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Generations of War: Conflict as a Social Determinant of Health in the Sudans

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Generations of War:
Conflict as a Social Determinant of Health in the Sudans

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Abstract

Generations of War: Conflict as a Social Determinant of Health in the Sudans
By Lara S. Martin

Once the largest country on the continent of Africa, Sudan now exists in two new forms. Sudan and South Sudan, two countries linked geographically, culturally, politically, and historically, have an adversarial, yet familial relationship. The effects of tribal violence in South Sudan beginning in 2013, the continuous insecurity along the border between the two countries, and failure of the 2005 Comprehensive Peace Agreement (CPA) permeate all aspects of Sudanese daily life. However, the British/Anglo-Egyptian control following the Mahdi defeat is one of the most important periods in Sudanese history as it laid the foundation in terms of power systems, infrastructure development, and resource allocation that is still present in modern day Sudan. The modern history of Sudan is built upon the framework established under the British colonial regime, but exacerbated by varying emerging political leaders in post-Independence Sudan and use of religious/cultural narratives for political gain. Through generations of replication of these systems now administered/managed by the NCP in the North and SPLA in the South, social structures and identities (ethnic, tribal, and religious) also propagate cyclical and protracted conflict.

Just as poverty, the place of your birth, access to education, and politics can be determinants of both community and individual health; this paper thesis is that conflict is also a social determinant of health to consider. By framing the public health outcomes affected by war within the theoretical foundation of the social determinants of health, we are able to simultaneously explore drivers of conflict and their immediate and long-term impact on a few specific health indicators (seeing trends over time in some cases). This paper explores an expansion of the traditional understanding of the social determinants of health from only considering SES towards utilizing conflict as a social determinant of health. These two new countries are at a critical time in their new infancy and it is now that new theories such as conflict as a social determinant of health must be utilized. More than 4 million people are displaced in Sudan and South Sudan, and if the context doesn't improve, generations of children will only know war.

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I would particularly like to send special thanks to all of my colleagues and friends in Sudan and South Sudan. You opened your homes and your hearts to me. You allowed me the space to learn and to grow, to know who the Sudanese are regardless of where political borders are drawn. In times of great difficulty, we were in the struggle together and faced challenges hand in hand. I will forever hold you in my heart and look forward to the day when we are together again.

Mushtageen habibis…

“You are shaken, death can come at anytime” - Southern Sudanese Survivor of the 1991 Borr Massacre

Table of Contents

Acknowledgements 6

Generations of War 10

A Colonial Framework for Conflict 11
Colonial Rule 11
Divide and Conquer 13
Modern Sudan and South Sudan, Post Independence 17

Social Determinants of Health 24
Conflict as a Social Determinant of Health 26
Conflict as a Driver of Health Status 28
Direct and Indirect Indices 29

Health in the Sudans: A Consequence of War 32
Health Data, Sudan and South Sudan 32
Table 1.1 Health Household Surveys 34
Table 1.2 Malnutrition in Sudan: Conflict Versus Non-Conflict Areas 36
Table 1.3 Malnutrition (Severe) in South Sudan: Conflict Versus Non-Conflict Areas (SSHHS, 2010) 37
UNICEF Sudan S3M Data (UNICEF, 2014) 38

Economics, Debt, and the Health Sector- 41
Table 1.4 Increasing Food Prices, Sudan (WFP, 2014) 43

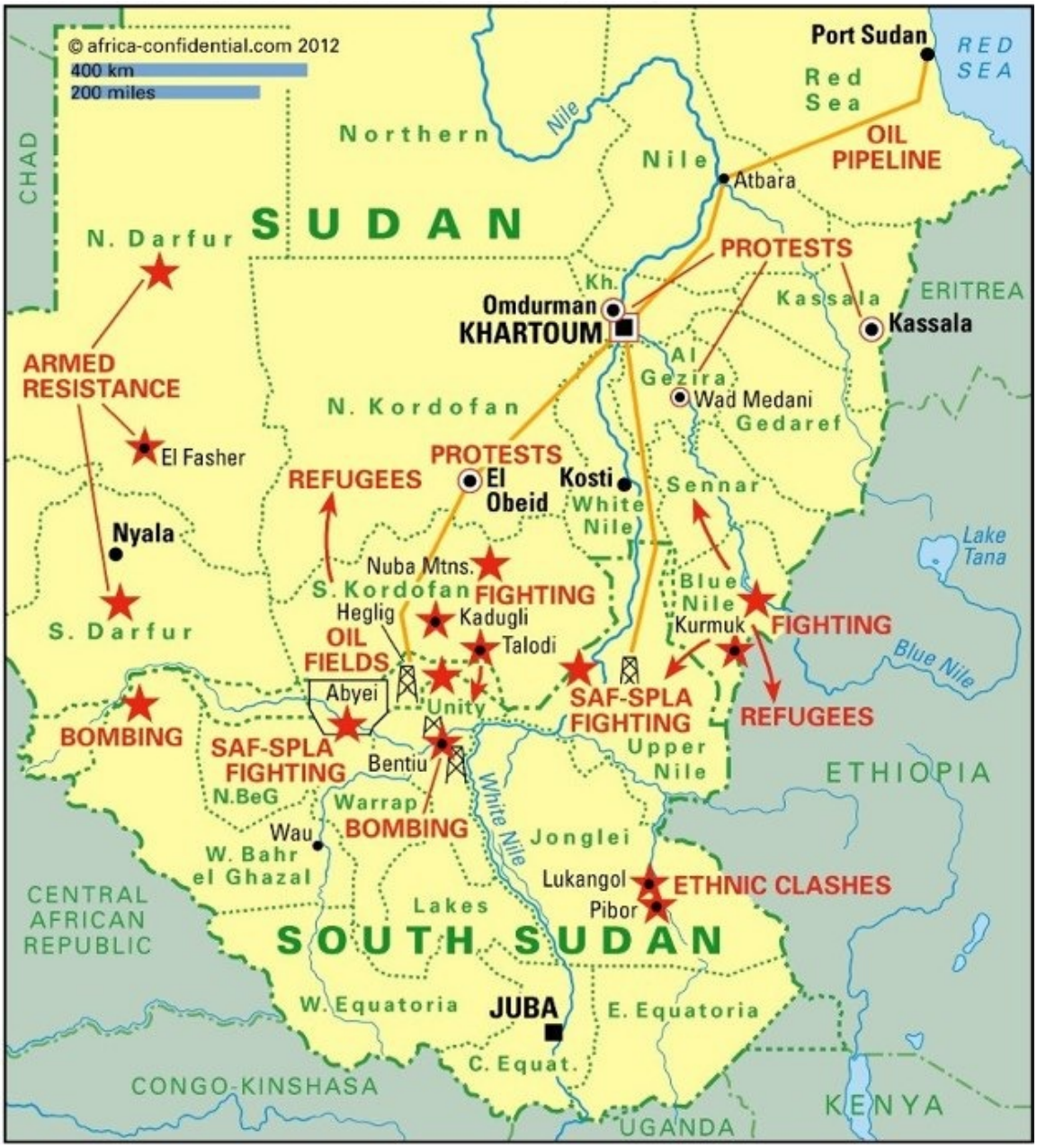
Discussion and Limitations 44

Conclusion 48

Resources 55

Annex I 59

Annex II 61



Map: Areas of conflict in Sudan and South Sudan, documented in 2012, Juba to be included in 2015

Generations of War

Once the largest country on the continent of Africa, Sudan now exists in two new forms. Sudan and South Sudan, two countries linked geographically, culturally, politically, and historically, have an adversarial, yet familial relationship. After more than 25 years of civil war, more than 10 years of conflict in Darfur, and renewed violence in South Sudan post-independence, war and conflict are the background to which all Northern and Southern Sudanese live their lives. Generations of Northern Sudanese and Southern Sudanese children only know insecurity, conflict, and war. As these two new nations learn to navigate new political and cultural realities post separation, a shared history of conflict from the colonial period through today ties these countries together.

This paper's thesis is that conflict acts as a macro-level force that continues its influence on the health and wellbeing of citizens of both countries today. Conflict as a social determinant of health is explored through the history of Sudan and South Sudan, the colonial roots for current conflicts, the theoretical foundations of the social determinants of health, and the current health status in both countries. Via a discussion of how conflict acts as a thread, woven throughout history, communities, and into replication of structures/systems of power, the devastating effects of conflict as a driver of deteriorating health and nutrition status for the Sudanese will be established.

A Colonial Framework for Conflict

The effects of tribal violence in South Sudan beginning in 2013, the continuous insecurity along the border between the two countries, and failure of the 2005 Comprehensive Peace Agreement (CPA) permeate all aspects of Sudanese daily life. The Republic of the Sudan and the Republic of South Sudan seem at once both intricately linked and divergent, brothers that argue and bicker. However, within this context it is important to examine the Colonial history of Sudan that established and replicated systems of inequality found in both countries today. The cultural, religious, and political lines of this colonial framework are where the modern replication of historical roots of conflict across the Sudans is found.

Colonial Rule

For the purposes of this thesis, colonialism is defined as the establishment of rule by one country over another country to exploit its resources for the gain of those in power. According to post-colonial theorists such as Frantz Fanon, systems were created to both subjugate the people being exploited while attempting to impose aspects of the socio-cultural heritage of the colonial power on those same subjugated people (i.e. becoming "good subjects"). The colonizer considers their subjects inhuman and through the colonial process subjects must in turn internalize inferiority via forced conformity (Fanon, 1994). Colonial rule in Sudan was a combination of influence from Egyptian, Turkish, and British Empires. According to a *Short History of Sudan* (2007), looking for natural resources they could utilize, the Turkish/Ottoman Empire attempted to unite Northern Sudan in 1820 and fought the Egyptian and British Empires for control of the area for most of the 19th century

(Fadlalla, 2007). To undermine Turkish control and attempt to claim the Sudan region as a whole, the British Empire claimed the *Sudd*, the ancient name for the area known today as South Sudan. Along with Arab traders who remained independent from (and adversarial to) any formal allegiance with the Ottoman and British Empires, the presence of British troops to the South destabilized the Turkish hold on the north. By 1882, with various insurrections across the Sudan, Ottoman control in the area was unstable and weakened. This made way for the Anglo-Egyptian Empire to establish rule over Northern Sudan. However, many of the feudal tribes in the South remained independent, difficult to control, and to the Arab traders in the North the British systems were a threat (Doran, 2011.) The Fur tribe, an independent self-ruling protectorate termed Dar-Fur, began insurrections when the Anglo-Egyptian Empire assumed colonial control over Sudan in 1870 and continued in waves through much of the 1870's and the 1880's. Instability expanded into in areas near what is modern-day Ethiopia and Bar-al-Ghazal in now North-Western South Sudan (Copnall, 2014.) Due to abolitionist and conversion movements that utilized religious narratives as tools for expansion of their philosophies, tensions were exacerbated between Muslim Sudanese and Christian foreigners along the 10th parallel border (Grizwold, 2010.) This set the stage for the emergence of Muhammed Ahmad, the *"Mahdi*" or guided one.

The Mahdi capitalized on messianic narratives among most of the popular regional religions (fundamentalist Islam and Animism) and established himself as the leader of the movement to remove *Khawajas* or foreigners out of Sudan, with a Qurranic

religious mandate to do so. In January of 1885, after years of building a movement of *Ansars* (followers), the Mahdi sieged Khartoum killing approximately 50,000 people including the famed General Gordon in the process of claiming control of the city (Fadlalla, 2007.) This ushered in the rule of the Mahdi in which Sharia Law, the Quran, and Arab identity are crucial both to the narrative of "the guided one" and his claim to power. Even though this lasted until only 1898 when the British-Egyptian empire reclaimed control of Sudan, it established the racial and religious foundations for a national identity that would be harnessed by future Islamist regimes (Copnall, 2014.) Arguably, the British/Anglo-Egyptian control following the Mahdi defeat is one of the most important periods in Sudanese history as it laid the foundation in terms of power systems, infrastructure development, and resource allocation that is still present in modern day Sudan.

Divide and Conquer

Religious rhetoric and practice has always been a part of national identity in Sudan and South Sudan (Copnall, 2014.) During the Middle Ages, Christianity expanded across the areas of the Nubian/Kush empire centered around the Nuba Mountains, while Islam was introduced to semi-nomadic groups via Muslim traders in the 9th and 10th centuries AD (Griswold, 2010). Nomads and traders traveled along the traditional routes between what is now known as South Kordofan, Abyei, and Southern Darfur, taking Islam with them. Southern Sudanese under British rule from approximately 1922 were not allowed to travel any further north than the 8th parallel. Below the 10th parallel, Christianity flourished in Southern Sudan via British missionaries. This swampy area between the latitudinal lines that cross the

natural topographical changes between the Sahel and the Sub-tropical climate of the South approximates today's current political border. It also signifies the changing religious and cultural borders between North and South, established under British rule. "Divide and conquer" was not only a political tool, but also a framework from which identities were established. John Lagu, former rebel leader for the Sudanese Peoples Liberation Army (SPLA) is quoted as saying "The British saw the South as a cultural vacuum that should be filled with Christianity" (Doran, 2011).

The British Empire in Sudan ruled the South and North separately, as previously established in 1820. As the British Empire assumed control over the Sudd, British Christian Missionaries with approval from the British government entered into South Sudan (south of the10th parallel) to promote the conversion of the Arab/Islamic tribes in the North through the pressure of the expansion of Christianity from the South. Another influence to the establishment of separate religious/ethnic narratives for North and South was a British abolitionist movement that advocated for the end of the extensive slave networks, particularly the enslavement of the Southern tribes by the Northern Arab tribes (Griswold, 2010). The view of Southern Sudanese as vulnerable, dark skinned persons in need of conversion was the foundation of colonial policies built upon assumptions of racial and religious superiority in Sudan. This resulted in preferential treatment given to the Arab educated Northerners and creation of what could be considered second-class status based on race and religion for Southerners (Copnall, 2014.)

Infrastructure, development, education, and allocation of resources all followed along these racially understood ideologies.

In the South, power structures and infrastructure development were relatively non-existent even in Juba (the largest town and now capitol). While in the North, Khartoum was established as the seat of authority transferring status from the nearby city of Omdurman, which was the Mahdist capital (Copnall, 2014). Under English development plans, Khartoum enjoyed a boom of infrastructure development where roads, palatial villas, and the architecture of the city were established. The city center is in fact still laid out in the shape of the "Union Jack" (which makes for an awful afternoon commute,) an indelibly lasting mark of the British Empire in Sudan. With the centralization of authority, power, and resources in Khartoum the peripheries of Sudan were never fully developed (Fadlalla, 2007). Discrimination against populations outside of Khartoum was solidified via formal systems of unequal wealth distribution. For example, Khartoum State benefits from extensive economic and urban planning while areas like Red Sea State, Greater Darfur, and the entire Southern region remained historically underdeveloped (Copnall, 2014.) This systematic discrimination, which can be seen in the simplest of assets such as the extent of paved roads, underpins the points of conflict between Sudan and South Sudan.

Motivated in part by a racist belief that the Blacker peoples of South Sudan were devoid of culture and religion, missionaries traveled across the South converting

Southern Sudanese to the Christian religion in large numbers. This version of Christianity became interpreted, intermixed with local traditions, and is the most popular faith in the country today. Many of the oldest church structures in the East Africa region exist in the Archdiocese of El Obeid in Southern Sudan and this stands as proof to the entrenchment of Christianity in the Southern identity. However, while Christianity was expanding across the South, Islam was becoming centralized in the North, using a particular strict interpretation of Islam. During the Mahdist Islamist revolution, religion became a political tool, utilizing Sharia law to establish legal frameworks based on Qurranic interpretations. This legal system was applied equally to Muslims, as well as non-Muslims across areas controlled by the Mahdi. When the revolution ended and British control resumed through the Anglo-Egyptian Colonial regime this religious and cultural narrative was reinforced to the benefit of the Empire through political systems that consolidated power with the Arab north (Doran, 2011).

This system is typical of the English 'divide and conquer' strategy where one local tribal, racial, religious, or ethnic group is "preferred" over another in order to keep local populations fighting amongst themselves and not against the colonial power (Burr, 2003). These systems were quite effective until the 1940's when countries ruled by colonial powers began to fight for independence (e.g. India, Ghana, etc.). In order to prevent complete independence and shore up their power the British Empire established a Unified Sudanese government in 1947, beginning a phase of home rule. However, instead of creating new systems of governance and shared

power in this government structure, Southerners were not allowed to participate in any of these processes nor were they allowed to hold any seat of office in the administration. The British Empire, with complicity from the Arab North, legalized racism and created a system in which black Southern Sudanese, dark skinned Fur tribes, and other non-Arab groups were excluded. With mismanagement and the tide turning against Colonial regimes, nationalist movements for independence gained strength and by 1956 an independent self governed "Republic of Sudan" was established (Burr, 2003). However, systems are often replicated no matter how unjust or cruel they may seem, when that is what a people know. Sudan is no different and post-independence Sudan was plagued by systems that preferred the capital only, slow economic development that resulted in high levels of poverty outside of the capital, oscillating control between civilian regimes and those of the military, and race-based policies that resulted in two civil wars, multiple coups, and the deaths of more than two million Sudanese.

Modern Sudan and South Sudan, Post Independence

The modern history of Sudan is built upon the framework established under the British colonial regime, but exacerbated by varying emerging political leaders in post-Independence Sudan and use of religious/cultural narratives for political gain. In one of the few recent explorations of history that led to the separation of Southern Sudan, the Al Jazeera documentary *Sudan: History of a Broken Land* provides one of the only comprehensive reviews of this modern era (Doran, 2011). Beginning from Independence in 1954, the British Empire left a very strong and organized government system in place. However, it was a system that clearly gave

preferential treatment to the Northerners. For example, out of 800 civil servant positions in the newly independent government only 4 were held by Sudanese of Southern origin (Doran, 2011). Systems of inequality established by the British remained in place, effectively shutting the South out of the halls of power. In 1955, with tensions rising and dissatisfaction growing, a group of Southern soldiers in the military refused commands given by an Arab officer and began an uprising that would give seed to 50 years of civil war. In the immediate aftermath of this violence, the civilian leader Abdullah Khalil faced a vote of no confidence in the parliament and leadership was handed over to the military General Ibrahim Abboud in 1958. This signaled the beginning of the political pendulum that is still in play today in Sudan, oscillating from civilian rule to military rule and back. Six years after Abboud took power, another coup installed a civilian government. However, throughout this time there was no power sharing mechanism to engage Southern Sudanese (Doran, 2011). Power, resources, and development were centered on Khartoum, where the British first established the government and infrastructure. In 1963, the military Ananya rebellion (named after a poison found in South Sudan) led by Joseph Luga established control of a majority of the Southern region and sparked a liberation movement that became the First Sudanese Civil War (1963-1972).

This is where the more complicated parallel structures of power begin— formal structures such as access to power in Khartoum in the North and the informal power structure in the South. During this time some very important individuals rose to power within these formal and informal structures. In the North, Hassan Al

Turabi, then a student activist at the University of Khartoum, advocated for an Islamist State with centralized control. Under his influence, the military ruler Jafar Numeri dismantled the British Addis agreement that gave the South autonomy, or informal self-rule. This infuriated the South. In May 1983, John Gurang led a Southern mutiny within the Sudanese military. In response, President Numeri attacked General Gurang. This action established a guerilla movement in Borr, which eventually led to the official establishment of the SPLA (Doran, 2011). In September 1983, one of the most important moments in modern Sudanese history took place. Harnessing the imagery and nationalism of the Mahdist revolution, Al Turabi influenced the construction of a constitution based on a strict interpretation of Sharia Law that was applicable to ALL Sudanese, not just Muslims. What would commonly be referred to as "The September Laws" signaled the establishment of a discriminatory legal system that punished all Southern Sudanese who were not Muslim. Riek Machar, the current Vice President of South Sudan and former rebel leader, says "It is what made the people of Southern Sudan swell, the ranks became one". In one moment in time the Southern Sudanese identity coalesced around the removal of such a legal system (Dolan, 2011). The September Laws took the movement of the Aynanya Rebellion, the First Civil War, and ushered in the Second civil war between South Sudan and North Sudan, which would not end until the CPA of 2005.

In 1985 with increasing resentment against Numeri, from both the South and the North, Islamist factions within Northern Sudan staged a coup (Dolan, 2011). Again

orchestrated by Al Turabi, while Numeri was on a state visit to the United States, the coup ushered Sadiq Al-Mahdi, the great grandchild of the Mahdi and brother in law to Turabi, into power as the Prime Minister of Sudan. However Turabi under estimated his brother in law's willingness to broker peace with the Southerners during his administration. Having spent countless years in civil war, Al-Mahdi established a meeting with the Southern leadership on September 19th 1989 (Dolan, 2011). Believing that a peace agreement with the South was an affront to Islam, Al Turabi organized a coup against his brother in law on June 30, 1989 and installed a young impressionable Islamist Brigadier General by the name of Omar Al Bashir into power. Believing that he could be controlled, Al Turabi handpicked President Bashir to lead Sudan through the National Congress Party, commonly referred to as the NCP (Dolan, 2011). However, as Bashir took authority and consolidated his power Al Turabi became quickly marginalized, even imprisoned at various points in Bashir's leadership. Bashir was considered uncontrollable and while the civil war raged on, other internal conflicts in Darfur and South Kordofan began (Dolan, 2011).

The conflict in Darfur has roots in colonialism, the slave trade, historic tensions between the sedentary Fur tribe and nomadic Islamic traders, and cyclical droughts that affect the region (Salih, 2005.) There are many stakeholders and players in the conflict from the Darfur Liberation Front (DLF,) to the Justice and Equality Movement (JEM,) the militia Janjaweed, the Sudan Liberation Movement (SLM,) the Sudanese government, rebel forces in South Sudan, and even the neighboring country of Chad whose own internal conflict spilled over the borders into the region.

Apart from the historic Darfur conflict mentioned previously, from the 1980's the escalating conflict with rebel movements in the South exacerbated tensions in the Darfur region. Southern rebellion forces armed the Darfur tribes while Sudanese government forces armed the Janjaweed, pitting them against each other (Fadlalla, 2007.) The Darfur conflict began in its current iteration when SLM and Janjaweed engaged in intense fighting centered in West Darfur. JEM a few months later also began military style operations against the Janjaweed. Violence escalated quickly and the devastating affects led to high mortality rates and displacement (WHO, 2004.) There are many assertions that this conflict constitutes genocide, as many of the stakeholders are fighting factions organized along ethnic and religious lines and so violence against civilians mirrored these same divisions. Some assert that Darfur is a classic example of a resource conflict due to the drought that led to arguments over land and water rights immediately prior to the beginning of the violence. Many also claim you cannot extricate this conflict from the conflict in neighboring Chad during this same time (De Waal, 2007.) However, as this conflict continues into 2015 it is important to view the Darfur conflict not as a singular event but part of the wider tapestry of conflict.

Before and during the conflict in Darfur, the SPLA in South Sudan split into two rebel movements along tribal and ideological lines. This internal conflict pitted the Dinka against the Nuer tribe in a fight for power. It created two parallel ideological movements, separatist (an independent South Sudan) versus unionist (power sharing in Khartoum) and their leaders, John Gurang versus Riek Machar. The SPLA

was essentially pitted against the splinter group SPLM-N (Sudanese Peoples Liberation Movement- Nasir) in 1991 when Riek Machar tried to overthrow John Gurang. This showed the effect of the "divide and conquer" policies on tribal affiliations in the South and the lack of clear Southern Sudanese identity even within Southern rebel organizations. Gurang remained in control of the SPLA when a negotiation was sought in 2005 after years of civil war, Gurang worked with international leaders and the Bashir regime to begin the peace process. Due to his untimely death six months following the establishment of the CPA in 2005, other SPLM leadership ushered in a new South Sudan government. Deputy SPLM leader Silva Kiir (Dinka tribe) became President of South Sudan and Riek Machar SPLM-N leader (Nuer tribe) became the first Vice President of South Sudan. This was meant to be a power-sharing arrangement that would reduce tribal conflict and establish a unified Southern Sudanese national identity. However, this was not the case. Power and development became centralized in Juba at the expense of the areas outside of the Capital. There were claims of preferential hiring and access to powerful civil servant jobs offered to Dinka tribesmen over other tribes by President Kiir. In June of 2012, Silva Kiir accused government officials of stealing more than Four billion USD worth of funds and leaving the country (Smith, 2012).

During this same month, war began between Sudan and the new South Sudan along the border areas of Abyei, South Kordofan, Blue Nile, and North Kordofan. Tensions particularly escalated around the Heglig Oil field in Abyei, Abyei Town (which was bombed and burned to the ground), and in South Kordofan which while remaining a

state of North Sudan, is in culture and ethnicity closely aligned with the South. Approximately a year later and less than two years after independence, tensions remained high between North and South Sudan. Kiir fired his entire Cabinet including Machar, creating a political crisis that escalated into violence. For months, Machar led a faction of soldiers with his Nuer tribal affiliation in the bush outside Juba, while Kiir consolidated power with Dinka-affiliated soldiers in Juba. Stories of ethnic based massacres and violence became widely reported by UN officials in 2013 and 2014. Most international agencies evacuated non-essential staff from all of South Sudan. Eleven rebel leaders including Machar were charged with treason (mostly in absentia). International powers hoped for an end to what increasingly became clear was ethnic and tribal violence aimed at an urgent power grab from both parties (Copnall, 2014). Countries such as the United Kingdom and United States threatened sanctions. On February 5th 2015 a temporary ceasefire and initial peace agreement was established, (Reuters, 2015). One of the many items currently being negotiated by the March 2015 deadline when the process will conclude is the issue of systems of inequality and preferential treatment/power given to one ethnic group. It seems the colonial systems of inequality that the South fought against for so long are being actively replicated in the current government.

Major questions for the Sudans (both South and North) remain unanswered as conflicts continue in both countries. These questions include: are these countries doomed to repeat past mistakes and systematize structural violence which will continue to deteriorate the health status of the populations when only

rebels/military leaders have access to power? Are those in positions of authority willing to continue to sacrifice the health and wellbeing of their countrymen for political gain? What is the effect of systematized violence and protracted conflict on the health of the Sudanese? For some of the answers to these questions we must look at the more focused area of public health to begin exploring the lasting effects of conflict. By framing the public health outcomes affected by war within the theoretical foundation of the social determinants of health, we are able to simultaneously explore drivers of conflict and their immediate and long-term impact on a few specific health indicators (seeing trends over time in some cases).

Social Determinants of Health

Inequality exists in this world, across, within, and between every society and in every country. These inequalities manifest themselves in a number of ways including but not limited to salary rates, access to education, access to fresh foods, rates of incarceration, and exposure to violence. Across the world there is a social/economic inequality gradient, meaning that the lower the socio-economic status (SES) of a person, the worse their health typically is (Marmot, 2005). In higher SES countries, high-risk diseases such as asthma, type II diabetes, influenza, and HIV usually affect low-income individuals and communities. This is the central tenet of Michael Marmot, who is a leading figure in the study of the social determinants of health (SDOH.) According to the World Health Organization (WHO), these health inequalities are "avoidable inequalities in health…" (WHO, 2003). They manifest in statistical data such as infant and maternal mortality rates, prevalence of chronic diseases such as type II diabetes and obesity, and life expectancies. These

can be different from country to country and between groups of communities within countries. For example, under-five mortality rates for individuals living in urban communities in low-income government subsidized housing in some cities may be higher than under-five mortality rates for individuals living in suburban communities in gated planned developments. Is this just a difference in housing or does SES affect the way these communities live, ultimately affecting their health outcomes? In the Health Determinants Model (HDM) the belief is that Socio-Economic Status (SES) is often considered one of the main 'drivers' of individual as well as community choice, and affects the way in which one lives, which in turn affects individual health.

In epidemiology (the study of disease causes and transmission), individual risk factors are typically the focus. These risk factors include individual causal relationships such as those between smoking and lung cancer or of higher blood pressure and cardiovascular disease. However, when looking at diseases at the population level it is important to understand the difference between 'biological markers, such as cholesterol levels, and behaviors, such as choosing to smoke. Once we ascertain this difference, we can then unpack the 'social determinants' or causes of the causes, so a solution is found. This is often referred to as 'looking upstream.' This places importance not simply on the immediate risks of disease, but on the root causes of these risks and 'drivers' for health inequality. These causes are often referred to as the social determinants of health (SDOH). WHO defines the social determinants of health as "the circumstances in which people are born, grow up,

live, work and age, and the systems put in place to deal with illness. These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics (WHO, 2003). Figure 1 is an illustration of how social determinants of health at various levels (global, national, local/community, and individual) affect and influence health status.

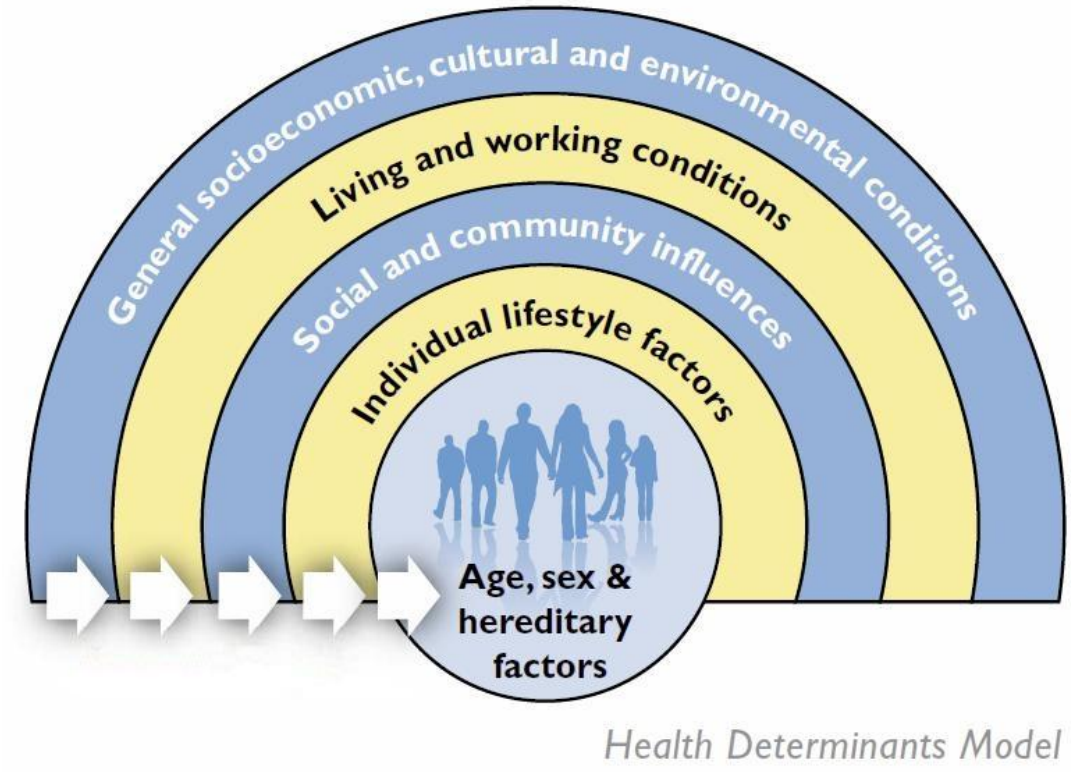


Figure 1 Dahlgreen and Whitehead Model, Social Determinants of Health

Conflict as a Social Determinant of Health

Just as poverty, the place of your birth, access to education, and politics can be determinants of both community and individual health; this paper's thesis is that conflict is also a social determinant of health to consider. The Health Determinants

Model is grounded in Marmot's idea that socio-economic status impacts the way in which these forces affect individual health (typically through access to care, quality of housing, available spending on healthcare, etc.) As with the social determinants of health in non-conflict settings, the forces that SES affects include a range from political, to environmental, to the basic choices in lifestyle one can make. However, in settings affected by war and violence these determinants are all impacted by the conflict. Any changes in individual as well as community health can be immediate and long lasting.

Experts in the WHO Eastern Mediterranean Regional Office (EMRO) in 2007 suggested that there were three determinants for health found in all conflict settings (Siddiqi, 2007). These include: the loss of human rights, which they conclude is the first social determinant of health in these types of settings. The second social determinant of health in conflict settings is breaches of medical neutrality, which means that doctors and the medical community are utilized as agents of violence within these settings. In many cases they are direct targets for violence themselves. The third and final social determinant of health in conflict settings and the most important to consider as we discuss health metrics is the progression from "stress to distress to disease" at the individual level due to recurring exposure to violence (Siddiqi, 2007). A protracted conflict in Northern Uganda, according to a 2009 study, was a key influence for the determinants of health of internally displaced persons (IDPs) that included: traumatic events leading to mental as well as physical illness, poverty, overcrowding of IDP camps, and dramatic changes on the cultural/social

norms of the affected communities (Roberts, 2009). All of these are determinants of health caused by the conflict.

This is an ideal example of Sam Friedman's "Big Events" theory presented in his article "Big Events and Networks" (Friedman, 2006). Friedman suggests along with certain social networks and disease pathways "big events" such as war disturb social and community networks. Such "big events" lead to riskier behavior among the affected populations, which has an increased impact on disease transmission, leading to epidemic outbreaks. In this sense, complex humanitarian emergencies lead to health emergencies and we can see from this theoretical perspective that an expansion of the traditional understanding of the social determinants of health should be considered to include conflict as a main driver of health status in emergency settings. In short, conflict is in many parts of the world the most significant social determinant of health.

Conflict as a Driver of Health Status

To understand conflict as a social determinant of health it is important to rely not only on conventional health indicators, which generally are presented on an annual basis at the national level by a Ministry of Health. These show only short-term impacts of conflict and must be combined with other data, particularly qualitative and contextual, to garner the long-term effects of war. However, in contexts where the government is one of the major actors engaged in the conflict many sources of information may be unreliable due to government oversight of data collection. Information may be skewed, and the timeliness of reporting out from these

countries/areas is potentially affected. Data must be triangulated between official government sources, UN reporting, and NGO surveys, interviews, and other sources.

Direct and Indirect Indices

In order to see the effect of conflict upon the health of the Sudanese, we must begin to examine metrics that monitor both directly and indirectly the impact of conflict on the health status of affected areas. Certain indices are direct measures of the impact of conflict and other indices are indirect or proxy measures of the impact. They can be considered tiered. Conflict is the primary causal factor. It leads to displacement, which is correlated with poor health outcomes. Examples of such poor health outcomes can be seen in Table 1.1, which displays results from national health surveys. As mentioned above, certain metrics within surveys are related to the conflict itself. The metrics of mortality, certain morbidity rates, and child malnutrition are impacted by emergencies typically at the beginning of a crisis, as well as indicating increasing severity. As such, they should be considered direct indices of conflict. While other metrics, such as water and sanitation coverage are impacted more by conflict-related displacement than conflict directly itself. Indicators related to WASH in emergencies, for example, should be considered indirect metrics of the impact of conflict on health status, unless directly impacted by the conflict (i.e. water points destroyed by military/rebels as a combat tactic). These metrics combined show us health trends over the course of the emergency response and help us to see the macro level view of the impact of conflict on a population. Conflict and post-conflict health indicators must be compared to pre-conflict indicators if possible, as most areas of conflict have underlying burdens of

poverty, inequality, and other determinants that precipitate conflict. For example, data from Darfur from the start of the conflict in 2003 to the present revealed that a both quantitative indices of mortality, morbidity, and qualitative contextual data on displacement could measure the impact of conflict in this region of Sudan.

From 2003 to 2004 the crude mortality rate in Darfur was 8 to 10 times higher than expected, approximately 4 times higher than the emergency threshold (1 death per 1,000 adults a day). After the height of the violence subsided crude mortality rates declined, but remained higher than emergency levels well into 2008. From September 2003 to 2008 (the height of the conflict) there were 300,000 persons whose deaths can be attributed directly to the conflict, above the baseline mortality rate in this region. However, this does not mean that the deaths were related to violence. Approximately, 80% of these deaths were due to conditions of displacement that led to disease (Dugomme, 2010).

As mentioned above, displacement significantly affected mortality, particularly during the transition from high levels of violence-related mortality at the beginning of the conflict to high levels of disease related mortality through the rest of the study period. Displacement leads to disease transmission and diarrhea-related deaths were the single greatest cause of death in Darfur. We can connect this to the stress distress disease idea that is one of the key characteristics of deteriorating health in conflict areas. There are approximately 2.7 million persons still displaced in Darfur

from the conflict, half of these are children, and 4.7 million persons remain conflict affected, with 315,000 new displacements occurring January of 2014 (WHO, 2014).

The main disease causes in Darfur are similar to those of the rest of the country. However, the disease burden is higher in areas of displacement. The main causes of morbidity in Darfur are diarrhea, acute respiratory infection, tuberculosis, malaria, and malnutrition. In both 2004 and again in 2013, there were emergency outbreaks of Yellow Fever, Acute Jaundice Syndrome/Hepatitis E Virus, and Malaria. From the WHO Situation Reports it is clear that conflict and displacement were at high levels in both of these years in Darfur (WHO, 2004 and 2013). They are all water related illnesses, two water-borne and in the case of malaria caused by standing/brackish water (i.e. poor sanitation).

By looking at the Darfur crisis through the lens of social determinants of health we can see the connectedness between conflict and the health outcomes of mortality and morbidity. Conflict creates the conditions of displacement; these conditions (caused by conflict in Darfur) limit the ability to acquire the necessary hardware for improved water/sanitation systems, and that in turn increases morbidity. Conflict is the primary causal factor that leads to various secondary factors (and confounders) that leads to poor health outcomes. We can conclude that poor health is the primary consequence of war in Darfur.

Health in the Sudans: A Consequence of War

In order to capture and understand the health status, health coverage, and strength of the health systems in the Sudans (the Republic of South Sudan and the Republic of the Sudan) national level data from both countries should be compared and then contrasted with data from various other non-government sources. These sources includes International NGOs, local NGOs, UN sources, and where possible program surveys/data at a local level below that of the State. The most comprehensive national level data set for both countries is from the 2010 Health Household Survey (HHS,) in which data from sentinel sites are reported up through various Ministry of Health (MOH) data collection points and collated into national level data for the country for one calendar year. These data are combined with a survey crafted to gather specific response data in order to provide additional validity to the national level results. This survey is conducted every 5 years in Sudan and 2010 is the second time that South Sudan also conducted a similar survey, providing comparable data on health status between the two countries. The results were published in 2011. It is important to note that the meta-level analysis is the only information distributed in Sudan. In South Sudan, data were released in detail and methodologies were transparent. A copy of the actual survey/questionnaire was also distributed. Below are the results with indicators shared between the two surveys that show the health status of Sudan and South Sudan following 25 years of civil war.

Health Data, Sudan and South Sudan

The data presented in Table 1.1 is from surveys that were conducted just prior to the separation of South Sudan into an independent country in 2011. This means that although the two countries were for legal purposes one country still, due to the CPA they were already acting independent from each other. Additionally, they each had separate Ministries of Health at this point in the survey process. Some indicators vary in how they are written but measure the same thing. Additionally, some indicators were collected in only one country. This proves a challenge, as these are the only national health surveys covering both Sudan and South Sudan to date. In attempt to overcome these limitations, the indicators selection criteria included:

1. They are either direct or indirect measures of the severity of conflict and widely accepted standard indicators (UN, SPHERE, USAID/OFDA, MOH)
2. Child health and nutrition indicators are preferred proxy indicators as the wellbeing of children deteriorates more quickly in emergencies than adults. Where possible, these were chosen over other indicators available.
3. They are impact or performance indicators (impact indicators suggesting a change in overall wellbeing in a population, performance suggesting progress towards a national health program desired result).
4. All Sudan indicators would be matched with the exact same South Sudan indicators. However, given the transparency and methods quality of the South Sudan survey, additional indicators should be included if in the same thematic area and provide useful gaps in information.

By following this criteria the indicators selected for Table 1.1 portray collectively the short term and long term impact of conflict on the health of the populations in Sudan and South Sudan. They provide us an example of common "impact pathways" for conflict upon the health of a population.

Table 1.1 Health Household Surveys
Sudan and South Sudan (SHHS and SSHHS, 2010)

Sector:	Indicator Name:	Sudan (%)	South Sudan (%)	Indicator Type[1]	Direct/ Indirect
Child Mortality (rate, per 1,000):	Neonatal Mortality	32.5	-	Impact	Direct
	Post neonatal mortality	24.07	-	Impact	Direct
	Total infant mortality	56.97	75	Impact	Direct
	Child Mortality	22.8	-	Impact	Direct
	Total Under Five Mortality	78.47	105	Impact	Direct
Malnutrition (by percent below/above set standard deviation (SD):	Children who are stunted (below -3 SD)	12.6	28	Impact	Indirect
	Children who are wasted (below -3 SD)	15.7	31	Impact	Indirect
	Children who are underweight (below -3SD)	5.3	23	Impact	Indirect
	Children who are severely underweight (above -3 SD)	-	12.5	Impact	Indirect
Child Health (by percent):	Children 0-5 months exclusively breastfed	41	45	Performance	Indirect
	Iodized Salt	9.48	79.2	Performance	Indirect

[1] As defined by UNCHR in their Practical Guide to the Systematic Use of Standards and Indicators, page 25, 2006, 2nd Edition

[2] Sudan and South Sudan use different vaccination regimes. Sudan uses a combined dose for DPT and South Sudan gives

	Consumption by Household				
	High Dose Vitamin A Supplementation (0-23 months)	60.5	4.1	Performance	Indirect
	BCG Vaccination Coverage	76.8	34.4	Performance	Indirect
	DPT/HB/HIB Coverage[2]	61.3	-	Performance	Indirect
	Measles Vaccination Coverage	70.1	26.3	Performance	Indirect
	Children with diahrrhea in the previous 2 weeks	26.8	34	Performance	Indirect
	Household Availability of Treated Bednets	58.2	52.3	Performance	Indirect
	Children taking antimalarial, same or next day	43	51	Performance	Indirect
	Intermittent Preventative Malarial Treatment Availability	20.5	51	Performance	Indirect
	DPT 1	-	22.1	Performance	Indirect
	DPT 2	-	22.3	Performance	Indirect
	DPT 3	-	15.1	Performance	Indirect
	Unvaccinated Children	-	45.9	Performance	Indirect
Water, Sanitation, Hygiene (by percent):	Households with Improved Water Access	81	68.7	Performance	Indirect
	Households with Improved Sanitation	21	7.4	Performance	Indirect

[2] Sudan and South Sudan use different vaccination regimes. Sudan uses a combined dose for DPT and South Sudan gives individual doses. Both are presented here to give a sense of overall coverage.

It is clear from the data presented above that both Sudan and South Sudan suffer from high child mortality rates. The malnutrition rates are above the UN/SPHERE Emergency Threshold. Particularly shocking is the status of the chronic malnutrition indicators of stunting, suggesting long-term malnutrition impact on children. Child health indicators show that children in both countries are in a generally poor state, excluding the measles vaccination outreach, which is a government priority due to the high number of IDPs in a chronic state of displacement and the high-risk nature of measles outbreaks in such contexts. Given the overall low coverage of water and sanitation services (Sudan data is skewed due to the development of Khartoum State which is included in their national data) morbidity and mortality rates will continue to rise. From Table 1.1 the impact of conflict on the short-term health outcomes (mortality) and long-term outcomes (malnutrition and services coverage) can be parsed out if systematically approached with a contextual lens.

Table 1.2 Malnutrition in Sudan: Conflict Versus Non-Conflict Areas (SHHS, 2010)

State:	Sector:	Indicator Name:	Measurement:	Type of Area
Khartoum	Malnutrition (by percent below/above set standard deviation (SD):	Children who are stunted (below -3 SD)	6.1	Capitol and Surrounding State
		Children who are wasted (below -3 SD)	7.8	
		Children who are underweight (below -3SD)	3.9	
North Darfur	Malnutrition (by percent below/above set standard deviation (SD):	Children who are stunted (below -3 SD)	7.2	Active Conflict
		Children who are wasted (below -3 SD)	12.2	
		Children who are underweight (below -	6.5	

		3SD)		
South Darfur	Malnutrition (by percent below/above set standard deviation (SD):	Children who are stunted (below -3 SD)	10.6	Active Conflict
		Children who are wasted (below -3 SD)	9.5	
		Children who are underweight (below -3SD)	2.3	
West Darfur	Malnutrition (by percent below/above set standard deviation (SD):	Children who are stunted (below -3 SD)	13.1	Active Conflict
		Children who are wasted (below -3 SD)	17.5	
		Children who are underweight (below -3SD)	6.7	
Red Sea*	Malnutrition (by percent below/above set standard deviation (SD):	Children who are stunted (below -3 SD)	32.7	Historically Underserved
		Children who are wasted (below -3 SD)	30.6	
		Children who are underweight (below -3SD)	14.7	
*Red Sea State is an outlier in the data, with rates high above any other, but is included because as mentioned above it has been discriminated against since the beginning of any Colonial control in terms of infrastructure development and is the least developed state in the country as a result.				

Table 1.3 Malnutrition (Severe) in South Sudan: Conflict Versus Non-Conflict Areas (SSHHS, 2010)

State:	Sector:	Indicator Name:	Measurement:	Type of Area:
Juba, Central Equatorial State	Malnutrition (by percent below/above set standard deviation (SD):	Children who are underweight (below -3SD)	6.7	Capitol and Surrounding Sate
Upper Nile	Malnutrition (by percent below/above set standard	Children who are underweight (below -3SD)	10.2	Active Conflict

	deviation (SD):			
Unity	Malnutrition (by percent below/above set standard deviation (SD):	Children who are underweight (below -3SD)	23	Active Conflict
Northern Bhar Gazal	Malnutrition (by percent below/above set standard deviation (SD):	Children who are underweight (below -3SD)	12.1	Active Conflict
*The only indicators that are measured at the state levels that are comparable are moderate malnutrition and severe malnutrition. Since moderate malnutrition was not measured in Sudan, Severe malnutrition is presented here.				

From Tables 1.2 and 1.3, we can see that areas of conflict (as well as historically discriminated against areas like Red Sea State) have significantly different malnutrition levels than those of stable non-conflict/developed areas. The prevalence of malnutrition in developed countries in 2014 according to FAO is less than 5% (FAO, 2014). In data from these tables both States that encompass the capitols of each country are just a little higher than this at approximately 6%. While, States of active conflict are fairly comparable between the two countries. It is clear that conflict impacts directly the basic overall health status of countries affected by war. This affect on populations can now be analyzed from the national level down to the level of the state, thanks to new survey methodologies.

UNICEF Sudan S3M Data (UNICEF, 2014)

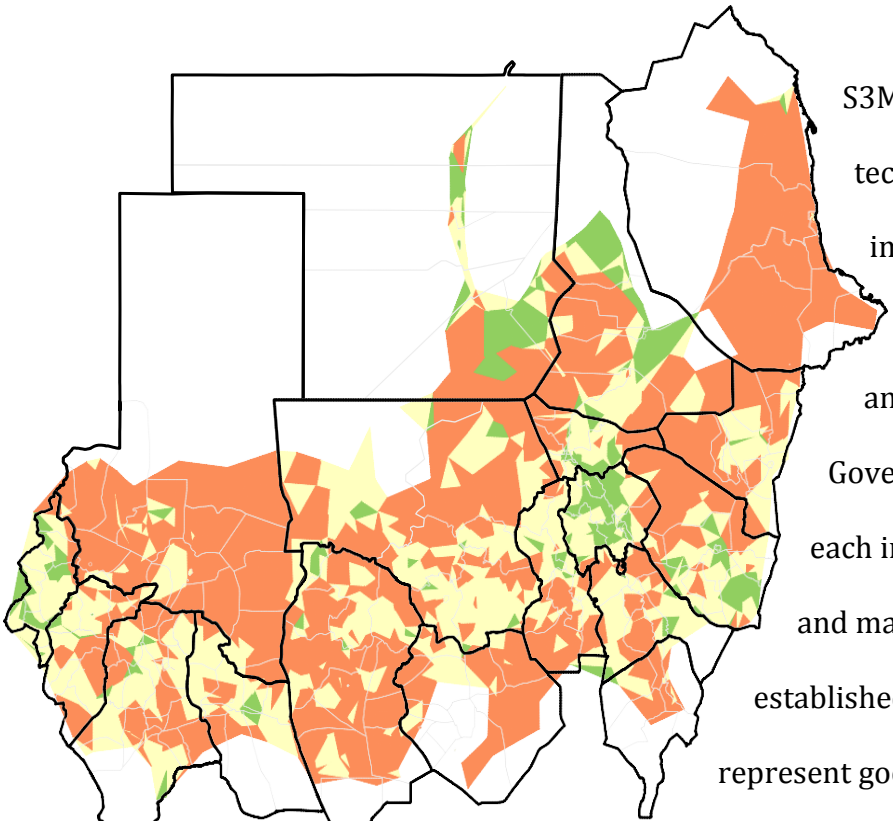


Figure 2 Wasting (WHZ) Children Under 5, Class Boundaries 5% and 15%

S3M is a new spatial survey technology that was just implemented in a national survey in Sudan by UNICEF and approved by the Government of Sudan in 2014. For each indicator, common minimum and maximum thresholds are established and color-coded to visually represent good (green), poor (yellow), or critical/severe (red) levels. In Figure 2 and Figure 3 are the S3M representations of the nutrition indicators for children (Figure 2) and mothers (Figure 3) across Sudan.

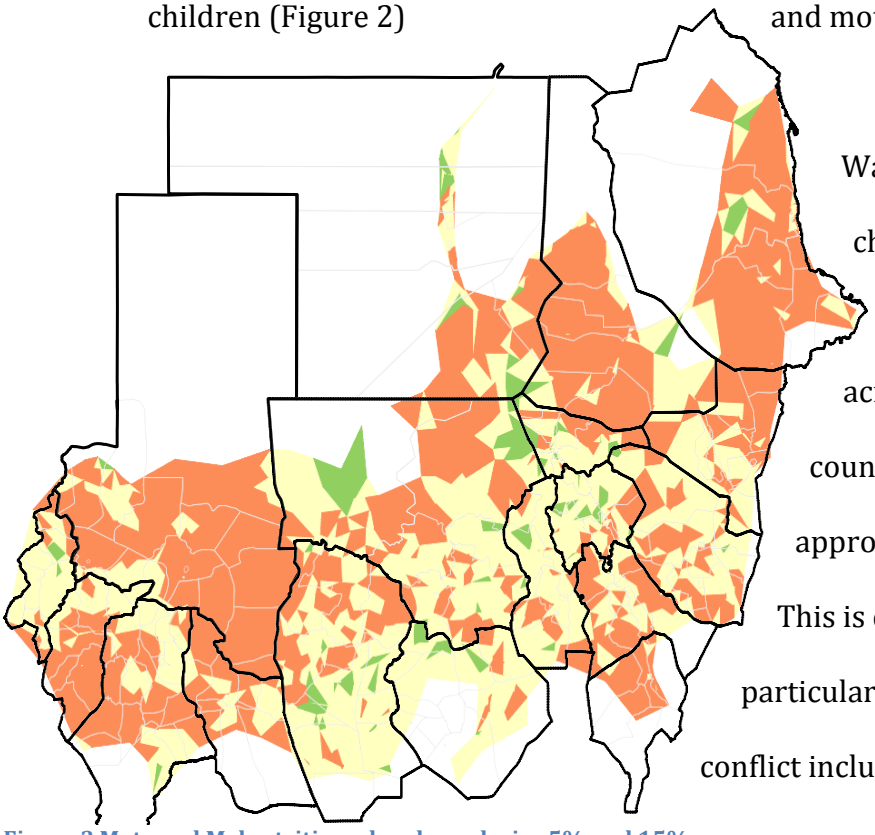


Figure 3 Maternal Malnutrition, class boundaries 5% and 15%

Wasting (WHZ) scores for children under 5 are above the emergency threshold of 15% across the majority of the country; this represents approximately 2 million children. This is denoted by the red color and is particularly concentrated in areas of conflict including Darfur and Blue Nile

states, as well as historically underserved areas in Red Sea State.

Maternal GAM (Global Acute Malnutrition via Middle Upper Arm Circumference, MUAC) is also critical with a majority (ca. 62%) of the country above emergency thresholds. Of these, there is also a particular concentration in areas of conflict such as in Darfur, South Kordofan, and Blue Nile. Additionally, we also see poor health outcomes in historically underserved and low resourced areas such as in Red Sea State. This is yet another example of the systematic privilege of Khartoum State at the expense of other areas of Sudan. In a mapping methodology that is based on a very colorful key, such as ones presented above, the juxtaposition of white/blank space indicating a lack of data in areas across the border with South Sudan is striking. These areas, already critically underserved and affected by more than a decade of war, are blank in every S3M map. It is important to note that the Sudanese government has not approved for release the actual survey data sets or the district administrative level spatial survey maps.

While S3M survey methodologies are not yet in South Sudan there is repeated nutrition survey data available to compare. Prior to the current conflict in South Sudan, Warrap State, an area affected by both conflict with Sudan (North) and tribal conflict near Abyei in the Northern Bhar el Ghazal State, was part of a survey conducted by Action Against Hunger in 2007. This survey showed that GAM was at 19% while SAM was at 2.8%, both above emergency thresholds (Action Against Hunger, 2007). As the conflict continued, in this state and across South Sudan the

nutrition status of children under 5 continued to degrade, as seen in the national data in 2010. In areas of new fighting in South Sudan such as in Upper Nile State, Maban County, the two refugee camps closest to the border and fighting had GAM rates above the emergency threshold (UNHCR, 2013). As insecurity increases, the approximately1.4 million internally displaced persons with malnutrition levels already at emergency levels will continue to deteriorate. UNICEF predicts that in 2015, even prior to the lean season, which is in March/April, more than 2.5 million conflict-affected Southern Sudanese will be at or over critical emergency nutrition levels (UNICEF, 2014).

Economics, Debt, and the Health Sector-

Given the economic foundation of the traditional application of the social determinants of health, and the realities of resource conflict in the development of the current conflicts, it is important to understand the economies of the Sudans. Both Sudanese economies are depressed by conflict, particularly the loss in oil revenues/subsidies for both countries, which affect all aspects of pricing and personal wealth (World Bank, 2013.) South Sudan's economy is additionally affected by tribal conflict while Sudan's economy is affected by ongoing fighting with non-state actors aligned with the South during the civil war. In 2012, both countries instituted austerity measures related to conflict over oil. When oil production was ceased in 2012 and resumed in 2014, there was a 70% withdrawal of fuel subsidies in Sudan from South Sudan, a 48% loss of South Sudan annual GDP in 2012; in 2014 there was a loss of 15% of the annual GDP (World Bank, 2013 and IRIN, 2012.) The austerity measures sought to reduce the impact of the lost revenue on the

economies of both countries. However, they are not favored by the people and increase economic burden on those who are already poor because subsidies are removed. Additionally, austerity measures led to a 30% devaluation of the Sudanese currency, a 41.6% inflation rate; South Sudan saw a 34% devaluation of it's currency, and a 79% increase in the inflation rate. This led to increasing levels of debt and reliance on foreign aid between both countries, which exacerbated preexisting tension on negotiations surrounding pre-separation loans.

Debt is central to development and politics across the entire North and East African regions, particularly in areas plagued by unstable governments and economies. The World Bank estimates that as of 2013 Sudan has external debts of $45.1 billion dollars and has been in non-accrual status since 1994 (World Bank, 2013). One of the most contentious issues between Sudan and South Sudan is how to share this debt. There are currently no estimates on South Sudan's national debt or how to approach the shared debt with Sudan. Additionally, the internal allocation of national budgets is a highly political and contested. Though it is only an estimation from 2012 Integrated Regional Information Networks (IRIN) calculation, 22% of the national GDP of Sudan is budgeted annually for defense spending (IRIN, 2012). Forty percent of South Sudan's GDP is budgeted annually, with 80% of that designated salaries. The health sector/Ministry of Health receives 4.2% of the annual GDP in South Sudan according to WHO, the World Bank estimates approximately 7% of the GDP in Sudan is spent on health sector expenditures (IRIN, 2012). Both countries rely heavily on external foreign aid for health system

financing and support. This may explain in part why there are 2.8 doctors and 8.4 midwives for every 10,000 persons in Sudan, and only one dentist in all of Greater Darfur (WHO, 2012). Coverage in South Sudan does not even reach to this level.

Economic instability, the level of debt, and conflict exacerbate already rising food prices in both countries. The 2013 South Sudan Annual Needs and Livelihoods Report and parallel 2014 Sudan report, published by the World Food Programme (WFP) show that a lack of access to land for growing season in Darfur, South Kordofan, Abyei, and Blue Nile (these areas are commonly referred to as the "Bread belt of Sudan") is dramatically effecting food costs and availability. Thirty percent of new IDPs in Darfur and 20% in South Kordofan missed the last growing season and will require food assistance (WFP, 2014.) Below is a chart representing the dramatic annual and five year rise in food costs in Sudan's three main cereal food crops.

Table 1.4 Increasing Food Prices, Sudan (WFP, 2014)

Grain	Month/Year Measured	% Above Previous Annual Measure (Wholesale Price)	% Above 5 Year Average (Wholesale Price)
Sorghum	November and December 2013	30	104
Millet	November and December 2013	13	86
Wheat	November and December 2013	44	106

Unlike Sudan, South Sudan is not an independent producer of cereals (the main food staple in the region) and relies heavily on the import of a majority of its food (WFP, 2013.) Due to increased transportation costs and the effect on trade by the conflict,

food staple market prices in Juba increased by 50% in 2013 (WFP, 2013.) In the border-states, areas of conflict along the border with Sudan, food price increases are even higher (wheat, sorghum, and millet) (WFP, 2013.) These issues with food prices and the overall economic crisis in both countries are exacerbating already high levels of chronic malnutrition. Additionally, new areas of acute malnutrition are expected due to the missed growing seasons in areas of displacement.

As presented in Table 1.4 and discussed above, economic and industry indicators are directly impacted by conflict. Increasing food costs and the rise in their wholesale prices impacts not only families that grow these crops, but also all food industries that use these crops to make products from them. In both countries, foods made from cereals are main staples of the Sudanese diet. When wholesale prices rise, due to economic constraints caused by conflict, preexisting levels of malnutrition (presented in Table 1.1) further deteriorate. It is clear, that even in economic terms, conflict is a social determinant of health that impacts directly or indirectly every facet of life, including food prices and access.

Discussion and Limitations

It may be easy to dismiss the premise of conflict as a social determinant of health. Some may suggest it is one singular issue in a cluster of drivers of an individual's health status without the need for unpacking. Others may say it should be taken as an assumption without in-depth exploration. However, given the number of state and non-state actors currently engaged in some level of conflict, as well as the number of protracted conflicts (long-term wars and insecurity,) it is important to

explore the relationship between conflict and health. It is true there are other limitations when exploring conflict as a social determinant including the inability to disaggregate poor health outcomes affected by other social determinants or preexisting poor health from the effect of conflict. Unpacking mortality rates and causes in conflict and non-conflict areas is difficult in Sudan. Following the engagement of international actors in Darfur, the Sudanese government now restricts any collated mortality and death counts, outside of those related to children. However, these issues are fairly typical in areas of active conflict where the government is one of the key players. Additionally, data collection and humanitarian access in areas of conflict is quite limited and challenging. Often, restrictions are placed that are formal (Sudanese government approval for all surveys) and informal (travel visas restricted, access restricted by military, logistic processes hindered, etc.) Referring back to Figure 2 and 3, the white areas on the border are missing data. In areas of conflict, a lack of humanitarian access and data often forecasts or predicts stark deteriorating conditions and high levels of mortality/morbidity, as well as malnutrition. This becomes more severe as the conflict becomes protracted, more than three times that of other developing nations not impacted by protracted crisis (FAO, 2010.)

The inability to obtain data and access are definite limitations, but there are many contextual based on-the-ground innovative solutions that aid workers utilize, which deserve further exploration and research. For example, Save the Children Sweden utilized historic displacement trends from previous conflicts in South Kordofan to

design emergency programs around the areas of current fighting where services could be established to encourage safe migration for IDPs and to capture data efficiently (R. Chaudhary, personal communication, July 2011.) Further to this, the World Health Organization is currently testing remote data collections methods via cell phones in Syria (WHO, 2011.) Utilizing new collection methods and historical migration trends are some ways to obtain data in difficult contexts. Additionally, many of the above mentioned limitations might be circumvented (theoretically) if we understand the interrelatedness (and often cyclical nature) of health status drivers in a given context and utilize proxy indicators to establish quantitative, as well as qualitative, foundations for the proposed linkages between conflict and health. Indicators such as child malnutrition are often used as proxy indicators to capture the severity of an emergency (i.e. severity of a conflict). It is possible to combine the use of such indicators with emergency rapid needs assessments (a tool consistently used by UN and NGO responding agencies at the very beginning of an emergency) adapted to inform responders of the context, history, and nature of the current conflict to understand which health areas would deteriorate first and the potential nuances of the health response. Combining existing tools, with an eye to conflict as a social determinant of health, allows responding teams to be better prepared and for programs to be more efficient in their response. Additionally, one of the main characteristics of health in conflict areas is the relationship between conflict leading to displacement and displacement impacting increased disease/poor health (WHO, 2007.) The use of proxy indicators to unpack direct and indirect impact is a necessary part of understanding this relationship. Once we are

able to do this, as the paper demonstrates above, it is clear that conflict is a driver of health status and programmatic response to emergencies caused by such conflict will improve when the context specifics of this relationship are understood.

This paper explores an expansion of the traditional understanding of the social determinants of health from only considering SES towards utilizing conflict as a social determinant of health. In the context of Sudan and South Sudan, conflict affects almost every facet of life. It results in high levels of displacement that is then associated with high levels of mortality and morbidity. Conflict impacts the economies of Sudan and South Sudan, resulting in lowering of individual SES across both nations, dramatically increasing national levels of debt and the burden of poverty. For both countries, conflict translates into higher food prices and high chronic rates of malnutrition. GAM rockets past the emergency threshold during the lean seasons because the effects of conflict incapacitate traditional coping mechanisms. In areas of active conflict and displacement, such as the border-states and Darfur, chronic emergency levels of malnutrition are constant. This is a health impact caused by conflict that we can measure, allowing us to understand this relationship and how it may change over time. However, this paper shows that the historical foundations of conflict are still causes today and results in poor health outcomes. It is clear that in order to better understand deteriorating health status in the Sudans, the history of conflict must be explored and become part of the programmatic foundation for all organization engaged in emergency response in this context.

Conclusion

It is within this history, as presented in this paper, that the framework and foundation for the current conflicts within and between Sudan and South Sudan is grounded. The British Empire used religion to divide and classify groups of Sudanese, to establish systems of power and preference based on these religious classifications that are related to racial classifications. The British Empire, utilized these social constructs to establish a border between North and South Sudan. They created systems that privileged the North over the South and Khartoum over any other State. Northerners controlled resources, land, allocation of national budgets, and controlled the political process. Religious and racial narratives became centered on these systems, power, and resources, both in terms of the tensions surrounding conflict internally and the dialogues of key international stakeholders. In the context of the British use of religion and its implication on current narratives, religion is used as a tool for division and for unification. Identities are crafted and accepted at the national and community levels through this process. In Sudan and South Sudan, it is clear that conflict leads to poor health outcomes. Religion acts as a powder keg and as a separatist narrative that fuels conflict, acting as one of the many drivers.

However, religion that acts as a tool for conflict can also provide the resources and narrative necessary for peace. When a conflict includes religion is a significant factor in the identity of one or both parts to the conflict; religious leaders on both sides of the dispute can be mobilized to facilitate peace; protracted struggles between two major religious traditions transcend national borders, as has been the case over

time with Islam and Christianity; and/or forces of realpolitik have led to an extended paralysis of action inter and intra faith dialogues should be a central part of peace and reconciliation efforts (Johnston, 2003.) These dialogues can be used as a counter force to the politicized ethnic and religious narrative that is not as useful as it once was (when one wants to drive peace, opposed to conflict). The nature and role of religion can be used as an avenue to propose new national, tribal, and ethnic narratives in both Sudan and South Sudan. Religion, where it once was used to 'divide and conquer', can lead to alternatives. One such alternative is a faith based peace framework termed the 'People to People' (PRP) process utilized by the New Sudan Council of Churches (NSCC) successfully in South Sudan to negotiate the Wunlit Peace Conference. PTP has four major parts: the awareness stage in which the demand for peace is built while increasing the understanding of the 'opposition', the strategy development phase in which peace strategies are crafted (and agreed upon) culminating in a written peace agreement, the adoption of the peace agreement, and the consolidation phase in which an effort is made to implement the peace agreement (Agwanda and Harris, 2009.) Essential to the PTP process presented above is that all participants have a peace as a shared goal, traditional conflict resolution mechanisms are emphasized, traditional rites/ceremonies are used to unify the divergent parties, and utilize peace passages within each relevant religious text. Through the use of such mechanisms, new social networks, economic, and even governance systems can be established that lead to different effects and outcomes, as opposed to replicating systems of inequality that have proven to be destructive and divisive. For example, the intermarriage between Muslim

Northerners and Christian Southerners, as well as between different tribes like Dinka and Nuer, was once seen as culturally taboo, but is now becoming more common (Sudan Tribune, 2014.) It is possible that new social, tribal, and religious constructs established through social institutions like marriage will move communities, tribes, and nations towards a unified peace. Religion can offer new interpretations of national identities for non-majority ethnic groups to access equality in governing structures and resources through adaptation of social justice movement dialogue at the grass roots level. This may be more applicable to the context of South Sudan, where civil society has greater freedoms than the constricted space of Northern Sudan, but regardless the opportunity for a new religious narrative in the Sudans is possible. This new narrative, changing social/cultural constructs, and use of reconciliation frameworks like the 'PTP' process to promote equality in formal/informal structures can mitigate and prevent cyclical violence in Sudan and South Sudan. Preventing conflict is the key to creating a context where improving the health status of the Sudanese, both short and long term, is actually possible. Peace and Reconciliation programs should be part and parcel of health programs, empowering communities to realize their right to health while promoting lasting peace. This should be a primary goal for any organization working in conflict contexts.

The Sudans, much like the cultures of those that inhabit the North and South, are vibrant and dynamic. They are two challenging countries to work in. For organizations that wish to implement programs the cyclical nature of violence can

be inhibiting. The social determinant of health lens is the best perspective for programs that seek to improve health status in conflict-affected areas. In order to achieve this goal, programs must utilize systems in parallel to provision of health services. These systems include local dispute resolution and community engagement projects. One such example are the 'Peace and Reconciliation Committees' that are preexisting tribal dispute resolution mechanisms. Organizations like Catholic Relief Services and Save the Children work through these processes to mitigate conflict over resources at the village level in Darfur. Working through these systems is one possible way of empowering local communities affected by conflict to reduce disputes, especially those with the potential to be exacerbated by ongoing war and insecurity. Health Management Committees and Poverty Reduction focused Livelihoods Programs are two additional systems that provide a pathway for community engagement in NGO projects in emergency areas. Health Management Committees are management groups established at health clinics and hospitals to ensure members of the community manage the operations of the clinic. The ultimate goal of the committees is to ensure high quality of culturally appropriate and sustainable medical care. Programs to improve livelihoods by reducing poverty often attempt to affect health from a different perspective. By supporting forms of livelihoods programming that improve the socio-economic status of an individual the potential exists to increase the wellbeing on an individual. For example, increasing the amount of livestock for a family in South Sudan increases the economic stability of a family, which potentially increases the nutritional diversity of the family, and the potential for discretionary income that

can be used towards health costs. In this example, empowerment, health, and nutrition status all have the potential for improvement. By understanding the sources of conflict, utilizing the concept of conflict as a social determinant of health, and crafting appropriate emergency response service delivery based on this perspective it is possible to not only create programming that is contextually appropriate but actively engaged in conflict mitigation. It is possible that programming engaged in in a meaningful way, as is suggested above, would not only mitigate the effects of conflict in Sudan and South Sudan but also prevent it-breaking it's modern cyclical and protracted nature.

As presented in this paper, conflict in Sudan and South Sudan has its roots in the colonial structures and systems of the British Empire. Through generations of replication of these systems now administered/managed by the NCP in the North and SPLA in the South, social structures and identities (ethnic, tribal, and religious) also propagate cyclical and protracted conflict. In Sudan and South Sudan, the national governments are party to the conflicts between each other, as well as those involving non-state actors. It is unrealistic to expect them to at once be engaged in conflict while playing the role of peacemaker, bringing about improved health status for their citizens. It is important for organizations, advocates, and researchers to consider conflict as a social determinant of health because as much as aspects of the conflict affect the devolution of health status, the environment of the conflict equally provides areas for community engagement and empowerment. It is important to the

improvement of health status to look for challenges and opportunities in program design.

It is with this in mind that this paper proposed an expansion of the traditional understanding of the social determinants of health from the basis of socio-economic status or position towards the use of larger macro level contextual forces such as conflict. In the world today, where insecurity and war permeates the daily lives of almost everyone in the world (either directly or indirectly), conflict is an extremely important social determinant of health. More research is needed to explore this idea further, particularly in other regions of the world also susceptible to protracted emergencies. In Sudan and South Sudan with the colonial foundation and the expansive influence of conflict across more than 40 years, it impacts the wellbeing of every man, woman, and child across these two countries. It is important that organizations that engage in this context consider the colonial history of the current conflict in their program design, utilize peace and reconciliation mechanisms to support the Sudanese in realizing their right to health, and ultimately empower conflict affected communities to break the cycle of violence through constructing new social/ethnic/religious narratives that support the above processes. These two new countries are at a critical time in their new infancy and it is now that new theories such as conflict as a social determinant of health must be utilized. More than 4 million people are displaced in Sudan and South Sudan, and if the context doesn't improve, generations of children will only know war. The rumbling of

children's empty bellies will be louder than any cries of patriotism or desire to adhere to the status quo.

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Annex I

Abbreviations and Acronyms

BCG- Bacille de Calmette et Guérin (Tuberculosis Vaccine)

CPA- Comprehensive Peace Agreement

CNPC- Chinese National Petroleum Corporation

DLF- Darfur Liberation Front

DPT- Diphtheria, Pertussis, and Tetanus Vaccine

GAM- Global Acute Malnutrition

GDP- Gross Domestic Product

HB/HIB- Hepatitis B and Haemophilus influenzae B combination vaccine

HHS- Health Household Survey

IDPs- Internally Displaced Persons

JEM- Justice and Equality Movement

MOH- Ministry of Health

MUAC- Middle Upper Arm Circumference

NCP- National Congress Party

NGO- Non-Governmental Organization

SES- Socio-Economic Status

SLM- Sudan Liberation Movement

SPLA- Sudanese Peoples' Liberation Army (military arm)

SPLM- Sudanese Peoples' Liberation Movement

SPLM/N- Sudanese Peoples' Liberation Movement- North (Northern Sudan)

UNHCR- United Nations High Commissioner for Refugees

UNICEF- United Nations Children's Fund

WFP- World Food Programme

WHO- World Health Organization

WHZ- Weight for Height Z Score

Annex II

Glossary of Terms

Ansars- Ansars is the Arabic word for 'followers' or 'believers'.

Child Mortality- Child Mortality is usually an indicator used as a litmus test for the health of a nation, as it relates to progress towards the Millennium Development Goals (WHO, 2011). They are measured per 1,000 live births and are commonly broken up into age groups. These include neonates, newborns to one month in age, post neonates, one month up to one year of age, and children who are 1 year in age up to just under 5 years in age. Total Infant Mortality is any death in children aged from birth to a year, while the total under five mortality rate is a cumulative calculation of all of these age groups to just under 5 years of age (WHO, 2011).

Dinka- Dinka is a major ethnic tribe of South Sudan, considered one of the historical ruling tribes of the South.

Fur- The Fur is a tribe of people in North Western Sudan who are historically very independent. The region Dar-Fur is their historic homeland.

Dar-Fur- Darfur is an independent region and former protectorate of Great Britain. It is the historic homeland of the Fur tribe. It is now 5 States within the Republic of Sudan and the location of protracted conflict.

Khawaja- Khawaja is the Arabic word for 'foreigner' or 'outsider'. It is used to refer to all non-Sudanese and colloquially also to those of a differing tribe from oneself.

Mahdi- Mahdi is the literal Arabic term for "Guided One". Commonly it refers to the famous Islamist rebel leader that won independence of Sudan from Great Britain.

Malnutrition- Child Malnutrition is a common indicator used to gauge the severity of an emergency via the health/nutrition status of a populace, in this case engaged in conflict (WHO, 2000). The rate of malnutrition often increases quickest in children, due to their vulnerability and weakened immune systems. In populations affected by conflict malnutrition rates show worsening health status first in this age group. Underweight, stunting (lack of height/vertical growth), and wasting (deterioration in muscle and fat tissue) are three common indicators that are compared to the averages established by the 2006 WHO growth standards, then translated into standard deviations (SD) from this average. Anything over -3 SD is the most severe acute malnutrition (SAM), -2 to -3 moderate acute malnutrition (MAM), and then global acute malnutrition (GAM) refers to a cumulative total of both SAM and MAM. The established emergency thresholds for any country include a SAM of 2% or higher and a GAM of 15% or higher (WHO, 2000).

Morbidity- There is no common agreed upon definition for Morbidity, but it is in general the state or prevalence of a specific disease (quantified into incidence and prevalence).

Mortality Rate- Mortality rate is the number of deaths in a given category of disease or age out of 1,000 live births, for a given time period.

Nuer- The Nuer are the largest ethnic tribe in South Sudan. They are considered one of the main historic ruling tribes, consistently engaged in tensions with the Dinka tribe and have great influence in formal power structures.

September Laws- These laws were a series of laws that attempted to institute national Sharia Law in Sudan, as part of an Islamization process during Jamar Numeri's tenure as President.

Sharia Law- Sharia law is a legal interpretation of Qurranic Teachings. They are locally interpreted and applied. So, one country or even one region can have different interpretations of the meaning of laws. However, they are often considered quite conservative when compared to Western legal structures.

Sudd- Sudd is the historic Arabic name for Sudan (and can be used to refer to the Sudanese region). It is derived from Sadd meaning obstruction and in historical writings was commonly used in reference to the large swampy areas such as those covering South Sudan.

Vaccination- Sudan and South Sudan utilize different vaccination regimens. While Sudan uses a combination DPT/HB/HIB vaccine, South Sudan uses a single dose regimen. Though they are different, this is inconsequential as general basic childhood vaccinations such as DPT are an indicator of the health system reach and access to care. Additionally, it should be clarified that a combination vaccine reach and only the first single dose should be compared because of a *loss to follow up* effect on the subsequent doses.

WASH (Water, Sanitation, and Hygiene)- Improved water access and sanitation are important health indicators because many diseases are transmitted via fecal matter or other contaminants in water. Fecal-Oral contamination is one of the most common pathways for disease transmission.