HEALTHCARE SYSTEM FACTORS ASSOCIATED WITHACCESS TO MATERNAL HEALTH CARE IN KENYA

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CHAPTER 1: INTRODUCTION

1.1 BACKGROUND INFORMATION

A health care system is the association of people, resources and institutions that deliver health care services to achieve target populations health needs. World Health Organization promotes the goal of universal health care to ascertain that the population obtains the required health services without facing financial hardship. Health system goals in accordance to WHO are fair means of funding operations, good health for the citizens and responsiveness to the expectations of the population. The progress towards these goals depends on how systems carry out the critical functions on financing, provision of health care services; resource generation and stewardship with additional dimensions on quality, acceptability, efficiency and equity.

Maternal health refers to the health of women throughout the pregnancy period, during the time of giving birth and the period after the delivery of a child. It is among the prominent challenges related to health in developing countries. Also, it includes all the scopes of health care like family planning, care given before conception occurs, antenatal care and postpartum care to minimize the level of morbidity and mortality among mothers and pregnant women (WHO & UNICEF, 2010).

Quality of maternal health care is crucial in ensuring that the mother and the child survive hence the women endeavor to realize the full potential vested in themselves as individuals, as mothers as well as members of a family in addition to being citizens of nation (Mungai, 2015).

Many women in the developing countries experience complications related to maternal health and an argument from Thaddeus and Maine (1990) showed that inadequate care in low income countries takes lead in maternal mortality. Usage of health care services is related to the health-delivery system organization which is affected by the quality of care, financial costs, continuity, availability of services and resources, community beliefs about health, comprehensiveness of services and social structures (Andersen, 1968; Fiedler, 1981; Kroeger, 1983).

The Kenya Vision 2030 seeks to change the country into an industrialized, middle-income nation to provide the nation with a high quality life by 2030, to achieve this, in collaboration with the United Nations member states by working towards the Universal Health coverage. The key areas that need to be emphasized on is to be able to achieve the UHC on improvement in maternal and

child health, increase in the coverage of immunization, prevention of non-communicable diseases particularly HIV sexually transmitted diseases, hypertension and diabetes, Tuberculasis, prevention of water borne diseases, among others. Kenya first focused on the preventable and primary health care this includes taking steps in sexual and reproductive health.

There are several official documents which capture the emphasis of the country's focus in maternal, newborn and child health and they are; "The Six Pillars of Kenya's MNCH Pogramme" and the "Strategic Framework for the Engagement of the First Lady in HIV Control and Promotion of Maternal, Newborn and Child Health in Kenya". The key results isthe elimination of some financial barriers to access hence free delivery services in public facilities (Karanja et al., 2018).

The implementation of the Maternal Newborn Child Health which is ongoing in the country assumes that all the communities in the implementation area are accessible and beneficial from the MNCH services and this is critical because marginalized communities in Kenya such as the pastoralists live in rural places which are far from the formal health services (Karanja et al., 2018).

Also, the Kenyan government has been implementing the policy on free utilization of health facilities by pregnant mothers since 2013 following the presidential directive. The aim of the programme was to promote health facility delivery utilization by mothers and consequently reduce maternal and neonatal deaths.

The free maternal deliveries policy works through reimbursable costs incurred. The health facilities use the available resources and seek reimbursement by the government. The different categories of health facilities receive different allocation per delivery. The free maternal services program uptake can improve if the government directs its efforts towards changing women's attitude on public health care quality services and also improve access to health facilities in slum areas.

Maternal deaths continue to be recorded which has been largely attributed to unskilled deliveries conducted outside health facilities in the country (38%) despite the introduction of free maternal deliveries in Kenya. Only about 61.2% of the deliveries are conducted in a registered health facility since the inception of the programme. The high cost of maternal and child health services

are one of the obstacles of service utilization in Kenya hence low utilization of maternal health care services (Ng'anjo Phiri et al., 2014).

In ensuring less maternal mortality occurrence, elimination of cost delivery was considered of great importance though other critical factors also contribute to maternal mortality and some of the factors are individual level, facility level and geographical level factors. These factors are classified as either those related to UHC or those that are related to Maternal Health.

To improve pregnancy outcomes mothers are advised to use the maternal health care services. The challenges faced with the implementation of free maternal health policy are such as insufficient funding, insufficient supply of drugs, shortage of skilled healthcare workers, late reimbursement involving the costs incurred in providing free maternity care, noninvolvement of stakeholders in maternal health, demotivation of health workers and heavy workloads (Gitobu, Gichangi and Mwanda, 2018).

The health status of mothers and children in a country is the index of showing how well the country is economically (United Nations, 2010). The health of the mother is connected with the life of the newborns. Maternal health leads to reduces mortality and morbidity of both the mother and the baby.

The International Conference on Population and Development which was held in Cairo, Egypt in 1994 suggested that comprehensive reproductive health policies be developed and implemented (UNFPA, 1994) and this helped Kenya to make improvements in maternal health through Kenya National Reproductive Health Programme.

1.2 PROBLEM STATEMENT

In Kenya, the maternal and neonatal mortality rates are still high at 362/100,000 live births and 22/1000 live births respectively despite major reforms by the national and county governments in the health sector. According to the KDHS 2014, 96% of pregnant women went for ANC and they were provided these services by a skilled healthcare provider but from this percentage only 58% made the recommended four or more ANC visits during their pregnancy. This is still very low given that ANC is the most vital and important component in the maternal health since we cannot manage the problem without the symptoms first. If the government is able to achieve the 100% ANC coverage according to the WHO standards of four or more visits as the goal of UHC, then maternal mortality and morbidity will reduce since during the visits the women will be told what to do and any problems noticed will be taken care of, this also means that majority will deliver in a health facility and PNC given to them.

Abuja recommends the public expenditure on health of 15% but Kenya only accounts for six percent and it has stagnated at this level for over the past decade (Hofman & Mohammed, 2014). There is enabling policy environment for maternal health and also political support but despite all these insufficient access to superior maternal health services which compromises of antenatal, delivery and postnatal services persist as a major challenge. Time taken to reach the health facility, type of care provided and accessibility of expert delivery services are still persistent issues (Anneceta, 2016).

In developing countries, maternal health can be improved by a multifaceted, religiously and culturally sensitive approach. The approach includes the country having a political stability, level of education among women to be increased; the existing health management system should be strengthened, economic empowerment and allocating the human and material resources wisely. The material resources are such as production and access to clean water and food. The Kenyan constitution respects life as an individual right and this means that maternal health strategies have to be improved and also health improvement of the unborn baby (Kagia, 2013).

Kenya has made outstanding development in improving Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCAH) outcomes during the last ten years. However, at the moment, many women, neonates, children, and adolescents keep suffering or dying from avoidable and treatable conditions.

1.3 RESEARCH QUESTION

- How is access to maternal healthcare influenced by healthcare system factors in Kenya?

1.4 RESEARCH OBJECTIVES

The main objective is to determine how access of maternal healthcare services is influenced by health system factors in Kenya. The Specific objectives are;

- Determine effects of healthcare system factors on Antenatal Care
- Determine effects of healthcare system factors on delivery
- Determine effects of healthcare system factors on care during postpartum

1.5 JUSTIFICATION OF THE STUDY

While focusing on access to Universal Health Care (UHC) is critical, certain specific gaps still remain to deliver full benefits to majority of the women especially in rural areas.

The findings of this study will be used to establish the populations which have limited or no access to maternal health services and this will help in making improvements of the services by the government. The focus of Government policy has been to eliminate fees while accessing delivery services in public hospitals. This will ensure a large proportion of pregnant women are not disadvantaged due to the delivery fees. Other important considerations should be taken into account in order to achieve 100 percent delivery in a health facility.

This study therefore focuses on key factors that determine maternal health. The study looks at gaps in the existing data and aims at designing a program of action that is exhaustive and implementable. The key factors the study considers are: Factors related to maternal health and Factors related to Universal Health Coverage. The findings of this study are expected to help

improve policy performance in the addressing the maternal mortality problem and ensuring that universal health coverage is met.

1.6 LIMITATIONS OF THE STUDY

The study will make use of secondary data with the main focus on factors related to maternal health and Universal Health coverage. However, delivery of maternal health has so many components which will not be covered under the current study.

CHAPTER 2: LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1: INTRODUCTION

Maternal health is amongst the prominent challenges related to health in the developing countries. It refers to health of women throughout the pregnancy period, during the time of giving birth as well as the period after the delivery of a child. It is a representation of all the scopes of healthcare including family planning, care given before conception occurs, pre-birth and postpartum care so as to minimize the level of ill health and death among mothers and pregnant women (WHO & UNICEF, 2010).

Health services usage depends on availability, quality provided and financial costs as well as personal characteristics, social structure and individual health cultures. This means that in developing countries income differentials exists and higher income and better social status are linked to better health hence slow progress in the reduction of maternal mortality.

Study by Khan 1987 showed the relationship between maternal health and child health especially during early infancy. The WHO advocates for at least four ANC visits for women without complications and this is one visit after every three months of gestation and final before giving birth. Recently, the WHO guidelines have changed to eight ANC visits and this is a challenge because most women don't make the four visits during pregnancy (Hagey, Rulisa and Pérez-Escamilla, 2014).

Worldwide, poor utilization of maternal health services is the principal cause of maternal morbidity and mortality. In developing countries majority of the women do not receive antenatal care and if they do they go for the services in the late months of their pregnancy and these women prefer homebirths (Mekonnen, 2003).

As a result of poor utilization of antenatal care visits, it's not possible to identify high risk pregnancies and women who have ever had complications before their histories will not be considered, information on sexual and reproductive health and child nutrition is not given to the mothers. Previous studies in low income countries on maternal healthcare and survival of child health have shown the differences in place of residence (Madise and Diamond 1996, 1997; Stephenson, 1998).

Kenya, Tanzania and Burundi have the highest maternal mortality ratios among the East Africa community member states of 362,578 and 740 deaths per 100,000 live births respectively.

The high rates of maternal deaths in Kenya are attributed to well-known and preventable causes which could be controlled if they accessed maternal health care. In 2014 according to the KDHS only 61% of women delivered in a health facility and 62% were assisted by a skilled healthcare provider. This can be because most women did not attend all the four ANC visits hence they weren't given advice on place of delivery or referrals in case of complications. However, this is not a reflection of a healthy and well-functioning system.

In 2003 Ethiopia established a Health Extension Programme which was fixed in the primary health care facilities and this was due to its high maternal mortality ratio which is currently at 19,000 maternal deaths yearly and 673 deaths per 100,000 live births. In this programme 33,000 health extension workers who were female were trained belonging to different posts and they were expected to provide maternal health care and also refer pregnant women with complications to health facilities with the available resources. The trained health workers also supervised traditional birth attendants and unpaid community health workers who supported health education in the communities.A study on maternal health utilization in Ethiopia found that an increase in delivery by a skilled health workers leads to a decrease in maternal deaths(Tsegay et al., 2013).

In order to promote safe motherhood and child survival, the government of Kenya launched the National Reproductive Health Services Delivery Strategy, 1997-2010which had the following important components; family planning, prenatal care, clean and safe delivery, essential obstetric care, prenatal care, newborn care and post abortion care. Also the Integrated Management of Childhood Illnesses (IMCI) strategy was developed in 1998 and set in motion in the year 2000.

Since the 2010 World Health Report and the 58th WHO Assembly resolution Universal Health Coverage has been the target (Evans and Etienne, 2010) and it has been included in the Sustainable Development Goal 3.8 which states "Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all" (United Nations General Assembly 69th session, 2015).

UHC has become a priority after we failed to achieve the MDGs. To be able to attain the UHC goals, monitoring and evaluation should be done at both the global and country level though Kenya doesn't yet have an official order on the goals, targets and monitoring and evaluation of performance.

Universal Health Coverage targets to enlarge the variety of health services offered reduce the financial costs on certain health services and increase proportion of population covered. To be able to progress towards UHC the health system delivery challenges and health financing reforms needs to be addressed. According to WHO, (2010) there are three key areas which are essential for health reforms and they include; raising health funds to offer health services, improving efficient and equitable use of available health resources and shifting to viable pre-payment methods (Obare, Brolan& Hill, 2014).

One of the country's big 4 agenda is universal health coverage. There has been a development in reducing maternal, newborn and child mortality but it has been slow and this led to the initiation of Beyond Zero campaign by the First Lady hence the declaration of free maternal health policy in 2013. The important reasons for maternal and child health are that the mothers health has a lifetime impact on child health and also because it will reduce on medical expenses and increase in savings.

In Kenya, UHC involves scaling up immunization, improving maternal and child health prevention of water borne, vector borne, HIV and Sexually Transmitted Diseases, Tuberculosis as well as prevention of non-communicable diseases like diabetes and hypertension and nutrition of women who conceive.

A crucial component of UHC that affects women is accessibility to maternal healthcare. There are 16 essential health services across four categories which are used to measure the intensity and equity of UHC in countries. The indicators for reproductive, maternal, newborn and child health include family planning, antenatal and delivery care, full child immunization and health seeking behavior for pneumonia.

Maternal health services can be improved in developing countries by understanding the community practices about maternity care, elimination of inequalities in the utilization of maternal health care and expansion of health services is needed.

Inequalities in the population are some of the challenges facing some countries despite achieving success in improving maternal healthcare services. There is high tendency of morbidity and mortality among disadvantaged women, and low provision of maternal health services which are unaffordable to increase safe pregnancy and delivery.

A prominent target within the health sectors is equity. Big differences have been seen in the health care services between children of high and low income countries and these inequalities and inequities are the most important factors leading to maternal and child health (Victora et al., 2003).

2.2 FACTORS ASSOCIATED WITH MATERNAL HEALTHCARE

2.2.1 FACTORS RELATED TO UNIVERSAL HEALTH COVERAGE

i. Access to finance

In Kenya, the highest maternal mortality ratios are in the counties which are considered to be the poorest. This shows that the poor population receives the poorest quality of maternal health care. Also the facilities in these regions are not equipped well for example lack of adequate skilled health workers and the capacity to perform caesarian surgeries. For example in the 2014 KDHS it showed that the women in the high wealth quartile were likely to deliver in the health facility compared to those in the low quantile. This is a perfect example of inequalities which leads to maternal and child outcomes and to be able to decrease maternal and newborn morbidity and mortality such inequalities should be put to an end and ensure all women regardless of their socioeconomic status receive high quality of services across the continuum of care (Kruk et al., 2016).

Kenya is implementing health financing reforms and this is according to the constitution of Kenya (Attorney General [Government of Kenya] The constitution of Kenya, 2010). It involves allocation of revenues for free primary healthcare which amounts up to Ksh.900 million and maternity services of Ksh.4.3 billion (Medium term budget policy statement, 2014). In 2012 health insurance scheme was introduced through the National Hospital Insurance Fund to cover each and every one of civil servants and their dependents, these are some of the initiatives that

provide protection against financial risk and this is important only when the services acquired are of good quality.

ii. Geographical factors

Geographical access to the healthcare focuses on the location of health facilities and the time one takes to travel to the facility. It is associated with the number of health facilities available to the communities and the availability of transportation (Wang, Temsah and Mallick, 2016).

A study by (Essendi et al., 2015) about the infrastructural difficulties to better health in maternal facilities in Kenya in view of the impression of community and health specialists found that poor infrastructural facilities was a problem in accessing maternal healthcare services in that, there were no great infrastructure to go to where majority of healthcare facilities were found and this made the separation and voyaging times so long and risky for mothers.

Distance to the health care facility is the main problem upsetting mothers from using maternal health care services and this is due to poor road networks and absence of transportation and as a result some pregnant women will visit a close-by traditional birth attendant instead of strolling numerous miles to a healthcare facility which she didn't have trust on.

iii. Access to health providers

This is an important factor when it comes to maternal health since they are a requirement for the delivery of better health services and outcome. The national human resource norm requires 3 health workers per 10,000 populations but still this hasn't been achieved in Kenya despite the growing numbers of health workers. The workers should be equitably distributed across the region, adequate and of good quality. Human resources for health (HRH) are requirement for delivery of better health services and outcomes (Mugo et al., 2018).

A study conducted by Kenya Institute for Public Policy Research and Analysis on an assessment of healthcare delivery in Kenya under the devolved system showed that between the years 2013 and 2016 there is an 8% increase in the registered health workers but they still do not meet the demand in the country and this can be because of reasons such as; most health workers migrate to other countries after completion of their studies, the health workers give less of their services to meet the demand of the residents hence the health workforce to population ratio is low.

The distribution of health workers in the rural and urban areas in the country shows a huge disparity. Urban areas have more health workers compared to the rural areas and this is because the rural is often associated with poor infrastructure, low access of training opportunities and no government support hence more health workers are attracted to the urban areas. Hence from the study, a large percentage of human resources heads (74%) reported not to have adequate staff.

2.2.2 FACTORS RELATED TO MATERNAL HEALTH

i. Antenatal Care

The good health of the women can be promoted during pregnancy and this prepares them psychologically and emotionally for parenthood. Antenatal care (ANC) is the care provided to pregnant women for better health conditions for the mother and the baby by skilled healthcare providers. ANC has four pillars which are used to ensure safe motherhood, good health during pregnancy and early postpartum period (Mother-baby package: implementing safe motherhood in developing countries World Health Organization, 1995, 1995). Survival of mother and babies is improved through good quality of antenatal care services and also increases the chances of women to use skilled birth attendant during delivery (UNICEF, 2017).

Receiving quality maternal health services helps in the detection and management of pregnancy-related complications and also reduces the chances of maternal and newborn deaths. Detection and management of many existing diseases doesn't mean prevention of all causes of maternal and newborn deaths (Mbuagbaw and Gofin, 2010).

There are several factors which influence utilization of antenatal care and they are; reproductive characteristics, socioeconomic, husbands attitude towards maternal health, family income, women's autonomy, distance to the health facility, accessibility and availability of the healthcare services. To be able to achieve high quality of ANC al the pregnancies should be treated as high risk pregnancies ad monitored for complications (Tekelab, Chojenta, Smith & Loxton, 2019).

ii. Delivery care

Delivery care is considered to be good when done by a skilled health worker and most especially done in a health facility. A good environment such as availability of health facilities and referral systems which are functional, the community which understands the importance of maternal

health, supporting policies on maternal health and also political support is needed for the mothers to receive quality delivery care services (Olsen et al., 2002).. Health professionals need a refresher training every three to five years

Kenya is promoting skilled care during pregnancy and childbirth for the mothers and newborn. When a woman delivers from a health facility and complications arise she can be able to be referred to another facility where they can be able to handle her condition if the health workers are not able to manage the complications. For a reduction in the deaths resulting from the complications of pregnancy it is important to increase the number of deliveries in a health facility. KDHS 2014 showed that only 43% of births are delivered in a health facility and only 44% delivered under supervision of skilled birth attendant.

Most of the women who have had other children prefer to deliver at home without skilled assistance because they believe they have an experience already compared to women who have never given birth.

2.3 IMPACT OF UHC FACTORS TO ACCESS OF ANC AND DELIVERY CARE

A study of 54 countries by Barros et al(Barros et al., 2012) found that inequality in income for women's health services was the greatest. A well designed UHC program benefits the women and children the most since they are visibly affected by healthcare inequalities.

Universal health coverage removes the financial burden especially to the poor women and provides a basic set to all users of high-impact primary care interventions which provide maternal and reproductive health services such as interventions for safe, effective contraception and the basic services proven to prevent the vast majority of maternal deaths(Partnership for Maternal, Newborn & Child Health, University of Aberdeen (2010) Sharing knowledge for action on maternal, newborn and child health., 2010). Also, comprehensive care promotes good health for women and the babies.

2.4 FACTORS ASSOCIATED WITH ACCESS TO MATERNAL HEALTHCARE IN KENYA

i. Education Level

Many studies have shown that a woman's education had an influence in the access of maternal health. Women with secondary plus education are more likely to use the maternal health services since most of them are likely to have a source of income, they are empowered and they can have a say regarding their health.

Also, the husband's level of education has a great impact on the utilization of maternal health services. If a woman has no education and the husband has some level of education, he will be able to understand the importance of ANC visits and delivery care in a health facility hence he will influence the wife to use these services.

A study on women's empowerment and maternal health utilization in Nepal 2001 found a strong relationship between women's education and use of maternal health care(Simkhada, Teijlingen, Porter &Simkhada, 2008).

ii. Marital Status

Women who are married have a higher likelihood of accessing maternal health services especially in their first trimester compared to those not married. This is linked to the support received from spouses which increases the amount of finances in order to access the services (Ochako, Fotso, Ikamari&Khasakhala, 2011).

Mothers who did not have any husband or their husband had more than one wife are less likely to access the maternity care. For example a woman who is married can have her first baby in a health facility and then later the husband marries a second wife and refuses to pay for her maternal services assuming the woman doesn't have any source of income. Also, a male figure in a woman's life during pregnancy is important and this is because they provide emotional support. For instance, a single pregnant lady can be assisted by the brother or uncles to cover her hospital fees. Some studies have shown that dependency on male figures has a relationship with accessing health care services(Byford-Richardson et al., 2013).

iii. Maternal Age

Older women with high birth orders are less likely to deliver in a health facility compared to the younger women.

As the age of the woman increases the less likely she is to deliver from a health facility. According to the KDHS 2009, approximately forty seven percent of women aged below twenty years delivered from a health facility compared to thirty six percent of those aged thirty five and above. Though these young ones deliver from a hospital they do not receive the PNC services; the 2009 KDHS shows that approximately fifty four percent of the women aged below twenty years did not receive post-natal care services. This may be because they have no money to cater for the PNC services since majority of them are still young therefore more likely to be single and have no source of income.

iv. Income/ Employment status

The women who have a source of income especially in the formal employment sector seek the maternal health care services compared to those who don't have income. This is because they can be able to pay for the services hence they can be able to attend the required four antenatal care visits (Nzioki, Onyango &Ombaka, 2015).

An investigation in 2014 (Cheptum et al., 2014) of an on-going Maternal and Infant Survival to Health Care Advancement (MAISHA) task to establish the obstacles to accessing and utilizing maternal and newborn child health services in the county found that employment status was an additional factor related access to the services and one had the capacity to access the services especially when some costs had to be incurred like direct costs of transport, medical as well as supply expenses, in addition to charges for health workers and health facilities. Employed individuals had a higher likelihood of accessing the services.

v. Residence

The urban areas have good infrastructure, good hospitals and enough skilled health care workers in their health facilities and that's why the urban areas has a higher number of women who delivered in a health facility (82%) compared to the deliveries in the health facility in the rural areas (50% and this is according to the 2014 KDHS.

Majority of the deliveries in the urban areas are done in a health facility (74.4%) compared to the rural areas where only a small proportion of them (35.4%) are done from a health facility (KDHS 2009). This can be because in the urban areas there are many health facilities which are affordable and easily accessed by the women compared to the rural areas where the health facilities are minimal and the distance from ones home to the health facility is far and also the mode of transport in the rural areas is poor. Most of the health facilities in the rural areas have few doctors and poor resources.

vi. Parity

Parity is number of children previously born alive to a woman. The higher the number of births a woman as, the less likely she will use the maternal health services.

Births to older women and births of higher order are more likely to occur at home. Most of these women don't find it necessary to deliver from a health facility since they already have other children and they prefer to be assisted by the traditional birth attendants. Also, the number of women receiving PNC declines as the parity of the woman increases. Women with many children have rarely go for the PNC after giving birth to their sixth born. According to the KDHS, women with six plus children had the highest percentage of those who didn't receive the PNC and women with one child majority of them received PNC.

vii. Time taken to reach health center

Poor infrastructural facilities is a noteworthy test to accessing maternal healthcare services in Kenya. There are no great infrastructure to the go to where the majority of the healthcare facilities are found especially in the rural areas and this made the separation and voyaging times so long and risky for mothers. Separation to the healthcare facilities is viewed as a main consideration upsetting mothers from approaching maternal healthcare services, this is an issue particularly due to the poor network of roads and absence of transportation. Some pregnant mothers prefer visiting a close-by traditional birth attendant instead of strolling numerous miles to a healthcare facility which she doesn't trust (Essendi et al., 2015).

viii. Knowledge on maternal health

A study carried out in Thika and Kagundo hospitals demonstrated that a large number of these women in both hospitals possessed knowledge pertaining to the services that were provided in these facilities however, only a small number had awareness of the opportunity of transferring patients from small health facilities to these main hospitals by use of ambulances implying that these facilities were unavailable. These women had knowledge concerning the services that were available in these hospitals but due to other factors, for instance, poor attendance by health workers acted as a discouragement for them to deliver in these hospitals. A recommendation from this research was that empowerment of the women through education and knowledge creation had to be undertaken to increase the understanding of the importance of delivering in hospitals and the ability to meet costs in accessing services (Kabue, Keraka&Simbauni, 2018).

ix. Decision making in the household

Women's involvement in making decisions on the household shows that she can also make decisions about her own health and her utilization of healthcare services. The decision can be made either by the woman alone or with consultation of other family members. This is important since the family's income is something that needs to be discussed on how it will be used and when such issues arise the level of income will determine the type of care the woman will receive.

A study in Ghana found out that the decisions on maternal health of a mother was strongly influenced by the opinions and values of the husband, traditional birth attendants, mothers-in-law and other family members. (Ganle et al., 2015).

x. Uncertainty during the first trimester

During the first trimester, young women and women who previously had pregnancy complications are vulnerable and often face uncertainty hence improvements in maternal health reduces this uncertainty for example this is linked to women who use injectable contraceptive and most young women ask for assistance in the health facility without disclosing their suspected pregnancy(Pell et al., 2013).

xi. Direct charges of maternal health

Though in Kenya maternal health service charges are free, there are some costs which are linked to the health services for example during the first ANC visit there is laboratory work which is supposed to be done and it involves money and also some hospitals charge a small amount of money on the iron tablets which are taken throughout the pregnant period. This can delay the attendance of using the ANC especially in cases where the woman doesn't have money.

xii. The stigma of adolescent pregnancy

Most of the African society expects a girl to get pregnant after high school or after eighteen years of age. When an adolescent girl gets pregnant, she is not yet fully mature to bear children and also she doesn't have the means to take care of herself especially if she is single and this can lead to mortality.

Most young girls especially those in school when pregnant they will try to hide it since it may lead to expulsion from school or being sent away from home hence a delay in maternal health services (Sychareun et al., 2018).

xiii. Quality of care

Most women (Simkhada, Teijlingen, Porter &Simkhada, 2008) initiate ANC late and this is because they perceive bad quality of services at the healthcare. The bad services are such as inadequate doctors at the health facility, harsh treatment from the health workers and payment of maternal services which they expect to be free. This has made many women to prefer treatment by traditional birth attendants since they pamper them and treat them nicely and also encourage them during labor compared to the skilled health workers at the health facility.

Also, the stories of the women in social media about their bad experiences at the health facilities has made them not to want to utilize the health facilities (Byford-Richardson et al., 2013).

xiv. HIV Testing

There is still HIV stigma in the country despite the efforts t reduce them. During the ANC visits, the woman has to be tested for HIV so that the child can be protected at birth through the PMTCT. In most hospitals, even if the mother did not go for ANC visits, the mother has to produce the proof of her HIV status in order to be admitted in a health facility for delivery and

hence the fear of testing can make the woman not to access any of the maternal health care services(Byford-Richardson et al., 2013).

xv. Women's awareness and attitude

The community and women's awareness about the importance of maternal health is a contributing factor to access to maternal health. Most women think that ANC should be started after three months of pregnancy and only when there is a complication with a pregnancy or if she had complications in the previous pregnancy. When a woman realizes she's pregnant early, in the first six months and she knows the importance of ANC, there are high chances she will access the services (Downe, Finlayson, Walsh & Lavender, 2009).

xvi. Unintended Pregnancy

Women who get pregnant by mistake or unplanned they start the prenatal care visits late. This is because they did not plan for this and hence they need to sit down and prepare psychologically, emotionally and financially.it will lead to fewer ANC visits which is inadequate. This happens in both the developing and developed countries (Dibaba, Fantahun & Hindin, 2013).

2.5 OVERVIEW OF KENYA'S HEALTH SYSTEM

a.) Disease burden

The high disease burden in Kenya is caused by communicable disease which is an important contributor and the Global Burden of Disease study in 2010 indicated that maternal, neonatal, non-communicable and nutritional conditions are among the top ten causes of Disability Adjusted Life Years (DALYs) in Kenya(Obare, Brolan& Hill, 2014).

b.) Service delivery and health outcomes

In Kenya, here are four main sectors which provide health services (public, private, faith-based and non-governmental organisations) in Kenya. There are health system factors described by WHO so that the country can be able to provide adequate healthcare services and they are; health financing, service delivery, health workforce, information, medical products, vaccines and technologies, leadership and governance. Though these factors were provided by WHO there are some challenges that make it impossible to attain the goal and such challenges are inadequate

and mismanaged funding, inefficiencies, shortage of health workers, inadequately equipped facilities, medicine stock outs; hence limiting the availability and quality of health services.

2.6 UNIVERSAL HEALTH COVERAGE IN KENYAN CONTEXT

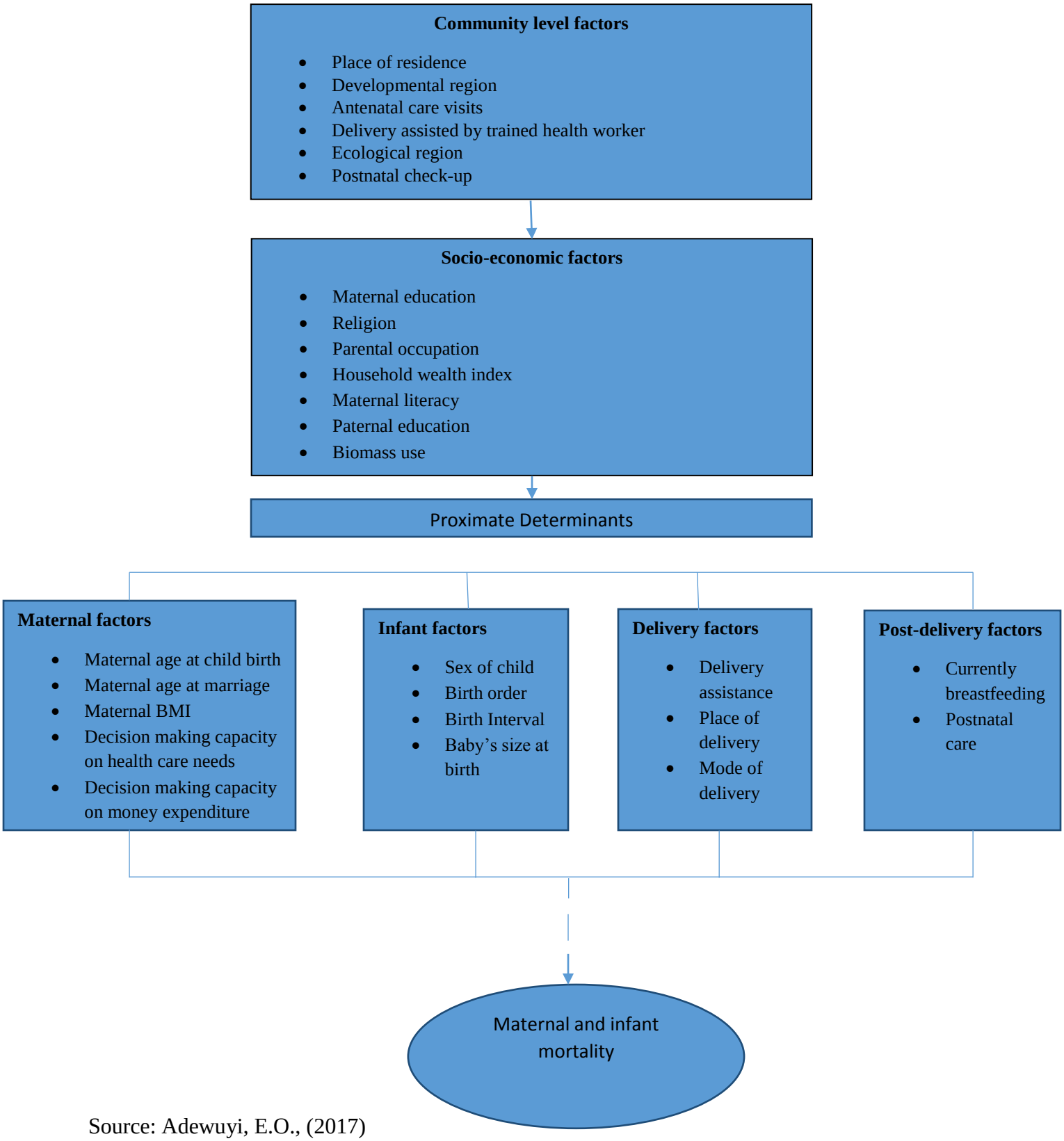
Kenya is in the initial stages of implementing UHC and health schemes such as NHIF sow that some work has been made towards improving the access of healthcare and social protection when it comes to the aspects of UHC. In Kenya, most of the health services have to be paid for and this is hard among the poor communities because it makes such households poorer. One of the main weaknesses in the health system is the inequalities between the rich and the poor communities in terms of health facility allocation.

A monitoring and evaluation framework is important for the implementation of UHC so that we can be able to monitor the progress though Kenya doesn't yet havea monitoring and evaluation framework. Also, political commitment and strong relationship among the stakeholders is important for Kenya's progress towards UHC for example countries like Ghana, Mexico and Vietnam in the last ten years have made impressive progress towards UHC.

The main objectives of a health system is to improve the health of the population without putting the population at financial risk while accessing the health services and an effective health system meets these objectives (WHO 2010).

Maternal mortality is influenced by community factors, socio-economic factors and the proximate factors. Factors which will have direct influence on maternal and child mortality are the proximate factors such as maternal, infant, delivery and post-delivery factors while the socio-economic and community level factors have an indirect (Lamichhane et al., 2017).

2.4 CONCEPTUAL FRAMEWORK



Source: Adewuyi, E.O., (2017)

CHAPTER THREE: DATA SOURCE AND METHODOLOGY

3.1 Data Source

This study will make use of data from the Kenya Demographic and Health Survey (KDHS) 2014 which was collected by the Kenya National Bureau of Statistics. The data was screened for both sampling and non-sampling errors. Non sampling errors arise due to mainly challenges in administering the questionnaire. Some of the examples of non-sampling errors include: Not being able to find and interview the right household, misunderstanding of the interview question among others. On the other hand, sampling errors arise due to challenges in sample selection process. For instance, the selected sample for the 2014 KDHS is one among many possible samples with equal likelihood of selection. This type of error is best evaluated statistically using statistical tools. Depending on the actual sample selected, other equally likely samples would yield different results but the findings are expected to be the same.

3.2 Methodology

The study aims at investigating how access to maternal health care services in Kenya is influenced by healthcare system factors. Specifically, it will: 1) determine effects of healthcare system factors on Antenatal Care, 2) determine effects of healthcare system factors on delivery, and 3) determine effects of healthcare system factors on care during postpartum. Each of the objectives will be analyzed using different models.

3.3 Method of Analysis

Since the study will investigate a myriad of variables both health and non-health related, it is proposed that different approaches be utilized to analyze each of the objectives at the first stage in the analysis. A three model approach is suitable due to the nature of dependent variables under investigation. In the first objective, the dependent factor will be the variables that define Antenatal Care, hence the dependent variable composition. Similarly, delivery being analyzed as dependent will form a variable composition collectively for the purpose of this study. Analysis of postpartum experiences of mothers will also be treated separately to isolate the effects arising due to system factors. In view of the proposed analytical approaches, the empirical model preferred here will be the logit model for individual objectives.

In the second stage however, the study will link all the outcome variables to maternal mortality. In this case, a dichotomous response variable will be adopted with similar independent variables from the three separate models consequently generating one empirical model which is multinomial. In essence, the response variable will have four categories namely: no maternal health care received, received ANC only, received ANC and delivery care and the third will be received ANC, delivery care and PNC.

3.4 The Empirical Model

The model proposed for the analysis is the logistic regression approach. The response variable in a logistic regression framework is normally dichotomous in which case it may be referred to as Bernouli or binary variable. In such a formulation, the response variable success is measured with the likelihood of π while the failure is measured with the likelihood of 1- π. While this formulation is far most commonly used in demographic analysis, the extension of the response variable to more than two categories is now common. This formulation is referred to as multinomial logistics regression model or polytomous models.

In a logistic formulation, the model does not make assumptions about the distribution of the predictor variables. The relationship of both ends of the model is not necessarily linear in nature. The general for of the logistic equation is given as:

$$\varepsilon = \frac{e^{y}}{1+e^{y}} \quad \textbf{.....1}$$

Where

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_n x_n \quad \textbf{.....2}$$

β_0 is the constant term of the equation, β_n is the coefficient of the right hand variables

3.5 The Wald Test

The Wald Test is a diagnostic test used to ascertain the statistical significance of the coefficients in the formulation. The Wald test computes a Z statistic as follows:

$$Z = \frac{\hat{\beta}}{SE} \quad \textbf{.....3}$$

Once the Z value is obtained from the formulation in 3 above, it is then squared to obtain the Wald statistic with chi-square distribution.

Although the Wald test statistic has been used to measure the statistical significance of the coefficients, some authors have pointed out some challenges associated with the use of the statistic. For instance, Menard (1995) asserts that in the case of large coefficients, the Wald statistic inflates the standard errors thereby lowering its value or the chi-square value. Agresti(1996) observes that the likelihood ratio test is more reliable smaller sample sizes than what Wald test obtains.

3.6 Variable Definition and their Measurements

Table 3.1 shows variables and their measurements

VARIABLE	VALUES
Age 5-year age groups	1=15-19 2=20-24 3=25-29 4=30-34 5=35-39 6=40-44 7=45-49
Type of place of residence	1= Urban 2= Rural
Highest education level	0= No education 1= Primary 2= Secondary 3= Higher
Wealth Index	1= Poorest 2= Poorer 3= Middle 4= Richer 5= Richest
Antenatal care in health facility	0= No 1= Yes
Place of delivery	0= Home 11= Respondents home 12= Other home 13= Enroute to provider 20= Public facility 21= Government hospital 22= Government health center 23= Government dispensary 26= Other public 30= Private medical facility 31= Mission hospital/clinic 33= Private hospital/clinic 35= Nursing/ maternity home 36= Other private medical 96= Other
Reason didn’t deliver at health facility	1= Cost too much 2= Facility not open 3= Facility too far 4= Don’t trust facility 5= No female provider

	6= Husband/family didn't approve 7= Not customary 8= Not necessary 9= Abrupt delivery 10= CS 11= Other
Check of the mother after delivery	0= No 1= Yes 2=Don't know
Baby postnatal check within two months	0= No 1= Yes 2= Don't know
Who performed postnatal checkup	10= Health Personnel 11= Doctor 12= Nurse/midwife 20= Other person 21= Traditional birth attendant 22= Community/ village health worker 96= Other
Covered by health insurance	0= No 1=Yes
Final say on health care	1= Respondent alone 2= Respondent and husband/partner 3= Respondent and other person 4=Husband/ partner aloe 5= Someone else 6= Other
Current marital status	0= Never married 1= Married 2=Living together 3= Widowed 4= Divorced 5= Not living together
Assistance during delivery	1= Doctor 2= Nurse/ midwife 3= community health worker 4= Traditional birth attendant 5= Relative, friend 6= Other

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