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ASSESSMENT OF QUALITY OF ANTENATAL CARE SERVICES AT THE LA-GENERAL HOSPITAL

By

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DECLARATION

I, RANSFORD EDUSEI, hereby declare that apart from specific references which have been duly acknowledged, this dissertation is my own work put together under the supervision of Dr. Patricia Akweongo and that this work has not been presented in part or whole for any other ethical consideration.

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DEDICATION

To almighty God and my Family (Mrs Edusei Rita, Alvin Frimpong Edusei, Emmanuella Adwoa-Nyamekye Edusei, Allen-Brown Adom Edusei and Ethan Obrempong-Afriyie Edusei).

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LIST OF ABBREVIATIONS

ANC	Ante Natal Care
CSO	Civil Society Organizations
GHS	Ghana Health Service
GHS-ERC	Ghana Health Service Ethical Review Committee
GSS	Ghana Statistical Service
MDG	Millennium Development Goals
NO.	Number
OPD	Out Patients Department
SERVQUAL	Service Quality
SAPS	Status Access Power Stuff
SDG	Sustainable Development Goals
UN	United Nations
UNICEF	United Nations International Children's Educational Fund
WHO	World Health Organization

ABSTRACT

Introduction: Despite measures to improve the quality of health care delivery in Ghana, there is still perceived unsatisfactory services rendered. La General Hospital recorded ANC attendance of 21,879 in 2015. The years 2016 and 2017 recorded a total number of 21,682 and 21,432 respectively. In 2017, about seven (7) stillbirths and nine (9) maternal deaths were recorded midyear at the hospital.

Objective: This study sought to assess the quality of antenatal care services and the associated factors at the La General Hospital, and to determine the socio-demographic as well as provider-related factors that influence clients' satisfaction with the quality of ANC.

Method: A quantitative cross-sectional study was conducted using a total of 385 pregnant women who attended Antenatal care at the La-General Hospital. The study was done in June, 2018 using structured questionnaires. Data were analyzed using STATA 15.0 statistical software. Descriptive and analytical statistics were used to generate means, percentages, cross tabulations to describe the findings, while bivariate analysis was conducted using Chi-square and logistic regression to determine significant associations reporting crude odds ratios. Confidence level of 95% and $p < 0.05$ was set as statistical significance.

Results: The majority of respondents were between the ages of 23 and 33, 57.6 % and 76.6% was employed. Many of them were also married 64.5%. Majority of respondents, 93.9% rated the quality of antenatal care at the La General Hospital as good (P = 93.9%, 95% CI= 91% - 96.1%). Tertiary education (cOR = 0.08, 95% CI = 0.009 – 0.7), marital status, separated (cOR = 0.02 95% CI = 0.0009 – 0.5); quality of service as a reason for attending ANC (cOR = 5.3, 95% CI = 1.1 – 25.2), ANC visits significantly increased the odds of a good rating of quality (cOR = 1.35, 95% CI = 1.02 – 1.78). The environmental factors such as clean toilets at the facility (cOR = 8.8, 95% CI = 2.9 – 25.7), adequate number of washrooms (cOR = 4.8, 95% CI = 1.5 – 15.6), enough chairs at waiting area(cOR = 13.1, 95% CI = 4.4 – 39.0), ventilation at waiting area (cOR = 10.1 95% CI = 3.5 – 29.0), enough privacy at ANC clinic ($p < 0.01$), confidentiality of information (p

<0.001), waiting time to meet the nurse (cOR = 0.74, 95% CI = 0.57 – 0.05) and waiting time to see doctor/midwife had significantly 33% reduction in the odds of rating overall ANC care as good. Perceived levels of respect shown by doctors and nurses were both significantly associated with the quality rating. The explanation of health state of mothers and unborn babies by doctors/midwives was significantly associated with the overall rating of care (cOR = 23.7, CI = 95% 1.3 – 419.0). From this study, 93% were satisfied with antenatal care services at the La General Hospital and rated quality of antenatal services as good.

Conclusion: ANC attendance, structural factors (physical environment: adequate ventilation in waiting area, adequate wash rooms, enough chair at waiting area, enough privacy at ANC clinic), and health provider factors (prompt attendance to clients by health workers, maintenance of confidentiality and show of respect towards clients, waiting time, contact time, clarity of diagnosis and treatment, health education on labour, medication and its importance, as well as breast feeding) influenced overall clients rating of quality of Antenatal Care at the La General Hospital. It was recommended that the administrators of La General Hospital should encourage and motivate staff to maintain existing relationship with clients and improve on maternal education through capacity building.

CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

According to the World Health Organization (WHO), the outcome of care for women and newborns around the time of birth in health facilities reflects the evidence-based practices used and the overall quality of services provided (WHO, 2016). Quality indicators aim to detect suboptimal care either in structure, process or outcome. It also serves as a tool to direct the process of quality improvement in health care (Vos et al., 2009).

Analysts have stated that the utmost success in maternal health will arise if maternal health care services are the sole source for women's health care solutions for any problem related to childbirth (Machira & Palamuleni, 2018).

According to the World Health Organization (WHO), tremendous progress has been made in increasing and improving maternal health services. Since 1990, the global maternal mortality ratio has declined by 45 %, while worldwide under-five mortality rate has declined by more than half, dropping from 90 to 43 deaths per 1,000 live births between 1990 and 2015 (United Nations, 2015).

Despite these achievements, indicators still remain low in some parts of Sub-Saharan Africa. High maternal and neonatal mortalities continue to exist in this part of Africa (Fagbamigbe & Idemudia, 2015). *Maternal mortality in Ghana was* estimated at 378 *deaths per* 100,000 live births (Ngongi, 2013).

This is unacceptably high. It has been well-known that virtually all of these avoidable deaths (99%) occur in developing countries. Ghana missed the opportunity to achieve Millennium Development Goals 5. Evidence suggests that the antenatal period offers opportunities to getting pregnant women with a number of interventions such as Antenatal Care (ANC) that may be essential to the health of the woman and her unborn baby (Dickson, Darteh, & Kyereme, 2017).

Antenatal care (ANC) helps in preparing women for delivery and parenthood by averting problems for pregnant women, mothers and babies through early detection, alleviation and management of health difficulties that affect mothers and babies during pregnancy (Fagbamigbe & Idemudia, 2015). The success of any antenatal care service depends on operational and functional series of care with accessible, affordable, high quality care during and after pregnancy and childbirth (Dickson et al., 2017).

To improve antenatal attendance, requires reduction to the barest minimum the barriers to seeking care. Financial barriers can be removed by ensuring quality but free health services (Pell et al., 2013). Donabedian (1988), listed seven indicators that define quality. These indicators are efficacy, effectiveness, efficiency, optimality, acceptability, legitimacy and equity (Kiguli, Ekirapa-kiracho, Mutebi, Macgregor, & Pariyo, 2009). The context of quality health care also focuses on interpersonal relationship between provider and client effectiveness, safety, hospital environment, amenities and others (GHS, 2010).

The quality of services rendered at the antenatal clinic is one of the key determinants of health seeking behaviour (Mbai, 2015). The level of quality determines their willingness

to return for services and follow-up visits. Ultimately, an improvement in the quality of antenatal services will affect maternal health outcomes positively. This study however, sought to assess the quality of antenatal care services at the La-General Hospital.

1.1 Problem Statement

The La General Hospital provides antenatal care services for the people of La and its environs. Averagely, about 350 pregnant women attend the hospital for antenatal care services within a week. In 2015, La General Hospital recorded ANC attendance of 21,879. The years 2016 and 2017 recorded a total number of 21,682 and 21,432 respectively.

The World Health Organization (WHO) has in place regulatory documents for antenatal care procedures (WHO, 2016). Aside this regulatory document, the Ghana Health Service (GHS) has also made available a policy document that contains code of ethics for staff, patients' charter and antenatal care procedures. These documents guide the course of service delivery so as to reach the highest quality desired, considering the socio-demographic as well as provider-related factors that influence service delivery at health facilities. Some of the factors known to affect quality of antenatal care include care and treatment, promptness to the needs of clients, relationship between health staff and clients, consent and confidentiality, sanitation of working environment, right to information among other issues (Janicijevic, Seke, Djokovic, & Filipovic, 2013).

However, despite these measures put in place by the WHO, GHS and other Civil Society Organizations (CSO) to improve the quality of health care delivery in Ghana, there is still

perceived unsatisfactory services rendered, and efforts to address these complaints have received less attention (Van Den Broek & Graham, 2009). Ofosu-Kwarteng (2012) confirmed that there remained a gap between the services health professionals deliver and the ideal which is the desired satisfaction. It has been reported that maternal mortality continues to be on the increase, and clients often complain about quality of services in public healthcare facilities. These services include antenatal services and this is evident in the maternal mortality ratio recorded for Ghana (GHS, 2010). In 2017, about seven (7) stillbirths and nine (9) maternal deaths were recorded midyear in La General Hospital. This is quiet alarming in the context of La Community which also boasts of the 37 Military Hospital which is a teaching hospital.

Therefore, this study sought to assess the factors that contribute to the quality of antenatal care services at the La General Hospital. The socio-demographic as well as service provider-related factors were among the many factors that were assessed in this study.

1.2 Justification of the Study

Maternal mortality rate in Ghana stands at 380 per 100,000 live births (UNICEF, 2013). Undoubtedly, most maternal deaths are preventable. This approach could positively impact on the Sustainable Development Goal, which aims at improving maternal health (Kyei-Nimako, Carolan-Olah & McCann 2016). This study sought to provide evidence-based research on the quality of antenatal care services at the La-General hospital, which will not only contribute to the existing body of knowledge on service quality, particularly for antenatal care in general, but also provide new knowledge, specifically on quality of antenatal care services at the La-General hospital.

Customer service, especially in a primary health care facility, is crucial for the survival of the facility since dissatisfied clients may change their health service provider (Hasannuzzaman & Haque, 2016). This may lead to eventual drop in the number of clients and also cause financial loss to the hospital. This study will provide an opportunity for the hospital to ascertain the magnitude of the problems that have been reported from pockets of complaints with regards to patients' perception about quality of care. It may also enable top level management to formulate targeted strategies to promote quality of antenatal care services at the hospital.

With regards to resource challenges, it will provide vital information on which areas to prioritize spending to improve overall quality of antenatal care services at the facility. The Ghana National Healthcare Quality Strategy (2017-2021) had stakeholder views emerging around the Donabedian (1988) principle (MOH, 2016). This study therefore, aimed to determine quality of antenatal care services in an urban health care facility. Findings from this study will add to the literature by showing how the Donabedian (1980), model might help to explain quality of antenatal care services and provide evidence for improvement of service delivery at the La-General hospital.

Findings from this study may further help to inform health professionals on how clients perceive the services rendered to them. Recommendations from this study may also help to give an insight into how the authorities or health policy makers could guide other stakeholders on the steps and guidelines that require consideration so as to improve maternal health and hence, reduce maternal morbidities and mortalities.

1.3. General Objective

To assess the quality of antenatal care services at the La-General Hospital.

1.3.1. Specific Objectives

1. To determine the influence of clients s(socio-demographic characteristics) factors on the quality of ANC.
2. To assess the quality (input processes and output) of the antenatal services.
3. To determine provider-related factors that influence client satisfaction with the quality of antenatal care.

1.3.2. Research Questions

1. What are the factors (socio-demographic characteristics) that influence clients on the quality of antenatal care?
2. What is the quality of antenatal care provided at the La General Hospital?
3. What are the provider-related factors that influence client satisfaction with the quality of antenatal care?

1.4 Conceptual Framework for the Study

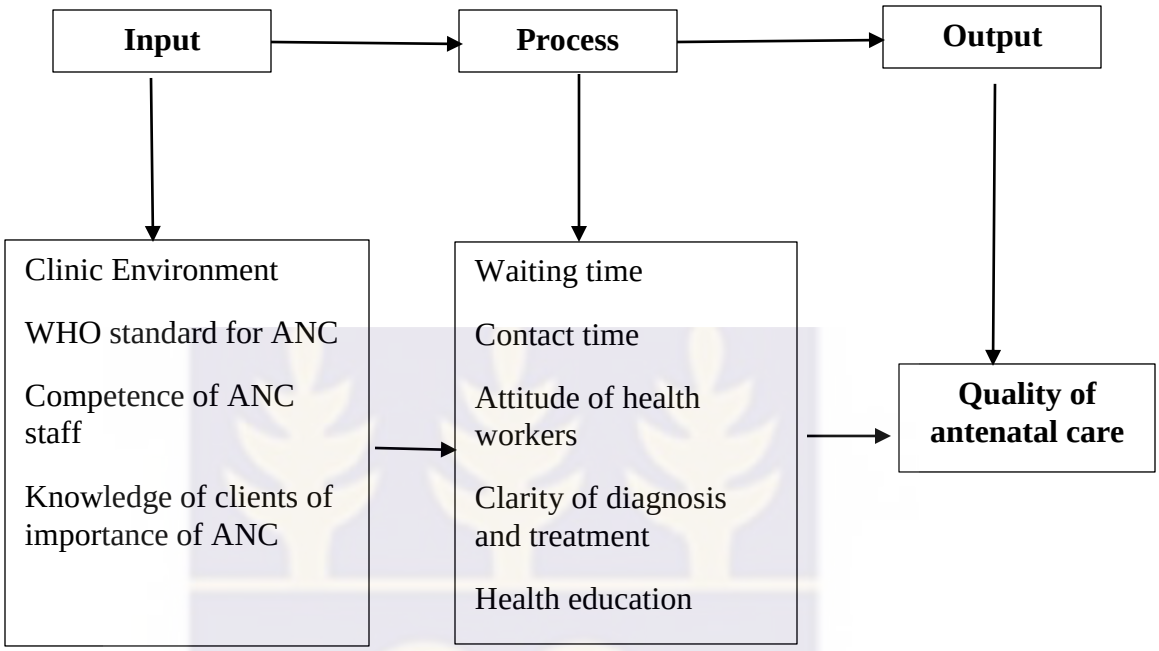


Figure 1: Conceptual framework of quality of antenatal care services and its attributes (Adapted from Donabedian 1988).

According to the Donabedian (1988), model, quality of care as health outcome is largely influenced by the structures and processes existing in the health facility. These structures and processes from the health care provider by way of their services (waiting time, contact time, attiude of health workers, clarity of diagnosis and treatment, education) influence the overall perception of the patients with regards to whether or not they are satisfied with the health care provided. Health care provider-related factors, such as physician communication, attitude of staff, the hospital environment (infrastructure and basic facilities), waiting time and cost of investigative tests influence patient's satisfaction.

However, perceived satisfaction of patients may vary across socio-demographic characteristics (age, sex, educational level, occupation, marital status, and income level) of patients who visit the facility (Shou-Hisa, Ming-Chin, & Tung-uang, 2003).

Inputs in this context refer to the arrangement of the clinic environment, the compliance with the WHO recommendation, competence of staff and knowledge of clients of ANC and its importance. The processes consider the promptness of staff to the needs of the pregnant mothers. Waiting time, contact time, attitude of health workers, health education and clarity of diagnosis are the processes that drive the components of ANC to optimum quality.

1.5 Organization of the study

The research is grouped into six chapters. Chapter one has the background of the research study, the problem statement, research questions, the objectives of the research as well as justification for the study. Chapter two reviews available as well as relevant literature associated with the study, quality measurement models and the conceptual framework for the study. Chapter three outlines the study area, study design, study population, the sampling procedures, research instrument, data collection and analysis as well as ethical considerations. Chapter four states data analysis and results presentation whiles, chapter five presents the discussion of the findings of the study, with chapter six providing conclusion and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Different models have been used to assess the quality of care provided in the services sector. These have been explained showing comparison among the models and selecting the model most suitable for this study. Factors affecting quality of antenatal care and patient satisfaction have been reviewed.

2.1 Quality of Care

Historically, developing countries have been focusing on the quantity rather than quality of health services, although sufficient evidence suggests that quality of care or the lack of it must be the focal point of every discussion about better health (Peabody, Taguiwalo, Robalino, & Frenk, 2001). These insufficiencies in quality of care signify neither the failure of professional compassion nor essentially a lack of resources (Fagbamigbe & Idemudia, 2015). Rather, they result from gaps in knowledge, inappropriate applications of information and technology (Owoo & Lambon-Quayefio, 2013). The major contribution of research in health care has been in the attempt to clearly define quality of care (Oladapo & Osiberu, 2009). According to Steffen (1988), the capacity of the elements of care is quality, such as process and structure, to achieve a goal, such as to improve outcomes. The obvious or inherent goals of a health care encounter (or a long-standing provider-patient relationship) decide to a great extent the scopes or properties that will be used to assess the quality of that encounter or relationship (McGeary, 1990).

Ovretveit (2009) also defines quality care as the provision of care that exceeds patient expectations and achieves the highest possible clinical outcomes with the available resources.

These definitions contain two main components. The first is the provision of technical quality care and the second is engaging patients in deciding about their treatment and care and to be treated in humane and culturally accepted ways (Pell et al., 2013).

The quality of antenatal care from the clients' perspective for the purposes of this study is defined as antenatal care that has good interpersonal relationships between provider and patient and promptness of attention (GHS, 2010) in terms of adequate waiting time and time spent by doctor with patient, is safe and has health education at the facility (Kotoh & Van der Geest, 2016).

2.2.1 SERVQUAL (Service Quality) Model

This model assesses quality in the service industries such as health, hospitality, banking and finance among others and the most widely used model to assess quality. The original domains comprising of reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding the customer and tangibles of the model were developed by Parasuraman et al., (1985). These were adapted from the fifth gap of the Gap Model (Ayensu, 2015), which comprised 5 main gaps: listening gap, service design and standards gap, service performance gap, service delivery external communication gap and finally, the fifth, expected service perceived service gap. After further statistical testing by the proponents, the 10 dimensions were therefore, scaled down to 5 (Arlen, 2008), as follows: Tangibility, Reliability, Responsiveness, Assurance

and Empathy. This model has been modified and used in different ways and in different settings, according to the research being undertaken. All the dimensions have been proven to be significantly related to the Quality of Service from its use in a wide range of clinical settings. The model has wide applicability (Yousapronpaiboon & Johnson, 2013). The model is tried and tested, and can be utilized relatively for benchmarking purposes (Al Bassam & Al Shawi, 2010).

2.2.2 SAPS (Status, Access, Power, Stuff) Model

This model was proposed by Gabe Zichermann and has been used in clinical settings and its correlation with other highly valid instruments is high with a Cronbach alpha of 0.85 (Hawthorne, Sansoni, Hayes, Marosszeky, &Sansoni, 2014). It can be used successfully in different clinical settings. Its simplicity has been demonstrated to maintain a high level of validity and reliability as far as patient satisfaction instruments go, from its uses. 'Its internal properties exceed psychometric criteria and it discriminates as well as longer instruments' (Hawthorne, 2015). The SAPS model was adapted from four very well-known reliable and validated patient satisfaction models and based on Donabedian's patient satisfaction theory. The seven recognized dimensions are: Effectiveness, Information, Technical Skill, Participation, Relationship, Access and Facilities, and Satisfaction General.

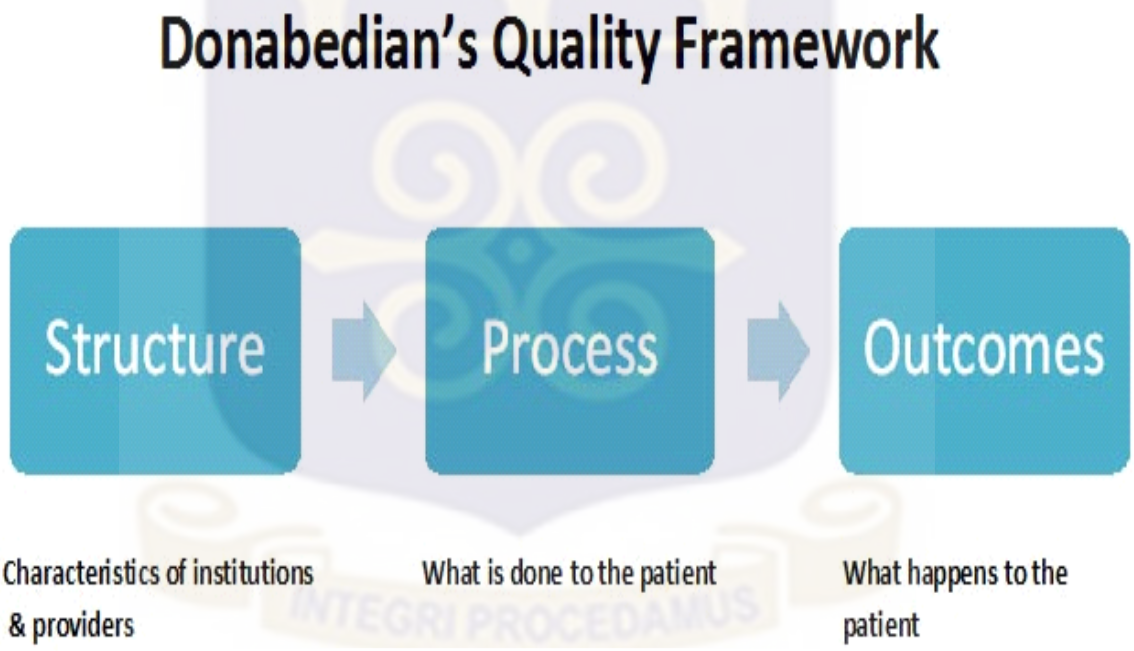
2.2.3 The Donabedian Model

Despite the advantages of service quality and SAPS quality models, this study adopted the Donabedian (1988) model to determine patients' satisfaction level of the quality of care at the study setting. The model was adopted in this study because it has received extensive empirical support for its ability to produce information from which inferences can be drawn on quality of care (Donabedian, 1988). According to the Donabedian (1988) model, three key domains, namely structure, process and outcome are interrelated in the context of a quality of care. Donabedian is of the view that a good system's structure increases the prospect of good processes, which increases the possibility of good outcome, such as patients' satisfaction (Donabedian, 1980). The model is therefore, criticized for its linear and sequential progression from structure to process and outcome by some authors who believe that the model will be quite useful if some patient characteristics and environmental factors are merged for a complete assessment of quality care (Mitchell et al., 1998; Coyle et al., 1999).

Notwithstanding, an important aspect of this framework is that it is sufficiently flexible to meet the context-specific requirements of the care setting. The separation of its components thus structure, process and outcome allow for a greater understanding of the interaction between each of these levels, which are inseparably linked but can also, independently, improve the delivery of quality (Donabedian, 2003). The model is generally recognized and applied in health care connected fields, which include but not limited to: Using the Donabedian framework to examine the quality and safety of nursing service innovation (Gardner et al., 2014), Donabedian's structure-process-outcome quality of care model: validation in an integrated trauma system (Moore et al., 2015),

measuring quality of services and provision in homelessness (Wolf & Edgar, 2007), and patient satisfaction with primary healthcare – a comparison between the insured and non-insured under the National Health Insurance policy in Ghana (Fenny et al., 2014).

The broad concept of the quality of care makes it difficult for a single approach to adequately and fully measure. Quality measurement of care follows the same track of struggle as its definition. The Donabedian "structure-process-outcome'' model offers a framework for factors that envisage patients' satisfaction with quality of care assessment (Fenny et al., 2014).



Source: (Donabedian, 1988)

2.3 Antenatal Care

Antenatal care (ANC) can be defined as the care delivered by trained health-care professionals to pregnant adolescent girls and women in order to safeguard the best health conditions for both mother and baby during pregnancy(WHO, 2015). The ANC components include: prevention and management of pregnancy-related or concurrent diseases; risk identification and health education and health promotion. ANC decreases maternal and perinatal morbidity and mortality together directly, through detection and treatment of pregnancy-related complications, and indirectly, through the identification of women and girls at increased risk of developing complications during labour and delivery, thus ensuring referral to an appropriate level of care(WHO, 2016).

2.3.1 Antenatal Services

The services offered at the antenatal clinic include the registration of the client, measurement of heights and weights, testing for urine proteins, recording of the blood pressures, examination of mother and fetus and tetanus immunization. Others include prophylactic treatment of malaria with Sulphadoxine Pyrimethamine, routine prescription of hematinics and screening of infections such as retroviral infections and hepatitis B. The rest are counselling and health education talks on family planning, labour and breast feeding so as to inform the expectant mothers (GHS, 2010). The providers of this service are the obstetricians, medical practitioners, nurses, midwives and traditional birth attendants (GHS, 2010). The WHO recommends a minimum of 4 ante-natal visits (WHO, 2015).

2.3.2 Benefits of Antenatal Care

The purpose of antenatal care (ANC) is to prepare women for birth and parenthood and prevent problems for pregnant women, babies and mothers through early detection, alleviation and or management of health complications that affect mothers and babies during pregnancy(Fagbamigbe & Idemudia, 2015). The achievement of any antenatal care service depends on efficient and functioning variety of care with affordable, accessible, high quality care during and after pregnancy and childbirth (Dickson et al., 2017). According to WHO (2015), antenatal care helps in the early identification and treatment of conditions that may threaten the health of the mother and helps a pregnant woman approach pregnancy and birth successfully (Mbai, 2015). Antenatal care (ANC) remains one of the safe motherhood interventions that if appropriately effected has the potential to significantly reduce maternal and perinatal mortalities (Oladapo & Osiberu, 2009). Furthermore, an effective antenatal care service reduces maternal mortality (Fagbamigbe & Idemudia, 2015). Antenatal care services also educate the pregnant woman on good nutrition, importance of exclusive breastfeeding and proper position of breastfeeding. It also informs them of the danger signs to note during pregnancy such as bleeding, hyperemesis gravidarum, symptoms of malaria among others (Lambon-Quayefio & Owoo, 2014). Lack of antenatal care however, denies the pregnant woman of these benefits and results in major risk factors for development of negative pregnancy outcomes (Dixon, Tenkorang, Luginaah, Kuuire, & Boateng, 2014).

2.4 Factors that Influence Patients' Satisfaction with Quality of Care

Factors in this study will be reviewed under two broad areas (Socio-demographic and provider-related factors).

2.4.1 Socio-Demographic Factors that Influence Satisfaction at OPD

A number of studies have found some association between socio-demographic characteristic and patient's satisfaction while others have not. Characteristics such as age, gender and education level of the patient were found to influence patient satisfaction in a national survey conducted in different hospitals of Taiwan (Oladapo & Osiberu, 2009). Also, studies found that the two determinants of higher satisfaction among patients are old age and better health status (Nguyen et al., 2002; Jenkinson et al., 2002). In another study, contrasting findings were that age, gender, perceived health and education level were not significantly associated with overall patient satisfaction (Oyvind, Ingeborg, & Hilde, 2011).

2.4.2 Provider-Related Factors that Influence Patients' Satisfaction

Some of the key health provider factors assessed in this study have been explained below:

Physician Communication: Communication is an essential tool used by health professional to get best responses from patients as well as enables the health professional to deliver quality health care to the patient. Interpersonal communication skills of physicians were found to be significant drivers of patient's satisfaction (Mbai, 2015). The quality of patient-provider communication offers a healing atmosphere where the patient will more likely maintain and utilize services provided by the provider. At the antenatal

clinic, mothers spend some of time with doctors in the consulting rooms. Communication between the patient and the physician most often impacts on the patient's perception of quality care rendered. "How well the doctors kept you informed about your condition" and "Understood the instructions and could easily follow them" were significantly associated with patients' satisfaction (Boudreaux, Boudreaux, Ary, & Mandry, 2017).

Environment: The hospital environment consists of the physical environment with regards to cleanliness as well as aesthetics and basic facilities that enhance the delivery of care. Mukhtar and colleagues (2013), in a descriptive cross-sectional study in a Tertiary care hospital revealed that majority of clients agreed that hospital was clean and very well ventilated. Environment was reported to significantly influence patient's satisfaction (Atinga & Abekah-Nkrumah, 2011).

Attitude of Staff: Perceived friendliness, respectfulness and fairness on the part of hospital staff goes a long way to inform patient's choice of a visit again or not. The hospital staff in the waiting area was found to be respectful and fair towards the patients (Lambon-Quayefio & Owoo, 2014)

Waiting Time: The time spent by clients waiting for their turn to be attended to by a doctor or the nurses has been found in other studies to influence clients perceived satisfaction(Atinga & Abekah-Nkrumah, 2011). Patro, Kumar, Goswami, Nongkynrih, Pandav (2008) also found waiting time for consultation as a factor that influences service in the OPD.

2.5 Patients Level of Satisfaction

Everyone desires quality of care (Saver et al., 2015). The satisfaction of patients with healthcare services has been confirmed to advance patients' quality of life (Dagger & Sweeney, 2006). It is generally agreed that patients perceived technical competency, empathy, verbal and non-verbal communication, being told the name of illness type and frequency of visit, as well as knowing the provider and patients' enablement, are the main predictor variables in patients' perceived satisfaction (Birhanu et al., 2010). Patients' satisfaction is perceived as both an outcome and a pointer and may present a simple first stage into understanding quality of care (Ware & Stewart, 1992). In measuring quality in health care, patients' satisfaction is an important and commonly used indicator as it affects clinical outcome, patient's retention, and medical mismanagement claims. It affects the timely, efficient and patient-centered delivery of a quality health care, thus, meeting the patients' expectation as a proxy but a very effective indicator to measure the success of doctors and hospitals (Prakash, 2010).

The satisfaction of the patient is a function of their use or access of healthcare services provided. Long waiting hours, unavailability of drugs and logistics, poor cleanliness, poor information provision, lack of privacy etc account for the main reasons why patients will be dissatisfied (Assefa et al., 2011). There is the likelihood that a patient will tell not less than 72 other people of bad service experiences at a facility, primarily and secondarily (Atinga et al., 2011). Patient satisfaction surveys remarks are useful to enhancements in the quality of care (Debono, 2009).

From time to time, patients' satisfaction studies need to be conducted to determine the indicators of patients' satisfaction to allow health facilities continue to modify their service deliveries to suit the patients' needs (Yousapronpaiboon& Johnson, 2013). As a number of studies have used patient perceptions as a key measure of evaluating healthcare quality (Sodani, 2010; Atinga, 2011).

CHAPTER THREE

METHODS

3.0 Introduction

This chapter outlines the procedures and steps that were followed in obtaining data and analyzing for the study. The chapter also introduces the sampling technique that was used. The sections include research design, target and study population, sampling technique and calculation of sample size, types and sources of data, research instrument, and administration of research instrument, data handling and finally ethical considerations.

3.1 Study Design

This study applied a cross-sectional analytical design and utilised quantitative approach. The study was carried out between June and July, 2018. This was used to assess the quality of antenatal care (ANC) at the La-General Hospital. The study was conducted among pregnant women attending the ANC.

3.2 Study Location

The study was carried out at the La-General Hospital located in Accra. La is a sub-urban community in the La Dade-Kotopon Municipality. The Municipality used to be a Sub-Metropolitan Assembly under the Accra Metropolitan Assembly until June, 2012, when it attained a Municipal status. Like all other municipalities, the La Dade-Kotopon Municipal Assembly was established by Local Government Act, 1993 (Act 462) with

Legislative Instrument 2133. The total population of La-Dade Kotopon Municipality, according to the 2010 Population and Housing Census, was 183,528 with females constituting 52.7% while males formed 47.3%. The municipality is best described as a youthful population with about 44.3 percent of the population being children under 15 years. The main ethnic group of the area is Ga-Adangbe. The dominant indigenous language spoken is Ga and it is a patrilineal society. However, other ethnic groups can be found in the municipality due to the warm hospitality of the indigenes and extensive economic activities in the area.

The La-General Hospital, which is a 180 bed capacity has nine (9) wards and sixteen (16)units serves a total of about 185,523 and more inhabitants from the municipality (Ghana Statistical Service, 2014). The La General Hospital was selected because it is the major health facility within the La Dade-Kotopon Municipality besides 37 Military Hospital which is a teaching hospital.

Antenatal clinics are held from Mondays to Thursdays. Averagely, about 350 pregnant mothers visit the antenatal clinic on weekly basis. The hospital, in 2017, recorded about 1668 deliveries mid-year. Out of that, there were 547 caesarian sections. About seven (7) stillbirths were recorded. Additionally, nine (9) maternal deaths were recorded midyear within that same year. Averagely, the hospital records 21 caesarian sections and 47 vaginal deliveries on weekly basis.

3.3 Study Population

A target population comprised a group of individuals or subjects, which serve as the main focus of a scientific query from which a sample is selected for a study (Castillo, 2009). For this study, it consisted of all pregnant women who attended Antenatal Clinic at the La-General Hospital within the month of June, 2018.

3.4 Sampling

3.4.1 Sample Size Determination

In a similar study in Nigeria, less than 35% of ANC users received desirable quality of ANC services (Fagbamigbe & Idemudia, 2015). Using 35% as the sample proportion, the sample size of this current study was computed using Cochran's formula (1965) as follows:

Where;

n= Sample size

z = Confidence interval at 95% which is 1.96

p = estimated proportion of the outcome of interest

d = Maximum error allowed

For the purposes of the study, the following assumptions were made in calculating the sample size:

95% confidence level (standard value 1.96), and

Maximum margin of error of 5%

Substituting into the formula, the sample size was computed as follows:

$$n = (z^2pq)/d^2$$

Thus, sample size $n = \frac{1.96^2 \times 0.35\ (1-0.35)}{0.05^2}$

n = 349.5 approximately 350

A 10% non-response rate was applied. The total sample therefore, was 385. The basis for the 10% non-responsive rate was to account for all questionnaires that were not completely filled.

3.4.2 Sampling Technique

A systematic random sampling technique was employed in the study to recruit pregnant women for the study. A daily antenatal care attendance register was used as the sample frame. Averagely, about seventy (70) pregnant women attend ANC at the La-General Hospital in a day. The ANC clinic is organized from Mondays to Thursdays. Data was collected over a period of one week. An estimated number of about 350 attend the clinic within the week. The sampling interval was then determined by dividing the estimated weekly attendance by the daily attendance (350/70) giving an interval of 5 with a starting point of 1. The pregnancy registrar for each day was used and the first pregnant woman was selected from the register, after which every fifth woman was also selected and interviewed. Only those who consented to the study were recruited to participate in the study.

3.5 Inclusion Criteria

All pregnant women who attended ANC clinic with gestational age of twelve weeks or more (WHO, 2016), who were either referred or decided to start ANC at the La-General Hospital by choice were recruited to participate in the study.

3.6 Exclusion Criteria

The mothers who were too ill on that day and those who did not consent were excluded from the study.

3.7 Study Variables

The variables measured in the study were categorized into dependent and independent variables.

3.7.1 Dependent Variable

The dependent variable measured in this study was quality of antenatal care services at the La-General Hospital. Quality of care was rated by participants as good quality or poor quality.

3.7.2 Independent Variables

The independent variables consisted of both socio-demographic characteristics of the pregnant women as well as health provider factors. These have been outlined in Tables 1 and 2.

Table 1: Independent Variables

Variable (Socio-demographic characteristics)	Description	Operational Definition	Scale of measurement
Age Age groups of mothers	18-30 years 31-49 years 50 years and above	Age categories of antenatal attendees at the La-General Hospital	Categorical
Marital Status	Single (Never married) Widowed Divorced Married Cohabiting	Marital status of respondents	Nominal
Religion	No religion Christianity Islamic Traditional Others (Please Specify)	Religion of respondent	Nominal
Educational Level	No formal education Primary Education Secondary Education Vocational Education Tertiary Education	Highest level of education attained by respondent	Ordinal

Independent Variables (continued)

Variable (Socio-demographic characteristics)	Description	Operational Definition	Scale of measurement
Employment status	Unemployed Self-employed Employed (Private Sector) Employed (Public Sector)	Form of employment of respondent	Nominal
Insurance status	National Health Insurance Private medical insurance Out of pocket	Forms of health financing for antenatal care services	Nominal
Self-perceived quality of care	Poor Good	Respondents view on quality of care provided at ANC clinic	Ordinal
Health provider Factors:			
Cleanliness of environment	Poor Good	Respondents view on cleanliness of environment	Ordinal
Waiting time	Short (< 10 minutes) Long (> 10 -30 minutes)	Respondents view on time spent between arrival and first contact with health personnel	Ordinal

Attitude of workers Caring, Respectful Sympathetic, Helpful, Friendly Empathy, Verbal abuse, Rudeness,	Negative /Positive Agree Strongly, Agree Disagree Strongly, Disagree)	Workers attitude towards clients	Ordinal
Patients Satisfaction Technical Competency of service providers Privacy during Consultation Frequency of visit in 12 months Type of visit Comfortable Seat	Strongly Agree/ Agree /Disagree/Strongly Disagree Yes/No Once/ Twice/ Three times/ Four times or more New/ Follow up Yes/No	Patients level of satisfaction with ANC	Ordinal

3.8 Data Collection Methods and Instruments

All pregnant women who attended Antenatal clinic with a recommended gestation period of twelve weeks or more (WHO, 2016), were selected for the study. Structured questionnaires were administered to participants at the exit of the clinic. Each questionnaire took approximately 10 – 15 minutes to be completed. The first part of the survey collected information on the socio-demographic factors of the respondents such as age, education, occupation, religion and marital status. The second part of the survey which measured the quality of antenatal care collected information on the number of required ANC visits by WHO, contact time, clarity of diagnosis and treatment, and clean environment. The third part of the survey elicited information on the level of patients' satisfaction of ANC services at the La-General Hospital, such as; the competence of the health workers, assurance of the mother and the unborn child's safety, the level of satisfaction with the service received (Quality of care rating), communication and waiting time.

3.9 Pretesting

The questionnaire was pre-tested at the Tema General Hospital. This was done by randomly administering draft copies of the questionnaires to the pregnant women thus enabling the researcher to modify the questionnaires for an efficient research study. This enabled the researcher to ascertain the adequacy of the research questions, time estimate for each question as well as make better preparation for the actual study. This facility was used because it is also a government facility with similar characteristics as that of the La-General Hospital. It was therefore, perceived that the experience of pregnant mothers at

the Tema General Hospital may be similar as those attending the La-General Hospital. The aim was to test for validity and reliability of the instruments. It also helped in training the research assistants. Anomalies in the questionnaire were corrected before the final data collection.

3.10 Data Analysis

To ensure accuracy and completeness, data were cleaned by running frequencies of all variables to check for inappropriate coding using STATA version 15 software. After double checking with raw data, all necessary corrections were made before analysis. The information in each questionnaire were coded and keyed into a computer using excel and imported onto STATA version 15.0 for analysis. In carrying out the analysis, both descriptive and analytical statistics were done. Frequency distribution tables, mean, percentages, charts and cross tabulations were used to describe the findings, while bivariate analysis was conducted using Chi-square to determine significant associations. Confidence level of 95% and $p < 0.05$ was considered.

3.11 Ethical Considerations

Ethical Clearance was obtained from Ghana Health Service Ethics Review Committee (GHS-ERC) to conduct this study.

3.11.1 Permission from the Study Sites

Subsequently, permission was sought from the hospital authorities of the La-General Hospital and Tema-General Hospital before data were collected for the study.

3.12 Participant Consent

Every participant was approached to express consent prior to involvement. Before participants were interviewed, each was given a consent form to read and sign. For participants who could not read and sign, consent was read to them in the language that they preferred and thumb-print sought before collecting data.

3.13 Privacy and Confidentiality

All the participants were given assurance that any information they provided were strictly to be used solely for academic purposes and information collected was handled with the strictest confidentiality. It was not shared with third parties who were not directly involved in the research. In addition, respondents were identified by numbers and not by names.

3.14 Risks and Benefits

Asking about their satisfaction level with ANC services did not raise emotions nor created discomfort for participants as envisaged. The additional time that was spent to complete the questionnaire however, posed some discomfort to participants as expected time to spend at the facility was further prolonged with the survey. However, they had the liberty to withdraw from participating if they desired to do so. They were assured that there was no foreseeable harm that may arise as a result of the study. It was explained to them that the results of the study would be beneficial in two main ways: may add to knowledge and may serve as a guide to policies on ANC interventions.

3.15 Right to Refuse

Participation in this study was voluntary. Participants were free to answer part or the entire questionnaire. They could choose to withdraw from the study or discontinue the interview at any time. Participants could also choose not to answer any question(s) they found uncomfortable about. Should they have chosen not to participate, it was not going to affect them or the clinic in any way. However, participants were encouraged to participate in this study to assess the quality of antenatal care services at the La General Hospital.

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter presents the results of the study on the assessment of quality of antenatal care at the La General Hospital. It highlights various factors such as socio-demographic characteristics of respondents, overall rating of quality of antenatal care, socio-demographic characteristics and quality of care rating, and inputs and processes associated with overall ratings of care rendered to participants. A total of 400 questionnaires were administered to the respondents. There were 15 incomplete questionnaires and these were dropped from the sample. After cleaning the data, 385 responses were therefore analyzed.

4.1 Socio-Demographic Characteristics of Respondents

The majority of pregnant women who attended Antenatal Clinic at the La General Hospital were between the ages of 23 and 33 constituting 57.6% (219/380). Only 7.4% (28/380) of respondents had no formal education. Those with secondary school education were 31.6% (120/380), 13.4% (51/380) had tertiary education and above. The majority of the respondents were employed 76.6% (291/380). Many of them also were also married 64.5% (245/380) with 25.5% (97/380) who were single. The results are shown in Table 2 below.

Table 2: Socio-Demographic Characteristics of the Pregnant Women who attended ANC at the La General Hospital

Variable	Frequency	Percent (%)
Age Category		
15-22	65	17.1
23-27	110	28.9
28-33	109	28.7
34-38	68	17.9
39-43	27	7.1
44-48	1	0.3
Educational Level		
None	28	7.4
Primary	68	17.9
Junior secondary	113	29.7
Senior secondary	120	31.6
Tertiary	51	13.4
Employment Status		
Employed	291	76.6
Unemployed	89	23.4
Marital Status		
Single	97	25.5
Married	245	64.5
Widowed	1	0.3
Separated	2	0.5
Co-habiting	35	9.2
Number of Pregnancies	**Mean = 2.20 95% CI = (2.08-2.32)**	
Number of Children	**Mean = 1.15 95% CI = (1.03 -1.27)**	

4.2 Antenatal Care Utilization among Respondents

ANC attendance among respondents ranged from one to nine with a mean number of attendances of 3.6 ± 1.9 SD. The highest number of pregnancies amongst respondents was five and the mean number of pregnancies was 2.2 ± 1.2 SD. One hundred and forty-four of the respondents, 37.9% (144/380) had no child alive. The maximum number of surviving children among respondents was four and this was among 3.4% (13/380) of the pregnant women. The mean number of children alive amongst the respondents was 1.15 ± 1.1 SD. One hundred and thirty-six of the respondents 35.8% (136/380), stated quality of service as their reason for attending ANC at the La General Hospital whilst 9.2% (35/380) were referred to the facility. Majority of the pregnant women were in the second and third trimesters of their pregnancies (45.5%; 169/380) and 38.2% (143/380) respectively. The results are outlined in Table 3.

Table 3: Antenatal Care Utilization among Respondents

Variables		
Number of antenatal visits M ± SD		3.6 ± 1.9
Number of pregnancies M ± SD		2.20 ± 1.2
Number of children alive M ± SD		1.15 ± 1.1
Number of children alive	**Frequency**	**Percent (%)**
0	144	37.9
1	102	26.8
2	80	21.1
3	41	10.8
4	13	3.4
Reason for attending ANC at LA hospital		
personal decision	122	32.1
referred	35	9.2
quality of service	136	35.8
proximity	87	22.9
Trimester of Pregnancy (n=374)		
1st Trimester	62	16.5
2nd Trimester	143	38.2
3rd Trimester	169	45.3

4.3 Overall Rating of Quality of Antenatal Care

Clients were asked to rate the overall care they received at the antenatal clinic on a Likert scale of poor, fair, good, very good and excellent. Less than one third (27.9%: 106/380) rated quality of antenatal care as excellent, whereas only 1.0% (4/380) rated the quality of antenatal care as poor. The results are displayed in figure 2a below.

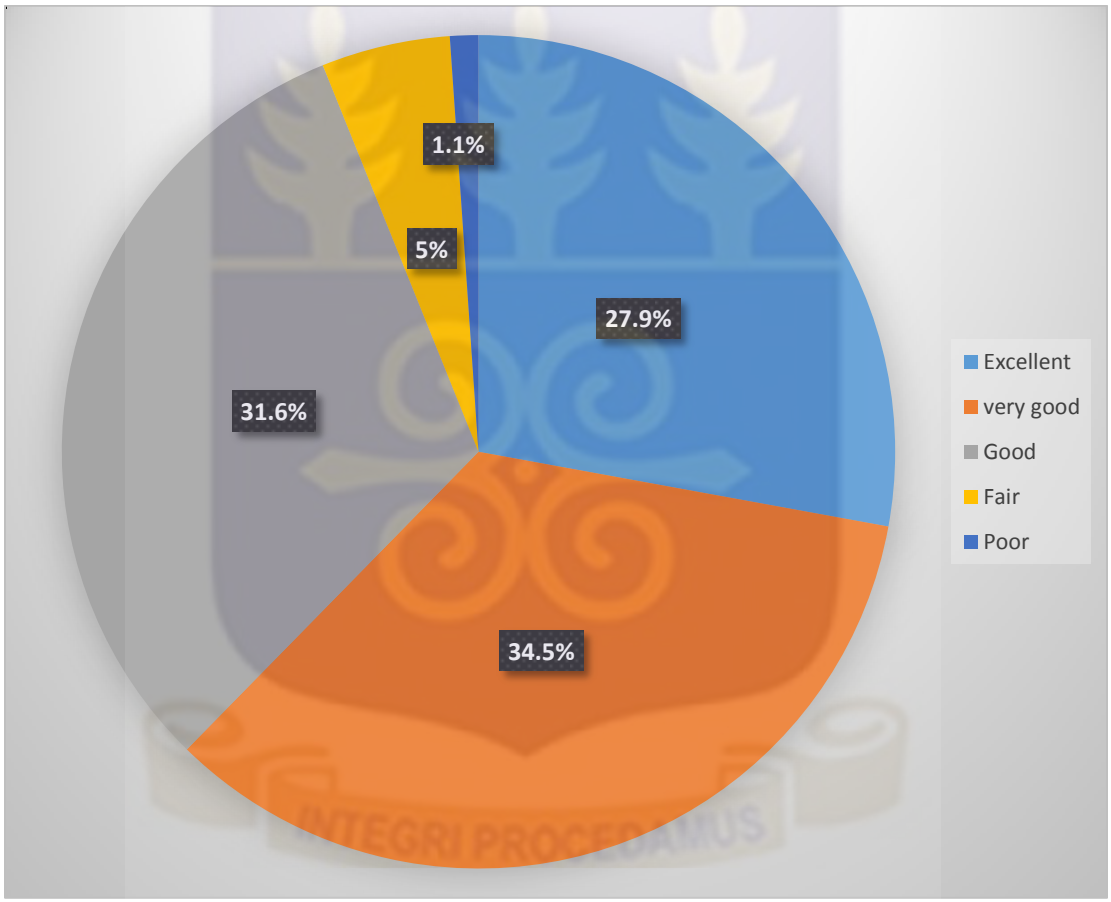


Figure 2a: Overall Rating of Quality of Antenatal Care

Majority, 93.9% (357/380) of the pregnant women rated the quality of antenatal care at the La General Hospital as good quality (P = 93.9%, 95% CI= 91% - 96.1%). Almost all the participants, 99.74% (377/380) indicated that their health and that of their unborn children had improved because of the quality of care given at the ANC. The results are indicated in figure 2b.

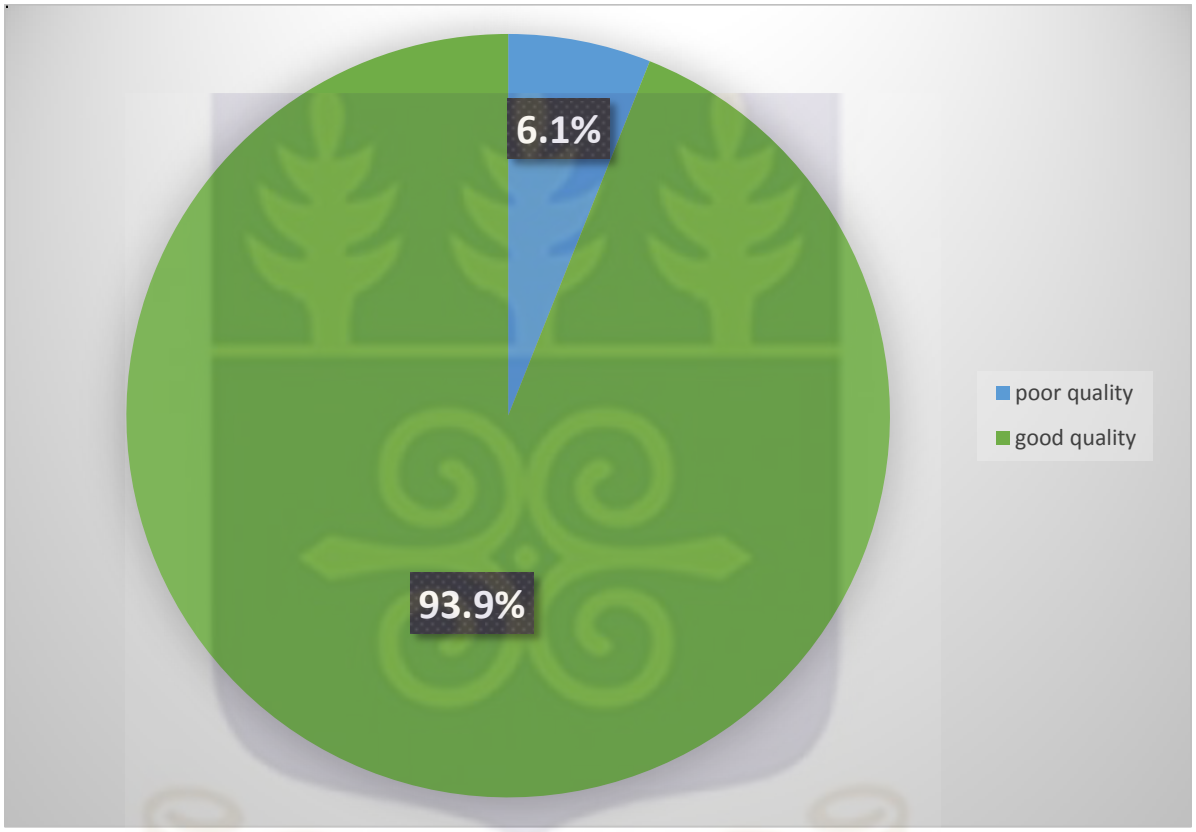


Figure 2b: Overall Rating of Quality of Antenatal Care

4.3 Socio-Demographic Characteristics associated with Quality of Care Rating

A simple logistic regression was fitted in order to compute estimates of the crude odds ratio. This was done to investigate the strength of association between socio-demographic characteristics and quality of care rating. The chi-square and logistic regression from the point estimates of crude odds ratios and their confidence intervals showed the significant socio-demographic characteristics associated with quality of care rating. Educational level was significantly associated in the chi-square analysis (p = 0.003). All the 28 respondents who had no formal education rated antenatal care as good. Respondents who had attended up to junior secondary school (cOR = 0.5, 95% CI = 0.06 – 5.4) and up to tertiary (cOR = 0.08, 95% CI = 0.009 – 0.7) had significantly higher odds of rating quality as good as compared with those who had primary education. Marital status, separated (cOR = 0.02 95% CI = 0.0009 – 0.5); reason for attending ANC were significantly associated. Quality of service as a reason for attending ANC increased the odds of rating ANC as good (cOR = 5.3, 95% CI = 1.1 – 25.2). A unit increase in ANC visits significantly increased the odds of a good rating (cOR= 1.35, 95% CI = 1.02 – 1.78). The results are displayed in Table 4 below.

Table 4: Socio-Demographic Characteristics associated with Quality of Care Rating

Variables	Quality Rating		X^2	COR (95% CI)
	good quality n = 357	poor quality n = 23	p-value	
Age category			+0.7	
15-22	63(96.9)	2(3.1)		Reference
23-27	104(94.5)	6(5.5)		0.5 (0.1 – 2.8)
28-33	101(92.7)	8(7.3)		0.4 (0.08 – 1.9)
34-38	62(91.2)	6(8.8)		0.3 (0.06 – 1.7)
39-43	26(96.3)	1(3.7)		0.8 (0.06 – 1.7)
44-48	1(100.0)	0(0.0)		1
Educational Level			**+0.003***	
none	28(100.0)	0(0.0)		1
primary	67(98.5)	1(1.5)		Reference
junior secondary	110(97.4)	3(2.6)		**0.5 (0.06 – 5.4)**
senior secondary	109(90.8)	11(9.2)		0.1 (0.2 – 1.2)
Tertiary	43(84.3)	8(15.7)		**0.08 (0.009 – 0.7)**
Employment Status			0.8	
Employed	273(93.8)	18(6.2)		Reference
Unemployed	84(94.4)	5(5.6)		1.1 (0.4 – 3.1)
Marital status			+0.06	
single	95(97.9)	2(2.1)		Reference
married	227(92.6)	18(7.4)		0.3 (0.06 – 1.2)
widowed	1(100.0)	0(0.0)		1
separated	1(50.0)	1(50.0)		**0.02 (0.0009 – 0.5)**
co-habiting	33(94.3)	2(5.7)		0.3 (0.05 – 2.6)
Reason for attending ANC			**+0.003***	
personal decision	113(92.6)	9(7.4)		Reference
referred	26(82.9)	6(17.1)		0.4 (0.1 – 1.2)
quality of service	134(98.5)	2(1.5)		**5.3 (1.1 – 25.2)**
proximity	81(93.1)	6(6.9)		1.1 (0.4 – 3.1)
Trimester of Pregnancy			0.5	

(n=374)			
1st Trimester	57(91.9)	5(8.1)	Reference
2nd Trimester	135(94.4)	8(5.6)	1.5 (0.5 – 4.7)
3rd Trimester	160(94.7)	9(5.3)	1.6 (0.5 – 4.8)
Number of antenatal visits (mean ± sd)	3.9 ± 4.8	2.8 ± 1.9	**1.35 (1.02 - 1.78)**
Number of pregnancies (mean ± sd)	2.2 ± 1.2	2.2 ± 1.2	1.02 (0.71 - 1.47)
Number of children (mean ± sd)	1.1 ± 1.1	1.2 ± 1.1	0.98 (0.68 - 1.41)

***statistically significant (p<0.05)** **+ Fisher's exact**

4.4 Health Providers factors (Inputs and Processes) associated with Overall Ratings of Care rendered to Participants

Respondents who agreed that a minimum of four ANC attendance was enough had significantly 6.3 times the odds of rating quality as good compared with those who strongly disagreed (cOR = 6.3, 95% CI = 1.1 – 34.4).Clean toilets at the facility were significantly associated with overall quality rating ($p < 0.01$) such that respondents who agreed that toilets were clean in the facility had eight times the odds of rating quality as good compared with those who strongly disagreed (cOR = 8.8, 95% CI = 2.9 – 25.7). Adequate number of washrooms for clients was significantly associated with the overall rating ($p = 0.004$). Participants who agreed that there was adequate number of washrooms had 4.8 times the odds of rating overall quality as good compared with those who strongly disagreed (cOR = 4.8, 95% CI = 1.5 – 15.6). Enough chairs at the waiting area ($p < 0.001$), ventilation at the waiting area ($p< 0.001$), enough privacy at ANC clinic ($p < 0.01$), promptness of health workers in attending to clients ($p< 0.01$), confidentiality of information ($p<0.001$). Participants who agreed that there were enough chairs in the waiting area had higher odds of rating quality of care as good (cOR = 13.1, 95% CI = 4.4 – 39.0).

Participants who agreed that ventilation in waiting area was right had 10 times the odds of a good rating as compared with those who strongly disagreed (cOR = 10.1 95% CI = 3.5 – 29.0). Participants who agreed (cOR = 5.4, 95% CI = 1.3 – 21.9) and those who strongly agreed (cOR = 20.1 95% CI = 1.9 – 212.0) had higher odds for good quality of ANC rating compared with those who strongly disagreed.

About 98% of those who agreed that health workers attended to them promptly rated the overall quality of care as good thus giving them higher odds of good quality rating of the ANC services compared with those who disagreed that health workers attended to them promptly. The results are shown in Table 5a.

Waiting Time

An hour increase in waiting time to meet the nurse significantly reduced the odds of a good quality rating for ANC service (cOR = 0.74, 95% CI = 0.57 – 0.05). Moreover, a one hour increase in waiting time had significantly 33% reduction in the odds of rating overall ANC care as good (cOR = 0.67, 95% CI = 0.51 - 0.88). The results are detailed in Table 5a.

Contact Time

The mean contact time among those who rated quality of care as good was 0.2 hours (12 minutes) as against a mean contact time of 0.3 hours (18 minutes) as among those who rated antenatal care as poor. The results showed that a unit increase in contact time with a doctor or a midwife significantly reduced the odds of a good quality rating of ANC services. The results are indicated in Table 5a.

Table 5a: Health Provider factors (inputs and processes) associated with overall Quality Ratings of care rendered to Participants

Variables	Quality Rating		X^2	COR(95% CI)
	good quality n = 357	poor quality n = 23	p-value	
Minimum of 4 ANC attendance is enough (n=376)			0.24	
strongly disagree	6(75.0)	2(25.0)		Reference
Disagree	9(90.0)	1(10.0)		3.0 (0.2 – 40.9)
Neither	47(92.2)	4(7.8)		3.9 (0.6 – 26.1)
agree	226(95.0)	12(5.0)		**6.3 (1.1 – 34.4)**
strongly agree	65(94.2)	4(5.8)		5.4 (0.8 – 35.9)
The clinic environment is clean			[+]0.3	
strongly disagree	6(85.7)	1(14.3)		Reference
disagree	7(100.0)	0(0.0)		1
neither	22(88.0)	3(12.0)		1.2 (0.1 – 13.9)
agree	273(94.8)	15(5.2)		3.0 (0.3 – 26.8)
strongly agree	49(92.5)	4(7.5)		2.0 (0.2 – 21.4)
Toilets are Clean			[+]**<0.001***	
strongly disagree	35(77.8)	10(22.2)		Reference
disagree	47(88.7)	6(11.3)		2.2 (0.7 – 6.7)
neither	69(98.6)	1(1.4)		**19.7 (2.5 – 160.3)**
agree	184(96.8)	6(3.2)		**8.8 (2.9 – 25.7)**
strongly agree	22(100.0)	0(0.0)		1
Adequate number of washrooms for clients			[+]**0.004***	
strongly disagree	63(84.0)	12(16.0)		Reference
disagree	103(94.5)	6(5.5)		**3.3 (1.2 – 9.1)**
neither	82(98.8)	1(1.2)		**15.6 (1.9 – 123.3)**
agree	101(96.2)	4(3.8)		**4.8 (1.5 – 15.6)**
strongly agree	8(100)	0(0.0)		1
Chairs are enough at waiting area			[+]**<0.001***	
strongly disagree	38(74.5)	13(25.5)		Reference

disagree	70(98.6)	1(1.4)		**23.9 (3.0 – 190.1)**
neither	47(95.9)	2(4.1)		**8.0 (1.7 – 37.8)**
agree	192(97.5)	5(2.5)		**13.1 (4.4 – 39.0)**
strongly agree	10(83.3)	2(16.7)		1.7 (0.3 – 8.8)
Ventilation in waiting area is right			**+<0.001***	
strongly disagree	29(76.3)	9(23.7)		Reference
disagree	37(92.5)	3(7.5)		3.8 (0.9 – 15.4)
neither	48(94.1)	3(5.9)		**4.9 (1.2 – 19.8)**
agree	227(97.0)	7(3.0)		**10.1 (3.5 – 29.1)**
strongly agree	16(94.1)	1(5.9)		4.9 (0.6 – 42.8)
There's enough privacy at ANC Clinic			**+<0.01***	
strongly disagree	10(76.9)	3(23.1)		Reference
disagree	12(80.0)	3(20.0)		1.2 (0.2 – 7.3)
neither	14(87.5)	2(12.5)		2.1 (0.3 – 14.9)
agree	253(94.8)	14(5.2)		**5.4 (1.3 – 21.9)**
strongly agree	67(98.5)	1(1.5)		**20.1 (1.9 – 212.6)**
Personal information is treated with confidentiality			+0.06	
strongly disagree	3(60.0)	2(40.0)		Reference
disagree	3(100.0)	0(0.00)		1
neither	13(100.0)	0(0.0)		1
agree	262(93.2)	19(6.8)		**9.2 (1.4 – 58.4)**
strongly agree	76(97.4)	2(2.6)		**25.3 (2.6 – 246.3)**
No. of staff who attend to me are adequate			+0.8	
strongly disagree	2(100.0)	0(0.0)		1
disagree	18(100.0)	0 (0.0)		1
neither	16(100.0)	0(0.0)		1
agree	268(93.1)	20(6.9)		0.8 (0.2 – 2.6)
strongly agree	53(94.6)	3(5.4)		1
The health workers attend to me promptly			**+<0.001***	
strongly disagree	8(72.7)	3(27.3)		Reference
disagree	58(80.6)	14(19.4)		1.6 (0.4 – 6.6)
neither	62(98.4)	1(1.6)		**23.3 (2.2 – 251.2)**

agree	200(98.0)	4(2.0)		**18.8 (3.6 – 98.2)**
strongly agree	29(96.7)	1(3.3)		10.9 (0.9 -119.2)
Never heard any confidential information about someone			**+<0.001***	
strongly disagree	2(40.0)	3(60.0)		Reference
disagree	5(71.4)	2(28.6)		3.8 (0.3 – 42.5)
neither	17(85.0)	3(15.0)		8.5 (0.9 – 74.4)
agree	263(96.3)	10(3.7)		**39.5 (5.9 – 263.1)**
strongly agree	70(93.3)	5(6.7)		**21.0 (2.8 – 156.1)**
Waiting time to meet nurse (mean ± sd)	2.3 ± 1.5	3.1 ± 1.7		**0.74 (0.57 - 0.95)**
Waiting time to meet doctor (mean ± sd)	1.7 ± 1.3	2.6 ± 1.9		**0.67 (0.51 - 0.88)**
Contact time with doctor (mean ± sd)	0.2 ± 0.2	0.3 ±0.3		**0.26 (0.07 - 0.97)**

***statistically significant (p<0.05)** **+ Fisher's exact**

Attitude of Health Professionals

Perceived levels of respect shown by doctors ($p < 0.01$), nurses ($p < 0.001$) were both significantly associated with the quality rating. Participants who agreed (cOR = 18, 95% CI = 1.03 – 314.8) and those who strongly agreed (cOR = 20.9, 95% CI = 1.2 – 361.6) that doctors were professionals and treated them with respect had higher odds of a good quality rating compared with those who disagreed strongly. Similarly, participants who agreed (cOR = 118.4, 95% CI = 11.1 – 1261.0) and those who strongly agreed (cOR = 91.9, 95% CI = 9.2 – 920.2) that nurses were professionals and treated them with respect had higher odds of a good quality rating compared with those who strongly disagreed. The results are outlined in Table 5b.

Clarity of Diagnosis and Treatment

The explanation of health state of mothers and unborn babies by doctors/midwives was significantly associated with the overall rating of care. Those who strongly agreed that their health state and that of their unborn baby was explained had significantly higher odds of rating ANC service quality as good compared with those who strongly disagreed (cOR = 23.7, CI = 95% 1.3 – 419.0). The results are outlined in Table 5b.

Health Education

Health education on labour ($p < 0.01$), medication and its importance ($p < 0.02$) as well as breast feeding ($p < 0.01$) was found to be significantly associated with quality of care rating. Participants who strongly agreed to the statement "I am happy with the information I received about labour" had 9.4 times the odds of rating quality of ANC service as good (cOR = 9.4, 95% CI = 1.2 – 76.8).

Participants who agreed and strongly agreed that doctors/midwives made medication and their importance clear to them had significantly higher odds of rating ANC quality as good (cOR = 35.4 95% CI = 3.01 – 413.0) and (cOR = 47.5, 95% CI = 3.5 – 639.9) respectively. The results are displayed in Table5b.

Table 5b: Health Provider Factors (inputs and processes) associated with Overall Quality Ratings of care rendered to Participants

Variables	Quality Rating		X^2	COR (95% CI)
	good quality n = 357	poor quality n = 23	p-value	
The doctors are professionals and treat me with respect			**+<0.01***	
strongly disagree	1(50.0)	1(50.0)		Reference
Disagree	1(50.0)	1(50.0)		1.0 (0.02 – 50.4)
Neither	23(85.2)	4(14.8)		5.8 (0.3 – 111.9)
Agree	144(94.7)	8(5.3)		**18 (1.03 – 314.8)**
strongly agree	188(95.4)	9(4.6)		**20.9 (1.2 – 361.6)**
The nurses are professionals and treat me with respect			**+<0.001***	
strongly disagree	1(20.0)	4(80.0)		Reference
Disagree	2(25.0)	6(75.0)		1.3 (0.08 – 20.1)
Neither	22(100.0)	0(0.0)		1
Agree	148(96.7)	5(3.3)		**118.4 (11.1 – 1261.0)**
strongly agree	184(95.8)	8(4.2)		**91.9 (9.2 – 920.2)**
The doctor explained my health state and that of my unborn baby			**+<0.01***	
strongly disagree	1(50.0)	1(50.0)		Reference
Disagree	0(0.0)	1(100.0)		1
Neither	11(84.6)	2(15.4)		5.5 (0.2 – 128.9)
Agree	179(93.7)	12(6.3)		14.9 (0.9 – 253.5)
strongly agree	166(96.0)	7(4.0)		**23.7 (1.3 – 419.6)**
The doctor made medication and its importance clear to me			**+<0.01***	
strongly disagree	1(33.3)	2(66.7)		Reference
Disagree	2(66.67)	1(33.3)		1
Neither	12(85.7)	2(14.3)		12.0 (0.7 – 203.1)
Agree	247(94.6)	14(5.4)		**35.3 (3.0 – 413.1)**
strongly agree	95(96.0)	4(4.0)		**47.5 (3.5 – 639.9)**

I am happy with the information I received about labour			**+<0.01***	
strongly disagree	61(87.1)	9(12.9)		Reference
Disagree	4(80.0)	1(20.0)		0.6 (0.06 – 5.9)
Neither	8(80.0)	2(20.0)		0.6 (0.1 – 3.2)
Agree	220(95.7)	10(4.3)		**3.2 (1.3 – 8.3)**
strongly agree	64(98.5)	1(1.5)		**9.4 (1.2 – 76.8)**
I am happy with the information I received about breastfeeding			**+0.02***	
strongly disagree	96(92.3)	8(7.7)		Reference
Disagree	33(94.3)	2(5.7)		1.4 (0.3 – 6.8)
Neither	17(77.3)	5(22.7)		**0.3 (0.08 – 0.9)**
Agree	162(95.9)	7(4.1)		1.9 (0.7 – 5.5)
strongly agree	49(98.0)	1(2.0)		4.1 (0.5 – 33.6)
I am happy with the information I received on family planning			+0.1	
strongly disagree	116(93.5)	8(6.5)		Reference
Disagree	43(93.5)	3(6.5)		0.9 (0.3 – 3.9)
Neither	20(83.3)	4(16.7)		0.3 (0.09 – 1.3)
Agree	146(94.8)	8(5.2)		1.3 (0.5 – 3.5)
strongly agree	32(100.0)	0(0.0)		1

***statistically significant (p<0.05)** **+ Fisher's exact**

CHAPTER FIVE

DISCUSSION

5.0 Introduction

The general objective of the study was to assess the quality of Antenatal Care at the La General Hospital, La Accra. It was to specifically determine the level of clients' satisfaction with the quality of care provided, assess quality (input processes and output) of the antenatal services and to determine provider-related factors that influenced client satisfaction with antenatal care. Hence, this chapter discusses the findings of the study.

5.1 Socio-demographic characteristics of respondents

Quality antenatal care from the clients' perspective for the purposes of this study was defined as antenatal care that has good interpersonal relationships between provider and patient and promptness of attention (GHS, 2010), in terms of adequate waiting time and time spent by doctor with patient, is safe and has health education at the facility (Kotoh & Van der Geest, 2016). Overall rating of the quality of care from the clients' perspectives is generally good after considering interpersonal relationships between provider and themselves, promptness of attention by way of waiting time and time spent by doctor/ midwife, safety and health education. About 93 out of 100 clients rated the quality of antenatal care they received as good (ie. good, very good or excellent). This is in sharp contrast with a similar study conducted in Nigeria, which found that less than 35% of ANC users received desirable quality of ANC services (Fagbamigbe & Idemudia, 2015).

This sharp contrast may have resulted from the overall quality rating that was measured from patients' perspective by way of self-response.

A number of studies have found some association between socio-demographic characteristic and patient's satisfaction while others have not. Oladapo and Osiberu (2009), reported that age had a significant association with patient satisfaction. Studies also indicated that satisfaction among patients was related to old age and better health status (Nguyen et al., 2002; Jenkinson et al., 2002). However, in this study age was not a significant predictor of patients overall quality rating of antenatal care. This finding contrasts with the findings of (Oyvind et al., 2011) who reported that age was significantly associated with overall patient satisfaction. Finding no association between age and overall quality suggests that the hospital did not discriminate between fertility age groupings of the women who attended antenatal care. Older mothers and younger mothers may be treated fairly or equally hence, this finding.

Educational level was significantly associated with rating of antenatal care as good. Respondents who had attended up to junior secondary school and up to tertiary rated quality as good as compared with those who had primary education. Similarly, educational level of the patients was found to have influenced patients' satisfaction in a national survey conducted in different hospitals of Taiwan (Oladapo & Osiberu, 2009). In another study, contrasting findings showed that education level was not significantly associated with overall patient satisfaction (Oyvindet al., 2011). Perhaps mothers with higher education were well equipped with the requisite knowledge of what to expect at the ANC and hence, were able to make a determination of quality by comparing

expectations with reality whilst less educated mothers just followed processes at the ANC.

5.2 Health Provider factors influencing quality of ANC services

In this study, communication on health state of mothers and unborn babies by doctors/midwives such as communication with clients on labour, medication and its importance as well as breast feeding were significantly associated with positive rating of ANC quality care. Participants who agreed and strongly agreed that doctors/midwives made medication and its importance clear to them had significantly higher odds of rating ANC quality as good. These findings are consistent with the findings of Mbai (2015), who asserted that interpersonal communication skills of physicians were found to be significant drivers of patient's satisfaction.

The quality of patient-provider communication provides therapeutic atmosphere where the patient will more likely maintain and utilize services provided by the provider. At the antenatal clinic, mothers spend some time with doctors in the consulting rooms. Communication between the patient and the physician most often impacts on the patient's perception of the quality of care rendered. "How well the doctors kept you informed about your condition" and "Understood the instructions and could easily follow them" were significantly associated with patients' satisfaction (Boudreaux et al., 2017).

Another significant finding of this study was that the physical environment (Adequate ventilation, clean toilets, adequate number of Chairs at waiting area) was associated with the level of satisfaction. Cleanliness of the hospital environment as well as aesthetics and basic facilities enhance the delivery of care. Mukhtar and associates (2013) in a

descriptive cross-sectional study in a tertiary care hospital in India, made similar revelations that majority of clients agreed that the hospital environment was clean and very well ventilated. Atinga and Abekah-Nkrumah (2011), also reported significant influence of hospital environment on patient's satisfaction in Ghana.

Perceived friendliness, respectfulness and fairness on the part of hospital staff plays a major role in clients' decision to visit the facility again or not. Lambon-Quayefio and Owoo (2014), reported that hospital staff in the waiting area were found to be respectful and fair towards the patients. This study revealed a similar finding in that show of respect towards clients by doctors/midwives and nurses was a significant independent predictor of the quality of antenatal services at the La General Hospital.

In this study, the time spent by clients waiting for their turn to be attended to by a doctor/midwife and the nurses was found to significantly influence the quality of care. Other studies, have also found association between waiting time and perceived satisfaction(Abekah-Nkrumah et al., 2011). Patro et al., (2008), stated that waiting time for consultation influences quality of service in the Out-Patient Department.

5.3 Limitations to the study

Quality of care was measured from patient's perception of the overall antenatal care rendered to them at the hospital. This quality rating was based on self-response of participants. It is well documented that self-reporting is accountable to response bias (Rosenman, Tennekoon &Hill, 2011). However, the strength of the study is that the Donabedian model has been tested by many other studies (Donabedian, 2003).

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

The socio-demographic characteristics, health education, clarity of diagnosis, attitude of health workers, physical environment, perceived friendliness, respectfulness and fairness on the part of hospital staff, and waiting time were all significantly associated with the overall rating of antenatal care in the La General Hospital. This section therefore, presents conclusions based on the specific objectives of the study.

6.1 Conclusions of the study

From this study, 93 out of 100 clients were satisfied with antenatal care services at the La General Hospital and hence, rated the quality of antenatal services as good. A unit increase in ANC attendance significantly increased the odds of satisfaction with the care rendered at the facility.

Influence of structural (environmental) factors on quality of ANC services:

Inputs and processes needed for the delivery of antenatal care at the hospital that significantly influenced qualities of antenatal care are;

- Physical environment: Adequate ventilation in waiting area, adequate wash rooms, enough chair at waiting area, enough privacy at ANC clinic were found to significantly influence the quality of care at the hospital.

Influence of health provider (process) factors on quality of ANC services:

Health provider-related factors found to influence satisfaction hence, overall rating of antenatal care at the La Hospital included:

- Attitude of prompt attendance to clients by health workers, maintenance of confidentiality and the show of respect towards clients were significant independent predictors of the quality of antenatal services.
- Waiting time: Increased waiting time to see a doctor/ midwife independent of increased waiting time to see the nurse significantly reduced the odds of a good quality rating of antenatal services at the La General Hospital.
- Clarity of Diagnosis and Treatment: The explanation of health state of mothers and unborn babies by doctors/midwives is significantly associated with the overall rating of care.
- Contact time: An increase in time spent by a doctor/midwife with clients negatively affected the overall satisfaction with antenatal services at the hospital.
- Health Education: Health education on labour, medication and its importance, as well as breast feeding was also significantly associated with clients' satisfaction.

6.2 Recommendations

Based on the findings of the study, the following recommendations are made:

- There is the need for hospital administrators at the La General Hospital to encourage or motivate health staff to help maintain existing working relationship with clients.
- The Ghana Health Service (GHS) and the management of the La General Hospital should organize regular in-service training programs to continue to build capacity of workers on customer relation.
- Information on clients and their unborn babies with regards to their current state and the repercussions should always be provided as part of the hospital maternal education by doctors/midwives.

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APPENDIX

Appendix 1: QUESTIONNAIRE FOR THE ASSESSMENT OF QUALITY OF ANTENATAL CARE SERVICES AT THE LA GENERAL HOSPITAL.

Nobody apart from the research team will know what you write or tick as an answer in the questionnaire as your response will be kept confidential.

You are expected to complete the questionnaire but if you decide otherwise, be assured that it would not affect you or the hospital. However, you are encouraged to share your experience and fully participate by responding to the following questions.

SECTION A: *Demographic Characteristics*

Please answer the questions that follow:

1. Age: 18-22 [ ]1 23-27[ ]2 28-33 [ ]3 34-38 [ ]4 39-43 [ ]5 44-48 [ ]6
2. Educational Level: None [ ]1 Primary [ ]2 JSS [ ]3 Secondary [ ]4 Tertiary [ ]5
3. Employment status: Employed [ ]1 Unemployed [ ]2
4. Marital Status: Single [ ]1 Married [ ]2 Widowed [ ]3 Divorced [ ]4 Separated [ ]5 Co-habiting [ ]6
5. Reason for attending ANC at the La-General Hospital?

   Personal Decision [ ]1 Referred [ ]2 Quality of Service [ ]3 Proximity [ ]4
6. If referred, kindly state the facility from which you were referred:

   Private [ ]1 Public [ ]2
7. If public, please specify the name of facility …….

8. Number of ANC visits so far ……

9. Trimester of Pregnancy 1st trimester [ ]1 2nd Trimester [ ]2 3rd Trimester [ ]3

10. Number of pregnancies woman ever had?.....

11. Number of living children……

SECTION B: *Indicators of Quality Care*

Please tick the appropriate answer

12. A minimum of 4 ante-natal clinic visits is enough to address all my health needs.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

13. The clinic environment is clean.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

14. The toilets are clean.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

15. The washrooms are adequate for the number of clients.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

16. The chairs in the waiting area are enough.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

17. The ventilation in the waiting area is just right.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

18. I feel that there is enough privacy at the ANC clinic.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

19. I feel my personal information is treated with confidentiality.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

20. The number of staff who attend to me are adequate.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

21. The health workers attend to me promptly.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

22. I have never heard any confidential information about someone or myself outside the clinic.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

SECTION B1: *Processes*

23. How long do you usually have to wait before being seen by the nurse? ….*hr*/ ...*min*

24. How long do you usually have to wait before seeing a doctor? …….*hr*/ ……..*min*

25. Are you happy with the time you normally have to wait? No [ ] Yes [ ]

26. If no, how long would you prefer to wait before being seen by a doctor? ….*hr*/ ..*min*

SECTION B2: *Contact Time*

27. How much time do you usually spend with the doctor? …….*hr*/ ……..*min*

28. Is the time spent with your doctor enough to answer all your questions?

No [ ]1 Yes [ ]2

29. If 'No', how much time would you prefer to spend with the doctor? ….*hr*/ …..*min*

30. The nurses are professionals and treat me with respect.

1- Strongly Disagree [ ] 2–Disagree [ ] 3–Neither [ ] 4 -Agree [ ] 5 -Strongly Agree[ ]

31. The doctors are professionals and treat me with respect.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

SECTION B3: *Clarity of Diagnosis and Treatment*

32. The doctor explained my health state and that of my unborn baby to me.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

33. The doctor made it clear the type of medication prescribed and its importance.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

SECTION B4: *Health Education*

34. I am happy with the information I received about labour.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

35. If you strongly disagree or disagree, please state why?

…….....

……

36. I am happy with the information I received about breastfeeding.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

37. If you strongly disagree or disagree, please state why?

…….....

……

……

38. I am happy with the information I received about family planning.

1 - Strongly Disagree [ ] 2 – Disagree [ ] 3 – Neither [ ] 4 - Agree [ ]

5 - Strongly Agree [ ]

39. If you strongly disagree or disagree, please state why?

….....

……

……

40. Were you told how to recognize and proceed about some serious problems in pregnancy?

No [ ]1 Yes [ ]2. If yes…….

(a) Premature rupture of membranes No [ ]1 Yes [ ]2

(b) Bleeding in Pregnancy No [ ]1 Yes [ ]2

(c) Premature contractions No [ ]1 Yes [ ]2

(d) Seizures No [ ]1 Yes [ ]2

(e) Fainting and dizziness No [ ]1 Yes [ ]2

(f) Fever No [ ]1 Yes [ ]2

SECTION C: *Output*

41. I will willingly return for follow ups because I am happy with the care given to me.

No [ ]1 Yes [ ]2

42. I will willingly take my medications because I am happy with the care given to me.

No [ ]1 Yes [ ]2

43. I will willingly recommend the facility to a pregnant friend.

No [ ]1 Yes [ ]2

SECTION D: *Outcome*

44. I am well informed on the importance of taking my medications and the danger signs in pregnancy.

No [ ]1 Yes [ ]2

45. My health and that of my unborn baby has improved because of the quality of care given.

No [ ]1 Yes [ ]2

46. Do you feel the quality of antenatal care given to you was because of the following?

(a) Age No [ ]1 Yes [ ]2

(b) Parity No [ ]1 Yes [ ]2

(c) Educational Level No [ ]1 Yes [ ]2

(d) Employment status No [ ]1 Yes [ ]2

(e) Marital status No [ ]1 Yes [ ]2

47. Overall, how would you rate the quality of antenatal care?

1 – Excellent [ ] 2 – Very Good [ ] 3 – Good [ ] 4 – Fair [ ] 5 – Poor [ ]

Appendix II: INFORMED CONSENT FORM

Title: ASSESSMENT OF QUALITY OF ANTENATAL CARE SERVICES AT THE LA GENERAL HOSPITAL

Principal investigator: EDUSEI RANSFORD

Address: **SCHOOL OF PUBLIC HEALTH**

DEPARTMENT OF HEALTH POLICY

PLANNING AND MANAGEMENT

UNIVERSITY OF GHA NA, LEGON

Contact: 0243358006/0299102108/adwumape@yahoo.com/eduseimod@gmail.com

My name is Edusei Ransford. I am graduate of the University of Ghana School of public health carrying out a study on the **assessment of quality of antenatal care services at the La General Hospital**. I will be assisted by two research assistants in this study. For the purpose of confidentiality, your name is not required and any information you provide will not be traceable to you. You may however, choose not to answer any question you may find uncomfortable. You can also withdraw from the study after giving your consent at any point. The information will not be used for any purpose than for the analysis of this research and academic use. I will be honored to have you partake in this study. The questionnaire should take you approximately 10 – 15 minutes to complete. There are no direct benefits or risks in your participation, except the additional precious time that you will use in answering the questionnaire and the discomfort associated with answering questions on service satisfaction. You will not be paid or compensated for your

participation. The study will benefit you in your future ANC services as suggestions for improvement in the quality of ANC will be made to the hospital administration after the research. It will also help improve upon maternal health care in Ghana.

The highest standards of ethics are maintained in the conduct of the study as it has been reviewed and approved by the Ghana health service ethical review board. You can choose a place of convenience to answer the questions. There is however, no conflict of interest in this study.

VOLUNTEER AGREEMENT

The above document describing the benefits, risks and procedures for the research title: "**ASSESSMENT OF QUALITY OF ANTENATAL CARE SERVICES AT THE LA GENERAL HOSPITAL"** has been explained to me.

I have read or have had someone read all of the above, asked questions, received answers regarding participation in this study, and I am willing to give consent to participate in this study as a volunteer.

…….. ……

Date Name and signature or mark of volunteer

If participants cannot read the form themselves, a witness must sign here:

I was present while the nature and purpose of this study were read to the volunteer. All questions asked were answered satisfactorily regarding participation in this study, and volunteer gave consent to participate in this study.

…….. ……

Date Name and signature or mark of witness

I certify that the nature and purpose in this research have been duly explained to the above individual.

…….. ……

Date Name and signature of person who obtained consent

For further information regarding this study, please contact:
Hannah Frimpong (Administrative Secretary; Ethical Review Board Ghana Health Service): 0243235225/0507041223