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The Global and Local Factors Influencing Maternal Mortality Ratios: Barriers and Recommendations for Success

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Abstract

Maternal death is defined as the death of a female of reproductive age during pregnancy, labor or within 42 days of termination of pregnancy from causes that are related to or aggravated by pregnancy and relevant care. Maternal deaths are measured by maternal mortality ratios per country and are reported as the number of maternal deaths per 100,000 live births. Each year an estimated 500,000 women die worldwide from complications due to pregnancy or labor and about half of these women live in Sub-Saharan Africa. The rationale for conducting this study is to address the prevalent and preventable issue, maternal death and to assess barriers to the achievement of the 5th Millennium Development Goal. **Purpose:** To explore maternal mortality worldwide and in Sub-Saharan Africa, to analyze health risk factors, social/environmental factors, tracking techniques, intervention techniques and policy factors both worldwide and in Sub-Saharan Africa and make recommendations for Sub-Saharan Africa aimed at reducing maternal mortality rates and achieving the 5th Millennium Development Goal. **Methods:**The design is a comparative literature review and policy analysis. Variables were chosen based on their relation to the outcome, maternal health. Studies reviewed came from peer-reviewed journals found in Arcadia University's Landman Library. Key words and phrases were used to identify relevant articles. Relevant data was extracted from articles such as demographic information, sample size, intervention being tested or chronic condition being observed and impact on the outcome, maternal health. Recommendations were then made for improving the likelihood of success for the Millennium Development Goal 5.

Policy Analysis: An assessment of policies implemented in Sub-Saharan Africa indicated that previous declarations and initiatives have failed within the last 40 years due to lack of funding and enforcement, resource scarcity, lack of government involvement and corruption.

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A lack of resources has created barriers to access for all of the population, in particular women who face gender inequality and discrimination. Lack of resources, enforcement and funding increase the disease burden and decrease access to care in Sub-Saharan Africa. A lack of education and gender inequality adds additional barriers for women and girls that ultimately influences maternal mortality rates in these countries. **Recommendations:** Using the Africa Health Strategy: 2007-2015 as a model, policy reform is necessary with elements of female empowerment through education and access to health care including control over social aspects of their lives such as marriage, family planning and cultural rituals such as female genital mutilation. The policy must be comprehensive and have a strong regulation and accountability system so that when decisions are made in the government, they are enforced at the community level. Lastly, communication is vital to policy reform; the system must have effective communication that allows the community level to communicate about needs not being met to the government. Unfortunately, capacity and lack of resources are challenges to decreasing maternal mortality, however effective use of resources can prove beneficial.

Introduction

Maternal death is defined as the death of a female during pregnancy, labor/ delivery or within 42 days post-partum from causes related to or aggravated by the pregnancy and obstetric care received during that time (WHO, 2013). Maternal mortality ratio is reported as the number of maternal deaths per 100,000 live births (WHO, 2013). Severe bleeding, infection, pregnancy induced high blood pressure and unsafe abortion accounts for 80% of all maternal deaths (WHO, 2013).

Each year an estimated 500,000 women die worldwide from complications due to pregnancy with approximately half of these women living in Sub-Saharan Africa. This region not only has the highest rate of maternal deaths but also has seen an increase in maternal deaths overall. According to Alvarez and colleagues (2009), major causes of maternal death in Africa are hemorrhaging, hypertension and obstructed labor. WHO (2013) reported that 99% of maternal deaths occur in developed countries and 98% of these deaths are preventable.

While half of all maternal deaths occur in Sub-Saharan Africa, an additional third occur in South Asia (WHO, 2013). The risk for maternal mortality is highest in females under fifteen years of age with complications from pregnancy and birth being the leading cause of death of adolescent girls in most developing countries.

Not only are females at risk for direct health complications that affect their health, but women who are exposed to poverty and gender violence and who lack education and access to care experience a more compromised level of maternal health (Mumtaz, Salway, Bhatti, Shanner, Zaman, Laing & Ellison, 2014; Vallieres, Hansen, McAuliffe, Cassidy, Owora, Kappler & Gathuru, 2013; Reid & Shams, 2013).

In 2000, the international community adopted eight Millennium Development Goals, (MDG), a significant outcome of the Millennium Summit. The Millennium Summit was the largest recorded meeting of world leaders to address the issues of global poverty and health (Millennium Project, 2006). The Millennium Development Goals defined at the summit focus on poverty, education, health, equality and sustainability with the fifth goal focused on improving maternal health. Under this MDG, countries signed an agreement to reduce maternal mortality rates by 75% between 1990 and 2015. As of 2013 maternal deaths were reduced worldwide by 47%, an accomplishment made possible through universal access to reproductive health care, a mandate incorporated into the MDG 5 (WHO et al., 2010). Although an MDG was developed specifically for this issue, current data does not support the goal being met within the defined timeline. Sub-Saharan Africa (500 per 100,000) and South Asia (220 per 100,000) still experience high rates of maternal deaths compared with documented decreases in Latin America, the Caribbean and Asia (Cross, Bell & Graham, 2010). This demonstrates the need to assess barriers that affect maternal mortality in Sub-Saharan Africa from both a health and social perspective (WHO et al., 2010).

The purpose of this study was to explore maternal mortality in Sub-Saharan Africa and analyze how health policies in Sub-Saharan Africa influence health risk factors and social/environmental factors that impact maternal mortality.

Methods

A policy analysis was conducted to identify the factors that influence maternal mortality in Sub-Saharan Africa, a region (Figure 1) that has made the least amount of progress toward achieving Millennium Development Goal 5, which mandates a 75% reduction in maternal mortality ratios worldwide by 2015.

Variables were chosen based on their relation to the outcome, maternal mortality, in a preliminary review of existing literature. Once variables had been chosen they were grouped together based on likeness.

Malaria, female genital mutilation, age, anemia, HIV/AIDS and nutrition were categorized as health risks. Socioeconomic status, education level, race, access to care and gender inequality were grouped into social and environmental factors. Within gender roles, the perceptions of the importance of women's health, which is defined as opinions of both men and women about the importance of women's health during pregnancy, including her risk of maternal mortality and morbidity were also assessed. The factors are listed in Figure 2)

Studies were identified for the analysis through Academic Search Premier and PubMed. Journals reviewed included Bio Med Central Public Health, Bio Med Central Pregnancy Childbirth, Maternal Child Health Journal and the Lancet. Additionally, the United Nations, Millennium Project (Millennium Development Goals), World Health Organization, Centers for Disease Control and Prevention, UNICEF, UNFPA and the World Bank websites were utilized for this review. Each site provides important primary data for maternal mortality rates.

Studies were chosen based on the presence of factors classified as social/environmental conditions or health risks , which influence maternal mortality. Relevant information extracted from the studies analyzed included sample size, participant's demographic information, chronic condition being observed and how this influenced maternal death. Policies were assessed at a regional level to make a recommendation for improving the likelihood of success for achieving the Millennium Development Goal 5 by 2015.

Comparative Review of Factors that Influence Maternal Mortality

Although there are different methods to address a complex health outcome such as maternal mortality, the most effective approach is a top down one that starts with a review of policies in Sub-Saharan Africa. The following section includes a review of the health risk factors (female genital mutilation, age, nutrition, malaria and anemia and HIV/AIDS status) that directly impact maternal health.

The next section reviews socio-economic status, education level, race, access to care and gender inequality; factors which illustrate how the societal and environmental infrastructure influences maternal health.

This review creates context for the policy analysis to show how these combined factors influence maternal mortality to create a foundation for the understanding of how policy influences maternal health. The goal is to make recommendations for a path forward and to create a road map for achieving the MDG 5.

Health Risk Factors

Sub-Saharan Africa contains 49 countries with a variety of health issues that need to be addressed in order to improve population health and target vulnerable populations specifically. Each country is addressing health issues and health policies differently depending on resources and prioritization. Sub-Saharan African Governments and the International community have taken an interest in improving the health of people living in these regions. Efforts to improve health can be seen through the creation of the Alma Ata Declaration in 1978, the Structural Adjustment Program and Bamako Initiative in 1987, the Health Sector Reform and Millennium Development Goals in the early 1990's and the Paris Declaration on Aid Effectiveness in 2005. More recent proposals have addressed primary health care coverage and universal access including the Ouagadougou Declaration on Primary Health Care and the Africa Health Strategy for 2007 to 2015. Until recently limited progress has been made towards universal health care coverage with the exception of Ghana and Rwanda.

The policy analysis section will explore and analyze how health policies in Sub- Saharan Africa in the past and present influence the social/ environmental and health risk factors that ultimately affect maternal mortality.

Female Genital Mutilation

Female genital mutilation, also known as circumcision, is the partial or full removal of the outer genitalia, though there are different types that vary in severity. Type I, clitoridectomy, is the removal or partial removal of the clitoris. Type II, excision, is removal or partial removal of the clitoris and labia minora with potential removal of the labia majora.Type III, infibulation, is the removal of the outer genitalia and narrowing of the vaginal opening by stitching the skin, leaving a small hole for urination and menstruation. Type IV is other procedures that do not fall into the other three types and can include pricking or piercing of the genitalia, which can be more or less severe depending on how it is done (Ball, 2008).

It is linked with the suppression of female sexuality and although it is a violation of a woman's human right, it is a difficult practice to eradicate because of its cultural and religious roots (Ball, 2008).

Prior to a study conducted in 2006 (Banks, Meirik, Farley, Akande, Bathija, & Ali, 2006) in which the WHO collaborated, little was known about the effects of female genital mutilation on obstetric outcomes and whether or not the type of female genital mutilation had a different effect on obstetric outcomes. Upon entering obstetric centers for delivery in Burkina Faso, Ghana, Kenya, Nigerian Senegal and Sudan, women were examined by trained nurses and classified by the WHO classification system for female genital mutilation. Women who had undergone female genital mutilation were compared with women who had not undergone the procedure. The results of the study showed an increased risk of adverse obstetric outcomes for women who had undergone female genital mutilation Increased risks included caesarean sections, blood loss for women with level II and III mutilation, and an increased risk for extended hospital stays of longer than three days. Researchers concluded that adverse obstetric and perinatal outcomes are documented known effects of female genital mutilation, both immediate and long term. Another study stated that scarring from female genital mutilation, if not opened adequately, can create an obstacle to a safe delivery (Ball, 2008). Female genital mutilation among other factors was found to contribute to the poor health status of women in Ethiopia Bauchi, and Nigeria (Natoli, Renzaho & Rinaudo, 2008; Andersson, Omer, Caldwell, Dambam, Maikudi, Effiong, & ... Hamel 2011).

Age

Age is a risk factor for maternal mortality and morbidity and must be considered because of the issue of child brides; a girl who is forced to marry before the age of 18. It occurs as a way to settle a family debt and to protect the girl from economic instability and rape. In Sub-Saharan Africa and South Asia between 50% and 70% of females are married before the age of 18 despite this being a human rights violation (Raj & Boehmer, 2013). With the highest rates of child marriages occurring in developing countries, risk factors for girls forced to marry under the age of 18 are lower socioeconomic status, living in rural areas with low access to health care and lower rates of female education (Raj & Boehmer, 2013). The social context of child brides is one of gender inequality and the devaluing of females, where there are less employment opportunities for females and more violence against them (Raj & Boehmer, 2013).

Girls that are married young are more likely to become pregnant as minors. This increases their risk for maternal and infant mortality and morbidities including maternal anemia, low birth weight and preterm birth (Raj & Boehmer, 2013; Gibbs, Wendt, Peters & Hogue, 2012). Contraceptive use is lower among adolescent wives. With little control over reproductive choices, early and short spacing between pregnancies influences maternal health negatively. There are associations between high rates of child marriage and poor indicators of maternal and child health. Out of the countries that were assessed for high levels of adolescent brides, 63% were affected by conflict. Child marriage was also associated with reduced rates of skilled birth attendant utilization during labor, this reduction was also more likely to occur in Sub-Saharan Africa and South Asia than in other regions in the world. It has been documented that countries with high levels of adolescent marriages are at an increased risk for maternal and child health issues, higher fertility rates and decreased use of skilled birth attendants (Raj & Boehmer, 2013).

Nutrition, Anemia and Malaria

Anemia is a significant health problem that influences maternal and perinatal mortality and morbidity (Tripathi, Tyagi, Singh, Dixit, Manju & Mala, 2012). It is a deficiency of red blood cells or hemoglobin in the blood, and is most often associated with lack of iron. There is also macrocytic anemia, which has links to nutrition and diet, for example pregnant women in Venezuela showed a higher prevalence of folic acid and B12 deficiencies than pregnant women in the United States (Tripathi, Tyagi, Singh, Dixit, Manju & Mala, 2012). Pregnancy increases the risk for anemia because of an increase in plasma volume in comparison with red blood cells, which leads to lower red blood cell and hemoglobin count. The WHO (WHO, 2013) estimates that the prevalence of anemia is estimated at 68% for pregnant woman worldwide. The health consequences of maternal anemia are stillbirths, low birth weight, pre-term birth, reduced work capacity, low tolerance to infections and perinatal death. (Obse, Mossie & Gobena, 2013).

Younger maternal age, malaria and nutrition are risk factors for maternal anemia (Gibbs, Wendt, Peters & Hogue, 2012; Obse, Mossie & Gobena, 2013). Anemia is influenced by low iron levels in the tissue reserves, folic acid and vitamin B12 deficiencies that usually result from low levels in the diet as well as low iron intake or poor absorption of iron from the diet.

Nutritional status has been named the major cause of anemia during pregnancy and therefore diet and iron supplements are essential in reducing maternal anemia (Obse, Mossie & Gobena, 2013; Lindsay, Gibney, & Mcauliffe, 2012). Obse, Mossie and Gobena (2013) assessed nutritional influences on anemia and found that participants who ate meat and vegetables less frequently had a higher occurrence of anemia. Improving nutrition to avoid anemia is also important because it influences the development and health of the child both as an infant and into adulthood, specifically concerning non-communicable diseases (Salisbury & Robertson 2013; Ojha, Robinson, Symonds & Budge2013).

HIV/AIDS

Another major indirect cause of maternal death besides anemia and malaria is HIV/AIDS. This is of particular interest and concern in developing countries where there are incomplete or inefficient death registration systems. In a study (Desai, Phillips- Howard, Odhiambo, Katana, Ouma, Hamel, & ... Laserson, 2013) which examined the direct and indirect causes of death in Kenya, whose death registration system was incomplete, HIV/AIDS was found to be a major indirect factor. In fact two-thirds of the indirect maternal deaths recorded in the study were a result of HIV/AIDS and malaria. The results also showed that women of a lower socioeconomic status were more likely to seek out care from a traditional birth attendant versus a hospital which would more likely have the resources to treat a pregnant woman with HIV/AIDS (Desai, Phillips-Howard, Odhiambo, Katana, Ouma, Hamel, & ... Laserson, 2013). A second study also found results that suggest that HIV/AIDS is an indirect cause of maternal mortality and therefore must be addressed in interventions aimed at improving maternal health. The study sites that pregnant females are more susceptible to HIV/AIDS in developing countries because of their inability to refuse sex and thus susceptibility to being infected. (Lattof, Wegner & Langer, 2012). The risks of HIV/AIDS during pregnancy for the mother include a weakened immune system in which she may not be able to fight off diseases as well as social consequences like being abandoned by her husband and family, which influences both mental health and physical health through her socioeconomic status (Garcia, Hromi-Fiedler, Mazur, Marquis, Sellen, Lartey & Pérez-Escamilla, 2013).

Social/Environmental Factors

Socioeconomic Status and Access to Care

The public health literature demonstrates a direct relationship between socioeconomic status and health outcomes, with lower socioeconomic status being linked with lack of access to care and low utilization of care leading to poorer health outcomes (Fitzpatrick Dennis, Webb, Lorch, Mathew, Bloch & Culhane, 2011). In a study conducted in a village in Punjab, researchers were investigating whether or not national and community level interventions were reaching women living on the social and economic margins of Pakistani society. In depth interviews, focus groups, observations and maternal death case studies were conducted to collect information. Results showed that despite the availability and awareness of treatment services, low-income women did not utilize the services due to poverty and the reliance on individuals from higher castes for loans or cash transfers. Researchers concluded that socioeconomic status was a significant barrier for Pakistan to achieve Millennium Development Goal 5 (Mumtaz, Salway, Bhatti, Shanner, Zaman, Laing & Ellison, 2014).

In India, with less focus on urban economic inequalities in maternal and child health, a study was conducted to establish the pathways of economic inequalities and health indicators in the urban population. Results showed that illiteracy among women and their partner, low socioeconomic status and mass media exposure all influence economic inequalities in maternal and child health indicators. Illiteracy was the key predictor for a number of antenatal care check-ups, institutional delivery, child immunization and infant deaths while low socioeconomic status was the key predictor for underweight children. This study shows a relationship between socioeconomic status and access to and utilization of care in urban populations in India (Goli, Doshi & Perianayagam, 2013).

Educational Level

Higher levels of maternal education are associated with better health behaviors during labor. However, in many countries where large gaps in gender equality exists, the education level of the head of the household, usually a man, is what influences whether or not a woman seeks out healthcare treatment.

Results of a study conducted in Uganda found that heads of households with secondary or higher education were significantly more likely to seek a skilled birth attendant than their counterpart that had only received primary education.

Head of household education is a barrier to healthcare access in Uganda and therefore increasing rates of head of household education can increase the number of women seeking a skilled a birth attendant during labor which is associated with better health outcomes and lower maternal death (Vallieres, Hansen, McAuliffe, Cassidy, Owora, Kappler & Gathuru, 2013).

An ecological study conducted in Iran found similar results to the study conducted in Uganda. Data collected consisted of maternal mortality ratio, the proportion of medical professionals and socioeconomic variables, urban residency, literacy and unemployment. There was a significant relationship between maternal mortality and male literacy as well as unemployment. Authors concluded that focus should be on male literacy, particularly in patriarchal societies as a means of reducing the number of maternal deaths. Programs aimed at increasing male literacy rates could improve the health of the mother, family and society. Recommendations for financial stability and increasing the number of health professionals to decrease maternal deaths were also included in the conclusion (Zolala, Heidari, Afshar & Haghdoost, 2012).

Gender Inequality

In India, a study conducted by Reid and Shams (2013) reported that women and female children who do not go to school are the last to eat, and if there is no food left the mothers generally go without food. The same system is practiced during pregnancy despite the pregnant woman's greater need for nutrition for herself and the growing fetus. If she eats before her husband or sons who go to school, she is not considered a "good woman". The definition of a "good woman" has been determined by society in India (Reid & Shams, 2013). This effectively demonstrates how gender inequality can negatively impact maternal health; when mothers are not receiving proper nutrition they are more susceptible to anemia, diseases and poor maternal and infant health outcomes (Gibbs, Wendt, Peters & Hogue, 2012; Obse, Mossie & Gobena, 2013). Another study suggested that the Indian Government declare maternal health as a human right due to the large number of female deaths are due to pregnancy or labor complications and that gender inequality and discrimination influence female deaths in India (Johnson & Das, 2011).

In urban settings in Nigeria (Corroon, Speizer, Fotso, Akiode, Saad, Calhoun & Irani, 2014), a study was conducted to measure women's empowerment and its association with family planning services use and maternal health behaviors.

Data came from baseline household surveys from the Measurement, Learning and Evaluation Project for the Nigerian Urban Reproductive Health Initiative. Empowerment of women was measured through the indicators economic freedom, attitude toward domestic violence, prohibitions of partners and personal decision-making. Results showed that women who are empowered are more likely to utilize family planning such as modern contraceptives, to deliver at facilities and to have skilled birth attendants present during labor.

Comparative Policy Analysis

Historical Background

Alma Ata- 1978

Multiple international policies and agreements have shaped the current health care system in Africa, which has influenced population health and in turn, maternal health and mortality. The Declaration of Alma Ata was the first international declaration that addressed the importance of primary health care for all. All member countries of the World Health Organization adopted this policy in 1978 beginning with implementation of the policy in developing countries. Primary health care is the first point of contact for citizens in the national health care system. The declaration was seen as significant because it would bring health care as close to people's homes and places of employment with the hopes of continuing the health care process. Western trained doctors and nurses as well as community health workers were to take part in this system. The government participated in a decentralization process and transferred authority and responsibilities to the provincial, district and sub-district level. The declaration proposed a plan for monitoring service quality, and provision of essential drugs, vaccines, equipment and other resources (Oluwule, 2008).

The declaration was ultimately unsuccessful for multiple reasons. Citizens felt that primary health care was cheap and ineffective because facilities lacked resources and staff. Instead they sought out secondary and tertiary care, completely bypassing the primary care level.

Civil war, natural disasters and the spread of HIV/AIDS created barriers to providing quality care in Sub-Saharan African countries and international political commitment to the declaration tapered off after the initial implementation.

Health care resources continued to go to large urban hospitals instead of being decentralized to provide a more even distribution of health care resources. Government corruption created a wary environment for donors and potential donors to implementing primary care (Oluwule, 2008).

Structural Adjustment Program and the Bamako Initiative- 1987

After the failure of the Alma Ata in Sub-Saharan Africa, the Structural Adjustment Program (SAP) was implemented in 1987. SAP was implemented in 40 African countries. The focus within this program was backed by the World Bank's ideological framework of privatization of health care services, loans and cost recovery. Despite the financial and economic approach to health care, SAP was seen as even more of a failure to resource poor regions, negatively impacting access to care, food scarcity and overall health. SAP was also negatively impacted by what is referred to as the "brain drain" of Africa's health work force. The drain severely impacted countries governments' ability to then address the spread of HIV/AIDS and the Millennium Development Goals (Oluwule, 2008).

To combat the scarcity of drugs, the reduced access to care and the negative impact of SAP on health in Sub-Saharan Africa the Bamako Initiative was also implemented in 1987. In many countries in the region, community pharmacies were established. It was reported that health indicators and quality of care were improved and services were more effective. However, in the end this initiative gave birth to the issue of multi-drug prescribing many of which were irrational or unnecessary. There were discrepancies regarding implementation at the community level, the initiative was mostly donor driven with limited coverage and lack of resources. The focus became more on implementation instead of on policy at the government and therefore began falling apart (Oluwule, 2008).

Health Sector Reform and the Millennium Development Goals

In 1993, the World Bank Development Report detailed a different approach. Instead of focusing on primary health care, the strategy suggests provision of health care services that have economic benefits due to improved health. The language changed from consequence and fruit of development to human capital for development.

The approach is much more singular and also focuses on the health care sector rather than a multi-sector approach that was envisioned in the Alma Ata.

The approach was named the Health Sector Reform, which emphasized a privatized approach with little to no government involvement. Private health insurance and private-public partnerships were emphasized. At the same time, the Millennium Development Declaration was declaring a comprehensive, multi-sector approach to improve health.

In 2000, world leaders came together for the UN Summit to discuss issues of poverty and health. As a result the UN Millennium Declaration was adopted and 8 goals were declared (Figure 3) (UN, 2014). The 8 Millennium Development Goals were created to address poverty, hunger, primary education, gender equality, maternal and child health, HIV, environmental sustainability and a global partnership for development (Oluwule, 2008).

Maternal mortality has decreased by almost half since 1990, a 47% decrease worldwide. Despite significant decreases in Eastern and Southern Asia and Northern Africa, the maternal mortality ratio remains 15 times higher in developing countries. Currently, 50 million babies are delivered yearly without medical attendants despite an increasing number of women (63% in 1990 versus 81% in 2011) receiving prenatal care. In developing countries only half of the women are receiving the recommended amount of care while the demand for the care is increasing at a much faster rate (United Nations, 2013).

Paris Declaration on Aid Effectiveness

In 2005, the Paris Declaration on Aid Effectiveness (Oluwule, 2008; OECD, 2014) was created to address the efficacy of aid and development assistance with five principles. The first was that developing countries would exercise effective leadership over policies, strategies and actions related to development. The second was that donor countries would support developing countries based on their national development strategies, institutions and procedures, the third was that donor countries would harmonize their actions with the developing country, and the fourth and fifth principles were to make their actions transparent and effective. All countries would manage their resources effectively, improve their decision-making and pledge to be mutually accountable for development results. Thirteen aid targets were established to monitor progress. Progress was monitored in 2008, 2010, 2011 and 2014.

Results of these monitoring processes show that, although the principles in the declaration have been influencing development, there is variation between speed and direction of progress in different developing countries; only one of the aid targets was met by 2010 (Oluwule, 2008; OECD, 2014).

The monitoring system for the declaration started in 2005 operationalized aid effectiveness based on how the declaration and aid helped people and benefited countries. The thirteen targets, established through the declaration, were measured through indicators that the international community believes do not adequately measure aid effectiveness. Despite this, the Paris Declaration on Aid Effectiveness shows promise where other international and national health declarations and initiatives have been ineffective.

These major policies have shaped the current state of Sub-Saharan Africa's health care and general population health. Although these policies do not focus directly on maternal health, pre and post-natal care is covered within primary care. Without primary care, there is no maternal care. To improve the health of a nation, universal access is crucial.

Policy Solutions to the Issues in the Health Care System

Performance Based Financing

Despite a lack of resources in Sub-Saharan Africa, improvements to efficiency and equity of existing resources can still be made. Recently, African countries have been implementing a new intervention, Performance Based Financing (PBF) (African Health Economics and Policy Association, 2011). On the demand side, PBF can be implemented by including conditional cash transfers and vouchers.

Those in need of the priority health care, like maternal and child health care services, would receive cash or vouchers to be able to pay for the health care services that they needed. On the supply side, financial incentives are introduced to personnel to increase productivity, change behaviors and improve quality health care. This intervention was implemented because many African countries have been unsuccessful in achieving the Millennium Development Goals, including number five.

Implementation requires multiple stakeholders, including government health ministries, non-governmental organizations, health facilities and healthcare providers. Contracts are signed and rules are created between the different members to increase the likelihood of success for this intervention policy (African Health Economics and Policy Association, 2011).

There is certainly debate over the effectiveness of this intervention, with success stories coming from Rwanda and Burundi and issues with implementation in Cameroon and Uganda. In order for this system to work, sustainable and adequate funding is absolutely necessary. It is also important to note that despite positive short-term effects, evidence suggests that personnel become accustomed to incentives and believe that these incentives are just part of the job. Therefore prevention methods must be developed to keep the financial incentives as just that, incentives (African Health Economics and Policy Association, 2011). While universal health care has been implemented in certain countries around the world including Rwanda and Ghana, many countries do not have this health care policy.

The Ouagadougou Declaration on Primary Health Care

In 2008, the International Conference on Primary Health Care and Health Systems was held to discuss the revitalization of primary health care, which had been first addressed in the Alma Ata in 1978. The Ouagadougou Declaration on Primary Health Care and Health Systems in Africa: Achieving Better Health for Africa in the New Millennium and Resolutions AFR/PHC/08/1, AFR/PHC/08/2 and AFR/RC58/R3 were adopted (WHO Regional Office for Africa- Africa Health Monitor, 2012). The nine major priorities of health are leadership and governance, service delivery, human resources, financing, information technology, community participation and ownership, partnerships for development and research. They have been identified because of the need to increase the speed of change that was originally introduced in the Alma Ata. The guiding principles for this declaration are country ownership, adequate resource allocation and reallocation, intersectional collaboration, decentralization and redistribution of authority and responsibility, equity and sustainable universal access, aid harmonization and alignment, mutual accountability for results, solidarity and ethnic decision-making informed by evidence (WHO Regional Office for Africa- Africa Health Monitor, 2012).

These priorities have implementation guidelines for countries to follow including the creation of partnerships, updating and enforcing public health laws, developing a strategic plan and a system that provides comprehensive and integrated health care. Monitoring and evaluation processes were also detailed to measure the success of implementation and overall health of the population in these countries (WHO Regional Office for Africa, 2012).

Implementation of the declaration is at different stages in different countries. In Angola, Equatorial Guinea, Mozambique and Nigeria, the countries started revitalizing primary health care and community-based health services. In the Congo, Ethiopia and Mauritania, tools were developed and essential health packages were re-evaluated to ensure that limited resources were going towards high efficacy interventions. Also, Niger developed a strategy to measure quality assurance. Madagascar took part in the District Health Systems Rapid Assessment while Eritrea and Malawi developed their National Health Policy. Benin and Swaziland developed their Health Strategic Plan while Comoros, Eritrea, Namibia and Senegal are revising their Health Strategic Plans. Thus far 44 national health policies have been created and revised based on the AFRO guidelines, which indicate an increase in implementation and a comprehensive approach to health development through key stakeholder involvement (WHO Regional Office for Africa, 2012).

Discussion

It is clear that despite the development of policies, several factors influence the efficacy of these policies. Lack of government involvement and resources, inequitable distribution of resources, funding issues, and inappropriate prescribing of medication influenced the failure of these policies and lack of access to services for the population. Policy failure adversely influences health risk factors and social/environmental factors, which affects overall health outcomes. Figure 4 illustrates the impact of health policies past and present on women's health and maternal mortality.

Despite the development of numerous policies designed to improve the economic status and health of populations, none of the policies address gender inequality within the society and fail to address reproductive and maternal health within the gender inequality framework. Without understanding how gender roles within societies influence health care utilization and barriers to service, policy makers miss a key component; how policy plays a role in health and health care utilization.

Without this knowledge, policy makers could be setting an agenda that misses essential components that ultimately affects population-based health outcomes; in this case, maternal mortality. Without addressing gender inequality and discrimination, women live in communities where they are not empowered, where they are less educated, where they are dependent on males for their socioeconomic status or are living in poverty. These factors contribute to a lack of access to health care.

When women are less educated, have a lower socioeconomic status and face gender discrimination; they are less likely to seek proper care. Women living in societies where they are not educated or empowered are unable to be in control of their own health and life. Without control, education and equality in terms of gender and socioeconomic status, women are more likely to be subjected to cultural practices such as FGM, they are more likely to eat last, to be more susceptible to diseases through lack of nutrition or the inability to saw no to sex/rape, and are more likely to be married off and impregnated at a young age FGM, child brides, rape and eating last are specifically rooted within male domination over females as well as low socioeconomic status and a lack of education (Ball, 2008; Johnson & Das, 2011; Lattof, Wegner & Langer, 2012; Raj & Boehmer, 2013). The higher risks for any of these situations occurring as well as the risk for violence act as barriers to women receiving proper health care. The health risk factors and the social/environmental factors have a common foundation; gender discrimination. By failing to address the underlying structural problem within society through health care policies, women are influenced negatively from a social, environmental and health perspective. These factors act as barriers to receiving timely and quality pre and post-natal care, therefore increasing the risk of maternal mortality. For the future, although the Ouagadougou Declaration on Primary Health Care has been created to address issues that have been identified through past failures, recommendations based on the policy analysis need also to address issues of gender inequality and female empowerment while using the Africa Health Strategy (2007-2015) as a model.

Recommendations

Female Empowerment

While all aspects of health care policy, from strategic planning, to funding and resource allocation are essential to success, the main focus of the recommendation for this analysis is that policies directed at both community and individual health should incorporate female empowerment.

Although the policies analyzed above were at the population level, women are half the population and while policies specific to women's health and maternal health are important, if primary health care includes pre and post natal care for expectant mothers and policies include empowerment to tackle the issue of gender inequality, there is a real possibility of maternal health improving and therefore the rate of maternal mortality decreasing.

According to Dr. Oluwole (2008) who commented on health care policy development in Sub-Saharan Africa over the last 40 years, the next steps towards success for the region are as follows; to develop national plans, to strengthen health systems, to empower individuals, families and communities, to scale up rapidly and to empower individuals families and communities. The empowerment piece of this recommendation is essential to the pursuit of reducing maternal mortality in Sub-Saharan countries. By focusing on policies, initiatives and interventions that empower individuals, the inequality gap between genders can be reduced women can take control over their own health care, have their voices heard, and be empowered to seek the health care services needed to improve their overall health and the health of their families and communities. While the Ouagadougou Declaration on Primary Health Care and Health Systems in Africa: Achieving Better Health for Africa in the New Millennium (WHO Regional Office for Africa- Africa Health Monitor, 2012) is valuable in addressing principles and priorities that include resource allocation, governance and leadership, service delivery, decentralization and universal access, it lacks the empowerment component.

Although the Ouagadougou Declaration on Primary Health Care and Health Systems in Africa: Achieving Better Health for Africa in the New Millennium does not include an empowerment component, the Africa Health Strategy (2007-2015) does. It addresses issues of maternal and infant mortality, burden of disease and the importance of female empowerment. In conjunction with the African Union, member states and the Regional Economic Communities, this strategy has been developed with outlines to improve the existing health care system and address health as a human right. The mission is to develop a system that is Africa driven that reduces the burden of disease and disability while strengthening health care systems, improving interventions and empowering communities (CARMMA & African Union, 2012; African Union Conference of Ministers of Health, 2007).

The Africa Health Strategy includes a section, which recommends that health care systems prioritize maternal mortality, achieving the Millennium Development Goal, promoting gender equality in policies, and eliminating laws that allow violence against women, including harmful cultural traditions such as FGM. This section is essential to the reduction of maternal mortality and draws clear linkages between the health risks and social factors described earlier, policies and maternal mortality. The strategy also recommends implementing a broader health program which includes family planning, STI screening and prevention and providing safe abortive services, Affording women the right to manage their health and health seeking behaviors is encouraged and supported by constructs defined in the Health Belief Model (perceived barriers and susceptibility) and the Theory of Planned Behavior (behavioral control and subjective norms). Related to the health risks of becoming pregnant at a young age, the strategy suggests focusing on reducing the rates of teenage pregnancies as a means of reducing maternal deaths.

By devoting a section to maternal and child health, addressing health issues that impact maternal mortality and promoting female empowerment, education and health, the Africa Health Strategy effectively addresses the complexity of maternal mortality and the barriers that prevent the success of Millennium Development Goal 5. It is clear that any health strategy or declaration without a section mandating improved maternal health ignores the tenets of social justice while ultimately hurting the health and economic prosperity of the entire population. It would not only be beneficial for implementation of the African Health Strategy but also for any future policies, plans, declarations or initiatives to use this strategy as a model for addressing gender inequality, an essential component of female health and maternal mortality in Sub-Saharan Africa.

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Figure1. Determinants of Maternal Health and Maternal Mortality

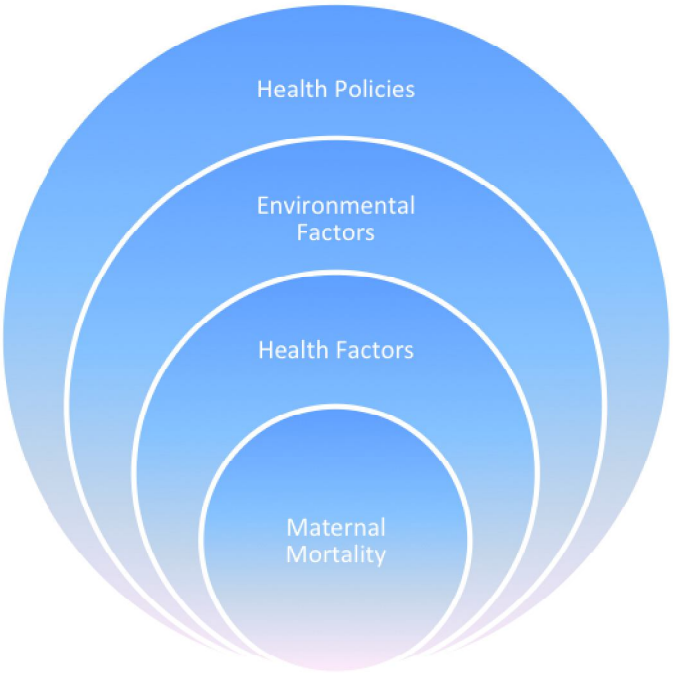
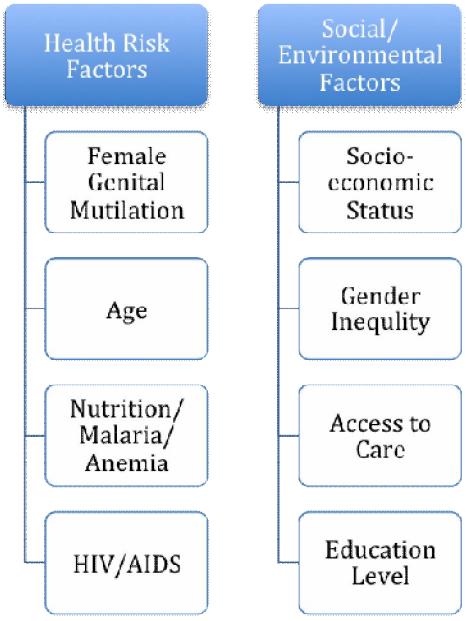


Figure 2. Social, Environmental and Maternal Health Risk Factors



Millennium Development Goal	Targets
1: Eradicate Extreme Poverty & Hunger	A. Between 1990 and 2015 reduce the proportion of people whose income is less than $1.25 per day by half. B. Achieve full employment and decent work for everyone including women and young people. C. Between 1990 and 2015 reduce the proportion of people who suffer from hunger by half.
2: Achieve Universal Primary Education	A. Ensure that by 2015, all children will complete primary school.
3: Promote Gender Equality and Empower Women	A. Eliminate gender inequality in primary education by 2005 and in all education levels by 2015.
4: Reduce Child Mortality	A. Between 1990 and 2015, reduce the under five years old mortality rate by 2/3rds.
5. Improve Maternal Health	A. Between 1990 and 2015, reduce the maternal mortality ratio by 3/4ths. B. Achieve universal access to reproductive health.
6: Combat HIV/AIDS, Malaria and Other Diseases	A. By 2015, halt and reduce the spread of HIV/AIDS. B. By 2010, achieve universal access to HIV/AIDS treatments for all who need it. C. By 2015, half and reduce incidence of malaria and other disease
7: Ensure Environmental Sustainability	A. Integrate sustainability principles into policies and programs and reduce the environmental loss of resources. B. Reduce loss of biodiversity, and achieve a significant reduction of loss by 2010. C. By 2015, reduce the number of people without sustainable access to safe drinking water and sanitation by half. D. By 2020, significantly improve the lives of 100 million people living in slums.
8: Develop a Global Partnership for Development	A. Further develop an open, rule based, predictable and non-discriminatory trading and financial system. B. Address special needs of the least developed countries. C. Address special needs of developing states that are land locked and islands that are developing states. D. Deal with debt in developing countries in a comprehensive manner. E. Provide affordable and essential drugs in developing countries working along side pharmaceutical companies.

Figure 3. UN Millennium Development Goal Targets

United Nations. (2013). *News on millennium development goals*. Retrieved from http://www.un.org/millenniumgoals/maternal.shtml

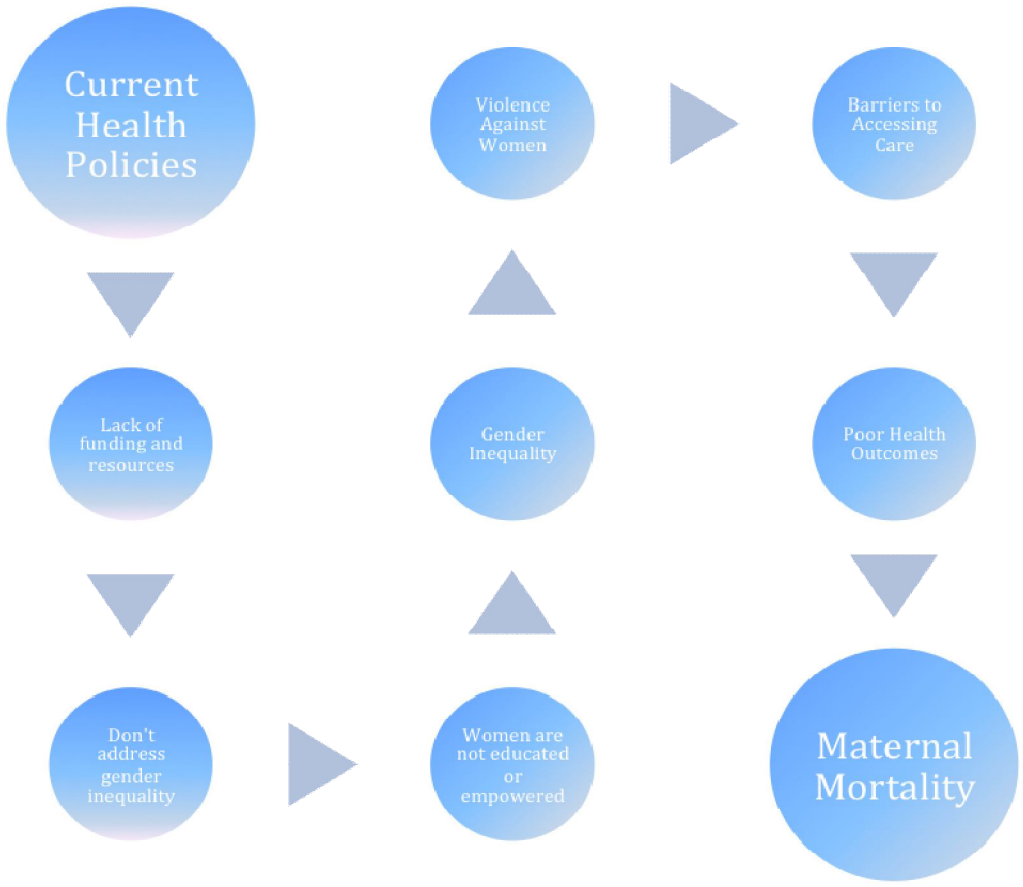


Figure 4. Pathway of Impact of Health Policies on Maternal Health