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Impediments to maternal mortality reduction in Africa: a systemic and socioeconomic overview

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Abstract: Maternal mortality is nowadays more of a problem of developing countries especially those in Sub-Saharan Africa (SSA). Maternal mortality has to large extent been eliminated in developed countries and has drastically been reduced in many other regions of the world. The maternal mortality rate (MMR) available in the literature from Africa is not a true reflection of the actual MMR as it is derived from institutional studies. The causes of maternal mortality in SSA are the same as those in developed countries. The means of addressing maternal mortality used in developed countries are the same as those used in developing countries, however, the success levels are not the same. There are various impediments to reducing maternal mortality with roots in cultural, social, economic and systemic factors prevalent in SSA. An in-depth study of these factors will give an insight as to why maternal mortality reduction has remained an enigma in SSA. Analyzing these factors will guide us to design and implement measures that will in the long run lead to significant maternal mortality reduction in SSA. The aim of this review is to identify impediments to maternal mortality reduction in SSA and highlight measures that can lead to maternal mortality reduction.

Keywords: impediments; maternal; mortality; overview; reduction; Sub-Saharan Africa.

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Introduction

Maternal mortality is defined as the annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy [1]. It is appropriate to start with a statement from the Lancet: “The ‘M’ which should have stood for maternal health instead often stands for maternal deaths, missed opportunities, muddled thinking, mistaken priorities and messy organization of health services” [2]. Harrison noted social, cultural and educational factors as important underlying factors in maternal mortality and morbidity; and the association of early marriages (6% of mothers under 15 accounting for 30% of maternal deaths) [3]. These two statements underline some of the challenges facing the efforts of maternal mortality reduction in Sub-Saharan Africa [SSA]. In 2017 the global maternal mortality rate (MMR) was 211/100,000 live births [4]. In the same year the MMR for North Africa was 112/100,000 and that of Sub-Saharan was 542/100,000 [4]. Even though Sub-Saharan Africa like other regions had significant reduction in MMR [38%], this is the same as the global reduction, however it is much lower than that of North Africa [46%], [4]. Sub-Saharan Africa alone accounted for two thirds of maternal deaths in the world in 2017 i.e. 196,000 [4]. It is obvious from this figures that the burden of maternal mortality is highest in this region. This vividly showed that Sub-Saharan Africa is significantly lagging in MMR reduction as even North Africa has a much lower MMR. What are then the reasons behind the unacceptable high MMR in Africa? (Figure 1)

The aim of these review is to identify impediments to maternal mortality reduction in SSA and highlight measures that can lead to maternal mortality reduction in the region.

Systemic and socioeconomic factors play a significant role in reducing MMR. Before delving in to this we need to

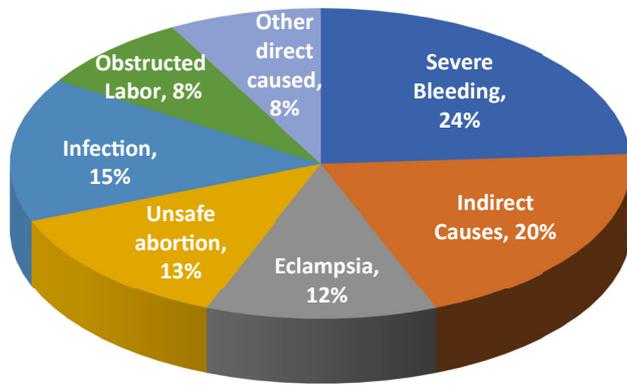


Figure 1: Causes of maternal mortality. USAID website (2006) adapted from “maternal health around the world” world health organization, Geneva, 1997 [5].

have a background as this will make it easier to understand all the underlined issues and challenges giving rise to the dismal MMR for Africa. Generally the causes of maternal mortality globally are similar even though the leading cause may differ depending on the region in question. In developing countries the leading causes of maternal mortality are hemorrhage, sepsis and hypertensive disorders of pregnancy and these are the same causes in the USA [6, 7]. Maternal mortality in the developed countries had at one point in the past been in three digits but today it is in two digits and in some countries even in one digit. In USA in 1900 the maternal mortality rate was 700/100,000 but one hundred years on, today it has now fallen to less than 10/100,000 [8]. In 1990 the MMR for Sri Lanka was 75/100,000 but drop to 30/100,000 in 2015 [9]. This shows that if a developing country is determined it can achieve success in reducing maternal mortality. That means there is no excuse for other developing countries to having high MMR.

What are conditions and circumstances leading to the persistently high MMR in Africa? The impediments can be analyzed on the basis of sociocultural, economic and demographic dynamics prevailing in Africa. Based on the Fragile States Index (FSI 2017), of the 15 most fragile states in the world nine were in Africa. These countries have the most unstable socioeconomic environment and poorly developed health infrastructure. Over the years many African countries have been engaged in wars and other forms of civil strife. DR Congo, Central African Republic, South Sudan, Somalia, Mali, Nigeria and Burkina Faso are still facing one forms of social instability or the other with attendant population displacement leading to famine and disease which are precursors to maternal and child

mortality. Poverty and illiteracy still bedevil African countries and the two form a vicious cycle. In 2009, 22 of 24 nations identified as having “Low Human Development Index were in Sub-Saharan Africa [10]. In Sub-Saharan Africa 41% of the population live on less than 1.9 USD. This implies that the ability to afford basic life necessities is very low including health care services which predisposes them to diseases and death. Education impacts positively on economic status and health seeking behaviour of individuals. Studies internationally have shown that more educated women are better able to understand the importance of prenatal care and are likely to know where to access such care [11, 12]. In 2015 the literacy rate in Sub-Saharan Africa was put at 64.0% [13]. This may have negative impact on health seeking behaviour of individuals and affect their economic position and accessibility and affordability of basic life needs including health care. Low position of women in society leads to catastrophic life threatening condition in them because they lack autonomy and cannot take decision on their own health at the critical hour of need. A study has shown that only $\frac{1}{4}$ (25%) of women of child bearing age said they were involved in making decisions about their own health care [14]. This can lead to deterioration of a disease condition and death. Because of illiteracy, superstitious beliefs are common in some African communities. Some diseases are attributed to evil spirits, some are believed to have no cure through the modern health care delivery system and should modern treatment be used to treat the disease patient would die or the disease will get worse. A good example is eclampsia. Many women afflicted by the disease would stay at home and die from the disease unreported. Coupled with this, in many parts of rural Africa women seek medical care from traditional healers in the first instance and thus resort to using herbal preparations and concoctions which will further complicate the disease. They seek modern medical care as a last resort and by then the patient condition has worsen to the extent that nothing can be done to salvage the situation. Corruption is an unfortunate phenomenon and though not peculiar to Africa it is more endemic in the continent. “The Global Corruption Barometer Africa” revealed that more than one out of four people (Approximately 130 million citizens) in 35 African countries surveyed, paid bribe to access essential public services, like health care [15]. This means that those who do not have the resources to offer bribe may die when in need of emergency care. If this situation persists it can aggravate the existing high maternal mortality in Africa.

Diseases as impediments to maternal mortality reduction in Africa

There are diseases which are more prevalent in Africa compared to other regions (Malaria, Anaemia and HIV). These are indirect causes of maternal mortality and can compound the high MMR in Africa. The Worldwide prevalence of HIV is 0.8% however the prevalence in Sub-Saharan Africa is many times more i.e. 4.9% [16]. Africa was home to 95% of malaria cases and 96% of malaria deaths in 2020 [17]. Malaria is a harbinger for anaemia in pregnancy with attendant negative impact on both the mother and the fetus which will lead to maternal and perinatal mortality. Another disease prevalent in Africa which contributes to the high maternal mortality in the continent is sickle cell disease (SCD), a debilitating disease which makes pregnancy a hazardous condition in those afflicted. About 25% of people in Nigeria carry the sickle cell gene, however only 2–3% suffer from SCD [18]. Maternal mortality from SCD is very high and the reported MMR is variable depending on the quality of care received. Considering the poor health infrastructure in many African countries, maternal mortality attributable to this disease is very high. MMR of 20% and 26% have been reported from Nigeria [19, 20]. This is the background giving an insight into the social, cultural and economic factors that are impediments to maternal mortality reduction in Africa.

Reproductive health factors as impediments to maternal mortality reduction

Reproductive health indices for Africa are poor and are inimical to maternal mortality reduction. Africa is the continent with the highest fertility rate and as of 2020 the fertility rate was as high as 4.325 births per woman [21]. The birth rate for Africa was 32.816 per 1,000 people which is higher than in most other regions of the world [21]. This means population growth far exceeds expendable resources available to cater for the basic needs of the population. Indirectly this implies there will be less resources allocated to provide quality health care services. This will impact negatively on disease outcome and maternal mortality. Antenatal care (ANC) services are meant to educate women on pregnancy and its complications and screen for conditions that may be hazardous to pregnant women. Quality ANC can potentially reduce pregnancy complications and in the long run reduce maternal mortality. Antenatal care utilization in Sub-Saharan Africa is 58.3% [22]. In some countries it is even lower. In Niger 32.9% and in Ethiopia 31.88%,

and incidentally these are countries with worst MMR. Home delivery is a panacea to delivery complications leading to maternal mortality. The weighted prevalence of home delivery was 23.79% [23], which means majority of women deliver at home and are exposed to labour complications and potentially maternal mortality. A study in 2003 found that 16.9% of women delivered on their own without assistance from anyone [14]. Pregnancy at extremes of reproductive age is associated with serious pregnancy complications that can lead to maternal mortality. This is a common phenomenon in SSA and it is not uncommon to see a girl of 15 years or less with a pregnancy or a woman at 40 years or more with a pregnancy. The prevalence of adolescent pregnancy in Africa is 18.8%, of which, 19.3% occurred in Sub-Saharan Africa and 21.5% in Eastern Africa [24]. Existing evidence indicated that 15% of pregnant women develop some form of obstetric complications during pregnancy and childbirth which is likely to result in maternal death if they fail to receive rapid obstetric interventions [25]. In a study conducted in nine Sub-Saharan African countries, researchers showed that only 28% of women who experience obstetric complications obtained emergency obstetric care [26]. In Ethiopia this is only 6% [27]. Contraception is a means of reducing parity, family size or spacing of births. Indirectly this will potentially improve the health of women and reduce the risk of pregnancy and thus maternal mortality. Approximately 41% of women of childbearing age face barriers to seeking contraception, particularly in rural areas [28]. The rates of modern contraception use among youth are especially troubling, as 63% of unmarried sexually active women between 15 and 19 years and 43% of unmarried sexually active women between the ages of 20 and 24 years are not using any type of birth control at all [28]. Looking at all these figures it will be clear that reproductive health indices in Africa do not favor maternal mortality reduction.

Poor health infrastructure as impediment to maternal mortality reduction in Africa

Many SSA countries lack well-articulated and implementable maternal child health care policies. Where such exists implementation is flawed. It is not uncommon to see governments implementing programs and at the same time non-governmental organizations implementing similar programs. At the end of the day because of lack coordination the program will be ineffective in reducing maternal mortality. Health infrastructure comprises of the physical structures, the equipment, the personnel and any other issues that will facilitate effective and efficient service

provision. It is not only the number of primary health care facilities that is crucial to reducing MMR, but functionality is also as well important. In Nigeria of the 30,000 Primary Health Care (PHC) facilities only 20% are functional across the country [29]. Presently, most of the PHCs in Nigeria lack the capacity to provide essential health care services, in addition to having issues such as poor staffing, inadequate equipment, poor distribution of health workers, poor quality of health care services, poor condition of infrastructure, and lack of essential drug supply [30]. The Nigerian situation likely reflects similar conditions in other SSA countries. There are currently 985 people for every nurse-midwife and 3,324 people for every medical doctor in Africa [31]. Sub-Saharan Africa has the lowest nurse/midwife and doctor ratios, which means the region suffers from scarcity of trained manpower to provide safe maternal health services. The implication of this is that, lots of pregnant women do not have the benefits of good quality prenatal and delivery care services and thus are at risk of maternal death. A study had shown that only 4.2% of public health facilities sampled met internationally accepted standards for essential obstetric care [14]. The implication is that hospital delivery does not guarantee maternal safety in pregnancy and during delivery.

Lack of adequate facilities and trained manpower push women to seek care from untrained or poorly trained providers and increase their risk of developing complications and death. The supply of essential drugs (magnesium sulphate, hydralazine, antibiotics, misoprostol etc.) is inadequate and erratic and these drugs are essential in management of pregnancy and delivery to prevent maternal mortality and morbidity. When such drugs and consumables are not available 24/7 in our facilities the risk of death is heightened.

Emerging impediments to reducing maternal mortality

Currently we are witnessing emerging threat to maternal mortality reduction in many communities in SSA. This is as a result of many factors some of which were mentioned earlier. Paucity in adequate number of well-equipped health facilities, staffed with well trained and motivated personnel, drives people into desperation when faced with life threatening emergencies. People in such circumstances can seek care from wherever it is available not minding the quality. We are beginning to witness an emerging phenomenon which has the potential of aggravating the

situations that can lead to worsening maternal mortality. This phenomenon includes the use of unorthodox practices in managing pregnant women and women in labour. Examples of such practices include use of fundal pressure to aid delivery in dystotic labour, pulling out the breech in case of difficult breech deliveries, use of traditional treatments for eclampsia, conduct of deliveries in prayer houses which are not equipped to manage obstetrical conditions and large proportions of home deliveries. In addition, we are also seeing increasing mortality attributed to injudicious use of high alert medications in pregnancy like oxytocics e.g. Misoprostol and Oxytocin, antihypertensive drugs such as Hydralazine, and anticonvulsants such as magnesium sulphate

These drugs have low margin of safety and when used inappropriately could cause serious complications and in some instances death of patients. It is obvious from the foregoing discussion that there are multitudes and multifaceted impediments to maternal mortality reduction in SSA.

The way forward equally requires a well-designed multipronged approach. General measures include improving the economic conditions of the populace, which in the long run will better their purchasing power and enable them to afford health care services. Education is an important tool in improving cultural, social, and economic situation of the people, which overall improves the lives and wellbeing of communities. Public enlightenment on health, on critical maternal health issues through radio, television and various social media platforms are crucial. The need for a robust and far reaching maternal and child health policy capable of effectively coordinating and implementing all programs targeting maternal and child health issues is needed. Comprehensive and effective oversight functions must be implemented to ensure delivery of quality maternal child services. Ensuring that facilities are evenly spread, equipped, provided with adequately trained and motivated personnel and supplied with essential medicines required in the management of various emergency obstetric conditions. Efficient referral services must be established between various levels of maternal health services (primary, secondary and tertiary) to ensure continuity of care. Sustained vigilance should be in place to address emerging impediments to maternal mortality reduction and continue designing and implementing new strategies to reduce maternal mortality. It has been established that maternal mortality is preventable and all measures employed by developed and developing countries should be utilized to achieve similar results.

Conclusions

Maternal mortality is now largely a problem of developing countries. Lots of factors impede significant reduction of maternal mortality which have their roots in the cultural, social, and economic circumstances of countries in SSA. To eliminate all the impediments, we have to adopt well-designed strategies and implement them with insight and vigour with ultimate goal of addressing the problem that refuse to go in SSA.

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