



**QUALITY OF ANTENATAL CARE SERVICES FOR ADOLESCENTS AND ADULT
PREGNANT WOMEN IN MBAGATHI AND PUMWANI HOSPITALS
(A COMPARATIVE CROSS SECTIONAL STUDY)**

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FULFILLMENT FOR THE AWARD OF DEGREE IN MASTERS OF
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UNIVERSITY OF NAIROBI.**

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DECLARATION

This research dissertation undertaken in partial fulfilment of the Masters of Medicine in Obstetrics and Gynaecology, is my original work, and has not been undertaken or presented for a degree in any other university.

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Date..........

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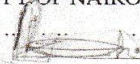
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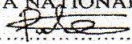
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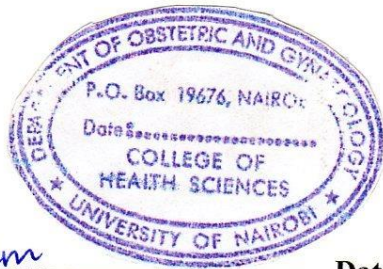
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DEDICATION

I dedicate this work to my loving parents, Mr. and Mrs Arara, my siblings who have been my cheerleaders throughout this journey, my spouse, Odhiambo for being my main support pillar and our children Zuri and Lugonzi.

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LIST OF ABBREVIATIONS

ANC:	Antenatal clinic
ERC:	Ethical and Review Committee
FP:	Family planning
KNH:	Kenyatta National Hospital
MNCH:	Maternal, Newborn and Child Health
SRH:	Sexual and reproductive health
SBA:	Skilled birth attendant
SDG:	Sustainable Development Goals
TBA:	Traditional birth attendant
WHO:	World Health Organization

OPERATIONAL DEFINITIONS OF TERMS

Adolescence-	Scientific term referring to the period of development between onset of physiologically normal puberty and ends when an adult identity and behavior are accepted
Adolescent-	A person within the age group of 10-19 years
Adolescent Pregnancy-	Pregnancy in a female below the age of 20
Adult Woman –	A fully developed person who has reached the age of majority and is legally responsible for their actions. Biologically, it's a person who has reached sexual maturity, officially aged 23 years and above.
Quality of Care-	The extent to which health care services provided to individuals and patient populations improve desired health outcomes. In order to achieve this, health care needs to be safe, effective, timely, efficient, equitable, and people-centered.
Antenatal Care-	A series of pregnancy related health care provided by a doctor or a health worker in a health facility.
Skilled Birth Attendant-	Someone “trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns”

ABSTRACT

Background: Antenatal Care (ANC) is depicted as the care given by health care professionals to a client when they visit a health care facility during the period of pregnancy. The World Health Organization (WHO) defines quality of care as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge”. In sub-Saharan Africa adolescents who were pregnant experienced very poor maternal health care when compared to adult pregnant women with the same comparable characteristics. There is paucity of data on quality of antenatal care between this two groups in Kenya. This study therefore aims to bring out the gaps by comparing the experiences of both the adolescents and adult pregnant mothers in Mbagathi and Pumwani Hospitals in the antenatal clinics. An outlook on their sociodemographics together with the ANC attendance with the specific ANC services offered will shed more light to this topic.

Objective: To compare the quality of antenatal care between adolescents and adult pregnant women in Mbagathi and Pumwani Hospitals.

Methodology: A comparative cross sectional study design of 115 adults and 66 adolescent parturients was done at Mbagathi hospital and Pumwani maternity hospital. Eligible participants were enrolled after signing the informed consent and after ethical approval from the KNH/UON Ethics Review Committee, and the Pumwani and Mbagathi Level IV Hospital Research committees. A pre-tested structured interviewer-administered questionnaire was used to obtain the relevant data and entered into a password protected excel sheet for cleaning before analysis using SPSS software. Descriptive statistics on the socio demographic characteristics across the two groups was computed and presented as proportions. Bivariate analysis using Chi-square test or the Man Whitney U test were used to determine the association between independent variables and dependent variables and ANCOVA and logistic regression analyses used to control confounding.

Results: Adults were 20.5 times likely to be married and 11.7 times more likely to have a planned pregnancy than adolescents, $p < 0.05$. Education and place of previous deliver of adolescents and youths did not vary statistically, $p > 0.05$. Uptake of ANC services was high but better among adults than adolescents. Adults, were 9.3, 13.5, 4.4, and 2.8 times more likely to undergo hemoglobin, urinalysis, blood grouping and blood sugar tests than adolescents, $p < 0.05$.

Moreover, adults were 6.7 times and 4.4 times more likely to get a delivery plan and have an ultrasound before 24 weeks gestation. Only 8.8% of participants and did not vary significantly between adolescents and adults, $p=0.12$. Perceived quality of ANC services did not vary statistically among adolescents and adults after controlling confounding. Education level and the types of hospital were predictors, $p<0.05$.

CHAPTER ONE: INTRODUCTION

1.1 Background

Quality of health services is a significant determinant of care-seeking. Antenatal care (ANC) is defined as a sequence of pregnancy related health care services given by a physician or health personnel in a health care facility. It's quite an important, entry point of an expectant woman to obtain a wide variety of health education and preventive services that are important towards improving mother and her pregnancy's healthiness. In recent years, studies have revealed two significant changes in maternal health globally: first, there has been a considerable reduction in global maternal mortality and second an upsurge in the numbers of live childbirths happening in the health facilities⁽¹⁾. The World Health Organization(WHO) defines quality of care as 'the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge⁽²⁾. Good quality of care has a multidimensional outlook that contains, amongst other factors, apt use of effectual clinical and non-clinical interventions, strengthened and functioning health substructure and insolvency of health providers. All these contributes to satisfaction of patients and providers and enhanced health outcomes to both mother and newborn⁽³⁾.

WHO released a new sequence of suggestions to advance the quality of prenatal care provided aimed at reducing the risk of miscarriages and pregnancy related complications thus giving women a positive pregnancy experience. These include; increasing the amount of interactions a pregnant woman has with health providers from 4 to 8, recommendations on nourishment throughout pregnancy, prevention and treatment of physiological problems common during pregnancy (e.g. nausea, heartburn) and preventive interferences for certain conditions(e.g. malaria and/or HIV)⁽⁴⁾.

According to KDHS 2014 adolescents recorded a poor attendance in the antenatal clinics as compared to the adult pregnant women ⁽⁵⁾. This is majorly based on fear of stigmatization when attending the clinics. The situation is totally different with the older women hence the need to compare the two groups. In many scenarios, women wish to give birth in the community for the reason that there are concerns about perceived quality of care in health care centers.

CHAPTER TWO: LITERATURE REVIEW

Prenatal and delivery care are mutually important for both maternal and neonatal health. Proper maternal health care can prevent adversative pregnancy outcomes for the mother and neonatal through preventive events or effectual managing of complications due to obstetric⁽⁶⁾. It is projected that 60 million women deliver annually away from health care centers, mostly at home, and 52 million deliveries occur without the help of a skilled birth attendant (SBA)⁽⁷⁾. There is a hindrance to getting both skilled care at delivery by mothers and emergency obstetric care (EmOC) for the unfortunate in the society who carry a high burden of maternal and newborn morbidity and mortality associated to complications of delivery by mothers. Internationally, the lowermost rates of skilled birth attendance have been noted in countries in South Asia and Sub-Saharan Africa⁽⁷⁾.

2.1 Perceived Quality of Care

Perceived quality of care that partially overlays with the known medical quality of care, is assumed to be having a significant impact on health care-seeking, elements of satisfaction including friendliness of the healthcare providers, convenience of supplies and reduced waiting times⁽⁸⁾. Numerous times the medicinal 'culture' may contradict with the woman's particularly for example, when family members/spouse are not allowed in to the delivery room/theatre or secrecy is not treasured; this may be perceived as poor quality of care⁽⁸⁾. Some research mention that women report improved quality of care in private health care facilities as compared to government health facilities which are free.

They appreciate the availability of resources in the private hospitals but they are usually limited by the cost implications^(9,10). Perceived interpersonal quality of care overlays to some degree with traditional beliefs and with cultural discrimination. Mrisho et al in a study in Tanzania (2007) points out that quality of care interacts much with other barriers such as distance and cost⁽⁹⁾. Objective measures of quality of care include: physical accessibility such as facility infrastructure, equipment and staffing, access to information, poverty and traditional values. Health workers' attitude features prominently when assessing the QoC as they impact the usage of maternal health care services. There has been reports on dissatisfaction with use of abusive

language, impolite, egotistical and negligent conduct at health care centers hence the women preferring the services of a traditional birth attendant (TBA) or relative^(9,10) .

Culture also has a role in the QoC. It is a setback in some instances. A study in Hoima district in Uganda revealed that the health staff urged women not to express pain openly during delivery as this was considered a sign of weakness yet they were expected to present with stoicism and without showing signs of fear⁽¹¹⁾.

Other shortcomings out listed as pertains resource availability in public hospitals revolved around the issues of hygiene and quality medical care. Women criticized the presence of very dirty toilet facilities, absence of necessary drugs and lack of water. In some facilities the women were asked to get water and clean up the labour wards after delivery^(11,12). A Vietnamese research discovered that the woman who delivered in a health care facility relatively gave a higher score in “health care delivery” but quite an opposite score for behavior and communication for health care workers. In comparison to women who delivered at home usually judged the quality aspect based on their earlier experiences or interactions in hospitals⁽¹³⁾. Adolescent pregnancy is a complex issue with many causative factors such as being poor , gender-based violence, gender inequalities, alcohol and drug abuse, poor access to contraceptives; low, erratic and improper usage of family planning methods, inadequate number of physicians and youth-friendly healthcare facilities, underprivileged healthcare workers’ attitudes and conduct, and insufficient sexual and reproductive health education (SRH) education^(13,14). Negative attitudes, labelling and judgmental behavior towards them could create barriers in the therapeutic relationships and may impact on the quality of care rendered to them⁽¹⁵⁾.

Support during pregnancy and delivery has a big influence in determining the quality of antenatal care. Studies have shown that positive gestation period for the mothers and having a childbirth experience quite helps the teenagers develop a positive attitude about the experience of motherhood and thus helps facilitate the transition into the maternal role⁽¹⁶⁾. This goes a long way as it begets a positive experience that establishes a rich and successful family relationship⁽¹⁷⁾; guarantees positive self-confidence; improves self-esteem ; and guarantees positive growth as a woman⁽¹⁸⁾. Studies have outlined common themes expressed by adolescents as their views on

supportive behaviors by the nurses: the nurse's presence during their antenatal visits and during labor, the nurse's reception of the laboring mother as an exceptional individual with specific wants, respect for the teenage's birth plan, emotional support, and instructional info about pregnancy and delivery⁽¹⁹⁾.

2.2 Socio-Demographics

Adult pregnant women are much more self-assured and persuasive in family decision-making policies than adolescents⁽²⁰⁾⁽²¹⁾. They are more likely to deliver in a healthcare setup based on their biological risks and increased awareness⁽²⁰⁾⁽²²⁾. On the other hand, some elder women may tend to prefer home deliveries based on their attachments to their traditional beliefs as compared to the adolescents⁽²¹⁾. Age is vastly correlated with parity, marital status, socioeconomic status, desire for a pregnancy, ability to make decisions and educational level⁽⁶⁾.

The married status may particularly influence the choice of birthplace, possibly this may be influenced by the female independence or their status or maybe familiar economical resources. Young teenage mothers may feel stigmatized thus making them prefer to give birth away from health care facilities because they foresee a negative provider experience⁽⁴⁾.

Religion- tradition, ethnicity and beliefs are frequently considered as indicators of individual's cultural background and are assumed to impact individual's beliefs, customs and morals in relation to deliveries, service use and women's status. Particular ethnic or religious groups may be discriminated against by health personnel, making those mothers probably not to seek healthcare services⁽²²⁾. Women in some cultures may seek to evade giving birth in health care centers because of particular cultural necessities such as; privacy from other family members throughout this time of "pollution"⁽²³⁾ or because of precise necessities involving birth delivery position, warmth, and how they handle the placenta which is key in some. In some tribal groups in parts of Africa, the belief that unsuccessful labor is mainly due to infidelity among individuals deters expectant mothers from seeking care leading to obstetric complications that could have otherwise been averted^(8,9). Beliefs that child delivery is an assessment of strength, and seeking health care by pregnant women maybe be considered a symbol of weakness and maybe be the reason for giving births unassisted in some setups⁽¹¹⁾.

The mother's education level from most research has suggested that maternal education might be actually a key determinant that will influence the usage of prenatal health care services in the community ⁽²⁵⁾. A fundamental impact of maternal education is to emphasis on female being dependent so that most women develop actually self-esteem, confidence, competences this is to make them make personal choices in respect to their own individual health and that of their children ⁽²⁶⁾. There are many possible ways that can actually clarify why maternal education can be linked to all kind of health behaviors among individual ⁽²⁷⁾.

Actually these factors include the heightened information/knowledge of the main benefits about preventive health care and the mindfulness of health services, willingness to accept different kind of health information, conversance with the modern medicinal culture, socialization to associate with the known services that are external to the home environment, access to financial resources and health care premiums, presence of open relationships, better communication with their partner, better surviving capabilities and negotiating skills and less power differential towards health care givers which result to better communication and the capability to demand adequate health care services ^(8,21). The increased consciousness of poor quality in most heath care centers and higher confidence in self-care might delay care seeking among the learned women.

Women who are economically capable may actually be capable of saving and seeking services in a heath care facility. However, in many environments' women are not economically capable because they do not earn money because they do not have jobs so they actually have no control over their finances. Also, several found out that women who had manual jobs are actually less likely to have a skilled birth attendant than the women who have white collar jobs ^(28, 29). This can be associated to the scarce limited economical resources and the health care services found in the rural regions.

2.3 ANC Services

Prenatal care services offer opportunities for health personnel to endorse a particular place of giving birth or give women information about the situation of their pregnancy, which in turn enlightens their choices on the place to give birth. Risk valuation during ANC visit might overtly enlighten the pregnant woman of what to expect and therefore go ahead to endorse a place where

an expectant woman can deliver. A study done in Uganda revealed that nurses used abusive languages on women without ANC cards. This was shown to hinder their return to access delivery services ⁽¹⁰⁾. Individuals attending ANC clinics can be an indicator of understanding the health system and the health facility.

Women who go for ANC clinics might actually be more likely to use this health care center during the time they will give birth. In many surroundings though, ANC is provided through mobile facilities and other small health care centers that do not offer delivery services to the community. This is a better approach towards reaching out to most women mainly in remote areas who would have otherwise neglected going to the bigger facilities for ANC due to distance. Abou-Zahr and Wardlaw (2003) in their study found out that most women in Sub-Sahara Africa rarely attend the ANC clinic in their first trimesters.

They will probably wait for second trimester and a considerable percentage presented themselves in the third trimester ⁽²⁴⁾. It's suggested that antenatal visits should start early and be attended at consistent intervals through the pregnancy period to alleviate some if not all possible pregnancy complications that women experience. Most research find that unintended pregnancies might probably receive inappropriate maternal health care with a higher likelihood of skipping most if not all of the ANC sessions ^(25,26) and meanwhile adolescents are probably anticipated to have unexpected pregnancies ⁽²⁵⁾.

Improving attention to adolescents' self-esteem, empathy and a non-judgmental attitude has a positive impact to the adolescent seeking SRH services. The attitudes of midwives are a significant component in terms of quality of delivery as they impact both positively and negatively on how adolescents and families perceive and understand maternal health care. Negative attitudes and behaviors of the attending midwives might lower the quality of care and the efficacy of maternal and newborn health advancement efforts, in addition to this it comprises women's vital right to a honorable and dutiful maternal health care ^(27,28).

The adequate provision of SRH services to teenagers in specific, involves among many others, offering youth-friendly surroundings. WHO defines youth friendly services as “Services that are reachable by the community, acceptable by individuals and suitable for teenagers. They are mostly at the suitable place at the most preferred price (free where necessary). And delivered in style that is suitable to the younger generation. They are efficient, safe and have affordable rates. They also definitely meet people’s wants especially for the young individuals who in turn recommend these services to their peers.”⁽³⁶⁾ Introducing services that are friendly to the younger generations in a health facility many a times will need adjusting our structural and operation time.

This might we need renovations and creating more room for confidential counselling among the clients, examinations and specifically conducting health conversations. In addition to this employee of health facilities may be called upon to reorganize their working hours making it quite possible for adolescent to get services during weekends, even in the late evenings and times that are suitable for them⁽³⁷⁾.

On health education, confers an essential part during the ANC period as the pregnant women are taught on birth plan, emergency preparedness, danger signs and nutritional advice. A research done by Stekelenburg and other authors in a Kalabo a region in Zambia in the year 2004 interpreted that majority of women who had knowledge about the danger signs in the pregnancy period were much likely to give birth in a hospital or health care facility, this was a huge contrast to those who had no information about dangers in pregnancy this showed the positive effect that education had (38). Results from the same research found out that majority of women did not actually receive any form of health education during the period of ANC clinics this showed a poor quality of prenatal care. Some of the participants in the research might have given coveted answers, Despite this, pregnant women prospects were actually met by taking their blood pressure and distributing medications (ferrous sulphate and chloroquine)⁽³⁸⁾.

The above results are quite similar to Mali where the women who were initially told about the pregnancy complications at prenatal visits were most likely to deliver at a hospital or health care facility⁽³⁹⁾. This meant that exposure to counselling about the various related pregnancy complications and its association with distance quite dictated on the women’s insights about their

vulnerability to and the significance of those pregnant related complications. Getting education quite influenced their decision on getting suitable delivery care, specifically in regions that are far away from health care centers where the happenings of such pregnancy complications, tied with travel over longer distances and the short time that is required for relevant action might actually lead to a maternal deaths ⁽³⁹⁾.

2.4 Gynecological Factors

Unwanted pregnancy – women with unplanned pregnancies might not invest in services of skilled attendance at delivery compared to one who is keen on having a child⁽⁴⁰⁾. Many a time desire is related to maternal age, marital status and their social support. It has been found out that there is no association with desire for pregnancy with deliveries done in homes⁽⁴¹⁾. Another research by Burgard found out that wantedness during the period of delivery increases the chances of having a health personnel conducting the child deliver by 30% in the South African nation with no such relations noticed in Brazil ⁽²¹⁾. In Kenya according to Magadi et al (2010) the chances of home deliveries have rose by 40% when it's unintended pregnancy ⁽⁴²⁾. There has been no association that has been linked to delivery care in Thailand ⁽⁴⁰⁾. Unplanned pregnancies have been depicted to be related to use of less health inputs such as antenatal care because of the delay in knowing or acknowledging their pregnancies. Births to most unmarried adolescents are often unwanted pregnancies and majority of the adolescent mothers are in a much perilous financial position ⁽⁴²⁾.

Any observed correlation between previous and succeeding health facility care delivery use is expected to be confounded by access and availability of the given services,⁽⁴³⁾ healthcare provider attitudes and believes, the former pregnancy complications, woman's knowledge about the various pregnancy risk and other factors. Obviously, the same elements that contributed immensely towards previous usage will likely be expected to influence present use. Qualitative studies one in Vietnam and another in Uganda indicated a provider's attitude mattered significantly. The women tend to deliver with the same provider if a previous delivery went well and tend to change if they were dissatisfied by the previous experience⁽²⁹⁾⁽¹⁰⁾.

Birth order- Usually the first delivery is thought to be difficult to a first time expectant woman. Except for unplanned pregnancies, most frequently high attention is placed on the first pregnancy. During this period the woman receives supreme care and most importantly support from her family ⁽²²⁾. Because of the delicate nature of a primigravida some health personnel may suggest delivery in a health care facility because of the resources found in ANC clinics. To contrast this a multiparous can draw on the experiences and can actually not feel the urge to get professional care if the former deliveries didn't have complications ⁽⁴⁵⁾. Very-high order births however are attributed to a higher risk. In addition to this, women who have several small children may actually have difficulty or problems in attending the necessary ANC clinics probably due to the lack of someone to take care of her children while she visits the clinics ⁽⁴⁵⁾. Blankson et al. (1993) discovered that teenagers were most likely to go late for prenatal care and they were associated with fewer prenatal visits during their second pregnancy. This could explain the adverse outcomes linked to the second pregnancy among teenagers ⁽⁴⁷⁾. In China because of the one child policy women with higher order pregnancies fear punishment and tend to keep off health facilities ⁽⁴⁴⁾. High parity at most times may be because of lack of access to contraceptives planning methods which may be related to lack of access to delivery care, traditional beliefs, and economical status. Adolescents have an issue accessing contraceptives at public hospitals or public health care centers. This is because health care personnel have negative attitudes towards them because access to this family planning pills by teenagers is linked with the social stigma ^(48,49,51). An employed nurse is documented saying that provision of contraception to teenagers is a lee way to immorality ⁽⁵²⁾. A research by Warenius et al discovered that nurses and midwives disapproved teenagers who engaged in sexual activities and actually were reluctant in giving them SRH services to teens.

2.5 Comparison between Adolescents and Adult Pregnant Women

In sub-Saharan Africa pregnant adolescents experience poor maternal health care services as compared to pregnant adult women in the community. The adolescents' only drawbacks were shown in the usage of both the antenatal and delivery care services. Evidently is that most pregnant adolescent started the antenatal visits late, they made fewer antenatal visits, had home deliveries, were assisted by unskilled personnel contrasting the pregnant adult women.

Adolescents are likely to experience premarital and unwanted pregnancies than the adult women hence they might not benefit from the recommended standards of maternal health care ⁽⁶⁾. This makes them a sub-group of concern especially among countries like Cote d'Ivoire in West Africa and Kenya where you find that more than a third of all teenage births are premarital. In such surroundings, encouraging mothers to access education and access to contraceptive services for the adolescents might make a substantial impact.

For adolescents, the mere fact that prenatal care services in this area are not frequently focused on their needs makes the health risks related to their pregnancies and childbearing more distinct than women who are older⁽³⁰⁾. This is evident from lack of youth friendly services in most hospitals. In a study by Sindiwe et al (2014) in South Africa, the pregnant adolescents felt that the ANC clinic environment was alienating to them. They explained that the organization of the clinic was causing them discomfort due to prolonged waiting time before being attended to and the nurse- midwife didn't offer any apology or explanation of the cause of the delays. There were very few staff members and too many women to be taken care of, and the obvious age difference- they were the youngest of the women attending the clinic and they had to sit amongst women who were much older than them by five to eleven years, making them quite uncomfortable as they felt judged⁽³¹⁾.

Maternal education is one of the strongest determinants of utilization of antenatal health care services⁽³²⁾. Adult women tend to have a higher level of education as compared to adolescents who some are school drop outs lacking even the very basic education. A study in Tajikistan showed that women with university education are most likely to give birth in a health care center than other women.⁽³³⁾ Education is probably likely to be linked with wealth and even better residential dwelling⁽³⁾ which points towards better maternal and child outcome.

2.6 Conceptual Framework

2.6.1 Schematic

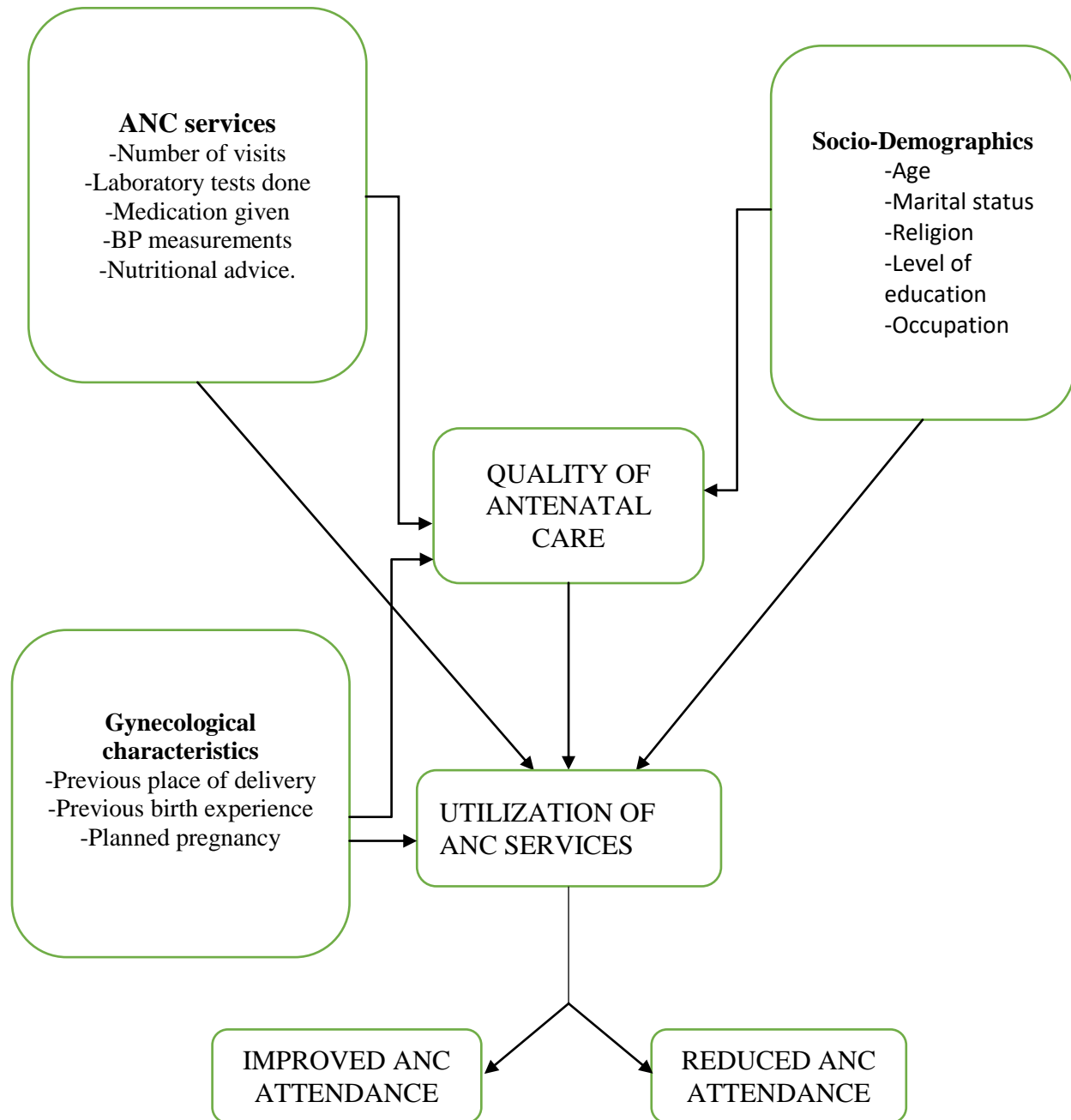


Figure 1: Conceptual framework

2.6.2 Narrative of the Conceptual Framework.

The quality of antenatal care offered to both adolescent and adult pregnant women is directly contributed to by the ANC services offered in the facility, the socio demographics and the gynecological characteristics of the pregnant women. These factors also play an important role in the utilization of antenatal care services. The socio demographics include; age, marital status, religion, level of education, occupation. ANC attendance (onset, frequency), number of visits, laboratory tests done, medication given (hematinics, folic acid), administration of Tetanus toxoid (TT), BP measurements, nutritional advice are some of the common services offered during the ANC visits. Gynecological characteristics involve sexual debut, previous birth experience, planned pregnancy, previous place of birth. All the above play a key role on the woman's choice on place of delivery which has a direct impact on the outcome of both the mother and the newborn.

2.7 Statement of the Problem

In most urban and modern areas, adolescent pregnancy is considered an outright disgrace because not only does it tarnish the family's image but also carries far reaching implications to the adolescent socially, academically, physically and psychologically. The adolescents, regardless of cultural background, will seek healthcare. How they are received and treated will determine their health seeking behavior. It's quite known that the suitable maternal health care can actually prevent pregnancy related outcomes for the mother and her child, this is mainly through the preventive measures implemented or in managing obstetric complications effectively. Young people in sub-Saharan Africa happen to experience very poor maternal health care than actually their older counterparts with the same characteristics. Adolescents in this parts are likely to go for prenatal clinics very late and infrequently thus making inadequate antenatal care visits falling below the number that is required during pregnancy. They also deliver outside the health care facilities and probably seek the services of unskilled birth attendant compared to the adult women in the society. This research aims to compare the quality of antenatal care of expectant adolescent and the adult women in Mbagathi and Pumwani Hospitals.

2.8 Justification

Adolescent pregnancy and motherhood has really remained a main health and social concern because it's linked to an increase of morbidity and mortality cases in both the mother and the child. WHO foresees a world where every expectant woman and her newborn receive quality care during the period of pregnancy, delivery and the prenatal period.

Quality of care actually improves efforts that can target vital maternal, neonatal and the general child care health (MNCH) and relatively achieve the higher effect on maternal, fetal and neonatal survival and well-being. Quality improvement in providing MNCH services is ignored but it remains the main approach to decreasing maternal and neonatal mortality rates. The general health status of pregnant women depends largely on the quality of the Antenatal Care (ANC) services available to them irrespective of their age. Adolescent pregnancy seems not to get the same attention as the adult pregnant women do hence compromising on the quality of care accorded to them.

Adolescents are generally likely to receive inadequate antenatal care thus have poorer maternal health care than the adult women. They present themselves late for antenatal care and they make fewer visits as compared to adult women. This is because most of the antenatal care are not oriented specifically to their needs depicted by lack of youth- friendly centers in most facilities. Most of the studies done in the department have focused more on pregnancy outcomes of adolescents, comparing early and late ANC attendance with none studies on the above mentioned topic. There is no research that is actually comparing the characteristics of the two groups on the quality of care offered hence the need for this research.

The findings of this study will help bridge the knowledge gap on the quality of care (QoC) of antenatal services between adolescents and the adult pregnant women. This will also shed light on the availability and functionality of Youth Friendly Services (YFS) as an infrastructure essential in assessment of quality of care in the facilities being studied. In addition, this study will complement the earlier findings on adolescent pregnancies and help formulate standard operating

procedures, policies and in service training modules in the management of adolescent pregnancies.

2.9 Research Question

What is the comparison of the quality of antenatal care for adolescents and adult pregnant women in Mbagathi and Pumwani Hospitals?

2.10 Objectives

2.10.1 Broad Objective

To assess the quality of antenatal care services for adolescents and adult pregnant women in Mbagathi and Pumwani Hospitals.

2.10.2 Specific Objectives

- a) To determine the socio demographic and gynecological characteristics between adolescents and the adult pregnant women.
- b) To compare the uptake of antenatal care services between adolescents and adult pregnant women.
- c) To correlate the uptake of antenatal care services with socio demographic and gynecological characteristics between adolescents and adult pregnant women.

CHAPTER THREE: METHODOLOGY

3.1 Study Design

The study was a comparative cross-sectional design.

3.2 Area of Study

This study was done in Pumwani Maternity Hospital and Mbagathi Level IV Hospital, both public hospitals in Nairobi County dealing mainly with maternity care. These two hospitals serve vast numbers of patients including those from low income bracket. The mothers seeking delivery services in these facilities are covered by the “Linda Mama Program” which makes them financially accessible to many including the pregnant adolescents who may not be financially stable. Thus this becomes a suitable environment for recruitment and evaluation of our study participants.

3.2.1 Pumwani Maternity Hospital

This hospital caters for 60% of deliveries in Nairobi County and gives its services to mainly low-income groups in Nairobi and neighboring sub counties. It is a referral centre for Nairobi City clinics and other units. It is situated in Eastlands, approximately 5 kilometers from Nairobi Central Business District. It's actually the main maternity health care facility in Kenya and Sub-Saharan Africa. It's equal to a Level V in status and it has been described to being the third busiest maternity hospital in Africa. The antenatal clinics are run by Consultant Obstetricians, Medical Officers and midwives on daily basis. Currently the hospital has about 358 obstetric beds, 2 theaters and 150 baby cots. The daily delivery rate in Pumwani Maternity hospital is around 50 – 100 for vaginal deliveries and 10 – 15 Caesarean Sections.

3.2.2 Mbagathi Level IV Hospital

Situated in Dagoretti district which is close to Kibera. Mbagathi hospital was developed in the 1950s mainly to provide healthcare services to communicable diseases that mainly required isolations and some of the diseases included Measles, Meningitis, TB and Leprosy. The hospital boasts of having a bed capacity of 200 and serves a population of more than 3 million people. Since the implementation of free maternal health care by the government women who deliver at the hospital has risen from 200 to 450 per month. The maternity unit found in the hospital has 2 theater rooms, labor wards, prenatal and postnatal wards.

3.3 Study Population

3.3.1 Definition of Study Population

The research population comprised adolescent mothers aged 10-19 years and adult women 25-49 years old, being attended to in Pumwani Maternity hospital and Mbagathi Level IV hospital. The age bracket of 20- 24 was intentionally left out because there might be no big difference between them and a 19-year-old. In a month the average number of pregnant adolescents attended to in Pumwani Maternity hospital is around 24. The hospital conducts upto 500 deliveries for the adult women in a month. Mbagathi Level IV hospital an average of 30 pregnant adolescents is attended to in a month with approximately 200 deliveries per month among the adult women.

3.3.2 Inclusion Criteria

- Adolescents between 10- 19 years in the postnatal wards.
- Adult women between 25- 49 years in the postnatal wards
- Parturient must have delivered in the named facilities.
- Signed informed consent.

3.3.3 Exclusion Criteria

- Clinically unstable parturient in the postnatal ward – these are patients who are too sick to be able to take part in the interviews.

3.4 Sample Size

Sample size was calculated using the difference in proportions - Fleiss JL formula with CC (Statcalcepi-infoTM) as outlined below. The following assumptions, from a similar study by Karin Gross et al in Tanzania¹ were considered during the calculation:

$$n = \left(\frac{r+1}{r}\right) \frac{(\bar{p})(1-\bar{p})(Z_{\beta} + Z_{\alpha/2})^2}{(p_1 - p_2)^2}$$

n = sample size per arm

r = ratio of unexposed to exposed, 2:1 in this case (unexposed taken as women aged above x years (adults) attending ANC, exposed taken as women aged between xx to xx years (adolescents), attending ANC)

P_1 = proportion unexposed (91%)

P_2 = proportion in exposed (76%)

\hat{P} = measure of variability, taken as $91+76/2=83.5$

Z_β = Value corresponding to the power of the study, in this case 80% = 0.84

Z_α = Value corresponding to the normal standard deviate at 95% C.I in this case = 1.96, with 0.05 level of significance

$P_1 - P_2$ = effect size (difference in proportions) = $91-76=15$

N/B: Using the EPI info calculation we got the following results: O.R of 0.3

Un matched Case - Control Study - Sample size					
Calculation					
Two sided Confidence Interval	95%		Kesley	Fleiss	Fleiss w/CC
Power	80%	Exposed	58	62	71
Ratio of unexposed to exposed	2*	Unexposed	116	124	142
Percent of outcome in unexposed	91%		174	186	213
Odds Ratio	0.3				

Adolescents = 58, adults = 116, total 174

3.5 Sampling Procedure

For the 174 participants (adults- 116 and adolescents- 58), proportionate sampling was used to arrive at the number to be sampled from each of the hospitals based on the patient numbers as shown in the table below:

Table 1: Proportions of pregnant adult women from the two hospitals

Hospital	Number of pregnant adult women attending ANC clinic between Jan to March 2018	Proportionate sample
Mbagathi Level IV Hospital	600	$600/2100*116=33$
Pumwani Maternity Hospital	1500	$1500/2100*116=83$
Totals	2100	116

Table 2: Proportions of pregnant adolescents from the two hospitals

Hospital	Number of pregnant adolescents attending ANC clinic between Jan to March 2018	Proportionate sample
Mbagathi Level IV Hospital	90	$90/162*58=32$
Pumwani Maternity Hospital	72	$72/162*58=26$
Totals	162	58

For either of the study groups, health talks were held by the Principal Investigator (PI) or Research Assistant (RA) at the respective postnatal wards to sensitize the patients and health care workers about the study. Parturients aged 10-19 and 25 to 49 years old, who were being followed up for their antenatal care and delivered in either of the two hospitals prior to the date of data collection, will be identified from the registry. The PI or RA did, on a daily basis, for the period of data collection, use computer generated random numbers to randomly select patients who met the inclusion criteria for enrollment. On average, two adult participants and one adolescent participant were enrolled per day until the targeted sample of 176 is arrived at.

3.6 Recruitment and Consenting

The study participants, adolescents and adult women were recruited from the postnatal wards in Pumwani Maternity Hospital and Mbagathi Level IV hospital after delivery. The study was explained to them individually, the benefits, harm and procedure including the final results dissemination. Informed written consent and assent was administered and only those who consent and meet the study criteria were included in the study. The study participants were informed about the study and recruited for interviewing on a convenient time for each of them. In both cases the interviews were targeted before they are discharged home. Their files were coded to avoid re-interviewing. They were issued with a survey questionnaire which they were expected to fill and submit back to the research assistants. Their consent and assent forms were coded and were used as a form of identification to avoid re-interviewing.

3.7 Data Variables

Table 3 below shows the data variables that were captured in the questionnaire for analysis:

Table 3: Study Variables

Objectives	Exposure variables	Outcome variables	Source of data
Socio-Demographics and gynecological characteristics of the adolescents and adult pregnant women.	Age, Marital status, Level of education, Occupation, Wanted pregnancy, Previous delivery experience, Previous place of delivery, Religion.	Improved ANC attendance Increased hospital delivery.	<ul style="list-style-type: none"> • Semi-structured questionnaire • Patient file • ANC booklet
Uptake and quality of antenatal care services.	ANC attendance (onset, frequency), Recommended 8 visits, Perceived service quality, Tetanus toxoid, BP measurements, ANC profile, Laboratory tests done, Medication given (hematinics, folic acid), Danger signs, , Nutritional advice, Health workers perception.	Reduced postpartum complications. Improved maternal and child outcomes.	<ul style="list-style-type: none"> • Semi-structured questionnaires • Patient file • ANC booklet • Likert scale

3.8 Data Collection

Recruited participants were scheduled for an interview at their convenience. In this study, questionnaires were used to obtain data relevant to the study's objectives and research question. The questionnaires were a modification of the Quality of Prenatal Care Questionnaire (QPCQ) - an instrument developed and tested in Canada coupled with the Likert scale. The principal investigator and research assistants approached every adolescent and adult woman who had already delivered, were in the postnatal ward. All who were willing to participate received a letter with information about the study, a consent form and were interviewed. The participants were issued with the assessment tools and when completed all the data from each participant were enveloped, sealed and labelled for confidentiality and quality assurance. Their files were coded to avoid re-interviewing. Study participants only participated in the study once and participants were interviewed once till required sample size was achieved. Materials used were stationery, questionnaires, data storage files, password protected computer, hard drives and flash drives.

3.9 Reliability of the Research Instrument

A pre-test utilizing the adolescents and adult women, excluded from the actual research, with similar characteristics to the study sample were conducted to determine the clarity of the items and consistency of the responses.

3.10 Quality Assurance

The following measures were taken for quality assurance through all the stages of the study.

- Data was stored in password protected computers, hard drives and flash drives to ensure confidentiality and accessible to only the principal investigator, supervisors and statistician.
- Quiet comfortable rooms were used for the interviews at the participant's convenience.
- The participants were interviewed using Swahili, English or both to facilitate proper understanding and accurate responses.

3.11 Ethical Considerations

The study was submitted to the Kenyatta National Hospital/ University of Nairobi ethics review committee (KNH/UON ERC) for ethical approval before commencing the recruitment. Permission was also sought from the University of Nairobi department of Obstetrics & Gynecology, Mbagathi Level IV Hospital and the Pumwani Maternity Hospital administration before the commencement of the study. Participants were consented and they signed consent forms voluntarily in a language they best understood.

Minors are persons under 18 years of age, the legal age of consent for research in Kenya. The inclusion of minors was justified because the research topic had a component of adolescent girls in it. The study applied the specific ethical provision for legal emancipation and informed consent for minors who were married, pregnant or a parent who allowed a minor to provide informed consent for care. Minors were counselled prior to assenting. A parent/ guardian who was present in the post-natal ward signed the assent form. Confidentiality was maintained because no names were disclosed in the research report.

3.12 Data Analysis

The data from the research was cleaned and coded immediately when the questionnaires were received. Editing was done to check on the inclusiveness and logic of the answers provided based on the consistency and significance of the answers to the items and objectives of the research. The Incomplete data were excluded from the analysis. The data was stored in a password protected hard drive and limited access computers. Descriptive statistics were explored and presented as frequencies, proportions, and medians. Associations between independent and dependent variable were determined using the Man Whitney test and ANCOVA if continuous and the chi square test and logistic regression if categorical at the 95% level of confidence. A $P < 0.05$ was statistically significant.

3.13 Study Results Dissemination Plan

The final results was published into a thesis and presented to the department. The work will be published in a maternal fetal journal for a wider audience. There will be organized individualized and group communication of the results to the study participants. A report will be sent to the Ministry of Health and Nairobi County, department of Health to aid in policy formulation.

CHAPTER FOUR: RESULTS

4.1 Results Flow Chart

Between January and March 2019, 2100 adult parturients attended Mbagathi and Pumwani hospitals antenatal clinics. Of the 2100, 134 were screened for eligibility and written informed consent administered. Of the 134, 18 were excluded because they did not meet our inclusion criteria and one eliminated for declining consent leaving 115 adults. Over the same duration, 162 adolescents attended ANC at Mbagathi and Pumwani hospitals. Of these 68 were screened for eligibility and written consent sought. Of the 68, two were excluded for not meeting our inclusion criteria. Thus, 66 adolescent women were recruited as presented in *Figure 1*.

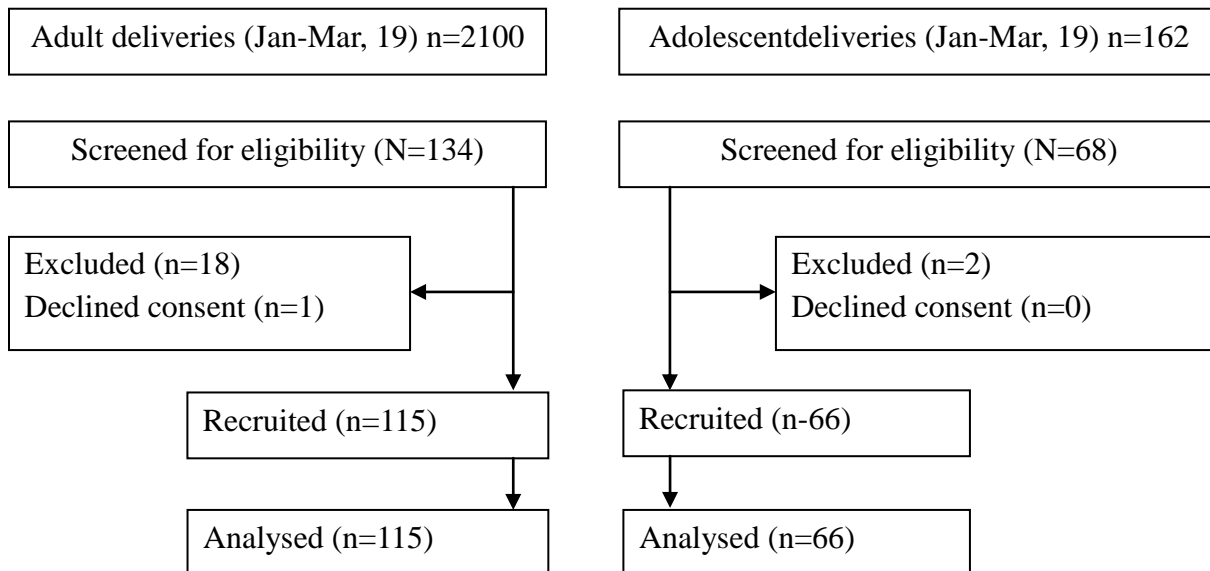


Figure 2: Flow chart showing the recruitment procedure for adolescent and adult parturients

4.2 Demographic and Reproductive Characteristics

Demographic data is presented in *Table 1* below. Adults were 20 times more likely to be married than youths (OR (95% CI) = 20.5 (8.60-49.21), $p < 0.01$), while close to 100% were less likely to be unemployed ($P < 0.01$). The odds of having a planned pregnancy (OR (95% CI) = 11.73(5.60-24.5)) and a parity $>2+0$ was also higher among adults ($P < 0.01$). However, while adults were two times more likely to have a tertiary education (OR (95% CI) = 2.06 (0.78-5.42)), the

difference was not statistically significant ($P>0.05$). Religion was also comparable among adults and youths ($P>0.05$), while 68% more adults were likely to have had a bad experience during a previous delivery, but not statistically significantly ($P>0.05$). Marital status, employment, parity, and pregnancy planning were identified as potential confounders.

Table 4: Socio-demographic characteristics of adolescent and adult pregnant women in Mbagathi and Pumwani hospitals

		Adults N=115	Adolescents N=66	OR (95% CI)	P
Education	Primary	32 (27.8)	22 (33.3)		Ref
	Secondary	59 (51.3)	36 (54.5)	1.12 (0.56-2.23)	0.73
	Tertiary	24 (20.9)	8 (12.1)	2.06 (0.78-5.42)	0.13
Religion	Christian	112 (97.4)	66 (100.0)	-	-
	Muslim	3 (2.6)	0 (0.0)	-	-
Marital	Single	8 (7.0)	40 (60.6)		Ref
	Married	107 (93.0)	26 (39.4)	20.5 (8.60-49.21)	<0.01
Employment	Employed	79 (68.7)	8 (12.1)		Ref
	Not employed	36 (31.3)	58 (87.9)	0.06 (0.02-0.14)	<0.01

Table 5: Reproductive characteristics of adolescent and adult pregnant women in Mbagathi and Pumwani hospitals

		Adults N=115	Adolescents N=66	OR (95% CI)	P
Parity	1+0	22 (27.5)	58 (72.5)	0.03 (0.01-0.07)	P<0.01
	>2+0	93 (92.0)	8 (8.0)		
Planned pregnancy	Yes	96(85.7)	22(33.8)	11.73(5.60- 24.5)	<0.01
	No	16(13.3)	43(66.2)	Ref	
Previous experience	Good	70 (73.6)	5 (62.5)	Ref	
	Bad	25 (26.4)	3 (37.5)	1.68 (0.37-7.55)	0.49
	None	22	58		
Previous Delivery	Hospital	90 (96.8)	8 (100.0)	-	-
	Home	3 (3.2)	0	-	-
	None	22	58		

4.3 Uptake of ANC Services

The uptake of ANC services, which includes the timing of ANC, number of ANC contacts, evaluations, and counselling on danger signs are presented in *Table 6* below. Overall, adults were less likely to attend their first antenatal clinic in the second trimester than youths did (OR (95% CI) = 0.03 (0.00-0.35), $P < 0.01$). However, adults were more likely to undergo routine ANC evaluations, with the odds of undergoing a hemoglobin evaluation, urinalysis, and blood grouping found to be 9.3, 13.5, and 4.42 times higher among adults ($P < 0.05$). Uptake of non-routine evaluations such as UECs, LFTs, and the hepatitis B surface antigen ELISA was low and comparable among adults and adolescents ($P > 0.05$). Adults were 4.42 times more likely to undergo an ultrasound examination before 24 weeks (OR (95% CI) = 4.42 (2.10-9.31), $p < 0.01$). But, even though 75% more adults were likely to have an ultrasound after 24 weeks gestation, the odds (1.75 (0.92-3.31)) was not statistically different ($P = 0.08$). Fundal height palpation, blood pressure monitoring, weight monitoring, administration of the tetanus toxoid vaccine, and provision of prescription prenatal medication provision was almost universal (over 90%) and comparable among adults and youths. But, adults were 6.7 times more likely to receive a delivery plan ($P < 0.01$) and were 25.3, 13.9, and 7.63 times more likely to receive counselling on danger signs such as absence of fetal movements, incidence of headaches/blurred vision, and swelling of the hand and feet respectively, statistically ($P < 0.01$), as presented in *Table 2* below.

Table 6: Uptake of ANC services by adults and adolescents

	Adults N=115	Adolescents N=66	OR (95% CI)	P
Timing of ANC				
First Trimester	14 (12.3)	5 (7.6)	Ref	
Second Trimester	99 (86.8)	51 (77.3)	0.69 (0.23-2.03)	0.50
Third Trimester	1 (0.9)	10 (15.2)	0.03 (0.00-0.35)	<0.01
No of ANC contacts				
Less than 8	109 (95.6)	66 (100.0)	-	-
At least 8	5 (4.4)	0 (0.0)	-	-

Table 7: Routine ANC investigations (profile) of adolescent and adult pregnant women in Mbagathi and Pumwani hospitals

Routine	Adults N=115	Adolescents N=66	OR (95% CI)	P
Haemoglobin	114 (99.1)	61 (95.3)	9.3 (1.06-81.8)	0.01
Urinalysis	114 (99.1)	59 (92.2)	13.5 (1.62-112.6)	<0.01
VDRL	115 (100.0)	61 (96.3)	-	-
HIV test	111 (96.5)	64 (96.9)	0.86 (0.15-4.86)	0.87
Blood group	112 (97.4)	59 (92.2)	4.42 (1.10-17.7)	0.02
Blood sugar	18 (15.7)	4 (6.3)	2.87 (0.92-8.90)	0.05

Table 8: Non routine ANC profile for adolescents and adult pregnant women in Mbagathi and Pumwani hospitals

Non Routine	Adults N=115	Adolescents N=66	OR (95% CI)	P
UECs	2 (1.7)	0 (0.0)	-	-
LFTs	5 (4.3)	0 (0.0)	-	-
Hepatitis B	11 (9.6)	9 (14.1)	0.66 (0.26-1.71)	0.40

Table 9: ANC services offered to adolescent and adult pregnant women in Mbagathi and Pumwani hospitals

	Adults N=115	Adolescents N=66	OR (95% CI)	P
US before 24 weeks	54 (47.0)	11 (17.2)	4.42 (2.10-9.31)	<0.01
US after 24 weeks	53 (46.1)	21 (32.8)	1.75 (0.92-3.31)	0.08
Delivery plan	108 (93.9)	46 (71.9)	6.70 (2.65-16.9)	<0.01
Fundal height palpation	115 (100)	61 (95.3)	-	-
Blood pressure	115 (100)	64 (100)	-	-
Weight taken	115 (100)	63 (98.4)	-	-
Tetanus toxoid	108 (93.9)	59 (92.2)	1.83 (0.61-5.47)	0.27
Prescription prenatal	112 (97.4)	60 (93.8)	3.73 (0.90-15.4)	0.05
Counselling (Danger signs)				
Absent foetal movement	114 (99.1)	54 (81.8)	25.3 (3.21- 200)	<0.01
Headache/blurred vision	113 (98.3)	53 (80.3)	13.9 (3.02-63.6)	<0.01
Swollen hands/feet	110 (95.70)	49 (74.2)	7.63 (2.66-21.9)	<0.01
Vaginal bleeding	115 (100)	55 (83.3)	-	-
Pregnancy progress	115 (100)	59 (89.4)	-	-

4.4 Quality of ANC Services

The weight measurement (98.3%), blood pressure measurements (98.2%), fundal palpation (97.2%), provision of prenatal vitamins (96.1%), provision of information on pregnancy progress, and counselling on fetal movements (92.8%) were almost universal and in line with WHO recommendations on health. However, only 86.0%, 65.2%, and 12.2% of patients had a delivery plan, at least four ANC contacts, and a complete ANC (*Figure 1*), with only 1.1% of patients receiving good ANC services in the studied sites. Overall, adults were twice more likely to have good quality services than adolescents but not statistically significantly ($P=0.12$).

ANC profile of adolescent and adult pregnant women in Mbagathi and Pumwani hospitals

Table 10: Definition of Quality for adolescent and adult pregnant women in Mbagathi and Pumwani hospitals

Number of antenatal contacts (8)
Prescription of prenatal vitamins
Complete ANC profile (HIV/VDRL/Hb/RBS/blood group/urinalysis)
Delivery plan during ANC
Weight measurements during ANC
Counselling on foetal movements
Assessment of uterine fundal height
Informed on progress of pregnancy
Blood pressure measurement
ANC parameters were extracted from WHO 2016/MOH 2013 ANC Guidelines. All parameters have to have been met for quality of ANC to be termed good. Any missing parameters equates to poor ANC.

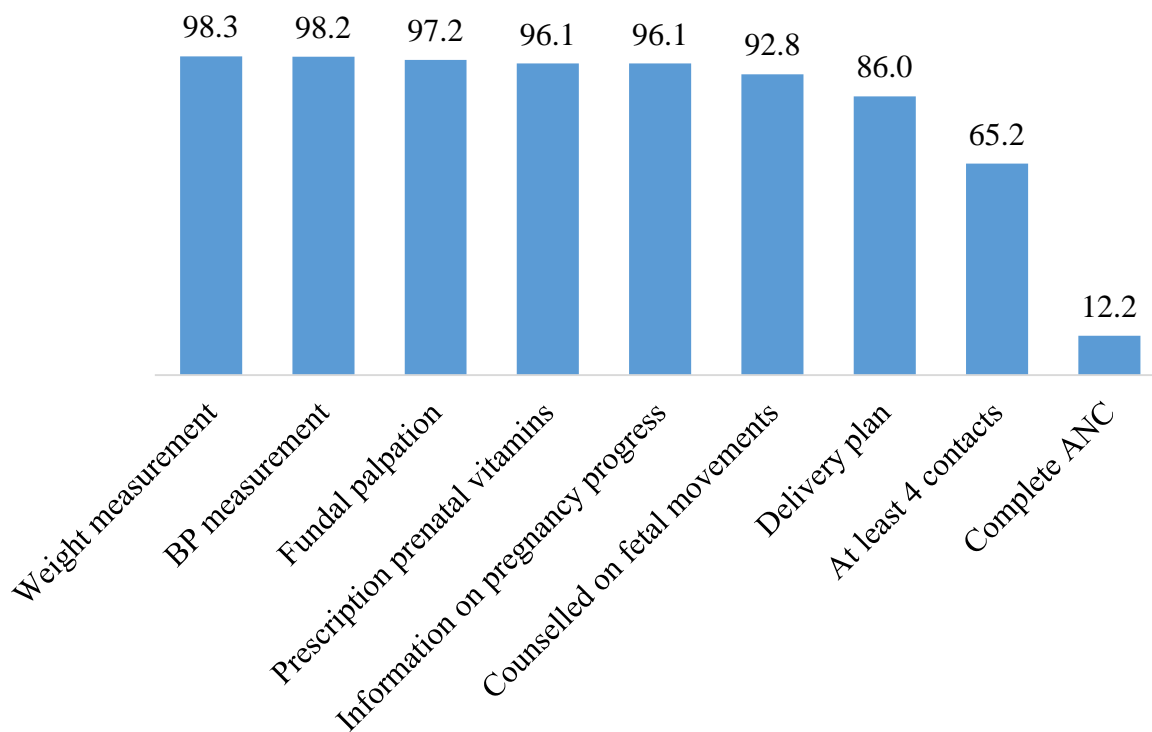


Figure 3: Quality of ANC services received by adults and adolescents

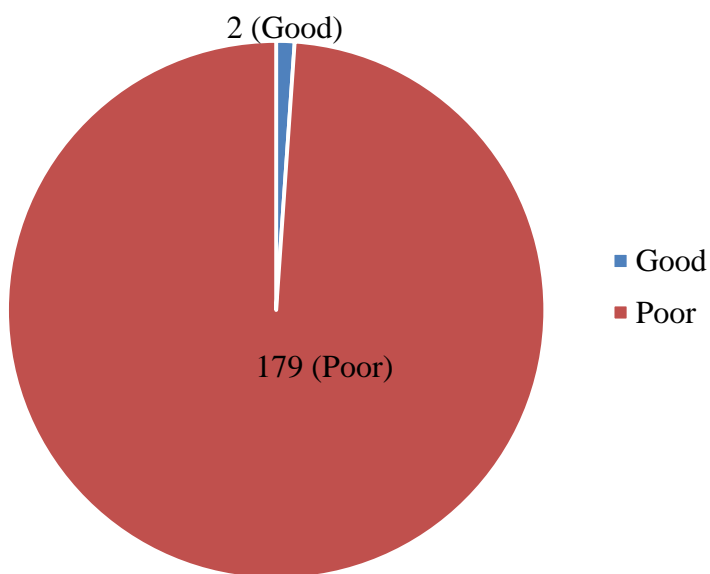


Figure 4: Quality of ANC services received by adolescent and adults

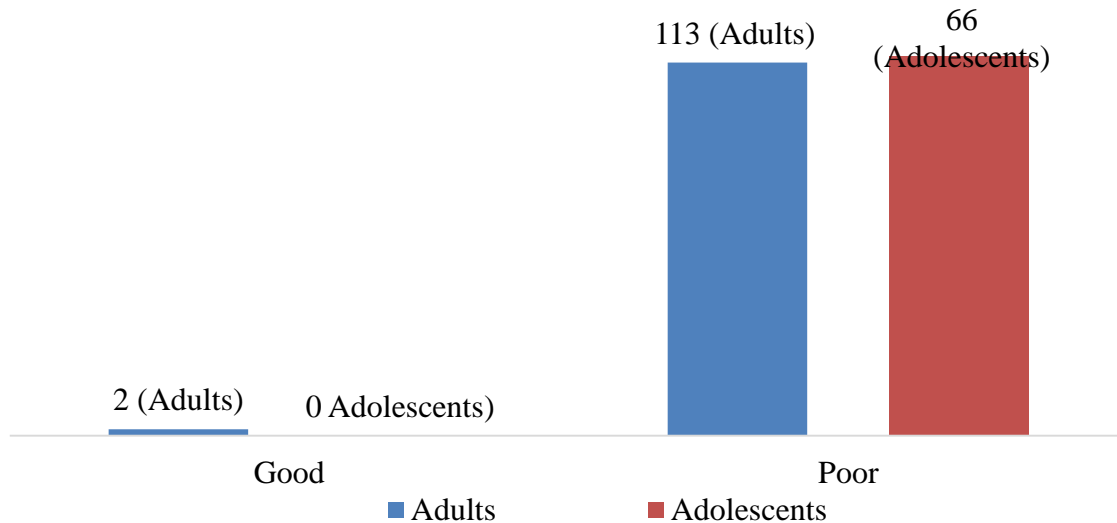


Figure 5: Quality of ANC services received by adolescent and adult pregnant women in Mbagathi and Pumwani hospitals

4.5 Perceived Quality of ANC Services

The median score for the perception of quality on ANC services was significantly higher among adults (4.0) than youths (3.5), $P=0.01$, which indicated a statistical difference in one or more of the six domains on perception of quality studied. Median scores for approachability, for instance, was statistically higher among adults (4.0) than adolescents (3.5), $p < 0.01$, with significantly more adults than youths feeling that antenatal care providers were not abrupt with them (mean rank = 98.7 versus 75.9), were patient (mean rank = 98.4 versus 76.4) and could openly listen to their questions (Mean rank = 100 versus 73.0), $p < 0.01$. The median scores for availability were also statistically higher among adults, with more adults than youths accessing antenatal care offices (mean rank = 98.8 versus 76.0) and having access to health care providers when necessary (mean rank = 98.4 versus 77.4), $p < 0.01$ (*Appendix 4*). Median scores for access to clinics and the knowledge of communication for ANC were higher among adults but not statistically ($P > 0.05$). The median scores for information exchange were higher among adolescents (4.0) than adults (3.9), while scores for sufficient time (4.0 versus 3.8) and scores for support and respect (4.3 versus 4.2) were higher among adults but not statistically ($P > 0.05$).

Table 11: Perceived Quality of ANC Services by adults and adolescents

	Mean Rank		
	Adults	Adolescents	P
APPROACHABILITY			
• My antenatal care provider(s) was not abrupt with me	98.7	75.9	<0.01
• I was not rushed during my antenatal care visits	98.4	76.4	<0.01
• My antenatal care provider(s) made me feel like I was not wasting their time	98.5	76.3	<0.01
• I was not afraid to ask my antenatal care provider(s) questions	100	73.0	<0.01
AVAILABILITY			
• I knew how to get in touch with my antenatal care provider(s)	92.7	88.3	0.54
• Someone in my antenatal care provider(s)' office always returned my calls	98.8	76.0	<0.01
• My ANC provider(s) was available when I had questions or concerns	93.0	87.0	0.46
• I could always reach someone in the office/clinic if I needed something	94.8	82.9	0.12
• I could reach my antenatal care provider(s) by phone when necessary	98.4	77.4	<0.01
INFORMATION EXCHANGE			
• I was given adequate information about antenatal tests and procedures	91.8	89.6	0.77
• I was always given honest answers to my questions	91.4	90.2	0.87
• Everyone involved in my ANC received important information about me	92.1	89.0	0.69
• I was screened adequately for potential problems with my pregnancy	93.2	87.0	0.42
• The results of tests were explained to me in a way I could understand	85.6	100.3	0.05
• My antenatal care provider(s) gave straightforward answers to my questions	88.6	95.0	0.40
• My ANC provider(s) gave me enough information to make decisions for myself	88.7	94.9	0.41
• My antenatal care provider(s) kept my information confidential	86.5	97.3	0.15
• I fully understood the reasons for blood work and other tests ordered	90.7	91.4	0.92
ANTICIPATORY GUIDANCE			
• My antenatal care provider(s) gave me options for my birth experience	94.0	85.6	0.26
• I was given enough information to meet my needs about breast-feeding	94.0	85.6	0.26
• My antenatal care provider(s) prepared me for my birth experience	89.5	90.8	0.86
• My ANC provider(s) talked with me about my expectations for labour and delivery	84.8	101.7	0.02
• I was given enough information about the safety of moderate exercise during pregnancy	88.2	95.8	0.31
• I received adequate information about my diet during pregnancy	90.0	92.6	0.72
• My AC provider(s) was interested in how my pregnancy was affecting my life	94.8	84.2	0.16
• I received adequate information about alcohol use during pregnancy	94.5	84.8	0.20
• I was given adequate information about depression in pregnancy	88.6	95.0	0.39
• My ANC provider(s) took time to ask about things that were important to me	94.1	85.5	0.26
SUFFICIENT TIME			
• I had as much time with my antenatal care provider(s) as I needed	94.4	80.6	0.06
• My antenatal care provider(s) was rushed	91.8	85.2	0.39
• My antenatal care provider(s) always had time to answer my questions	89.2	89.9	0.92
• My antenatal care provider(s) made time for me to talk	87.2	93.5	0.41
• My antenatal care provider(s) took time to listen	91.1	86.5	0.54
SUPPORT AND RESPECT			
• My antenatal care provider(s) respected me	92.6	88.1	0.54
• My antenatal care provider(s) respected my knowledge and experience	91.2	90.5	0.91
• My decisions were respected by my antenatal care provider(s)	91.9	89.4	0.73
• My antenatal care provider(s) was patient	85.1	101.1	0.03
• I was supported by antenatal care provider(s) in doing what I felt was right for me	91.2	90.5	0.92
• My antenatal care provider(s) supported me	90.4	92.0	0.82
• My antenatal care provider(s) paid close attention when I was speaking	92.7	88.0	0.53
• My concerns were taken seriously	94.9	84.1	0.15
• I was in control of the decisions being made about my antenatal care	96.9	80.6	0.02
• My antenatal care provider(s) supported my decisions	95.1	83.7	0.11
• I was at ease with my antenatal care provider(s)	91.6	88.5	0.67
• My values and beliefs were respected by my antenatal care provider(s)	92.3	88.7	0.62

Table 12: Perceived quality of ANC services for adolescents and adult pregnant women in Mbagathi and Pumwani hospitals

	Median Score			P
	Overall	Adults	Adolescents	
Perception of quality of care (overall)	4.0	4.0	3.5	0.01
Information Exchange	4.0	3.9	4.0	0.97
Anticipatory Guidance	4.0	4.0	4.0	0.25
Sufficient Time	4.0	4.0	3.8	0.58
Approachability	3.8	4.0	2.5	<0.01
Availability	4.0	4.0	3.8	0.03
Support and Respect	4.3	4.3	4.2	0.66
Performance grading criteria (Rubaish Abdullah (2010)).				
Low [median of 1&2]				
Acceptable [median of 3]				
Exceptional [median of 4 and 5]				

The perception of quality differed statistically the demographic and medical characteristics of patients. Patients who attended ANC at the Pumwani hospitals perfect the services offered to be of a better quality that those who attended ANC at Mbagathi hospital (mean rank = 101.7 versus 65.4, $p < 0.01$). Moreover, adult patients with a higher level of education (secondary and tertiary than primary) and married were more likely to perceive the quality of services on offer to be of a higher quality than youths ($P < 0.05$). However, after controlling for marital status, hospital, and education of participants, age of participants (adults versus adolescents) did not influence the perception of quality of ANC care statistically significantly ($F = 0.09$, $P = 0.75$). The site of ANC (hospital) ($F = 8.24$) and education level of patients ($F = 10.80$) were found to be the only predictors for perception of quality of ANC care among studied patients ($P < 0.05$).

Table 13: Perceived Quality of ANC Services by adults and adolescents

Variable		Mean Rank	P
Group	Adolescents	77.8	0.01
	Adults	98.5	
Hospital	Pumwani	101.7	<0.01
	Mbagathi	65.4	
Education	Primary	73.5	<0.01
	Secondary	93.9	
	Tertiary	111.9	
Employment	Employed	97.6	0.10
	Unemployed	84.8	
Marital Status	Single (never married)	69.2	<0.01
	Married	98.8	
Parity	1+0	90.9	0.91
	>2+0	90.1	
Regression			
Variable	Mean Square	F	P
Group (adults/adolescents)	0.03	0.09	0.75
Marital status	0.99	2.72	0.10
Hospital	3.00	8.24	<0.01
Education	3.93	10.80	<0.01
F: ANCOVA statistic			
P: P value			

CHAPTER FIVE: DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

5.1 Discussion

A comparative analysis of the socio demographic characteristic of 115 adults and 66 adolescents showed that adults were twenty times more likely to be married and 0.006 times less likely to be unemployed than the adolescents. 72.5% of the adolescents were Para1+0 as compared to 92% of adult women who were >Para2+0. Adults were 11 times more likely to have a planned pregnancy as compared to adolescents. This was consistent with Magadi M. et al (2000) who pointed out that unmarried adolescents attended fewer antenatal sessions as compared to the married adult women. Zhang F. et al (2004) in his study found out that women with higher socioeconomic status are more likely to seek antenatal services.

Study findings were inconsistent with Magadi et al (2010) in Kenya who reported that chances of home deliveries have rose by 40% when it's an unintended pregnancy and Gabrysch S. et al (2009) who concluded that young teenage mothers may prefer to deliver at home because they foresee a negative provider experience. Our findings mirrored the results of other authors from Africa and the developed world. In the larger Sub Saharan Africa and China, for instance, unmarried adolescents – especially those from rural areas - tend to attend fewer antenatal sessions than adults and is lowest among the adolescents with a poor economic status ^(6,35).

Uptake of antenatal care services between the two groups was comparable. Only a tenth of the study participants attended ANC in the first trimester and they both had poor quality of ANC services as per WHO recommendations of at least 8 visits. Adults were more likely to undergo routine ANC evaluations than adolescents. Even though uptake of a plethora of routine evaluations were over 80% in both groups, adults were more likely to have their hemoglobin, urinalysis and VDRL tests measured. Moreover, uptake of evaluator procedures such as ultrasounds (before and after 24 weeks), prescription medication, and counselling services on danger signs were also significantly higher among adults than adolescents. The findings are consistent with Abou-Zahr and Wardlaw (2003) who's study showed that most women in Sub-Saharan Africa rarely attend the ANC clinic in their first trimesters. Majority attend in 2nd trimester. It is also agreeable with Akinyi M. (2007) in a study done in Kenya which revealed

that higher proportion of women in SSA initiate prenatal care later in 2nd and 3rd Trimester. KDHS (2014) corroborated the study findings as it showed that most women attended their first ANC during the 2nd trimester (70.5%). Our data is consistent with the findings of Mgata and Maluka (37) and Magadi et al. (25) in which attendance of ANC in the first trimester in sub-Saharan Africa was low, with a majority of women initiating their first contact in the second trimester. Both groups recorded a small number of those undergoing non-routine ANC profile. There was 100% recording of weight and blood pressure measurements among adolescents and adults. 9 out of 10 parturients had access to prenatal vitamins, fundal height palpations and counselling on danger signs of pregnancy. Even though the quality of ANC services offered in the studied facilities was sub-optimal for a majority of participants, the perception of quality of ANC was good among both adults and youths. However, statistically, adults seemed to be more satisfied with the quality of ANC services in all domains. In terms of approachability, adults were more satisfied with the quality of the services offered, antenatal care providers were less likely to be abrupt with them, rush them, or fail to answer their questions, probably because of their age. Moreover, more adults than adolescents felt that antenatal care providers were reachable by phone when needed and that they made them feel in control of decision-making during their ANC visits. Adult married women who sought health services at Pumwani were more likely to receive satisfactory services, a finding that has been replicated in Nigeria⁽⁴⁰⁾ and Ethiopia (41).

On comparison between adults and adolescents, 93% of the adults were married as compared to 39.4% of the adolescents ($p < 0.01$). Adolescents were 6 times likely to be unemployed ($p < 0.01$).

With first trimester ANC attendance as a reference, adults were 0.03 times less likely to attend their first ANC clinic in the 3rd trimester ($P = 0.01$). Only 17.2% and 21% of the adolescents had an ultrasound done before and after 24 weeks respectively ($p < 0.01$). Adult women were 6 times more likely to have a delivery plan than adolescents ($p < 0.01$). For the routine ANC profile, adolescents were less likely to have the tests done as compared to adult women who were 9 times more likely to have Hb done, 13 times more likely for urinalysis and 4 times more likely for blood group ($p < 0.01$). Adults were more likely to undergo non-routine ANC evaluations than adolescents. Scores on overall perception of quality of ANC service was significantly higher among adults. Scores for approachability and availability were significantly higher among adults.

These findings were consistent with James and Strümpher (2011) in South Africa who reported that pregnant adolescents' noted their experiences at the ANC clinic as not being adequately cared for. Akowuah JA et al (2000) in Ghana concluded that maternal education is one of the strongest determinants of utilization of antenatal health care services. These were inconsistent with Atuyambe et al. (2007) in Ghana whose findings showed that adolescents had poor HSB, more community stigmatization and violence, bigger challenges in terms of social support.

5.2 Study Strengths

This is the first study to compare the quality of antenatal care given to adolescents versus adult pregnant women in Mbagathi and Pumwani Hospitals. Findings will inform on policies, help formulate standard operating procedures and in service training modules in the management of adolescent pregnancies. Data collection from the study settings was a representation of a clearer picture as the hospitals serve a vast majority of expectant mothers with minimal financial expectations hence affordable to many.

5.3 Study Limitations

Participants in this study were interviewed after delivery in the post-natal wards. There was a likely chance of recall bias on their antenatal care hence their ANC booklets were used in extraction of some data and confirming others already stated by them. In addition, some information was likely to be missed from the patients' files. Where essential data was missing, the PI picked the next eligible file for enrollment into the study. This decision was made on a daily basis.

5.4 Conclusions

The health seeking behaviors of both the adolescents and adult women was good. Only 1.1% received good quality of care as per WHO standards. Non routine ANC profiles are minimally done, likely attributed to prohibiting costs and lack of employment. Fewer ultrasounds being done by both adolescents and adult women, likely due to non-inclusivity in the "Linda Mama" package. More adults than adolescents had a delivery plan. Both adolescents and adults had <8 contacts during their antenatal follow up. There was no difference between perceived QoC and received QoC.

5.5 Recommendations

- Community engagement by advocating for early ANC attendance.
- MOH to promote adherence to guidelines on management of adolescent pregnancy by disseminating the guidelines. Feedback need to be given to the study sites.
- Education to the healthcare workers and patients on importance of doing the ANC profile as they impact on the quality of services being offered thence the overall health of the mother and the child.
- Educating the mothers on the importance of having ultrasound scans done during the course of pregnancy.
- Need for education to both the adolescents and adult women on value for attending the stipulated 8 ANC contacts as per WHO.
- Women empowerment by offering higher education to the girls with subsequent gainful employment opportunities.

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ANNEXES

Annex I: Consent and Assent Form/ FomuyaIdhini

QUALITY OF ANTENATAL CARE SERVICES FOR ADOLESCENTS AND ADULT PREGNANT WOMEN IN MBAGATHI AND PUMWANI HOSPITALS (A COMPARATIVE CROSS SECTIONAL STUDY).

Principal investigator: Dr. Corrine Awuor Arara.

Introduction

I Dr. Corrine Arara, a postgraduate student at the Department of Obstetrics &Gynecology, University of Nairobi, am conducting a study on quality of antenatal care between adolescents and adult pregnant women in Mbagathi and Pumwani Hospitals.You are hereby requested to participate in the study.This information will help you make a decision on whether to participate in the study or not. You may ask any questions about the study or anything in this form that is not clear.

Purpose of the study

The general health status of pregnant women depends largely on the quality of the Antenatal Care (ANC) services available to them.The experiences of these pregnant women has a big impact on their outcomes as it largely impacts on ANC utilization. This study aims to look at comparison of the quality of antenatal services offered between adolescents and adult pregnant women and how it affects their health seeking behavior and ultimately maternal and child outcome.

Study Procedure

We are inviting you to take part in this research project. If you accept, you will be asked to respond to a few questions that the research assistant/I will administer to you. You will be asked a few questions by the research assistant or myself. If you do not wish to answer any of the questions included in the study, you may skip them and move on to the next question. The information recorded is confidential, your name is not being included on the forms, only a number will identify you, and no one else except our data analyst will have access to the data.

Duration

The data collection process for the study will take place over a period of three months. During that time, we will visit you once for interviewing. Each interview will last for about 30 minutes.

Benefits

Your participation in the study will help us obtain information that will be used to fully understand how the quality of antenatal care between adolescents and adult pregnant women contributes to their care during pregnant and the pragmatic interventions to be put in place to ensure all the pregnant women both adolescent and non- adolescent are handled and managed in a better way. This study is expected to benefit your household, the local community, Kenya and mothers globally.

Possible risks

The study will have no invasive procedures and you'll only be required to answer a few questions. There will be no added risks to your standard care as that accorded to other patients.

Voluntarism

This is a voluntary exercise and you can withdraw at any point during the study with no repercussions. The management you receive at the hospital will be standard and not influenced by your decision.

Compensation

No compensation will be offered for participation in the study.

Confidentiality

The information from you will be confidential. Neither names nor any information identifying you will be included in the questionnaires and the final report.

Sharing the Results

Nothing that you tell us today will be shared with anybody outside the research team, and nothing will be attributed to you by name. The knowledge that we get from this research will be shared with you and the hospital where you attend the clinic before it is made widely available to the public. Each participant will receive a summary of the results. There will also be small meetings in the clinics to share the outcomes of the study; these will be announced. Following the meetings, the results will be presented at the department of Obstetrics and Gynecology, University of Nairobi as part of the fulfilment of the master of Obstetrics and Gynecology.

Subsequently, the results will be published so that other interested people may learn from the study.

Right to Refuse or Withdraw

You do not have to take part in this research if you do not wish to do so, and choosing to participate will not affect your access to the services offered in this hospital.

Contact information:

If you have any questions regarding the study, you can contact Dr. Corrine Arara through telephone number 0725 900883. You may also contact the KNH/UoN/ERC Committee-0735-274288/0721-665077.

Or

The chairperson,

KNH/UON Ethics and Research Committee

P.O. Box 20723-00202, Nairobi.

Telephone number: (254-020) 2726300-9 Ext 44355

Email: uonknh_erc@uonbi.ac.ke

Your participation in the study will be highly appreciated.

Consent:

I..... hereby consent to take part in the study, the purpose and intent of which has been explained to me by Dr. /Mr.....

I clearly understand that my participation is completely voluntary.

Participant's Signature: -----

OR

Thumb Print of Participant

Date.....



Assent:

I have read and understood the information provided above. I have been fully explained to about the study and have had the opportunity to ask questions which have been answered to my satisfaction. I have agreed to participate in this study voluntarily and have not been coerced/manipulated or bribed in any way.

Participant's Signature: -----

OR Thumb Print of Participant

Date: -----



I agree to let my child participate in this study:

Parent/ Guardian's Name: -----

Parent/ Guardian's Signature -----

Date: -----

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands. I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Print Name of person taking the consent _____

Signature of person taking the consent _____

Date _____ (Day/Month/Year)

FomuyaIdhini

KICHTWA CHA UTAFITI:

UBORA WA HUDUMA YA UJAUZITO KATI YA VIJANA NA WANAWAKE WAKUBWA KATIKA HOSPITALI MBILI, KAUNTI YA NAIROBI.

MtafitiMkuu: Dkt. Corrine Awuor Arara

Utangulizi:

Mimi Dkt. Corrine Arara mwanafunzi washahada katika Idaraya Obstetrics and Gynecology, Chuo kikuu cha Nairobi, ninafanya utafiti juu ya ubora wa huduma ya ujauzito katika vijana wanawake waliokoma katika kaunti ya Nairobi. Maelezo hayata kusaidi ku fanya uamuzi juu ya kushiriki katika utafiti huu. Unaweza ku uliza swali lolote kuhusu utafiti au chochote katika fomui hii kukuweza shakue lewazaidi.

Madhumuni ya utafiti:

Afyaya jumla ya wanawake waja wazito inategemea kwau kubwa ubora wa huduma za ujauzito wanayopata. Uzoefu wa akina mama hawa una athari mkubwa kwama tokeo ya ujauzito. Utafiti huu unalinganisha ubora wa huduma za ujauzito katika vijana wanawake waliokoma anajinsi inavyoathiri tabia za ozaki utafutamatibabu wakati wamimbanama tokeo ya mama namtoto aliyezaliwaba adaye.

Mudawakufanya utafiti:

Huu utafiti utafanya kwamudawamie zitu. Wewe kamamshiriki utahoji wamaramojapekee. Kipindi cha kuhoji wautachuku adakikaishirinitu.

Faida:

Ushiriki wa katika utafiti utatusaidi kuelewa kwa undani ubora wa huduma za ujauzito anajinsi unachangi katika kuwahudumi wanawake wazito nanjamwafakayaku watumiki bila ubaguzi. Utafiti huu unatarajiwa ku faida familia yako, jamii yako, nchi ya Kenya a kinamadamuniani.

Hatarizi lizoweza kama:

Utafiti huu hautakuwana athari zo zote kwaku nautahitaji katika ukuji buma swali machache. Hakutakuwana hatarizi adiyahudumayakawaidakama ile ili yopewa wagonjwa wengine.

Hiari:

Hilini zoezi la hiarina unaweza kuji ondo awakati wowote wautafiti bila wama. Usimamizi unaopokea kwenye hospitali utakuwawakawaidanahauta athiri uamuzi wako.

Fidia:

Hakunafidiaitolewakwakushirikikatikautafitihuu.

Utaratibu:

Kama mshirikiwautafiti,
mtafitinamsaidiziwautafitiwatapatamaelezokotakwakufanyamahojianomafupinawe.

Usiri:

Taarifakutokakwakoitakuwasiri.

Hakunamajinawalamaelezoyoyoteyakukutambulishayatakayonukuliwakwenyeripotiyautafitihuu.

Kugawanamotokeo

Hakunakileutakachotwambiakitajadiliwanayeyote yule nje yakundi hili la utafiti,
nahakunakitakachoidhinishwajinalako.

Ujumbeambaotutapatakutokananahuutafititutajadilinawenajamiikablaiwehurukwawatuwengine.

Kilaatakayeshirikiatapokeamaelezokiufupiyamajibu. Pia

kutakuanamikutanondogokatikajamiinahiiitawasiliswhakutokananamikutano,
tutachapishamajibundiposawenginewalionanahamuwaweze kujifunza kutokananautafiti.

Hakiyakukataa au kujitoa

Siolazimaushirikikatikautafitihuukamahunaniyakufanyahivo,
nakuchaguakutoshirikihaitadhurukuopokeahudumazinazo pean wakatikahospitalihii.

Maelezoyamawasiliano:

Ukiwanaswalilolotekuhusuutafitihuu, unawezakuwasilianana Dkt. Corrine Arara
kupitianambarununu 0725900883. Unaweza pia kuwasilianana KNH / UoN / ERC Committee
kupitianambari 0735-274288 / 0721-665077.

Ama:

Mwenyekiti,

KNH / UON KamatiyaMaadilinaUtafiti

S. L. P. 20723-00202, Nairobi.

Nambariyasimu: (254-020) 2726300-9 : 44355

Baruapepe: uonknh_erc@uonbi.ac.ke

Tunakushukurusanakwaushirikiwakokatikautafitihuu.

Idhini:

Mimi.....

nimeamuakwaariyangumwenyewekushirikikatikaufitihuubaadayamaelezoya kina

kutokakwaDkt. / Bwana / Bi.....

ninaelewawazikwambaushirikiwangunikwahiari.

SahihiyaMshiriki Tarehe

Wasilisho la mtafiti/mwenyekuchukuaidhini.

Nimemsomeakitaratibukaratasiyahabarihuyumwenyeuwezewakushiriki,

nakwakadriyauwezowangunimehakikishakwambahuyumshirikaanaelewautafutihuukwa kina.

Nathibitishakuwamshirikaalipewanafasiyakuulizamaswalikuhusuutafitihuu,

namaswaliyotealiyoulizamshirikayamejibiwakisawasawanakwakadriyauwezowangu.

Nathibitishakwambahuyuhajalazimishwakupeanaidhininaidhiniimepeanwaburenakwakujitolea.

Jina la uchapisho la anayechukuaidhini.....

Saini yaanayechukuaidhini.....

Tarehe

Annex II: Study Questionnaire

Study Title: QUALITY OF ANTENATAL CARE SERVICES FOR ADOLESCENTS AND ADULT PREGNANT WOMEN IN MBAGATHI AND PUMWANI HOSPITALS (A COMPARATIVE CROSS SECTIONAL STUDY)

Date:.....

Time:.....

Section I (to be administered to all the study participants by the research assistant; kindly tick the boxes as appropriate)

1. Serial number.....

Section A. Sociodemographics

1. Study group (*tick as appropriate*)

Adolescent mothers group

Adult women group

2. What is your age in years

3. What is your highest attained level of education (*tick as appropriate*)

Primary

Secondary

Tertiary (College/University)

4. Religion?

Christian

Muslim

Other

5. Marital status

Single (never married)

Married

Divorced/Separated

6. Employment history?

Employed

Self employed

Not employed

Section B. Gynecological history

7. How many children do you have? Have you lost any pregnancies? If so, how

.....

Indicate as Para+.....

8. What was your age when you started experiencing your monthly periods?

.....

9. Was these a planned pregnancy?

Yes

No

10. When was your last delivery? Indicate the year:

11. What was your previous delivery experience?

Good

Bad

12. What the place of previous delivery?

Hospital

Home

SECTION C. Antenatal history

13. When was your first ANC visit?

.....(indicate in weeks)

14. How many ANC visits did you attend in total?.....

	Antenatal profile	Done	Not done
a)	Hemoglobin level		
b)	Urinalysis		
c)	VDRL		
e)	UECs		
f)	HIV test result		
g)	LFTs		
h)	Hepatitis B Surface Ag		
i)	Blood group		
j)	Blood sugar		

15. Was an ultrasound done before 24 weeks? Yes No

16. Was an ultrasound done before 24 weeks? Yes No

17. Were given a delivery plan during your Antenatal Clinic? Yes No

18. Was your uterine fundal height palpated and corroborated with dates?

Yes No

19. Was your blood pressure being measured during your antenatal clinic?

Yes No

20. Was your weight taken during your antenatal clinic? Yes No

21. Was Tetanus toxoid(TT) given?

Yes No

22. Were you given any medication while attending the clinic (hematinic, folic acid)?

Yes No

23. Counseling on danger sign during antenatal clinic

		Yes	No
a)	Were you told to return if there was reduced or absence of fetal movements?		
b)	Were you told to return if you have severe headache/ blurred vision?		
c)	Were you told to return if you have swollen hands/feet?		
d)	Were you told to return if you have vaginal bleeding?		
e)	Did the health care provider inform you about the progress of your pregnancy?		

Section D. Perceived Quality of Care

“Strongly Disagree” (1), “Disagree” (2), “Neither Agree Nor Disagree” (3), “Agree” (4) and “Strongly Agree” (5).

Information Exchange

24.

		1	2	3	4	5
a)	I was given adequate information about antenatal tests and procedures					
b)	I was always given honest answers to my questions					
c)	Everyone involved in my antenatal care received the important information about me					
d)	I was screened adequately for potential problems with my pregnancy					
e)	The results of tests were explained to me in a way I could understand					
f)	My antenatal care provider(s) gave straightforward answers to my questions					
g)	My antenatal care provider(s) gave me enough information to make decisions for myself					
h)	My antenatal care provider(s) kept my information confidential					
i)	I fully understood the reasons for blood work and other tests my antenatal care provider(s) ordered for me					

Anticipatory Guidance

25.

		1	2	3	4	5
a)	My antenatal care provider(s) gave me options for my birth experience					
b)	I was given enough information to meet my needs about breast-feeding					
c)	My antenatal care provider(s) prepared me for my birth experience					
d)	My antenatal care provider(s) spent time talking with me about my expectations for labor and delivery					
e)	I was given enough information about the safety of moderate exercise during pregnancy					
f)	I received adequate information about my diet during pregnancy					
g)	My antenatal care provider(s) was interested in how my pregnancy was affecting my life					
h)	I was linked to programs in the community that were helpful to me					
i)	I received adequate information about alcohol use during pregnancy					
j)	I was given adequate information about depression in pregnancy					
k)	My antenatal care provider(s) took time to ask about things that were important to me					

Sufficient Time

26.

		1	2	3	4	5
a)	I had as much time with my antenatal care provider(s) as I needed					
b)	My antenatal care provider(s) was rushed					
c)	My antenatal care provider(s) always had time to answer my questions					
d)	My antenatal care provider(s) made time for me to talk					
e)	My antenatal care provider(s) took time to listen					

Approachability

27.

		1	2	3	4	5
a)	My antenatal care provider(s) was abrupt with me					
b)	I was rushed during my antenatal care visits					
c)	My antenatal care provider(s) made me feel like I was wasting their time					
d)	I was afraid to ask my antenatal care provider(s) questions					

Availability

28.

		1	2	3	4	5
a)	I knew how to get in touch with my antenatal care provider(s)					
b)	Someone in my antenatal care provider(s)' office always returned my calls					
c)	My antenatal care provider(s) was available when I had questions or concerns					
d)	I could always reach someone in the office/clinic if I needed something					
e)	I could reach my antenatal care provider(s) by phone when necessary					

Support and Respect

29.

		1	2	3	4	5
a)	My antenatal care provider(s) respected me					
b)	My antenatal care provider(s) respected my knowledge and experience					
c)	My decisions were respected by my antenatal care provider(s)					
d)	My antenatal care provider(s) was patient					
e)	I was supported by my antenatal care provider(s) in doing what I felt was right forme					
f)	My antenatal care provider(s) supported me					
g)	My antenatal care provider(s) paid close attention when I was speaking					
h)	My concerns were taken seriously					
i)	I was in control of the decisions being made about my antenatal care					
j)	My antenatal care provider(s) supported my decisions					
k)	I was at ease with my antenatal care provider(s)					
l)	My values and beliefs were respected by my antenatal care provider(s)					

Annex III: KNH/UoN-ERC Letter of Approval

Annex IV: Certificate of Plagiarism