comprehensive Emergency Obstetric Care

MDG: Millennium Development Goal

MHD: Municipal Health Directorate

PRAMS: Pregnancy Risk Assessment Monitoring System

UNICEF: United Nations International Children`s Education Fund

WIFA: Women in Fertility Age

WHO: World Health Organisation

ABSTRACT

Adolescent pregnancies are regarded as the risk factor for adverse perinatal outcomes. This may be probably due to biological immaturity, unintended pregnancies and the challenges they often face during pregnancy and the care. There has been research report of high early neonatal mortality rate from pregnancies of younger maternal age (15-19years) in the Kassena Nankana Municipality. This appears to be declining since 2009 probably because of improved health services such as the newborn care in the municipality. The purpose of the study was to explore the factors that influence perinatal outcomes in adolescent pregnancies. The sample size was 200 adolescent mothers. Multistage sampling method was used to select the facilities. Simple random sampling technique was used to select the participants at the facilities. The data were analysed using STATA version 11 software programme and results presented in tables. The findings were that prematurity, traditional beliefs and practices, and low family planning uptake appeared to be more linked to influencing poor perinatal outcomes among adolescent pregnancies in this study.

A lot more advocacy and sensitisation need to be done by the MHD to discourage unhealthy cultural practices, low family planning uptake and consumption of alcoholic beverages among the adolescents. The study also recommends that the MHD intensify education on family planning uptake by the youth. Youth centres with adolescent reproductive facilities including sex education and preconception classes need to be increased by the municipal to optimise good perinatal outcomes among adolescent pregnancies.

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1.0 INTRODUCTION

1.1Background to the study

Infant and child mortality rates mirror the degree of socio-economic progress and also determine the quality of life of a country. These are essential for monitoring and evaluating policies, health programmes and population (Paria, 2013).Perinatal outcomes can pose a public health challenge to the health status and development of the society (Duvan, 2010). Perinatal outcomes including live births, stillbirths and early neonatal deaths among adolescent pregnancies are particularly important determinants of infant mortality and morbidity in life. The impacts of adverse perinatal outcomes are increased risk of health problems in adulthood (WHO, 2008). A lot of the 3.2 million stillbirths that occur yearly in the world appear to be more neglected than neonatal deaths and not even mentioned in the MDG 4. Meanwhile these are also preventable using similar solutions as for maternal and newborn survival (Yakoob et. al., 2010).

Over 6 million perinatal deaths occur globally each year (World Health Organization 2006; Carlo et al. 2010).More than 98% of perinatal deaths occur in developing countries and sub-Saharan Africa has the greatest risk (Lawn, et. al.2011). Perinatal deaths account for the highest proportion of deaths among children 0-14years (Lawn, et. al.2011; Carlo WA, Goudar SS, Jehan I et al., 2010).

A considerable progress is made to curtail rising neonatal deaths and to achieve the Millennium Development Goal 4 target in developed regions, but this is insufficient in developing regions. Whilst the average annual rates of maternal death (4.2%) and under-five death (2.9%) decrease faster, the neonatal mortality rate (2.1%) decreases more slowly (G8 2009; Shiffman2010). At least an estimated 41% neonatal mortality

contributes to under-five deaths globally. The perinatal outcomes of young age pregnancies may be more affected in this regard.

Stillbirths and deaths during the first week of life are 50 per cent higher among newborns to adolescent mothers than among newborns to mothers in their twenties. Infants of adolescent mothers are more likely to be premature and have low birth weight (WHO, 2012). A publication by WHO (2008) suggests that perinatal mortality rate at birth in adolescent pregnancies is well over 50% in Ghana compared to the lower rate of women aged 20-29 years old, 38% (Macro international (2008). A true burden of perinatal outcomes in adolescent pregnancies needs to be clear and further addressed in Ghana and the Kassena Nankana Municipality.

There is a variation of childbearing adolescent women in African region depending on cultural, religious, political, economic and other factors. Early pregnancy has been discussed as an independent risk factor for adverse perinatal outcomes in many publications (Kurt et.al, 2010). Public health interventions such as intermittent preventive treatment of malaria, skilled birth attendance and increasing the frequency and quality of antenatal care have been emphasised as present strategies to reduce pregnancy related adverse health outcomes of neonates especially among adolescents. Even though, some factors are known, the discovery of additional unidentified preventable risk factors for adverse perinatal outcomes among adolescent pregnancies is required to further reinforce present efforts to reduce perinatal mortality. The aim of this study is therefore to explore the influence of socio-cultural factors and health service utilisation on perinatal health outcomes of adolescent pregnancies. The study will help revitalize efforts to reduce child

and newborn deaths and to contribute towards achieving Millennium Development Goal 4(MDG-4, Reduce child mortality) in Ghana.

1.2 Problem statement

The growing incidence of teenage pregnancies and its associated adverse perinatal outcomes has been of great concern to every right-thinking Ghanaian and the people of Kassena Nankana Municipality. Several factors affect pregnancies which sometimes result in poor perinatal outcomes such as early neonatal mortality, stillbirth, premature births and low birth weight. Adolescent pregnancies are suggested to be at increased risk for these adverse perinatal outcomes. Adolescents may face so many barriers in making decisions and also receiving health care ranging from prenatal, antenatal and postnatal period.

Even though the antenatal coverage in the Kassena Nankana Municipality keeps on improving year by year, perinatal deaths rather seems to decrease steadily. The Municipal has also performed well to significantly decrease maternal deaths by about 50%. Despite the increased antenatal care services and improved skilled deliveries, perinatal deaths rather decrease steadily as of 2009. There has been a high neonatal mortality and the most important causes are direct. The most common causes of neonatal death include birth asphyxia and injury, infections and prematurity in rural Northern Ghana. More of the neonatal deaths occur in the first week of life. Studies have shown that more of this burden is realized in the adolescent deliveries. Young maternal age less than 20years is about two times associated with this phenomenon in the Municipality. The study recorded neonatal mortality rate of 39.2 per 1000 live births from births of young maternal age less than 20years and 22 per 1000 live births from births of mothers 20 years and above (Welaga et.al. 2013). The probable increase in adverse perinatal

outcomes particularly in adolescence is perceived to be attributed to biological immaturity. The problem of perinatal death is probably given little attention. It could also be attributed to the cultural believe that such a product of conception at that early stage is not counted as yet a human being and soon forgotten of without records. A lot more investigation is therefore required to better appreciate the socio-demographic and health service factors that influence high early neonatal mortality particularly in adolescent pregnancies.

1.3 Rationale for the study

The study should help reveal unsuspected factors that may be contributing to perinatal outcomes among adolescent pregnancies in the Kassena Nankana Municipality. The study will help define areas where concerns of adolescent mothers may need improvement. It will help strengthen those areas so as to inform Ministry of Health (MOH) policies for planning effective strategies to prevent adverse perinatal outcomes associated with adolescent pregnancies. This study will help develop more awareness campaigns of the complications and deaths due to adverse perinatal outcomes particularly in early neonates delivered by adolescents.

Possibly, other districts/municipalities which share similar characteristics with Kassena Nankana Municipality could adopt the findings to help solve perinatal problems of adolescent pregnancies.

Conceptual approach

Literature reveals that potential risk factors of adverse perinatal outcomes are: indirect and remote factors which include personal characteristics of the woman: age, education, marital status and parity. Socio-cultural factors such as religious affiliations, occupation and traditional beliefs and practices like prevention of eating certain kinds of food. The use of herbal preparations during pregnancy is noted as some of the contributing factors to adverse perinatal outcomes. Health behaviours such as alcohol use, the decision to be pregnant and whether to use contraceptive or not are also the determinants of perinatal outcomes. Health seeking behaviours and health care utilisatiion are important in determining the outcome of pregnancy. Adequate level of antenatal attendance of at least greater than four times optimise good perinatal outcomes since it helps identify high risk mothers and address their needs. The history of maternal illnesses such as anaemia, malaria, hypertension, diabetes among others determines to a large extend the outcome of pregnancy.

Conceptual approach

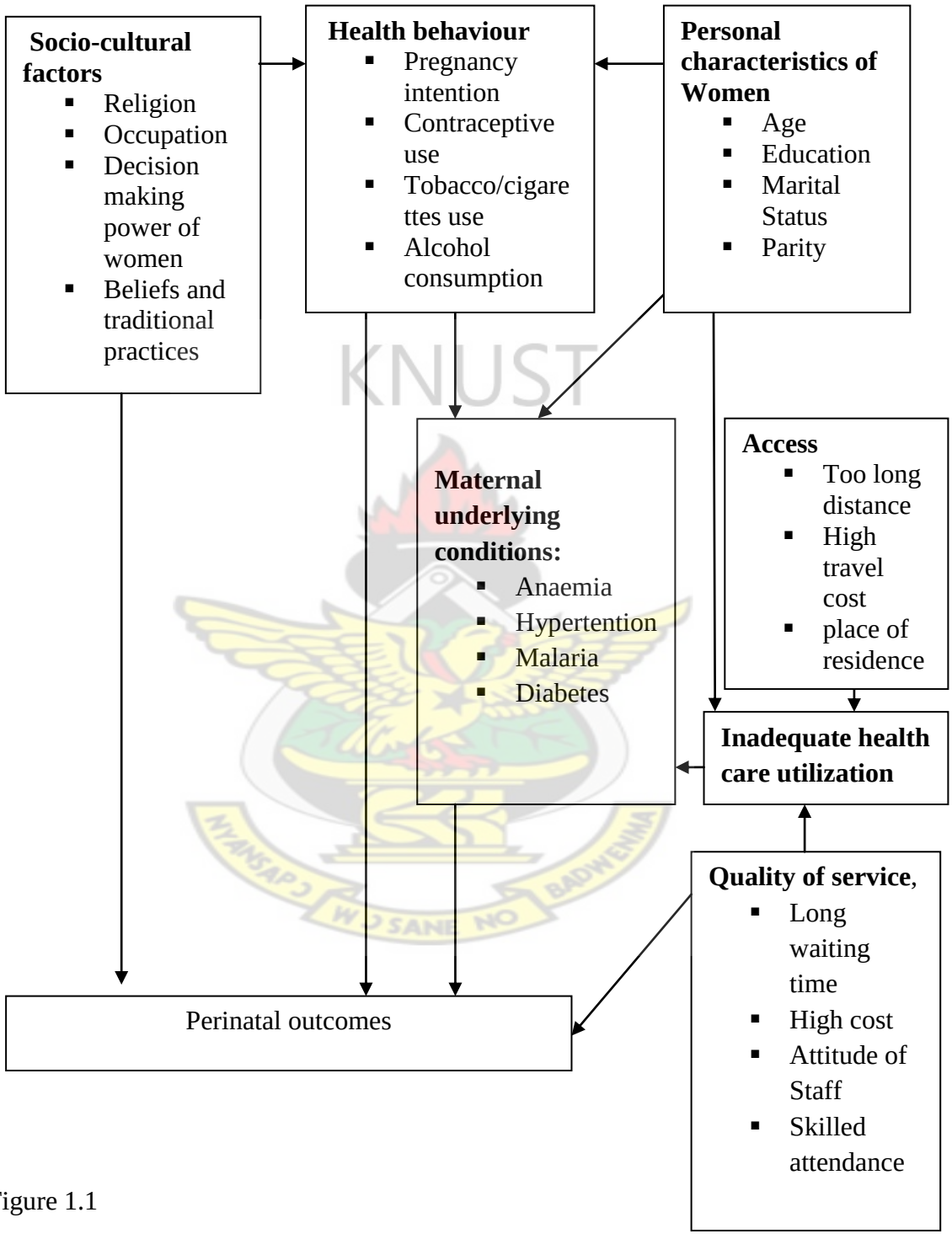

Figure 1.1

Source: Student Author

1.4 Study objectives

1.4.1 General objective

The main objective of the study is to determine factors that influence perinatal outcomes among adolescent pregnancies.

1.4.2 Specific objectives

The specific objectives to answer the research questions of the study are to:

1. Determine the socio-demographic factors that influence perinatal outcomes among adolescent pregnancies?

2. Determine health seeking behaviours influencing perinatal outcomes among adolescent pregnancies?

3. Determine the influence of health care utilisation on perinatal outcomes among adolescent pregnancies?

4. Use the findings to make recommendations that will inform the Municipal health directorate for planning effective interventions to prevent adverse perinatal outcomes associated with adolescent pregnancies.

1.5 Definition of terms

Adolescents: Persons aged 15-19years old

Adolescent pregnancy: Pregnancy in female 15-19years old

Premature birth: The birth of a baby before 37 completed weeks of pregnancy

Perinatal outcomes: live birth, perinatal death

Adverse Perinatal outcomes: stillbirth, perinatal death

Perinatal death: A stillbirth and death occurring during the first 7 completed days of life.

Stillbirth: a baby delivered after 28 weeks gestation without any signs of life

Unmet need for conception: Refers to when a woman in union or sexually active, she can conceive, does not want to become pregnant within the next two years, but she does not use any contraception to prevent pregnancy.

Unintended pregnancy: This is a pregnancy that is mistimed, unplanned or unwanted at the time of conception.

CHAPTER TWO

2.0 REVIEW OF RELATED LITERATURE

Introduction

The review has been organised along the lines of the socio-demographic characteristics, health seeking behaviours, pregnancy care-seeking behaviour of adolescents and health care utilisation influencing perinatal outcomes among adolescent pregnancies. It also includes maternal conditions such as anaemia, malaria, diabetes and hypertension that have influence on perinatal outcomes.

2.1 The influence of socio-demographic characteristics on perinatal outcomes of adolescent pregnancies

Socio-demographic characteristics determine the behaviour and general health of all persons and outcomes of pregnancy in both adolescents and adult mothers. There are variations in how these influence perinatal outcomes. In adolescent pregnancies, age has been adjudged a major determinant of adverse perinatal outcomes. Ages below 19 years and above 35 years are said to be at increased risk of poor perinatal outcomes such as pre-term, small for gestation, low birth weight babies and high neonatal mortality (Stewart et al., 2007). A study by Pun and Chauben (2011) suggests that adverse pregnancy outcomes could be attributed to lower maternal age and underprivileged socio-economic background, quality of prenatal visits and family supports.

Low level of education has indirect effects on the understanding of nutrition and food aspects as well as upgrading of the socio-economic conditions. Higher education of the mother determines to a greater extend the child survival (Walraven et al., 1995; Ansah, 2006). Delivery under unhygienic conditions, the use of non-sterile instrument for cutting cord and dressing it with cow dung are threats to neonatal survival. Seclusion of

both mother and baby soon after delivery contributes to delay in seeking for health when either of them is probably ill (Kruger, 2007). In Ghana women believe the use of herbs prior to labour facilitate safe delivery (Debrah, 2010). The frequency of pregnancy during adolescence is greatly not consistent in Africa. Short birth interval does not give the mother enough time to recover from the nutritional burden and stress of the preceding pregnancy, which may lead to poor perinatal outcomes (Dewey& Cohen, 2007). Marital status has been reported to influence perinatal outcomes. According to Swati (2007) teenage mothers are more likely to be unmarried compared with adult women. The findings of a study conducted by Duvan et al (2010) in Turkey instead showed that most adolescent pregnant women are married and well supported by their families. It therefore suggests that most of their pregnancies are planned and intended. In some jurisdiction, young girls are not aware of existence of their legal rights against child marriage. They may therefore be bound to marry early in life without consent in domestic violence dominated areas (UNFPA, 2012). The early marriage can lead to complications related to pregnancy and childbirth as well as poor perinatal outcomes (Auger et al., 2008). In the view of Charles et al. (2009), sexually transmitted infections such as syphilis and HIV/AIDS have been connected with poor pregnancy outcomes including spontaneous abortion, stillbirth, pre-term birth and low birth weight.

Others think otherwise. Whilst a study conducted by Mosha and NapendaelI (2010) rather agrees that maternal height, maternal total weight during the last two trimesters and haemoglobin levels has substantial impact on the infant birth weight and subsequent poor perinatal outcomes, Kurth et al. (2010) on the other hand states that the chances of delivering an infant with low birth weight is more than doubled for adolescent

women compared with mothers older than 16 years. Biological immaturity and continuous maternal growth may stand for biologic growth barriers for the foetus. This may result in adverse perinatal outcomes.

However, a study by Nancy and Deanna (1997) in U.S.A revealed that 15-19-year-olds among blacks face significantly lower risks of delivering low-birth-weight babies than black women aged 25-29. Additionally, on the face of it poorer birth outcomes of teenage mothers appear to result largely from their adverse socioeconomic circumstances, not from young maternal age per se". Racial difference may not be of any significance in Ghanaian population and for that matter the study area since almost all of the inhabitants are from black origin. A clear cut etiology of adverse perinatal outcomes in adolescent women is difficult to establish. Both biological and socio-demographic factors are implicated (Duvan et al, 2010).

Teenage mothers again are more at risk of developing anaemia and having preterm delivery as well as low birth weight. Adolescent mothers are twice as likely to develop hypertensive problems with less assisted and caesarean deliveries compared to adults (Pun and Chauhan, 2011). Welaga et al (2013) have demonstrated that multiple births, gestational age less than 32weeks and first pregnancies have the highest significant association with neonatal death particularly in the first one week of life.

2.2 Health seeking behaviours that influence perinatal outcomes in adolescent pregnancies

Some health behaviours do not result from pregnancy itself, but directly contribute to proximate causes of death and disability in newborns. They also indirectly contribute to underlying health conditions such as anaemia (James, 2010). These

behaviours include tobacco/cigarette smoking and alcohol use, pregnancy intention and contraceptive use. These are reviewed as follows.

2.2.1 The influence of tobacco/cigarette smoking and alcohol use on perinatal outcomes

Pregnant adolescents are more likely to smoke and abuse a drug than are older women (Lule & Rosen, 2008). Research shows that there is a relationship between mothers who took antibiotics and preterm delivery than those who consumed alcohol (Bayingana et al., 2010). Exposure to alcohol and tobacco during pregnancy are known to be associated with low birth weight, birth defects, sudden infant death syndrome and asthma and respiratory illnesses. Exposure to environmental tobacco smoke may set in utero and continue throughout development (Marinda and Sharon, 2009).

2.2.2 The influence of pregnancy intention on perinatal outcomes

Unintended pregnancy means a pregnancy that is mistimed, unplanned or unwanted at the time of conception. The intention of pregnancy is largely determined by the decision making power of the adolescent mother.

The adverse effects of unintended pregnancy on perinatal outcomes could be greatly felt. The danger of low birth weight delivery and infant mortality are known to be higher among unintended pregnancies compared to planned pregnancies (North Carolina PRAMS Fact Sheet, 2009). A study by Marinda and Sharon (2009) shows that unintended pregnancy is linked with young maternal age, African-American race, lower maternal education, and Medicaid use. The findings revealed that over 50% of women who reported they did not intend to become pregnant were not actively avoiding pregnancy. Again the findings in the study by Duvan (2010) indicates that majority of the unplanned adolescent pregnancies are also unintended. This study used adults as a control

in which there could be confounding factors. Also using only hospital data may leave out some socio-cultural factors that affect perinatal outcomes in the adolescents.

2.2.3 The influence of contraceptive use on perinatal outcomes

Early initiation of sexual activity without contraceptive use predisposes adolescents particularly to high risk of unplanned teenage pregnancies and associated adverse perinatal outcomes. A major concern is the issue of unintended pregnancies, unsafe abortion and preterm deliveries (Magadi, 2004). The rate of contraceptive use among both married and unmarried adolescents remains low globally. Unmet need for contraception among the youngest age group is high (James, 2010). In sub-Saharan Africa it is indicative that the incidence of adolescent pregnancies is highest, largely due to lack of effective contraception for adolescents (Treffers, 2003).

2.3 The influence of pregnancy care-seeking behaviour and health care utilisation on perinatal outcomes

Health care utilisation involves the use of health services in terms of clinical, public health services or the services of medical care professionals. Health care utilisation is influenced by diverse factors. Health care utilisation behaviour ranges from the use of preventive services, such as prenatal care or early discovery and screening tests, to possible surgery or involuntary hospitalisation. The study of health care utilisation behaviour includes examining the extent to which these services are used. It also spells out how satisfied clients are with the services.

Pregnancy care seeking behaviours are influenced by variety of factors, the demand on one side and supply on the other side. These factors may lead to different choices and inadequate health care utilisation leading to adverse perinatal outcomes. The

underutilisation may include low antenatal care attendance and home deliveries. The influencing factors may include perceived poor staff attitude, poor quality of health services and inadequate skilled attendants.

2.3.1 The influence of antenatal visits on perinatal outcomes

There is a wide variety of demand and supply faces factors that influence use of pregnancy care. Mothers in general recognise antenatal services as most useful and beneficial. Adolescents relatively have less personal autonomy in making health care decisions. They are more economically underprivileged, have less authority over use of economic resources, have less mobility (particularly married adolescents), and are more affected by household cruelty. It is however stated that no evidence shows that educational level or social and cultural factors such as traditional beliefs have differential effect on adolescents' use of pregnancy care (Amponsah 2006; James 2010).

Many factors influence ANC attendance across sub-Saharan African countries with varying levels among rural and urban areas. These may include: a woman's and/or her husband's level of education; a woman's occupation; economic status; distance to health facility; parity, age and stigma of adolescent pregnancy (Pell et.al.2013). Adolescents face health challenges that have not come to the notice of health workers. Adolescents may underutilise health services probably because of long waits, distance to health facilities or unfriendly services. They could also feel ashamed to ask for money for the cost of the required visits (UNICEF, 2011).

A survey data from sub-Saharan Africa indicate that women often only commence ANC after the first trimester and do not accomplish the ideal number of ANC visits. Ghanaian women for instance initiate ANC earlier and are more likely to achieve

four ANC visits; all the same the proportion of deliveries in health facilities is lower compared to Malawi and Kenya (GSS 2008, NSO 2010).

Many scholars have pointed to the fact that successive number of ANC visits (4 times) by a pregnant woman is a prerequisite for good perinatal outcomes. Jesmin.et al (2012) succinctly put it that ANC visits are associated with increased uptake of facility-based delivery and improved perinatal survival. The misunderstanding of the concept about focused ANC has led to several perceived conclusions. However, the issue of focused ANC and its benefits stresses the fact that there should be quality improvement in care of pregnant women. It is not necessarily the number of visits. Nyarko et al (2006) emphasise the need for quality and comprehensive ANC services.

It is noted in a study that a number of factors affect ANC attendance. In Kasena-Nankana municipality particularly, women walk for up to an hour to reach the nearest health facility and longer to a bigger health centre. Adolescents and unmarried younger women hid their pregnancies and delayed ANC visits so as to turn away from the probable social implications of pregnancy such as exclusion from school, expulsion from their biological home, partner abandonment, stigmatisation and gossip. Also, few women in Kenya are cautious of attending antenatal clinic because they would be told of their HIV status knowing that a positive result has ramifications if their status is exposed to their husbands. The findings also revealed that communication at health facilities is more two-way if a woman was relatively affluent or well educated or had a familial relationship or friendship with the health worker which is more of social context. The cost of ANC attendance also varies among countries and at different sites. In northern Ghana, commercial transportation in remote areas is scarce. Women mainly walk to the

clinic and travel costs may be minimal. Pregnant adolescents are more likely to be affected by this situation since they are tied to their parents 'strings' and cultural norms in the society. Though young woman somewhat understood the importance of ANC visits, it is perceived to be obligatory as a result of the authority of health staff or the vague idea of it being the 'law' in Upper East Region (Pell et al.,2013).

Perhaps the limited knowledge of young women about antenatal care programmes and the fear of HIV testing have been further obstacles to efficient antenatal care. Convincingly adolescent age and antenatal care are directly related for the improvement of pregnancy outcomes in Central Africa (Kurth et. al. 2010). Poor neonatal outcomes of teenage pregnancy may be related to non-utilisation of prenatal care rather than their biological age (Swati, 2007). This was a hospital-based study and might not establish significant association of adverse perinatal outcomes with socio-cultural factors. These findings compared the adolescent and adults in which there could be a sampling bias in terms of differences in age (Mann, 2003). Other studies blame poor perinatal outcomes in adolescent pregnancies on quality of prenatal care (Pun and Chauhan, 2011).

Place of delivery has potential effect on the outcome of pregnancy. Birth preparation in adolescents and choice of delivery place may be different from that of adults since their decisions are largely controlled by the adults and the socio-cultural norms. Adolescents who are married and live in rural areas of India for instance have low utilisation of maternity care services. Low utilisation of safe delivery care is higher among Muslim adolescent women compared with other religions. They however initiate breastfeeding sooner than other religious groups and this promotes child survival in this group (Singh, 2012).

The decision of a woman to deliver at health facility is also influenced by husband and other family members and availability of traditional birth attendant. Therefore in obstetric emergency situation, every moment of delay in seeking and receiving skilled care increases the risk of maternal deaths/disability and stillbirths (Abdou, 2011). Other findings blame characteristics of unfriendly youth services as major barrier of adolescents concern (Senderowitz, 1999).

2.3.3 The influence of skilled attendance on perinatal outcomes

The vulnerability of babies during birth to various complications demands that all women and babies have access to childbirth care from skilled care providers. Skilled care in an enabling environment should provide key interventions during labour and sufficient essential newborn care such as warmth, early and exclusive breastfeeding, and cleanliness. It demands that resuscitation should be initiated if the baby does not breathe within 30 seconds after birth. Aside these, improving linkages with the community, and promoting simple home behaviours must save lives (Luwei et al., 2007).

Access to skill birth attendance, available and quality EOC also determines the perinatal outcomes among adolescent pregnancies (Gabrysch et al 2012). Charles et al (2012), instead talk about minimum UN coverage rates for EOC as are anticipated to be one Comprehensive (CEOC) and four Basic EOC (BEOC) facilities per 500,000 populations. Presence of these interventions contributes significantly to good maternal and perinatal outcomes. It may largely depend on availability and adequacy of skilled staff. The concern now is the adequate skills needed to attend to adolescent pregnant women in particular during labour (World Health Organization, MPS Department, 2007).

A study by Baiden et al. (2006) suggests that having skilled attendance and avoidance of infanticides could contribute to reduce neonatal mortality in the Kassena

Nankana Municipality. Other scholars think otherwise. Deaths due to preterm birth complications could be reduced at faster rate and addressing these deaths requires specific skills, such as for feeding support and Kangaroo Mother Care, and at least some basic commodities (Liu et al. 2012, Lawn et al 2010). Even though Ipas, a U.S.-based organisation has trained midwives in the field of reproductive health which has reduced post abortion complications in adolescents, it appears little is done for adolescents to have access to skilled delivery care (Senderowitz, 1999).

2.4 Summary

A relevant literature review has been made to provide knowledge on the factors that influence perinatal outcomes among adolescent pregnancies. There are different interpretations of these factors by different authors. All that is got from the literature is that adequate prenatal, antenatal and postnatal care contributes to good perinatal outcomes. Adverse perinatal outcomes have rippling effect not only in the neonatal life but in adulthood as well. Factors contributing to this range from personal characteristics of the adolescents to health care utilisation. These factors include age, marital status, parity, decision making power of women, history of maternal conditions, alcohol use, pregnancy intension, contraception, number of antenatal visits, place of delivery and skilled attendance. It is my hope that this review of literature would not only be used as a study guide but would add value to findings of the study.

CHAPTER THREE

3.0 METHODOLOGY

Introduction

This chapter describes the specific design that was used in the study. It also includes the study area, population, and data collection tools and data collection techniques.

3.1 Research design

The researcher used cross sectional study type. This is because the information about both risk factors and the outcomes were ascertained during the same period of time. It could also help identify predictors of multiple perinatal outcomes (Gail A.1995; Mann, 2003). It was a Facility-based study.

Quantitative data collection technique was employed in gathering data. The research assistants who understand both English and the local dialect collected the data using structured interviews.

3.2 Data collection

A written structured questionnaire was the tool used. All mothers who were adolescents and delivered within the given study period were interviewed. The data was collected from participants during antenatal and child welfare clinics. There was one set of questionnaire that served as interview guide for research assistants. The written questionnaire covered issues of perinatal outcomes among adolescent pregnancies found on the public domain and the literature review. The questionnaire was divided into sections. Most (95%) of the items were closed questions.

3.3 Study area

The Kassena-Nankana Municipality is one of the nine (9) Districts/municipalies located in the Upper East Region of Ghana. It spreads for 55 kilometers from north to south and 53 kilometers from east to west. The municipality shares boundaries to the; North with Kassena-Nankana West District and Burkina Faso, East with Kassena-Nankana West District and Bolgatanga Municipal, West with the Builsa District and South with West Mamprusi District (in the Northern Region). The Municipal capital is Navrongo. This municipal has an estimated population of 113,950 living in 110 communities. It has a population density of 92 persons per square kilometer which shows a dispersed population. The majority of the population is rural, only 13 per cent of the population lives in towns. Only Navrongo can be classified as an urban settlement.

The Municipality is made up of seven sub-municipalities namely Navrongo Central, Navrongo East, Pungu, Manyoro, Kologo, Wuru and Vunania/Kapania. For this study, five sub municipalities were sampled. The proportion of women in their reproductive age is 24%. Only the eligible adolescent mothers took part in this study. There are an estimated 23 health facilities in the Municipality: Municipal Hospital-1, Health Centres-2, Private Clinic-1, CHAG facility-1, Functioning CHPS -19.

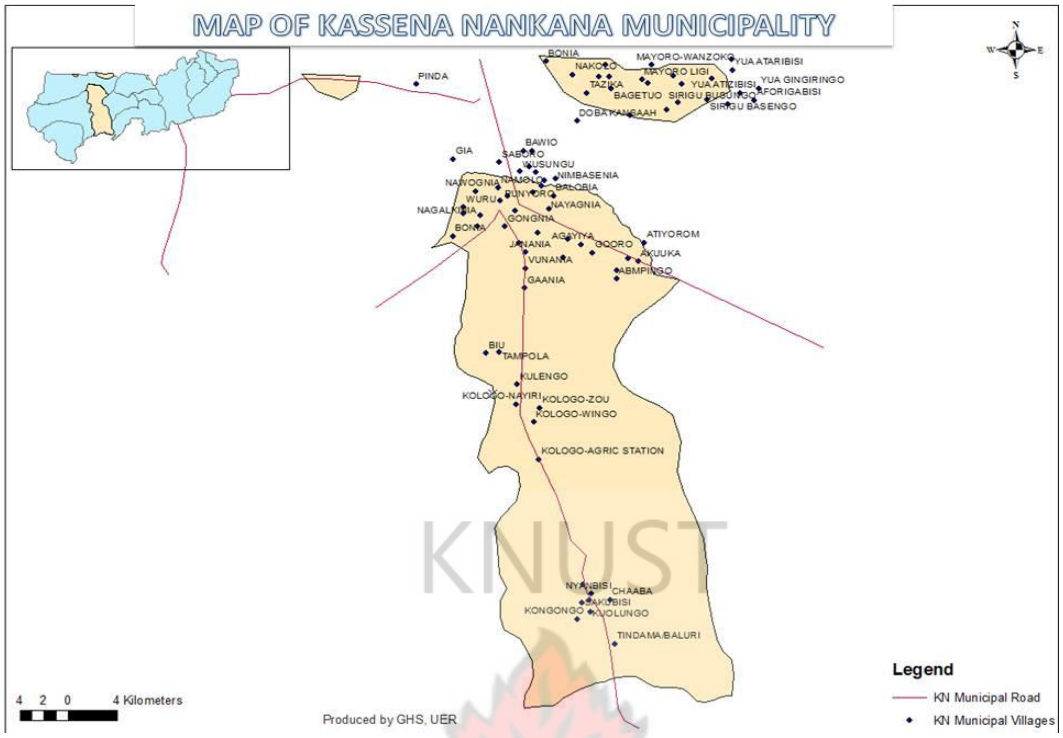

Figure 3.1

Table 3.1

Background of the Kassena Nankana Municipality (2013)

TOTAL POPULATION	113,950
0-11 Months	3305
0-59 Months	22790
WIFA	26550
Expected pregnancies	3305
Number of sub-Municipals	7
Number of communities	110
No of Hospitals	1
No of Health Centres	2
No of Clinics	3
No of CHPS Zones	24(19)F

Source: Municipal health directorate profile

Table 3.2

Sub-municipalities and their populations

Sub-municipality	Population
Navrongo central	25,752
Pungu	13,674
Manyoro	15,953
Wuru	15,041
kologo	17,092
Vunania/Kapania	9,121
Navrongo east	17,318

Source: Municipal health directorate

Table 3.3

Deliveries (2011-2013)

Year	Total deliveries	Adolescent deliveries
2011	2179	332
2012	2431	366
2013	2353	342

Source: Municipal health directorate

3.4 Study population

The study population was all women of reproductive age (15-49years) as of 30th September 2013**.** A sample from this population was drawn and consisted of adolescent mothers who have experienced stillbirth or delivered as of 30th September 2013. They

must have been 15- 19years old at the time of delivery and resident in the Municipality since the last two years as of 30th September 2013.

3.5 Study variables

The dependent variables of interest are stillbirth and early neonatal death. Below are the independent and dependent variables.

Table 3.4

Key study variables

Conceptual definition of variable	**Operational Definition/Indicator**	**Scale of Measurement**	**Objective to be addressed**
Age	Age in complete years of the mother at the time of delivery	**Nominal** 15-17 18-19	One(1)
Place of residence	Place where mother resided for at least a month before delivery	**Nominal** Rural Urban	One(1)
Birth interval	Number of months interval from one delivery to the next	**Nominal** <24months ≥24monyhs Don't remember	One
Gestation	Number of months old of pregnancy at delivery	**Nominal** <9months	One(1)

		≥9months Don't remember	
Traditional beliefs and practices	Traditional beliefs and practices mother engaged in during pregnancy	**Binary** Yes No	One(1)
Maternal conditions	Diseases suffered by mother prior to or during pregnancy	**Nominal** Anaemia Malaria Hypertension Diabetes Other(specify)	One(1)
Alcohol consumption	Consumption of alcohol during pregnancy	**Binary** Yes No	Two(2)
Pregnancy intention	Planned intention of mother to or not to be pregnant	**Binary** Yes No	Two(2)
Contraceptive use	Mother ever used contraceptive prior to most current pregnancy	**Binary** Yes No	Two(2)

Mother`s level of Antenatal attendance	Number of Antenatal Visits	**Nominal** <6visits ≥6visits	Three(3)
Place of delivery	Place where baby was delivered	**Nominal** Home Health facility	Three(3)
Client satisfaction	Client impression about care received at clinics	**Ordinal** Good Poor	Three(3)
Perinatal death	Baby delivered with no life after 28days of gestation or dead in first one week of life	**Binary** Alive Dead	Perinatal outcome
Age of baby at death(neonatal)	Age baby died in days	**Interval** 0-1 day 1-3days 4-7days Don't remember	Perinatal outcome

3.6 Sample and sampling technique

In this study, data was collected from 200 participants during antenatal visits and child welfare clinics using simple random technique. Participants were selected with their consent just to make sure that they were participating willingly and also relaxed before answering the questions. Adolescent mothers who wanted to be interviewed privately in their homes were given the opportunity. Mothers who also wished to seek for their parent`s or husband`s consent were allowed to do so. The investigator used Confidence level of 95 %(1.96).

3.6.1 Inclusion criteria

The study participants comprised of adolescent mothers (15-19years) as of the end of 30th September 2013.They must have been adolescents (15-19years old) at the time of delivery and resident in the Municipal since the last two years. Only adolescent mothers with history of singleton births were interviewed**.**

3.6.2 Exclusion criteria

Adult mothers who were above 19years old at the time of delivery and not resident in the Municipal since the last two years. Mothers below 15years were not included. Mothers who delivered twins in the study period were not interviewed. All adolescent mothers who met the inclusion criteria at the study period were included and proportion of perinatal deaths calculated.

3.6.3 Sampling technique

A multi-stage sampling method was employed. It included:

First stage –Simple Random Sampling of five sub-municipalities

Second stage – Simple Random Sampling of ten facilities

Third stage – Systematic Random Sampling of participants

Five sub-municipalities out of the seven were selected by simple random sampling using the "lottery" technique. Two Health facilities (Hospital, Health Center/CHPS Center) were selected from each sub-municipality by simple random sampling representing 10 facilities in total. At each sub-municipality, the health facilities were assigned numbers. These were written on separate pieces of papers which were folded and put in a box. The box was shaken to ensure randomisation. Two neutral persons assisted. Each of them picked only one folded piece of paper without replacement. The facilities assigned to those numbers picked were included in the sampling sites. Sampling frame which is a listing of all the selected facilities were developed and used to calculate the sampling interval. From this interval, the facility to start with was taken. The investigator then visited the facility. This was followed by selection of the participants.

At the facility level, a listing of mothers who have delivered two or less years ago and (in the age brackets of 15-19years) as of 30th September 2013 was done. The number of participants to be selected from each facility was calculated based on the average monthly population attendance of the mothers. The investigator selected every participant using simple random technique till all the required number of participants was got. Only adolescent mothers who have ever experienced delivery or stillbirth within the specified study period were interviewed.

3.6.4 Sample size estimation

Sample size was estimated at 200 as follows:

$$n = \frac{z^2 p(1-p)}{d^2}, \qquad n = \text{sample size}$$

Confidence level set at 95% (1.96)

The p-value was set at 0.05.

z=standard normal deviation set at 1.96

p=proportion of adolescent deliveries=15%

d=degree of accuracy desired at 0.05

$n = \frac{1.96^2.0.15(1-0.15)}{0.05^2}$=195.9216=196, approximately 200

Sample size was therefore estimated at 200 participants for the study.

3. 6.5 Pre-testing of research tool

To ensure validity of the instruments for the study, the questionnaire was given to course mates and the supervisor to read through. Suggestions that were made helped the investigator to modify and restructure the questionnaire appropriately. Pre-test was also carried out at non-selected facilities which share common characteristics with the selected ones in the municipality. The necessary modifications were done.

3.7 Data handling

The research assistants were well informed on confidentiality and secrecy of all information. No names were used in order to preserve confidentiality for all records. All answered questionnaires were collected at the end of every day. They were put in a cabinet under lock and key by the investigator. All persons handling the data were keenly supervised especially during the stage of analysis. The computers for the data analysis had passwords which were known by only the principal investigator.

3.8 Ethical considerations

This proposal was sent to the KNUST Committee on Human Research, Publications and Ethics for review and feasible advice. This was to ensure that the rights of all participants was valued and also in accordance with scientific enquiry. Informed

consent was obtained from the participants. The investigator also obtained informed consent from the head of the health institutions and community leaders.

3.9 Limitations

The study might not cover some adolescents who deliver at home and fail to attend antenatal and child welfare clinics. The study is concerned with only the perinatal outcomes and not mothers. Some of the adolescent mothers might have left the area at the time of data collection to other parts of Ghana for greener pasture and would be missed. There may be difficulty of recall of events by participants. The study could not also assess the skill mix or competencies of the skilled staff and logistic strengths of the facilities.

3.10 Assumptions

It was assumed that the study population is normally distributed and the participants responded objectively. Also, the adolescent mothers were already familiar with research activities in the Municipality and were willing to participate fully.

3.11 Data analysis

All returned questionnaires were cross-checked for completeness and corrections made immediately. A period of one month was used for data collection. The data to answer the research questions were processed and analysed using statistical software STATA version11. The multiple choice and dichotomous responses were converted to percentages. The investigator measured the association between independent variables and the dependent variable with odds ratio, the observed association between independent variables and the dependent variable (perinatal outcomes) were tested for statistical significance using chi square test. For further analysis binary logistic regression was used.

CHAPTER FOUR

4.0 RESULTS

Introduction

This chapter involves presentation and interpretation of the responses received. The aim of the responses was to address the research objectives formulated by the researcher. These include**:** to determine socio-demographic factors that influence perinatal outcomes, to determine health seeking behaviours that influence perinatal outcomes, to determine the influence of health care utilisation on perinatal outcomes among adolescent pregnancies.

The results have been outlined under the following sub-headings: the influence of demographic factors, the influence of socio-cultural factors and maternal medical conditions on perinatal outcomes, the influence of Health behaviours on perinatal outcomes and the influence of health care utilisation on perinatal outcomes.

4.1 Demographic characteristics

Table 4.1

Demographic factors

Category	**Total births N (%)**	**Perinatal deaths (PNM/1000births)**	**P- value (95% CI)**
Maternal age(years)			
15-17	59(29.5)	2(33.8)	
18-19	141(70.5)	4(28.4)	P=0.834
Residence			
Rural	165(83)	5(30.3)	P=0.300
Urban	35(17)	1(28.5)	
Marital status			
Married	118(59)	4(33.9)	
Single	57(27.5)	2(35.1)	
Divorced/Separated	11(5.5)		P=0.83
Living with partner	14(7)		

Level of education			
No formal education	31(16)	2(64.5)	
Primary	152(76)	3(19.7)	P=0.240
Secondary/Tertiary	17(8)	1(58.8)	
Parity			
Nulliparous	159(80)	3(19)	P=0.0.069
Multiparous	41(20)	3(73)	
Birth interval			
<24months	18(9)	2(133)	
≥24months	175(88)	4(27)	P=0.101
Don't remember	7(3)		
Gestation			
<9months	22(11)	3(136)	P<0.000
≥9months	174(87)	3(17.5)	
Don't remember	4(2)		

Source: Student field survey

In this study all participants were adolescent mothers who have been pregnant as well as experienced still births or delivery at adolescent age. Within the study period between October 2011 and September 2013, a sample of 200 adolescent mothers who delivered were interviewed. They were mothers who had singleton births. Out of the 200, six experienced perinatal mortality representing 30 per 1000births. One of the deaths occurred in the first day, three within the first three days and two between the third and seventh day of life. Over 83% of all the deaths occurred at health facilities.

From table 4.1, the ages of participants at delivery ranged from 15-19years. With respect to the age distribution, it is seen that most of the participants comprising about 71% were between 18-19years of age and 29% were in the age category of 15-17years old. Perinatal death rate in the mothers with age groupings 18-19years was 28 per 1000 live births compared to 15-17years group (33 per 1000 live births).

The proportion of adolescent mothers in the rural areas was 83% and in the urban areas 17%. It also revealed that more of the perinatal cases (30 per 1000 live births) occurred among adolescent mothers in the rural areas while (28 per 1000 live births) occurred

among mothers in the urban areas. Most participants comprising 76% have been educated to primary level, as much as 16% have no formal education while just 8% have a secondary or tertiary education. It is seen that most of these participants comprising 59% were married and thus were given out in marriage at early teenage. About 28% however were single with 5% Divorced/Separated or widowed while 7% just living with partners.

In assessing their history of delivery, it was observed that most participants (87%) delivered at 9calender months or greater and 11% delivered at less than 9calender months and 2% could not remember their gestation. Perinatal death among the mothers who delivered before 9caleder months were 136 per 1000births while the delivery at 9 calendar months or greater was about 17 per 1000births.

4.2 Perinatal death distribution by sub municipality

This part of the results in the study was to identify areas that perinatal deaths among adolescent pregnancies are more likely in the municipality.

Table 4.2

Perinatal deaths in the sub-municipalities

Sub-municipality	**Total births**	**Perinatal death/1000births**
Navrongo central	57(28.5)	4(70)
Pungu	30(15)	0
Navrongo East	39(19.5)	1(25)
Kologo	38(19)	1(26.3)
Manyoro	36(18)	0

Source: Student field survey

Five sub-municipalities were randomly selected in this study. The results of the findings from the various municipalities are displayed in table 4.2 above. Out of 57cases from Navrongo central, 4 participants attested to have experienced perinatal deaths. Also,

1 perinatal death out of 39 participants and 1 perinatal death out of 38 participants also were experienced from Navrongo East and Kologo sub-municipalities respectively.

4.3 The influence of socio-cultural practices and maternal conditions on perinatal outcomes.

The participants perceived socio-cultural practices and the history of maternal medical conditions that have effect on the perinatal outcomes are shown in the table below.

Table 4.3

Socio-cultural factors

Category	**Total births N (%)**	**Perinatal deaths (PNM /1000births)**	**Odds ratio (95%CI)**	**Adjusted odds ratio (95%CI)**
Employment status				
Clerical/salary worker	7(3.5)	1(142.8)	1	
Farming/Fishing	66(33)	3(45.5)	0.28(0.03-3.2)	
Trading/small scale business	12(6)		1	
Student	64(32)	1(15.6)	0.09(0.01-1.72)	
Unemployed	51(25.5)	1(19.6)	0.12(0.01-2.20)	
Religion				
Christian	155(78)	3(19.4)	2.9(0.29-30.27)	
Muslim	18(9)	1(55.6)	4.8(0.76-30.58)	
Traditionalist	23(87)	2(86.9)	1	
Others(none)	4(2)		1	
Decision making power of adolescent mother				
Parents/in-laws	157(78.5)	4(25.47)	1.9(0.33-10.54)	
Couple	43(21.5)	2(46.5)	1	
Traditional beliefs and Practices				
Yes	33(16)	3(90.9)	5.5(1.05-28.31)	1.4(0.13-14.87)
No	167(84)	3(17.9)	1	

Source: Student field survey

The results in table 4.3 indicates that only 4% participants are formally employed and on salary. The rest are engaged in farming/fishing (33%), trading and small scale business (6%). About 32% are students and 26% revealed they have nothing doing.

The table 4.3 also shows the participants' religious background of which most were christians comprising 78%, 18% were Muslims, 23% were Traditional/Spiritualist while 2% had no religion. It again reveals that the decision making power for participants responses are that about 79% of major decisions of health care are made by parents/in-laws in the family for them to seek for health. It was seen in table 4.3 that 21% had major health seeking decisions made by the adolescent mother and her spouse. Perinatal mortality resulting from adolescent whom the parents make major decisions was about 25 per 1000births whilst that of the adolescent decision making power was 47 per 1000births**.**

A higher proportion (84%) of adolescent mothers said they did not engage in traditional beliefs and practices. About 16% said they were involved in a number of traditional beliefs and practices among which 2% taboo eggs, 10% took herbal preparations, 2% each taboo cow milk and pork during pregnancy. A high perinatal mortality (91 per 1000births) was observed among mothers who said they had been engaged in traditional practices compared to mothers (18 per 1000births) who did not engage in traditional practices.

Table 4.4: **History of Maternal medical conditions**

Category	**Total births N (%)**	**Perinatal deaths (PNM/1000births)**	**P-value(95% CI)**
Yes	53(26)	3(56.6)	P<0.185
No	147(74)	3(20.4)	

Source: Student field survey

From table 4.4, majority (74%) of the mothers reported no history of illnesses except normal minor disorders of pregnancy. About 26% reported to have suffered various conditions either prior to or during the pregnancy. Among these conditions were malaria, anaemia, hypertension and STIs. Perinatal mortality among mothers who had experienced any of the maternal conditions was about 57 per 1000births while 20 per 1000births was observed in mothers who never experienced any of the major sicknesses mentioned in this study.

4.4 The influence of health seeking behaviours on perinatal outcomes

Table 4.5

Health seeking behaviours and perinatal outcomes

Category	**Total births N (%)**	**Perinatal deaths (PNM/1000 births)**	**Odds ratio (95% CI)**	**Adjusted odds ratio (95% CI)**
Alcohol use				
Yes	17(8.5)	2(125)	5.9(1.01-35.30)	4.9(0.36-65.0)
No	183(91.5)	4(21.9)	1	
Pregnancy intention				
Yes	49(24.5)	1(20.4)	1	
No	151(75.5)	5(33.1)	1.60(0.18-14.42)	
Ever used family planning method				
Yes	148(74)	2(13.5)		
No	52(26)	4(76.9)	0.20(0.03-0.93)	1.2(0.01-0.75)

Source: Student field survey

Table 4.6

Reasons for mothers not using contraceptives prior to pregnancy

Category	**Total births N(%)**	**Perinatal deaths (PNM/1000births)**	**P-value**
Partner opposed	6(11.5)	1(19.2)	
Religious prohibition	3(5.8)		
Cost is too much	1(1.9)		P=0.239
Fear of side effects	28(53.8)	2(71.2)	
Inconvenient to use	2(3.8)		
Staff attitude	3(5.8)		
Wanted to be pregnant	9(17.3)	1(111)	

Source: Student field survey

The results in table 4.5 show clearly that 92% of the adolescents did not consume alcohol during pregnancy. As seen in table 4.5, the intention of pregnancy influence the adverse perinatal outcomes by over 25% compared to unintended pregnancies by about 76%. Unintended pregnancies had 1.64 increased odds of perinatal death (33 per 1000 live births) compared to intended pregnancies (20 per 1000births).

Again out of 200, 74% had ever used family planning method and the influence on perinatal death rate among them was 14 per 1000 live births compared to 26% who had never used family planning method before the most current pregnancy which influence perinatal death rate resulting in 77 per 1000 births. Among the reasons given by mothers who said they have never used contraceptives, about 54% indicated it was because of side effects, proportion of 17% said they wanted to become pregnant and at least 2% said it was due to the cost which they could not afford

4.5 The influence of health care utilisation on perinatal outcomes

Table 4.7

Health care utilisation and perinatal outcomes

Category	Total births N (%)	Perinatal deaths (PNM/1000 births)	Odds ratio (95% CI)	Adjusted odds ratio (95% CI)
Antenatal visits				
<6visits	10(5)	3(100)	0.04(1.0-2.1)	0.03(0.00-0.35)
≥6visits	190(95)	3(15.7)	1	
Discrimination				
Yes	14(7)	1(71)	1	
No	186(93)	5(27)	0.35(0.04-3.30)	
Delivery place				
Health facility	176(88)	5(28)	1	
Home	24(12)	1(42)	3.91(0.67-22.59)	
Skilled attendance				
Health professional	176(88)	5(28)		
TBAs	19(10)	1(53)	0.19(0.33-1.16)	
Mother in-laws	5(2)			
Client satisfaction				
Good	191(95)	5(26)		
Poor	9(5)	1(111)	4.65(0.48-44.59)	

Source: Student field survey

Table 4.8

Mothers reasons for home delivery

Category	Frequency	Percentage	P-value (95% CI)
Too long distance	1	10	
Decision maker delayed	7	70	X^2=3.25,P=0.355
Facility environment	2	20	

Source: Student field survey

The results in table 4.7 indicates clearly that an overwhelmingly 95% had adequate antenatal visits (≥6visits) with a perinatal mortality rate of over 15 per 1000births**.** Only 5% of the participants had inadequate antenatal visits (<6visits) with a perinatal mortality rate of 100 per 1000births. The greater number of antenatal visits had 0.04times odds influence of perinatal mortality rate compared to adequate perinatal visits. That is the antenatal visits of six or more by a pregnant adolescent has about 96% reduction of experiencing perinatal death. This was significant at P<0.006, OR=0.04, 95%CI (1.0-2.1).

The table 4.7 shows that out of the 200 adolescent mothers, 88% delivered at the health facilities and were attended by skilled health professionals whilst 12% delivered at home and attended by TBAs or mother in-laws. Among mothers who delivered at home, about 70% of them indicated they did so because their decision makers (parents/mother in-laws) suggested they should delay in reaching the health facility when labour had already set in.

With regards' to staff attitude and its influence on adolescent health service utilisation, 7% of the participants attested to the fact that they were discriminated by the staff. Greater majority (93%) said the staff and adult mothers were friendly towards them every time they visited the clinics. For the quality of health services, 95% had perceived it was good and had experienced perinatal mortality rate of 26 per 1000births. Only 12% of the adolescents had the opinion that it was poor among which the perinatal mortality rate was 111 per 1000 births. This was not significant.

4.5.1 The influence of basic management of baby after delivery

The investigator sought to determine basic management related facts that influence early neonatal survival.

Table 4.9

Basic management of baby after delivery

Category	Frequency	Percentage
Breastfed within 30minutes after delivery		
Yes	189	95
No	11	5
Delayed first bath		
Yes	12	6
No	188	94
Bathed with herbs		
Yes	22	11
No	178	89
Given herbs to drink		
Yes	29	15
No	171	85
Strict seclusion		
Yes	192	96
No	8	4

Source: Student field survey

In respect of basic care of the baby after delivery, 95% said breastfeeding was initiated within 30minutes after delivery while 5% delayed for more than 30minutes. About 94% bathed the baby early enough after delivery but 6% did not. A proportion of 11% also bathed the babies with herbs and 15% of the babies were given herbs to drink. Among the adolescent mothers about 96% had a strict seclusion of both mother and baby for the first one week. Only 4% of the mothers said their babies were not secluded.

In bivariate analysis traditional beliefs and practices, premature delivery(less than 9months), alcohol use during pregnancy, low uptake of any family planning method and

less than six antenatal visits were the likely influencing factors of perinatal death among adolescent pregnancies. The ingestion of herbal preparations during pregnancy was observed as statistically significant factor that seems to have influenced adverse perinatal outcomes at P<0.043, {(OR=5.4, 95CI %(1.05-28.3)}. Mothers who encountered full term birth were about 90% less likely to experience adverse perinatal outcomes. It implies about 10% of prematurity in this study could result in perinatal mortality. This was statistically significant at {(P<0.010, OR=0.11, 95%CI (0.02-0.58)}.

Alcohol consumption by adolescent mothers during pregnancy was associated with about 6 times increased odds of perinatal mortality compared to mothers who have not consumed alcohol {OR= 5.96,95%CI(1.01-35.3)}. This was statistically significant at P<0.049.

Adolescent mothers who said to have ever used family planning method before becoming pregnant were 84% less likely to experience perinatal mortality compared to mothers who never patronised any family planning method{OR=0.2,95%CI(0.03-0.93)}. This was significant at P<0.041. Mothers who had six or more antenatal attendance were about 96% less likely to experience perinatal death compared to mothers who received less than six antenatal services. This was significant at p<0.000, {OR=0.04, 95%CI (0.01-0.21)}.

Even though weakly significant, mothers who have birth interval equal to or greater than 24months were 82% less likely to experience adverse perinatal outcomes compared to 18% of those with shorter birth interval. Mothers with history of maternal sickness together had about 3times increased odds of perinatal mortality compared to those who said they did not suffer any of those conditions. This was however not significant. Again

delivery at home appears to have about 3times increased odds of perinatal mortality compared to health facility delivery. This was also not significant.

Table 4.10

The association of socio-demographic factors, health behaviours and health care utilisation with perinatal outcomes.

Category	**Total Births No (%)**	**Perinatal deaths (PNM/ 1000births)**	**Odds ratio (95% CI)**	**Adjusted odds ratio (95% CI)**
Maternal age(years)			P=0.835	
15-17	59(29)	2(33.8)	1	
18-19	141(71)	4(28.36)	0.83(0.148-4.671)	
Residence			P=0.315	
Rural	165(83)	5(30)	0.41(0.072-2.331)	
Urban	35(17)	1(28)	1	
Birth interval			P=0.064	
<24months	18(9)	2(111)	1	
≥24months	175(88)	4(23)	0.18(0.03-1.10)	
Don't remember	7(3)			
Gestation			P<0.010	P<0.037
<9months	22(11)	3(136)	1	1
≥9months	174(87)	3(17)	0.11(0.02-0.589)	1.7(1.14-2.20)
Don't remember	4(2)			
Traditional beliefs and practices			P<0.0.043	P=0.005
Yes	33(16)	3(90.90)	5.46(1.05-28.37)	1.4(0.13-14.87)
No	167(84)	3(17.9)	1	
Mothers medical condition			P=0.835	
Yes	53(26)	3(56.6)	2.88(0.57-14.73)	
No	147(74)	3(20.4)	1	
Alcohol use during pregnancy			P<0.049	P=0.231
Yes	17(8)	2(125)	5.96(1.01-35.30)	4.9(0.36-65.01)
No	183(92)	4(21.9)	1	
Used any family planning method			P<0.049	P<0.029

Yes	148(74)	4(13.5)	1	1
No	52(26)	2(76.9)	0.20(0.03-0.93)	1.2(0.01-0.75)
Place of delivery	P=0.128			
Health facility	176(88)	5(28)	1	
Home	24(12)	1(42)	3.91(0.676-22.59)	
Level of ANC attendance	P<0.000			P<0.8
<6visits	10(95)	3(100)	1	
≥6visits	190(5)	3(15.7)	0.037(0.01-0.21)	0.03(0.00-0.35)
Client satisfaction	P=0.18			
Good	191(95)	5(26.1)	1	
Poor	9(5)	1(111)	4.65(0.48-44.59)	

Source: Student field survey

All variables which were statistically significant in bivariate analysis were further analysed using binary logistic regression. This was to understand how these variables influence perinatal outcomes upon interaction. The results showed that mothers who used alcohol during pregnancy had the highest increased odds (5) of perinatal mortality. This was however not significant at p<0.231, {OR=4.86, 95 %(0.36-65.01)}. Mothers who delivered prematurely (<9calender months) were also about 2times more likely to experience adverse perinatal outcomes which was statistically significant at p<0.037, {OR= 1.7, 95%CI (1.14-2.20)}.Babies from mothers who had engaged in traditional beliefs and practices were about 1.4times increased odds of perinatal death. It was significant at p=0.005, {OR=1.36, 95%CI, (0.13-14.87)}. Mothers who said they never used family planning services prior to their pregnancies were 1.2times more likely to experience perinatal mortality. This was significant at p<0.029, {(OR=1.2, 95%CI (0.01-0.75)}. Therefore, the patronage of family planning services among adolescents is significantly associated with perinatal survival. Mothers who had six or more antenatal visits were about 97% less likely to experience perinatal death compared to mothers who

received less than six antenatal services. This was significant at p<0.000, {OR=0.01, 95%CI (0.01-0.35)}. It implies greater number of antenatal visits is associated with good perinatal outcomes among adolescent pregnancies.

CHAPTER FIVE

5.0 DISCUSSION

It is often a joyous moment upon safe arrival of a newborn in families. Families are basic units that make up the nation`s health system. Quality health begins from the families and extends to society at large. Perinatal care is a complex issue that has a lot of challenges and needs all the necessary attention to optimise the outcomes. Its impact on MDG4 emanated the pledges for reduction of under five mortality rate by 2015. Family values as well as socio-cultural factors, health seeking behaviours and health care utilisation have influence on perinatal outcomes. Despite so many interventions, adverse perinatal outcomes appear high among adolescent pregnancies.

With a sample of 200 mothers interviewed, the perinatal mortality rate in this study was 30 per thousand births. It is apparent from the results that 16% of the perinatal deaths in this study occurred on the first day of life. About half of the deaths occurred within first three postnatal days and slightly over 33% occurred between the third and seventh postnatal days. The death occurred more within the first three days period of the neonatal life probably as a result of extreme values placed on traditional practices including strict seclusion that go on in families after a newborn arrives. Factors that appeared to be leading in influencing perinatal mortality were some traditional beliefs and practices such as drinking herbal preparations during pregnancy, prematurity and alcohol use during pregnancy, low patronage of family planning services and the low level of antenatal attendances.

In bivariate analysis, it was found out that premature birth, unhealthy traditional practice, the use of alcohol, low family planning uptake and less number of antenatal attendances were more linked to poor perinatal outcomes among adolescent pregnancies.

Less number of antenatal attendance conferred decreased odds of influencing adverse perinatal outcomes. Therefore, mothers who ever had greater number of antenatal attendance were more likely to have about 4 percent good perinatal outcomes. Over 83% of all the deaths happened at the health facilities. Early neonatal mortality in young maternal age below 20years appears to have reduced since 2009.

A 70% proportion of the adolescents were in the age brackets 18-19years at the time of delivery. However, perinatal mortality (33.8) appeared more pronounced among those in the lower age category (15-17years). This implies that the early pregnancies occur in adolescent with advanced age but the lower age groups are more likely to be at risk of perinatal death experiences. This result is consistent with a study by Pun and Chauben (2011) which revealed that adverse pregnancy outcomes could be attributed to lower maternal age and underprivileged socio-economic background, quality of prenatal visits and family supports.

The analysis clearly shows that there is higher proportion of adolescent deliveries in the rural settings with more perinatal mortality than the urban areas. The adverse perinatal outcomes appear relatively higher among adolescent mothers without formal education than those with at least primary education and secondary level. These occurrences conform to a study findings by Walraven et al (1995) that low educational status of mothers are linked with indirect effects on the nutrition and socioeconomic implications of the mother and the newborn. Judging from the responses given, perinatal death seems relatively lower among married adolescents than among single adolescent mothers though majorities (59%) were married. These findings support the view of

Duvan et al (2010) who believe that married adolescents get family support. They may plan well and are less likely to experience adverse perinatal outcomes.

It was found in this study that most adolescent mothers had delivered once and had a normal pregnancy length of 9 calendar months. However, the few who delivered twice in longer intervals were more likely to experience good perinatal outcomes. It may be that the longer intervals between the pregnancies increase the rest period of the mother and quality birth preparation. This leads to provision of adequate nutrition for the mother and the unborn baby. The 83% of the unemployed adolescent mothers did not grant increased odds of perinatal mortality. It may be due to improved placement of a good number of community health nurses at every conner of the municipality through the introduction of the Community-based Health planning and Services (CHPS). This is contrary to other literatures that associate unemployment status or other forms of poverty indicators to perinatal death (Pun and Chauben, 2011).

The study found out that traditional religion seems to have conferred increased odds of influencing perinatal mortality in this age group. However, it was not statistically significant. Decisions made by the adolescents' couple appear to have much influence on perinatal death though not significant. The odds of the influence of major decisions taken by the adolescent with regards to their health seeking behaviour on the adverse perinatal outcomes is 1.8folds compared to major decisions made by parents and in-laws. This is not consistent with other study (Abdou 2011; Senderowitz 1999) that suggests that major decisions taken by parents and other adult members of the family for women to seek health services especially at the point of delivery have greater impact on the perinatal outcomes. This may be because a lot more education on adolescent reproductive health

has so much improved in the municipality through the presence of Youth Alive programme, Navrongo health research center and other non-governmental organizations.

The study also found out those maternal medical conditions even though not statistically associated, they conferred about 3times increased odds of perinatal death. It is however, important to note that conditions such as anaemia and malaria did occur in most of the mothers who experienced perinatal death and conferred impact on pregnancy which could lead to adverse perinatal outcomes. It may mean that the intermittent preventive interventions and other nutrition programmes play important role in perinatal survival.

Alcohol consumption during pregnancy appears to have influence on adverse perinatal outcomes as it had the highest increased odds on perinatal mortality. This may be as a result of early and regular exposure to alcoholic beverages to these young individuals. It therefore beholds on parents and guardians as well as philanthropies in the municipal to intensify education against alcohol use by the young aged groups. This is similar to findings from other studies (Marinda and Sharon, 2009) that showed that alcohol and other drug use have a rippling impact on the perinatal outcomes. Prematurity seem to have a significant influence on adverse perinatal outcomes. This was significant in the study. These findings are consistent with other literature (Welaga et al 2013; Kruger 2007) that have shown that gestational age less than 32weeks and socio-cultural factors have significant influence on adverse perinatal outcomes.

Unintended pregnancies are more likely to result in adverse perinatal outcomes compared to desired pregnancies among adolescents. Even though this was not significant it is important that unintended pregnancies in the adolescents are seriously

curtailed. The inadequate antenatal visits less than six times was not significantly associated with perinatal death.

Other forms of predictors that emanated from the findings were; discrimination against young mothers, place of delivery, skilled attendance and quality of Health Services. The issue of discrimination appears to be low as only 7% of the mothers responded that they were discriminated by staff or adult mothers which were not statistically associated with perinatal mortality.

A reasonable proportion (88%) of the mothers delivered at health facility and had skilled staff attended to them. A lot more of the participants expressed they were impressed with the quality of service given them. This is contrary to the popular perception that poor staff attitude is a significant factor for inadequate health services utilisation by adolescents and its negative consequences on perinatal outcomes. With regards to perceived quality of health services, mothers who said they were impressed with the quality of health services were 88%. This was not significant. These findings agree with study conducted by GSS (2008), NSO (2010) that suggests that Ghanaian women in general initiate antenatal visits earlier and can achieve at least four visits. It is also contrary to the fact that adolescents may underutilise health services probably because of long waits, distance to health facilities or unfriendly services (UNICEF, 2011). This may be because of improved health systems in the region. This could be attributed to improved antenatal and obstetric care that has helped in early detection and referral of high risk cases where by optimising good perinatal outcomes.

In the binary logistic regression analysis, the study identified prematurity, traditional beliefs and practices and low family planning uptake as factors that seem to be

significantly associated with perinatal mortality among adolescent pregnancies. These stood out after other factors were controlled. These findings conform to similar works (Baiden et al 2006; Welaga et al 2013; Kruger 2007).

CHAPTER SIX

6.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Summary

There has been high early neonatal mortality outcomes from pregnancies of younger maternal age (15-19) years. The purpose of the study was to explore the factors that influence perinatal outcomes in adolescent pregnancies. The perinatal outcomes include live birth, stillbirth and death within the first one week of life. These factors include personal characteristics of the adolescent mothers, socio-cultural factors, and health behaviours of adolescents and health care utilisation of adolescents. The study also sought to give recommendations to the MOH policies for planning effective interventions to prevent adverse perinatal outcomes associated with adolescent pregnancies in the municipality. The sample consisted of 200 adolescent mothers. Multistage sampling method was used to select the facilities. Simple random sampling technique was used to select the participants at the health facilities. The data were analysed using STATA programme version11 and results presented in tables. The findings were that factors which appeared to be influencing perinatal mortality in bivariate analysis include; prematurity, unhealthy traditional beliefs and practices such as drinking herbal preparations during pregnancy, alcohol use during pregnancy, low patronage of family planning services and low level of antenatal attendances. However, the binary logistic regression analysis showed that gestation less than 9 calendar months, unhealthy traditional beliefs and practices and low family planning uptake were more linked to poor perinatal outcomes among adolescent pregnancies.

It is also evident that decisions made by adults on seeking for health has less influence on adverse perinatal outcomes compared to decisions made by the adolescents themselves and their spouses. Discrimination against young mothers at clinics has no significance on health care utilisation and the consequence on adverse perinatal outcomes. It therefore seems to have declined according to the findings of this study.

It is recommended that more education be intensified on family planning uptake by the youth and to reduce their level of alcohol consumption. Youth centres with adolescent reproductive facilities should also be increased by the municipality to engage the adolescents during their leisure time.

6.2 Conclusion

Adolescent mothers have a high risk of perinatal mortality. However, there has been a decline since 2009 probably because of improved health interventions including newborn care in the municipality. In this study factors that seem to influence perinatal outcomes among adolescent pregnancies were premature gestation, unhealthy traditional beliefs and practices low family planning uptake, alcohol use during pregnancy and inadequate antenatal attendance.

A lot more advocacy and sensitisation need to be done to discourage unhealthy cultural values and practices, low family planning uptake and consumption of alcoholic beverages among the adolescents.

6.3 Recommendations

The researcher suggests the following recommendations: The Municipality and other philanthropies should try to increase awareness in the community about early pregnancies, its adverse effects on perinatal outcomes and ways to prevent it. There is the need to increase awareness of the benefits of family planning and the consequences of its low uptake in the community. This will discourage them from fear of side effects in using family planning methods. It is also important to ensure availability of the contraceptives services on a wider extent for younger persons and at a free cost. This is achievable through community based programmes such as using mass media, more involvement of primary/community based health volunteers and local community leaders.

It could be of greater benefit if a separate counselor possibly from the younger age group is chosen to discuss and share solutions for perinatal problems in smaller groups. The counselor should stress the continuation of education and the need for contraception to postpone further teenage pregnancy, especially in the younger age group. The counseling sessions should be made accessible at separate areas from other age group to make sure there is sufficient privacy and to maintain confidentiality every time, because it is an important concern in this age group. The young age group should be given enough time to ask questions. Group deliberations will also provide them the opportunity to learn from the experiences of others in the group and promote the development of social support networks that can extend beyond pregnancy to prevent future adverse perinatal outcomes.

Counseling on reproductive health should also be made more effective at primary level of their education since majority become pregnant and drop out of school at this

stage. It will also help to prevent unintended pregnancies and the consequences on perinatal outcomes.

There should be more education for pregnant adolescents on the effects of traditional practices especially the first one week of the neonatal life. The Municipal health directorate together with the municipal assembly should discourage the household values and practices for pregnancy intentions among the adolescents.

The young pregnant women differ in numerous aspects from adults; routine perinatal care programmes may be insufficient for their needs. Policies should be tailored towards this age group. Pregnant teenagers should therefore be encouraged to visit health facilities more often for healthcare since study reveals that it drastically reduces perinatal cases. MOH in Ghana need to have sex education policy implemented at the very grass root level of the communities.

Suggestions for further research

A further study could be carried on this topic done using a case control design or a greater percentage of perinatal cases. Prospective study could also be done. The perinatal mortality is soon becoming rare though a significant challenge to all persons and health service delivery. It would also be very important if such a study could be replicated in Municipalities/districts with similar characteristics.

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APPENDIX

Questionnaire

Kwame Nkrumah University of Science and Technology, College of Health Sciences, School of Medical Sciences, Department of Community Health

Topic: Factors influencing Perinatal Outcomes among Adolescent Pregnancies in Kassena Nankana Municipal, Navrongo.

INTERVIEW INFORMATION

DATE OF INTERVIEW |__|__| Day |__|__| Month |__|__||__|__| Year

RESULT * |__|

INTERVIEWER NAME _____

SUPERVISOR _____

CHECKED BY _____

ENTERED BY 1) _____

2) _____

CHILD`S AGE _____

RESPONDENT'S IDENTIFICATION

FACILITY NAME:

RESPONDENT COMMUNITY NAME:

Good …… My Name is ……

We are working on a study concerned with perinatal outcomes in the municipal. You have been selected as one of the participants to this study and we would very much appreciate your participation. The interview will take about 20 minutes. We would be grateful to ask you some questions about this subject matter. The interview is not meant to appraise your performance but to plea for your assistance in finding factors that may be contributing to perinatal outcomes. You are not under obligation to answer any question you are not comfortable answering. We will ensure strict confidentiality. No names or forms of identification are required. Please respond objectively to the following questions/statements.

CONSENT:

Signature/Thumbprint…….....

May I begin the interview now?

NO	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
PART 1:SOCIO-DEGRAPHIC CHARACTERISTICS I would like to start by asking you a few questions about yourself.			
Q1	Please tell me your date of birth or your current age in years.	|__|__| day |__|__| month |__|__||__|__| year |__|__| age (completed years) Don't know…….88	
Q2	At what age did you deliver your most current baby	|__|__| age (completed years) Don't know……...88	
Q3	Place of residence	Rural ...…….....1 Urban.…….…..……..2	
Q4	What is your marital status?	Married…….…….…….....1 Single……..…..……..…...2 Divorced/Separated.....,3 Living with partner……4 Other(specify)….....5	
Q5	What is the highest level of school you attended?	None……..…….....1 Primary.....2 Secondary……..…….....3	

		Tertiary.....4 Other(specify)……..…..…5	
Q6	What is your occupation?	Clerical/salaried worker……..1 Farming/Fishing…….…….2 Trading/Small scale business..…3 Artisan……..…4 Casual worker……..…….....5 Student.…….....6 Unemployed…..……..……7	
Q7	What is your religion?	Christian……....……1 Muslim……..…….....2 Traditional/Spiritualist……3 Hindu…….…….....4 No religion ……5	
Q8	How many times have you delivered?	Once……....1 Twice……..……2	
Q9	How many months old was your pregnancy when you delivered?	|__|__| number Don't know……. ...…..88	
Q10	What is the time interval between the most current delivery and the previous one if any?	<24months……....……...1 ≥24months…….…...…….....2 Not applicable..……...…….....3	
Q11	Have you ever suffered any medical condition?	Yes……..……1 No……..……..…2	
Q12	Which of the following sickness did you have during that last pregnancy?	Anaemia……..1 Malaria…….……..2 Hypertension …..……3 Diabetes……..…….....4 Other(specify……..…….....5	
Q13	Were you engaged in any traditional beliefs and practices during your pregnancy	Yes……..……1 No…….……..2	**Skip to Q15**
Q14	What traditional beliefs and practices were you engaged in during your pregnancy	Taboos eggs…….…….....1 Takes herbal preparations…..….2 Others(specify)……....3	

Q15	Who in the family usually make major decisions for woman to seek health service?	Myself……. ...……1 My husband……..……...…....2 Both of us……..…….. ...…....3 Parents…..……..…..4 In-laws……...……..…5 Other(specify)…….....6	
PART2 :HEALTH BEHAVIOURS **SectionA: Maternal smoking and alcohol consumption during pregnancy**			
Q16	Did you use tobacco/cigarettes during your pregnancy?	Yes……..……....1 No……..……2	
Q17	Have you consumed any alcoholic beverages during the most current pregnancy?	Yes……..…….…...1 No……..…..…….....2 Don`t know…….……..…….....88	**Skip to Q18** **Skip to Q18**
Q18	How often do you use alcoholic beverages?	Practically everyday……....1 1-2times a week……..…2 3-4times a week……..…3 1-2times a month……....4 Less than once a month……..5 Don`t know……..…6	
	SectionB:Pregnancy intention and contraceptive use		
Q19	Did you intend to be pregnant for the child we talk about?	Yes……..1 No……..……..2	
Q20	Did you use any contraceptive method prior to the most current pregnancy?	Yes……..1 No..……2	
Q21	If no to question Q19, why didn`t you use any family method?	Partner opposed…...……....1 Religious prohibition……..2 Knows no method……...3 Knows no source to get the method……....4 Fear of side-effects…….....5 Lack of access/too far ……7	

		Costs too much……..…...…....8 Inconvenient to use…….....9 Staff attitude…..……....10 Other(specify)..……..……...11	
PART3:HEALTH CARE UTILISATION **Section A: Level of ANC Attendance**			
Q22	Where is your usual place of seeking for health services when you or family member is ill?	Drug store……...1 Herbalist/traditional healer…….2 Health facility…….....3 Others (specify)……...…….....4	
Q23	Did you see anyone for antenatal care for your previous pregnancy we talk about?	Yes……..……..……....1 No……..……...……..2	**Skip to Q31**
Q24	Whom did you see?	Doctor ……..…….....1 Nurse/midwife ……...2 Auxiliary midwife ……..3 Community health worker……..4 Other (specify)……...…....5	
Q25	How many times did you receive antenatal care during the pregnancy we talk about?	Less than 6 visits……1 Greater than 6visits….……2	
Q26	How many months pregnant were you when you first received antenatal care for that last pregnancy?	|__|__| number Don't Know…….....88	
Section B: Quality of Health Services and staff attitude I wish to ask you few questions about care you received during the ANC visits.			
Q27	What is your impression about the procedures carried out on you during each session of the health facility visits?	Very Good…...……..……..1 Good…...……..…….. 2 Fair…..……..……..3 Poor…...……..……4 Very poor…….....……..…5	
Q28	How did the staff relate to you during your visits to the clinics?	friendly…….....1 Unfriendly……...2	

Q29	Have you ever been discriminated at the health facility during any visits for care?	Yes……..……....1 No……..…….2	**Skip to Q31**
Q30	Who discriminated against you?	Adult mothers…….....1 Health staff…….....2	
Section D: Place of Delivery, Skilled Attendants and Perinatal Outcomes Now I would like to talk to you about all the pregnancies that you have had in your lifetime. By this I mean all pregnancies and all the children born to you, whether they were born alive or dead. I understand that it is not easy to talk about children who have died, or pregnancies that have terminated before full term, but it is extremely important that you tell us about all of them so that we can develop programmes that would help improve perinatal outcome in the future.			
Q31	Where did you deliver?	Home …….....1 Health facility…….……2	
Q32	If delivered at home, What factors influence your choice of delivery place?	Too long distance……....1 High travel Cost ……....2 Decision maker (specify)…….....3 Attitude of health staff……....4 Facility charges…….……....5 Facility environment…..…....6 Other(specify)…..……..7	
Q33	Who did the delivery of your baby	Health professional…..……..….1 TBA/others…….....2	
Q34	What was the mode of delivery of your baby	Spontaneous……..……...…..1 Assisted……..……...…….....2 Caesarean section……....3	
Q35	If delivered at home how was the cord separated and treated after delivery?	Cut by…….....1 Dressed by……...2	
Q36	How was your baby managed the first one week after delivery (tick as many as possible)	Baby kept warm……..1 Breastfed within 30minutes after birth ……....2 Delayed first bath...……...3 Bathed with herbs.....4 Given herbs to drink……...5 Other (specify)…...……6	

Q37	What was the weight of the baby at birth?	<2500g……..……..1 >2500g…..……..2	
Q38	Was the baby alive up to one week?	Yes……..…1 No……..……..2	
Q39	If no to Q38, after how long was baby dead?	Within a day……1 1-3days…….....2 4-7days…….....……...3 Don`t remember……..……4	
Q40	If no to Q38, where did death occur?	Home…….……1 Health facility……..…….…..2	
Q41	Suggest ways by which good perinatal outcomes among adolescent pregnancies can be improved	…… …… …… …… …… …… ……	

Thank you