

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,  
GHANA  
COLLEGE OF HEALTH SCIENCE  
SCHOOL OF MEDICAL SCIENCE  
DEPARTMENT OF COMMUNITY HEALTH**



**EQUITY IN UTILIZATION OF MATERNAL HEALTH CARE SERVICES  
IN THE KUMASI METROPOLIS, GHANA**

**BY**

**NYAKI DORICE FABIAN**

**NOVEMBER, 2014**

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,  
GHANA  
COLLEGE OF HEALTH SCIENCE  
SCHOOL OF MEDICAL SCIENCE  
DEPARTMENT OF COMMUNITY HEALTH**

**EQUITY IN UTILIZATION OF MATERNAL HEALTH CARE SERVICES  
IN THE KUMASI METROPOLIS, GHANA**

**KNUST**

**BY**

**NYAKI DORICE FABIAN**

**A THESIS SUBMITTED TO THE DEPARTMENT OF COMMUNITY  
HEALTH, SCHOOL OF MEDICAL SCIENCES, COLLEGE OF HEALTH  
SCIENCES, KWAME NKRUMAH UNIVERSITY OF SCIENCE AND  
TECHNOLOGY IN PARTIAL FULFILMENT OF REQIUREMENTS FOR  
MASTERS OF PUBLIC HEALTH (MPH) DEGREE IN HEALTH  
EDUCATION AND PROMOTION**

**NOVEMBER, 2014**

## **Declaration**

I hereby declare that this dissertation is substantially my own original work, that no part may be reproduced without my permission. It contains no material neither previously published by another person nor submitted in any form for an award at any other academic institution, except where due acknowledgement has been made.

**NYAKI, Dorice F., ID (9909913)**

.....  
Student's Signature

06<sup>th</sup> November, 2014

Certified by:

**Dr. A.K. Edusei**

.....  
Supervisor's Signature

06<sup>th</sup> November, 2014

Certified by:

**Dr. A.K. Edusei**

.....  
Head of Department Signature

06<sup>th</sup> November, 2014

## **Dedication**

This thesis is dedicated to my family for their unconditional support and to pregnant women suffering from health inequities.

# KNUST



## **Abstract**

Ghana is one of the countries that adopted the 2011 Rio Political Declaration, in which the Member States expressed their determination to achieve social and health equity through action on social determinants of health. The aim of this study was to examine inequity in utilization of maternal health care services in Kumasi Metropolis, Ghana. This was a descriptive cross sectional study which used questionnaires as a data collection technique and tool. A multistage sampling was used to sample women who had given birth within a year prior to the study. The inequity in utilization of maternal health care services was assessed with respect to socio demographic, facility-related and socio-cultural factors. Univariate and multivariate logistic regression analyses were carried out to elicit the impact of each factor towards inequity in the utilization of maternal health care services. A significant difference was observed among the high socio economic group which in this study were determined by being educated and employed and the low socio economic group, which in this study were determined by being uneducated and unemployed with respect to distance to the health facility (aOR= 1.81, 95% CI = 1.09-3.00) and affordability of the services (aOR = 0.35, 95% CI = 0.18-0.67). Parity, marital status and attitude of medical personnels were also seen to significantly influence utilization of maternal health care services. Age, attendance to the health facility, place of delivery, seeking permission and setting were not significantly ( $P > 0.05$ ) determining inequity in the utilization of maternal health care services. The study showed evidence of the inequity in the utilization of maternal health care services in Kumasi metropolis. A more rigorous system in which concrete actions are taken to address the maternal health inequities and reduce maternal mortality is recommended.

**Key words:** equity, health, maternal health care, social determinants of health

## **Acknowledgement**

I am very grateful for the contribution of those who assisted me in diverse ways. My sincere gratitude goes to Intra-acp Mobility Scholarship Scheme for the opportunity and financial support to making my studies a success. This is without forgetting my coordinator, Mr. Ernest Adu-Gyamfi who always did his best to create an enabling environment both socially and technically.

My profound gratitude goes to Dr Anthony Kwaku Edusei for his reliable time, guidance and constructive criticism that gave essence to this thesis. My special thanks to the Community Health Department of the School of Medical Sciences, and all lecturers for their ardent investment in accomplishment of this award.

Despite the distance, My parents Mr. and Mrs. Fabian Nyaki, my sister Gloria, my brother Deogracious, my children Evelyn-Mercy, Victoria-Mira, B-Jonathan, Michelle, G-Gabriel, Adriel-Dylan, my soul friend Joseph Pilot, my brother-in-law Dr. Hobokela Stephen and my sister-in-law Sia never left my side. Words are grossly inadequate to express my love to you.

The company of my friends; Eddie Farngalo and Yvonne Waimbin always gave me the strength to move on, and for this I am more than thankful.

Above all, I am beholden to the most High Almighty God for his unexplainable countless mercies.

## Table of Content

Declaration .....	ii
Dedication .....	iii
Abstract .....	iv
Acknowledgement .....	v
Table of Content .....	vi
List of Figures .....	x
Appendices .....	xi
List of Abbreviations .....	xii
CHAPTER ONE .....	1
INTRODUCTION AND BACKGROUND TO THE STUDY .....	1
1.1. Background to the Problem.....	1
1.2. Statement of the Problem.....	4
1.3 Research Questions .....	6
1.3.1 Principal Objective.....	6
1.3.1.1 Specific Objectives .....	6
CHAPTER TWO .....	7
LITERATURE REVIEW .....	7
2.0. Introduction.....	7
2.1. The Concept of Health Equity .....	7
2.2. Health Inequity and its root causes .....	9
2.2.1. Major theoretical approaches to social determinants of health.....	10
2.2.1.1. Psychosocial approach .....	11
2.2.1.2. Social production of diseases/political economy of health approach .....	11
2.2.1.3 Ecosocial approach .....	12
2.2.2 Perspectives through which the social determinants of health influence health inequities .....	12
2.2.3. Theories of power guiding action on social determinants of health .....	13
2.2.4. The social production of diseases model .....	14
2.3. Root causes of health inequity and how they manifest at a population level .....	15
2.4. Components of maternal health care.....	17
2.5. Determinants of inequity in utilization of maternal health care.....	18

2.5.1. Age.....	19
2.5.2. Education .....	20
2.5.3. Marital status.....	21
2.5.4. Residence mobility.....	22
2.5.5. Maternal health knowledge.....	22
2.5.6. Deliveries at health facilities.....	23
2.5.7. Maternal health care affordability.....	24
2.5.8. Cultural perceptions on maternal health services .....	24
2.5.9. Quality of maternal health care.....	25
2.6. Ghana government initiatives to improve utilization of maternal health care Services .....	25
2.6.1. Policies, strategies and guidelines on maternal health care services .....	26
2.7. Challenges in improving maternal health care in Ghana .....	28
CHAPTER THREE .....	32
METHODOLOGY .....	32
3.1. The Profile of the Study Area .....	32
3.1.1 Demographic characteristics .....	32
3.1.2. Economic Activities and Available Resources .....	32
3.1.2.1. Occupation .....	32
3.1.2.2. Health Facilities .....	32
3.2. Study Design.....	33
3.3. Sampling .....	33
3.3.1 Sample size determination .....	33
3.3.2 Sampling Procedure .....	34
3.4. Data Collection Technique.....	36
3.5. Data Processing and Analysis .....	36
3.6. Ethical Considerations .....	37
3.7. Pre-test .....	37
3.8. Study Variables .....	38
3.9. Limitation of the Study .....	40
CHAPTER FOUR.....	41
RESULTS .....	41
4.0. Introduction.....	41

4.1. The socio-demographic characteristics of the study subjects .....	41
4.2. The Association between the Socio-demographic Factors and Utilization of Maternal Health Care Services .....	43
4.3. The Socio-demographic, Facility-related and Socio-cultural Factors Associated with Inequity in Utilization of Maternal Health Care Services in Kumasi Metropolitan area .....	45
4.3.1. Influence of socio-demographic characteristic of women on inequity in the utilization of maternal health care services in Kumasi .....	46
4.3.2. Influence of facility-related factors on inequity in the utilization of Maternal Health care services in Kumasi .....	47
4.3.3. Influence of socio-cultural factors on inequity in the utilization of Maternal Health care services .....	48
CHAPTER FIVE .....	49
DISCUSSION .....	49
5.1. Influence of socio-demographic characteristic of women on inequity in the utilization of maternal health care services in Kumasi .....	49
5.2. Influence of facility-related factors on inequity in the utilization of Maternal Health care services in Kumasi.....	51
5.3. Influence of socio-cultural factors on inequity in the utilization of Maternal Health care services .....	54
CHAPTER SIX.....	55
CONCLUSION AND RECOMMENDATIONS .....	55
6.1. Conclusion .....	55
6.2. Recommendation .....	55
6.2.1. Ideal framework for implementing maternal health care interventions.....	56
6.2.2. What should be done to ensure implementation of interventions aimed at improving maternal health care services in Kumasi .....	58
REFERENCE.....	59
APPENDIX I .....	69
APPENDIX II .....	74

## List of Tables

Table 1: Number of CHPS zones by region from 2000-2008.....	29
Table 2: Study variables.....	39
Table 3: Socio-demographic characteristics of the study subjects.....	41
Table 4: Association between the social-demographic factors and utilization of maternal health care services .....	43
Table 5: Factors associated with inequity in utilization of maternal health care services in Kumasi metropolitan area.....	45



## List of Figures

Figure 1: The Conceptual Framework for Action on the Social Determinants of Health.....	16
Figure 2: The Illustrative diagram for pillars of maternal and childhood services ...	18
Figure 3: Distribution of medical personnel per region.....	31

KNUST



## Appendices

Appendix I: Study Questionnaires ..... 69

Appendix II: Permission letter to collect data in Oforikrom, Nhyieso and Subin sub-districts ..... 74

# KNUST



## **List of Abbreviations**

ANC - Antenatal care

aOR – Adjusted Odds Ratio

CDC – Centre for Disease Control

CHPS – Community Based Health Planning and Services

CI – Confidence Interval

CSDH - The Conceptual Framework for Action on the Social Determinants of Health

GHS - Ghana Health Service

GMHS – Ghana Maternal Health Survey

GSS – Ghana Statistical Service

KATH - Komfo Anokye Teaching Hospital

KNUST – Kwame Nkrumah University of Science and Technology

MAF - MDGs Accelerated Framework

MDGs, - Millennium Development Goals

MMR - Maternal Mortality Ratio

MoH – Ministry of Health

NHIS– National Health Insurance Scheme

OR – Odds Ratio

PMMP - Prevention of Maternal Mortality Programme

PNC – Postnatal Care

PPS - Probability Proportionate to Size

P-Value – Probability Value

RCH - Reproductive and Child Health

TBA – Traditional Birth Attendants

UDHR – Universal Declaration of Human Rights

UN – United Nations

UNDP – United Nations Development Program

UNICEF - The United Nations Children's Fund

WHA-World Health Assembly

WHO – World Health Organization

## CHAPTER ONE

### INTRODUCTION AND BACKGROUND TO THE STUDY

#### 1.1. Background to the Problem

High maternal mortality rate is a major indicator of inequality in accessing maternal health care, both between and within countries (UNDP, 2011). Half a million women, most of them from developing countries die each year of complications during pregnancy or child birth; of which half of all emanates from Africa (WHO, 2010). In Sub Saharan Africa, improving maternal health continues to be a major challenge such that a woman has a 1 in 31 chance of dying during pregnancy or childbirth, as compared to 1 in 4,300 in a high-income country such as Sweden (Zere *et al.*, 2011 and WHO, 2010)

In Ghana, despite the improvement of maternal health care in over the past 20 years albeit at a slow pace, maternal mortality poses a challenge that has been of great concern to policy decision makers to the extent that Maternal Mortality was declared a national emergency in July 2008 (Witter *et al.*, 2009:2). Between 1990 and 2005, maternal mortality ratios reduced from 740 per 100,000 live births to 503 per 100,000 live births, and then to 451 per 100,000 live births in 2008. Upon the continuity of the current trends, maternal mortality will be reduced to only 340 per 100,000 by 2015, instead of the MDG target of 185 per 100,000 by 2015. The improvement, however, is not the same for all regions (Ministry of Health, 2011). In some settings, improvement in the national maternal mortality ratio (MMR) hides the

existence of persistent internal inequities, some of which continue to increase even when aggregate trends improve (Houweling and Kunst, 2001).

During the United Nations Millennium Summit held in 2000, which led to adoption of the Millennium Development Goals (MDGs), Ghana was one of the 189 countries to commit to the MDG goal number 5, which aims at reducing maternal mortality rate by three quarters, from 600 deaths in 100,000 live births (600/100,000) in the country at the time of adoption to 185/100,000 by year 2015 (Ministry of Health, 2011).

In Ghana, the national level efforts to reduce maternal mortality rate have reciprocated similar initiatives at the global level. In recent time, efforts to address inequity in health at the global level have placed at the forefront the social determinants of health approach to address inequity. A report by the UN Commission on Social Determinants of Health issued in 2008, pointed out that there was far too little action on social determinants of health something which called for a need for an active research program on it. The report laid out rationale for a global movement to advance health equity through action on the social determinants of health. The findings of the Commission was accepted by the UN Member States who adopted resolution WHA62.14 calling upon the UN Secretary General to convene a global event in order to discuss renewed plans for addressing the alarming trends of health inequities through addressing social determinants of health (WHO, 2009).

The global event took place in 21 October 2011 in Brazil, leading to the adoption of the Rio Political Declaration on social determinants of health, in which the Member

States pledged to work towards reducing health inequities. Ghana also adopted the Declaration in which the Member States expressed their determination to achieve social and health equity through action on social determinants of health, underscoring the principles set out in the WHO constitution, the 1978 Declaration of Alma-Ata and the 1986 Ottawa Charter reaffirming the essential value of equity in health and recognizing that the enjoyment of highest attainable standard of health is a fundamental right of every human being without distinction of race religion, political belief economic or social condition.

Ghana has established several programs between the year 2000 to date to achieve equity in utilizing maternal health care and reducing maternal mortality. This include the 2010 MDG Acceleration Framework (MAF) and country Action Plan developed by the Ministry of Health and Ghana Health Service, in collaboration with development partners particularly the United Nations Country Team and other stakeholders in Ghana. In aggregate, the aim of these actions is to capitalize on the existing commitment and captures the evidence available to put forward concrete and realistic proposals to scale up the achievement of the MDGs; Prevention of Maternal Mortality Programme (PMMP); Making Pregnancy Safer Initiative; the Safe-Motherhood Initiative and a 2003 new maternal health care policy that provides free maternity care at the point of delivery in all public and mission facilities to ensure increased and equitable access to and use of skilled maternal healthcare services. However, the intended goals outlined by these programs are far from being reached.

Despite the very sound theoretical programs mentioned earlier and normative claims advanced in support of free maternity care, empirical evidence on whether providing

free maternity services has a corresponding effect on the equal uptake of these services by women across all socio-demographic strata is notoriously scant. Maternal mortality, which accounts for 14% of all female deaths, is still the second largest cause of female deaths in Ghana (Asamoah *et al.*, 2011).

As more resources continue to flow into the design and execution of the programs and policy and discussions of the need to achieve MDG-5 figure prominently in national and international policy discourses, empirically investigating the question of equity and its determinants in utilization of maternal health care services is of essence.

## **1.2. Statement of the Problem**

The main aim of this study was to examine equity in utilization of maternal health care services in Kumasi Metropolis, Ghana. The motivation for the study is set on the background of the high mortality rate in Ghana, which stands at 451 deaths per 100,000 live births and the increasing global attention in health inequity, especially in utilization of maternal health care.

Maternal mortality is a key indicator for maternal health and reveals dramatic inequalities between and within countries that cannot be attributed to biological differences. The characteristics of individual women like age, number of previous pregnancies, and education level play a role in determining whether they seek appropriate services, but the underlying factors influencing health behavior operate at inter-related levels of social influence: family and peers, the community in which

women live and the health system available to them, attendance by skilled health personnels at birth and emergency referrals, wider cultural norms, the legal and policy environment and overarching governance structures (UNDP, 2011).

The equal uptake of maternal health care services by women across all socio-demographic strata is notoriously scanty. This is despite the very sound theoretical programs and policies in support of free maternity care. Maternal mortality, which accounts for 14% of all female deaths, is still the second largest cause of female deaths in Ghana (Asamoah *et al.*, 2011).

Ghana is among countries that adopted the 2011 Rio Political Declaration, in which the Member States expressed their determination to achieve social and health equity through action on social determinants of health.

Taking into consideration this development, both at the global and national level, this study examined equity in utilization of maternal health care services in Kumasi Metropolis. In trying to understand the relationship between the two, this study focused on examining the relationship between health and equity, ascertaining if utilization of maternal health care services in Kumasi Metropolis is equitable among urban and peri urban dwellers and determining the determinants of equity in utilization of maternal health care services in the urban and peri urban Kumasi.

### **1.3 Research Questions**

- Is utilization of maternal health care services in Kumasi Metropolis equitable among urban and peri urban dwellers?
- What are the determinants of inequity in utilization of maternal health care services in the urban and peri urban Kumasi?
- What interventions are needed to address the inequity in utilization of maternal health care in Ghana?

#### **1.3.1 Principal Objective**

The objective of the study was to examine inequity and its determinants in the utilization of maternal health care services in urban and peri urban Kumasi.

##### **1.3.1.1 Specific Objectives**

1. To ascertain the inequity in the utilization of maternal health care services in urban and peri urban Kumasi.
2. To assess the influence of the socio-demographic characteristics of the women on inequity in the utilization of maternal health care services in urban and peri-urban Kumasi
3. To investigate the influence of facility-related factors on inequity in the utilization of maternal health care services in urban and peri-urban Kumasi.
4. To ascertain the influence of the socio-cultural factors on inequity in the utilization of maternal health care services in urban and peri-urban Kumasi

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0. Introduction**

The chapter is divided into seven sections. Section one gives an overview of the concept of health equity, highlighting it as a human right and as such governments have a legal obligation to protect it. Absence of health equity signifies presence of health inequity. Section two traces the root causes of health inequity through the four pillars that forms the bedrock of CSDH framework. Section three uses the CSDH framework to show how the root causes of inequity result into inequity in health status at a population level. Section four explains the components of maternal health care, showing a range of health care issues involved in the continuum of maternal health care and section five uses the root causes of inequities discussed in section three to explain the determinants of inequity in utilization of maternal health care. Section six looks at the government initiatives to improve utilization of maternal health care. It provides a discussion of health policies and strategies planning and section seven explores the challenges in implementation of the initiatives that leads to failure in achieving the expected results

#### **2.1. The Concept of Health Equity**

Health equity is defined by WHO department of Ethics, Poverty, Trade and Human Rights as the presence of fair and avoidable or remedial differences in health among

population groups that is socially, geographically, demographically, or economically defined. Braveman and Gruskin (2003) support this view by pinpointing out that achievement of health equity depends on the absence of these differences in health between and within social groups that have different levels of underlying social advantages and disadvantages.

Health equity is a human rights aspect. According to the 1948 Universal Declaration of Human Rights (UDHR) section 25, citizens of any country have a right to the highest attainable standard of health that is inclusive but not restricted to food and nutrition, medical care, health working conditions and health environment (UN, 1948). Health is defined by WHO to mean a state of being physically, mentally and socially well-being, and not merely an absence of diseases or infirmity (WHO, 1948).

Realization of health as a human rights aspect invokes a concept of 'right holders' on one hand and responsibilities of 'right providers' on the other hand. While a given population as citizens of a county have a right to health, the governments bears the primary responsibility of protecting and ensuring the enjoyment of this right. This relationship is stressed by section 28 of UDHR which provides that everyone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized.

The importance of contextualizing health equity as a human right perspective is explained by Braveman and Guskin (2003) when they argue that 'A human rights

perspective removes action to relieve poverty and ensure equity from the voluntary realm of charity... to the domain of law'; and that this 'provide not only a framework but also a legal obligation for policies towards achieving equal opportunities to be health...'

From this section, it is clear that governments and populations they govern are key players in realizing health equity. Absence of health equity signifies presence of health inequity. The following section examines the concept of health inequity and its root causes.

## **2.2. Health Inequity and its root causes**

Health inequality is defined by WHO to mean differences in the distribution of health determinants or the health status between different population groups (WHO Commission on Social Determinants of Health, 2008).

This study uses the WHO Commission's Conceptual Framework for Action on the Social Determinants for Health (CSDH), to explain the relationship between health and inequity.

The CSDH framework is built on four pillars:

- i. Major theoretical approaches to social determinants of health
- ii. Perspectives through which the social determinants of health influence health inequities

iii. Theories of power guiding action on social determinants of health

iv. The social production of diseases model

These four pillars are explained in details below.

It is important to note that the approaches explained below gives reference to ‘social determinants of health or to ‘determinants of health’. Notably, the Center for Diseases Control (CDC) has examined the difference between ‘social determinants of health’ and ‘determinants of health’ and explains that the concept of social determinants of health is wider than the determinants of health. Determinants of health include health behavior, genes and biology, social environment example health services, discrimination and physical environment while social determinants of health encompasses other set of factors that contribute to the social patterning of health, diseases or illness(Centre for Disease Control, 2013).

### **2.2.1. Major theoretical approaches to social determinants of health**

There are three main theoretical approaches on social determinants of health that seek to explain social inequities in health. These are psychosocial approach, social production of diseases or political economy of health approach and ecosocial theory (WHO, 2010).

### **2.2.1.1. Psychosocial approach**

This approach originates from the study by Cassel (1976), who explains that the perceptions and experience of personal status that people in unequal societies have led to stress and poor health, because the stress emanating from social environment affects or increase their likelihood of being vulnerable to diseases. The approach further argues that the social cohesion is weakened as a result of these differences leading to further inequality in health status.

### **2.2.1.2. Social production of diseases/political economy of health approach**

This approach do not dispute the contribution of unequal status explained in the psychosocial approach but argues that it is not enough to focus on perception of status inequality; the important element of structural causes of inequalities has to be added into the equation. The scholars of this theory explain that the structural causes also include economic processes and political decisions that determines and conditions the private resources available to the individuals and that shape the nature of public infrastructure including health services and regulations, education, transportation, environmental controls, availability of food quality of life and occupational health regulations (Lynch *et al.*, 1998).

### **2.2.1.3 Ecosocial approach**

This approach integrates the social and biological reasoning offered by the psychosocial and social production of diseases approaches to historical, dynamic and ecological perspective. According to (Krieger, 2001), this approach enables to analyze the current and changing population patterns of health, diseases and well-being in relation to each level of ecological, biological and social organization

KNUST

### **2.2.2 Perspectives through which the social determinants of health influence health inequities**

There are three perspectives through which the social determinants of health influence health inequities; these are the social mobility or social selection, the social causation and the life course perspectives (WHO, 2010).

The ‘social selection’ perspective provides that it is not the socioeconomic position determining health but health determining the socioeconomic position. This is to mean that one’s attainment of the social position is determined by health, thus consequential to a pattern of social mobility through which the unhealthy individuals occupies the lower social scale while the healthier ones moves up the scale (Illsley, 1955; West, 1991).

The ‘social causation’ perspective explains the opposite of the social selection. It provides that the health status is determined by social position through intermediary factors in which higher risks in developing health problems is posed among people in

the lower economic subgroups. This approach argues that, inequalities in health emanate when there is uneven distribution of the quality of these intermediary factors between different socio economic classes (Fox, 1985; Marmoth, 1981 and Marmot, 1991).

The life course perspective advocates that, the causal link between exposure to health risks and outcomes within an individual's life course, across generations and in diseases trends at a population level is better understood through timely interventions (Lynch, 2005). Factors that promote good health or raise diseases risk are suggested by this approach to have accumulated gradually over the life course, although there could be a developmental period when their effects have a greater impact on health in some cases (Ibid).

### **2.2.3. Theories of power guiding action on social determinants of health**

The theories of power guiding action on social determinants of health are embedded in the human rights perspective, whereby health is seen as a basic human right of citizens and the government has a responsibility of ensuring that this right is enjoyed by citizens. In essence, action on social determinants of health inequities is a political process, engaging both the disadvantaged citizens/communities and the state. This view is supported by Arrendt (1969) who notes that 'power is conceptually and above all politically distinguished, not by its implication in agency, but above all, by its character as a collective action'.

The ideal power necessary to address social inequities will be ‘a relationship in which people are not dominated but empowered’ to undertake a shared action (Rawls, 1971).

The human rights perspective to address inequity means ‘ A human rights agenda supporting the collective action of historically dominated communities to analyze, resist and overcome oppression, asserting their shared power and altering social hierarchies in the direction of greater equity’ (Commission on Social Determinants of Health Report, 2007, pg 17). On the concept of empowerment, the Commission report offers a clear perspective when it explains that a model of community or civil society empowerment appropriate for action on health inequities cannot be separated from the responsibility of the state to guarantee a comprehensive set of rights and ensure the fair distribution of material and social goods among population groups (Ibid, pg 18).

#### **2.2.4. The social production of diseases model**

Advocates for the social production of disease model argue that the social context leads to the social stratification. This stratification produces three things; different vulnerabilities in terms of health condition and material resources availability, different exposure to health damaging conditions and also determines different consequences of ill health for the different groups in a given population. (Hallqvist *et al.*, 1998)

### **2.3. Root causes of health inequity and how they manifest at a population level**

The root causes of health inequity are captured in the main elements of the CSDH framework. The framework is summarized in the diagram below and is explained as follows:

The root causes of health inequity are the structural determinants that shape the social hierarchies according to key stratifiers. The most important structural stratifiers are education, income, social class, occupation race/ethnicity and gender (WHO, 2010).

The structural determinants are those determinants that generate societal stratification and social class divisions. These determinants are rooted in two things, first, the key institutions and second, the mechanisms of socio economic and political context.

Social economical and political context encompasses all political and social mechanism that produces, shape and maintain social hierarchies. These include education system, labor market, political institutions, societal values and absence or presence of welfare state and distribution process.

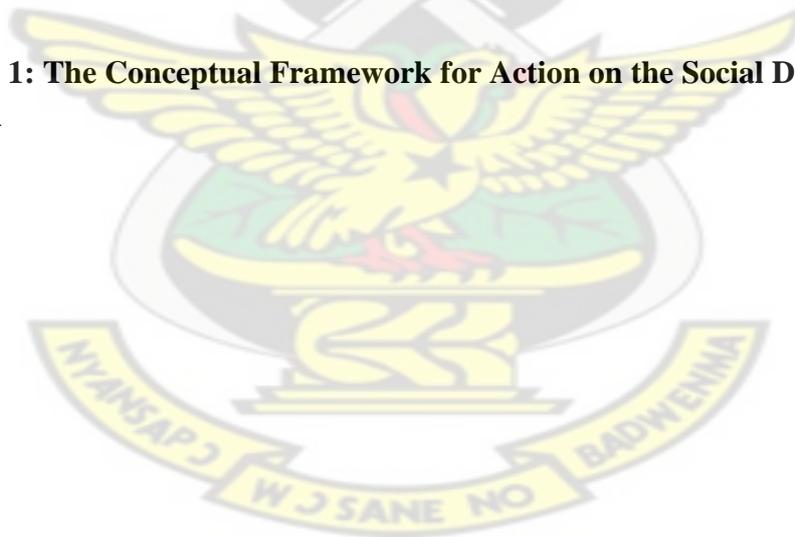
The CSDH framework explains that the root causes of health inequity manifest themselves at the level of population through the intermediary determinants (WHO, 2010). Intermediary determinants are those determinants that reflect people's position within social hierarchies, based on their social status, individual experiences in exposure to and vulnerability to health compromising conditions.

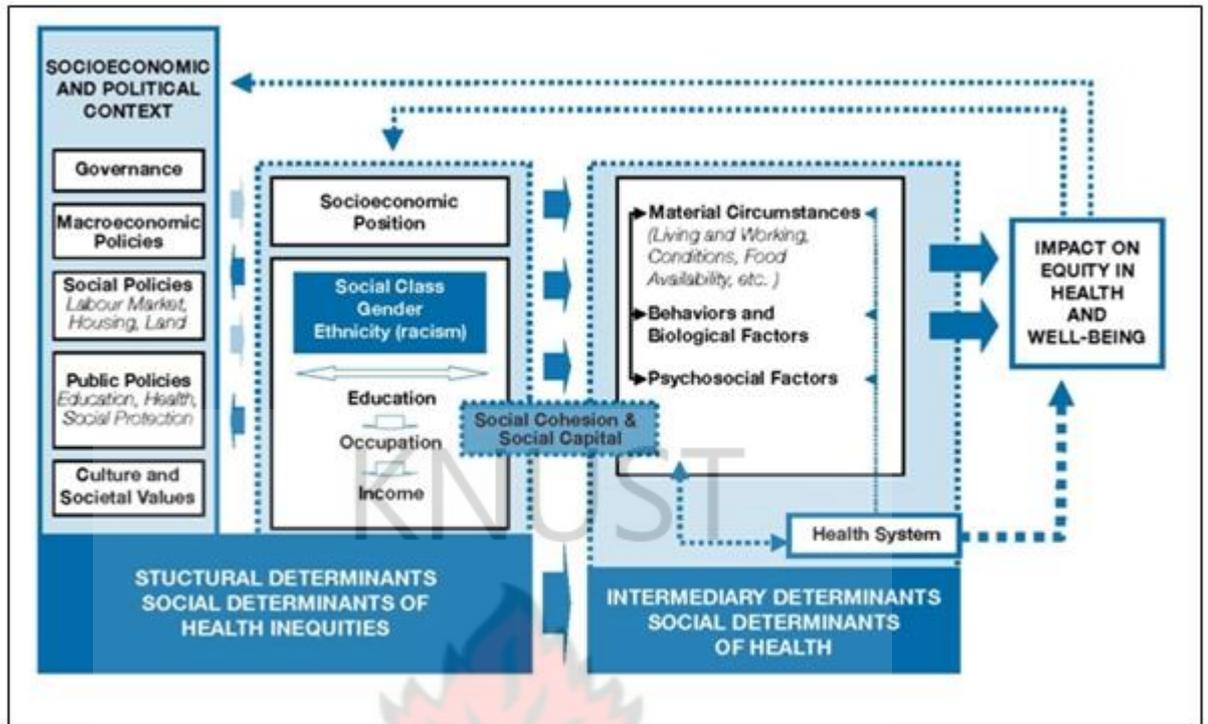
They include the following:

- Material circumstances (including factors such as housing, consumption potential and work environment)
- Psychosocial circumstances ( Including physical stressors, social support and coping mechanism)
- Behavioral and biological factors (Including nutrition, physical activities, genetic factors)
- Health systems (these mediate different consequences of illness in peoples life and incorporates differences in exposure and vulnerability through action led from within the health sector)

The social capital is linked to both the structural and intermediary dimensions.

**Figure 1: The Conceptual Framework for Action on the Social Determinants of Health**



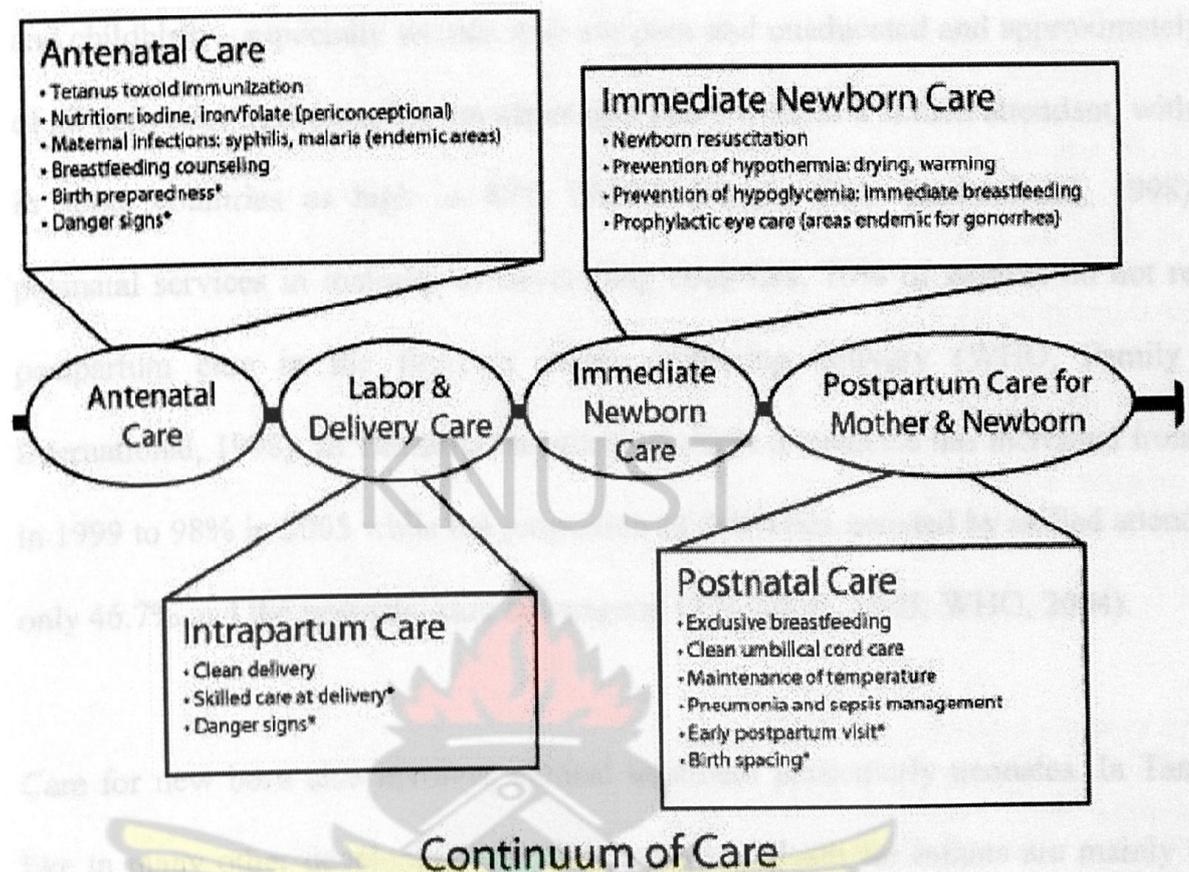


Source: UN Commission on Social Determinants of Health (2008)

#### 2.4. Components of maternal health care

Maternal health care comprises a continuum of four pillars of health care services; that is antenatal care, immediate new born care, labor and delivery care and postnatal care. Each pillar has a specific set of health activities illustrated in the figure below by Babinard (2006) as cited in Ndunguru (2011).

**Fig 1: The illustrative diagram for pillars of maternal and childhood services.**



Source: Babinard, 2006.

## 2.5. Determinants of inequity in utilization of maternal health care

Utilization of maternal health care is best measured at the individual and household levels where health seeking behavior is determined. The framework of health seeking behavior is explained in a study by Andersen and Newman (1972). In this study the authors argue that utilization of health care services is based on the following individual/household characteristics:

- i. Predisposing characteristics- including age, education and health knowledge, marital status, residential mobility and number of previous pregnancies.
- ii. Enabling characteristics-including income, health care system and access to and availability of health facilities.
- iii. Need characteristics- including health status and expected benefits from treatment.

KNUST

It is important to link this framework with the CSDH framework that is used to determine health inequity in this study. The predisposing characteristics outlined by Andersen and Newman (1972) above are referred to as *structural determinants* in the CSDH framework, the enabling and need characteristics are the *intermediary determinants* in the CSDH framework. Therefore, as explained by the CSDH framework, the structural determinants plus the intermediary determinants lead to inequity in utilization of maternal health care services. Each component is explained below:

### 2.5.1. Age

The age of the women plays an important role in the utilization of maternal health care services. Age serves as a reserve of accumulated knowledge which prompts their decision to either utilize the health services or not. According to Mpembeni *et al.*, (2007), Blanc *et al.*, (2007) and Chakraborty *et al.*, (2003) women in their thirties are more likely to seek antenatal, delivery and postnatal health care services than

older women and teenagers. Younger women are just starting child bearing so they tend to fear home deliveries. Some of them might hide their pregnancies because they are not married or are still attending school. Some are afraid of being labeled 'promiscuous', afraid of or prejudicial against health care providers or they could simply be too young and ignorant to appreciate the value of the maternal health care services (Chaibra, 2008; Reynold *et al.*, 2006; Matua, 2004).

### **2.5.2. Education**

High literacy among women is noted as an important determinant in utilization of maternal health care services (Simkhada, 2007; Matthew *et al.*, 2000; Letamo and Rakgoasi, 2003). Celik and Hotchkiss (2000) agree to this assertion, which is also highlighted by WHO (2009) and Mpembeni *et al.*, (2007). Educated women are more likely to realize the benefits of using maternal health care services due to increased awareness of the health services (Matsumura and Gubhaju, 2001). Education increases female autonomy, change marriage patterns, and create shifts in household dynamics (Raghupathy, 1996). It also affects decision-making power within the household (Matsumura and Gubhaju, 2001) and builds greater confidence and capability of women to make decisions regarding their own health (WHO and UNICEF, 2003).

Education and social welfare not only aim at improving maternal health, but also leads to sustained reduction in maternal mortality and morbidity (Franke and Chasin, 1992). Mulholland *et al.*, (1999) and Matha (2004) noted that high education level of the husband is critical in promoting health seeking behavior.

Low level of education for women has been identified as a major barrier to the utilization of maternal health care services, especially antenatal care. This prevent women from seeking care, and accessing the best choices for themselves and their children's health, thus critical delays, unnecessary complications and deaths (Koblinsky Tain and Gaym, 2010; Black, 2010). Low education affects women's comprehension of important information and their ability to make informed decisions, including awareness of their right to health (Matua 2004; Irinoye *et al.*, 2001).

### **2.5.3. Marital status**

According to WHO (1998), married women's decision making power is enormously limited in matters of reproduction and sexuality (Walker *et al.*, 2010; Blank *et al.*, 2010). Several studies have indicated that a husband's permission is required for a woman to seek health services. In many cultural contexts, men decide when to seek treatment (Oxaal and Baden, 1996; Haberland, 2004).

Marital Status among young women influences health care seeking behaviors. Young married women lack social independence and decision making powers to seek maternal health care and at times they consult their husbands and mothers-in-laws for permission, making them prone to what they decide, be it beneficial or not (WHO, 2003).

Young unmarried women are less likely to get social support from the men who impregnated them, and some of them lack the support of family as they are either

denied support deliberately as a form of punishment or their families are not in a position to support them. Most of them do not have means to support themselves (Erci, 2003; Chowdhury *et al.*, 2003; McCaw-Binns *et al.*, 1995).

#### **2.5.4. Residence mobility**

Residence location is an important factor in utilization of maternal health care services. Studies suggest that residence location determines accessibility to health facilities in terms of distance and transport (Simkhada *et al.*, 2007). This is why women in urban areas utilize maternal health services more than rural women who face challenges of long distance and lack of transport (Paredes *et al.*, 2005; Sharma, 2004; Obermeyer and Potter, 1991 and Mekonnen and Mekonnen, 2003). Nielsen *et al.*, (2001) and Magadi *et al.*, (2000) argues that the longer the distance to the health facility the less the uptake of maternal health and antenatal clinic visits.

#### **2.5.5. Maternal health knowledge**

Knowledge is identified as a major variable that could influence the decision on whether or not to utilize the maternal health care services. Women need information about maternal health services before they conceive to enable them make informed decisions when pregnant. Health education programmes during antenatal care services inform women about pregnancy and child care, nutrition, malaria, reproductive health, family planning, and sexual transmitted diseases (Barnet and Fagan, 2003).

The timing of the first antenatal care is an important entry point for delivery care as women who initiate antenatal care early are more likely to use skilled professional assistance at delivery than their counterparts who initiated antenatal care (ANC) late. Late initiation of antenatal care may affect the type of assistance women receive during delivery, putting them at a greater risk of maternal mortality (Ochako *et al.*, 2003).

Scholars have noted that frequent antenatal visits, at least four visits as recommended by WHO expose pregnant women to more health education and counseling which leads to increased awareness on the importance of utilizing maternal health services (Stekelenburg *et al.*, 2004; Osubor, Fatusi and Chiwuzie, 2006; Kumbani and McInerney, 2002. Women who are exposed to proper checkup will detect pregnancy risk factors and prevent them in time and will have knowledge and awareness on personal and child care (Paredes *et al.*, 2005; Bhattia and Cleland, 1995).

#### **2.5.6. Deliveries at health facilities**

Studies have indicated that some women prefer home deliveries to deliveries at health facilities (Mpembeni *et al.*, 2007; Simkhada *et al.*, 2007). There are several factors that prevent women from delivering at health facilities, including perceived poor quality of care and negative attitude of service providers (Mathole *et al.*, 2004). Some scholars have argued that insurance coverage encourages women to deliver in health facilities because they do not fear associated costs (Celik and Hotchkiss, 2000). Urban women are therefore more advantaged than most rural women who do not have access to insurance coverage (Erci, 2003).

### **2.5.7. Maternal health care affordability**

Majority of pregnant women are not able to afford maternity fees (WHO, 1998). Many studies have identified health services cost as a barrier for accessing maternal health care services, especially for women with low income (Adamu and Salihu, 2002; Overbosch *et al.*, 2004; Griffith and Stephenson, 2001; Myer and Harrison, 2003; Mathole *et al.*, 2004; Mumtaz and Salway, 2005). Women with high income have access to better maternal care (Magadi *et al.*, 2000; Matsumura and Gubhaju, 2001; Sharma, 2004) and they also have easy access to health knowledge (WHO and UNICEF, 2003). Miles-Doan and Brewster (1998) and Kabir *et al.*, (2005) noted that women who were civil servants or white collar workers have access to the maternal health care services more than unemployed women. Employed women tend to start antenatal care earlier (Magadi *et al.*, 2000; Navaneetham and Dharmalingam, 2002). Women married to men with low income or no income at all had less access to adequate maternal care services compared to those whose spouses had high income (Ciceklioglu *et al.*, 2005).

### **2.5.8. Cultural perceptions on maternal health services**

Scholars have noted that the need for medical care is determined not only by the presence of physical disease, but also by cultural perception of illness (Addai, 2000; Youthnet, 2004; Mpembeni *et al.*, 2007). The use of maternal health services is mediated by cultural influences that shape the way individuals perceive their bodies, their health and available healthcare services. Cultural practices and traditional beliefs could be a negative factor contributing to less utilization of maternal health

care services. For some women, cultural beliefs that the early period of pregnancy is most vulnerable to witchcraft prevent them from initiating antenatal care during the first three months of pregnancy (Mathole *et al.*, 2004; Mumtaz and Salway, 2005).

### **2.5.9. Quality of maternal health care**

The quality of maternal health care is influenced by many factors including a well-functioning health system (Boerma *et al.*, 2008) and health providers level of professionalism both in terms of skills and capacity and their general attitudes to clients (Matua, 2004). Women and adolescents are sometimes reluctant to use maternity care services because health care providers are perceived to be rude, insensitive and threatening (Matua, 2004; Starrs, 1997; Ziyani *et al.*, 2004). Shortage of skilled attendants especially in the rural areas encourages women to prefer traditional birth attendants delivery services (Mpembeni *et al.*, 2001). Some health providers have little training and experience in handling maternal related complications (Creel and Perry, 2003), compromising the quality of health care service.

### **2.6. Ghana government initiatives to improve utilization of maternal health care Services**

Ghana established maternal health care ninety four years ago in 1920's. Concerted efforts to improve maternal health care can be traced back to the year 2000 with the adoption of MDG5 which calls for the governments to improve maternal health care and reduce maternal mortality rate.

The government has attempted to improve maternal health care and equity through national policies, strategic plans and guidelines on maternal health care. These have been heavily influenced by the country's health sector reform that started in the mid 1980s. The evolution of maternal health care policies has also replicated the global efforts to improve maternal health care and reduce maternal mortality.

### **2.6.1. Policies, strategies and guidelines on maternal health care services**

The Ghana Ministry of Health (MOH) advocates and formulates national health policy, and is responsible for monitoring and evaluating progress towards its targeted outcomes. In 1997, the Ghana Health Service (GHS) was established. It is an autonomous government agency responsible for implementation of national policies under the control of the Minister of Health through its governing Council, "The Ghana Health Service Council".

The MOH has established the Reproductive and Child Health (RCH) section to coordinate the implementation of reproductive and child health activities at the national level. The Reproductive and Child Health (RCH) Unit is one of five units under the public health directorate which is also under the eight directorates of the GHS. The unit is headed by a Deputy Director of Public Health in charge of Family Health. The unit works with the regional health directorates which are headed by Regional Directors of Health Services. Each regional directorate has a public health unit which sees to the implementation of reproductive health activities. The district directorates have similar structures as that of the regions. The districts report to the regions and the regions send reports to the national level. At the national level, the

RCH unit works with other units under the Public Health Directorate and with other Directorates of the GHS. The RCH Unit also collaborates with other Ministries, Departments, Agencies, Non-Governmental Organizations and the Private sector working in reproductive health area.

Reproductive health services are implemented within the framework of the health sector reforms. Several interventions have been developed in recent years for improving reproductive health. These include a National Reproductive Health Service Policy published firstly in 1996, then 2003. This policy aim at making make reproductive health service accessible and affordable to the majority of the target groups; providing the framework for guiding reform and development in the reproductive health service and clarifying the roles of various agencies involved in the provision and financing of reproductive health services. The National Reproductive Health Service Standards and Protocols which specifies the logical and chronological phases of the technical gestures necessary to deliver the service.; Maternal death and clinical audit guidelines which aim at to assisting health workers with a tool to monitor the standards of client care and describe the steps involved in conducting a clinical or death audit.; Community-based health planning and services (CHPS) of 1999, aiming at increasing access to maternal and child health services.; and introduction of user fees for all services except tetanus toxoid immunization for pregnant women though to reduce the financial barriers to services, while maintaining the user fee financing scheme, a series of exemptions were later instituted. Antenatal care, delivery services, family planning, and immunizations were among the services receiving fee exemptions.

However, despite this level of commitment, maternal mortality still remains high at 451 deaths per 100,000 live births. The section below outlines challenges persisting in improving maternal health care services in Ghana.

## **2.7. Challenges in improving maternal health care in Ghana**

One of the most important indicators of maternal health care is maternal mortality rate. In Ghana, the maternal mortality rate stands at 451 deaths per 100,000 live births. The Ministry of Health (2011) acknowledges that between 1990 and 2005, maternal mortality ratios reduced from 740 per 100,000 live births to 503 per 100,000 live births, and then to 451 per 100,000 live births in 2008. Upon the continuity of the current trends, maternal mortality will be reduced to only 340 per 100,000 by 2015, instead of the MDG target of 185 per 100,000 by 2015. The question is, ‘why are the government initiatives yielding such a slow progress towards achieving the MDG5 target?’

Community Based Health Planning and Services (CHPS) is a strategy adopted by the MOH as a national programme to bridge the gap in healthcare access by reducing health inequalities and promote equity of health outcomes by removing geographic barriers to health care. Despite having considerably reduced long distances previously covered by pregnant women to attend Antenatal Care (ANC) and seek other healthcare services and reduced the waiting period women have to endure to access healthcare in other facilities such as the district health facility, there are disparities in distribution of the CHPS compounds across different regions leading to

inequity in the utilization of maternal health care services to women in the concerned areas (MOH, 2009).

The below table stipulates a clear picture of the functional zones in different regions of Ghana. There are disparities in the distribution of CHPS zones across different regions as the available functional zones do not commensurate with the population in the districts. For example Upper East region has 36 more CHPS zone than Central region whilst its population is 782,143 short of central region.

<b>Table 1: Number of CHPS Zones by Region from 200-2008</b>			
<b>Region</b>	<b>Functional Zones</b>	<b>Population covered</b>	<b>District Population</b>
Upper East	82	295,257	1,059,222
Upper West	29	84,969	560,697
Northern	34	149,082	1,793,731
Brong Ahafo	7	36,498	488,263
Ashanti	8	42,337	472,192
Volta	37	145,506	1,051,865
Eastern	54	221,282	1,677,186
Western	43	280,108	1,179,969
Central	46	210,551	1,841,365
Greater Accra	5	47,229	412,587

**Source:** MOH (2009)

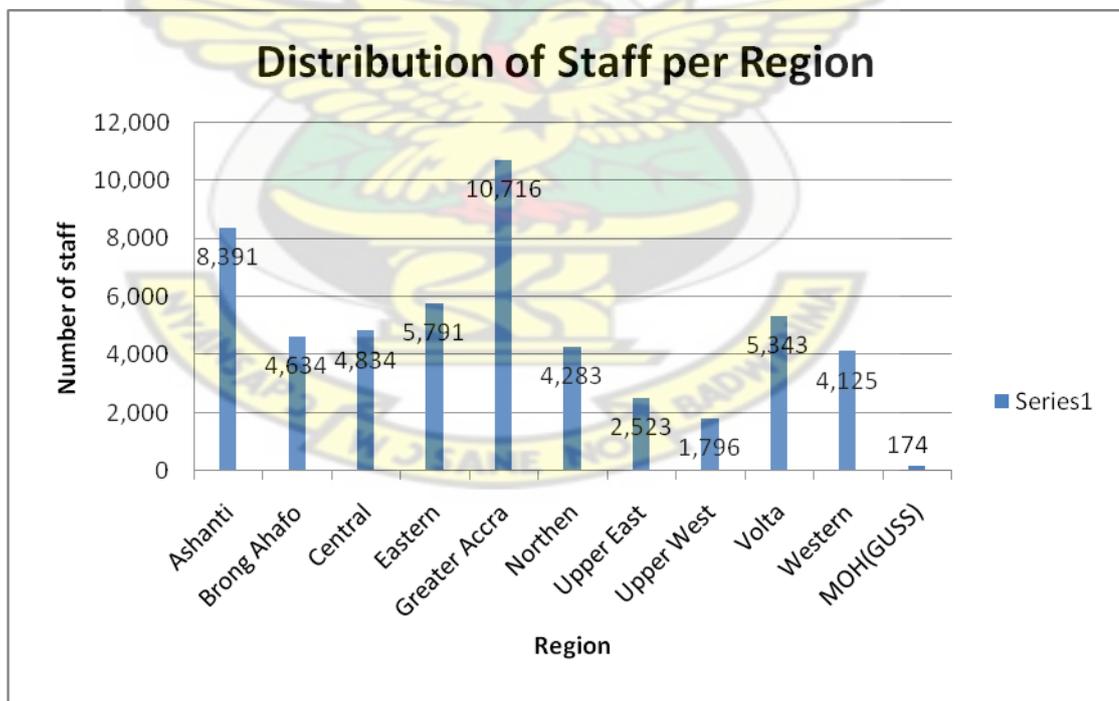
Furthermore, getting CHPS compound accredited under the NHIS is difficult. This is due to lack of meeting certain criteria including the range of services being provided, safety and quality management, staffing levels relevant to the service, care delivery, environment and infrastructure, basic equipment and organization and management. Pregnant women visiting such unaccredited CHPS are required to pay services rendered to them, fostering some of them not to utilize the services as they cannot afford (Socioserve, 2013).

National Health Insurance Scheme (NHIS) was launched in 2004, superseding the user fee and exemption system of health service financing. The primary goal of the scheme was to improve access to and quality of basic health care services in Ghana. Individuals must enroll in the NHIS and pay a premium to participate. In 2008, pregnant women were exempted from paying NHIS premiums (MOH, 2008a), allowing both, those who had paid premium to enroll and those who were not in the system to freely enroll and benefit from the free services offered under the scheme, inclusive of antenatal care, delivery, caesarean section, management of emergency obstetric conditions, and postnatal care (Population Council *et al.*, 2006). Despite this government initiative, women still pay for some of the services and those who cannot afford spend the whole day waiting for the services while those with cash get served first.

Based on evidence from Central and Volta Regions, MoH (2008) listed challenges of the health system include; poor access to quality maternal health services especially at community level, poor access to emergency obstetric care, weak referral systems and services in which some of the facilities tend to refuse receiving referred patients

and poor infrastructure including roads and communication systems logistics equipment leading to death of pregnant women in an emergence condition.

Despite the increase in number of maternal health service personnel due to increased number of enrollments and trained individuals, for example, from 115 in 2003 to 625 in 2007 and a decrease in staff international migration to 64 in 2007 from 108 in 2002 with respect to midwifery, facilities still suffer serious manpower constraints. The doctor population ratio was at 1: 17,733 and 1: 1,510 for the nurse-population ratio in 2008. In addition, there is disproportionate distribution of medical personnel (Figure1) across the country with a significant proportion, 70%, based in Greater Accra and Ashanti Regions.



**Figure 3: Distribution of medical personnel per region**

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1. The Profile of the Study Area**

##### **3.1.1 Demographic characteristics**

Kumasi metropolis is the most populous district in the Ashanti region, accounting for a third of the region's population. It was estimated to have the population of 1,170,270 in 2000 (Ghana Statistical Service, 2000). It is currently approaching 2.3 million (Millennium cities initiative, 2013). The city covers 254 square kilometers and encompasses 10 sub-metropolitan areas; Asawasi, Asokwa, Bantama, Kwadaso, Manhyia, Nhyiaeso, Oforikrom, Suame, Subin, and Tafo.

##### **3.1.2. Economic Activities and Available Resources**

###### **3.1.2.1. Occupation**

It is mainly the commercial and industrial centre in the Ashanti region, with little traces of agricultural activities.

###### **3.1.2.2. Health Facilities**

Kumasi has five health districts: Bantama, Asokwa, Manhyia North, Manhyia South and Subin. In Bantama sub metro there is Komfo Anokye Teaching Hospital (KATH) which serves the whole city as well as its immediate peri-urban communities. It is a referral hospital which serves as a laboratory reference for the

rest of the hospitals in the metropolis. Other hospitals include the Kumasi South Hospital in Asokwa sub metro, Manhyia hospital in Manhyia sub metro and Suntreso hospital. This indicates that hospitals are scarcely found in many localities in the districts ([www.modernghana.com](http://www.modernghana.com), 2014)

Kumasi has 85% of the doctors in Ashanti region which happens to be the second region after Accra in the country with largest number of doctors. Out of the 85%, 72% are situated in Komfo Anokye Teaching Hospital, in Bantama sub metro, leaving the 13% of doctors distributed in other hospitals, thus indicates unfair distribution of medical personnel.

### **3.2. Study Design**

This is a descriptive cross-sectional study which was carried out in urban and peri urban Kumasi for a period of three months; July, 2014 – September, 2014. Both, utilization and its determinants were examined at once in determining inequities in the utilization of maternal health care in Kumasi Metropolitiss, Ghana.

### **3.3. Sampling**

#### **3.3.1 Sample size determination**

The sample size of 422 women in the fertility age was selected using the following statistical formula:

$$N = \frac{Z^2 p q}{d^2}, \text{ where;}$$

N= The calculated sample size

Z = The reliability co-efficient for 95% level of significance

P = 50% Proportion of women at fertility age utilizing maternal health care services

q = (1 – P) = 1-0.5=0.5

d = Margin of error tolerated: 0.05

$$N = \frac{Z^2 p q}{d^2}$$

$$d^2$$

$$N = \frac{(1.96)^2 \times (0.5 \times 0.5)}{0.05^2}$$

$$= \frac{3.842 \times 0.25}{0.0025}$$

$$0.0025$$

$$= 384$$

Non respondents = 10% of 384 = 38.4

Sample size = 384 + 38

$$= 422$$

### 3.3.2 Sampling Procedure

This study employed a multistage sampling procedure where;

- In the first instance, the names of the 10 sub-metros were written on a piece of paper. 1 urban sub- metro and 2 peri-urban sub- metros, making a total of 3 sub- metros were randomly selected from the 10 sub metros in Kumasi Metropolis. The sub- metros selected were Subin, Nhyiaeso and Oforikrom

- In the second instance, the communities were chosen from the selected sub-metros. Subin had 10 communities from which 2 were selected, and Oforikrom and Nhyiaeso had 16 communities each, from which 3 communities were selected from each. The communities were written in a piece of paper and randomly picked. These included Pampaso, Twumduasi, Ayigya, Ayeduase, Kotei, Santasi, Danyame and Adeeba respectively. In all, they were 2 urban communities and 6 peri urban communities.

- Sample size from each sub metro was calculated using probability proportionate to size (PPS). The population size of all sub metros were added then divided by the sample size. The proportion obtain was multiplied by the population size in each sub metro to obtain the sample size in each areas as follows;

The Population size was obtained from Kumasi Metropolitan Assembly, Metro Health Directorate:

$$\text{Subin} = 136,813$$

$$\text{Nhyiaeso} = 229,565$$

$$\text{Oforikrom} = 224,414$$

$$\begin{aligned} \text{Proportion of sample} &= \frac{422}{136813 + 229565 + 224414} \\ &= 0.000714295 = 0.00071 \end{aligned}$$

$$\begin{aligned} \text{Subin} &= 136813 \times 0.00071 \\ &= 98 \end{aligned}$$

$$\begin{aligned} \text{Nhyiaeso} &= 229565 \times 0.00071 \\ &= 164 \end{aligned}$$

$$\begin{aligned} \text{Oforikrom} &= 224414 \times 0.00071 \\ &= 160 \end{aligned}$$

- The sample size in Subin, Nhyiaeso and Oforikrom was 98, 164 and 160 respectively, making the total of 422. In the selected communities within the sub-metros, households were selected randomly depending on the accessibility of women in the fertility age who have ever been pregnant and delivered within three years prior to the study.

#### **3.4. Data Collection Technique**

Questionnaire as the data collection technique and tool was employed.

#### **3.5. Data Processing and Analysis**

This study defined equity as “fairness in utilization of maternal health care services among women, irrespective of their demographic characteristics, social cultural factors and facility related factors. Education and Occupational status of the individual participants were used as a proxy measure of socio economic status which was applied as a measure of equity. The univariate analysis was done to find the association between equity whose measure was the socio economic status (denoted by “high socio economic” and “low socio economic”) and other demographic, social

cultural and facility related factors. The difference in utilization of maternal services with respect to demographic, social cultural and facility related factors among the two socio economic groups indicated the presence of inequity. The regression model was then run to determine the determinants of inequity in utilization of maternal health care services and ascertain whether there is difference between urban and peri urban settings. The final model which determined the determinants of inequity in utilization of maternal health care services included the significant and important non significant factors of inequity in utilization of maternal health care services. Other non significant factors including “attendance to the health facility” and “need to seek permission” were dropped using the likelihood ratio test, p-value of 0.2.

### **3.6. Ethical Considerations**

Ethical clearance was obtained from the Committee on Human Research Publications and Ethics KATH-KNUST, District Director of Health Service, Chiefs, sub chiefs and opinion leaders in the respective study areas, along with verbal consent from each respondent in the communities who formed part of the sampling units. Privacy, volunteerism and confidentiality were highly adhered to.

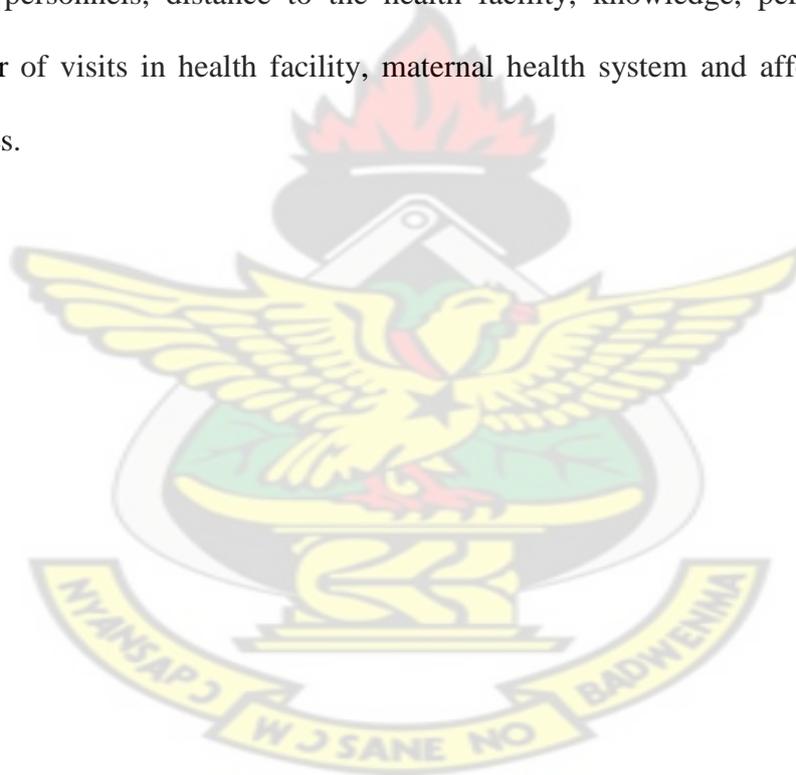
### **3.7. Pre-test**

The questionnaires were tested in any of the communities that did not form part of the study areas, which was Atonsu Agogo community in Asokwa sub metro. This was to test the clarity of the questionnaires in meeting the stated objective. Modifications were done upon unexpected and ambiguity related to the

questionnaire. It also served as an opportune moment for further training of the research assistant to ensure their preciseness of the study.

### **3.8. Study Variables**

The study comprised of dependant variable which was ‘inequity in utilization of maternal health care services’ and independent variables consisting of age, education, occupation, residence, parity, woman status in the house, attitudes of health personnels, distance to the health facility, knowledge, perception, beliefs, number of visits in health facility, maternal health system and affordability of the services.

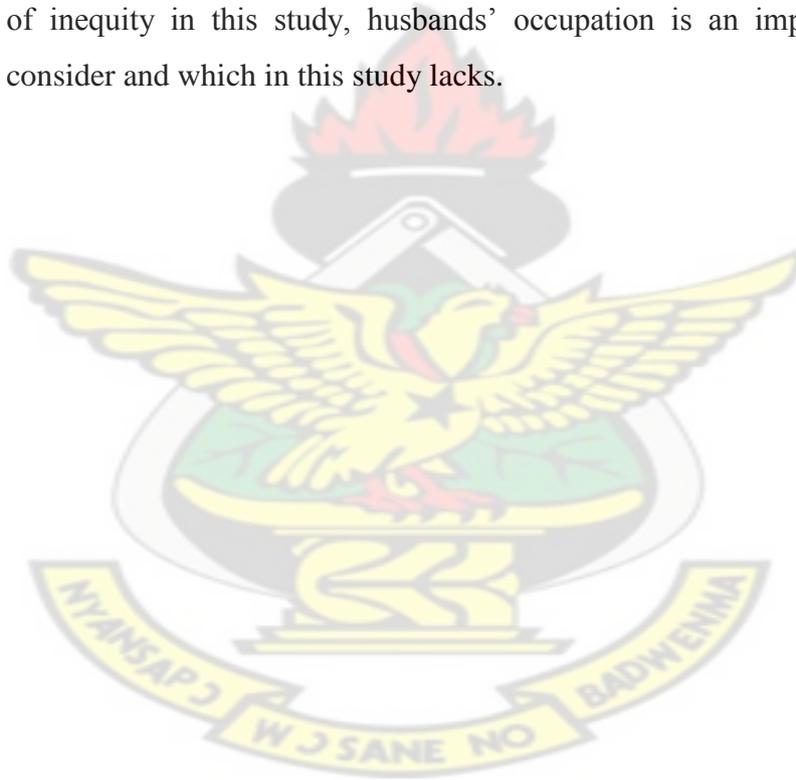


**Table 2: Study Variables**

<b>STUDY VARIABLES</b>	<b>TYPE OF VARIABLE</b>	<b>OPERATIONAL DEFINITION</b>
Age	Numeric (Continuous)	Years lived to present
Education	Ordinal	No education, primary education, secondary education and above
Occupation	Nominal	Employed, Self employed, Not employed
Place of residence	Nominal	Area where one lives
Marital Status	Nominal	Status of a woman,: Single, Married, Divorced, Separated, Widow
Parity	Numeric (Discrete)	Number of children one has: 1, 2, 3, 4+
Woman status in the house	Nominal	Ability to make decisions in the house independently
Attitudes of health personnels	Ordinal	Expressed in terms of how the women are treated.1-Very good, 2-Good, 3- Satisfactory/average, 4- Not good
Distance to health facility	Ordinal	How far is the health facility from where a person lives, expressed as; 1- Nearby, 2-Far, 3-Vey far
Number of visits to the health facility	Ordinal	Visits paid to the health facility: Regularly, Occasionally, Seldom
Affordability of the services	Nominal	Expressed in terms of being able to pay for services
Knowledge	Nominal	Awareness of the importance of maternal health care services
Perception	Nominal	Views on utilizing maternal health care services
Beliefs	Nominal	Values concerning utilization of maternal health care services
Maternal health system	Nominal	The structure of the maternal health system

### 3.9. Limitation of the Study

- The data were collected by research assistants who were familiar to the community, which could result in social desirability bias. However, interviewers were well trained to form a climate of trust with the interviewees aiming at facilitating sincere responses
- Part of this study used secondary data. This presented a rather narrow and controlled context more biased to the views of the writer.
- In determining the socioeconomic status which was used as a proxy measure of inequity in this study, husbands' occupation is an important factor to consider and which in this study lacks.



## CHAPTER FOUR

### RESULTS

#### 4.0. Introduction

This chapter presents the study findings. It is divided into three sections. Section one presents the socio-demographic characteristics of the respondents. Section two presents the association between the socio-demographic characteristics and the utilization of maternal health care services and section three presents the association between the socio-demographic characteristics, facility-related, and socio-cultural factors and inequity in utilization of maternal health services.

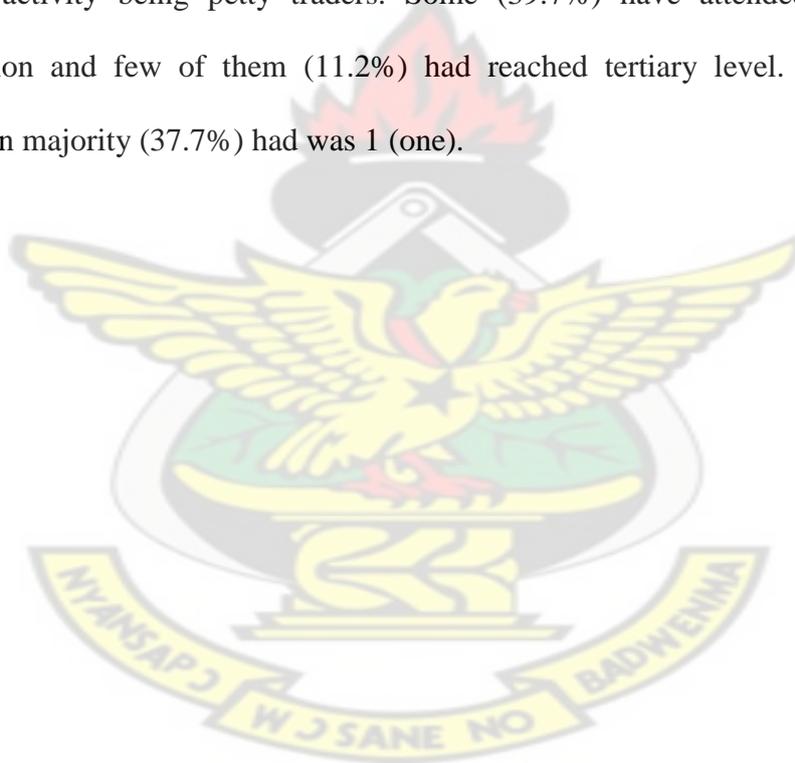
#### 4.1. The socio-demographic characteristics of the study subjects

**Table 3: Socio-demographic characteristics of the study subjects**

Variable	Number (N=422)	(%)
<b>Age</b>		
15-24	114	27.0
25-34	196	46.5
35+	112	26.5
<b>Education Level</b>		
None	109	25.8
Primary	155	39.7
Secondary	111	26.3
Tertiary	47	11.2
<b>Marital Status</b>		
Married	293	69.4
Divorced/Widow/Separated/Single	129	30.6
<b>Occupation</b>		
None	112	26.5
Self employed	254	60.2
Employed	56	13.3
<b>Number of Children</b>		
1	159	37.7
2	132	31.3
3	75	17.8
4+	56	13.2

Table 3 above presents a total of 422 women who had given birth within three year prior to the study. The table summarizes the socio-demographic characteristics of the respondents. Out of the total, majority (46.5%) fell in the middle age, (25-34 years), with the aged, 35+ years and the young ones, (15-24 years) being 26.5% and 27%, respectively. Their ages ranged from 15 to 49 years with the mean age being  $29.9 \pm 8.2$  years.

Over half of them (69.4%) were married and self- employed (60.2%), with their major activity being petty traders. Some (39.7%) have attended primary level education and few of them (11.2%) had reached tertiary level. The number of children majority (37.7%) had was 1 (one).

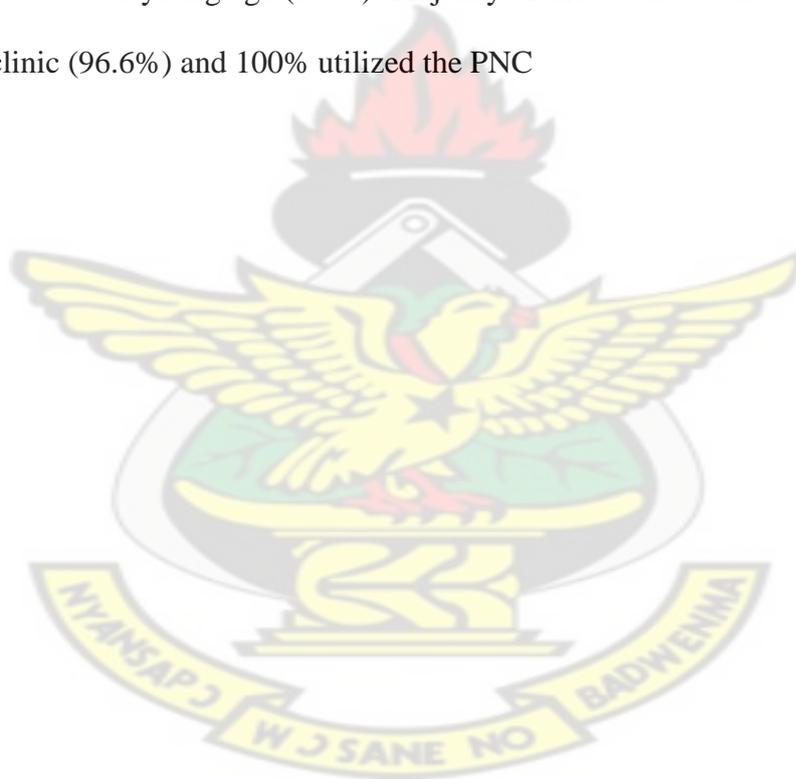


#### 4.2. The Association between the Socio-demographic Factors and Utilization of Maternal Health Care Services

**Table 4: Association between the Social-demographic factors and utilization of Maternal Health Care services**

Variable	ANC N (%)		PNC N (%)		Place of Delivery N (%)	
	Yes	No	Yes	No	Clinic	TBA/HOME
<b>Age group</b>						
15-24	111(97.4)	3(2.6)	111(97.4)	3(2.6)	104(91.2)	10(8.8)
25-34	194(99.5)	1(0.5)	196(100.0)	0(0.0)	192(98.0)	4(2.0)
35+	110(98.2)	2(1.8)	110(98.2)	2(1.8)	107(95.4)	5(4.6)
<b>Education Level</b>						
None	108(99.1)	1(0.9)	108(99.1)	1(0.9)	102(93.6)	7(6.4)
Primary	151(98.0)	3(2.0)	153(98.7)	2(1.3)	149(96.1)	6(3.9)
Secondary	109(98.2)	2(1.8)	109(98.2)	2(1.8)	105(94.6)	6(5.4)
Tertiary	47(100.0)	0(0.0)	47(100.0)	0(0.0)	47(100.0)	0(0.0)
<b>Marital Status</b>						
Single	83(95.4)	4(4.6)	84(96.6)	3(3.4)	79(90.8)	8(9.2)
Married	290(99.3)	2(0.7)	291(99.3)	2(0.7)	284(96.9)	9(3.1)
Divorced/Widow/Separated	42(100.0)	0(0.0)	42(100.0)	0(0.0)	40(96.1)	2(3.9)
<b>Number of children</b>						
1	156(98.1)	3(1.9)	156(98.1)	3(1.9)	150(94.3)	9(5.7)
2	131(100.0)	0(0.0)	132(100.0)	0(0.0)	129(97.7)	3(2.3)
3	73(97.3)	2(2.7)	74(98.7)	1(1.3)	71(94.7)	4(5.3)
4+	55(98.2)	1(1.7)	55(98.2)	1(1.8)	53(94.6)	3(5.4)
<b>Occupation</b>						
None	109(97.3)	3(2.7)	109(97.3)	3(2.7)	104(92.9)	8(7.1)
Self employed	251(99.2)	2(0.8)	252(99.2)	2(0.8)	245(96.5)	9(3.5)
Employed	55(98.2)	1(1.8)	56(100.0)	0(0.0)	54(96.4)	2(3.6)
<b>Setting</b>						
Urban	97(99.0)	1(1.0)	97(99.0)	1(1.0)	93(94.9)	5(5.1)
Peri-urban	318(98.4)	5(1.6)	320(98.8)	4(1.2)	310(95.7)	14(4.3)

The findings of the study as indicated in table 4 above show that the usage of maternal health care services was high. Of those living in peri-urban, only 1.6% did not attend ANC and 1.2% did not attend PNC, while 4.3% did not deliver at the health facility. In urban settings, 1.0%, 1.0% and 5.1% constituted those who did not attend ANC, PNC and not delivered at the clinic, respectively. The reasons for not attending were; accessing TBA services (14.2%) ,there is no importance of going to the health facility (7.9%), services not near (45.8%), services offered are costly (12%), bad treatment of medical personnel (14.5%), permission denial (2.1%) and afraid because of young age (3.0%). Majority of those who attended ANC, delivered at the clinic (96.6%) and 100% utilized the PNC



### 4.3. The Socio-demographic, Facility-related and Socio-cultural Factors Associated with Inequity in Utilization of Maternal Health Care Services in Kumasi Metropolitan area

**Table 5: Factors Associated with Inequity in Utilization of Maternal Health Care Services in Kumasi Metropolitan area.**

	Variable	High socio-economic status	Low socio-economic status	Odds Ratio(95% CI)	P-value	Adjusted Odds Ratio(95% CI)	P-value
		N(%)	N(%)				
<b>Socio-demographic factors</b>	<b>Age</b>						
	15-24	63(55.3)	51(44.7)	1		1	
	25-34	114(58.2)	82(41.8)	1.13(0.71-1.79)	0.619	1.32(0.72-2.43)	0.374
	35+	76(67.9)	36(32.1)	1.71(0.99-2.93)	0.053	1.08(0.48-2.41)	0.858
	<b>Marital Status</b>						
	Married	170(58.0)	123(42.0)	1		1	
	Divorced/Widow/Separated/Single	83(64.3)	46(35.7)	1.31(0.85-2.00)	0.223	2.40(1.34-4.32)	0.003
	<b>Parity</b>						
	1	79(49.7)	80(50.3)	1		1	
	2	72(54.5)	60(45.5)	1.21(0.77-1.93)	0.409	2.13(1.18-3.84)	0.012
3	52(69.3)	23(30.7)	2.29(1.28-4.09)	0.005	4.35(2.01-9.40)	<0.001	
4+	50(89.3)	6(10.7)	8.44(3.42-20.80)	<0.001	20.93(6.5566.90)	<0.001	
<b>socio- cultural factors</b>	<b>Attendance to the health facility</b>						
	No	249(60.0)	166(40.0)	1			
	Yes	3(50.0)	3(50.0)	1.50(0.30-7.52)	0.622		
	<b>Place of Delivery</b>						
	Clinic	241(59.8)	162(40.2)	1		1	
	Home	12(63.2)	7(36.8)	1.15(0.44-2.99)	0.769	0.76(0.23-2.55)	0.66
	<b>Need to Seek Permission</b>						
	No	145(59.7)	102(40.3)	1			
	Yes	103(61.3)	65(38.7)	0.90(0.60-1.34)	0.595		
	<b>Setting</b>						
Urban	52(53.1)	46(46.9)	1		1		
Peri urban	201(62.0)	123(34.0)	1.45(0.92-2.28)	0.113	1.44(0.86-2.40)	0.165	
<b>Facility-related factors</b>	<b>Affordability of the services</b>						
	No	27(41.5)	38(58.5)	1		1	
	Yes	223(63.4)	129(36.6)	0.41(0.24-0.70)	0.001	0.35(0.18-0.67)	0.001
	<b>Attitude of medical personnel</b>						
	Not good	35(66.0)	18(34.0)	1		1	
	Satisfactory	122(65.6)	64(34.4)	0.98(0.51-1.87)	0.952	0.97(0.46-2.00)	0.944
	Good	80(57.5)	59(42.5)	0.70(0.36-1.35)	0.285	0.73(0.35-1.54)	0.411
	Very good	13(33.3)	26(66.7)	0.26(0.11-0.62)	0.002	0.27(0.10-0.73)	0.01
	<b>Distance to the health facility</b>						
	Nearby	163(55.8)	129(44.2)	1		1	
Far	83(69.8)	36(30.2)	1.82(1.16-2.87)	0.009	1.81(1.09-3.00)	0.021	
Very far	4(66.7)	2(33.3)	1.58(0.29-8.78)	0.599	0.82(0.11-6.09)	0.845	

#### **4.3.1. Influence of socio-demographic characteristic of women on inequity in the utilization of maternal health care services in Kumasi**

The study revealed that there was no significance difference ( $p > 0.05$ ) among women in the high socio-economic status and women in the low socio-economic status in the utilization of maternal health care services with respect to age and marital status. However, though the utilization of the maternal health care services was higher in the higher socio-economic group the differences was only significant in those aged above 35 years ( $p = 0.053$ ). Whereas among the married women, there was no significant difference between the utilization of maternal health services among the high and low socio-economic groups, the utilization was significantly higher for the higher socio-economic group among the women who were single, divorced, widow, and separated by 31%.

Parity was found to influence inequity in the utilization of maternal health care services. It can be observed that the more the number of children one has, the less the likelihood of utilizing the maternal health care services for the women in the low socio-economic group, as the odds ratio (OR) tend to increase from 1.21 (95% CI = 0.77-1.93) to 2.29 (95% CI = 1.28-4.09) to 8.44 (95% CI = 3.42-20.80) among those with 2, 3 and 4+ children, respectively. With parity 2, no significant difference was observed in the utilization of the maternal health care services among the two socio-economic groups.

#### **4.3.2. Influence of facility-related factors on inequity in the utilization of Maternal Health care services in Kumasi**

Table 5 shows that affordability of the services, attitudes of medical personnels and distance to the health facility were found to significantly influence equity ( $p < 0.05$ ), in utilization of maternal health care services.

The study indicated that, with affordability as an issue, women in the high socio-economic status were 59% less likely to utilize maternal health care services (OR = 0.41, 95% CI = (0.24-0.70)) than women in the low socio-economic status.

The attitude of medical personnel is seen significantly influencing the utilization of maternal health care services. It can be observed that, the better the attitudes of medical personnel the higher the utilization of maternal health care services. This is indicated by the higher utilization of the services by the lower social group who responded the attitudes are very good (OR = 0.26, 95% CI = 0.11-0.62). Despite not significant, this is also indicated by decrease in utilization of maternal services by higher socio economic group shown by the decrease of the odds ratio from (OR = 0.98, 95% CI = 0.51-1.87) among women who responded “satisfactory” to (OR = 0.70, CI = 0.36-1.35) among women who responded the attitudes are good.

Significant difference in the utilization of maternal health care services was shown among higher socio economic group and lower social economic group with respect to distance to the facility. The utilization was lower among the high socio-economic group

by 82% more than the lower socio economic group. Despite not being significant, still the high socio economic group staying very far (OR = 1.58, CI = 0.29-8.78) utilized the services less than the socio economic group.

#### **4.3.3. Influence of socio-cultural factors on inequity in the utilization of Maternal Health care services**

No significance difference ( $P > 0.05$ ) was found among women in the high socio-economic status and women in the low socio-economic status in the utilization of maternal health care services with respect to attendance to the health facility; place of delivery, seeking permission and setting. This is despite the fact that, women in the higher socio economic status who delivered at home, needed to seek permission and dwelled in urban areas were 15% more likely, 10% less likely and 45% more likely, respectively to utilize the maternal health care services than women in the lower socio economic status.

Even after controlling for other variables, affordability of the services (adjusted odds ratio (aOR) = 0.35, 95% CI = 0.18-0.67) and marital status (aOR = 2.40, 95% CI = 1.34-4.32) were seen to statistically significantly influence inequity in utilization of maternal health care services

Distance to the health facility, attitude of medical personnel and parity were also seen to significantly determine inequity in the utilization of the maternal services, adjusted for other variables (Table 5).

## CHAPTER FIVE

### DISCUSSION

#### **5.1. Influence of socio-demographic characteristic of women on inequity in the utilization of maternal health care services in Kumasi**

The study showed the coverage of ANC was 99%, which was apparently as higher as 96% which was observed by Ghana Maternal health Survey (GMHS, 2007). Majority of women (94%) made four or more antenatal visits during pregnancy. However, only about 5% and 1% paid a visit at least thrice and once, respectively. This is seemingly good as WHO recommends pregnant women to have a minimum of four antenatal care visits, and at least one during each trimester of pregnancy. This is important in detecting and preventing adverse pregnancy outcomes and is most effective if the visits begin early during a pregnancy and continue at regular intervals throughout the pregnancy. The study revealed that of all who attended ANC, 97% delivered at the clinic and all utilized the PNC (Table 2). Despite the tremendous utilization of maternal health care services, maternal mortality is as high as 451 per 100,000 live births (GMHS, 2007) and accounts for 14% of all female deaths in Ghana (Asamoah *et al.*, 2011). The question is, is utilization of maternal health care services in Ghana equitable?

Before discussing the single factors determining inequity in the utilization of maternal care services, a general consideration ought to be made with regard to the fact that the model only identified a handful of significant associations. Elements which Andersen

and Newman (1972) perceived as determinants of inequity in utilization of maternal health care services and which previous research had recognized as significant determinants of unequal access to maternal health care services, such as age, attendance to the health facility, delivery place, seeking permission and setting (Gabrysch and Campbell, 2009; Baral *et al.*, 2012; Arthur, 2012; Mpembeni *et al.*, 2007), were not significant in the analysis presented in this study. The observed lack of a significant association, however, can at least be taken to indicate that, with regard to the concerned factors, that is, age, attendance to the health facility, delivery place, seeking permission and setting, inequity in the utilization of maternal health care services was not fostered, reaching equally to people with different socio-demographic and socio-cultural factors.

The analysis of the results showed parity as a significant determinant influencing inequity in the utilization of maternal health care services. This result was consistent with findings from Ethiopia by Palamuleni (2012) and Abebe *et al.*, (2012). The more the number of children one has the less the probability of giving birth at the health facilities for the women in the low socio-economic group. This is evidenced by the odds ratio (OR) which increased from 1.21 (95% CI = 0.77-1.93) to 2.29(95% CI = 1.28-4.09) to 8.44(95% CI = 3.42-20.80) among those with 2, 3 and 4+ children, respectively in relation to women with 1 child with respect to not utilizing the services. Limited access to resources and time constraints related to child care and household activities and that women with more children perceive delivery as a normal process and develop the confidence to give birth at home, were argued by Gabrysch and Campbell (2009) and Simkhada (2008) as reasons that could explain this relationship

Consistent with previous research (Tsegay *et al.*, 2013), findings from this study though found no significant difference between the utilization of maternal health services among the high and low socio-economic groups, the utilization was significantly higher for the higher socio-economic group among the women who were single, divorced, widowed, and separated by 31%. A possible explanation might be that single, widowed and divorced women are more empowered and have more autonomy than married women.

## **5.2. Influence of facility-related factors on inequity in the utilization of Maternal Health care services in Kumasi**

The study indicated that there is a significant association between inequity in the utilization of maternal health care services and affordability of the services ( $p < 0.05$ ). Although other studies (Adamu and Salihu, 2002; Overbosch *et al.*, 2004; Griffith and Stephenson, 2001; Myer and Harrison, 2003; Mathole *et al.*, 2004; Mumtaz and Salway, 2005) have identified health services cost as a barrier for accessing maternal health care services, especially for women with low income and that women with high income have access to better maternal care (Magadi *et al.*, 2000; Matsumura and Gubhaju, 2001; Sharma, 2004), this study found that women in the high socio-economic status have 41% chance less of utilizing the services than women in the low socio-economic status. In any case, the lower maternal health care services utilization among the wealthiest women remains surprising, though this could suggest that poorer women might have benefited the most from the financing policy of 2008 in which Free Maternal Care

policy was introduced into the Nation Health Insurance scheme to improve maternal health and reduce child mortality

Apart from the fact that women in the high socio-economic status could afford the services more though in contrast to the findings, WHO and UNICEF, (2003) further added that, they also have easy access to health knowledge which is similarly reported in Malawi by Kumbani and Inerney (2002) and Stekelenburg *et al.*, (2004) in Zambia that, women who were knowledgeable of risk factors were more likely to utilize health facilities for delivery compared to those with no knowledge. It is expected that a better informed individual is better placed to make reasonable decisions.

Majority of women in the low socio-economic status (54%) who responded as able to afford the services, were supported by National Health Insurance Scheme (NHIS) which covers antenatal care, delivery, caesarean section, management of emergency obstetric conditions, and postnatal care (Population Council *et al.*, 2006). This could be attributed by the introduction of free Maternal Care policy into the Nation Health Insurance scheme in improving maternal health and reducing child mortality (MOH, 2008b), but not overcoming barrier to access due to reliability of the maternal health services. In line with the findings from Arthur (2012) that most of the expectant mothers end up spending the entire day at the health center for their check-ups, the study further found that, over half (55%) supported by NHIS complained about spending a lot of time at the health facility waiting for the services which could discourage the utilization of maternal health care services. This is a form of indirect cost especially to the mothers in the

informal sector who may have to go to the market to earn a daily living. Dalinjong and Laar (2013) further added that, this could be due to some facilities preferring those who pay in cash than those with insurance, hence fostering inequity.

In line with the finding from previous studies in other African countries by De Allegri *et.al* (2007) in Burkina Faso, Regassa (2011) in Ethiopia, Kowalewski *et.al* (2002) and Mpembeni *et.al* (2011) in Tanzania who argued that distance act as a barrier in limiting access to care, both for women wishing to use ANC, women wishing to deliver in a health facility and use the PNC, probably largely because of the poor conditions of the roads, the absence of systematic transport, and the high direct and indirect costs associated with it; the present study highlighted the effect of distance to the health facility towards inequity in the utilization of maternal health care services ( $p < 0.05$ ). The nearer to the health facility the easy access one has to the facility. The high socio economic group staying far from the facility were as well seen to utilize the services less than the lower socio economic group (Table 5).

The attitude of medical personnels was indicated as among the influencing factors towards inequity in the utilization of maternal health care services. These findings were consistent with the observations made by AbouZahr (2007) and Cannavan (2008) that, pregnant women may not return to the facility when maltreated by health care providers. Some women fail to utilize the services due to the negative attitude of medical personnels (Mathole *et.al* 2004). The study conducted in Gambia (Nyanzi, 2008) noted this could be associated with women delivering by TBAs though this was not seen as

significantly influencing equal access to maternal health care services by the present study.

### **5.3. Influence of socio-cultural factors on inequity in the utilization of Maternal Health care services**

Attendance to the health facility, delivery place, seeking permission and setting were found not to significantly influence equity in utilization of maternal health services among the two socio-economic groups. This is contrary to what Andersen and Newman (1972) perceived as determinants of inequity in utilization of maternal health care services and which previous research by Gabrysch and Campbell (2009); Baral *et al.*, (2012); Arthur (2012) and Mpembeni *et al.*, (2007) had recognized as significant determinants of unequal access to maternal health care services. The observed lack of a significant association, however, can at least be taken to indicate that, with regard to the concerned factors, that is, attendance to the health facility, delivery place, seeking permission and setting, inequity in the utilization of maternal health care services was not fostered, reaching equally to people with different socio-cultural factors.

## CHAPTER SIX

### CONCLUSION AND RECOMMENDATIONS

#### 6.1. Conclusion

The study has examined inequity in the utilization of maternal health care services in the Kumasi Metropolis, Ghana, in relation to socio-demographic characteristics, facility-related and socio-cultural factors. Despite the fact that almost all women in the fertility age who delivered within a year prior to the study attended antenatal care, delivery and postnatal care services; it is concluded that utilization of this maternal health care services in the Kumasi metropolis is not equitable, fostered by:

- Bad attitudes of medical personnels
- Inability to afford services
- Long distance to the health facilities
- Parity, where the utilization of maternal health services reduces with the increased number of children
- Marital status, where married women have less access to services than single, divorced and widows

#### 6.2. Recommendation

This is divided into two sections. Section one outlines an ideal framework for implementing maternal health care interventions and section two gives recommendations

on what needs to be done to ensure implementation of the interventions aimed at improving maternal health care service in Kumasi Metropolis.

### **6.2.1. Ideal framework for implementing maternal health care interventions**

The ideal framework for implementing maternal health interventions is provided by the UN Commission on Information and Accountability for Women's and Children's health (2011). According to the framework, there are three key components in implementing maternal health care interventions, namely monitoring, reviewing and action.

*Monitoring* largely depends on the health information system which provides information and data on what is happening and how resources are used. *Reviewing* includes the process of analyzing data to determine the progress on maternal health care, identifying shortcomings and recommending remedial action. *Action* refers to the actual or practical implementation of interventions that emerge from the reviewing process. It includes taking measures to address the shortcomings, using the resources better to achieve set targets and adopting programs that have positive impact in improving maternal health care.

These components complement the recommendations of the report issued by the World Bank's two studies on countries that have made important strides in improving maternal

health. These countries are Sri Lanka, Malaysia, Bolivia, Zimbabwe, China, Egypt, Jamaica, Indonesia and Honduras (Pathmanathan *et al.*, 2003).

The study provides that these countries adopted three strategies in their approaches to improve maternal health care: first, they developed a solid health system which supported an increase of professional midwifery, establishment of systems to monitor maternal births and deaths, use of maternal health data for high profile advocacy and replicating locally successful programs across the countries.

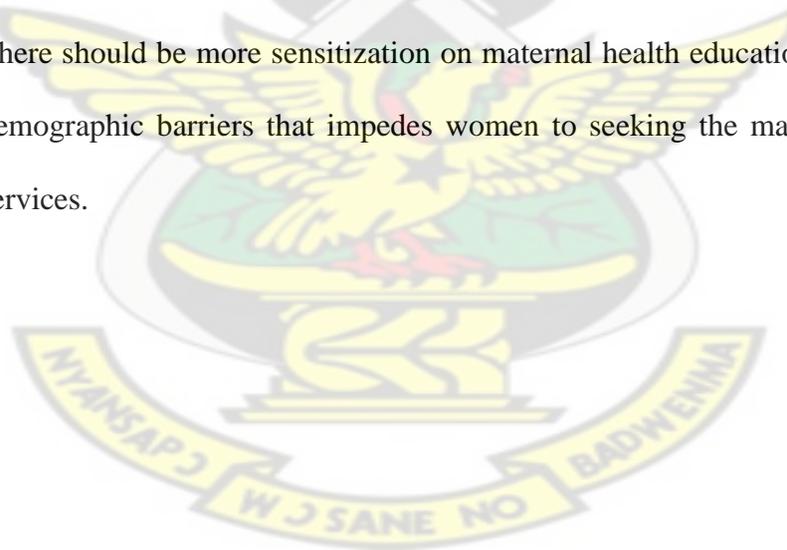
The second strategy was to increase access to maternal health care especially in the rural areas by removing financial, social and physical barriers to accessing maternal health care and fostering community participation.

The third strategy was to raise the quality of maternal healthcare through better organization, clinical management and communities' empowerment, which lead to increased utilization of maternal health care services.

Ghana has conducted a comprehensive review of maternal health care, and both shortcomings and remedial interventions are well known. The challenge lies in the implementation of the interventions, whereby concrete action is needed to correct the shortcomings and to ensure that responsible actors are accountable for their action and inaction towards implementation of the interventions. Section two below examines what needs to be done to ensure implementation of recommended interventions.

### **6.2.2. What should be done to ensure implementation of interventions aimed at improving maternal health care services in Kumasi**

- ❖ The stakeholders should ensure that strategies to address health inequity that are foreseen in the various government strategies and policies are practically implemented to address social causes of ill health, to reduce health disparities and to create and sustain economically viable societies.
- ❖ To reduce the long waiting time that deter women from utilizing maternal health care services, a more rigorous system that ensures the proper clinical management is recommended.
- ❖ There should be more sensitization on maternal health education on cultural and demographic barriers that impedes women to seeking the maternal health care services.



## REFERENCE

- Abebe, F., Berhane, Y. and Girma, B. (2012) 'Factors associated with home delivery in Bahirdar, Ethiopia: A case control study', *BMC Res Notes*, Vol.5, Pg: 653
- Abera, M. and Belachew, T. (2012) 'Predictors of safe delivery service utilization in Arsis zone South-East Ethiopia', *Ethiopia Journal of Health Science*, Vol.21 (Special Issue 3), Pg: 101–113
- AbouZahr, C. (2007) *Maternal mortality in 2005: Estimates developed by WHO, UNICEF, UNFPA and the World Bank*, Geneva: WHO Press
- Adamu, Y.M. and Salihu, H.M. (2002) 'Barriers to the use of antenatal and obstetric care services in rural Kano, Nigeria', *Journal of Obstetrics and Gynaecology*, Vol. 22(6), Pg: 600–603
- Addai, I. (2000) 'Determinants of use of maternal-child health services in rural Ghana', *Journal of Biosocial Science*, Vol 32(1), Pg: 1-15
- Andersen, R. and Newman, J.F. (1972) *Societal and individual determinants of medical care utilization in the United States: The Milbank Memorial Fund Quarterly. Health and Society*, Pg: 95-124
- Arrendt, H. (1969) *On violence*, Harcourt Brace Jouanouta, New York
- Arthur, E. (2012) 'Wealth and antenatal care use: implications for maternal health care utilisation in Ghana', *Health Economics Review*, Vol.2, Pg: 14, Available: <http://www.healthconomicsreview.com/content/2/1/14>
- Asamoah, B.O., Moussa, K.M., Stafström, M. and Musinguz, G. (2011) 'Distribution of causes of maternal mortality among different socio-demographic groups in Ghana; a descriptive study' *BMC Public Health Journal*, Vol.11 (159), Available: <http://www.biomedcentral.com/1471-2458/11/159>
- Babrinard, J. (2006) *Overview of issues and measures to improve access to MDG 4 and 5*
- Barnett, M. and Fagan, J. (2003) 'The relationship between maternal gatekeeping, paternal competence, mothers' attitudes about the father role, and father involvement', *Journal of Family Issues*, Vol.24 (8), Pg: 1020-1043

- Black, R.E., Cohen, B., Nkrumah, F., Coovadia, H., Nampala, P.H. and Lawn, J. (2010) 'Sub-Saharan Africa's mothers, newborns, and children: where and why do they die?' *PLoS Medicine*, Vol.7 (6):e1000294
- Boerma, J. T., Bryce, J., Kinfu, Y., Axelson, H. and Victora, C. G. (2008) 'Mind the gap: equity and trends in coverage of maternal, newborn, and child health services in 54 Countdown countries', *Lancet* Vol.371 (12), Pg: 59-67
- Bhatia, J.C. and Cleland, J. (1995) 'Determinants of maternal care in a region of South India', *Health Transition Review*, Vol.5 (2), Pg: 127-142
- Braveman, P.A. and Gruskin, S. (2003) 'Defining equity in health', Vol.57, *J Epidemiol Community Health*, Pg: 254-8. doi:10.1136/jech.57.4.254
- Cannavan, A. (2008) 'Review of global literature on maternal health interventions and outcomes related to provision of skilled birth attendance', *Development policy and practice*, Amsterdam
- Cassel, J. (1976) 'The contribution of the social environment to host resistance', *American Journal of Epidemiology*, Vol 104(2), Pg: 107-123
- Celik, Y. and Hotchkiss, D. R. (2000) 'The socio-economic determinants of maternal health care utilization in Turkey', *Journal of Social Science and Medicine*, Vol.50 (1), Pg: 797-806
- Centers for Disease Control and Prevention (2013) *social Determinants of Health*, U.S.A, available: <http://www.cdc.gov/socialdeterminants/FAQ.html>
- Chaibra, C.N.M. (2008) *Factors influencing adolescents' utilization of Antenatal care services in Bulawayo, Zimbabwe*
- Chowdhury, R. I., Chakraborty, N., Islam M, A., Bari, W. and Akhter, H.H. (2003) 'Determinants of the use of maternal health services in rural Bangladesh', *Health Promotion International*, Vol.18 (3), Pg: 27-37
- Ciceklioglu, M., Soyer, M.T. and Ocek, Z.A. (2005) 'Factors associated with the utilization and content of prenatal care in a western urban district of Turkey', *International Journal for Quality in Health Care*, Vol.17 (6), Pg: 533-539

- Creel, C.L., and Perry, R.J. (2003) *Improving the Quality of Reproductive Health Care for Young People*, New Perspectives on Quality of Care
- Dalinjong, P.A. and Laar, A.S. (2013) 'The national health insurance scheme: perceptions and experiences of health care providers and clients in two districts of Ghana', *Health Economics Review*, Vol.2 (13), Pg: 1-13
- De Allegri, M., Ridde, V., Louis, V.R., Sarker, M., Tiendrebéogo, J., Yé M Müller, O. and Jahn, A. (2011) 'Determinants of utilization of maternal care services after the reduction of user fees: a case study from rural Burkina Faso', *Journal of Health Policy*, Vol.99 (3), Pg: 210–218
- Erci B. (2003) 'Barriers to utilization of prenatal care services in Turkey', *Journal of Nursing Scholarship*, Vol. 35(3), Pg: 269–273
- Franke, R.W. and Chasin, B.H. (1992) 'Kerala state, India: radical reform as development', *International Journal of Health Services*, Vol.22, Pg: 139-56
- Gabrysch, S. and Campbell, O.M.R. (2009) 'Still too far to walk: a literature review of the determinants of delivery service use', *BMC Pregnancy Childbirth*, Vol.9, Pg: 34
- Ghana Maternal Health Survey (2007)
- Ghana Statistical Service (2000) Population and Housing Census
- Haberland, N., Erica, C.L. and Hillary, B.J. (2004) *A World Apart: The Disadvantage and Social Isolation of Married Adolescent Girls*, brief based on background paper prepared WHO/UNFPA/Population Council Technical Consultation on Married Adolescents. Edited by: Council TP, New York: Population Council
- Hallqvist, J., Diderichsen, F., Theorell, T., Reuterwall, C. and Ahlbom, A. (1998) 'Is the effect of job strain due to interaction between high psychological demand and low attitude', *Social Science medical Journal*, Vol 46, Pg: 1405-1415
- Houweling, T. and Kunst, A.E. (2001) 'Safe Motherhood Strategies: A Review of the Evidence: A Global picture of the poor – rich differences in the utilization of delivery care', Canada: EC Directorate General DEV, pp 296-299, available: <http://www.reviews.givewell.org/files/DWDA%202009/Interventions/Maternal%20Mortality/SafeMotherhoodStrategies.pdf#page=301>

- Illsley, R. (1955) 'Social Class Selection and class differences in relation to stillbirths and infant deaths', *British Medical Journal*, Vol 24(2) (4955)1520:4
- Kabir, M., Iliyasu, Z., Abubakar, I.S. and Sani, A.A. (2005) 'Determinant of utilization of antenatal care services in Kumbotso village, Northern Nigeria', *Tropical Doctor Journal*, Vol.35, Pg: 110–111
- Koblinsky, M., Tain. F. and Gaym, A. (2010) 'Responding to the maternal health care challenge: The Ethiopian Health Extension Program', *Ethiopia Journal of Health Development*, Vol.24 (1) Pg: 105–109
- Kowalewski, M., Mujinja, P. and Jahn, A. (2002) 'Can mothers afford maternal health care costs? User costs of maternity services in rural Tanzania', *African Journal of Reproductive Health*, Vol.6 (1), Pg: 65–73
- Krieger, N. (2001) 'Theories of Social Epidemiology in the 21st Century: an ecosocial perspective', *International Journal of Epidemiology*, Vol 30(4), Pg: 64-77
- Kumasi Metropolitan Assembly, Metro Health Directorate (2014)
- Kumbani, L. and Mc Inerney, P. (2002) *The knowledge of obstetric complications among primigravidae in a rural health centre in the district of Blantyre*, Malawi. Pg: 43-54
- Letamo, G. and Rakgoasi, S. D. (2003) 'Factors associated with the non–use of maternal health services in Botswana', *Journal of Health, Population and Nutrition*, Vol.21, Pg: 40-47
- Lynch, J.W., Kaplan, G.A., Pamuk, E.R., Cohen, R.D., Heck, K.E., Balfour, J.L. and Yen, I.H. (1998) 'Income inequality and mortality in metropolitan area of the United States', *American Journal of Public Health*, Vol 88(7), Pg: 74-80
- Magadi, P.t., Thembi, I.T., Ransjo – arvidson, A.B. and Ahiberg, B.M. (2002) 'Quality of Maternal Care for adolescent mothers in Mbabane, Swaziland', *International Nursing Review*, Vol.49, Pg: 38-46
- Mathole, T., et al. (2004) *A qualitative study of women's perspectives of antenatal care in a rural area of Zimbabwe Midwifery*, Pg: 22-32

- Matua, A.G. (2004) 'Determinants of maternal choices for place of delivery in Ayiru county, Uganda', *Africa Journal of Nursing and Midwifery*, Vol6 (1), Pg: 33-38
- Matthews, Z., Mahendra, S., Kilaru, A. and Ganapathy, S. (2001) 'Antenatal care, care-seeking and morbidity in rural Karnataka, India: results of a prospective study', *Asia-Pacific Population Journal*, Vol.16 (2), Pg: 11-28
- Matsumura, M. and Gubhaju, B. (2001) 'Women's status household structure and the utilization of maternal health services in Nepal', *Asia-Pacific Population Journal*, Vol.16 (1), Pg: 23-44
- McCaw-Binns, A., La Grenade, J. and Ashley, D. (1995) 'Under-users of antenatal care: a comparison of non-attenders and late attenders for antenatal care, with early attenders', *Journal of Social Science and Medicine*, Vol. 40(7), Pg: 1003-1012
- Mekonnen, Y. and Mekonnen, A. (2003) 'Factors influencing the use of maternal healthcare services in Ethiopia', *Journal of Health, Population and Nutrition*, Vol.21 (4), Pg: 374-382
- Miles-Doan, R. and Brewster, K.L. (1998) 'The impact of type of employment on women's use of prenatal-care services and family planning in urban Cebu, the Philippines', *Studies in Family Planning*, Vol. 29(1), Pg: 69-78
- Millennium cities initiative (2013) Available: <http://mci.ei.columbia.edu/millennium-cities/kumasi-ghana/>
- Ministry of Health (2008b) *National Consultative Meeting for the Reduction of Maternal Mortality in Ghana*, Available: [http://www.moh.gov.gh/moh/docs/programs\\_of\\_work/Consecutive%20meeting/Minister'sspeech.pdf](http://www.moh.gov.gh/moh/docs/programs_of_work/Consecutive%20meeting/Minister'sspeech.pdf)
- MoH (2008) *National consultative meeting on the reduction of maternal mortality in Ghana: Partnership for action*, A synthesis report
- MOH (2009) *In-depth Review of the Community-based Health Planning Services (CHPS) Programme*, A report of the Annual Health Sector Review
- Ministry of Health (2011) *Ghana Health Service Annual Report*

- Ministry of Health (2011) *Maternal Health: Millennium Development Goals Acceleration Framework and Country Action Plan*, government of Ghana and United Nations Country Team in the Republic
- Mpembeni, R.N.M, Killewo, J.Z., Leshabari, M.T., Massawe, S.N., Jahn, A., Mushi, D. and Mwakipa, H. (2007) 'Use pattern of maternal health services and determinants of skilled care during delivery in Southern Tanzania: implications for achievement of MDG-5 targets', *BMC Pregnancy Childbirth*, Vol.7, Pg: 29
- Mumtaz, Z. and Salway S. (2005) 'I never go anywhere: extricating the links between women's mobility and uptake of reproductive health services in Pakistan', *Social Science and Medicine*, Vol.60 (8), Pg: 1751–1765
- Mulholland, A., Alibaruho, G. L., Brew – Graves, C. and Monreal – Pinand, I. (1999) *Promoting Health through women's functional literacy and intersectoral action: Lessons from the Nigeria project*, WHO: Geneva
- Navaneetham, K. and Dharmalingamb, A. (2002) 'Utilization of maternal health care services in Southern India', *Journal of Social Science and Medicine*, Vol.55, Pg: 1849-1869
- Ndunguru, E. (2007) *Thesis: Assessment of utilization of maternal health services and associated factors for women with infants in rural Morogoro district council*, Muhimbili University of Health and Allied Science, Tanzania
- Nielsen, B.B., Hedegaard ,M., Liljestrang, J., Thilsted, S.H. and Joseph, A. (2001) 'Characteristics of antenatal care attenders in a rural population in Tamil Nadu, South India: A community-based cross-sectional study', *Health and Social Care in the Community*, Vol.9 (6), Pg: 327–333
- Nyanzi, S. (2008) *Empowering traditional birth attendants in the Gambia: A local strategy to redress issues of access, equity and sustainability?* Dakar, Senegal: Graphiphus
- Obermeyer, C.M. and Potter, J. (1991) 'Maternal Health Care Utilization in Jordan: A Study of Palamuleni, M. (2012) 'Determinants of non-institutional deliveries in Malawi', *Malawi Medical Journal*, Vol.23 (4), Pg: 104–108

- Ochako, R., Fotso, J.C., Ikamari, L. and Khasakhala, A. (2003) *Utilization of maternal health services among young women in Kenya: Insights from the Kenya Demographic and Health Survey*
- Osubor, K.M., Fatusi, A.O. and Chiwuzie, J.C. (2006) 'Maternal health-seeking behavior and associated factors in a rural Nigerian community', *Maternal Child Health Journal*, Vol. 10, Pg: 159-169
- Overbosch, G., Nsowah-Nuamah, N., Van Den Boom, G. and Damnyag, L. (2004) 'Determinants of antenatal care use in Ghana', *Journal of African Economies*, Vol.13 (2), Pg: 277-301
- Oxaal, Z. and Baden, S. (1996) *Challenges to women's reproductive health: maternal mortality*, Social Development Department, Department for Overseas Development (DFID), UK
- Paredes, I., Hidalgo, L., Chedraui, P., Palma, J. and Eugenio, J. (2005) 'Factors associated with inadequate prenatal care in Ecuadorian women', *International Journal of Gynecology and Obstetrics*, Vol.88 (2), Pg: 168-172
- Pathmanathan, I., Liljestrand, J., Martins, J.O.M., Rajapaksa, L.C., Lissner, C., Silva, A., Selvaraju, S. and Singh, P.J. (2003) *Investing in Maternal Health: learning from Malaysia and Srilanka*, World Bank Health and Nutrition Series
- Population Council, Ministry of Health [Ghana], UNFPA/Ghana, and Ghana Health Service (2006) *Priority setting for reproductive health at the district level in the context of health sector reforms in Ghana*, Accra, Ghana
- Raghupathy, S. (1996) 'Education and the use of maternal healthcare in Thailand'. *Social Science and Medicine*, Vol.43(4), Pg: 459-471
- Rawls, J. (1971) *A theory of Justice*, Harvard University Press
- Regassa. N. (2011) 'Antenatal and postnatal care service utilization in southern Ethiopia: A population based study', *Africa Journal of Health Science*, Vol.11 (3), Pg: 390-397
- Reynolds, H.W., Wong, E.L. and Tucker, H. (2006) 'Adolescents Use of Maternal and Child Health Services in Developing Countries' *International Family Planning*

*Perspectives*, Vol.32 (1), Pg: 6–16, Available:  
<http://www.guttmacher.org/pubs/journals/3200606.pdf>

Rio Political Declaration on Social Determinants of Health, 2011 ‘World Conference on Social Determinants of Health’, Rio De Janeiro, Brazil, 19-21 October, available:  
[http://www.who.int/sdhconference/declaration/Rio\\_political\\_declaration.pdf](http://www.who.int/sdhconference/declaration/Rio_political_declaration.pdf)

Sharma, B. (2004) ‘Utilization of antenatal care services in Nepal’, *Nepal Population Journal*, Vol.11 (10), Pg: 79–97

Simkhada, B., Teijlingen, E.R., Porter, M. and Simkhada, P. (2008) ‘Factors affecting the utilization of antenatal care in developing countries: Systematic review of the literature’, *Journal of Advance Nursing*, Vol.61 (3), Pg: 244–260

Starrs, E. (1997) *The safe motherhood action agenda: Priorities for the next decade*, New York: Family care International

Stekelenburg, J., Kyanamina, S., Mukelabai, M., Wolffers, I. and Van Roosmalen, J. (2004) ‘Waiting too long: low use of maternal health services in Kalabo, Zambia’, *Tropical Medicine International Health*, Vol. 9, Pg: 390-398

Tsegay et al. (2013) ‘Determinants of antenatal and delivery care utilization in Tigray region, Ethiopia: A cross-sectional study’, *International Journal for Equity in Health*, Vol.12, Pg: 30, Available: <http://www.equityhealthj.com/content/12/1/30>

UN Commission on Information and Accountability for Women’s and Children’s health (2011) *Accountability Results, Working group on accountability for results Patterns and Determinants*, *Studies in Family Planning*, Vol.22, Pg: 177 – 187, Available:  
<http://www.jstor.org.ezproxy.liv.ac.uk/stable/pdfplus/1966644.pdf?acceptTC=true>

United Nations Declaration of Human Rights (1948), available:  
<http://www.jus.uio.no/lm/un.universal.declaration.of.human.rights.1948/portrait.a4.pdf>

United Nations Development Program (2011) Millennium Development Goals Report, New York, available:  
[http://www.un.org/millenniumgoals/11\\_MDG%20Report\\_EN.pdf](http://www.un.org/millenniumgoals/11_MDG%20Report_EN.pdf)

- UNDP (2012) *Ghana Millennium Development Report*, United Nations Development Program, Ghana and NDPC/GOG
- Walker, N., Weissman, E., Chopra, M. and Black, R.E. (2010) 'PLoS Med' *Sub-Saharan Africa's mothers, newborns, and children: how many lives could be saved with targeted health interventions?* Vol.7 (6), Pg: 21
- West, P. (1991) 'Rethinking the Health selection explanation for health inequalities', *Social Science Medical Journal*, Vol 32(4), Pg: 373-84
- WHO (1946) Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946
- WHO (1978) Alma-Ata Declaration: World Health Organization: The International Conference on Primary Health Care', Alma-Ata, USSR, 6-12 September, available: [http://www.who.int/publications/almaata\\_declaration\\_en.pdf](http://www.who.int/publications/almaata_declaration_en.pdf)
- WHO (1986) Ottawa Charter for Health Promotion Ottawa, Canada: World Health Organization: The first International Conference on Health Promotion, Available: [http://www.who.int/hpr/NPH/docs/ottawa\\_charter\\_hp.pdf](http://www.who.int/hpr/NPH/docs/ottawa_charter_hp.pdf) (accessed 11th November, 2013)
- WHO (2010) *Trends in Maternal Mortality: 1990 to 2008*, Estimates developed by WHO, UNICEF, UNFPA and The World Bank. Geneva: World Health Organization, Available: [www.who.int/whosis/mme\\_2005.pdf](http://www.who.int/whosis/mme_2005.pdf)
- WHO Commission on Social Determinants of Health (2008), '*Closing Gap in a Generation: Health Equity through Action on the Social Determinants of Health*', Geneva, World Health Organization, Commission on Social Determinants of Health, available: [http://www.who.int/social\\_determinants/final\\_report/media/csdh\\_report\\_wrs\\_en.pdf](http://www.who.int/social_determinants/final_report/media/csdh_report_wrs_en.pdf)
- WHO and UNICEF (2003) *Antenatal Care in Developing Countries: Promises, Achievements and Missed Opportunities: An Analysis of Trends, Levels, and Differentials: 1990-2001*, WHO and UNICEF, Geneva, New York
- Witter, S., Adjei, S., Armar-Klemesu, M. and Graham, W.J. (2009) *Providing free maternal health care: ten lessons from an evaluation of the national delivery exemption policy in Ghana*, Global Health Action 2

World Health Assembly (2009) '*Resolutions and Decisions adopted by the General Assembly during its sixty-four session*', 15 September-24 December, United Nations, 62:14, available:[http://www.un.org.in/items/UNOfficialDocuments\\_ResolutionsAndDecisions64SessionVol1.pdf](http://www.un.org.in/items/UNOfficialDocuments_ResolutionsAndDecisions64SessionVol1.pdf)

World Health Organisation (2009) *Reproductive health indicators: guidelines for their generation, interpretation and analysis for global monitoring*, Available: [www.who.int/reproductive-health/publications/rh\\_indicators/](http://www.who.int/reproductive-health/publications/rh_indicators/). Accessed on (12 February, 2014)

[www.modernghana.com](http://www.modernghana.com), 2014

YouthNet (2004) *Expanding Contraceptive Options and Access for Youth: Education, services and products can help protect against unintended pregnancy and STIs*, Special Report Yuba Raj, B., Karen, L., Skinner, J., Edwin, R. and Van, T. (2012) 'Maternal health services utilization in Nepal: Progress in the new millennium?' *Health Science Journal*, Vol. 6, (4)

Zere, E., Tumusiime, P., Walker, O., Kirigia, J., Mwikisa, C. and Mbeeli, T. (2010) 'International Journal for Equity in Health' *Inequities in utilization of maternal health interventions in Namibia: implications for progress towards MDG 5 targets.*, Pg: 16

Ziyani, I.S., King, L., Ehlers, V.J. (2004) 'Using triangulation of research methods to investigate family planning practices in Swaziland', *Africa Journal of Nursing and Midwifery*, Vol.6 (1), Pg: 12-17

**APPENDIX I**

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**MPH HEALTH EDUCATION AND PROMOTION**

**QUESTIONNAIRE**

**2013/2014**

District \_\_\_\_\_

Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Hello my name is \_\_\_\_\_ from Kwame Nkrumah University of Science and Technology. I am here to gather information on the utilization of maternal health care services. I would appreciate your participation as your perspective is very important to this study. Your responses will be kept strictly confidential, and your name will not be recorded as part of this questionnaire and will not appear in any reports. This interview will take about 20 minutes. I request you to respond to the questions to the best of your ability. If you have any questions at any time during the interview, please do not hesitate to ask. However, you can end the interview at any time you feel like doing so. At this time, would you like to ask me anything about this interview?

Do you agree to participate in this interview?

Yes, respondent agree to participate in this interview

No, the respondent does not agree to participate in this interview

## Section one: Demographic Characteristics

1. How old are you?
2. How many Children do you have?
  - 1
  - 2
  - 3
  - 4+
3. What is the level of education you have completed?
  - No education
  - Primary
  - Secondary
  - Tertiary(Certificate - Degree)
4. Marital status
  - Single
  - Married
  - Divorced
  - Separated
  - Widow
5. Occupation
  - Employed
  - Self employed
  - Not employed

## Section two: Attendance to maternal health care services

6. Did you attend antenatal clinic for the last born?
  - Yes
  - No

7. If not, why were you not attending? (Tick all that are applicable)

- Afraid because of young age
- Services are far
- Not aware of the services
- Services offered are costly
- Bad attitude of the medical personnels
- Attending to TBA
- Permission denial
- There is no importance of going
- Taboo
- Others specify.....

8. Are you attending post natal clinic?

- Yes
- No

9. If not, why are you not attending?

- Services not available
- Services not near
- Not aware of the services
- There is no importance of going
- Permission denial
- Services offered are costly

10. Where did you deliver your last born?

- Clinic
- Home
- TBA
- Other specify.....

11. If having more than one child: Were you attending antenatal and post natal clinic for the other children?

- Yes
- No

12. Where did you deliver the other children?

- Clinic
- Home
- TBA
- Other specify.....

**If have attended (still attending) antenatal and post natal clinic:**

13. How did (do) you find the attitude of medical personnel?

- Very good
- Good
- Satisfactory/Average
- Not good

14. How can you describe the accessibility of the maternal health care services in terms of distance?

- Nearby
- Far
- Very far

15. How would you describe your utilization of the maternal health care services?

- Regularly
- Occasionally
- Seldom

16. What is your reason for your response above?

- Bad treatment of medical personnel
- Services not near
- Not aware of the services
- There is no importance of going
- Permission denial
- Services offered are costly

17. Can you afford paying the maternal health care services?

- Yes
- No

18. If not, how do you access the services?

- Health Insurance
- Free
- Others specify.....

19. How reliable are the services?

- Normal
- Prolong

20. Do you seek permission from anybody to attend maternal health care services?

- Yes
- No, I decide on my own

21. If yes, from whom do you have to seek permission?

- Husband
- In-laws

## APPENDIX II

In case of reply the number  
and the date of this letter  
should be quoted

My Ref. No: KM/UN – 2/11/01

Your Ref. No:

Tel. No.03220 – 24106 / 27639

Fax. No. 03220 - 24106

E-mail: [ksighs@yahoo.com](mailto:ksighs@yahoo.com)



METRO HEALTH DIRECTORATE  
GHANA HEALTH SERVICE  
P. O. BOX KS 12588  
KUMASI

27<sup>th</sup> May, 2013

---

**TO WHOM IT MAY CONCERN**  
**MS.DORICE F. NYAKI**

This is to certify that Ms. Dorice F. Nyaki from the College of Health Sciences, KNUST, has been accepted to conduct her research for the award of MPH (Health Education and Promotion) in three Communities within the Kumasi Metropolis.

**Her work is “Utilization of Maternal Health Care Services in Kumasi Metropolis.”**

I will be grateful if you could give her the required ethical clearance.

Thank you.

  
**DR. KWASI YEBOAH-AWUDZI**  
**METRO DIRECTOR OF HEALTH SERVICE**  
**KUMASI**