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COLLEGE OF HEALTH SCIENCE

ASSESSMENT OF THE QUALITY OF ANTENATAL CARE IN MANAGING ANAEMIA BASED ON GUIDELINES IN ASHAIMAN MUNICIPAL AND NINGO PRAMPRAM IN GREATER ACCRA

BY

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DECLARATION

I, Abdul-Nasir Abdul-Somad do hereby declare that apart from references to other people's work which have been duly acknowledged, this dissertation is as a result of my own independent work and has not been submitted for the award of any degree in any institution.

…… **.....**

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DEDICATION

I dedicate this work to the Almighty God who gave me the grace to complete this work successfully.

I also dedicate this study to my brother Alhaji Ibrahim Abdul Samed and my wife Yussif Memunatu.

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ABSTRACT

Background: The development of maternal health services does not warrant their use by women. Nor do the use of maternal health services warrant ideal results for women. A unique element of health care components which is spotlight to explain why women do either not access facilities at all or access the facilities late and experience an average unfavourable results, in spite of timely presentation, concerns the intangible notion of care.

Quality of care based on the definition of Institute of Medicine (IOM) is the degree to which health services for people and populations are enhanced by the probability of desired health results and are coherent with present professional understanding. The six dimensions of the quality of care with regards to the World Health Organization (WHO) are effectiveness, accessibility, equity, acceptability/patient-centeredness, safety, efficiency

Anaemia during a pregnancy is viewed as a crucial conundrum of preventive health worldwide. Records from WHO estimates that more than half of the world's pregnant women have a haemoglobin grade classified as anaemia (that is a haemoglobin level below 11.0g/dl)Iron deficiency may result in manifold adverse results for both mother and infant, including an increased risk of hemorrhage, sepsis, maternal mortality, perinatal mortality, and low birth weight.

The WHO recommends 120mg/day of iron (Fe) and 400Ug/day of folic acid (FA) for 3 months for the therapeutic treatment of anaemia in pregnancy (WHO, 2017).

General objective: To assess the quality of antenatal care with respect to anaemia management in pregnancy

Method: A mixed method of cross-sectional quantitative study design and an in-depth qualitative study design was used. Ashaiman Municipal and Ningo Prampram District are two of 26 districts in Greater Accra of Ghana.

Lot Quality Assurance Sampling (LQAS) technique was used in the study. The study covered 27% of ANC facilities in Ashaiman municipal and 38% of ANC health facilities in Ningo Prampram district. This was done to fulfill the LQAS by including a health facility in each sub-district as a supervisory area.

Results: 9 health facilities had at least a midwife, laboratory technician and auxiliary health staff at their facilities and 4 facilities had only a midwife and auxiliary staff.

Only 1 health facility had anaemia treatment framework at their maternity unit and none of the health facilities had anaemia treatment protocols at their ANC units.

The study also found out that only 3 health facilities out of the 13 provided anaemia clinics to address anaemia in pregnancy and only 6 health facilities initiated treatment for anaemic pregnant women. However, none of the health facilities provided the 3 months WHO recommended therapeutic treatment for the anaemic women at their health facilities.

Conclusion: Correction supplementation of iron deficiency anaemia as noted by the WHO is a primary focus of health care facilities. However, despite the high prevalence of anaemia in Ghana and its well documented effects, particularly on females and children, the quality of care in managing anaemia in pregnancy was poor in this study. There were lack of essential structural measures such as framework for anaemia management, anaemia treatment protocol, and referral register for management of anaemia. This structural measures are required to ensure better health

service delivery process and outcome. As a result the process and outcome measures for managing anaemia in pregnancy was also poorly rated.

Key Words: Quality of care, Anaemia, Treatment guidelines for anaemia, Antenatal care and Anaemia in pregnancy.

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LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Clinic
ANMs	Auxiliary Nurse Midwifes
dl	Decilitre
DNA	Deoxy ribonucleic acid
DO	Direct Observation
EPF	European Patient Forum
FA	Folic Acid
Fe	Iron/Fersolate
GDHS	Ghana Demographic Health Survey
GNHQS	Ghana National Health Quality Strategy
GSTG	Ghana Standard Treatment Guideline
Hb	Haemoglobin
HIV	Human Immunodeficiency Virus
IDA	Iron Deficiency Anaemia
IFA	Iron Folic Acid
IOM	Institute of Medicine
IPT	Intermittent Preventive Treatment
IQ	Intelligence Quotient
ITBNs	Insecticide Treated Bed Nets
LBW	Low Birth Weight
LQAS	Lot Quality Assurance Strategy

MDGs	Millennium Development Goals
mg	Milligram
NHIS	National Health Insurance Scheme
NHS	National Health Care Solution
NHSI	National Health Care Solution, Inc.
OECD	Organization for Economic Co-operation and Development
RE	Re-Examination
SA	Supervisory Area
SARA	Service Availability and Readiness Assessment
SDG	Sustainable Development Goal
STG	Standard treatment Guideline
Ug	Microgram
UNICEF	United Nations International Children's Emergency Fund
WAHU	West African Health Organization
WASH	Water Sanitation and Hygiene
WHO	World Health Organization

DEFINITION OF TERMS

Antenatal care	Care provided to pregnant women throughout pregnancy either by a Professional or a non-professional. The degree to which a service meets the expectation of an Individual or a group.
Anaemia	A status in which the number and size of red blood cells, or the haemoglobin concentration, falls below an established cut-off value, therefore impairing the capacity of the blood to transport oxygen around the body
Anaemia Clinics	Refers to the nutritional services provided at antenatal facilities for pregnant women with anaenia.
Quality antenatal care	Care provided to pregnant women throughout pregnancy. This should be compatible with the required standards.

CHAPTER ONE

INTRODUCTION

1.1 Background

The development of maternal health services does not warrant their use by women. Nor do the use of maternal health services warrant ideal results for women. A unique element of health care components which is spotlight to explain why women do either not access facilities at all or access the facilities late and experience an average unfavourable results, in spite of timely presentation, concerns the intangible notion of care (Willis et al., 2000).

Quality of care based on the definition of Institute of Medicine (IOM) is the degree to which health services for people and populations are enhanced by the probability of desired health results and are coherent with present professional understanding. The six dimensions of the quality of care with regards to the World Health Organization Organization (WHO) are effectiveness, accessibility, equity, acceptability/patient-centeredness, safety, efficiency (EPF, 2017).

The three-element strategy of Donabedian to evaluate the quality of care promotes improvement measurement. The three elements are structure, process and outcomes. Donabedian believed that structure measures influenced process measures, which in turn affected outcome measures as shown in figure 1 below. Each of the different types of measures has a different function in determining whether the improvement project has had the desired impact(NHSI (NHS Improvement) ACT Academy, 2008).

Structure measures reflect the attributes of the health service provider such as health staff to patient ratios and operating times of the health service. These are otherwise known as input measures (NHSI (NHS Improvement) ACT Academy, 2008).

Process measures represent the manner health systems and processes work to achieve the required results. Examples of process measures are the length of time a pregnant woman waits for antenatal clinic (ANC) service, if an anaemic pregnant woman gets certain norms of care or not, if staff washes their hands, recording of incidents and taking action on the findings and whether pregnant women with anaemia are kept informed of the delays in waiting for an appointment (NHSI (NHS Improvement) ACT Academy, 2008).

Measure of outcome demonstrate the impacts of care of health service on the anaemic pregnant female and also demonstrate the outcome of service enhancement job and whether it ultimately achieved the target(s) set. Examples of result measures include decreased mortality, decreased duration of stay, decreased hospital-acquired infections, negative events or damage, decreased emergency admissions and enhanced patient experience (NHSI (NHS Improvement) ACT Academy, 2008).

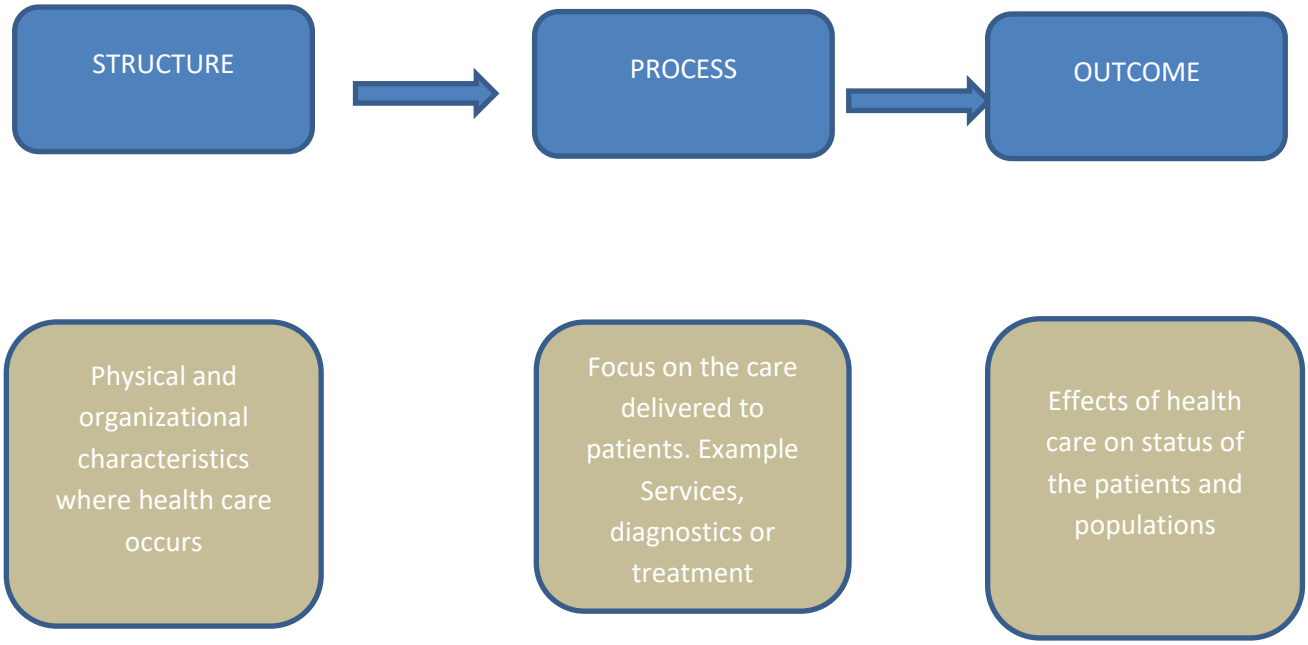

Figure 1: The Donabedian model for quality of care
Source: (NHSI (NHS Improvement) ACT Academy, 2008)

Anaemia is a status in which the number and size of red blood cells, or the haemoglobin concentration, falls below an established cut-off value, therefore impairing the capacity of the blood to transport oxygen around the body. Anaemia is an indicator of both poor nutrition and poor health(WHO, 2014). Haemoglobin is a variable, measured at health facilities in Ghana to determine anaemia status of people.

Anaemia during pregnancy is viewed as a crucial problem of preventive health worldwide. Records from WHO estimates that more than half of the world's pregnant women have a haemoglobin grade classified as anaemia (that is a haemoglobin level below 11.0g/dl) (Idowu et al, 2012).

There are various forms of anaemia. According to WHO/UNICEF, anaemia is an indicator of poor nutrition and bad health. Iron Deficiency Anaemia (IDA) remains the commonest form of anaemia (WHO/UNICEF, 2004).

During pregnancy, there is a variation of haemoglobin concentrations, at the beginning of a pregnancy, there is a normal decrease in haemoglobin concentrations followed by a slight increase towards the end of pregnancy (Osungbade et al, 2015). Iron deficiency may result in manifold adverse results for both mother and infant, including an increased risk of hemorrhage, sepsis, maternal mortality, perinatal mortality, and low birth weight (WHO, 2017).The most usual cause of anaemia worldwide is iron deficiency, leading from lengthy negative iron balance, caused by inadequate dietary iron intake or absorption, increased needs for iron during pregnancy or growth periods, and increased iron losses as a result of menstruation and helminth (intestinal worms) infestation (WHO, 2014). Other significant determinants of anaemia worldwide comprise infections, another dietary deficiencies (peculiarly folate and vitamins B12, A and C) and inherited conditions (adding sickle cell condition, thalassaemia – an inherited blood condition – and degenerative inflammation) (WHO, 2014). Anaemia is also frequent in complicated malaria and may be connected with minor infection of bacteria. Anaemia is a peculiarly crucial ramification of complicated malaria in pregnant women. In control and high transmission areas, pregnant women, peculiarly females who conceived first time in their life, are vulnerable to complicated anaemia (WHO, 2014).

The WHO recommends 120mg/day of iron (Fe) and 400Ug/day of folic acid (FA) for 3 months for the therapeutic treatment of anaemia in pregnancy (WHO, 2017).

1.2 Problem Statement

The World Health Organization has made patient safety a worldwide priority. WHO estimates that one in ten patients is damaged by avoidable mistakes with immediate health effects such as pain, disability, physical and psychological trauma, and death. The projected financial cost of hazardous care is about 10 percent of the total health expenditure of a country. The WHO orientations call upon all governments to take steps to ensure access to high quality, safe, efficient health care and services within a sustainable development approach (Langlois, 2015).

According to the Economic Co-operation and Development Organization (OECD) “One of the most important developments in the past decade has been a popular awaking to problems of quality. In fact, across OECD countries, there is a large and expanding bank of evidence of serious shortcomings in quality that result in unnecessary deaths, disability, and poor health, and that add to cost” (Langlois, 2015).

A wide strategy to quality of maternity care has gained comparatively slight attention. Throughout history, the main emphasis of maternal health services has been to decrease mortality due to maternal factors by providing health facility-based services. Perhaps the efficacy of this strategy in advanced and developing nations has detracted from the wider problems of quality of care that influence women's health (Hulton, Matthews, & Stones, 2000).

Even belated presentation of issues by pregnant women in case of complexity, in addition to poor quality of care, leads to higher rates of perinatal and maternal mortality and serious morbidness (Hulton et al., 2000).

According to the World Health Organization (WHO), anaemia affects half a billion women of reproductive age worldwide. In 2011, 29 % (496 million) of non-pregnant and 38% (32 million) of pregnant women aged 15-49 years were anaemic. South Asia and Central and West Africa bear the most of the burden of anaemia cases (Kumar, 2015). The prevalence of anaemia among pregnant women in Ghana is 45% as noted by the 2014 Ghana Demographic Health Survey (GDHS, 2014).

Due to the high prevalence of anaemia in Ghana, the study was required to assessthe quality of care provided at antenatal health facilities based on guidelines in the Ashaiman Municipal and Ningo Prampram District.

1.3 Research Questions

1.3.1 Main Research Question

What is the quality of care offered to pregnant women with anaemia at Ashaiman municipal and Ningo Prampram health facilities?

1.3.2 Specific Research Questions

1. What is the quality of care delivered to pregnant women with anaemia at Ashaiman municipal and Ningo Prampram health facilities?
2. Are Care provided based on agreed standards of treatment of anaemia in pregnancy?
3. Are there management structures that ensure the review and treatment of anaemia at health facilities?
4. Are healthcare providers trained on anaemia treatment protocol?
5. Is there an effective therapeutic supplementation for pregnant women with anaemia at health facilities?

1.4 Conceptual Framework

The definition of the quality of care by the Institute of Medicine in chapter 1.1 paragraph two (2) provide the foundation for the creation of an institutional framework for the quality assessment of maternal health. In this context, the definition enables quality to be divided into two (2) constituent components (Williams & Mpembeni, 2015):

1) Quality of care provided within the health organization
2) The experience of care quality by users

The above two (2) constituents and their components are interrelated in a framework as shown in figure 2.The framework in figure 2 below describes six (6) elements linked to care provision which includes Physical and Human resources, System of Referral, Maternity System Information, Appropriate use of technologies, Internationally Recognized good practices and Management of emergencies (Hulton et al., 2000).

Physical and human resources includes the amount and caliber of non-health and health providers hired to provide and support healthcare services and the overall healthcare infrastructure, including water and electricity supply (Kabene, Orchard, Howard, Soriano, & Leduc, 2014).

Referral system consists of transport accessibility and procedures of require referrals of instances. It is essential that reference protocols for health facilities are defined with inputs and commitment from executives at all levels within the referral system (Hulton et al., 2000).

Maternity Information Systems relates to the existence of official procedures to classify and then record health problems by main cause (Hulton et al., 2000).

Appropriate technology relates to a technique or processes that are scientifically sound, that can be adjusted to local demands and satisfactory for those who apply it or for whom it is

applied, and that are preserved and used with funds that the local society can provide (Ren et al., 2015).

A woman experience of care from figure 2 can be split into four (4) wide fields ; connection with and experience of human and physical resources ; cognition (that's the extent she knows what's happening to her and why) ; Respect, Dignity and Equality (that is the compliments, self-worth and equity of care a patient gets throughout her stay at the health facility) ; and lastly Emotional support (the excited support a patient gets when she has an issue) (Hulton et al., 2000).

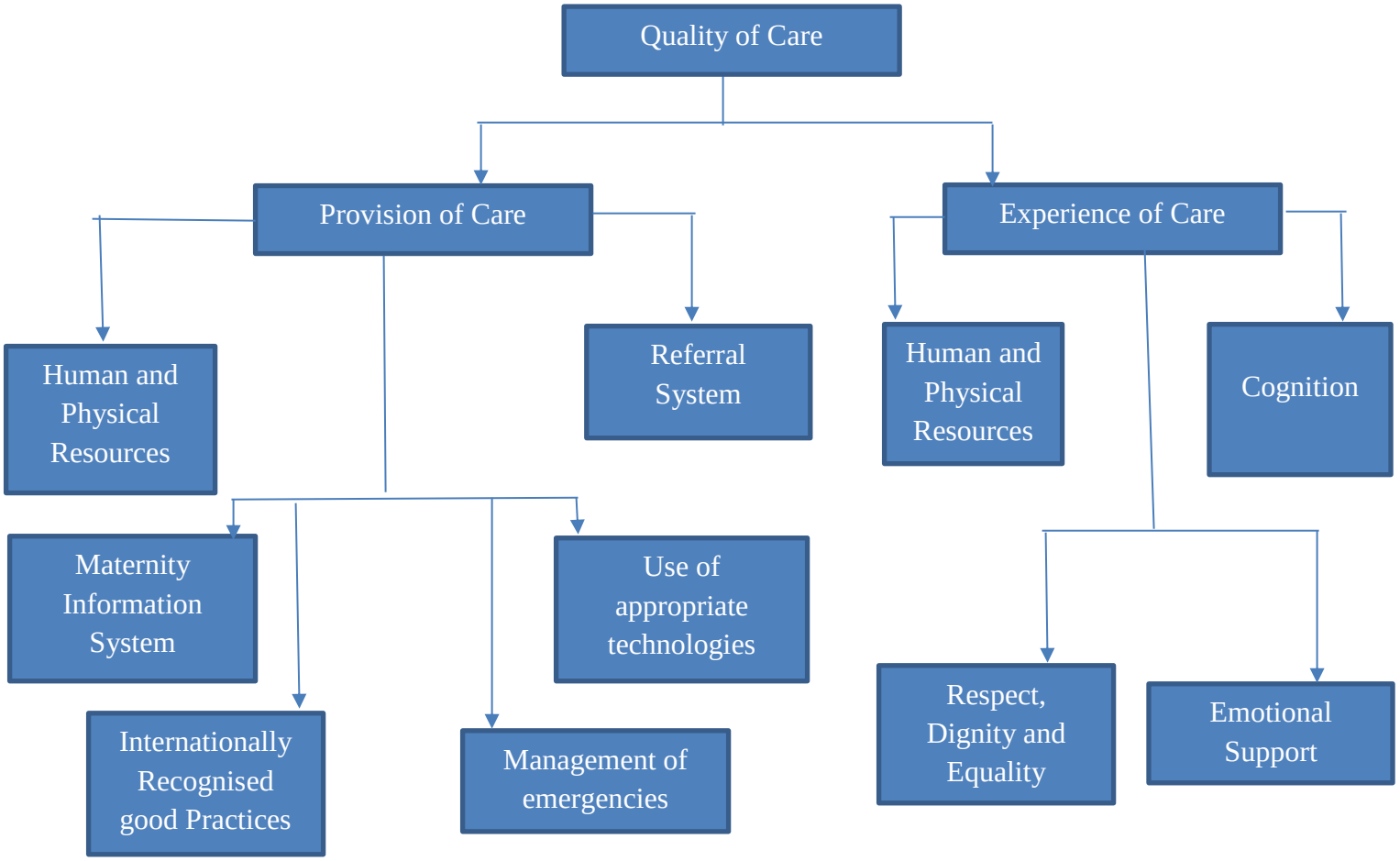

Figure 2: Framework for assessing quality of care of health facilities adapted from Hulton et al (2000)

The framework in figure 2 shows that quality of care is influenced by provision of care and the patient experience of receiving health care. The provision of care is affected by six comprising of Physical and Human resources, System of Referral, Maternity System Information, Appropriate use of technologies, Internationally Recognized good practices and Management of emergencies. Whiles experience of care is affected by four elements comprising of human and physical resources, cognition, Respect, Dignity and Equality and Emotional support.

1.6 Justification

The World Health Organization noted that even in countries where health systems are well formulated and resourced, there is bare evidence that quality remains an important concern, with expected outcomes not predictably achieved and with wide variations in standards of health-care delivery within and between health-care systems (Lukacs & Bhadra, 2012).

As a consequence, many agencies pay close alertness to the strategic significance of quality of care in optimizing the effectiveness of a country's health care system.

The West African Health Organization (WAHO) in its strategic plan 2009-2013 suggested improving the quality of healthcare systems (Langlois, 2015).

Based on the high prevalence of anaemia and its multiple adverse outcomes throughout the world, the World Health Organization in its consortium meeting with other agencies in 1992 noted that Iron deficiency, and specifically iron deficiency anaemia, remains one of the most severe and important nutritional deficiencies in the world today (WHO, 2017).

In Ghana, all pregnant women that visits antenatal services are offered Iron and Folic Acid (IFA) supplementation. However, the disparity between elevated antenatal care, elevated

incidence of anaemia during pregnancy, elevated maternal mortality and morbidity keep doubts about the health care quality rendered and, in particular, the handling of anaemia during pregnancy at antennal health facilities in Ghana (Urassa et al, 2002).

This research assessed the quality of care rendered by antenatal health facilities for managing anaemia. Examining the quality of care is a crucial step towards realizing the present disruptions in the country health system (GNHQS 2016).

The results of this study as well as its recommendations will help health facilities and other stakeholders to improve the quality of care, effectively investigate and manage anaemia in pregnancy, and therefore reduce the burden of the disease in Ghana.

1.7 Objectives

Main Objective: To evaluate antenatal care quality with respect to anaemia management in pregnancy.

Specific Objectives:

1. To assess the quality of care with respect to the element of structure of health facilities relevant for anaemia management during pregnancy
2. To assess the quality of care with respect to the elements of process and outcome of anaemia management by health facilities
3. To asses clients experience of care at health facilities in management of anaemia duringpregnancy
4. To explore factors associated with anaemia management during pregnancy at health facilities

CHAPTER TWO

LITERATURE REVIEW

The chapter presents a review of literature of quality of care as a public health concern, methods and strategies use in assessment of quality of care and strategies used in the prevention and management of anaemia during pregnancy and previous studies on quality of care and anaemia management.

2.1 Quality of Care as Public Health Concern

Health care quality is the level to which health care treatments are in conformity with standards and are safe, efficient, effective, timely, equitable, accessible, client-centered, employ appropriate technology and lead in positive health outcomes, rendered by endowed personnel in an enabling surroundings (Asiedu, 2018).

Quality integrated among a greater worldwide campaign for a general health care extent is highlighted in the Sustainable Developmental Goal (SDG) 3, which seeks to safeguard wellness life and upgrade welfare for all ages. SDG 3 specifically expresses the aim below: *Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all* (GNHQS 2016).

For the Ghanaian setting, the Health care Sector 2014-2017 Development Medium-Term Plan tries to cover health service quality delivery (GNHQS 2016).

The Ghana National Health Quality Strategy (GNHQS) 2016 mentioned that feeble links remain between clinical care and public health at the district level, and ambiguous oversight

and accountability systems within the health system have resulted in fragmentation in quality approaches with limited impact on patient experience and health outcomes. It also noted that health sector agencies work separately without any coordination, and teaching hospitals and private sector actors have largely been on the fringes, with niggling involvement and little expectation of accountability (GNHQS 2016).

2.2 Goal of the Ghana National Health Quality Strategy

The objective of the National Health Quality Strategy of Ghana is to unendingly better the health status and well-being of Ghanaians by the advancement of a superior structured health scheme that positions patients and communities in the midst of health care quality (Asiedu, 2018).

The specific objectives of the Ghana health quality strategy are to:

- Unceasingly better outcomes for health in the health of the population priorities areas
- Formulate an interconnected quality healthcare organization in the area of effective planning, quality improvement and quality control adding the improve application of statistics for making of informed decision
- Enrich experiences of patients through forthcoming to the health demands and ambitions of the diseased person and local community (GNHQS 2016)

2.3 Methods of Assessing Quality of Care

The assessment techniques used to evaluate quality of care should be valid, viable and precise to reflect the performance of health workers (Cardemil, Gilroy, Callaghan-Koru, Nsona, & Bryce, 2012).

2.3.1 Observation

Techniques for observation are crucial in the evaluation of fundamental health quality factors related to equipment condition, crowding, cleanliness, customer relationships. It is an efficient way to verify the elements of care outlined by providers and exit (patient) interviews (Hulton et al., 2000). Observational methods have the benefit that information represents an action or interaction on its own rather than someone providing and recalling what occurred (Hulton et al., 2000). The disadvantage however, is that health providers are incline to be influenced by the presence of the observers that can lead to the greatest behavioral bias (Hulton et al., 2000).

2.3.1a Observation of Clinical encounter with re-examination

Direct observation (DO) with re-examination (RE) by a higher-level qualified clinician is a prevalent and well-regarded technique for assessing the clinical efficiency of health employees at first-level health facilities. Direct observation with re-examination includes independent verification of the case by a qualified health personnel (Cardemil et al., 2012).

2.3.1b Observation of clinical encounter

Direct observation allows the health worker to assess clinical instances in the presence of a silent observer. One disadvantage of direct observation is the influence of an observer, known as the Hawthorne effect, which can introduce a positive bias in quality of care assessments (Cardemil et al., 2012).

2.3.2 Facility Records

Records of a facility can be split into two (2) groupings: information accessible in the general public sector (e.g. annual accounts and annual reports) and primary documents, data regularly gathered by health facilities (e.g. registers of admissions) (Hulton et al., 2000).

2.3.2a Register review

Register review is less time-consuming and resource-intensive than direct observation and may be an optimal proxy for clinical behavior. However, records of health staffs are often incomplete, subject to reporting bias (for instance, health staffs can only record uncomplicated diseases they can handle and not record others) and may only be feasible in environments with high-level health staffs (Cardemil et al., 2012).

2.3.3 Provider Interviews

Provider interviews are organized and structured on an entire spectrum of health care providers that can be employed to acquire data at variety of impressionistic, theoretical, factual, and substantive issues. One disadvantage of provider interviewing is that, they often show reactions that represent idealized behaviour. That's how many health providers react to whatever they know the answer is, rather than precise depiction of current services of health delivery (Hulton et al., 2000).

2.3.4 Exit Interviews

Exit interviews refers to structured and semi-structured interviews with clients that assessed care at a heath facility at the time of leaving the health facility. Clients can't expressed themselves as frankly about their care experiences as they might at home (Hulton et al., 2000).

2.3.5 Case Notes

Case notes when used in combination with an exit interview, it can be helpful to pierce incidents together. They can assist to differentiate between bad leadership and bad record keeping (Hulton et al., 2000).

2.3.6 Community Survey

Community surveys refers to household surveys intended to generate patient's views and data about their care experience. Community surveys require too much time and resources (Hulton et al., 2000). Community surveys can provide some distinctive insights into community behaviour, and can also be used indirectly to acquire data that is hard to acquire directly from health providers (Hulton et al., 2000). It enables data to be collected on previous happenings and can include particular inquiries pertaining to many elements of quality of care, from social relationships and health service delays to the use of particular processes (Hulton et al., 2000). If the surveys cover a sufficiently big region, it can furnish data for a variety of organizations (government, philanthropic, non-governmental and private) (Hulton et al., 2000).

2.3.7 Focus Groups and In-depth Interviews

Focus group and in-depth interviews can be used to capture the complicated emotions and views of patients or the underlying energy status dynamics (Hulton et al., 2000).

2.4 Lot Quality Assurance Sampling (LQAS)

Lot Quality Assurance Sampling is an analysis method that can be used locally to identify health administrative units that fail to reach an established performance benchmark for an

indicator and hence support local management decision making by sharing information across different health administrative units (Valadez, 2010).

A lot in health systems can be defined as a catchment area or community of a health unit or health worker. A lot relates to a supervisory area (SA) in these environments. The manufacturing unit is the collection of health employees below the manager who oversees the SA. The aim of employing LQAS is to evaluate whether a particular SA achieves a preset target measure and to analyze the output of district SAs (Valadez, 2010).

Valadez clarifies that to employ LQAS, system health managers require to describe two boundaries. The first is the coverage measure, which is the ratio of the community that the health providers should cover during a preset time. The coverage measure should rise over a period as the project advances and health services improves. And secondly, he noted that, in community health terms, a threshold could be end of year coverage target and that the lower threshold is an intolerably low level of coverage that should make managers unhappy and try to find out the issues engendering the missed health service delivery and solve it with a adjusted commitment of time and resources (Valadez, 2010).

Valadez stated that two features made LQAS appealing to evaluators of the health scheme. First, a manager requires a tiny sample to approximate whether the performance of a health provider has reached a preset level. On such tiny samplings, information gathering does not compete for time to provide health services. Secondly, the sample processes and analysis are rather easy (Valadez, 2010).

LQAS was initially designed to be used by factory managers, hence a minimally educated person could carry out these procedures. Health managers are mostly to a greater extent trained than the previous year's managers (Valadez, 2010).

In specific, the above two features establish LQAS useful as a functional management instrument for tracking and evaluating health facilities that attempt to involve members of a community in leadership (Valadez, 2010).

The increasing interest in applying LQAS was recorded in a review of 34 LQAS apps evaluating antenatal care, oral rehydration therapy, immunization coverage, growth tracking, disease incidence, family planning and health worker's technical abilities and expertise. LQAS was also used to evaluate the outreach of community health employees, precision of health records and training programmes for health employees (Valadez, 2010).

This study used LQAS to assessed quality of care in managing anaemia in pregnancy at the Ashaiman Municipal and Ningo Prampram District.

2.5 Anaemia as a Public Health Concern

Anaemia prevention and treatment is a major intervention and implemented in many countries to reduce the incidence and prevalence of anaemia globally. There are many guidelines and researches on the treatment of anaemia. However, the quality of treatment varies from country to country and facility to facility.

Table 1 below shows that a prevalence of 40% or more of anaemia is a severe public health significance. Whiles a prevalence of anaemia of 20%-39.9% , 5%-19.9% and 4.9% or below are of moderate, mild and normal public health significance respectively (WHO, 2017).

World Health Organization (WHO) noted that Iron deficiency anaemia accounts for most of the anaemia in deprived settings. However, several other possible causes should be noted. These other causes include malaria hemolysis; deficiency in glucose-6-phosphate dehydrogenase; congenital hereditary deficiencies in haemoglobin synthesis; and deficiencies in other nutrients, such as vitamins A, B12, and C, and folic acid (WHO, 2017).

Table 1: WHO proposed classification of public health significance of anaemia

Category of public health significance	Prevalence of anaemia (%)
Severe	> or = 40
Moderate	20.0 – 39.9
Mild	5.0 – 19.9
Normal	< or = 4.9

Source: (WHO, 2017)

Blood loss such as that connected with schistosomiasis, hookworm infestation, childbirth hemorrhage, and trauma can lead in both iron deficiency and anaemia. Like vitamin A deficiency, inhibition of iron's ordinary metabolism can lead to anaemia (WHO, 2017).

Due to the high prevalence and multiple adverse outcomes of anaemia throughout the world. The World Health Organization in its consortium meeting with other agencies in 1992, noted that Iron deficiency, and specifically iron deficiency anaemia, remains one of the most severe and important nutritional deficiencies in the world (WHO, 2017).

Because of the public health importance of anaemia, all heads of states of WHO representatives, endorsed a declaration to work and reduce iron deficiency anaemia (WHO, 2017).

Following the declaration, a guide for programme managers was developed based on WHO consultations in 1993 to reduce iron deficiency anaemia. Key recommendations were made for governments to implement and among them are as follows (WHO, 2017):

1. Take suitable research to gather or modify data on incidence and rigorousness from anaemia within different age classes and along sex in the country's main bionomical partitions and socio-economic classes; findings ought to be made accessible quickly and employed for reasons for support and programme designing and tracking.
2. Devise and enforce, as a component of the National nutrition plan of action, an iron deficiency prevention programme based on a mixture of nutritional enhancement, dietary enrichment (where appropriate) and iron supplementation; preventive health activities incorporated into maternal and child health and main health programmes should also be included in the plan.
3. Develop suitable support operations, e.g. human resources development (training of programme executives, industry experts, promotion agents and laboratory and field employees, each for their corresponding roles), advocacy, communication, education, information, advance studies and furnish a minimal equipment needed for such operations, including those for anaemia evaluation.

Most countries including Ghana have implemented these recommendations. However, the World Health Organization noted that these recommendations are neither systematically enforced nor properly controlled or assessed (WHO, 2017).

A study in India which evaluated anaemia management among Auxiliary Nurse Midwifes (ANMs) noted that 64% of them had not underwent training on anaemia management. Also the study found out that 41% of the ANMs could not distinguished rightly the type of anaemia cases requiring referrals (Kumar, 2015).

Also, many studies recently in Ghana and globally are focused on identifying principal factors that causes anaemia in pregnancy, these project would focused on assessing the quality of anaemia management in pregnancy in Ashaiman and Ningo Prampram.

2.5.1 Iron Deficiency

Iron deficiency is the most common nutritional deficiency in the globe. Globally, deficiency due to iron is estimated to affect 1.25 billion people (Chritsian, 2006).

Iron deficiency defined as a condition in which there are no mobilizable iron stores and signs of a compromised supply of iron to tissues, including the erythron, are observed. The more severe levels of iron deficiency are related with anaemia. Deficiency of Iron impacts a substantial contribution, and a great deal an absolute majority among populations within almost every country in the world. Projects for the control of iron deficiency, peculiarly supplementation of Iron for pregnant women, were implemented in ninety out of one hundred and twelve nations that provided WHO data in 1992 (WHO, 2017).

2.5.2 Iron Deficiency Anaemia

Iron deficiency anaemia is seen as a subset of iron deficiency. Iron deficiency reflects the extreme reduced ending of the iron deficiency dispersion (WHO, 2017).

Because anaemia is the most prevalent indicator used to screen for iron deficiency, the terms anaemia, iron deficiency, and iron deficiency anaemia are most frequently used interchangeably. There are, however, mild-to-moderate forms of iron deficiency in which, although anaemia is absent, and tissues are still functionally impaired (WHO, 2017).

However, it should be observed that the magnitude of the convergence amongst deficiency of Iron and anaemia due to Iron deficiency differs significantly from group to group and by age and gender group (WHO, 2017).

The magnitude of convergence amongst complete anaemia and anaemia due to Iron deficiency levels also differs depending on the group monitored. The biggest convergence happens in groups where nutritional absorption of Iron is low or loss of blood is prevalent owing to worm plague (WHO, 2017).

The World Health Organization observed that iron deficiency anaemia during pregnancy

- increases perinatal risks for mothers and neonates; and
- Increases overall infant mortality (WHO, 2017)

There are two recognized factors that add to the growth of iron deficiency anaemia (IDA) during pregnancy; the first is the iron stores of the woman at the moment of conception and the second is the quantity of iron absorbed during gestation (Osungbade & Oladunjoye, 2012).

2.5.3 Iron Requirements

Iron is essential for almost all living organisms. It participates in oxidative and reductive processes as part of redox enzymes and thus plays an essential role in oxidative energy production. Iron is also involved in oxygen transport as part of the heme molecule (WHO, 2017).

Iron status can be classified into iron deficiency anaemia, iron deficiency without anaemia, ordinary status of Iron with variable quantities of reposited iron, and lastly overload of Iron which can damage organ when serious. Deficiency of Iron results from a long-term adverse iron equilibrium (WHO, 2017).

2.5.4 IFA supplementation to prevent and treat IDA

It is essential to distinguish among supplementation for control of iron anaemia due to Iron deficiency (preventive supplementation) and supplementation for the correction of anaemia due to Iron deficiency (supplementation for correction). Correction supplementation are a primarily component of the hospital care system (WHO, 2017).

All pregnant women (Preventive/Universal supplementation) should receive 60mg and 400Ug daily of iron and folic acid respectively from the second base of pregnancy to restrain anaemia as a result of iron deficiency. But in a population with a serious prevalence of anaemia (greater than 40%) as showed in table 1 above, it is suggested that iron supplementation start during the early stages of pregnancy (WHO, 2017).

However, the quantity of iron supplement suggested by the WHO to correct iron deficiency anaemia for pregnant women is 120mg/day for 3 months whiles folic acid is unchanged from the preventive/universal supplementation as 400Ug (WHO, 2017).

The Ghana standard treatment guideline recommends 200mg of elemental iron daily (65mg of iron hourly) and 5mg of folic acid for treatment of anaemia for pregnant women (GSTG, 2017).

The Ghana standard treatment guideline recommends that pregnant women with anaemia whose Hb levels does not improve after 2 weeks of supplementation should be referred along with those with severe anaemia which is define as Hb level below 7g/d (GSTG, 2017).

A study in Pakistan which evaluated the prescription rate of health providers in managing anaemia in children noted that 81.1% of Pediatrics registered at OPD's were anaemic and only 11.4% of them were on anaemia therapy, prescribed by their health provider. Though majority of the health workers evaluated on their knowledge on IDA 93.4% replied the questions about IDA, its treatment and prevention in conformity with WHO guideline. But when parents were evaluated regarding IDA, its effects and prevention, only 13.7% were able to respond befittingly (Sohaila et al., 2016).

2.5.5 Etiology of Iron Deficiency Anaemia

Regrettably, an etiology of anaemia is intricate in underdeveloped countries than in modernized countries. A rigorous list of anaemia causes in underdeveloped countries includes: high consumption of absorption inhibitors, blood loss due to worm plague, insufficient dietary intake, poor iron bioavailability due to low consumption of absorption enhancers and increased requirements at certain stages of the life cycle, particularly during pregnancy and rapid early childhood and adolescent growth, (Dwumfour-Asare & Kwapong, 2013).

Iron deficiency is responsible for about 95% of anaemic pregnancy in Ghana usually due to inadequate dietary intake, previous pregnancies or normal loss of iron in blood during menses, and interference of iron stores by parasites. In the meantime, infections are powerfully linked up to numerous and related at risk components, including poverty, exposure to contaminated water and soil, poor hygiene practices, especially in rural communities lacking improved water, sanitation and hygiene infrastructure. In West Africa, these causes of pregnancy anaemia are also prevalent in relation to pica. Pica refers to eating of the unique form of mud (soil) as a consequence of lusting for the soil. Pica is increasingly associated with danger of becoming anaemic (Dwumfour-Asare & Kwapong, 2013).

Among local Ghanaians, serving male spouses with alimentary meals denies pregnant women nutritious part of meals and this is practiced intentionally to please male spouses (Dwumfour-Asare & Kwapong, 2013).

However, some studies report that some women do not follow health advice. A study in Tanzania which evaluated why females do not follow medical advice on maternal referrals, noted that, the refusal of the females in following the health advice was determined by closed family members. The study noted that the main reasons for refusal of the health providers advice included disbelieving the health provider's advice, mentioning former successful pregnancies despite referral advice among others (Pembe et al., 2017).

2.5.6 Functional and Health Consequences of Iron Deficiency Anaemia

Firstly, cognitive performance, behaviour, and physical growth of infants, preschool and school-aged children are affected by deficiency of anaemia. Even animals and humans with

iron-deficit have marred gastrointestinal issues and modified hormone output and metabolic process patterns (WHO, 2017).

The hormone output and metabolic process patterns include neurochemicals and thyroid secretions that are connected with neurologic, skeletal, and regulatory-temperature changes that restrict the ability of people subjected to coldness to preserve temperature of their body (WHO, 2017).

Furthermore, replication and repair of DNA involves iron-dependent enzymes (WHO, 2017).

The World Health Organization noted that adolescent females who had their diet enriched by iron experienced fewer tired, their performance increased at school and their humour developed (WHO, 2017).

Neurologic failure among little kids, teenagers and grownups as specified by measurements of electrophysiology, was also recorded as it is interrelated with deficiency of Iron (WHO, 2017).

Kids found to have mild anaemia immediately after birth attained reduced Quotient Intelligence (IQ) exams rating and cognitive achievement when entering college as compared with kids born without anaemia in Costa Rica. The finding arose yet whilst the exams was checked for an extensive set of socioeconomic measures. Similar outcome has lately been verified in Chile (WHO, 2017). In Thailand, on the other side, the bad achievement in a local language as well as mathematical testing kids of haemoglobin low concentrations did not overturned anaemia by supplementation of Iron(WHO, 2017).

Deficiency of Iron can, thus affect cognitive efficiency at different phases of one's development (WHO, 2017).

The impacts of IDA in new bornes and early phases of childhood are unlikely to be reversed by IFA treatment. An approximately 10-20 percent of pre-school kids in advanced nations and an estimated 30-80 percent in underdeveloped nations have anaemia by the age 1 year. The anaemic young kids will postponed brain receptor growth and, by the time they attain school going age, their performance in language abilities are bad as well as coordination and motor skills which is equal to an IQ deficit of 5 to 10 points. (WHO, 2017).

Secondly, iron deficiency impacts status of immunity and enhanced sicknesses from diseases along groups of ages. Infectious disease morbidity is boosted in iron-deficient communities due to the unfavourable burden of iron deficiency on the immune system (WHO, 2017).

Thirdly, Iron deficiency impacts muscle energy use sources and the strength ability as well as job efficiency of all age groups of workers. A linear connection has been noted between iron deficiency and agricultural work ability in Colombia, Guatemala, Indonesia, Kenya, and Sri Lanka. Working capability of the workers returned quickly after supplementation of iron to normal (WHO, 2017).

Furthermore, supplementation of iron improved working performances among highway employees and rubber tappers in Indonesia, tea pickers in Indonesia and Sri Lanka, farm employees in India, Guatemala and Colombia, and industrial employees in Kenya, China and other nations (WHO, 2017).

In China Anaemic adult females were compared with anaemic free adult female employees and were found to be 15 percent fewer effective in carrying out their jobs. The anaemic adult females were found to exhaust 6 percent energy less on their jobs, they also had 4 percent reduced maximum job ability, and had 12 percent reduced general productivity compared to concentrations attained after 4 months of iron therapy with anaemia (WHO, 2017).

Likewise, non-anaemic iron-deficient female runners considerably enhanced their strength and physical performance after iron supplementation likened to those of a placebo control group (WHO, 2017).

Iron deficiency in grown females increases maternal mortality, loss of prenatal and perinatal infants, and prematurity. About 40% of all perinatal maternal deaths are associated with anaemia. Favourable outcomes of pregnancy occur 30-45 percent fewer in women that are anaemic, and their new babies have less than half of iron normal stores fewer than favourable outcome babies. Babies with insufficient iron store require more iron than milk from breastmilk can supply. Furthermore, if iron deficiency caused by pregnancy is not fixed, women and their babies experience all the implications mentioned above (WHO, 2017).

2.5.7 Strategies for Combating Iron Deficiency and Anaemia

Anaemia during maternity requires instant aid by implementing policies which comprehensively can combat the maternal anaemia (Dwumfour-Asare & Kwapong, 2013).

Various projects are known to be efficacious in embedded kinds, ranging from iron nutrient supplements to infection control (particularly malaria and worms) and impacting beneficial views and procedures. An example of such interventions are Preventive Intermittent

Treatment (IPT) against malaria, application of supplementation of iron for a defined group of people, use of insecticide-treated bed nets and Intermittent bed nets, food fortification, nutrition education promotion of exclusive breast feeding, social marketing for enhanced dietary iron, education and awareness-raising, efficient deworming, and enhanced water supply and sanitation (Dwumfour-Asare & Kwapong, 2013).

2.6 Quality of care Measures

Measurement of quality in health care is the procedure of following information to assess providers of health care' efficiency opposed to defined standards of quality of care. Health care quality interventions can be of several forms. Health care quality measures assess care throughout the broad spectrum of phases of care of health. Health quality measures is a process of bettering quality health care (Morris & Bailey, 2014).

Quality measures are usually categorized into four wide classifications: 1) structure, 2) process, 3) outcome, and 4) patient experience (Morris & Bailey, 2014).

2.6.1 Structure Measures

Measures of structural evaluates the health care settings resources and whether environments of health care are adequate of delivering health care services. Measures of structure include the human power of health services and the capableness's of the employees, policy of condition for care provided and the handling of the health facility resources (Morris & Bailey, 2014).

Basic reasons for using structural interventions are two. Firstly, the features of healthcare environments can considerably change the care of quality. Secondly, healthcare services that fulfill certain requirements have a benefit when offering high-quality care (Morris & Bailey,

2014). While measures of structure provide essential data about the ability of a provider, it essentially have constraints. Particularly, measures of structure provides a piece of the complete care picture. For instance, a health facility has the authority to execute certain services does not suppose these services actually happen, or whether it capture the services enhance the health of the patient. Specifically, the reason that a facility has the power of a structural measure does not end in the facility discharging care which increases health of patients (Morris & Bailey, 2014).

A study in rural Tanzania reported the availability of structural measures such as equipment and supplies in health facilities and also the availability of IFA tablets in all health facilities except in one clinic (Urassa et al, 2002). The study noted a need of urgency of improving the measures of structural and process quality of antenatal care, which can lead a helpful control programme (Urassa et al, 2002).

Similarly, another study also in Tanzania also reported the availability of structural measures such a BP machines, stethoscopes, weighing scales, HIV test kits, folic acid, mebendazole and SP drugs. However, the research found that there was a serious deficit of antenatal care suppliers in all clinics and health facilities (Nyamtema AS, Bartsch-de Jong A, Urassa DP, Hagen JP, & van Roosmalen J., 2012).

A Bolivian study which assessed the effectiveness of anaemia prevention and control noted that copies of anaemia prevention and therapy standards and protocols were not accessible in all health facilities and as one of the variables influencing the anaemia prevention and control programme (Freire, Samuel G.Kahn, & L., 2003).

2.6.2 Process Measures

Measures of process refers to the degree to which health care facilities systematically provide sick people with particular services that are consistent with recommended care rules. These steps are usually associated with processes or treatments that are known to enhance health status or prevent future ramifications or health situations (Morris & Bailey, 2014).

Process measures provides health providers with useful, actionable response and an unambiguous ways of enhancing their efficiency. Yet, over-reliance on measures of process to monitor efficiency and distribute health provider dividends can be difficult (Morris & Bailey, 2014).

Holding measures of process which are well-designed is essential and sets the distinction between offerings suggested care/checking the boxes out. While measures of process usually consider sector norms of care, they don't anyways systematically show results (Morris & Bailey, 2014).

Measures of process which are good should always have a reliable proof that can associate a process with enhanced results (Morris & Bailey, 2014).

A review of a Tanzanian study shows that just 4 percent of pregnant women with anaemia who were severely anaemic had required counseling and the average proportion of anaemic women who had appropriate counseling were 9.78%. The study also found out that 8-10 percent of pregnant women discovered anaemic during routine testing had any action on management of anaemia prescribed by health providers, as with only 3-4 percent of all pregnant women with recorded haemoglobin results in the facility register. The authors of

the study cast doubt on the performance of antenatal programme for pregnancy anaemia management in Tanzania (D.P. et al., 2002).

Another study in Colombo district of Sri Lanka reported that among the pregnant women who were checked at an ANC, 72% were tested for anaemia and only 29% of them were communicated to of the signs of anaemia. The study also reported that 83% of pregnant women were not informed of their haemoglobin level (Prathapan, Lindmark, Fonseka, Lokubalasooriya, & Prathapan, 2011).

2.6.3 Outcome Measures

Measures of outcome evaluates the health of patients by the health care they encountered. Specifically, measures of outcome examine the impacts care has had on the sick person, status of sick person, and sick person functions, albeit designed or unintended. Outcome measures also examine whether or not care objectives are achieved (Morris & Bailey, 2014).

Measures of outcome frequently contain patient data on how satisfied they are with the health facilities they have experienced, but these measures do not assess the full extent of patient experience (Morris & Bailey, 2014).

Despite measures of outcome are significant to the stakeholders of health services, their purpose is limited by the fact that formulating outcome measures that are genuinely meaningful can be quite difficult (Morris & Bailey, 2014). Key challenges to formulating meaningful outcome measures include:

1) Outcome measures needs elaborate data available in records of health facility and costly as well as difficult to acquire

2) The challenge of collecting adequate data to furnish profitable information about a specific results (Morris & Bailey, 2014)

A Tanzanian study reported poor quality of anaemia management and suggested that it may demonstrate a usually substandard quality of health care in other significant aspects of antenatal health facilities (Urassa et al, 2002).

Another study in rural Ethiopia reported that the general performance in managing anaemia in pregnancy was weak in the health facilities. The study noted that, routine prophylaxis or well-known pregnancy-related risk factors such as anaemia was only prescribed to a small proportion of the study subjects (Mekonnen, Berheto, Ololo, & Tafese, 2017).

2.6.4 Patients Experience Measures

Measures of experience by patients provide response on care experience of patients who encountered health services, in addition to social aspects of care. But measures of patience experience evaluate numerous other characteristics of health care, grading from the clarity and accessibility of data provided by health personnel, to whether patients are inform about test results, to how patients get urgent care appointments (Morris & Bailey, 2014).

Research shows that favourable patient experiences have a well-documented connection to the quality of health care: Patients with better care experiences are often more involved in their care, more committed to therapy plans and more receptive to health advice. (Morris & Bailey, 2014).

A Tanzanian study reported that majority of pregnant women attending ANC in health facilities in Tanzania rated their experience of care from highly to moderately satisfy with

health services. However, the study noted that the satisfaction expressed at all levels of healthcare could either imply a lack of understanding among pregnant women of what care they could expect from antenatal facilities or a lack of distinction in the quality of care at district levels of the research region. (Urassa et al, 2002).

CHAPTER THREE

METHODS

3.1 Introduction

This section explained the research methods employed to address the objectives of the study. The areas covered include study area, type of study, study population, sample size, inclusion criteria, exclusion criteria, data collection, data analysis and ethical considerations.

3.2 Study Area

The study was conducted in Ashaiman Municipal and Ningo Prampram District. Ashaiman Municipal and Ningo Prampram District are two of 26 districts in Greater Accra of Ghana. Ashaiman Municipal and Ningo Prampram District had 22 and 18 ANC health facilities respectively where pregnant women attended antenatal clinics.

3.3 Study Population

The study population was women who were pregnant and attended ANC clinics, midwives and other health providers who provided health services to pregnant women. The recruited pregnant women with anaemia and health providers were all consented, before participating in the study.

3.4 Inclusion Criteria

The inclusion criteria were health facilities that provided antenatal services, pregnant women with anaemia that visited a health facility more than once and health providers that provided services at ANC units.

3.5 Exclusion Criteria

The exclusion criteria were health facilities not providing antenatal clinics, pregnant women that were not anaemic, pregnant women with anaemia who visited the health facility for the first time and health providers that were not providing services at ANC unit.

3.6 Study Design

A mixed method design was used. A cross-sectional quantitative study design was used to analyzed all quantitative data was used because of the short time of this study. Whiles an in-depth qualitative study was used to identify associated factors relating to anaemia management in pregnancy.

3.7 Sampling Procedure

Data was collected in two phases. In the first phase, a total of 40 health facilities from Ashaiman and Ningo Prampram were included. Lot Quality Assurance Sampling (LQAS) technique was used in the study. Assuming a sample value of 75 percent and an expected value of 20 percent and a meaning level of 5 percent with 90 percent power, thirteen (13) antenatal health facilities were covered, six (6) in Ashaiman and seven (7) in Ningo Prampram, and the facilities were randomly selected (Prathapan et al., 2011).

This accomplished the suggestion of including a minimum of 25% of healthcare organizations in the districts when evaluating health care quality (Prathapan et al., 2011).

The study covered 27% of ANC facilities in Ashaiman municipal and 38% of ANC health facilities in Ningo Prampram district. This was done to fulfilled the LQAS by including a health facility in each sub-district as a supervisory area (Valadez, 2010). Both Ashaiman and Ningo Prampram had 7 sub-district each. However one sub-district in Ashaiman Municipal,

Blakpatsona was excluded from the study because the only ANC facility St. Mina at the sub-district was not in operation at the time of this study.

In the last phase, the sampling unit sampled consisted of pregnant women with anaemia receiving antenatal services in the selected health facilities. For the LQAS technique, at minimum five pregnant women with anaemia from each health facility were invited to take part in the research using the facilities antenatal registers. Therefore, in total, sixty-five (65) anaemic women were recruited for the study (Prathapan et al., 2011).

For the health providers 13 were consented and only 10 health staff were interviewed. This was because at the tenth health provider the study reached the point of saturation and did not continue with the 3 other health providers.

3.8 Data Collection and Analysis

The study team comprised of the main investigator and five research assistants who gathered information from the health facilities. All the data collectors were health workers with the exception of one person who was undergraduate at the University of Ghana, Legon.

The main investigator trained the information collectors for two days to ensure data quality management. Pre-testing of the questionnaire was carried out at the ANC unit of the Kpone Health Center, a health facility in Kpone Katamanso Municipal.

The quantitative data gathered were entered into Microsoft Excel and then transferred for further processing and evaluation with STATA version 15 IC software. To summarize the information, descriptive statistics such as means, graphs, tables and ratios were used.

The qualitative information gathered were transcribed verbatim and analyzed manually using thematic descriptive analysis.

3.9 Study Variables

The research variables were divided into factors measured in the structure, process, outcome and experience of care. The choice of the design, method, outcome and experience of care interventions has been driven by the WHO Service Availability and Readiness Assessment (SARA) Reference Manual and previous research (Do, Wang, Hembling, & Ametepi, 2017). The dependent variable was the quality of health services in the management of anaemia during pregnancy, while the independent variables consisted of factors of the experience of care, structure, process and outcome.

3.9.1 Structure measured Variables

Measures of structural evaluates the health care settings resources and whether environments of health care are adequate of delivering health care services. Measures of structure include the human power of health services and the capableness's of the employees, policy of condition for care provided and the handling of the health facility resources (Morris & Bailey, 2014)

The structured variables were evaluated using the facility inventory questionnaire through observations. The structured factors considered in this research are cleanliness, tables and chairs, room, examination couches, skilled health staff, normal treatment guidelines, anaemia therapy protocol, anaemia framework, IFA inventory, referral letters, health facility transportation and ANC registers.

3.9.2 Process measured Variables

Measures of process refers to the degree to which health care facilities systematically provide sick people with particular services that are consistent with recommended care rules. These steps are usually associated with processes or treatments that are known to enhance health status or prevent future ramifications or health situations (Morris & Bailey, 2014).

The process variables were Hb's documentation at registration and 36 weeks of gestation, Initiation of anaemia treatment, provision of anaemia clinics, use of counseling cards, community involvement, addressing anaemia emergencies, records on anaemia emergencies addressed.

Anaemia clinics refers to the nutritional services provided at antenatal facilities for pregnant women with anaenia.

The process variable "Treatment initiation" for health facilities that initiated anaemia therapy was reached by randomizing five chosen confirmed anaemic instances from each ANC health facility register for the month of July 2019 and was contrasted with the diagnosis and prescription reported on the corresponding National Health Insurance (NHI) claim forms. If a health facility had a score of at least 1 (i.e. initiating therapy for at least 1 out of 5 instances), it was coded as "Initiating therapy" and if a facility had no score, it was coded as "Not initiating therapy".

3.9.3 Outcome measured Variables

Measures of outcome evaluates the health of patients by the health care they encountered. Specifically, measures of outcome examine the impacts care has had on the sick person,

status of sick person, and sick person functions, albeit designed or unintended. Outcome measures also examine whether or not care objectives are achieved (Morris & Bailey, 2014).

The outcome measured variables in this study are anaemia treatment, documentation of latest Hb results and status of treatment.

The anaemia treatment variable was measured using a binary outcome variable called "treatment" and coded as "< 120 mg of Iron, 400Ug of Folic Acid daily for 3 months or less" for pregnant women with anaemia who received an overall of less than 120 mg of Iron for 3 months or less and "120 mg of Iron, 400Ug of Folic Acid daily for 3 months" for pregnant women with anaemia who received 120 mg of Iron daily for 3 months.

WHO's recommendation for the therapy of anaemia among pregnant women is 120 mg of iron daily and 400Ug of folic acid daily for 3 months (WHO, 2017), while the Ghana Standard Treatment Guideline recommends 200mg of elemental iron daily (65mg of iron 8 hourly) and 5 mg of folic acid daily for the treatment of pregnant women (GSTG, 2017).

This research used the WHO treatment suggestion to evaluate health services on the outcome variable "treatment" as the dosage for anaemia therapy was smaller than Ghana's standard treatment recommendation and still fits in the Ghana's situation.

The treatment status of pregnant women with anaemia variable was measured using three result factors called "treatment status" and coded "Hb improved to normal" for pregnant women with anaemia whose known Hb concentrations had improved to normal Hb concentrations after initiation of therapy, "Hb did not improve to normal" for pregnant women with anaemia whose known Hb concentrations had not enhanced to normal Hb after initiation of therapy and "Not known treatment status" for pregnant women with anaemia whose treatment status was not known.

3.9.4 Experience of care measured Variables

Measures of experience by patients provide response on care experience of patients who encountered health services, in addition to social aspects of care. (Morris & Bailey, 2014).

The experience of care measurement factors considered in this research are clarity and accessibility of information health staff provide, information about test results, service delays and experience of general quality of care.

3.10 Ethical Considerations

Before the study was carried out, the following ethical issues were considered:

- The Health Service of Ghana Ethical Review Committee granted ethical clearance. The protocol ID provided to start the research was (GHS-ERC 069/04/19).
- An introductory letter was acquired from the School of Public Health, Legon to the Regional Health Directorate of Greater Accra, who also gave the researcher an introductory letter to the two districts of Ashaiman and Ningo Prampram Health Directorates. The two Directorates of Health then wrote to advise all the health services engaged in the research.
- Prior to information collection, informed consent was acquired from the study respondents. The ANC in-charges notified the pregnant women about the existence of the information collection team and the purpose of the research and prompted the women to engage in the research because the result will assist enhance the services they received.
- Before getting the participants ' permission, the information collectors clarified the purpose of the research, the procedures concerned, the related risks and advantages of engaging in the research. Participants who agreed to participate in the research were told to register or provide a thumbprint before the interview started.

- If a participant was unable to read the consent form itself, a witness was created to sign the same consent form indicating that he or she witnessed that everything about the research had been explained to the participant before consenting to engage in the research.

CHAPTER FOUR (4)

RESULTS

4.1 Introduction

This section addressed the results of a research aimed at evaluating the quality of care in handling pregnancy anaemia at ANC facilities. The results acquired were provided in tables and charts. In addition, some of the analysis performed in this section included frequency and descriptive analysis. The results shall be provided as follows:

4.2 Ownership of Health Facilities

The study was performed in thirteen (13) health facilities of which seven (7) where government health facilities representing 53.85% and six (6) were private health facilities representing 46.15% as shown in figure 3 below.

4.3 Demographic Data

This section explored the demographic features of the study participants. The demographic information gathered included age distribution, marital status, academic qualification, religious affiliation, and respondent occupation. In addition to the demographic data are the years of working experience for health providers.

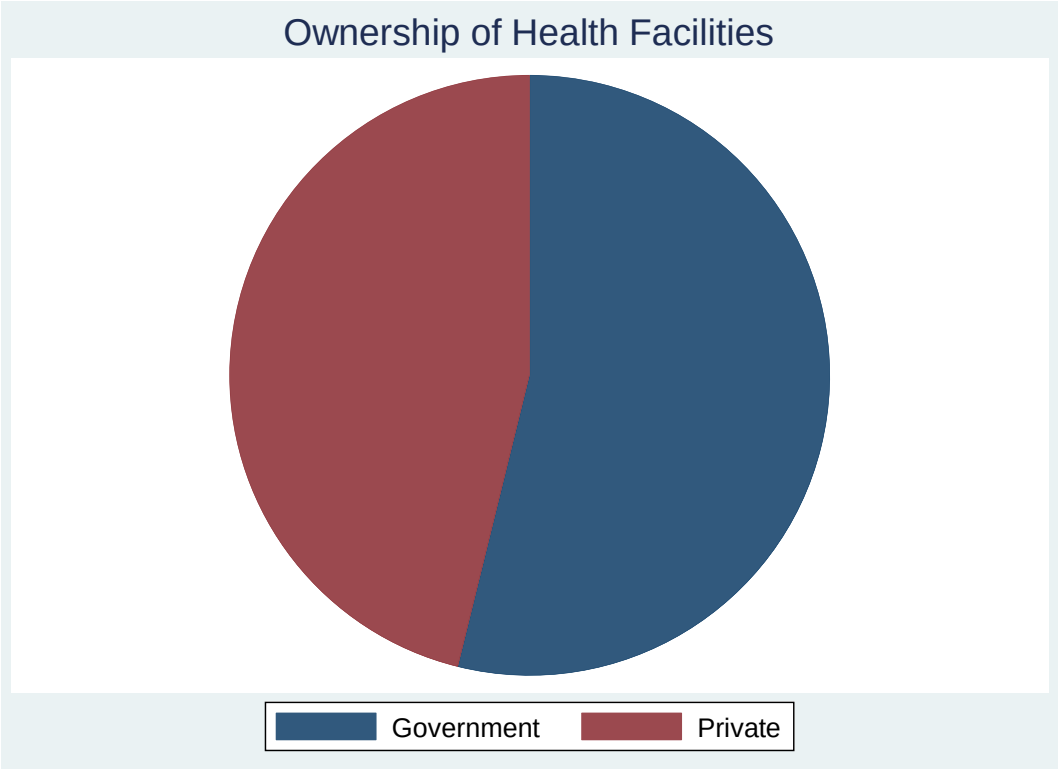

Figure 3: Ownership of Health Facilities

Table 4.1 presents a summary of the demographic information of anaemic women who were the participants. The respondent's average age was 28.37 years with a standard deviation of 5.80. The respondents least age was 18 years, while the largest age was 42 years. The findings also showed that, with regard to marital status, the majority of participants representing 50 (76.92%) were married, 8 (12.31%) were cohabitating, while 7 (10.77%) said they were single or never married.

The finding also indicated that quite a proportion of participants representing 22 (33.85%) had attained middle/JHS education as their highest educational qualification, 17 (26.15%) had secondary/SHS education, while another 11 (16.92%) said they had

achieved tertiary or more as their lowest academic qualification. In addition 10 (15.38%) had achieved primary / basic schooling and 5 (7.69%) with no formal education.

It was again disclosed that most of these participants included in this research were affiliated with the Christian religion representing 52 (80%) whiles Muslim represented 13 (20%) as shown in Table 4.1.

Further interaction with the respondents revealed that, 27 (41.54%) of them were traders, 12 (18.46%) were self-employed, 9 (13.85%) of the respondents work as government employees whiles 4(6.15%), 2(3.08%) and 1(1.54%) were Farmers, Apprentice and Students respectively.

Table 4.1: Demographic Characteristics of Respondents

Variable	Number (N=65)	Percent
Age category (years)		
15-24	19	29.23
25-34	37	56.92
35-44	9	13.85
Marital status		
Married	50	76.92
Cohabitation	8	12.31
Single/Never married	7	10.77

Table 4.1: Demographic Characteristics of Respondents (Cont'd)

Educational Qualification		
Informal Education	5	7.69
Primary/Basic	10	15.38
Middle/JHS	22	33.85
Secondary/SHS	17	26.15
Tertiary or More	11	16.92
Religious Affiliation		
Muslim	13	20.00
Christian	52	80.00
Occupation of Respondents		
Student	1	1.54
Apprentice	2	3.08
Unemployed	10	15.38
Farmer	4	6.15
Trader	27	41.54
Self-employed	12	18.46
Government employee	9	13.85

Figure 4 below shows the number of times a pregnant woman visited the facility at the time of the study. The figure shows that 24 (36.92%) of the anaemic women visited the health facilities with this pregnancy twice, 19 (29.23%) women visited the facilities thrice, 11 (16.92%) women visited the facilities four times and another 11 (16.92%) women visited the facilities more than four times.

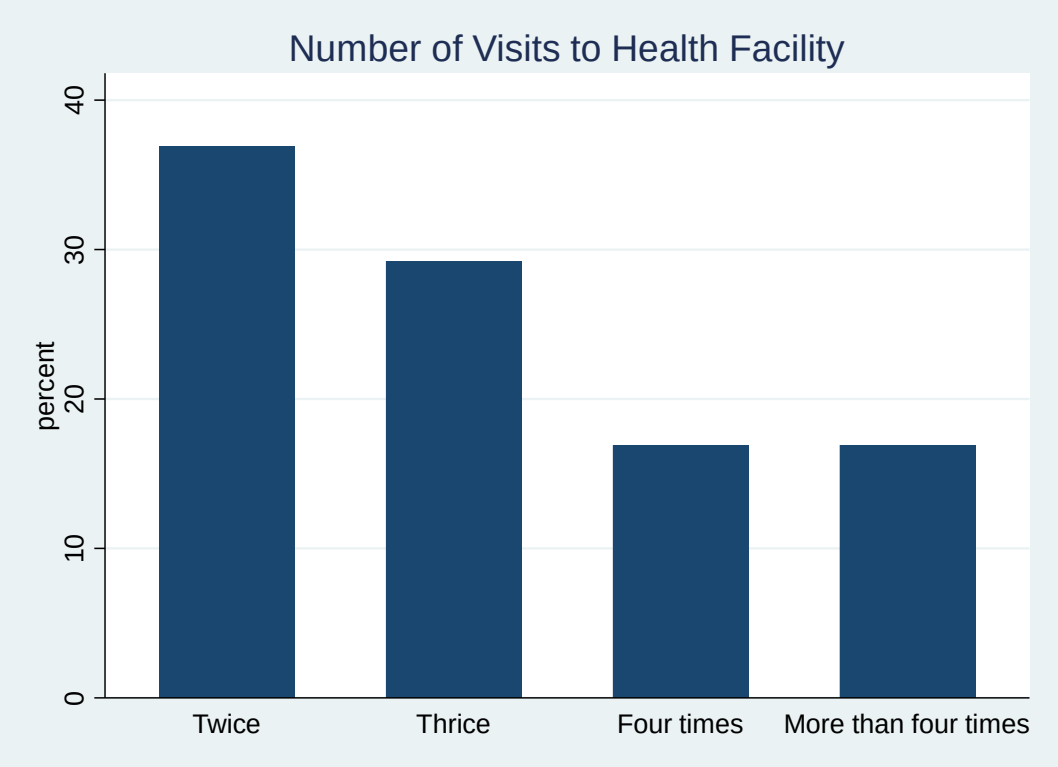

Figure 4: Number of times pregnant women with anaemia visited Health facility

Also the mean age for the health providers surveyed was 39.5 years. All health providers were over 25 years old with a minimum age of 29 years and a maximum age of 65 years. Their work experience as health employees ranges from 4 years to 33 years. Table 4.2 below provides an overview of the category of health providers surveyed and their roles at health facilities.

Table 4.2 Category of health staff and their responsibility

Health staff number	Category of staff	Role at health facility
Health provider 1	Midwife	Provide maternity services
Health provider 2	Midwife	Maternity in-charge
Health provider 3	Midwife	Maternity in-charge
Health provider 4	Enroll Nurse	Assist midwife in maternity services
Health provider 5	Retired midwife	Maternity in-charge
Health provider 6	Midwife	Provide maternity services
Health provider 7	Midwife	Provide maternity services
Health provider 8	Midwife	Maternity in-charge
Health provider 9	Midwife	Maternity in-charge
Health provider 10	Midwife	Provide maternity services

4.2 Structure measures

Table 4.3 showed that all health facilities were satisfactorily clean. The finding also indicated that all health facilities had table and chairs, examination couches, Iron Folic Acid stock and ANC register in adequacy.

Table 4.3 below also indicates 12 (92.31%) of the health facilities were spacious enough to provide health services whiles 1 (7.69%) were not spacious. Also 12 (92.31%) of the health facilities had the national standard treatment guideline and referral forms or letters whiles 1 (7.69%) did not have the guideline and referral forms.

The finding also show that with regards to human resource, 8 (61.54%) of the health facilities had a midwife, laboratory technician, doctor and/or more health staff whiles 4

(30.77%) had midwife and auxiliary staff only and 1 (7.69%) of facilities had midwife, laboratory technician and auxiliary staff.

However, none of the health facilities had anaemia treatment protocol and anaemia management referral register at their ANC units but only 1 (7.69%) had framework for anaemia management displayed at the ANC of the facility.

The facilities that had transportation accessible for referrals were 9 (69.23%) and 4 (30.77%) facilities were not having transport accessible for referrals.

Table 4.3: STRUCTURE MEASURES

Variables	Number (N=13)	Percent
Cleanliness of Health Facilities		
Satisfactory Cleanliness of Facilities	13	100.00
Unsatisfactory Cleanliness	0	0
Tables and Chairs		
Satisfactory availability of tables and chairs	13	100.00
Unsatisfactory availability of tables and chairs	0	0

Table 4.3: Structure Measures (Cont'd)

Space availability		
Satisfactory Space	12	92.31
Unsatisfactory Space	1	7.69
Examination couches		
Satisfactory examination couches	13	100.00
Unsatisfactory examination couches	0	0
Qualified personnel at Health Facility		
Midwife and auxiliary staff	4	30.77
Midwife, lab. Technician and auxiliary staff	1	7.69

Table 4.3: Structure Measures (Cont'd)

Midwife, lab. Technician, Doctor or more	8	61.54
Standard Treatment guideline (STG) at facility		
Availability of STG	12	92.31
Non-availability of STG	1	7.69
Anaemia Protocol at ANC		
Availability of anaemia treatment protocol	0	0
Non-availability of anaemia treatment protocol	13	100.00
Anaemia Framework at ANC		
Having anaemia framework	1	7.69
Not having of anaemia framework	12	92.31
IFA Stock (2months)		
Adequate stock of IFA stock	13	100.00
Non-adequate stock of IFA stock	0	0
Referral forms/letter		
Availability of referral forms/letter	12	92.31
Non-availability of referral forms/letter	1	7.69
Referral Register for anaemia/with anaemia		
Availability of register for referral	0	0
Non-availability of register for referral	13	100.00
Transport for Referral		
Availability of transport for referral	9	69.23
Non-availability of transport for referral	4	30.77
ANC register		
Availability of ANC register	13	100.00
Non-availability of ANC register	0	0

4.3 Process measures

Table 4.4 indicates the process measures in the management of anaemia in pregnancy. 12 (92.31%) of health facilities updated registers for haemogloblin results checked at registration for the month of May, 2019 whiles only 9 (69.23%) of the health facilities updated their registers for haemoglobin results checked at 36 weeks for pregnant women who were at 36 weeks or more of gestation at the time of the research and 4 (30.77%) of health facilities were not satisfactorily updating their haemoglobin results at 36weeks or more of gestational age.

Also the finding shows that 6 (46.15%) of health facilities initiated anaemia treatment after confirmation of anaemia diagnoses whiles 7 (53.85%) did not initiate treatment after confirmation of anaemia. This process measure was arrived at by randomization of five selected confirmed anaemic cases from each health facility ANC register for the month of July, 2017 and was compared with the diagnosis and prescription recorded on the respective patient National Health Insurance (NHI) claim forms.

Additional finding also shows that 3 (23.08%) of health facilities provided anaemia clinics whiles 10 (76.92%) were not providing anaemia clinics. However, 9 (69.23%) of health facilities were using counseling cards to counsel pregnant women with anaemia on local diets based on a four-star (4-star) diet model.

Moreover, 7 (53.85%) of health facilities were involving local communities in the management of anaemia in pregnancy through pregnancy schools and health community meetings. 6 (46.15%) of health facilities were not having any mechanism of engaging local communities in the treatment and management of anaemia in pregnancy.

Furthermore, finding from table 4 below shows that all facilities in some way were addressing some form of anaemia emergencies in pregnancy, but only 2 (15.38%) of health facilities had evidence of documentations aside the referral letter/form and 11 (84.62%) of health facilities had no records on anaemia in pregnancy emergency cases addressed aside the referral letters.

Table 4.4: Process Measures

Variables	Number	Percent
Updating Hb at Registration for Month of May, 2019		
Facilities satisfactory updating	12	92.31
Facilities not satisfactory updating	1	7.69
Updating Hb at 36 weeks of registration for 5 women with more than 36 weeks		
Facilities satisfactory updating	9	69.23
Facilities not satisfactory updating	4	30.77
Anaemia treatment initiation		
Initiating Anaemia treatment	6	46.15
Not initiating Anaemia treatment	7	53.85
Anaemia clinics		
Providing anaemia clinics	3	23.08
Not providing anaemia clinics	10	76.92
Using counseling cards for 4-Star diet education		
Facilities providing education on 4-star diet	9	69.23
Facilities not providing education on 4-star diet	4	30.77

Table 4.4: Process Measures (Cont'd)

Community Involvement of Anaemia Management		
Facilities involving communities	7	53.85
Facilities not involving communities	6	46.15
Addressing Anaemia Emergencies		
Facilities addressing anaemia emergencies	13	100.00
Facilities not addressing anaemia emergencies	0	0
Records on Anaemia Emergencies Addressed		
Facilities with records	2	15.38
Facilities without records	11	84.62

4.4 Outcome measures

Table 4.5 below shows outcome measures of health facilities in the treatment and management of anaemia in pregnancy. Outcome variables are mostly derived from medical records and in Ghana ANC medical records are documented in the pregnancy booklets which are in the possession of the patients. The findings of the outcome measures were derived from the pregnancy books of the pregnant women with anaemia who served as respondents to this study and was complimented with health facilities ANC registers which also contains some medical records.

Table 4.5 shows that 28 (43.08%) of pregnant women with anaemia had their latest haemoglobin test results available and documented, whiles 37 (56.92%) of pregnant women with anaemia did not have results of their latest haemoglobin available and documented. The latest haemoglobin test results are required in the subsequent or next visits of the anaemic pregnant woman and are very important for evaluating the progress of anaemia treatment.

In addition, table 4.5 indicates that only 6 (9.23%) of the pregnant women with anaemia had records of their haemoglobin levels that improved to normal, 14 (21.54%) had records of haemoglobin levels still below the normal levels and 45 (69.23%) pregnant women with anaemia status of treatment was not known as their records of latest Hb results was not known or checked.

Furthermore, none of the pregnant women as shown by table 4.5 below responded that they were recommended by the health staffs to take the treatment regimen of 120mg of elemental Iron, 400Ug of Folic Acid daily for a duration of 3months. With this particular outcome indicator, the health facilities do not have sufficient documentation for it to be measured through provision of care perspectives as the ANC units were not having registers for treatments.

Table 4.5: Outcome Measures

Variables	Number	Percent
Anaemia Treatment		
<120mg of Fe, 400Ug of FA daily for 3-6months	13	100.00
120mg of Fe, 400Ug of FA daily for 3-6months	0	0
Information on latest Hb's		
Latest Hb available	28	43.08
Latest Hb not available	37	56.92
Status on Treatment		
Hb improved to normal	6	9.23
Hb not improved to	14	21.54
Not known status of treatment	45	69.23

4.5 Experience of care measures

Table 4.6 and figure 5 and 6 shows findings of experience of care measures. 59 (90.77%) of pregnant women with anaemia responded that they understood the languages health staffs used to communicate with them and also 59 (90.77%) responded that they understood the explanation that, they had anaemia after their haemoglobin test results.

Figure 5 below shows that, 28 (43.08%) of the pregnant women with anaemia rated the quality of care at the health facilities in treating and managing anaemia in pregnancy as very good, 34 (52.31%) and 3 (4.62%) as good and fair respectively.

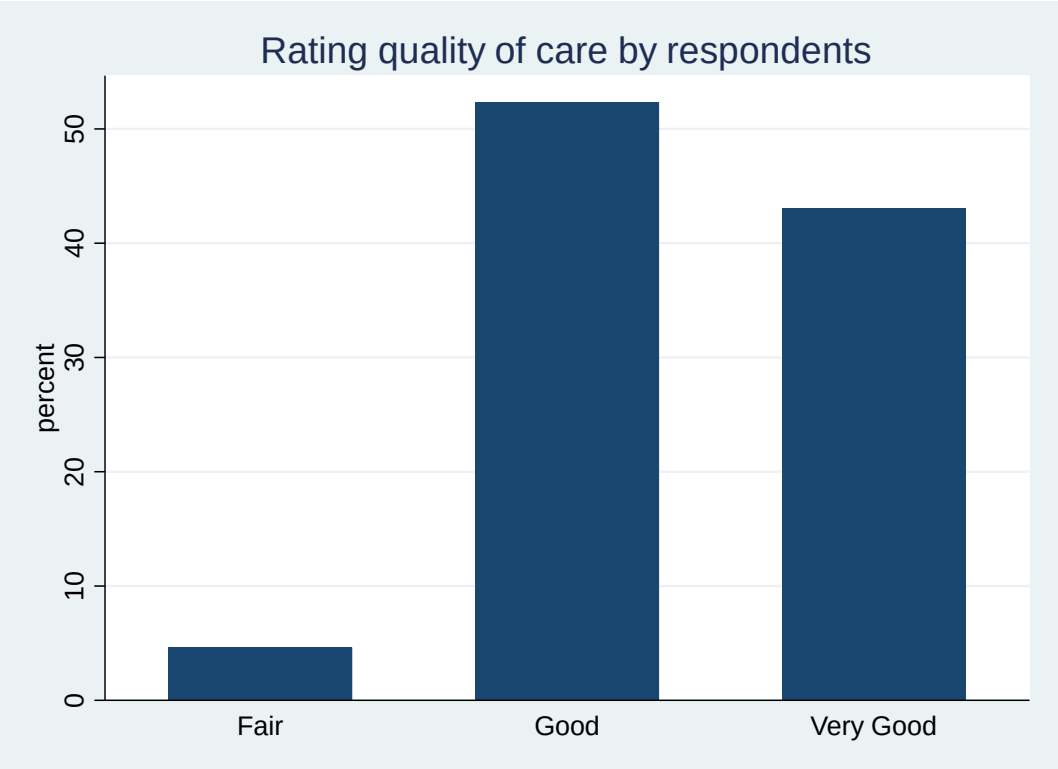

Figure 5: Rating quality of care by pregnant women with anaemia

Figure 6 below shows that, 22 (33.85%) of the pregnant women with anaemia rated long waiting time for service delays or waiting time at the health facilities. There was no difference among those who rated not long waiting time and no waiting time at 17 (26.15%) each and 9 (13.85%) reported very long waiting time.

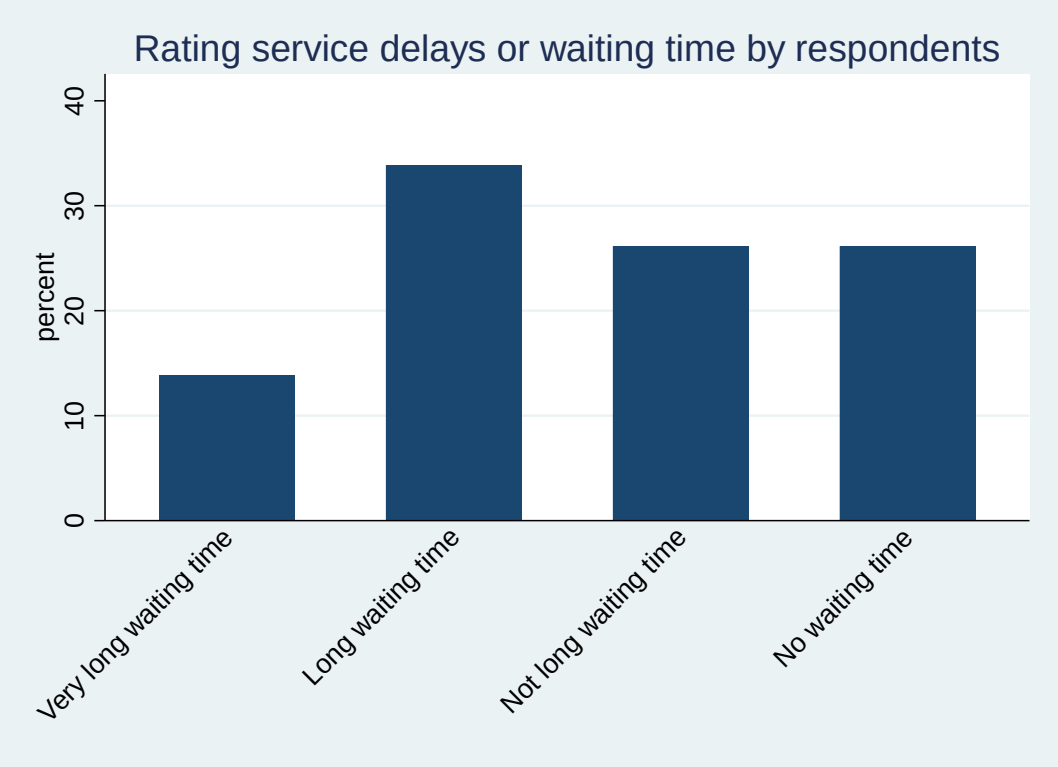

Figure 6: Rating service delays by pregnant women with anaemia

Table 4.6: Experience of Care Measures

Variables	Number	Percent
Clarity and accessibility of information health staff provide		
Understood language used for explanation	59	90.77
Did not understand language used for explanation	6	9.23
Information about test results		
Informed of anaemia test results	59	90.77
Not informed of anaemia test results	6	9.23

4.6 Factors associated with anaemia management

This section explored factors associated with anaemia management in pregnancy and contains findings from an in-depth interview with health providers that provided health services at ANC units.

4.6.1 Perception of health providers on overview of anaemia management in pregnancy

The health providers perceived that IFA is given to pregnant women with anaemia for treatment. They perceived that the anaemic pregnant woman is given a monthly medication of IFA for which she will take 120mg of Iron and 5mg of Folic acid daily. In addition they said they provides counseling to the women to eat iron rich foods. Furthermore, they perceived that when the anaemic women comes for the next visit in a months' time, the Hb test is repeated along with the medication. They also perceived that when the Hb of an anaemic pregnant woman is below 7dl there are referred for emergency treatment.

"*Normally, Hb is check …….. IFA is given to them and they are also counsel on their diet. We give 60mg of fersolate bd* (twice daily)*, 5mg of folic acid and we also add multivites (*multivitamins*) for them. We provide them 30 days medication. When they come the next visit we repeat the test (*Hb test*) and also the medication. But when the Hb is below 7dl, we refer them*". Health Provider 2.

4.6.2 Training on anaemia management

Majority of the health providers, particularly those from the private health facilities said they had not attended trainings on anaemia management aside what they leant from schools.

"*I am a pensioner and now works at a private health facility. So I have not been able to go for any recent training on anaemia. But when I was at the public sector, I attended one training on anaemia and that has been a very long time ago*" Health Provider 5.

4.6.3 Access to anaemia treatment guideline at ANC facility

Majority of the health providers said they do not have anaemia treatment guidelines at their units.

"We do not have one (Anaemia treatment guideline) in the facility" Health Provider 8.

4.6.4 Supportive Supervision on anaemia management in pregnancy

Majority of the health providers said that, they regularly receives supportive supervision but not focus on anaemia management. They said most of the supportive supervision is on malaria and HIV/AIDs.

"A team from the health directorate often comes around (for supportive supervision). They come for malaria and HIV/AIDs and not on anaemia" Health Provider 1

4.6.5 Perception of health providers on clients response to treatment

Most of the health providers perceived that some of the pregnant women with anaemia are not cooperating with treatment. The health providers said that those women who are not cooperating with treatment do not often take the IFA medication as prescribed and often don't comply when they are asked to go for a repeated laboratory test for their Hb.

"They is ignorance among some of the women, so they do not really take the IFA medication and counseling on their diet serious. They sometimes lie about taking the medication…… When you ask them to go for a repeated test they don't come back with the results and often claims they don't have money for the test" Health Provider 7.

4.6.6 Experiences/challenges regarding anaemia management in pregnancy

Most of the midwifes submitted that, the major challenge in the management of anaemia in pregnancy is that many of the pregnant women with anaemia reports for ANC services in the latter stages of pregnancy and with low Hb levels. They said that, it is often difficult to build their Hb levels to normal before they deliver.

*"The challenge is that most of them are anaemic and comes especially in the 3rd trimester (*of pregnancy*). This makes it very difficult to build their Hb (*levels*) before they give birth"* Health Provider 3

Another challenge in the management of anaemia identify by some of the health providers is that, they do not have laboratory services in their health facilities and thereby the pregnant women are asked to go outside the facility for the test.

*"……We do not have a lab (*laboratory service*) here, so we make arrangements with other facilities to take the samples of those women who can pay and work on them. Those who can't pay we ask them to do the test outside and bring us the results and most of them will not come back with the results* (requested*)"* Health Provider 4.

CHAPTER FIVE (5)

DISCUSSIONS

The analysis examines the quality of health care of facilities in the management of anaemia in pregnancy with regards to standard treatment guidelines. The sample technique used in the study allowed all sub-districts to be covered in the study areas with the exception of one sub-district that was not having an operational ANC health facility at the time of this study. Health facilities were grouped based on sub-districts and were then randomly selected for the study.

The questionnaires were designed to meet the standards of assessing quality of care in health facilities. Factors related to provision of care such as human and physical resources, maternity information system, use of appropriate information systems, internationally recognized good practices, management of emergencies and referral systems were covered in this study. Also factors associated with experience of care by the study participants of health facilities such as experience about the human and physical resources, cognition, respect dignity and equity, and emotional support were covered as well. The study was also guided by the WHO Service Availability and Readiness Assessment (SARA) Reference Manual for the selection of quality of care measures.

5.1 Structure measures

Performance of health facilities with regards to availability of structural measures such as qualified personnel, tables and chairs, IFA stock and standard treatment guideline were satisfactorily rated in this study. The finding agree with a study in Tanzania which reported the availability of equipment and supplies in health facilities. It also noted the availability of

IFA tablets in all health care facilities bar in one dispensary(Urassa et al, 2002). Also another Tanzanian study reported the availability folic acid in health facilities. The study however, noted in contrast to this study finding that, there was severe deficit of health providers for antenatal care in all clinics and health centers(Nyamtema AS et al., 2012)

However, with regards to availability of structural measures such as anaemia framework, anaemia treatment protocol, referral register for management of anaemia, the health facilities were poorly rated in this study. The non-availability of this structural measures affects service delivery in the management of anaemia in pregnancy. The Tanzanian study also supports this finding and suggested that there is an urgent need for improvement of the structural quality of antenatal care as it may become an effective control programme (D.P. et al., 2002). Another study in Bolivia which assessed the effectiveness of anaemia prevention and control also agreed with this finding and noted that copies of norms and protocols on anaemia prevention and treatment were not available in all health facilities and attributed it as one of the factors affecting the anaemia prevention and control programme (Freire et al., 2003).

5.2 Process measures

Health facilities performed satisfactorily with process measures such as assessment of anaemia at registration and at 36 weeks of pregnancy and duly documented the test results in the ANC registers. This finding suggest an effective universal supplementation programme at the health facilities as the programme requires testing and documentations of haemoglobin levels at registration of pregnancy and 36 weeks of gestation. The finding is similar to a study in Colombo district of Sri Lanka which reported that among the pregnant

women who were checked at an ANC facility, 72% were tested for anaemia (Prathapan et al., 2011)

The used of counseling cards and community involvement in the treatment and management of anaemia in pregnancy were also rated satisfactorily in this study. However and inconsistent with a previous Tanzanian study, shows that only 4% of pregnant women with anaemia who were severely anaemic had appropriate counseling and the average proportion of anaemic women who had appropriate counseling were 9.78% in that study (D.P. et al., 2002).

However, the facilities were rated poorly with regards to process measures such as initiation of anaemia treatment after confirmation of diagnosis, provision of anaemia clinics to appropriately counsel pregnant women with anaemia and documented records of anaemia emergencies in pregnancy. A study consistent with this finding noted that, routine prophylaxis or well-known pregnancy-related risk factors such as anaemia was only prescribed to a small proportion of the study subjects(Mekonnen et al., 2017). Another study which agree with the finding noted that 8-10% of pregnant women discovered to be anaemic during routine examination had any action on management of anaemia taken by health workers, as with only 3-4% of pregnant women with documented anaemia in the whole study group. The authors of the study cast doubt on the performance of antenatal programme in Tanzania for management of anaemia in pregnancy (Urassa et al, 2002).

Another study in Pakistan which evaluated the prescription rate of health providers on anaemia among children supports this finding as it noted that 81.1% of Pediatrics registered

at OPD's were anaemic and only 11.4% of them were on anaemia therapy, prescribed by their health provider (Sohaila et al., 2016)

5.3 Outcome measures

The performance of health facilities with regards to outcome measures were generally, poorly rated in this study.

Latest haemoglobin test results of previously diagnosed pregnant women with anaemia, which is required to know the outcome or status of anaemia treatment were inappropriately recorded. The finding of this study shows that, 56.92% of the pregnant women with anaemia who had been seeking health care in the health facilities monthly for at least twice visits during the study, did not have their latest haemoglobin levels checked. Also the status of treatment of the pregnant women with anaemia were also poorly rated in this study. The study found out that 69.23% of pregnant women with anaemia status of treatment was unknown as there were no documentations available on the progress of their treatment. This two findings probably questions the continuity of care provided to patients as well as health providers or staffs adherence to standard treatment protocols and anaemia treatment pathways. This practice is in contrast to the Ghana standard treatment guideline which recommends that an anaemic patient whose haemoglobin level does not improve after 2 weeks of treatment should be referred to a specialist (GSTG, 2017).

Moreover, the study finding shows that none of the pregnant women with anaemia were under the 3 months WHO recommended treatment of 120mg of Fe and 400Ug of FA.

The finding of the poor quality of health facilities in this study is consistent with a Tanzanian study which reported poor quality of anaemia management in Tanzania and

suggested that it may demonstrate a generally substandard quality in other significant aspects of antenatal care programme (Urassa et al, 2002) . Another study in rural Ethiopia which agree with the finding reported that the general performance in managing anaemia in pregnancy was weak in the health facilities in Ethiopia (Mekonnen et al., 2017).

5.4 Experience of care measures

The findings of this study shows that a combined 95.38% of respondents rated the quality of care at health facilities as good and very good. This finding is consistent with a Tanzanian study which noted that majority of antenatal attendants were highly and moderately satisfied with the care they received. But the study noted that the satisfaction expressed at all levels of health care could either mean lack of knowledge among women of what care they could expert from antenatal clinics, or lack of difference in quality care at various levels of the referral system (Urassa et al, 2002).Also, this study found out that majority of women (90.77%) responded that there were informed of their test results of haemoglobin level. This is in contrast to a study in Colombo district of Sri Lanka which noted that 83% of pregnant women were not informed of their haemoglobin level(Prathapan et al., 2011).

In addition, the study also found out that 90.77% of pregnant women with anaemia were informed of their condition in a language they understood clearly. This finding is consistent with the Sri Lanka study which noted that 90% of pregnant women were satisfied with the adequacy of information received(Prathapan et al., 2011).

Furthermore, this study found out that 47.70% of respondent complained of at least long waiting time before services are granted to them. This is consistent with previous findings

which was conducted in Kenya and Namibia which in addition noted that waiting time is a serious problem at health facilities in developing countries(Do et al., 2017).

5.5 Factors associated with anaemia management

This section explored factors associated with anaemia management by using the experiences of health providers who works at ANC units.

The health providers showed considerable knowledge in the management of anaemia in pregnancy as they explained some concepts regarding anaemia treatment. But the quality of care measures evaluated in this study reveals that majority of pregnant women with anaemia are not provided with appropriate care despite health providers having considerable knowledge on anaemia management. This finding is supported by a previous study which reported that health providers though possess comprehensive knowledge, put little efforts in addressing anaemia, but rather focused more on acute health issue (Sohaila et al., 2016).

Also this study noted that health providers considered cases for referral only when the woman has severe anaemia (Hb levels below 7dl). However, the Ghana standard treatment guideline recommends that cases for referral are severe anaemia and anaemic cases with haemoglobin levels not improving after 2 weeks of therapy (GSTG, 2017). A study in India noted that about 41% of health providers could not identify two scenarios for which an anaemic woman should be referred (Kumar, 2015).

Aditionally, the study found out that majority of health providers at the ANC units particularly, those in the private facilities had not attended trainings on anaemia management. This finding agrees with the India study which reported that 64% of health providers were not trained on anaemia management project.

Moreover, the study also found out that some of anaemic women were not cooperating with therapy and some report very late in pregnancy for the first time for ANC services. An Ethiopian study which assessed why women do not adhered to anaemia therapy noted that the commonly reasons were drug side effects 76 (43.9%), forgetfulness 67 (38.7%) and insufficient tablets prescribed by health professionals 46 (26.6%) (Shewasinad & Negash, 2017). Another study in Tanzania noted that some women do not comply with health advice as a result of been influence by close family members (Pembe et al., 2017).

5.6 Study Limitations

Measuring of the variable "duration" of treatment which is the recommended 3 months period IFA are prescribed for treatment, was a limitation for this study. The variable was only measured in this study from the patients (pregnant women with anaemia) perspective which is likely to be affected by recall bias. There were no available data from the health facilities to measure this variable from the provision of care perspective. Health facilities were not having records on anaemia treatment aside the ANC register which does not account for therapeutic IFA supplementation and hence does not measure the variable duration for treatment.

CHAPTER SIX (6)

CONCLUSIONS AND RECOMMENDATIONS

This chapter discusses the conclusions and recommendations for the study based on the study objectives.

6.1 Conclusions

Correction supplementation of iron deficiency anaemia as noted by the WHO is a primary focus of health care facilities. However, despite the high prevalence of anaemia in Ghana and its well documented effects, particularly on females and children, the quality of care in managing anaemia in pregnancy was poor in this study. There were lack of essential structural measures such as framework for anaemia management, anaemia treatment protocol, and referral register for management of anaemia. This structural measures are required to ensure better health service delivery process and outcome. As a result the process and outcome measures for managing anaemia in pregnancy was also poorly rated.

The following specific conclusions are made from the study findings:

- Majority of health facilities had adequacy of qualified personal and physical resources such as tables and chairs, IFA drugs, examination couches, ANC registers, transport systems, and ANC referral forms
- None of the health facilities had anaemia treatment protocol displayed at the ANC units and less than one-tenth of health facilities have a framework illustrating anaemia management at their ANC units

- Almost all health facilities documented Hb results at registration in their ANC registers and majority of health the health facilities documented their Hb results at 36 weeks of gestation in their ANC registers
- Majority of health facilities had not initiated anaemia treatment for confirmed pregnant women with anaemia at their facilities
- Majority of health facilities were not providing anaemia clinics to appropriately counsel the pregnant women with anaemia
- Majority of health facilities had a mechanism of engaging the local communities in the management of anaemia
- None of the health facilities adhered to the WHO standard treatment guidline of anaemia
- Health facilities were probably missing out on emergency cases whose haemoglobin levels were not improving after 2 weeks of therapy
- Majority of the pregnant women with anaemia were satisfied with the quality of care rendered to them
- Majority of pregnant women with anaemia responded that there were made aware of their condition and also explained in a language by the health workers in a language they understood
- They were generally high satisfaction among women on their experiences of care
- Majority of health providers were not trained on anaemia management especially those at the private health facilities
- Many pregnant women with anaemia reports for ANC services at the late stages of pregnancy

6.2 Recommendations

Based on the findings of this study, the following recommendations are made.

The Ghana Health Service should help with the implementation of the following :

- Develop and display anaemia treatment frameworks and anaemia treatment protocol at all maternity units
- Strengthening anaemia clinics and increasing the coverage of health facilities providing the services
- Ensure that health facilities adheres to the standard treatment protocols of anaemia management
- Develop and implement the use of anaemia treatment register at all ANC units
- Strengthen and make correction supplementation of IDA a major component of antenatal services
- Strengthen advocacy at the community levels for early pregnancy registration at health facilities

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APPENDICES

Appendix 1: Consent for Pregnant Woman

Project Title**: Assessment of the Quality of Antenatal Care in Managing Anaemia Based on Guidelines in Ashaiman Municipal and Ningo Prampram in Greater Accra.**

Hi, my name is Abdul-Somad Abdul-Nasir a Master of Public Health Monitoring and Evaluation Student at the University of Ghana. I am conducting a study to assess the performance of health facilities in treating anaemia during pregnancy and to determine anaemic women experience of care in management of anaemia by the health facilities. You have been selected to take part in this study because the health facility records show that you are anaemic and we will be grateful if you would be willing to share your experiences with us.

Study Procedure

If you agree to participate in this research, a trained research assistant will interview you. You will be asked to share your experiences of how the health workers help to manage the anaemia. The interview will be short and last only 15 to 20 minutes. You are free to answer the questions to best of your understanding and seek clarification if any questions are unclear.

Nature of research

The expected outcome of this study is to find out whether health facilities are following guidelines in the management of anaemia in pregnancy. In addition, we would like to know whether pregnant women with anaemia are satisfied with the performance of health facilities in managing anaemia in pregnancy.

Risks and benefits

The proposed project is a minimal risk study and does not involve any aggressive procedures. There are no direct benefits to the participants. The findings of the study will be beneficial to the health facilities, pregnant women and Ghana Health Service as a whole in especially management of anaemia during pregnancy. Your participation in this study may therefore be helping in strengthening the management of anaemia in the municipality or district and the region as a whole.

Cost

There will not be any cost obtained by participants in the course of this study

Confidentiality

The information gained from this study would be held private and used for the purpose for the study. The information would be kept safe in a file without your name, but with a number and will only be available and accessible to the members of the research team. The coded number to your name would be kept confidential. The results of the study would be shared in such a way to prevent a link between your identity and any information.

Compensation

We will not pay you for participation in this study.

Voluntariness

Participation in this study is voluntary and you can willingly withdraw from this study at any period without any consequences.

Outcome and Feedback

The findings from this study will be disseminated to the health facilities through the health directorates.

Funding information

The study is been funded by the student researcher or the principal investigator.

Sharing of participants information/Data

The data, which would be generated would be used for the purposes of academic work and publication in future. The data would be destroyed after the purposes for which it is being collected.

In-depth Interview

We would record the in-depth interview in order to transcribe and translate the information for analysis. This is solely for the purposes of this study, after which the recording s would be destroyed.

Provision of Information and Consent for participants

A copy of the information sheet and the consent form would be given to you for keep after signing it.

QUESTIONS

You are encouraged to ask questions about the study. If you have any questions concerning this study information you may contact the following persons;

Contact Numbers

In case of any queries/difficulties you may contact the following:

1. Abdul-Somad Abdul-Nasir

Tel: 0249815433

E-mail: fifanash@ymail.com

2. Dr. Justice Moses K. Aheto

Tel: 0242527292

E-mail: justiceaheto@yahoo.com

You may also contact the Chair or Administrator of the Ghana Health Service Ethical Review Committee. 3. Madam Hannah Frimpong

GHS-Ethical Review Committee Research and Development

Division Ghana Health Service

P. O. Box MB 190, Accra

Office: 0302 681 109 Mobile: 024 451 6482

Email: Hannah.Frimpong@ghsmail.org

Voluntary Consent

I……, have read the written information (or have had the information read and adequately explained to me in a language I understand) for the study "**Assessment of the Quality of Antenatal Care in Managing Anaemia Based on Guidelines in Ashaiman Municipal and Ningo Prampram in Greater Accra".**

I have been given adequate opportunity to ask any question I have. All questions have been answered to my satisfaction. I have also been given enough time and opportunity to consider taking part in this study. I fully comprehend the content and possible implications as well as my right to withdraw from the study even after consenting and signing this form.

I therefore agree to participate in this study.

Initials of Participant…… ID Code…….

……..

Signature of Participant Date: ……..

Right thumb print Sign (Witness):

Form filled by: ……

Signature: ……...

Date: ……...

Interpreters' Statement

I interpreted the objectives and the content of the Participant's Information Sheet to the afore-mentioned participant to the best of my knowledge in the (…….) language to her proper understanding.

All questions, appropriate explanations sort by the participant and answers were also duly interpreted to her satisfaction

Name of Interpreter ……..

Signature ……..

Date…….

Contact Details

Investigators Statement and Signature

I declare that enough time has been given the participant to read and learn about the study. All questions and clarifications which came up have been duly addressed.

Researcher's name……

Signature……..

Date……..

Appendix 2: Consent for Health Worker

Project Title**: Assessment of the Quality of Antenatal Care in Managing Anaemia Based on Guidelines in Ashaiman Municipal and Ningo Prampram in Greater Accra.**

Hi, my name is Abdul-Somad Abdul-Nasir a Master of Public Health Monitoring and Evaluation Student at the University of Ghana. I am conducting a study to assess the performance of health facilities in managing anaemia during pregnancy and to determine anaemic women satisfaction of management of anaemia by the health facilities. You have been selected to take part in this study because the health facility in for which you are working for was randomly selected to take part in the study and we will be grateful if you would be willing to share your experiences with us.

Study Procedure

If you agree to participate in this research, a trained research assistant will interview you. You will be asked to share your experiences of how the health workers help to manage the anaemia in pregnancy. The interview will be short and last only 15 to 20 minutes. You are free to answer the questions to best of your understanding and seek clarification if any questions are unclear.

Nature of research

The expected outcome of this study is to find out whether health facilities are following guidelines in the management of anaemia in pregnancy. In addition, we would like to know whether pregnant women with anaemia are satisfy with the performance of health facilities in managing anaemia in pregnancy.

Risks and benefits

The proposed project is a minimal risk study and does not involve any aggressive procedures. There are no direct benefits to the participants. The findings of the study will be beneficial to the health facilities, pregnant women and Ghana Health Service as a whole in especially management of anaemia during pregnancy. Your participation in this study may therefore be helping in strengthening the management of anaemia in the municipality or district and the region as a whole.

Cost

There will not be any cost obtained by participants in the course of this study

Confidentiality

The information gained from this study would be held private and used for the purpose for the study. The information would be kept safe in a file without your name, but with a number and will only be available and accessible to the members of the research team. The coded number to your name would be kept confidential. The results of the study would be shared in such a way to prevent a link between your identity and any information.

Compensation

We will not pay you for participation in this study.

Voluntariness

Participation in this study is voluntary and you can willingly withdraw from this study at any period without any consequences.

Outcome and Feedback

The findings from this study will be disseminated to the health facilities through the health directorates.

Funding information

The study is been funded by the student researcher or the principal investigator.

Sharing of participants information/Data

The data, which would be generated would be used for the purposes of academic work and publication in future. The data would be destroyed after the purposes for which it is being collected.

In-depth Interview

We would record the in-depth interview in order to transcribe and translate the information for analysis. This is solely for the purposes of this study, after which the recording s would be destroyed.

Provision of Information and Consent for participants

A copy of the information sheet and the consent form would be given to you for keep after signing it.

QUESTIONS

You are encouraged to ask questions about the study. If you have any questions concerning this study information you may contact the following persons;

Contact Numbers

In case of any queries/difficulties you may contact the following:

1. Abdul-Somad Abdul-Nasir

Tel: 0249815433

E-mail: fifanash@ymail.com

2. Dr. Justice Moses K. Aheto

Tel: 0242527292

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You may also contact the Chair or Administrator of the Ghana Health Service Ethical Review Committee. 3. Madam Hannah Frimpong

GHS-Ethical Review Committee Research and Development

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P. O. Box MB 190, Accra

Office: 0302 681 109 Mobile: 024 451 6482

Email: Hannah.Frimpong@ghsmail.org

Voluntary Consent

I……, have read the written information (or have had the information read and adequately explained to me in a language I understand) for the study "**Assessment of the Quality of Antenatal Care in Managing Anaemia Based on Guidelines in Ashaiman Municipal and Ningo Prampram in Greater Accra".**

I have been given adequate opportunity to ask any question I have. All questions have been answered to my satisfaction. I have also been given enough time and opportunity to consider taking part in this study. I fully comprehend the content and possible implications as well as my right to withdraw from the study even after consenting and signing this form.

I therefore agree to participate in this study.

Initials of Participant…… ID Code…….

……..

Signature of Participant Date: ……..

Interpreters' Statement

I interpreted the objectives and the content of the Participant's Information Sheet to the afore-mentioned participant to the best of my knowledge in the (……) language to her proper understanding.

All questions, appropriate explanations sort by the participant and answers were also duly interpreted to her satisfaction

Name of Interpreter ……..

Signature ……..

Date…….

Contact Details

Investigators Statement and Signature

I declare that enough time has been given the participant to read and learn about the study. All questions and clarifications which came up have been duly addressed.

Researcher's name……

Signature……..

Date……..

APPENDIX 3 QUESTIONNAIRE FOR PREGNANT WOMEN Respondent ID……

School of Public Health College of Health Sciences University of Ghana

Questionnaire on Assessment of the Quality of Antenatal Care in Managing Anaemia Based on Guidelines in Ashaiman Municipal and Ningo Prampram in Greater Accra

Name of Health Facility:…….

Name of Interviewer:……

Date:…….. \..... \.....

Hi, my name is ……. , we are conducting a study to assess the performance of health facilities in treating anaemia during pregnancy and to determine anaemic women experience of care in management of anaemia by the health facilities. You have been selected to take part in this study because the health facility records show that you are anaemic and we will be grateful if you would be willing to share your experiences with us. The interview will be short and last only 15 to 30 minutes. You are free to answer the questions to best of your understanding and seek clarification if any questions are unclear.

The findings of the study will be beneficial to the health facilities, pregnant women and Ghana Health Service as a whole in especially management of anaemia during pregnancy. Your participation in this study may therefore be helping in strengthening the management of anaemia in the municipality or district and the region as a whole.

Question Number	Demographics	Responses
1	What is your age? (In completed years)	
2	What is your marital status? (Circle one)	1.Married 2. Cohabitation 3. Single\Never married
3	What is your highest educational level? (Circle one)	1.Formal Education 2.Primary\Basic 3.Middle\JHS 4.Secondary\\SHS 5.Tertiary
4	What is your religious affiliation? (Circle one)	1.Moslim 2.Christian 3.Traditionalist 4.Other specify
5	What is your occupation? (Circle one)	1.Student 2.Apprentice 3.Unemployed 4.Farmer 5.Trader 6.Self employed 7.Government employee 8.Other Specify
6	Is this your first pregnancy? (circle one)	1.Yes 2.No
7	Did you start ANC clinic (initial visit) at this facility? (Circle one)	1.Yes 2.No
8	About how many times have you visited this facility with this pregnancy? (circle one only)	1.Once 2.Twice 3.Thrice 4.Four times 5.More than four times

Human and Physical Resources		
9	In your opinion, was the health care provider's skills and knowledge adequate to provide care? (Circle one).	1.Yes 2.No
10	How would you rate the cleanliness of this facility? (Circle one only).	1.Not clean 2.Fairly clean 3.Clean 4.Very clean
11	In your opinion, was the health care provider's equipment adequate for your antenatal care services? (circle one)	1.Yes 2.No
12	In your opinion, is the space adequate for offering of ANC services (circle one)	1.Yes 2.No
13	How would you rate the comfort of the waiting area? (circle one only)	1.Not comfortable 2.Fairly comfortable 3.Comfortable 4.Very comfortable

Cognition		
14	How will you rate the readiness of the staff to listen to your problems? (Circle one only).	1.Not at all 2,Fairly ready 3.. Ready 4. Very ready
15	Did the health care provider explain the findings of your Hb test or tell you what was wrong with you? (Circle one).	1.Yes 2. No
16	Did the health worker explain findings to you in an easy to understand language? (Circle one)	1.Yes 2..No
17	Did health workers allow you to ask questions on services you did not understand (Circle one)	1.Yes 2..No
18	In your opinion, did the health care provider examine you in a way that you feel respected and happy? (Circle one.)	1.Yes 2.No
19	How will you rate the relationship between health providers and clients in this facility (Circle one)	1.Poor 2.Fair 3.Good 4.Very Good

Respect, Dignity and Equity		
20	Normally, have you been treated with respect by members of staff? (circle one)	1.Yes 2.No
21	How would you rate the way your privacy was respected during physical examination? (Circle one).	1.Poor 2.Fair 3.Good 4.Very Good
22	Were you able to communicate with providers in privacy (circle one)	1.Yes 2.No
23	How would you rate the way your personal information was kept confidential? (circle one)	1.Poor 2.Fair 3.Good 4.Very good

Emotional Support		
24	Were the instructions clear about the drugs you were given or prescribed? (Circle one).	1.Yes 2.No
25	To what extent have you been involved in making decisions about your antenatal care? (circle one)	1.Not involved at all 2.Somewhat involved 3.Involved 4Very involved
26	How will you rate the health providers when it comes to provision of emotional support for women whose conditions are continuously unresolved? (Circle one)	1.Poor 2.Fair 3.Good 4.Very Good

General and Outcome Measures		
27	What type of drugs (IFA) did the health provider recommended to you to improve your Hb? (Circle one) **If option 1 Go to 29**	1.Suspention or Liquid 2. Tablets or Capsules 3. Both suspension and Capsules 4. Other (Specify)……...
28	If tablets, how did the health provider explained to you to take the IFA? (Circle one)	1.60mg Iron, 400u Folic daily 2. 60mg Iron twice daily, 400u Folic daily 3. Other (Specify)……...
29	If suspension, how did the health provider explained to you to take the IFA? (Circle one)	1.60mg Iron, 400u Folic daily 2. 60mg Iron twice daily, 400u Folic daily 3. Other (Specify)……...

30	How long the health provider did asked you to take the IFA drugs? (Circle one)	1. 2 weeks 2. 1 Month 3. 2 Months 4. 3-6 Months 5. Not informed
31	Did your Hb improved to normal after taking the drugs? (Circle one)	1.Yes 2.No 3. Don't know 4. Not informed
32	If No, did the health provider referred you to the next line of treatment? (Circle one)	1.Yes 2.No
33	Can I please take records of your Hb at registration and the recent one? (Observe and record	1. Hb at registration …….. 2. Recent Hb…… 3.Recent not available
34	In general, how would you rate the quality of care you have received during today's visit? (circle one)	1.Poor 2.Fair 3.Good 4.Very good
35	Would you want to come to this facility again before you deliver? (Circle one)	1.Yes 2.No
36	Would you like to deliver your baby at this facility? (circle one)	1.Yes 2.No
37	How will you rate quality of care provided by staff at this facility? (Circle one).	1.Poor 2.Fair 3.Good 4.Very good
38	How would you rate the amount of time you waited before being attended to? (Circle one).	1. Very long waiting time (more than one hour). 2. Long waiting time (30min-one hour). 3. Not long waiting time (20-30min). 4. No waiting time(less than 20 min).
39	How would you rate your experience of getting enough time to ask questions about your care/problems if any? (circle one)	1.Poor 2.Fair 3.Good 4.Very good

I would like to thank you for your time

APPENDIX 4 Health Facility Inventory Questionnaire

Interview\ Observation date ……..\.....\.....

Name of observer\Interviewer…….

Human and Physical Resources		
1	Cleanliness of the building	1.Satisfactory 2.Unsatisfactory
2	Space availability of the building	1.Satisfactory 2.Unsatisfactory
3	Availability of tables and chairs for daily activities	1.Satisfactory 2.Unsatisfactory
4	Adequacy of examination couches	1.Satisfactory 2.Unsatisfactory
5	Type of health facility	1.Government 2.Private
6	Is the health facility having qualified personnel for the assessment and management of anaemia?	1.Midwife and auxiliary staff 2.Midwife, laboratory technician and auxiliary staff 3. Midwifes, laboratory technicians, Doctor/Medical Assistant, Nutritionist and auxiliary staff 4.Other (Specify)
7	Is the facility having treatment guideline?	1.Yes 2.No
	Is the facility having sufficient stock of IFA?	1.Yes 2.No
Referral Systems		
8	Is the ANC having referral forms?	1.Yes 2.No
9	Is the ANC having referral register for anaemia/or with anaemia cases?	1.Yes 2.No
10	Is reliable transport available at the health facility for referrals?	1.Yes 2.No
Maternity Information System		
11	Is the facility having ANC register?	1.Yes 2.No

12	Is the ANC register updated for Hb's tested at registration for May 2019?	1.Yes 2.No
13	Is the ANC register updated for Hb's tested at 36 weeks (Any 5 anaemic women with 36weeks of gestation or more)	1.Yes 2.No
14	Is anaemia diagnosed and treatment initiated? (Using 5 sample anaemic cases of July,2019 of the ANC register compare with NHIS claim forms)	1.Yes 2.No
Appropriate Technologies		
15	Is the facility providing anaemia clinics?	1.Yes 2.No
16	Is the facility using counseling cards to educate pregnant women with anaemia on the 4-Star diet?	1.Yes 2.No
17	Is the facility having a mechanism or procedure of involving the community/locals in the management of anaemia in pregnancy?	1.Yes 2.No
Management of Emergencies		
18	Is the facility having a framework illustrating anaemia conditions that falls into emergency management?	1.Yes 2.No
19	Is the facility addressing anaemia emergency cases?	1.Yes 2.No
20	Is the facility having records on anaemia emergencies addressed?	1.Yes 2.No
Internationally Recognized good practices		
21	Is the ANC of the facility having anaemia treatment protocol/guideline?	1.Yes 2.No
22	Is there a framework at the ANC of the facility illustrating anaemia supplementation and anaemia treatment?	1.Yes 2.No

APPENDIX 5 In-Depth Interview for Health Staff

Interview Guide for Health Staff Working on the Anaemia Treatment and Management in Pregnancy

Date ……

Participant ID number……

Health facility name ……..

Age of health worker……

Position…….

Sex of health worker……..

Introduction

- Thank health worker for their time and introduce project
- Go through consent form and give participant a signed copy
- Outline format of interview

Level of formal training/Cadre of health professional…….

1. Briefly outline your current position and responsibilities

2. Can you kindly give me an overview of the anaemia treatment and management?
3. Have you had any training on the anaemia treatment and management? (Probe type of training and period trained as well as content and duration of training and training by which organization)

4. How accessible is the anaemia treatment guideline to you in the course of your work? (Probe and ask to see treatment guideline if available)
5. How often do you receive facilitative supervision on anaemia treatment and management? (Probe form of supervision and who comes for supervision)
6. Can you please take me through the recommended anaemia treatment and management for a potential anaemic pregnant woman who visit your facility?
7. How are your clients responding to anaemia treatment and management?
8. Can you share your experiences/challenges regarding anaemia treatment and management in this facility?
9. In what ways do you think the anaemia treatment and management policy can be improved for optimal results in this facility?

THANK YOU FOR YOUR TIME