Civil Wars through a Public Health Lens: A Comparative Case Study of Nigeria and Cambodia

Xiaobin Zhou

Civil wars and/or regional conflicts are among the top sources of diseases and injuries worldwide but are often neglected in public health training and practices. The health impacts of civil wars not only include the direct morbidity and mortality from battlers, but also the long-term indirect impacts on health system, physical and mental health, and socioeconomic factors that relate to health status. In this essay, the civil war histories of two countries, Nigeria and Cambodia, are studied around their health impacts and health interventions. Through applying the three-level principles of prevention into the comparative study, the suggestions are made to reduce the negative impacts of civil wars before, during, and after the civil war in order to appeal to the public health community for evidence-based interventions to minimize the health burdens of civil wars.

According to WHO, there were an estimated 200,000 people killed directly from wars and conflicts worldwide in 2014 alone (2015). This mortality could be the fifth among the top ten causes of deaths (WHO, 2015 & 2018). However, civil wars or regional conflicts have not been put in the list as a separate cause of mortality and morbidity. Instead, part of the mortality is calculated into injuries, homicides and/or accidents. The global injuries due to conflicts have seen an increase in recent decades, coming from the increasing conflicts in the Middle East and recurring conflicts in the several African countries such as Nigeria, Sudan, and the Democratic Republic of the Congo (WHO, 2015). Because of the breakdown of information systems and misrepresentation of data for political considerations, the direct effects also experience difficulties in measurement. Besides the direct mortality from the battlefields, the populations in the conflict areas suffer from displacement, absence of health services, infectious disease outbreaks and chronic diseases including mental health issues in long-term (Johnson, 2016). These indirect effects are hard to estimate when they are linked with wars and conflicts.

Despite the huge burden of wars and conflicts, preventions and responses to them are neither much emphasized in public health training nor well integrated into the public health practices and researches (Benjamin, 2007). According to Levy, the principles of public health preventions can also be applied to war: "Primary prevention is preventing war or causing a halt to a war that is taking place. Secondary prevention is preventing and minimizing health and environmental consequences. Tertiary prevention is treating or ameliorating the health consequences of war (2000)." Under these principles, risk factors can be studied in multiple levels, such as "society at large, the community and the family and individuals" and in related "economic, political, humanitarian, and military" aspects so that interventions around the risk factors can better control health outcomes of the war and conflict. (De Jong, 2009).

In this essay, the civil war histories of two countries, Nigeria and Cambodia, are studied around their health impacts and health interventions. In order to compare effectively and make constructive suggestions to today's global health practices, the two countries are selected in similar time constraints. Through applying the three-level principles of prevention into the comparison, the suggestions are made to reduce the negative impacts of civil wars before, during, and after the civil war.

Nigeria Civil War 1967-1970 (Biafra Secessionist Movement)

Nigeria is a country with abundant natural and human resources, with multiple oil reserves and the largest population in Africa (ranked 7th worldwide) (UN, 2017). However, the development potentials have been inhibited by its weak administrative structures, which resulted in a high level of corruption, inequality, and poverty (Economic Commission for Africa, 2012). Added to these are the ethnic and religious division under a centralized governmental structure resulting from British colonial legacy (Heerten & Moses, 2017). The enduring structural problems without effective solutions have given Nigeria significant socioeconomic instability and civil disobedience (Economic Commission for Africa, 2012). Back in 1966, six years after Nigeria declared independence, ten-

sion rose between North and South in seeking control of the new state. The Igbos (an ethnic group native to south and southeast Nigeria) who survived from the coups and massacre fled to the East Region and declared independence as the Republic of Biafra in 1967. The war between Nigeria and Biafra lasted for 30 months, with the isolation of Biafra from supplies and trade, which caused a large-scale famine in Biafra. At the end of the war, 14 million Biafran survivors were overcrowded into shrunk territories with limited access to the sea and oil fields (Tarantola, 2018). The tension and regional conflicts last until today.

Throughout the war, the federal government prevented arms, food, medical supplies from reaching Biafra (Sandberg, 2017). International Biafran Relief committees sent supplies to the isolated area, which, from Nigeria's federal government's perspective, prolonged the war (Sandberg, 2017). It was estimated that one to three million people died from the battlefield, disease, and starvation (Falola & Heaton, 2008). Besides the mortality during the thirty months, multiple studies have been done to study the famine's effect on population health after the war. According to Hult et al., the risks for hypertension, glucose intolerance, and overweight are significantly higher among people with fetal exposure to the Biafra famine (2010). The undernutrition during the fetal-infant period is associated with significant increases in hypertension (9.5%-24% more likely to have systolic blood pressure over 140mg), in diabetes (8.0%-13% increased risk), and overweight (Odd Ratio=1.41, 95%CI 1.03-1.93) (Hult et al., 2010). The undernutrition during childhood period is associated with 9.5-16% increased prevalence of hypertension (Hult et al., 2010). In another study done by Akresh et al., the Nigerian children who were 0-3 years old during the war exhibited a significant loss of stature in long-term (-0.129, p=0.001), which is associated with the loss of longevity, education, earnings and the health of the next generation (Akresh et al., 2012). These study results suggest the significance of interventions: 1. prevent both sides from inhuman tactics, such as bringing leaders of both sides to the table to set the basic humanity rules that comply to the international law and declarations; 2. minimize the influence of inhuman practices through field supports during the war; 3. early rehabilitation plans and implementation to reduce the long-term negative health impacts such as hypertension, diabetes, and reduced stature from malnutrition, and overall negative effects on socio-economic status from the interruption of education.

Records have also shown that the onset of the Nigeria civil war challenged international health programs, such as for smallpox eradication. According to William Foege in his memoir *House on Fire*, the eradication plan was designed for the Eastern Region by the strategy of surveillance and containment with great support from leaders in the Igbo tribe before the start of the civil war (2011). Near the start of the war, the risks of traveling and transporting supplies increased significantly (Foege, 2011). The smallpox eradication professionals run the risks of losing lives without support from the authorities (Foege, 2011). Fortunately, the last outbreak of smallpox in Nigeria was successfully contained before the independence declaration of Biafra and some international organization such as International Committee of the Red Cross continued the surveillance work in conflict areas and refugee camps (Foege, 2011). The experience of Nigeria not only serves as a good example of continuing the public health programs in hardship, but also as a good lesson on the need of gaining the support and approval from both sides of the war in order to eliminate the chance of losing staff in war and unplanned interruption in the middle of the war.

The Republic of Biafra indeed received humanitarian reliefs from the outside world, one of which was from the Biafra supporting sides, France. In 1969, the French Red Cross with several other NGOs deployed teams of French doctors in cooperation with the International Committee of the Red Cross (Tarantola, 2018). These doctors had to pledge to remain neutral and publicly silent about tragedies happening during the war. The doctors eventually formed the M´edecins sans Fronti`eres (Doctors without Borders) which marked great importance in the efforts of humanitarian relief and global health later. However, by that time, the humanitarian relief was started as an instrument to influence the progress of war by the political powers supporting Biafra (Tarantola, 2018). Such incidences are not rare considering another example of the Central Intelligence Agent's use of polio eradication campaign as channels for spying activities in Pakistan. International organizations need to develop conventions and agreements on the neutrality of humanitarian reliefs during the war while monitoring the practices at the same time.

Cambodia Civil War (1968-1975) and Khmer Rouge Era (1975-1979)

As an expansion of Vietnam War, Cambodia's civil war was characterized by regional conflicts among several foreign power (US, Societ Union, China, and Vietnam) and different political ideologies and militant nationalism (royalist or communist) (World Peace Foundation, 2015). Between 1965 and 1973, the U.S. bombed 83 sites in Cambodia, which caused an estimated casualty of 250,000 people (Own & Kiernan, 2006). After the communist side took over the country in 1975, Cambodian communists began to restructure the country drastically, committing to a range of atrocities including murders, attacks on refugee camps and threats to foreign aid workers and journalists (World Peace Foundation, 2015). The fatalities from the Kymer Rouge regime during the period of 1970 to 1979 were estimated at around 1.17~3.42 million, around 15~43% of the population, defined as a self-genocide (Heuvaline, 1998).

In addition to the direct mortality caused by U.S. bombs, civil war, and the Khmer Rouge regime, researches have also studied the long-term effects of this period of conflicts and violence. Based on a survey done in 1990, a study comparing two communities in Cambodia and Thailand, Siem Reap and Surin, identified the differences of mental health between a traumatized and a non-traumatized civilian community from the same ethnic origin and the long-term impacts of mass violence (Mollika et al., 2014). Around 49.5% of Siem Reap residents have reached the clinical threshold for depression versus 19.7% of Surin residents who have reached the threshold (Mollika et al., 2014). As for PTSD, potential PTSD prevalence is 20.6% in Siem Reap and 2.2% in Surin (Mollika et al., 2014). In another study focusing on Cambodia's civil conflicts' long-term effects of exposure to armed conflict during school age, researchers found that 0.9-1.1 years of education loss for men and 0.6-0.9 years of loss for women in average due to the conflict exposure (Islam 2015). In addition, for every year of civil conflict exposure, the earnings fall by 6.6%-8.6% for men (Islam 2015). These results show the importance of establishing health rehabilitation programs for mental health and education as early as possible to minimize the health costs in the long term.

Unlike the number of records on humanitarian reliefs in Biafra, the records about the Cambodia War have focused more on the rehabilitation and reconstruction of health system after the years of civil war and dictation, during and after Vietnamese invasion. The Kymer Rouge dictation period destructed the health system greatly: hospitals and medical schools were forced to shut down, medical professionals were murdered or forced to work and die out in exhaustion and starvation (Santini, 2002). By the time when Vietnamese took over Cambodia in 1979, the health care system barely existed: "Of the 530 practicing doctors in the country in the early 1970s, only 32 remained—two of whom were surgeons and 20 fled the country when the borders opened. 26 of 120 pharmacists, 28 of 90 dentists, and 728 students of various specialties remained. Not a single professor survived the genocide" (Santini, 2002). In this situation, the Vietnam-back government prioritized healthcare in its reconstruction process. The government admitted a huge number of students into the reopened medical school for an abbreviated medical education and supported building new hospitals (Bourdier, 2016). Meanwhile, the government established a fifteen-year campaign to develop a communal health system applying humanitarian principles (Bourdier, 2016). During this period, only Oxfam and International Committee of the Red Cross entered Cambodia to complement the health system under reconstruction rather than to substitute it. After the Vietnamese period, Cambodia experienced privatization and mass entrance of international organizations, which decreased the human resources in the national health system, and the health system was fragmented by the "mixed and disjointed interventions" decided by big donors according to their priorities and criteria of innovativeness (Bourdier, 2016). Often, the few years of reconstruction right following the war can decide the country's long-term development greatly. This progression of Cambodia's health system during and after the war suggests the key responsibility played by the nation and the appropriate assistant position of foreign aids in the rehabilitation process after the war. International organizations need to realize that despite their goodwill, overreacting can result in weak health system development for the long term. Further studies should be done surrounding the collaboration mechanisms in the rehabilitation process and their health impacts in the long term in order to better inform the international organizations on better public health interventions.

Discussion

At the time of the occurrence of these Nigerian and Cambodian civil wars, not a lot of studies had

been done on the prevention of civil wars and regional conflicts. There are not many records on the prevention interventions of these two civil wars selected in this comparative study. However, these two civil wars share certain commonalities as potential risk factors despite completely different historical and cultural contexts. For both countries, there existed two sides fighting for the control of the country in support of different foreign powers. The governments were weak and unaccountable in their decision making while the society had deep-rooted inequality issues. For the governance and societal issues, according to De Jong, the conflicts can be better prevented when the countries develop legal standards and structure for decision making in quality, to reduce the inequality between groups and to embrace development polity to eliminate poverty (2009). From these risk factors, primary interventions should be designed to prevent the war from happening in high-risk countries. Although there are studies on the predictors of civil wars, they usually not timed well enough to prevent the civil war from happening by dealing with its root causes. In order to gain sustainable peace, international communities need to set standards of interventions and take actions based on the evidence found.

As for the secondary interventions or health programs during the war, the comparison between Cambodia and Nigeria have significant implications for global health practices. Although the humanitarian reliefs in the Nigerian civil war succeeded in providing relief to its civilians, the superficial neutrality of organizations could have prolonged the suffering of local populations to some extent and put the lives of staff in danger. In the Cambodia civil war, the direct participation of foreign forces also created direct mortalities. In order to provide effective humanitarian reliefs during the war, the involved foreign aid should not participate in any actual battle in any form. Instead, the international political and military powers should engage both sides on tables talks for peace agreements and resolutions. As for health aid, health professionals' neutrality and separation from other foreign powers build their reputations between both sides of the conflict and enable the continuation of public health work potentially under the support of authorities. Such support can increase the chance of the continuation of priority health programs that existed in the country and can lower the risks which health professionals take in the conflict area.

The comparison of Nigeria and Cambodia also has implications on the after-war reconstructions, i.e. the tertiary prevention of wars and conflicts. Policies designed to keep children with the previous disruption in schools need to be implemented because of the war's long-term effect on various aspects of health including physical and mental health, and its significant influences on the socioeconomic status of the residents in the conflict areas. The training of medical professionals in the reconstruction process can rebuild the foundation of the health system and population health in the long-term. Thinking of the brain-drain in the medical field still faced by Nigeria today and the overflow of international organizations in Cambodia after Vietnam-occupation period, it is important to set standards in the global communities on the partnership between organizations and local governments. It is important for the organizations to prioritize what local governments prioritize and to supplement the construction of health system instead of substituting it especially during the reconstruction and rehabilitation period after the war and conflict when any constructive strategies will prolong the influence in the countries' societal structures.

Conclusion

In conclusion, this essay only provides a brief overview of the Nigerian and Cambodian civil wars and some of the lessons learned for today's public health practices at different stages of the civil war through applying primary, secondary, and tertiary prevention principles. Civil wars/regional conflicts have been ongoing issues in certain part of the world. Their health impacts, both direct and indirect, short-term and long-term, are of great public health importance. Multilevel and interdisciplinary approaches should be used to study the factors related to war such as economics, history, political science, sociology and evidence-based interventions should be developed before, during and after the war to minimize the health burdens of the war.♦

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