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# BARRIERS TO HEALTHY BIRTHS AT NIGERIAN HOSPITALS

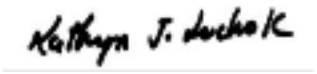
By

Caroline Johnston

Submitted in Partial Fulfillment
of the Requirements for
Graduation with Honors from the
South Carolina Honors College

May 3, 2021

Approved:



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## Description

This thesis focuses on maternal mortality in Nigeria, West Africa. I chose Nigeria to examine maternal mortality trends because Nigeria is responsible for a large portion of global maternal deaths. Although Nigeria constitutes only 2% of the world's population, it accounts for 14% (40,000) of global maternal deaths (Sub Saharan Africa, 2012). According to the Nigeria Health Financing system assessment by Reem Hafez, Nigeria's maternal mortality rate is 2.6 times higher than the global average (Hafez, 2018). Nigeria's high maternal mortality rate is related to its economy, cultural groups, and religion, and political climate. Although the solution to maternal mortality is complex, this paper primarily looks at how an improvement in hospitals is one solution that could contribute to better maternal outcomes in Nigeria. Understanding more about these issue in Nigeria may elucidate how these trends can be addressed in other parts of sub-Saharan Africa.

## Abstract

Maternal mortality is a problem everywhere, but it is especially dangerous in Nigeria where the average woman experiences pregnancy six times during her lifetime (Population Reference Bureau, 2001). Many researchers focus on the medical complications associated with labor, such as hemorrhage, eclampsia, or infection. Although these birth complications are the direct sources of maternal death, it is also important to recognize how maternal mortality is a multifaceted issue influenced by local cultural groups, religions, politics, poverty level and the absence of basic infrastructures. Although maternal mortality is interconnected with social and geographical elements, my paper concentrates on Nigerian hospitals and their contribution to the maternal death rate. The eight most pressing issues in Nigerian hospitals include strict hours of operation, lack of affordability in medical costs, poor

distribution, insufficient oversight and lax hiring standards, staff shortages, scarcity of supplies, unprofessional staff behavior, and lack of sensitivity towards religions and cultures.

## Purpose

According to estimates from the World Health Organization, approximately 295,000 women died from a maternal cause in 2017 (Trends in maternal mortality, 2019). Maternal mortality is a common cause of death in many countries. There is no better example than Nigeria, which has one of the highest rates of maternal mortality in the world. In this paper, I analyze the specific causes behind issues in Nigeria. Nigeria can be used as a case study because many of the same issues are prevalent in other lower resourced countries throughout the world. These issues include poverty, limited infrastructures, and restricted access to contraceptives. The purpose of this paper is to study maternal mortality in Nigeria because what it illustrates may be useful for examining maternal mortality in other low resourced counties, especially in Sub-Saharan Africa (Luchok, 2021).

## What is Maternal Mortality?

Maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management (World Bank, 2019). Maternal death can be classified as direct obstetric, indirect obstetric, or late (Trends in maternal mortality, 2019). Direct obstetric deaths are the consequence of a birth issue, such as a hemorrhage, infection, eclampsia, obstructed labor, administration of the wrong treatment (Trends in maternal mortality, 2019). Indirect obstetric deaths refer to deaths affected by a pre-existing condition or condition

that surfaced during pregnancy (Trends in maternal mortality, 2019). An example is death in childbirth resulting from HIV (Trends in maternal mortality, 2019). Last, a late maternal death is characterized by death taking place 42-360 days following childbirth (Trends in maternal mortality, 2019). Late maternal deaths may present themselves as direct or indirect, the key, defining feature is that the patient dies post-childbirth (Trends in maternal mortality, 2019).

There are three ways to measure maternal death- maternal mortality ratio, maternal mortality rate, and adult lifetime risk. Maternal mortality ratio (MMR) is the number of maternal deaths in a certain time span per 100,000 live births during the same time span (Trends in maternal mortality, 2019). This measurement does not take fertility into account but does give an annual account of the risk of maternal death among all live births in that time frame (Trends in maternal mortality, 2019). The second measurement is maternal mortality rate (MMRate), which is the number of maternal deaths among women of reproductive age (15-49 years old) in a population (Trends in maternal mortality, 2019). Maternal mortality rate considers the population's fertility rate as well as the probability of maternal death per pregnancy (Trends in maternal mortality, 2019). The third measurement is the adult lifetime risk of maternal death (Trends in maternal mortality, 2019). Adult lifetime risk of maternal death is the likelihood that a 15-year-old female will die from a maternal problem at some point in her lifetime (Trends in maternal mortality, 2019). The lifetime risk increases every time a woman is pregnant so high fertility locations usually have a higher risk (Luchok, 2021). Concerning Nigeria, women give birth an average of six times so the lifetime risk is extremely high (Population Reference Bureau, 2001). Nigeria's lifetime risk is a 1/29 chance that a 15-year-old girl will die from a birth issue during her lifespan (Fapohunda & Orobaton, 2013). Nigeria's extremely high lifetime risk sets it

apart from other countries and is a major reason why maternal death is such a pressing issue there (Population Reference Bureau, 2001).

**Why should we be concerned about Maternal Mortality?**

Of all the problems our world faces, why focus on our attention on maternal mortality? Why should we dedicate our time and energy towards an issue than only affects women? Meanwhile, the whole population is suffering from problems like poverty, insufficient education, and transmission of communicable diseases. Many struggle to see maternal mortality as a pressing issue. According to studies from the World Health Organization, 1 out of every 18 Nigerian women die during pregnancy or childbirth (IRIN, 2009). One reason for this is the lack of accessibility to maternal resources that safeguard women against unsafe deliveries. Currently, fewer than 42% of births in Nigeria are attended by a midwife (Population Reference Bureau, 2001). In 2010, almost 50% of Nigerian women lacked access to antenatal care services (Umar, 2017).

The lack of maternal health services reflects the low societal status of women in male-dominated Nigeria. According to the article "Too Far to Walk: Maternal Mortality in Context", maternal mortality is described as "In its purest form, the decision to seek medical care is a behavioral response to a perceived need created by an illness. The complexity of the real world. however, introduces variability and constraints into this process" (Thaddeus & Maine, 1994, p.1100). In other words, maternal health is not seen as a value because society does not value women. Vicki Penwell argues that maternal mortality is a human rights issue (Penwell, 2010). According to her article "A Hidden Tragedy: Birth as a Human Rights Issue in Developing Countries", "Women are not dying because of diseases we cannot treat; they are dying because societies have yet to make the decision that their lives are worth saving" (Penwell, 2010, n.p.).

Another reason why maternal death is so common in Nigeria is because of the high fertility rate in combination with limited access to contraceptives. Only 15% of the Nigeria's childbearing women (between 15-49 years old) use any type of contraception (Population Reference Bureau, 2001). In Kano, Zamfara, and Katsina state, 247 Nigerian men were trained to by the maternal and child health integrated program on how to inform community chiefs and religious leaders about safe pregnancies (Sinai et al. 2017). They educated families about contraception use, family planning, maternal services, and the importance of spacing pregnancies (Sinai et al. 2017). This project increased Northern Nigeria's contraceptive acceptance rate from 3% to 19% (Sinai et al. 2017). This result indicates that men heavily influence the community's uptake of maternal services (Sinai et al. 2017). When asked about family planning services, one participant from the study said, "She should consult her husband first because he owns her" (Sinai et al. 2017, p. 101). Many men and women hold the husband responsible for making decisions about employing of contraceptives and child spacing procedures (Sinai et al. 2017). Many husbands are opposed to contraceptives and only consider it when their wives' lives are at stake (Sinai et al. 2017).

In 2013, a study conducted in Kaduna State, Nigeria found that approximately 83% of women wanted to deliver at a hospital, but most of them could not because their husband did not grant them permission (Sinai et al. 2017). Shifting the decision-making process about reproductive health to women may improve maternal outcomes by empowering women with education and creating opportunities to increase access to maternal resources (Esienumoh, et al. 2016). Giving women more opportunity to make their own health decisions may help lift stigmas on maternal services and promote safer pregnancies (Sinai et al. 2017).

According to the Muhammad Ali Pate, the executive director for nutrition, health, and population at the World Bank Group, “Maternal healthcare is one of the most important investments a country can make to build human capital and boost economic growth” (Nakweya, 2019). The Safe Motherhood project argues that restoring the wellbeing of women across the globe is an end in itself (Thaddeus & Maine, 1994). Safe motherhood is founded on the idea that we must fight against maternal mortality, not for the betterment of their children or family, but because women are fundamentally important (Thaddeus & Maine, 1994).

Other programs argue that maternal health should be prioritized because women are essential members of their families, communities, and societies (Thaddeus & Maine, 1994). Mothers often spend many hours cooking food, collecting water, and gathering firewood to provide for their family (Sachs, 2005). They raise children, care for the sick, and look after the elderly (Sachs, 2005). From 1983 to 1987, Alaka Basu studied motherless households in Matlab, Bangladesh to assess the consequences of maternal death on children between the ages of 0-9 years old (National Research Council, 2000). According to his logistic regression analysis, children with deceased mothers were more likely to die than children with deceased fathers (National Research Council, 2000). The death of the mother also had the greater financial impact on the family than the death of the father (National Research Council, 2000). Since men were not used to handling the family budget and relations, it was very hard for the household to function (National Research Council, 2000). Children were usually sent to live with their grandparents or dropped out of school to help with household chores (National Research Council, 2000). It is hard to fill the role of a mother. They are irreplaceable and entitled to better health (Thaddeus & Maine, 1994).

**How to Resolve Maternal Mortality in Nigeria?**

The Sustainable Development Goals is an initiative committed to promoting healthy lives around the globe (Nakweya, 2019). In 2015, they announced their next target goal was to reach a global maternal mortality rate of 70 out of 100,000 births by 2030 (Nakweya, 2019). However, Nigeria lags far behind this reality with a maternal mortality rate that is more than double the global average (Hafez, 2018). According to the Nigeria Health Financing system assessment, Nigeria has a maternal mortality rate of 576 deaths per 100,000 live births (Hafez, 2018).

To properly understand the severity of maternal mortality, we must first install systems to reliability track and record medical data. These data will allow us to build a profile highlighting the greatest threats to maternal health at Nigerian hospitals and clinic. According to the executive supervisor at the Kenya headquartered African Population and Health Research Center, Catherine Kyobutungi, we need to collect accurate data so we can devise sound proposals to introduce or change policies (Nakweya, 2019). Establishing policies that protect female health is obtainable, but only if we empower women and elevate female social status (Thaddeus & Maine, 1994). The idea is to partner with women and local groups to develop programs that empower women, so they have the autonomy to make their own decisions about their maternal care.

This idea of female empowerment is discussed heavily by the Safe Motherhood initiative, (Thaddeus & Maine, 1994). To improve conditions for women, this project calls for intervention at the local, national, and international levels (Thaddeus & Maine, 1994) Safe motherhood efforts focus on improving the health status of pregnant women by developing and increasing accessibility to maternal resources like antenatal services or emergency obstetric intervention (Thaddeus & Maine, 1994). According to Catherine Ngugi, the chief of National AIDS and

Sexually Transmitted Infections Control Program at the Ministry of Health in Kenya, increasing the accessibility to maternal resources such as trained midwives could help lower the number of maternal deaths (Nakweya, 2019).

Another well-known health initiative is called the Millennium Project. The Millennium project composes strategies for the secretary-general of the United Nation on how to improve international issues like maternal mortality (Sachs, 2005). The Millennium project takes a multifaceted approach to maternal mortality by arguing that maternal death is tied to a host of other societal issues like poverty, lack of education, gender inequality, male dominated politics, and cultural norms (Sachs, 2005). This project emphasizes how female empowerment and the development of female status in politics is essential to making maternal mortality a pressing issue in the eyes of society (Sachs, 2005). To facilitate change, we must start by educating women about their health crisis (Sachs, 2005). We must demand equal education opportunities for all genders and inform young girls about their reproductive rights and freedoms (Sachs, 2005). We must challenge gender stereotypes and fight to put women in male-dominated professions (Sachs, 2005). Women must come together and form legal groups to destroy policies that enforce gender inequalities (Sachs, 2005).

The Millennium project claims “The key to achieving the goals in low-income countries is to ensure that each person has the essential means to a productive life. In today’s global economy, these means include adequate human capital, access to essential infrastructure, and core political, social, and economic rights” (Sachs, 2005, p. 12). Adequate human capital refers to providing reproductive health services, offering universal primary education for both girls and boys, growing literacy and nutrition awareness, and building technological skills to expand on previous knowledge (Sachs, 2005). Access to Infrastructure refers to more transportation

opportunities, better hygiene practices, greater accessibility to clean water, and growth of technology (Sachs, 2005). Lastly, the political, social, and economic rights encompass reproductive rights, policies that protect people from domestic violence, and building societies that empower the voices of women in politics (Sachs, 2005).

The issue of maternal mortality must be examined with a wide lens that examines culture, religion, economy, and politics (Sachs, 2005). Maternal mortality requires a comprehensive, multidimensional solution to improve Nigeria as a whole country (Sachs, 2005). To thoroughly understand maternal mortality in this context, we need to briefly examine Nigeria's political and economic system, cultural groups and history.

## Background Information

### Economy

Nigeria resides in the African tropics (Demographic and Health Surveys, 1990). It alternates between wet and dry seasons that offer a diverse range of climate conditions (Demographic and Health Surveys, 1990). Warm temperatures, frequent rainfalls, and soil rich in nutrients provide Nigeria with an ideal environment to farm and grow crops (Demographic and Health Surveys, 1990). Up until the discovery on oil in January of 1953, Nigeria's economy was heavily dependent on agriculture (Demographic and Health Surveys, 1990). In 1960, over 50% of the population worked jobs in the agriculture business (Demographic and Health Surveys, 1990). As their source of income, farmers sold their products locally and abroad (Demographic and Health Surveys, 1990). Common agricultural products include yams, cattle, cocoa, peanuts, palm oil, millet, cassava, rice, and corn (Curry, 2021).

In 1953, the economy switched from agricultural exports to gas and oil exports (Demographic and Health Surveys, 1990). Despite their participation in oil exports ,by 1998, Nigeria's export products were 95% oil (Curry, 2021). From 1970 to 2000, the population of Nigerians below the poverty line has risen from 19 million to 90 million (Grigorov, 2009). Most Nigerians cannot afford health services, and only 5% of these services are covered by insurance (Smith, 2021). Knight Frank, a real estate consultant, estimates that Nigeria needs to spend roughly $82 billion additional dollars on the healthcare estate to match the global spending average (Smith, 2021).

**Cultural Groups**

Nigeria is composed of four major cultural groups- the Hausa, Fulani, Igbo, and Yoruba (Adebowale, 2019). The Hausa and Fulani are predominantly Muslim and mostly reside in Northern Nigeria (Adebowale, 2019). The Igbo and Yoruba reside in Southern Nigeria (Adebowale, 2019). The Yoruba have both Muslim and Christian worshippers, while the Igbo have mostly Christian followers (Adebowale, 2019). Many Igbos replaced their traditional religion with Christianity due to colonization (Adebowale, 2019). However, some Igbos still practice the traditional Igbo religion (Adebowale, 2019).

One study in Nigeria assessed the pregnant women who met the WHO's recommendation for four antenatal visits (Al-Mujtaba, 2016). Most of these women lived in the South (76.8–89.0%), then the North-Central (66.0–76.0%), and the fewest in the North (35.5–51.9%) (Al-Mujtaba, 2016). The study also assessed mothers who gave birth with a skilled attendant (Al-Mujtaba, 2016). The South had the most attended births (73.4–78.8%), then the North-Central

(46.5–67.2%), and lastly the North (16.1–27.8%) (Al-Mujtaba, 2016). Religion may influence people's utilization of maternal resources.

Indigenous religions, such as the traditional religion of the Igbo tribe, typically worship multiple gods (Curry, 2021). They often use traditional medicine, also known as juju, to heal wounds (Curry, 2021). Juju healers utilize a broad range of herbs and plants to prepare remedies for common health problems and injuries (Curry, 2021). These herbal treatments are often effective at reducing symptoms with limited side effects (Curry, 2021). Many traditional herbal treatments gave rise to modern prescription medicines (Curry, 2021). In addition to practicing traditional medicine, the Igbo tribe also performs a special ritual during childbirth (Egwuatu, 1986). Pregnant women are sent to "rural therapeutic destinations", where a team of TBAs, religious leaders, relatives, and herbalists gather around and support the mother during delivery (Ezeonwu, 2011).

Traditional African medicine tends to focus on restoring one's overall wellbeing in all areas of one's life. This includes the concept of physical and social bodies (Davis-Floyd & Cheyney). In other words, one's health status is tied to events in the physical body as well as events in the social body (Davis-Floyd & Cheyney). Health issues may be the result of social conflicts, familial strains, divine intervention, or violations of ethics (Davis-Floyd & Cheyney). This line of thought claims that one's health status is tied to not only to events in their physical events, but also to events in their social life (Davis-Floyd & Cheyney). They believe that physical ailments and disease could manifest because of issues originating from the social body (Davis-Floyd & Cheyney). These issues usually involve violations of ethics or moral obligations, such as cheating on one's spouse (Davis-Floyd & Cheyney). Nigerians seek to repair relationships in their social body as another means to help restore health in their physical body

(Davis-Floyd & Cheyney). Often, people use a combination of biomedicine, worship, and natural treatments to address a health problem.

In Nigeria, it is very common for Christians and Muslims to participate in traditional medicine and local indigenous religion (Curry, 2021). The fusion of traditional African practices with Islam and Christianity is demonstrated in groups like the Bori Cult and Aladura church (Curry, 2021). The Bori cult, which is a blend of Islam and traditional practices, believe that the living must worship and pay their respect to the spirits of deceased family members and ancestors (Curry, 2021). The Aladura church arose from the influence of traditional practices on Christian principles (Curry, 2021). Followers adhere to Christian doctrines but also believe in healing exercises, charms, and divine prophecy (Curry, 2021).

There are several Christian churches in Nigeria, including Protestantism, Roman Catholics, Methodists, Presbyterians, Evangelical, Anglicans, Pentecostals, Baptists, Anabaptists, and Pentecostals (U.S Department of State, 2018). Pentecostal Christianity is a very popular religion in Nigeria that encourages their followers to follow to a specific childbirth regimen (Oni-Orisan, 2017). These churches hire female caretakers, called “Sisters”, to work in birthing locations known as mission homes (Oni-Orisan, 2017). “Sisters” employ prayer and fasting exercises to ward evil entities away from the mother (Oni-Orisan, 2017). Sometimes, women must adhere to 12-hour-long fasts that last up to 14 days (Oni-Orisan, 2017). These fasts are believed to provide spiritual protection (Oni-Orisan, 2017). There are 2 Pentecostal Christian churches- Christ Apostolic Church and Redeemed Christian Church of God- amongst the Yoruba people (Oni-Orisan, 2017). Both of these churches are Pentecostal Christian, they have different opinions on biomedicine. Christ Apostolic Church is more wary of biomedicine (Oni-Orisan, 2017). According to a minister of the church:

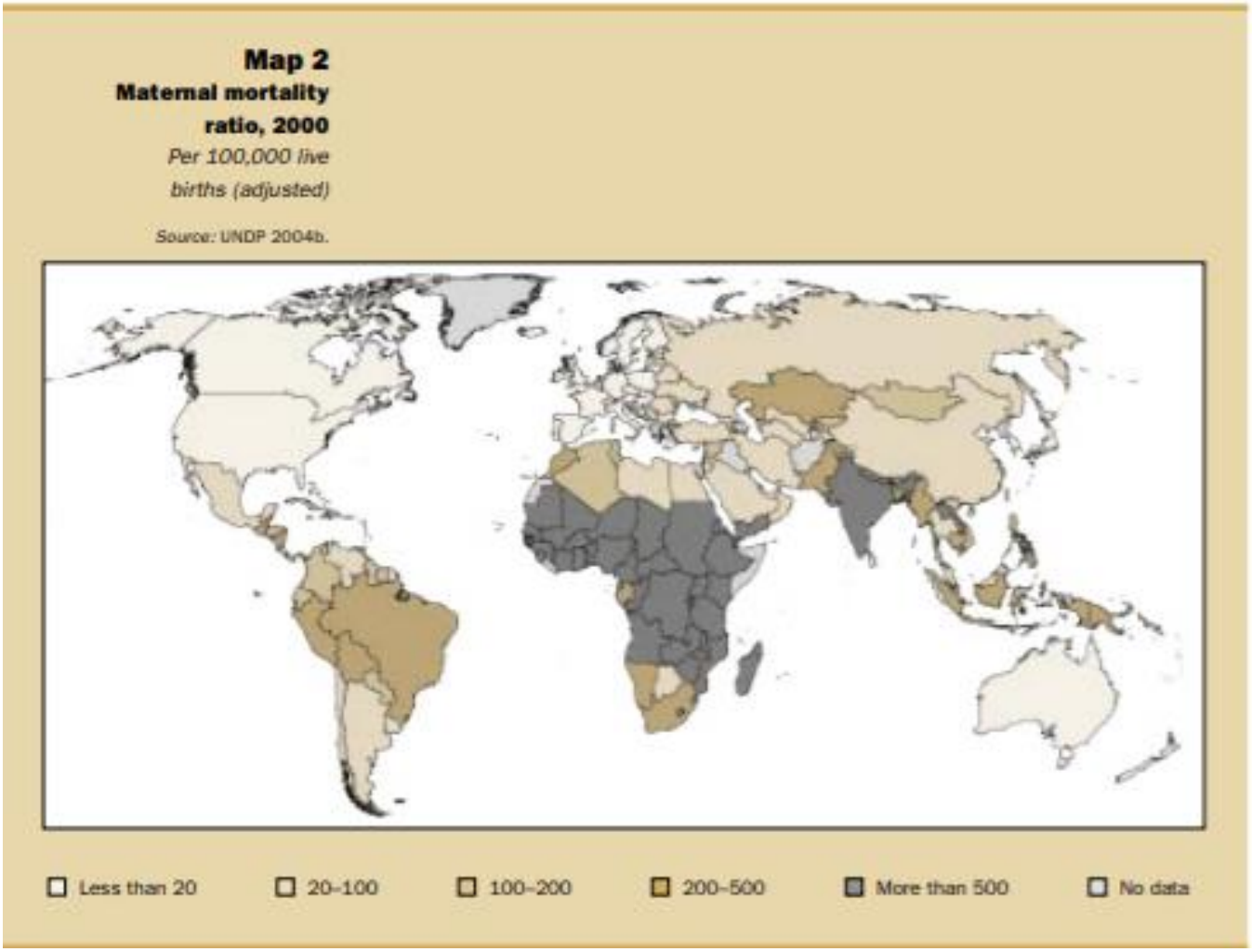
> Expectant mothers of our church ought not go to any hospital/maternity home either for check-up or childbirth, since the Bible has promised us good care and safe delivery (Isaiah 40:11; 66:9; 1 Timothy 2:1). Anyone found guilty of the above shall be suspended from sharing of the Holy Communion for a period of months. (Oni-Orisan, 2017, p.120-129)

The Redeemed Christian Church of God encourages pregnant women to make appointments at their local health clinics (Oni-Orisan, 2017). This goes to show that religions vary, and beliefs ultimately come down to the discretion of the individual.

## Maternal Mortality across the Globe

Nigeria is a prime model to study maternal mortality. One of the highest rates of maternal mortality is found in Nigeria, the most populous country in Africa (Population Reference Bureau, 2001). Even though the total number of maternal deaths across the globe has decreased by over one third since 2000, we still see significant differences in maternal health between different ethnic and geographic groups (Nakweya, 2019). Whereas maternal mortality rates in low resourced countries make up half the global average maternal mortality rate, maternal mortality rates in Nigeria are still 40 times higher than those in better resourced countries, and still twice as high as other low resourced countries (Fapohunda, 2013). In 2017, Asia and Africa had proportionally high rates of maternal mortality compared to other countries (Nakweya, 2019). In 2017, southern Asia and sub-Saharan Africa were collectively responsible for 86% of all maternal deaths worldwide, with 66% of the deaths occurring in sub- Saharan Africa and 20% in southern Asia (Nakweya, 2019). The range in maternal mortality ratio between continents can be seen in figure 1.

**Figure 1**




*Note*. This map displays the maternal mortality ratio across the globe in the year 2000. Reprinted from "Investing in Development: A Practical Plan to Achieve the Millennium Development Goals" by J.D. Sachs. UN Millennium Project 2005. United Nations Development Programme. New York 2005. Retrieved from https://www.who.int/hdp/publications/4b.pdf

Most African countries possessed a maternal mortality ratio over 500 deaths per 100,000 live births in 2000 (Figure 1). According to a report by the United Nations, the number of maternal deaths in sub-Saharan Africa are approximately 50 times greater compared to any other

region (Nakweya, 2019). A study on the top 10 countries with the greatest incidence of maternal death found that 9 of the 10 countries reside in sub-Saharan Africa (Nakweya, 2019). Figure 1 and table 1 compare each region's maternal mortality ratio and number of maternal deaths.

**Table 1**

**Table 4.3. Comparison of maternal mortality ratio (MMR, maternal deaths per 100 000 live births) and number of maternal deaths, by United Nations Sustainable Development Goal (SDG) region, subregion and other grouping, 2000 and 2017**

| SGD region | 2000 | | 2017 | | Overall percentage change in MMR between 2000 and 2017[c,d] (%) | Average annual rate of reduction in MMR between 2000 and 2017[d] (%) |
|---|---|---|---|---|---|---|
| | MMR point estimate[a] | Number of maternal deaths[b] | MMR point estimate | Number of maternal deaths | | |
| World | 342 | 451 000 | 211 | 295 000 | 38.4 | 2.9 |
| Sub-Saharan Africa[e] | 878 | 234 000 | 542 | 196 000 | 38.2 | 2.8 |
| Northern Africa and Western Asia | 158 | 15 000 | 84 | 9 700 | 46.6 | 3.7 |
| Northern Africa[f] | 244 | 11 000 | 112 | 6 700 | 54.1 | 4.6 |
| Western Asia[g] | 81 | 4 000 | 55 | 3 000 | 32.4 | 2.3 |
| Central and Southern Asia | 375 | 153 000 | 151 | 58 000 | 59.7 | 5.3 |
| Central Asia[h] | 49 | 590 | 24 | 390 | 52.0 | 4.3 |
| Southern Asia[i] | 384 | 152 000 | 157 | 58 000 | 59.2 | 5.3 |
| Eastern and South-Eastern Asia | 114 | 36 000 | 69 | 21 000 | 39.3 | 2.9 |
| Eastern Asia[j] | 56 | 11 000 | 28 | 5 300 | 49.9 | 4.1 |
| South-Eastern Asia[k] | 214 | 25 000 | 137 | 16 000 | 36.0 | 2.6 |
| Latin America and the Caribbean[l] | 95 | 11 000 | 73 | 7 700 | 23.0 | 1.5 |
| Oceania | 106 | 590 | 60 | 400 | 43.0 | 3.3 |
| Australia and New Zealand | 8 | 23 | 7 | 26 | 11.0 | 0.7 |
| Oceania (excl. Australia and New Zealand)[m] | 223 | 560 | 129 | 380 | 42.0 | 3.2 |
| Europe and Northern America | 17 | 2 000 | 12 | 1 500 | 27.5 | 1.9 |
| Europe[n] | 20 | 1 500 | 10 | 740 | 53.3 | 4.5 |
| Northern America[o] | 12 | 500 | 18 | 760 | -52.2 | -2.5 |
| Landlocked developing countries[p] | 787 | 98 000 | 407 | 65 000 | 48.3 | 3.9 |
| Least developed countries[q] | 763 | 194 000 | 415 | 130 000 | 45.6 | 3.6 |
| Small island developing States[r] | 249 | 3 100 | 210 | 2 600 | 15.7 | 1.0 |

[a] MMR point estimates have been rounded according to the following scheme: < 100 rounded to nearest 1; 100–999 rounded to nearest 1; and ⩾ 1000 rounded to nearest 10.

[b] Numbers of maternal deaths have been rounded according to the following scheme: < 100 rounded to nearest 1; 100–999 rounded to nearest 10; 1000–9999 rounded to nearest 100; and ⩾ 10 000 rounded to nearest 1000.

[c] Overall change for the whole period since the first year of the millennium (data from 1 January 2000).

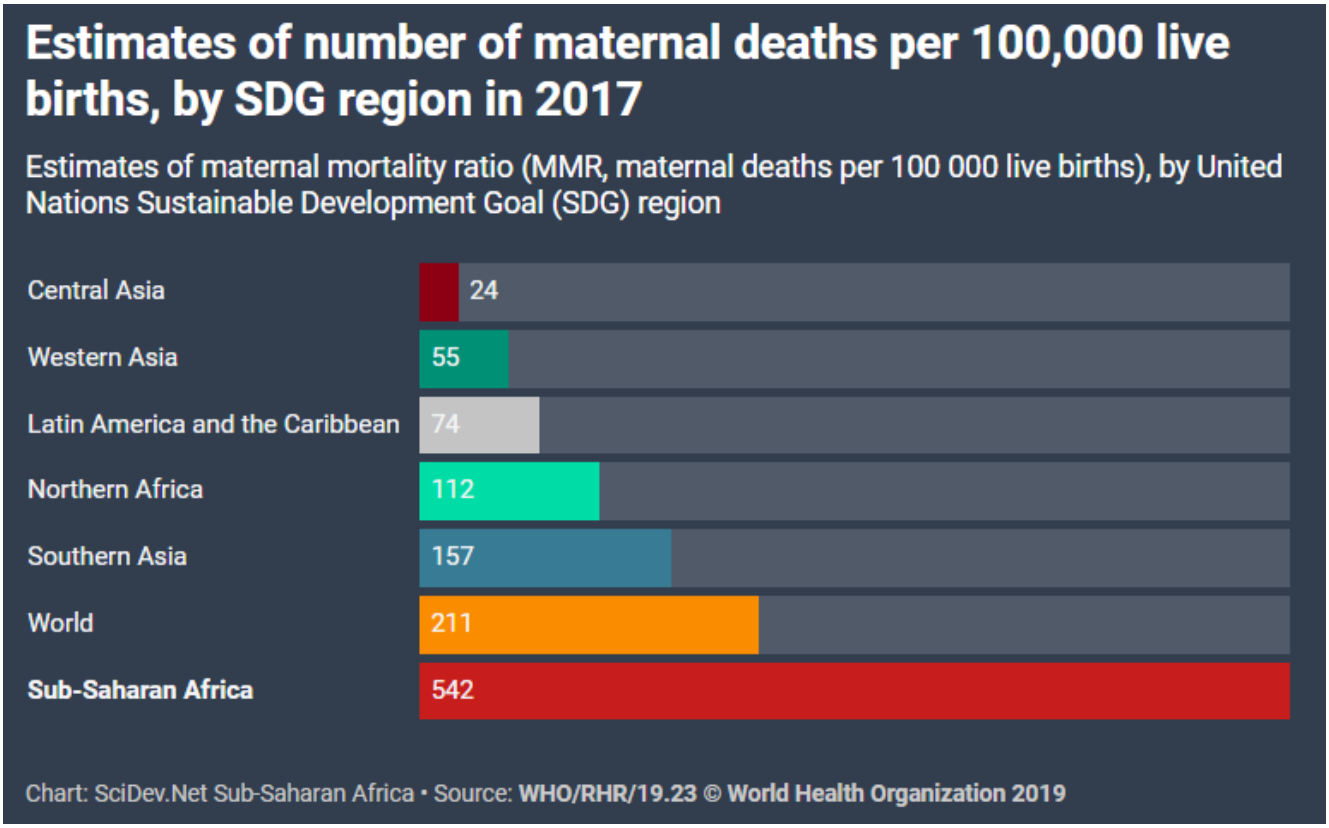
[d] Percentage changes and annual rates of reduction were calculated on rounded numbers.

[e–r] See footnotes for Table 4.1.

*Note*. This table is a comparison of the maternal mortality ratio by regions, subregions, and other groupings. Reprinted from *Trends in maternal mortality 2000 to 2017* by WHO, UNICEF,

UNFPA, World Bank Group, and the United Nations Population Division. Copyright 2019 by Geneva: World Health Organization.

**Figure 2**

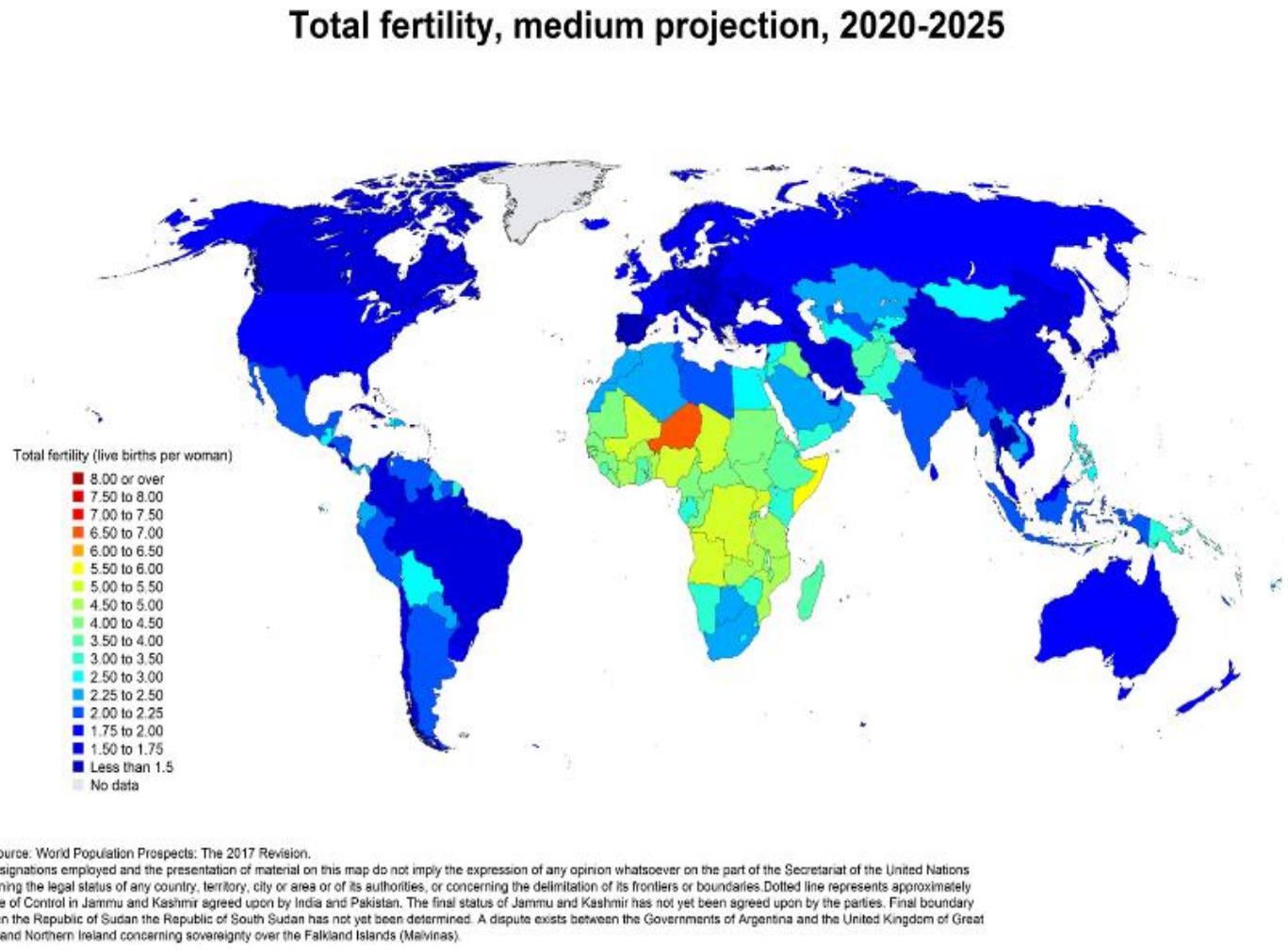



*Note*. This figure displays estimates of maternal mortality ratio by United Nations Sustainable Development Goal region in 2017. Reprinted from "Sub-Saharan Africa Tops Maternal Deaths Globally" by Gilbert Nakweya. *Sub-Saharan Africa*, 2019.

Sub-Saharan Africa has the highest estimated maternal mortality rate of all regions in both 2000 and 2017 (Figure 2). The overall percentage change in maternal mortality rate from 2000 to 2017 was 38.2%, compared to 59.7% in central and southern Asia (Nakweya, 2019).

A major reason why Nigeria suffers from a high number of maternal deaths is because of the intersection of high fertility and limited access to contraceptives. Nigeria is the 7th most populous country in the world (Adebowale, 2019). Every year, approximately 7 million Nigerian women give birth (Al-Mujtaba, 2016). The high number of annual pregnancies reflects Nigeria's high fertility rate and societal expectations to have large families.

**Figure 3**



*Note*. This figure displays total fertility rates across the world. Reprinted from "Ethnic disparities in fertility and its determinants in Nigeria" by Ayo Stephen Adebowale. Fertil Res and Pract 5, 3 (2019). Retrieved from https://doi.org/10.1186/s40738-019-0055-y

As represented in figure 3, Nigeria has one of the highest total fertility rates in the world. In 2013, its fertility rate reached 5.5 (Adebowale, 2019). Nigerians are known for having many children. According to the Population Reference Bureau, the average Nigerian woman gives birth 6 times throughout her life (2001). Many people take pride in raising a big family, as it allows the familial lineage to live on and provides the father with a successor. Early marriages are very common, and girls often have their first pregnancy before they turn 18 (National Population Commission & ICF International, 2014).

## Nigerian Hospitals and Maternal Mortality

While maternal mortality is a multifaceted issue related to many different cultural, religious, and economic factors, this paper focuses in on one factor: Nigerian hospitals. The purpose of this paper is to investigate barriers within Nigerian hospitals, and the areas in which hospitals need the most improvement. I collected secondary data reports from organizations like the United Nations Fund for Population Activities, World Bank Group, United Nations International Children's Emergency Fund, the United Nations Population Division, and the World Health Organization. I identified eight unique barriers to maternal care at hospitals and offer ideas for solutions. The eight barriers I discuss include strict hours of operation, lack of affordability in medical charges, poor distribution, insufficient oversight and lax hiring standards, staff shortages, scarcity of supplies, unprofessional staff behavior, and lack of sensitivity towards religions and cultures. To address these barriers, we need to implement

diversity training for hospital staff and invest in infrastructure development to give rural communities the foundation they need to support a birth center.

## Unhealthy Births at Nigerian Hospitals

Although Nigeria constitutes only 2% of the world's population, it accounts for 14% of global maternal deaths (Amodu, Salami, & Richter, 2017). According to the World Health organization and United Nations Children's fund, 45,000 women in Nigeria die each year from childbirth (Population Reference Bureau, 2001). Some of these deaths take place in the hospitals. There are many facility-level issues, such as poorly trained personnel and lack of equipment, that can result in negligence and even maternal death (Ezeonwu, 2011). I argue that one way to reduce maternal mortality is to develop and strengthen the delivery services at Nigerian hospitals. Of course, there are many other socioeconomic, religious, and geographic factors that contribute to the high maternal mortality rate, but I will only be looking at hospitals. This project is significant because it provides insight into how Nigeria's hospitals can improve maternal outcomes by making changes in their maternity care. I identified eight barriers to healthy births at the hospital. These include out-of-facility barriers that prevent women from reaching hospitals, and in-facility barriers that prevent hospitals from providing adequate delivery care.

### Out-of-facility Barriers

A survey of twenty countries in Africa revealed that approximately 15% of women are expected to need medical intervention during birth, but fewer than one third of these women receive these services (Pearson et al. 2007). To increase access to emergency obstetric services, we must identify the obstacles that limit hospital accessibility.

***Barrier #1: Strict Hours of Operation***

The first of these barriers that stop women from visiting hospitals is the strict hours of operation. A study on health services in Zamfara State, Nigeria found that most hospitals do not stay open past business hours or on weekends (Tukur et al. 2016). The limited budget prevents hospitals from hiring enough staff members to work on a 24-hour schedule. As a result, Nigerian hospitals cannot offer help in emergency situations that occur after hours (Tukur et al. 2016). This situation is especially dangerous for pregnant women, who enter labor at unpredictable times and sometimes endure contractions for more than 24 hours. Many pregnant women struggle to find help when they enter labor during the night (Tukur et al. 2016). According to a qualitative study in Northwest Nigeria, a participant recalled a situation where his friend essentially begged the doctor to treat his wife after finding no staff at their local hospital. He recounted his frustration with the hospital by saying:

> We rushed my friend's wife to the hospital only to be told that the doctor was at home. Three times they went to call him without luck. The condition of my friend's wife was visibly deteriorating, and the nurses appeared helpless. When the doctor eventually emerged after a very long delay…he insisted he was travelling and would not see any patient…my friend lost it, went wild, grabbed the doctor by the collar and threatened to kill him (doctor) should the wife in labor die! He wouldn't calm down despite all efforts. It was only then that the doctor attended to the woman and she eventually delivered (Tukur et al. 2016, p. 590).

In this situation, the limited hospital schedule prevented a patient from receiving medical assistance. This is an example of how limited operation hours acts as a barrier that prevents mothers from receiving the care they need.

***Barrier #2: Lack of Affordability in Medical Charges***

The second barrier that prevents women from visiting hospitals is the lack of affordability in medical charges. Many women refuse to deliver their babies in hospitals because they cannot afford to pay the medical bills. Cost of delivery is a significant obstacle to the access of maternal services. In private hospitals, a vaginal delivery costs 3,500 naira (37 U.S. dollars) and a Caesarean section delivery costs 20,000 naira (175 U.S. dollars) (Population Reference Bureau, 2001). At public hospitals, a vaginal delivery costs 1,200 naira (11 U.S. dollars) and a Caesarean section delivery costs 6,000 naira (53 U.S. dollars) (Population Reference Bureau, 2001). Medications and pain drugs are additional fees (Population Reference Bureau, 2001). Hospital services are far too expensive for most Nigerians. According to the World bank, nearly 71% of Nigeria lives around or below 1 dollar per day (Ezeonwu, 2011). In the year 2000, the top 2% economic quintile in Nigeria was equivalent to the bottom 55% (Grigorov, 2009). To make matters worse, most Nigerian citizens are not covered by their nation's health insurance (Ofoli et al. 2020). In Nigeria, approximately 72% of medical services are purchased with out-of-pocket money (Smith, 2021). A cross-sectional survey administered in Jabi Abuja, Nigeria found that only 10% of participants were covered by the Nation Insurance Scheme (Ofoli et al. 2020). A qualitative survey study discovered that 33% of participants were unable to access preventive care due to their lack of health insurance (Ofoli et al. 2020). Extremely high medical bills are a major problem in Nigerian healthcare. To make hospital services more affordable, hospitals need to lower their medical expenses.

***Barrier #3: Poor Distribution***

The third barrier that prevents women from visiting hospitals is poor distribution. Many Nigerians feel that hospitals are too few and far away. According to a cross sectional survey administered in Jabu Abuja, Nigeria, 36% of participants ignore hospitals because of their less-than-ideal location (Ofoli et al. 2020). Many women, especially those in the countryside, do not live within proximity to a healthcare facility (Ezeonwu, 2011). According to a 2004 study by NPC and ORC Macro, approximately 82.7% of urban communities have access to health providers compared to only 47.8% of rural communities (Ezeonwu, 2011). Distance to the health provider is a significant issue in the countryside. Usually, hospitals are located far away from the river-line where the villages reside (Ezeonwu, 2011). Poor roads and cost of transportation make it difficult for pregnant women to reach hospitals in enough time to deliver their baby (Ezeonwu, 2011). Most mothers in rural Nigeria do not have access to public and private transportation, like buses, taxi cabs, and personal cars (Ezeonwu, 2011). These services are usually too expensive and not available in short notice (Ezeonwu, 2011). As a result, many mothers from rural areas struggle to arrive at the hospital with ample time (Ezeonwu, 2011). Although roughly 70% of Nigerians live in these rural areas, very few hospitals are built in these communities (Ezeonwu, 2011). Rural areas often lack access to clean water, and many suffer from sepsis issues (Ezeonwu, 2011). The seclusion and lack of running water and electricity makes it difficult to recruit enough medical personnel (Ezeonwu, 2011). According to the World Health Organization, only 49% of people in rural communities have access to clean water (Ezeonwu, 2011).

Hospitals are more commonly built within urban locations, in which 72% of residents have access to clean water (Ezeonwu, 2011). Although cities and urban destinations offer more

amenities, the greatest demand for healthcare lies in rural areas that lack these conveniences (Ezeonwu, 2011). Due to low federal funds, hospitals cannot afford to set up locations in rural areas. These places would require hospitals to install utilities that their medical staff require to perform basic tasks (Ezeonwu, 2011). Furthermore, the seclusion and lack of amenities like phones, electricity, and transportation makes it difficult to attract medical personnel (Ezeonwu, 2011). Hospitals are expensive to construct, especially in areas far away from clean water. Most rural areas do not have the resources to sustain a large hospital (Ezeonwu, 2011). Since it would be too difficult to build hospitals in small country villages, we must devise other ways to offer delivery care in rural Nigeria.

How do we expand healthcare into the places that need it most: rural Nigeria? One solution is to build small birth centers within the rural villages (Martin & Cary, 2013). In Rwanda, members of the Butaro village led the design, construction, and operation of their local birth center (Martin & Cary, 2013). Local doctors and nurses designed the blueprints, and other members of the community were hired to construct the birth center with local materials (Martin & Cary, 2013). By employing locals, this project gave money back to the community (Martin & Cary, 2013). Since the project was directed by people who reside in the village, the birth center was conceived to fit the wants and needs of its community (Martin & Cary, 2013). According to Courtney Martin and John Carey, who traveled to Butaro, Rwanda for the Aspen Institutes' Global Health & Development program, the local birth center was refreshingly different from birth locations in the United States. They said "Rather than being a fortress of internal hallways and small, secluded rooms, like so many American hospitals, it is characterized by open-air external walkways and big, collective spaces with beds directly facing bright windows with beautiful views. There are also countless places to gather and sit outside — including a beloved

koi pond. Color-coded signage paired with the color of wards is bright and easy to understand for potentially anxious visitors, unlike the bureaucracy and bad lighting one finds too often in stateside clinics" (Martin & Cary, 2013, n.p.). A great way to expand delivery care into rural regions is to establish birth centers like this one that are sustained by members of the community.

Another way to reduce maternal mortality in rural Nigeria is to equip these medical birth centers with the necessary staff training and equipment to provide antenatal care resources. Antenatal services offer preventive health and nutrition education, screenings for anemia and high blood pressure, tetanus toxoid immunization, and routine physical exams (Brieger et al. 1994). According to the 2000 Demographic and Health Survey, "Antenatal care provided by a skilled health worker enables (1) early detection of complications and prompt treatment (e.g., detection and treatment of sexually transmitted infections), (2) prevention of diseases through immunization and micronutrient supplementation, (3) birth preparedness and complication readiness, and (4) health promotion and disease prevention through health messages and counselling for pregnant women" (National Population Commission & ICF Macro, 2009, p.125).

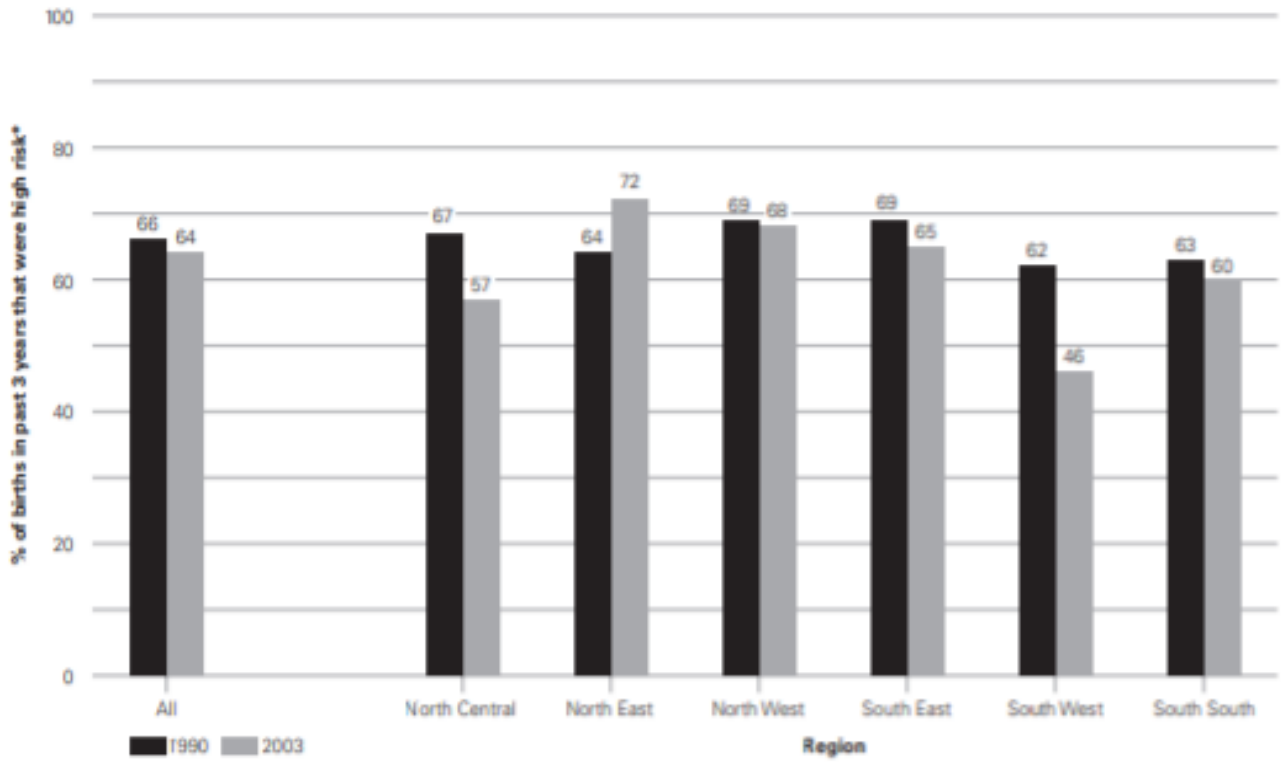
Antenatal care services are extremely important for the early detection and prevention of high-risk pregnancies (Brieger et al. 1994). High risk pregnancies are dangerous because the mother has a higher probability of encountering birth complications (Brieger et al. 1994). The complications can jeopardize the life of the mother or her baby, and often require emergency obstetric intervention at a hospital (Brieger et al. 1994). High risk pregnancies include mothers that have back-to-back successive pregnancies, mothers that have given birth multiple times, pregnant mothers that are under 18 years old, and pregnant mothers that are over 35 years old (Bankole et al. 2009). In rural regions of Nigeria, husbands often oppose child-spacing methods,

resulting in successive pregnancies that increase the mother's risk of encountering an issue during labor (Ezeonwu, 2011).

Antenatal care services are particularly valuable in Nigeria due to the frequency of high-risk pregnancies, especially amongst young, preadolescent girls. Figure 5 demonstrates how prevalent high-risk pregnancies are in Nigeria in 1993 and 2003.

**Figure 4**

*In both 1990 and 2003, two-thirds of recent births to Nigerian women were high risk.*




*Births occurring to women younger than age 18, women aged 35 or older, women whose last birth occurred less than two years earlier and women who already had four or more children. *Source:* Special tabulations of the 1990 and 2003 Nigeria Demographic and Health Surveys.

*Note.* This figure displays special tabulations of the 1990 and 2003 Nigeria Demographic and Health surveys. From "Barriers to Safe Motherhood in Nigeria" by Akinrinola Bankole, Gilda Sedgh, Friday Okonofua, Collins Imarhiagbe, Rubina Hussain and Deirdre Wulf. 2020. New York: Guttmacher Institute. [Statistical data on high-risk births in 1990 and 2003]. Retrieved April 5, 2021, from https://www.guttmacher.org/sites/default/files/report_pdf/motherhoodnigeria.pdf

Figure 4 above shows 66% of pregnancies in 1990 and 64% of pregnancies in 2003 were considered high-risk. Early marriages and child brides are extremely common in Nigeria since nearly 45% of the population is 14 years old or younger (Curry, 2021). Women typically get married at young ages on behalf on their family's decision (Sinai et al. 2017). Of married women in Nigeria who are between the ages of 15-24 years old, the median age of marriage was 15 (Sinai et al. 2017). According to a 1981 study in Northern Nigeria, "In most parts of Hausaland child marriage is the rule […] the father has the right to contract his virgin daughter in marriage regardless of her wishes and without consultation with the mother" (Sinai et al. 2017, p. 100). A research study on the childbirth practices of the Bakassi community in Southern Nigeria found that it is normal to begin motherhood as early as 12 years old (Esienumoh et al. 2016). One participant said "I became pregnant when I was 12 years old and I had the baby, so I feel that at age 12, a girl is old enough to start having babies. Children are gifts from God and he gives these to people at any age" (Esienumoh et al. 2016, n.p.).

Approximately 23% of Nigerian women between the ages of 15-19 years old are pregnant or have already been pregnant (National Population Commission & ICF International, 2014). This is very concerning because mothers under 18 are at greater risk of labor

complications like eclampsia (Esienumoh et al. 2016). The World Health Organization's Maternal and Newborn health surveys discovered that mothers aged 10–19 years old were more likely to experience eclampsia, puerperal endometritis, systemic infections, low birthweight, preterm delivery, and severe neonatal conditions compared to mothers aged 20-24 years old (Ganchimeg et al. 2014). Since their bodies are not completely developed, pre-pubescent mothers are more prone to birth complications that can result in mortality (Population Reference Bureau, 2001).

Approximately 70,000 adolescents die every year from complications related to pregnancy and childbirth (Planned Parenthood, 2020). Nearly 50% of maternal deaths happen in underage mothers (Esienumoh et al. 2016). Identifying these high-risk pregnancies and referring them to the hospital is often lifesaving (Brieger et al. 1994). To reduce maternal mortality, we should provide access to antenatal services to allow the early detection of high-risk pregnancies in rural Nigeria.

**In-facility Barriers**

It is vital that Nigerian hospitals offer premium delivery care. In-facility barriers are issues with the hospital system itself. These problems prevent hospitals from providing adequate delivery care. These barriers include insufficient oversight and lax standards, staff shortages, scarcity of supplies, unprofessional staff behavior, and lack of sensitivity towards religion and culture.

***Barrier #4: Insufficient Oversight and Lax Hiring Standards***

The first of these barriers is insufficient oversight and lax hiring standards. Many hospitals, especially private ones, hire health workers who lack the necessary certifications and

licenses to safely treat patients (Ezeonwu, 2011). Since Nigeria does not enforce strict regulations on its health workers, many people get away with fraudulent medical practices within hospitals (Ezeonwu, 2011). Many Nigerians attest to the terrible care they received at hospitals, where employees lacked the medical training and expertise to treat incoming patients (Ezeonwu, 2011). To fix this, Nigeria needs to install a regulatory body to monitor health employees and check the validity of their qualifications (Ezeonwu, 2011). Nigeria also needs to impose penalties on illegal medical workers since they are actively risking the lives and well-being of patients (Ezeonwu, 2011). Lastly, insufficient funds forced hospitals to resort to desperate measures to hire staff. Hospitals need more federal funding so that they can afford to hire qualified professionals with valid educations. Adequate funds will allow hospitals to hire qualified candidates, rather than resorting to cheaper, ineligible workers.

***Barrier #5: Staff Shortages***

Nigerian hospitals have difficulty hiring nurses because they cannot afford to pay their staff with competitive wages (Ezeonwu, 2011). The lack of amenities, remoteness, and low pay lead many nurses to take jobs overseas instead (Ezeonwu, 2011). Since hospitals have difficulty contracting new employees, they tend to be severely understaffed and their personnel are overworked (Ezeonwu, 2011). In fact, it is estimated that there are just 1.7 nurses for every 1000 people in Nigeria (Ezeonwu, 2011). To protest the poor salary and work conditions, many staff members leave their posts to join strikes alongside groups like the Nigerian Medical Association (Population Reference Bureau, 2001). In these situations, the hospital lacks the staff to treat arriving patients. Staff shortages contribute to high maternal mortality because trained medical workers become unavailable in cases of obstetric emergencies.

Other times, hospitals are so overpopulated with patients that women are forced to give birth in the waiting room (Tukur et al. 2016). According to a qualitative study in Norwest Nigeria, multiple women recalled situations where pregnant women delivered their babies on their own while waiting to be checked into a hospital room (Tukur et al. 2016). One participant claimed, "my wife delivered safely on her own even before the midwife got round to attend to her" (Tukur et al. 2016, p. 590). This story reveals how staff shortages are a major barrier to healthy deliveries that jeopardize the health and safety of the mother. To overcome issues with staff shortages, the Nigerian government needs to expand its budget so that hospitals can secure enough nurses to satisfy patient demand.

***Barrier #6: Scarcity of Supplies***

Research shows that Nigeria's 206 million population is estimated to double in 2050 (Smith, 2021). Most Nigerian hospitals do not have enough medical supplies to meet the needs of their growing population (Davis-Floyd & Cheyney). Low funds prevent hospitals from stocking up on blood supplies and essential medications like anesthesia (Davis-Floyd & Cheyney). A study in Anambra State, Nigeria interviewed nursing and medical personnel from the Nursing and Midwifery Council of Nigeria (Ezeonwu, 2011). A medical worker from this study claimed, "Drugs supplied by the government, especially those needed during the critical times of labor and delivery, never get to the 'owners' who need them most, particularly in the rural areas" (Ezeonwu, 2011, n.p.). Medical supplies are often sent to other specialty departments before reaching the delivery ward (Ezeonwu, 2011).

Failure to have vital supplies available during childbirth can result in serious birth complications or death of the mother. In December 2001, a pregnant woman named Yemi Omoshola died while delivering her child at a hospital in Lagos, Nigeria (Population Reference Bureau, 2001). Her child was overdue, so her physician tried to induce labor (Population Reference Bureau, 2001). As a result, she suffered from heavy blood loss and eventually lost consciousness (Population Reference Bureau, 2001). Because the hospital did not have emergency blood supplies on hand, she died on the table (Population Reference Bureau, 2001). If Nigerian hospitals were adequately funded, they would have enough medical supplies to save the lives of patients like Yemi Omoshola. To prevent more maternal deaths, it is key that the government spend more money on healthcare so that hospitals can afford to have vital supplies and life-saving equipment on hand in cases of emergency.

***Barrier #7: Unprofessional Staff Behavior***

The next barrier is the poor reputation of hospitals caused by unprofessional staff behavior. In Nigeria, fewer than 38% of births take place in a medical facility (Umar, 2017).. Many women refuse to give birth in the hospital because of negative experiences with hospital staff. A study in Zamfara, Nigeria interviewed women who previously gave birth in the hospital and asked them to assess the quality of their treatment (Tukur et al. 2016). Most mothers were grossly unsatisfied with the service (Tukur et al. 2016). Many women perceived the hospital team to be impatient and that they rushed the women through delivery to make room for the next patient (Tukur et al. 2016). Medical personnel were described as arrogant, disrespectful, unempathetic, and rude (Tukur et al. 2016). One Nigerian woman claimed her the personnel in the facility "used to shout on people… such that now I don't go there" (Tukur et al. 2016, p.591).

Another Nigerian recalled a horror story about a pregnant woman from her village who was in dire need of medical assistance (Tukur et al. 2016). When she finally located a medical worker, the worker cast her off and said her husband was "a villager who only now is bringing a corpse" (Tukur et al. 2016, p.590). Instead of tending to the woman, he sent the couple to the Hospital at Gusau where the woman died before reaching any help (Tukur et al. 2016). This account is an example of the many horrible stories that circulate communities and leave women scared of hospitals.

The editor-in-chief of Midwifery Today, Jan Tritten, explained how she has seen maltreatment firsthand at many hospitals in lower resourced countries like Nigeria (Penwell, 2010). Tritten explains "I have also seen, in developing countries, women in labor hit, kicked, slapped and pinched on the inside thighs to the point of bruising. I have seen healthy women physically restrained (strapped down, eagle-spread) for normal births. I have also witnessed many cases of vicious verbal abuse, and once or twice even witnessed the line being crossed into behavior that appeared to be blatant sexual abuse" (Penwell, 2010, n.p.).

In 2012, questionnaires were administered to 446 Nigerian mothers to assess their experience at Enuga State University Teaching Hospital in southeastern Nigeria. The study found that 437 mothers (98%) of the 446 respondents encountered at least one instance of maltreatment from hospital staff (Okafor et al. 2015). Approximately 54.5% of the mothers faced nonconsensual services, 35.7% faced physical assault, 29.6% faced inadequate care, 29.1% faced neglect or abandonment, 26% faced nonconfidential care, and 20% faced discrimination on specific attributes like social class and ethnic origin (Okafor et al. 2015). Many mothers also reported being insulted and threatened with a cesarean delivery (Okafor et al. 2015). The abusive treatment of patients is a major barrier to improving hospital maternity care. Hospital staff need

to receive training on empathy, professionalism, and patience. Abuse of patients should be recorded and reprimanded by a regulatory body.

***Barrier #8: Lack of Sensitivity towards Religions and Cultures***

The final barrier is medical staff's lack of knowledge and sensitivity towards religious obligations, practices, and maternity wishes. This is specifically the case for Yoruba women and Islamic patients.

**The Yoruba.** The Yoruba believe that women must squat during delivery so that their feet can soak up the Earth and receive its fertility (Hallgren, 1983). This process is very sacred, and the circumstances of the mother's delivery are often used to name the child (Hallgren, 1983). It is customary for the mother to deliver her baby while being encircled by supportive sisters and female relatives (Hallgren, 1983). After the delivery, the mother's placenta and umbilical is buried in the soil to restore her fertility (Hallgren, 1983). Despite their religious obligations to squat during delivery, hospitals prefer mothers to deliver in the supine-lithotomy (laying-down) position so the physician can see the womb better (Brink, 1982). Hospitals also have policies that restrict the number of guests allowed in the hospital (Tukur et al. 2016). Since the Yoruba hold childbirth to be a very holy and important event, many families are adamant they receive permission to witness the delivery despite hospital rules (Hallgren, 1983).

In the future, hospitals that serve the Yoruba should take steps to be more accommodating of their delivery preferences. If the hospital is unable to accommodate their patient's preferences, hospital staff should take the time and effort to explain why certain protocols must be upheld for the safety of the mother (Rabin, 2010). For example, restrictions on the number of guests are put in place since the physician needs enough space to safely deliver the

baby. Furthermore, hospitals should consider allowing squat births in the case that the mother has little to no risk of birth complications. The squatting position is advantageous because it reduces the mother's risk of tearing (Brink, 1982). It is more comfortable for the mother because it harnesses the force of gravity to direct the baby down the birth canal (Brink, 1982). The primary issue with the squat position is that it restricts the physician's visual field, making it more difficult to intervene if complications arise (Brink, 1982). Yoruba patients with no history of birth complications or health conditions should be considered as a candidate for squat deliveries to comply with their religious beliefs. Unless safety regulations say otherwise, patients should be able to take home their placenta to carry out the burial ritual.

**Muslim Patients.** Another group in Nigeria who deserves more attention and consideration in hospitals is Muslim patients. According to the executive summary of the 2018 report on International religious freedom in Nigeria, a survey by the Pew Research Center found that approximately 48.8% of Nigeria's population identifies as Muslim (U.S Department of State, 2018). Although almost half of Nigeria's population is Muslim, traditional hospital employees are not always accommodating and understanding of Muslim beliefs (U.S Department of State, 2018).

For example, Islam faith forbids the consumption of alcohol, pork, and gelatin (Attum et al. 2021). This becomes an issue when hospital food or medications contain these products. Additionally, some women are not comfortable wearing hospital gowns because they violate Muslim dress codes (Attum et al. 2021). According to Islam beliefs, the "Awrah", or parts of the body that must be covered, include the arms, legs, and head (Rabin, 2010). This is particularly important in the presence of men outside the family (Rabin, 2010). According to Dr. Padela, Muslim law prohibits women to be alone with a man outside the family because sex could

potentially occur (Rabin, 2010). In these cases, the man and woman would be visited by Satan (Rabin, 2010). This belief causes many women to feel uncomfortable with male physicians (Rabin, 2010). According to preaching's of the Prophet Muhammad Peace be Upon Him in the Hadith, "A woman should not travel except with a Dhu-Mahram (her husband or a man with whom that woman cannot marry at all according to the Islamic Jurisprudence), and no man may visit her except in the presence of a Dhu-Mahram" (Al-Mujtaba, 2016). The article, "Nigeria: Childbirth still deadly", interviewed Hassan Kurfi from Nasarawa, Nigeria to hear the male perspective on hospital births (IRIN News, 2009). According to Kurfi, many Nigerian husbands, including himself, do not feel comfortable letting a male physician tend to their wives during childbirth (IRIN News, 2009). He claims "In our tradition, culture and religion, we do not encourage close contact between men and women [who are not related]; especially for unmarried women…I would rather have a female traditional birth attendant attend to her. Even my wife is not comfortable with having a male doctor around her when she is delivering a baby" (IRIN News, 2009, n.p.). Since patients are not guaranteed a female physician, many Muslim mothers are hesitant to give birth in the hospital (Attum et al. 2021).

To respect the beliefs of their Muslim patients, health professionals should give their patients a questionnaire prior to seeing their patients (Attum et al. 2021). Doctors and nurses should obtain permission to touch the patient, brief the patient on the purpose of the hospital gowns, and explain why a physical exam is necessary (Attum et al. 2021). If the operating physician is male, female staff members should be always present in the room (Attum et al. 2021). Physicians should allow their patient to breastfeed alone to respect their privacy (Attum et al. 2021). The physician should respect their patient's diet and provide alternative medications if

necessary (Attum et al. 2021). If the woman is sick and needs cleaning, it is more polite in Muslim culture to suggest a shower instead of a bath (Attum et al. 2021).

Doctors in predominantly Muslim regions, such as Northern Nigeria, should learn about Muslim customs (Al-Mujtaba, 2016). For instance, many Muslim women do not make eye contact or shake hands with men as a sign of respect and modesty (Attum et al. 2021). They believe that the left hand is filthy, so physicians should make an effort to use their right hand to dispense medicine (Attum et al. 2021). Since Islam belief requires females to be accompanied by their husband or male relative outside the home, physicians should grant the husband access to the delivery room (Attum et al. 2021). Additionally, patients who feel uncomfortable with the hospital gowns should receive a more modest alternative or be granted permission to wear their own clothes (Rabin, 2010). During the summer months, many Muslims fast in celebration of Ramadan (Attum et al. 2021). It is important that physicians advise pregnant patients to avoid these fasts to ensure their own safety (Attum et al. 2021).

## Conclusion

To overcome these eight barriers, we must take steps to improve the accessibility and quality of hospital healthcare. The first step is to provide diversity training to the hospital staff. Physicians and nurses should become familiarized with local communities, like the Yoruba tribe, to build and promote understanding of common beliefs and practices. A study performed by the department of Nursing science at University of Calabar in Nigeria examined the diversity in cultural childbirth exercises by thoroughly interviewing 29 Nigerian women (Esienumoh et al. 2016). According to the journal article:

> It is concluded that cultural diversity explicitly exists in the nurse/ midwife and client interaction in this setting. Therefore, to create a positive impact on maternal care, nurses, midwives, and other healthcare providers should deliberately seek to understand the cultural values and practices of the people and adopt the harmless ones. This would require flexibility in professional practice. Where the culture is inimical to health, the health providers should democratically and collaboratively through therapeutic action motivate the clients to critique their practices with the hope of possible repudiation or re-patterning. (Esienumoh et al. 2016, n.p.).

Out of respect for their Muslim patients, hospital staff should inform themselves on Muslim customs to ensure patients feel safe and respected. All staff should participate in practice exercises that test their skills to address patient requests with discretion and confidentiality. Physicians should ask patients how they prefer to receive care and their delivery preferences. To meet the needs of their communities, hospital staff should undergo diversity training, so they are better prepared to accommodate the unique needs of different religious and cultural groups. If the hospital is unable to fulfill the patient's maternity wishes, staff members should at least explore what realistic measures can be taken and clarify the limits (Rabin, 2010).

The next and final step is to increase federal funding of hospitals. Right now, the Nigerian government provides very little funds to maternal services. In 2018, Nigeria's government spent only 3.89% of its $495 billion-dollar Gross Domestic Product on Health Care, while Kenya spent 5.17% and South Africa spent 8.25% (Smith, 2021). In 2005, Nigeria's total health expenditure amounted to only $16.7 billion, 60% of which did not come from the government (Grigorov, 2009). Surprisingly, a study from the World Health Organization in 2005 revealed that the federal investment in Nigerian healthcare is dismal compared to income

from private donors. Private sectors spent over 7 times as much money on healthcare compared to the government in 1998 and 2000 (Bankole et al. 2009). Due to insufficient funds, Nigerian hospitals struggle to achieve healthy deliveries because of limited supplies, less competent staff, and insufficient training. Nigerian hospitals need a larger budget so they can purchase more supplies and hire more staff to meet the demands of Nigeria's growing population. Adequate funding will allow hospitals to offer delivery care that is affordable and available around the clock.

Although increased funds would help improve hospital services, it is unrealistic to argue that it would entirely resolve Nigeria's issue with maternal mortality. Hospital births are not the right option for everyone (Davis-Floyd & Cheyney). Most Nigerians have complex social ties to their communities and many mothers develop relationships with their traditional birth attendant from years of delivering all their children with them (Esienumoh et al. 2016). According to a study investigating pregnancies in rural Nigeria, 18 out of 29 Nigerian mothers used TBAs (Esienumoh et al. 2016). One claimed, "I had all my seven children at the TBAs" (Esienumoh et al. 2016, n.p.). Many families demonstrate loyalty and follow tradition by using the same traditional birth attendant for each new generation (Esienumoh et al. 2016). When laws and regulations force women to give birth at a facility, the poorest of women get left with no affordable options and are forced to give birth alone (Davis-Floyd & Cheyney).

Maternal mortality cannot be resolved by simply pouring money into hospitals and antenatal care clinics. Maternal mortality is a global problem that is interconnected with poverty, social status, politics, and community development (Umar, 2017). Most rural villages are disconnected from the economy and do not have the monetary means to bring in teachers, medical workers, and construction crews (Sachs, 2005). Often, communities lack basic

infrastructures like irrigation pumps, computers, food processing machinery, building tools, and electrical equipment (Sachs, 2005). The intersection of infrastructure issues and poverty at these destinations present a challenge to building and staffing a hospital (Luchok, 2021).

To sufficiently address maternal mortality, we must examine the underlying causes of inequalities within the individual geographic region (Umar, 2017). We need to explore how religion, ethnicity, and policy work together to influence maternal health (Umar, 2017). According to Abubakar Sadik Umar, a researcher at Walden University. "Religion and ethnicity are part of the fabrics of culture of defined population and has been reported as a pointer to low utilization rate of maternal health services and poor pregnancy outcomes even in developed and developing countries" (Umar, 2017, p.442). The implementation of the new strategies needs an understanding of the cultural setting of the specific area (Umar, 2017). Learning about local communities and their culture will provide us with insight into how to recognize the communities' needs and effectively communicate about maternal resources like antenatal care (Umar, 2017). We must gain support from tribal leaders, religious workers, and politicians to promote the utilization of maternal services (Umar, 2017).

When I started this thesis, I thought merely increasing use of hospitals would solve the maternal mortality crisis. What I have learned is that it is a much broader multi-faceted issue that requires a myriad of solutions, and that hospitals in Nigeria were a bigger part of the problem rather than the sole solution. By taking a deep dive into the factors and barriers that reduce the effectiveness of hospitals, I have created an eight-point analysis that can guide others in examining these issues in other Sub-Saharan locations and perhaps beyond. These eight points suggest areas that need support and/or change to begin to reshape hospitals into viable solutions for emergency obstetric care.

I discovered through my literature review how Nigeria's high rate of maternal mortality is influenced by its fertility rate, social norms to have large families at an early age, women's lack of autonomy over maternal health decisions, restricted access to contraceptives, and limited maternal resources. Nigeria serves as an ideal case study because other parts of Sub-Saharan Africa encounter many of the same or similar issues.

. Many countries near Nigeria struggle with high fertility rates. According to projections for the years 2020-2025, Africa has the highest projected fertility rates compared to every other continent in the world (Figure 4). Although African women are prone to having many children, about 65-80% of pregnant women do not receive any antenatal care (Brieger et al. 1994).

Limited access to maternal resources and services is a problem common to not only Nigeria, but most countries in Sub-Saharan Africa. The infrastructure issues that affect hospital placement, staff training, personnel credentials and supplies are one piece of this multi-faceted problem of maternal mortality. Maternal mortality is also closely influenced by the local community's culture, most notably through their economy, society, and religion. Studying all these factors in Nigeria can give us insight into how to reduce the number of maternal deaths in this and other lower resourced countries. Perhaps this eight point analysis can be useful to programmatic planning that promotes the intrinsic value of women and makes the road to motherhood a less perilous journey.

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