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Reducing Maternal Mortality in Egypt: A Ripple Effect of the Safe Motherhood Initiative

During the 20th century, many advancements in primary healthcare were made that greatly improved life expectancy and the overall health of people throughout the world. As the number of individuals dying due to communicable diseases began to decrease, global maternal mortality rates remained high. In an effort to address the critical problem of maternal mortality, world leaders met in 1987 to create a plan known as the Safe Motherhood Initiative.[1] This project was designed to promote maternal health across the world and to better the quality of prenatal care that women were receiving in order to lower maternal mortality rates. After bringing the problem of maternal mortality to the forefront, Egypt decided to conduct their own National Maternal Mortality Survey to assess the extent of the issue of maternal mortality throughout the nation.[2] This study revealed high rates of maternal mortality and poor prenatal care, as well as a disparity between the quality of care being received in Upper Egypt as compared to Lower Egypt. These discoveries prompted health policy leaders to create effective plans for reform in order to lower the national maternal mortality rates and improve healthcare for pregnant women in Egypt. These projects became known as the Mother Care Egypt Project (1996-1998) and the Healthy Mother/Healthy Child Project (1998-2003) and dramatically improved prenatal care, delivery, and postpartum services for women in Egypt.[3] Both of these reform programs targeted Upper Egypt and as a result, these policies were extremely effective in

[1] Rosenfield and Min, “A History of International Cooperation in Maternal and Child Health,” 4.
[2] Gipson, Reginald et al, “The Trend of Maternal Mortality in Egypt from 1992–2000,” 71.
[3] Koblinsky and Campbell, “Reducing Maternal Mortality,” 99.

decreasing the rates of maternal mortality in this region; however, they were less successful in Lower Egypt, which did not improve to the same degree. By examining the extent of and the factors that contribute to the problem of maternal mortality and how it varies between Upper and Lower Egypt, I hope to explain why such a disparity in the quality of maternal care exists across Egypt and how the Safe Motherhood Initiative prompted Egypt's National Maternal Mortality Survey, and subsequently, the reform programs that helped to lower the national maternal mortality rates.

One of Egypt's most serious problems is the poverty of its populations, and more specifically, the economic disparity that exists between various regions of Egypt. Although nearly one-third of the country's population lives below the poverty line, it is estimated that 41 percent of those people live in Upper Egypt.[4] One possible explanation for the high poverty levels in Upper Egypt is the legacy of cotton cultivation which relied heavily on child labor back in the late 19th century in this region.[5] Entire families worked to harvest cotton and sugar and neither literacy nor economic diversity were prioritized. As a result, these regions have remained impoverished. Just as in other places throughout the world, poverty in Egypt is linked to lesser opportunities for employment, lower levels of education and malnutrition, and poor access to healthcare. Unlike many other developing nations, Egypt has a sizable health infrastructure. Size, however, is not an indicator of effectiveness. Egypt's healthcare system is comprised of both private and public sectors. The primary care clinics run by the Ministry of Health provide services at an affordable rate, but are known to deliver low quality care.[6] Often times, this means that if people can afford to seek out private healthcare options, they do so in order to receive

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[4] Campbell, Oona et. al, "National Maternal Mortality Ratio in Egypt Halved Between 1992-93 and 2000," 463.
[5] Rutherford, Sowers, "Modern Egypt: What Everyone Needs to Know. Modern Egypt," 81-82.
[6] Rutherford, Sowers, "Modern Egypt: What Everyone Needs to Know. Modern Egypt," 97.

proper care, creating a system in which those living in poverty are not able to obtain quality healthcare. In 1990, only 27 percent of births occurred in a health facility and just 40 percent of births were attended by skilled attendants such as an obstetrician, midwife, or daya (a traditional birth attendant).[7] This means that many pregnant women were not getting adequate medical care or assistance throughout the birthing process. However, proximity to care was most likely not a major contributor considering a 1989 survey suggests that 99 percent of women lived within 30 kilometers of a government hospital.[8] Many of the women may have chosen not to give birth in the presence of a skilled attendant due to lack of affordability or due to the low quality care that these providers have been known to provide. Because of the large health infrastructure already present in Egypt during this time, a greater focus on the quality of maternal care, as well as the accessibility of care for people of all economic backgrounds was paramount for lowering the nation's maternal mortality rate.

In 1987, the World Bank, World Health Organization, and the United Nations Fund for Population Activities held a conference in Nairobi, Kenya to discuss the global problem of maternal mortality. At this time in history, about 500,000 maternal deaths were occurring each year across the world.[9] The Safe Motherhood Initiative was created and proposed four strategies that could be used to reduce maternal mortality rates by 50 percent worldwide by the year 2000.[10] The proposal involved better quality primary health care and family planning, good prenatal care and nutrition, an increase of trained professionals at all births, and greater access to obstetric care for high risk pregnant women.[11] Even prior to this initiative, Egypt had conducted

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[7] Campbell, Oona et. al, "National Maternal Mortality Ratio in Egypt Halved Between 1992-93 and 2000," 466.
[8] Koblinsky and Campbell, "Reducing Maternal Mortality," 93-111.
[9] Rosenfield and Maine, "Maternal Mortality-A Neglected Tragedy," 83.
[10] Rosenfield and Min, "A History of International Cooperation in Maternal and Child Health," 10.
[11] Rosenfield and Min, "A History of International Cooperation in Maternal and Child Health," 10-12.

several studies to assess the extent of pregnancy-related deaths, but only at the regional level. After the Safe Motherhood Initiative was created, Egypt's Ministry of Health and Population conducted their first national study in 1993. This study confirmed that Egypt was suffering from high rates of maternal mortality, especially in Upper Egypt.

Because poverty is known to be linked to healthcare, education, and overall quality of life, it is not surprising that the maternal mortality rates in Egypt were found to be the highest in regions of Egypt with the greater levels of poverty. The National Maternal Mortality Survey revealed that Upper Egypt suffered from 217 maternal deaths per 100,000 live births, whereas Lower Egypt had 132 maternal deaths per 100,000 live births.[12] On average, the national maternal mortality rate in 1993 was 174 deaths per 100,000 live births. In comparison, developed regions of the world in 1990 were estimated to have maternal mortality rates of about 26 deaths per 100,000 live births.[13] On a global scale, the leading causes of maternal mortality during the 1980s were infection, hemorrhages, and birth complications. In an article written in 1985 for *The Lancet* regarding the problem of maternal mortality by Dr. Rosenfield and Dr. Maine, they made pointed remarks regarding the ineffectiveness of current strategies in place to combat maternal mortality saying,

> *"At international meetings of obstetricians, where developing countries are well represented it is depressing to find that the emphasis is almost entirely on the high- technology subspecialties and that sessions on the social issues are usually attended by a small minority of physicians who are already knowledgeable about these problems."*[14]

Egypt's survey of maternal mortality was a clear effort to understand what specific social and economic issues were causing deaths so that they could create an effective and explicit action plan to lower the rate of maternal mortality throughout the nation. The study concluded that in

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[12] Gipson, Reginald et al, "The Trend of Maternal Mortality in Egypt from 1992–2000," 71.
[13] World Health Organization, "Trends in Maternal Mortality: 1990 to 2013," 25.
[14] Rosenfield and Maine. "Maternal Mortality-A Neglected Tragedy," 85.

Egypt, 47 percent of the maternal deaths in 1993 could be attributed to "substandard care by health providers" and a delay in seeking medical care was responsible for 30 percent of the deaths.[15] In 1992, researchers also found that there were no protocols in place to deal with obstetric emergencies.[16] With the information they gained from conducting this study, recommendations were made by Egypt's Ministry of Health and Population (MOHP) in order to help the nation reach its goal of reducing the maternal mortality rate by 50 percent by the year 2010.[17] Many of these suggestions focused on more comprehensive training for medical professionals in hopes of reducing the number of deaths related to low quality care by health providers. Furthermore, since the survey revealed that Upper Egypt had higher rates of maternal mortality than other parts of the country, many of the reforms and programs were created to target this region.

One of these policies, the Mother Care Egypt Project (MCEP), was put into place from 1996-98 in Upper Egypt. This program, funded by the United States Agency for International Development (USAID), launched a media campaign across the country to increase awareness about potential pregnancy complications and also had health educators conduct home visits in order to educate women on birth preparedness.[18] In addition, it worked with the MOHP to update protocols regarding normal pregnancy and delivery care.[19] Also funded by the USAID in 1998, the Healthy Mother/Healthy Child project (HMHC) which targeted Upper Egypt, was created in response to the National Maternal Mortality Survey and was effective in reducing the national maternal mortality rates. The HMHC program did not focus on educating the general public, but

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[15] Campbell, Oona et. Al, "National Maternal Mortality Ratio in Egypt Halved Between 1992-93 and 2000," 464.
[16] Koblinsky and Campbell, "Reducing Maternal Mortality," 100.
[17] Gipson, Reginald et al, "The Trend of Maternal Mortality in Egypt from 1992–2000," 72.
[18] Gipson, Reginald et al, "The Trend of Maternal Mortality in Egypt from 1992–2000," 73.
[19] Koblinsky and Campbell, "Reducing Maternal Mortality," 100.

rather focused on educating medical professionals through updated clinical practices and practitioner training. In conjunction with Egypt's MOHP in Upper Egypt, the program created protocols for obstetric care in the case of pregnancy complications and passed a decree requiring the presence of specialists in hospitals at all times. Besides addressing quality of care, the HMHC program also increased capacity in hospitals across Upper Egypt through renovations and additional equipment.[20]

Through the reform of the systems designed to educate both the patients and practitioners, the HMHC project and MCEP were successful in lowering the national maternal mortality rate in Egypt. Upon completing a follow-up study in 2000 to see what progress had been made, the maternal mortality ratio (MMR), or the number of maternal deaths per 100,000 live births had decreased by 52 percent nationwide.[21] The largest cause of maternal deaths was still "substandard care by obstetricians," which was attributed to 47% of the maternal deaths in 2000; however, it was also the factor most improved upon, as it was responsible for 132 fewer deaths in 2000 than in 1993.[22] This drop in deaths as a result of insufficient care can be attributed to the changes made as a result of the HMHC program that focused on updating training protocols and increasing competency for obstetricians and other medical professionals. Maternal deaths resulting from a delay in seeking care also decreased from 42 percent in 1993 to 30 percent in 2000.[23] More women were seeking care during pregnancy upon recognition of a problem due to an increase in education and awareness amongst the community thanks to the MCEP that focused on educating women in their homes and raising awareness about the problem of maternal mortality.

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[20] Gipson, Reginald et al, "The Trend of Maternal Mortality in Egypt from 1992–2000," 73.
[21] Campbell, Oona et. Al, "National Maternal Mortality Ratio in Egypt Halved Between 1992-93 and 2000," 462.
[22] Campbell, Oona et. Al, "National Maternal Mortality Ratio in Egypt Halved Between 1992-93 and 2000," 464.
[23] Campbell, Oona et. Al, "National Maternal Mortality Ratio in Egypt Halved Between 1992-93 and 2000," 464.

Although the maternal mortality rate dropped in all regions of Egypt, Upper Egypt had far greater success in lowering their rate of maternal mortality as compared to the metropolitan areas and Lower Egypt. Both the HMHC program and the MCEP were created to specifically target Upper Egypt, since the region was suffering far worse from maternal mortality in comparison to the rest of the nation. However, this fixation on Upper Egypt actually resulted in less improvement in other parts of the country. In fact, the MMR in Lower Egypt, the more urban and affluent area, was higher than that of Upper Egypt in 2000.[24] The intention to lower the maternal mortality rate in the part of the country that was suffering from maternal deaths at the highest rate, was responsible for this reversal in the MMR between Upper and Lower Egypt.

Many societal factors that affect maternal health such as the role of women in Egypt and religious beliefs, were not investigated or changed by these reforms. Religion is an important aspect of Egyptian culture, a nation made up of mostly Muslims and Christians. A significant portion of women in Egypt get married while they are still teenagers and begin having children within their first year of marriage. Decisions about women's bodies during pregnancy in Egypt have historically been made by the husband, but are sometimes made by the wife as well.[25] Despite traditionally having domestic roles and little to no education, between 1992 and 2000 the number of Egyptian women receiving an education increased from 52 percent to 57 percent.[26] Contraceptive use also increased by 19 percent between 1992 and 2000.[27] Education is usually accompanied by an increase in socioeconomic status and autonomy; so, this increase is opportunity for women may be responsible for lower rates of maternal mortality for many reasons ranging from the ability to seek care when they deem necessary, fewer unwanted

[24] Campbell, Oona et. al, "National Maternal Mortality Ratio in Egypt Halved Between 1992-93 and 2000," 464.
[25] Rutherford, Sowers, "Modern Egypt: What Everyone Needs to Know. Modern Egypt," 83.
[26] Gipson, Reginald et al, "The Trend of Maternal Mortality in Egypt from 1992–2000," 78.
[27] Gipson, Reginald et al, "The Trend of Maternal Mortality in Egypt from 1992–2000," 78.

pregnancies and subsequently, fewer illegal and dangerous abortions, and a greater understanding about pregnancy prevention and family planning. These contributing factors, although not intentionally improved upon by the HMHC program and the MCEP, helped to lower the maternal mortality rate across Egypt.

In a country with such great economic disparity, reducing maternal deaths was no easy feat. Different regions of Egypt had different factors contributing to their rates of maternal mortality and there was no single plan for reform that could tackle all of the causes for poor maternal, prenatal, and antenatal care. However, making the advent of a viable solution a priority through a national survey was key to kickstarting effective reform. The convention held in Nairobi, Kenya in 1987 that became the birthplace of the Safe Motherhood Initiative helped to call attention to the problem of maternal mortality across the world and encouraged international organizations, as well as national governments to start tackling the issue. The National Maternal Mortality Study was conducted as a result of this call to action and helped Egypt's governmental organizations to understand what could be causing the high maternal mortality rates throughout the country. The subsequent reform programs enacted in Upper Egypt known as the Healthy Mother/Healthy Child program and the Mother Care Egypt Project utilized the data from the study to focus in on the training and education that needed to take place in order to lower the frequency of maternal deaths. Upper Egypt improved its maternal care to a much greater extent than the other regions of the country, although the MMR decreased in all areas. This difference can be attributed to the small scope of the reform programs. Had the programs been nationwide, its possible that Egypt could have seen an even greater reduction in their maternal mortality rate, with lower MMRs in all regions of the nation. The major contributor to lowering the number of maternal deaths in Egypt is both the MCEP and the HMHC program, but an increase in

education and changes in societal norms for women also contributed to the decrease in maternal mortality rates. By taking responsibility for the need to improve the quality of maternal health care and through research conducted prior to implementing actual reform, Egypt was able to successfully and efficiently lower their national maternal mortality rate.

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