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The Lasting Legacy of Chemical Weapons in Iraqi Kurdistan

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THE LASTING LEGACY OF CHEMICAL WEAPONS IN IRAQI KURDISTAN

by

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ABSTRACT

In 1988, the Iraqi regime executed the Anfal Genocide against its Kurdish population, killing a conservative estimate of approximately 50,000 to 100,000 Kurds (Human Rights Watch, 1993). This genocide involved the widespread usage of chemical weapons and marked a highly traumatic moment in modern Kurdish history. As of today, little academic research has been completed on the long-term medical and political consequences of exposure to chemical weapons in the Kurdistan region.

This exploratory research aims to contribute to the body of literature on this topic through interviews with medical professionals, Kurdish politicians, and non-governmental organization employees that have expertise on the Anfal attacks and their aftermath. By following a semi-structured interview format with the help of a native Kurdish translator when necessary, this research project was able to collect novel information on the lasting legacy of chemical weapons in Iraqi Kurdistan. The commentary included topics like how to medically and politically address the aftermath of chemical weapons, and how chemical weapons changed Iraqi Kurdistan's healthcare system, societal relationships, and economy.

Data collected for the medical findings proposes that improvements to Iraqi Kurdistan's general medical infrastructure and emergency healthcare capacity are necessary to aid Anfal survivors and the future safety of the nation. Evidence within the political findings suggests that chemical weapons are not only detrimental to health, but also to the social, economic, and international components of Iraqi Kurdistan's politics. Overall, this project adds to the growing body of literature that focuses on contemporary Kurdish affairs within the context of historical violence.

DEDICATION

For the Kurds, with great respect.

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INTRODUCTION

On March 16, 1988, the Kurdish city of Halabja smelled of apples (Human Rights Watch, 1993). Unfortunately, the root of the aroma was far from agricultural. That day, infamously known as "Bloody Friday," approximately 3,200 to 5,000 Kurds perished in chemical attacks perpetrated by the Iraqi military (BBC, n.d.). Gases and nerve agents, which coated the town through an aerial advance, gave the area its lingering smell of fruit (Human Rights Watch, 1993). Regrettably, the experience of Halabja was not unique. The fatalities occurred at a time when the Iraqi government deployed chemical warfare on a regular basis in its counterinsurgency campaign against the Kurds known as the Anfal Genocide or Anfal.

Anfal was a byproduct of the Iran-Iraq War, Saddam Hussein's longstanding hatred for Iraq's Kurdish population, and his ambition to crush the Kurdish insurgents (Human Rights Watch, 1993). According to investigators of the Human Rights Watch (1993), Anfal raged from February 23, 1988 to September 6, 1988. Death during this period of devastation stemmed from multiple sources. As commonly seen in genocide, Anfal exhibited the targeted use of artillery against noncombatants, including a notably atrocious "gendercide" marked by widespread execution of Kurdish boys and men (Kurdistan Regional Government, n.d.). Anfal, however, was distinctive from many previous genocides in its patterned usage of chemical agents as weapons of mass destruction. With all methods of murder combined, it is estimated that the total fatalities of Anfal conservatively range from 50,000 to 100,000 and possibly reach as high as 182,000 Kurds (Human Rights Watch, 1993; Kurdistan Regional Government, n.d.). While an understanding of Anfal is incomplete without discussion of artillery usage and campaigns such as the Kurdish "gendercide," this research focuses on Anfal's instances of chemical warfare.

This approach attempts to study the genocide from a narrower perspective and to generate comprehensive analysis of the long-term implications of chemical weapons attacks on Kurdish society.

Loss of life and the occurrence of injury, the immediate results of chemical warfare, are clear points of conversation for Anfal and have been heavily covered by journalists and investigative organizations alike. However, the long-term implications of exposure to chemical agents have been less thoroughly considered. Since Anfal took place in 1988, a mere 32 years ago at the time of this writing, countless survivors and descendants of survivors are presently alive. It is said that these individuals offer a "living laboratory for studying the effects of chemical weapons" (Hughes, 2002, p. 210). While the connotation of this statement may be perceived as callous, for its insinuation that a group's shared trauma renders their existence into one as research subjects, upon further review it suggests a valuable point. Through their experience with chemical brutality, the Kurdish provide a meaningful opportunity to gain insight into the consequences of chemical weapons (CW) in a manner that may aid survivors of chemical warfare in the future, should there be any.

In the examination of the enduring effects of CW, this exploratory research aims to present an interdisciplinary angle, which assesses not only medical consequences, but also political ones. In doing so, this analysis seeks to dissuade the opinion that no more than health is majorly impacted by CW and to format advice for governments that may one day face similar issues. Through this process, this research also helps to contextualize the current state of affairs for the Kurds. In 2017, the Kurds living in Iraqi Kurdistan, the geographical emphasis for this evaluation, attempted and failed to claim full separation from the Iraqi government through an

independence referendum (Morris, 2017). This process, which will be further detailed within this study, backfired and resulted in further infringement of the autonomous region's political control (Morris, 2017). Arguably, the dilemmas faced today by Iraqi Kurdistan in the pursuit of sovereignty can be traced back to historical violence like Anfal. As this study outlines the interdisciplinary consequences of CW and how society can prepare and recover from them, it will also detail the strong linkages between Anfal's CW and the Kurds' unsatisfied desire for national freedom.

BACKGROUND

Chemical Weapons

According to the United States' Department of Homeland Security (n.d.), weapons of mass destruction (WMD) are generally recognized as one of the following four categories: nuclear, radiological, biological, or chemical. In his time as the President of Iraq (1979-2003), Saddam Hussein was accused of utilizing multiple types of WMD. Infamously, the United States entered the 2003 Iraq War over false claims regarding the WMD capability of the Hussein regime (Kessler, 2019). While Iraq no longer had nuclear, biological, and chemical capacity in the early 21st century, the fact that Hussein mandated the usage of chemical WMD in the 1980s is heavily substantiated by independent reporting and international intelligence (Kessler, 2019; Hiltermann, 2007). The Anfal Genocide was far from the first instance of large-scale chemical death and has proven to be far from the last instance, as the widespread usage of chemical weapons in Syria has demonstrated. Historically, CW present a substantial and prevailing niche in the realm of conflict, and for this reason they are a worthwhile topic of study.

Before detailing the extensive timeline of CW, the nature of what exactly constitutes one must be described. According to the Organisation for the Prohibition of Chemical Weapons (n.d.), or OPCW, "a chemical used to cause intentional death or harm through its toxic properties," would qualify as a CW. Broadly, OPCW (n.d.) states that these weapons may fall into five categories as distinguished by their modes of action and intrinsic qualities. The five OPCW (n.d.) classifications include choking agents, blister agents, blood agents, nerve agents, and riot control agents.

Choking agents, like chlorine, are those that prey on the respiratory tract and may result in the functional drowning of an individual through internal fluid build-up (Ganesan et al., 2010). Blister agents, like mustard gas, are known to trigger dermatological, ophthalmological, and pulmonary issues through the burning and blistering of areas touched by the toxic substances (Geoghegan & Tong, 2006). Blood agents, like hydrogen cyanide, disrupt typical function by interacting with the cellular components of blood that take part in oxygen transportation and may lead to victim suffocation (Ganesan et al., 2010). Nerve agents, like sarin, inhibit acetylcholinesterase, a crucial enzyme for the maintenance of normal synaptic communication, and produce nervous overstimulation and potential paralysis (Geoghegan & Tong, 2006). Lastly, riot agents, like pepper spray, cause coughing, tears, and generalized airway irritation (OPCW, n.d.). OPCW (n.d.) notes that riot agents only meet the criteria for CW when utilized in warfare, not when utilized as "domestic law enforcement." This alludes to the fact that intent is crucial to the determination of whether a CW has been employed, as the stockpiling, production, and application of chemicals does not always meet CW qualification standards (OPCW, n.d.).

Evidence of chemicals as WMD dates much further back than most contemporary conflicts and other forms of modern munitions. For example, arsenic-based weapons, which are blood agents, rose to popularity in antiquity and were commonly used by the Chinese beginning in 1000 B.C. and in 431-404 B.C. by the Spartans in the Peloponnesian War (Radke et al., 2014). It was not until World War I, however, that CW deployment was so prevalent that the period is often denoted in textbooks as the Chemist's War (Fitzgerald, 2008). Both the Allied Powers and the Central Powers were chemically offensive during this time and the major toxicants involved included chlorine, mustard gas, and phosgene (Fitzgerald, 2008). Strikingly, "1.3 million

casualties and approximately 90,000 deaths" are attributed to CW in World War I (Fitzgerald, 2008). The trend of fatalities rooted in chemical exposure continued after 1918, with incidences such as Nazi gas chambers in World War II, Egyptian cocktails of mustard gas and nerve agents against a Yemeni opposition in the 1960s, and Portugal's usage of chemical agents in Angola, Mozambique, and Guinea-Bissau in the 1970s (Ghanei & Amini, 2010; Tezcür & Horschig, 2020).

More recent examples of chemical warfare are not limited to the Anfal Genocide, not even when discussed within a solely Kurdish context. Since 2011, the state of Syria has contained an ongoing civil war. As a means of repressing rebel forces, President Bashar al-Assad and his military have carried out numerous CW attacks with substances such as the nerve agent sarin (Lukey et al., 2019). A significant fraction of the Kurdish nation, which will be discussed in greater detail, resides in Syrian territory. While these events are influential to the Kurdish narrative, they are beyond the scope of this study, which concentrates on the Kurds within Iraqi Kurdistan.

Acts exploiting the lethal properties of CW are not limited to state conduct. Non-state actors, such as terrorist organizations, have also claimed chemical operations. In March 1995, a doomsday cult called Aum Shinrikyo released sarin on the Tokyo subway system during morning rush hour, killing 13 and harming thousands (BBC, 2018). Aum Shinrikyo had a penchant for CW, as they were accused of a smaller sarin attack in 1994 and a failed hydrogen cyanide attack in 1995 (BBC, 2018). It is not surprising that terrorist organizations are drawn to CW as a means of destruction since they are "inexpensive and… relatively easy to produce," and yet they offer "mass casualties with small quantities" (Ganesan et al., 2010). This idea is

reinforced by the readily available global stocks of chemical precursors and the fact that most factories that process pesticides, petrochemicals, or detergents possess the basic equipment necessary for CW manufacturing (Browne, 1988). For these reasons, CW are frequently referred to as "the poor man's atomic bomb" (Browne, 1988).

Recognizing the danger that chemical warfare presents in the post-Cold War period, the international community has responded with multilateral agreements such as the Chemical Weapons Convention (CWC). According to the OPCW (n.d.), the managing organization of the CWC enforcement, the convention seeks to do the following:

> "to end the development, production, stockpiling, transfer and use of chemical weapons; to prevent their re-emergence; to ensure the elimination of existing stocks of such weapons; and, in so doing, to make the world safe from the threat of chemical warfare."

Currently, there are 193 states that have pledged commitment to the CWC (OPCW, n.d.). This list of member states includes Syria, which acceded the agreement in 2013 after backlash over their use of CW in civil war (OPCW, 2013). Israel, Egypt, South Sudan, and North Korea are the only states that have yet to ratify the CWC. Interestingly, the United States' Department of State (2019) reports, "with confidence," that a Russian-backed Syrian regime has used CW at least once since accession in an attack on the Syrian city of Douma in 2018. Russia, another pledged member of the CWC, has additionally been accused of underreporting declared CW facilities for OPCW monitoring (U.S. Department of State, 2019). These are just two of the many cases of noncompliance accusations that have been circulated since the effective period of the CWC.

Noncompliance in multilateral agreements is a trend that can be followed throughout the history of chemical warfare prevention efforts. The CWC was not the first disarmament

agreement on the topic, nor was it the first to experience issues with member parties adhering to rules (OPCW, n.d.). Notably, the 1899 Hague Convention against CW was reiterated at a second member meeting in 1907, less than a decade before the start of the notorious Chemist's War (OPCW, n.d.). In 1925, the Geneva Protocol was established in response to World War I, only for World War II to exploit chemical agents soon after. With the demise of previous multilateral agreements and its own problems with noncompliance, the CWC may be looked upon with doubt as an entity that could globally establish and enforce policies on WMD. For this reason, political, academic, and professional investment in methods that help society to cope with the effects of chemical warfare remain significant to civilians and governments everywhere.

The Kurds

The Kurdish narrative started long before Anfal. As the "largest nation in the world without its own independent state," the Kurds are a topic of contemporary complexity and are highly influential to Middle Eastern geopolitical dynamics (Gunter, 2004, p. 197). This populous and historically marginalized ethnic minority is geographically centered along the borders of Turkey, Syria, Iraq, and Iran. In the geographical area known as Kurdistan, there are believed to be 25-30 million Kurdish individuals (CNN, 2019). Kurds can also be found in other locations, including many in the countries of the former Soviet Union and the West. Within the United States, Nashville, Tennessee is a hub for Kurdish emigrants and descendants, earning it the nickname "Little Kurdistan" (Kurdistan 24).

While this dispersal has led to widespread multilingualism, the main language of the nation is Kurdish. Of the Kurdish dialects, Kurmanji and Sorani are the two principally spoken.

From a religious perspective, most Kurds follow the Sunni branch of Islam; however, other religions, including Christianity, are practiced in the Kurdistan region. In terms of environmental conditions, mountains dominate Kurdish topography. The mountains of Kurdistan are of deep cultural importance since they have served as physical protection for the nation throughout its history (The Kurdish Project, n.d.). It has been suggested that mountain barriers are integral to how the Kurds have been able to "survive as a distinct ethnic group" in surroundings that are often antagonistic (The Kurdish Project, n.d.). This thought has been echoed in literature, as a popular proverb suggests that the Kurds have "no friends but the mountains" (Glavin, 2015, p. 57).

This proverbial idea stems from a consistent pattern of Kurdish oppression at the hands of larger powers. For example, the "Kurdish Question," the pondering of under what conditions the Kurdish desire for representation and power can be satisfied, has its roots in the closure of World War I (Tezcür, 2019). When the Ottoman Empire fell in the aftermath of the war, the Kurds nearly achieved autonomous recognition through a document called the Treaty of Sèvres. The treaty, drafted in 1920 by the Allied powers and imposed over the highly weakened Ottoman Empire, proposed redistributing Middle Eastern land in a way that would have provided for a Kurdish region with European influence. The treaty never came to fruition due to a refusal by Turkish nationalists, and instead the 1923 Treaty of Lausanne was enacted. Unlike the Treaty of Sèvres, the Treaty of Lausanne awarded the complete Anatolian Peninsula to the nascent Turkish state, without the foundation of a Kurdish state.

While the prospect of a formal Kurdish homeland has not been fulfilled, Kurds have found varying degrees of self-rule in Iraq and Syria. Iraqi Kurdistan is a semi-autonomous region

that is home to nearly 6,000,000 individuals. This population increased in recent years with an influx of refugees and internally displaced people escaping violence caused by the Islamic State and the Syrian civil war. The area covered today by Iraqi Kurdistan was heavily impacted by Anfal, which is why it is the focus of this study. Iraq's 2005 constitution officially recognized Kurdish semi-autonomy; however, many tensions between the Iraqi government and the Kurdistan Regional Government, which controls Iraqi Kurdistan, exist. Arguments over the ownership of the oil-rich city of Kirkuk, which was captured by the Iraqis in October 2017, and Kurdish sovereignty are especially fervent.

Like the Treaty of Lausanne, recent events have furthered dismissal of Kurdish autonomy, such as the failed Kurdish independence referendum of 2017. The referendum, which 92% of Northern Iraqi voters supported, was effectively nulled after the Iraqi government responded with punitive and military action, including the closure of Kurdish airspace (BBC, 2017). The Kurds had anticipated support from the United States, after allying with them in numerous conflicts like the fight against the Islamic State, but the United States instead did not support Kurdish independence (Ottaway, 2017). Turkey, Iran, and Syria, the other three major countries with significant Kurdish population, were strongly against the independence referendum for the fear that it could inspire their own Kurds to seek self-representation. It is said that this knowledge and a desire to act strategically in the Middle East, is what led the United States to arguably betray their ally (Ottaway, 2017). Since then, the United States has pulled further away from the Kurds by removing most American troops from the Kurdish-controlled territory in northern Syria, a decision which paved the way for a Turkish incursion and led to the angry resignations of multiple American military officials (Schmitt, 2019). As with the aftermath

of World War I, the Kurdish nation is currently at the mercy of a difficult geopolitical situation and international friendships that give way in the face of Kurdish desire for sovereignty. With these obstacles, it is difficult to imagine that the Kurds will soon receive the homeland once promised to them in a forgotten treaty many years ago.

The Iran-Iraq War

To understand the Anfal Genocide, it is necessary to understand the Iran-Iraq War, which waged from 1980-1988. In September of 1980, an Iraqi invasion of Iran incited the war. The attack came at a turbulent time for the new Islamist regime in Iran, which took over under the guidance of Ayatollah Khomeini in 1979. Iraqi advancement in 1980 may be viewed as opportunistic, as it preyed on the unpreparedness and chaotic nature of the new Iranian government. Officially, Iraqi President Saddam Hussein claimed that the reason for the war was "a territorial dispute over the Shatt al-Arab," which is a waterway between Iran and Iraq (Hardy, 2005). However, some political analysts propose that Hussein felt personally threatened by the Iranian revolution, which reestablished the importance of Shi'ism, and that he worried it would inspire rebellion within his country's domestic Shiite majority (Hardy, 2005). Though the war lasted for eight years, it did relatively little other than cause destruction, both to property and life. Estimates declare that anywhere from half a million to 1,500,000 lives were lost between the two opponents (Hardy, 2005).

Throughout the eight years of conflict, both Iraq and Iran relied on various military methods to gain strategic advantage; however, each side had distinctive tactics that led much of their approach. For the Iranians, one tactic was known as the "human-wave" (Harris & Aid,

2013). At the start of the war, Iran's population of nearly 39 million was almost triple Iraq's population of 13.6 million (World Bank, n.d.). Khomeini hoped that Iran could utilize its demographic resource of motivated and largely unprepared young recruits to face Iraqi forces and to defeat them by sheer number (Hiltermann, 2007).

To counter the demographic superiority of Iran, Iraq relied on chemical weapons (CW) in addition to typical artillery (Harris & Aid, 2013). Chemical weapons were the military solution of Iraq's choice because they are relatively cost-effective, compared to typical ammunition, and they provide a psychological fear that Iraq hoped would discourage future human-wave participants (Hiltermann, 2007). The war's chemical barrier was broken by Iraqi testing of tear gas on Iranian troops in 1982 (Hiltermann, 2007). Since the context was within war, this riot control agent would have situationally qualified as a chemical weapon (OPCW, n.d.). Encouraged by the psychological distress it observed in Iranian troops, Iraq progressed to mustard gas, a blister agent, in the summer of 1983 (Hiltermann, 2007). Aside from inflicting mental and physical harm, the equipment meant to protect against CW significantly slows down troops (Wade, 2003). This fact furthered the usefulness of CW for the Iraqi military. Shortly over a year later, in the winter of 1984, Iraq became the first recorded entity to employ nerve gas on a battlefield, which it did with the fruity-smelling nerve agent tabun (Hiltermann, 2007).

Although members of the Iraqi regime publicly accused Iran of also using chemicals in retaliation, there is "no convincing evidence that Iran ever used chemical weapons" in the Iran-Iraq War (Hiltermann, 2007, p. 157). Structurally, many chemical agents are gas molecules. Subsequently, the spread of CW is notoriously hard to control in wars fought between sides

located in close proximity to each other. This was seen in World War I when soldiers of both the Allied and Central Powers suffered consequences of chemicals they helped to deploy (Perry, 2017). This phenomenon is known as "blowback," and for the Iraqis it was likely the result poor attack planning and shifts in wind patterns (Perry, 2017; Hiltermann, 2007).

Chemical attacks on the Iranians served as training grounds for chemical attacks on Iraq's own Kurdish citizens. A historical overview of the relationship of the Kurds and Iran throughout the Iran-Iraq War helps trace the roots of the Iraqi decision to envision and execute Anfal, which they considered to be a counterinsurgency campaign (Human Rights Watch, 1993). During the 1980s, and still to this day, two political parties dominated Iraqi Kurdish politics. Those parties are the Kurdistan Democratic Party (KDP) and the Patriotic Union of Kurdistan (PUK).

The KDP, which was established in the 1940s and is spearheaded by the Barzani family, was eager to ally with Iranian forces as early as 1983, five years before Anfal began (Hiltermann, 2007). This alliance, inspired by the KDP's hope of achieving greater autonomy and lessening Iraq's long-standing oppression of the Kurds, was met with harsh consequences from the Iraqi government. When Saddam's regime learned of the partnership, which helped the Iranians emerge victorious from the important battle of Haj Omran, they sent forces to abduct "between five and eight thousand Barzani men" in July of 1983 (Hiltermann, 2007). The men, who were never seen again, were mass executed (Kurdistan Memory Programme, n.d.). This massacre was met with little to no international outcry, which some retrospectively say could have discouraged future attacks against civilians by Iraq (Human Rights Watch, 1993).

The Talabani family's PUK, on the other hand, was not as initially enthusiastic about cooperating with Iran (Hiltermann, 2007). This apprehensiveness was likely due to its

partnership with the Kurdistan Democratic Party of Iran (KDP-I), which fought against the Iranian regime and relied on support from Saddam (Izady, 1992). At one point, the PUK even considered aligning with the Iraqi government after repeated attempts by Iran to infringe on the KDP-I (Hiltermann, 2007). However, after 1984 negotiations with Iraq over Kirkuk soured, the PUK was eventually pushed into the arms of Iran – who was willing to offer much-needed medical supplies and another avenue toward claiming Kirkuk (Hiltermann, 2007). While Saddam publicly pointed to Iranian-Kurdish partnerships as justification for Anfal, Iraq has a historic pattern of Kurdish discrimination, including significant anti-Kurdish violence in the 1970s (Human Rights Watch, 1991). These accusations later became Saddam's attempt at legitimization of Anfal, a horrific genocide of the Kurdish people.

The Stages of Anfal and the Role of the International Community

To suffocate the Kurdish forces, Saddam appointed his cousin and previous commander of the Iraqi secret police, Ali Hassan al-Majid as the lead on operations (Kelly, 2007). Al-Majid, a kindred spirit of World War II's Josef Mengele, later became known as "Chemical Ali" for his role as the director of Anfal (Kelly, 2007). Anfal began on February 23, 1988, with the signing of an Iraqi Defense Ministry order detailing plans of Kurdish "purification" and an attack on Sergalou-Bergalou, the headquarters of the PUK at that time (Human Rights Watch, 1993; BBC, 2007). Following a multi-week siege of Sergalou-Bergalou, which involved CW, one of the most infamous events of Anfal occurred: the Halabja Massacre (Human Rights Watch, 1993). It should be noted, that throughout all of the mentioned chemical attacks, violence without chemicals was also pervasive in Anfal.

On March 16, 1988, Halabja, a town in the southeast of modern Iraqi Kurdistan, was subjected to a conventional airstrike followed by a chemical gassing at the hands of the Iraqi forces (BBC, 2007). Halabja had been recently liberated from Iraqi presence by the Iranian-backed peshmerga, the name of the Kurdish military that means "those who face death" (BBC, 2007; Hiltermann, 2007). The conventional airstrike's destruction allowed the later dissemination of gases to seep into broken shelters and homes and to fill them with deadly toxicants that smelled of apples (Human Rights Watch, 1993). According to reports of the United States' Department of State (2003), around 5,000 citizens died in Halabja, while "10,000 more were blinded, maimed, disfigured, or otherwise severely and irreversibly debilitated."

Over the next six months, seven further stages of Anfal followed with the final stage ending on September 6, 1988 (Human Rights Watch, 1993). New stages corresponded to shifts in the Iraqi government's concentration on different areas of peshmerga control (Hiltermann, 2007). Chemicals had a distinct function in the Anfal Genocide. Not only did they serve as vectors of violence, but each large-scale chemical attack also marked the first day of a new Anfal stage (Hiltermann, 2007).

Many of the details of Anfal are debated, as survivor testimonial is a large source of evidence due to the difficulties of widespread independent reporting in wartime. For example, details of which chemical agents were used in Halabja, and other massacres, were highly controversial (Hiltermann, 2007). After much argument within the international medical community, using human samples and photographs, it was determined that the CW operated in Halabja and the rest of Anfal primarily included a cocktail of mustard gas and various nerve agents like sarin, tabun, and VX (Hiltermann, 2007; U.S. Department of State, 2003). Also

controversial was the question of how aware and involved the international community had been during the genocide.

During the acts of genocide, the international community allegedly knew relatively little about Anfal and its victims. David Newton, the US ambassador who worked in Baghdad at the time of Anfal, claimed that the United States inferred Iraqi conflict with the Kurdish, but was "surprised later when they discovered the scale and intensity of the brutality" (Hiltermann, 2007, p. 138). However, declassified Central Intelligence Agency documents include mentions of regular briefings regarding the extent of CW usage against the Kurds, which directly contradicts Newton's statements (Harris & Aid, 2013).

In fact, further declassified information, paints a convincing picture of complicity of the United States in the Iraqi chemical warfare. At one point, the U.S. Defense Intelligence Agency even shared satellite imagery with the Iraqis to warn them about an upcoming Iranian offensive that targeted a weak point within their military's distribution (Harris & Aid, 2013). The logic behind these ploys by the United States can be summed up with one quote by former Secretary of Defense Frank C. Carlucci in which he said, "Iranian victory is unacceptable" (Harris & Aid, 2013). These sentiments were likely because pre-revolution, Iran used to be an American ally in the region. However, as the new Iranian regime espoused an ideologue of anti-Americanism, the United States saw Iraq as a "defense against the Islamic revolution" (Hiltermann, 2007, p. 45). With these thoughts in the American mind, the lives of the Kurds and how they were affected by Iraq's wartime progression were set aside for the assurance of containing Iran.

The United States is not the only member of the international community that had knowledge of and complicity in the Kurdish genocide. Overall, there was a lack of meaningful

reaction to the Iraqi government's CW strategy, both against the Iranians and the Kurds, which was a source of anger for many involved. Since there was a dearth of real-time investigation on the chemical usage, and pressure by the United States and its allies on the United Nations Security Council, in presidential statements, the UN often condemned both Iran and Iraq for participating in chemical warfare (Hiltermann, 2007). This dual blame infuriated the Iranian government, which was never proven to have used chemical weapons, and potentially encouraged the Iraqi regime that the global community was willing to turn a blind eye; thus, the statements arguably had no impact on saving lives (Hiltermann, 2007).

Additionally, the West was complicit in the genocide through their business with the Iraqi regime in chemical precursors and equipment (Harris & Aid, 2013). For instance, Western countries including the United States, Italy, Germany, and Britain, all made arms deals with Iraq around the time of Anfal, some of which were specifically chemical (Dobbs, 2002; Harris & Aid, 2013). To demonstrate this truth in a particularly remarkable statistic, in 1988 the U.S.-based Dow Chemical Company sold "$1.5 million of pesticides to Iraq," which could easily have served as CW precursors (Dobbs, 2002).

In the years following Anfal, some advancements in the study and documentation of the topic, such as Human Rights Watch's respected and extensive official report, did work to illuminate the issue in the public eye. However, today, international coverage of the victims of Anfal is largely nonexistent. This ignorance arguably correlates with the precarious modern geopolitical situation of the Kurds, as governments are hesitant to acknowledge Kurdish tragedies and desires for fear of raising ire from the four countries that control the sovereignty of

Kurdish geography. The Kurds, on the other hand, commemorate the events of Anfal annually and describe them as central to their pursuit of independence from the Iraqi government.

ASSESSING THE LONG-TERM IMPLICATIONS OF ANFAL

Prior to novel data collection for this research, the current body of literature on the medical and political consequences of chemical warfare during Anfal was analyzed. This process encountered difficulties with the present situation of Kurdish development. Medical review had hurdles due to the lack of databases common in Western countries. For example, Iraqi Kurdistan does not have a national cancer registry to track statistics relevant to cancer over time (Zibari, 2020). Political review, on the other hand, was influenced by the lack of Kurdish statehood. Not only is Iraqi Kurdistan's semi-autonomy relatively new when compared to Kurdish history, but political reporting on Kurdish affairs is often suppressed by other Middle Eastern governments. Without certain scientific institutions and the bulk of research that comes from long-term governmental sovereignty, research on the Kurds deals with constraints that many other topics would not face. In comparison, the 1995 sarin attack on the Tokyo subway system, a one-day affair in a more developed nation, has no shortage of scholarly studies that meet international research standards.

This limitation impacted the medical literature review far more than the political literature review. In response to this, the literature review within this study leans on articles from respected peer-reviewed journals on the general consequences of chemical weapons to provide a foundation for the research into Anfal-specific facts. As supplemental evidence, peer-reviewed medical research on specific incidences of non-Anfal chemical warfare has been included. At the end of each section within the medical review, context from journals and researchers local to Kurdistan has been incorporated, with the stipulation that the reader understands the unique obstacles in scientific methodology that stem from a regional lack of resources. Given this

caveat, Kurdish scientists are diligently working to improve the scientific tools available to them (Moreno-Walton, 2020). Through the building of databases and partnerships with reputable foreign research institutions, Kurdistan-based medical research will progress and gain further international recognition.

Medical Literature Review

Table 1. Long-Term Medical Effects of Mustard Gas and Nerve Agents.

Component of Health	**Non-exhaustive List of Conditions Experienced**
Eyes	Mustard gas: Refractive errors (like astigmatism), keratitis, and blindness (Riazi et al., 2004; Ghasemi et al., 2009; Balali-Mood & Hefazi, 2005) Nerve agents: Impaired visual ability through nervous system dysfunction (Egoz et al., 2017)
Skin	Mustard gas: Burns, blisters, scarring, necrosis, hyper- and hypopigmentation, hypersensitivity, chronic dryness, and disfigurement (Balali-Mood & Hefazi, 2005)
Respiratory System	Mustard gas: Edema of respiratory tissue, epithelial necrosis, chronic bronchitis, asthma, bronchiectasis, airway narrowing, pulmonary fibrosis, chest pain, and respiratory failure Nerve agents: Respiratory paralysis, bronchosecretion, bronchoconstriction, and chest pain (Balali-Mood & Hefazi, 2005; Ganesan et al., 2010)
Cancer	Increased rates of hematological cancers, such as leukemia and lymphoma (Othman et al., 2011; Godsen, 1998)
Reproduction	Decreased fertility, increased congenital abnormalities in children, increased miscarriages, and increased perinatal deaths (Abolghasemi et al., 2010; Godsen, 1998)
Mental Health	Posttraumatic stress disorder, “poor general functioning,” depression, anxiety, personality disorders, and behavioral conditions (Balali-Mood & Hefazi, 2005; Dworkin et al., 2008; Ahmad et al., 2000; Kawana et al., 2001)

Blister agents and nerve agents were the most frequently employed methods of chemical warfare during Anfal, and their lasting medical effects have been significant to the Kurdish population. When considering the major medical consequences of CW, two categories of literature frequently arise: those that detail the somatic effects and those that detail the psychological effects. As noted by many of the articles, it is important to remember that the mind and body are inextricably connected. In fact, there is an entire field of medicine, known as psychosomatic medicine, which champions the study of the relationship between psychological factors and physical illness (Fava & Sonino, 2010). With this premise acknowledged, it is important to understand this literature review from a holistic viewpoint. Though each research team may focus on certain areas of health, each area undoubtedly affects others. Furthermore, the full body of general research on chemical agents and health is extensive, therefore this should be considered a detailed synopsis rather than a complete overview.

As mentioned in the discussion of OPCW's (n.d.) chemical agent categories, the eyes are vulnerable organs during chemical warfare. This is especially true when blister agents have been implemented (OPCW, n.d.). Mustard gas, a blister agent, was a major player in Iraq's Kurdish genocide (Hiltermann, 2007). Thus, many Kurdish survivors struggle with ophthalmological issues (Godsen, 1998). Among the long-term eye disorders reported after mustard gas exposure are refractive errors (like astigmatism), keratitis, and blindness (Riazi et al., 2004; Ghasemi et al., 2009; Balali-Mood & Hefazi, 2005). Sarin and VX, nerve agents utilized in Anfal, have also been shown to cause impaired visual ability through parasympathetic nervous system dysfunction (U.S. Department of State, 2003; Egoz et al., 2017). In a study completed in 2000 by the University of Duhok in Iraqi Kurdistan, 57.5% (n = 40) of the research subjects, who were

survivors of the Halabja massacre, experienced long-term ophthalmological concerns (Hama et al., 2008).

Aside from the eyes, skin is another external structure of the body that is commonly altered by CW (OPCW, n.d.). Many of the skin disorders caused by chemical warfare are acute in nature, such as blisters and burns (Ganesan et al., 2010). However, the severity of injury to skin is related to the duration of exposure (Balali-Mood & Hefazi, 2005). After multiple exposures, prolonged exposure, or in some cases singular brief incidence, mustard gas can lead to enduring problems such as scarring, necrosis, hyper- and hypopigmentation, hypersensitivity, and chronic dryness (Balali-Mood & Hefazi, 2005). Unfortunately, physical skin disfigurement is a difficult issue to fix in Iraqi Kurdistan, as the region has a shortage of the specialized surgeons that would complete reconstructive operations (Godsen, 1998). Of the 40 Halabja survivors surveyed by the University of Duhok in 2000, 12 years after the massacre, 50% reported lasting dermatological problems (Hama et al., 2008).

Of the three most common areas of concern for the health effects of chemical agents, eyes, skin, and the respiratory tract, the third is the subject of a substantial amount of research. Seeing as how people are more likely to die from chronic breathing problems than eye and skin irritation, this makes sense. Both blister agents and nerve agents can have detrimental impact on the respiratory system (OPCW, n.d.). As a baseline, nerve agents can cause respiratory paralysis and blister agents can induce edema of respiratory tissue (Ganesan et al., 2010). Physiologically, this results in conditions like epithelial necrosis, respiratory distress syndrome, chest pain, chronic bronchitis, asthma, bronchiectasis, airway narrowing, pulmonary fibrosis, bronchosecretion, and bronchoconstriction (Balali-Mood & Hefazi, 2005; Ganesan et al., 2010).

With the vast number of respiratory medical issues caused by CW, it is not surprising that 75% of the 40 Halabja survivors in the University of Duhok's study suffer chronic respiratory illnesses (Hama et al., 2008).

Regardless of warfare, cancer is considered a leading cause of death globally. In 2008, the World Health Organization reported that cancer alone was responsible for 13% of annual deaths (World Health Organization, n.d.). Within populations that have suffered CW attacks, many scientists suggest that the incidence of cancer is much higher (Godsen, 1998; Othman et al., 2011). Through her fieldwork with survivors of Anfal, Dr. Christine Godsen suggests that cancer rates in Halabja were "at least three to four times greater" than global averages "even 10 years after the attack" (Godsen, 1998). A research team in Iraqi Kurdistan investigated this claim by compiling the cancer registries of nine Iraqi Kurdish hospitals, and cross-checking them for duplicated patients that would normally be caught by a national cancer registry (Othman et al., 2011). They determined that not only was there an increased risk of cancer in Iraqi Kurdistan, but specifically hematological cancers showed highly increased rates (Othman et al., 2011). Although this research team did not have access to typical cancer databases expected in Western cancer research, they argue that their collection methods were valid and that their limitation in methodology "does not nullify the data" (Othman et al., 2011, p. 1264). Dr. Godsen's medical analysis of the area included notes on a rise in leukemia and lymphoma, which are hematological cancers (Godsen, 1998).

Aside from conditions that principally affect the survivors of chemical attacks, there are side effects of CW that also affect descendants of the survivors through abnormalities related to reproduction. In a study on the children of Iranian men exposed to mustard gas, it was found that

the children experienced rates of congenital malformations and respiratory diseases that were significantly greater than the children of Iranian men not exposed to mustard gas (Abolghasemi et al., 2010). Among the Iranian men participating, it was also determined that five of them who had been fertile prior to exposure became infertile after exposure (Abolghasemi et al., 2010). Further, anecdotal evidence from medical professionals and researchers adds to the body of literature supporting the idea that CW may lead to reproductive problems. For example, in Dr. Godsen's analysis of Halabja, she also reported a high infertility among the population, along with high numbers of miscarriages and perinatal deaths (Godsen, 1998). Lastly, in her thorough collection of interviews with Anfal survivors, Dr. Choman Hardi discovered stories of women who gave birth to stillborn babies after gas attacks occurred during their pregnancies and of women with young children at the time of the attacks who then grew up to be mentally delayed (Hardi, 2011).

While there are multiple fields of medicine left that could be considered in the context of CW, such as cardiology and neurology, the last major specialty that is most frequently discussed in relation to Anfal is psychiatry. During her stay in Halabja, Dr. Godsen described the psychiatric consequences of Anfal as ubiquitous, saying these consequences are visible in "almost every house and every ward of the hospital" (Godsen, 1998). In a 2006 study of 291 survivors of the Halabja massacre, researchers discovered higher than average rates of posttraumatic stress disorder and "poor general functioning" (Dworkin et al., 2008, p. 774). These results were especially significant in the women and the elderly of the sample (Dworkin et al., 2008). While the elderly participants may have experienced more traumatic violence due to their age, other researchers suggest that women are particularly vulnerable to traumatization. For

example, Dr. Hardi provides evidence that there is a gendered experience of the Anfal genocide, in which women suffered compounding traumatic events like rape and sexual assault (Hardi, 2011). Other studies present children as a greatly impacted population, concluding that 87% of the children of 45 families sampled in Anfal displacement camps showed signs of posttraumatic stress disorder (Ahmad et al., 2000).

These scientific results about the widespread and long-term psychiatric implications of the CW attacks are further supported by studies in Iran and Japan. A series of studies on the Iranian soldiers of the Iran-Iraq War stated that the veterans dealt with mental health matters including, but not limited to, depression, anxiety, personality disorders, and behavioral conditions (Balali-Mood & Hefazi, 2005). In a report that followed psychological symptoms of victims of the 1995 Tokyo sarin attack, posttraumatic stress disorder was diagnosed in 14.1% of the 191 participants (Kawana et al., 2001). The Japanese research team also indicated that due to cultural stigmatization of mental health, which could have led to an underreporting of posttraumatic stress disorder and depression, it is likely that additional participants suffer from the somatization of psychological conditions (Kawana et al., 2001).

As actors often choose chemical warfare to not only cause physical harm, but to subdue a population through psychological fear, these statistics show that it has been successful in its goal throughout many cases over time (Hiltermann, 2007). While many villages, towns, and cities that faced the Anfal Genocide were not discussed within these articles, the results of the Halabja studies, the Tokyo studies, and the Iranian studies can be used a standard of comparison for those left unresearched. In order to generate international research community interest on the medical consequences of Anfal, further development of scientifically valid databases and collections of

medical information are necessary. Once these are in place, studies of the biopsychosocial complications of Anfal's chemicals will be able to further progress and to potentially impact the general well-being of the Kurdish population (Moradi et al., 2019).

Political Literature Review

While the medical consequences of the CW usage during Anfal are well-studied, the long-term political consequences for Iraqi Kurdistan's population are significantly less researched. In fact, the body of literature describing the multifaceted political impact that chemicals had on the Kurdish future is slim to nonexistent. Although there are very few articles available on this topic, there is research detailing the effects of Anfal's chemical warfare on specific areas that influence politics, such as the economy. Additionally, though the Anfal Genocide is relatively understudied, other genocides, such as the Rwandan Genocide of 1994, have been extensively analyzed for political consequences. By supplementing the small amount of political discussion related to the CW of Anfal with evidence from other cases of genocide, a political literature review on this topic can be constructed.

The connection between a government and its people is arguably at the root of national politics. For this reason, governmental documents worldwide, like constitutions, often take great care to discuss this affiliation. Analyzing how the connection between the Kurdistan Regional Government (KRG) and its people has been altered due to CW is an important point of political examination. Shared trauma, such as experiences in wartime violence and the loss of significant individuals, has been shown to serve as a precursor to intense community bonding (Elder & Clipp, 1988). This conclusion would suggest that population-wide exposure to CW may be

responsible for a closer relationship between the KRG and the Kurdish citizens. In fact, researchers who have studied Anfal in relation to Kurdish nation-building have described Anfal as the "chosen trauma" that is central to the demands for Kurdish independence and secession (Baser & Toivanen, 2017).

However, recent studies have shown that the KRG's methods for handling the remembrance and outcomes of Anfal have driven a wedge between itself and its people (Watts, 2012). In fact, in 2006, Kurdish students led a large protest in Halabja against the KRG's policies regarding the CW legacy. The protest began as a peaceful attempt to block KRG officials from visiting the monument to the Halabja Massacre; however, after local security fired on the crowd, it ended with the death of one protestor and the injury of many. Expressing moral outrage, the protestors burned the Monument of Halabja Martyrs down. Researchers who have analyzed this outburst of community anger suggest that discrepancy between the speech and actions of the KRG contributed to this event (Watts, 2012). Specifically, protestors were furious that the KRG spent money building and maintaining the monument, which frequently saw visits from international diplomats, instead of applying the money to needs within Halabja (Watts, 2012). For example, at the time of the protest, most of Halabja lacked basic infrastructure like roads and nearly half the population had no reliable supply of water (Watts, 2012). A resident of Halabja summed local tensions by stating that "everybody uses Halabja like a card" and yet, "when it comes to working in Halabja, nobody does it" (Watts, 2012).

Aside from potential damage to Kurdish political leadership through citizen backlash, the Anfal Genocide can arguably be tied to the destruction of the Kurdish economy. Although economy is not an exact representation of a nation's political situation, financial affairs are

commonly discussed in political and governmental analyses. As a point of comparison, the detrimental economic effect of the Rwandan Genocide can be offered. Researchers claim that the Rwandan Genocide was responsible for a 58% decrease in Rwanda's GDP the year that it occurred (Holder, 2019). While no statistics are available on the GDP of Iraqi Kurdistan in relation to Anfal, it can be inferred that the Iraqi violence caused a decrease in regional productivity in 1988. This decrease in economic dealings, which the Human Rights Watch referred to as demolition of Kurdistan's "traditional rural economy," presumably had long-lasting political effect on the Kurds (Human Rights Watch, 1993). Although the Kurds have succeeded in other industries, such as their prosperous oil ventures in the early 21st century, agriculture's role as the historical basis of Kurdish finances makes its discussion worthwhile (Noori, 2016).

As referenced by the Human Rights Watch report, Kurdistan at the time of Anfal was a highly agricultural society. In the early 1980's, the Kurdish region of Northern Iraq supplied 25-30% of Iraq's total crop production (Eklund et al., 2016). However, through the destruction of villages, mass-killings, and the forced migrations of survivors, the attacks of Anfal dismantled a large portion of the prosperous Kurdish agricultural society (Eklund et al., 2016). To be exact, researchers estimate that post-Anfal there was a 400 square kilometers decrease of winter cropland, which is the most important growing season for the Kurdish diet (Eklund et al., 2016). This led to reliance on food imports in the 1990s, and even a United Nations-sponsored Oil for Food program (Hardi, 2011). Moreover, other studies also suggest that the chemicals of Anfal, specifically the mustard gas, may have led to a decrease in agricultural soil quality lasting four to five years (Razavi & Slalamati, 2013). While the alleged soil impact is both temporary and

contested, if Kurdish farmers believed their crops were experiencing ill-growth, the widespread depopulation associated with Anfal contributed to the Kurdish urbanization in the 1990s and further agricultural economic decline (Hardi, 2011).

The chemicals of Anfal not only disrupted the economy through Kurdish industry, but also through their medical consequences. Firstly, returning an area after an incident of CW usage to healthy conditions through decontamination is expensive. For example, the clean-up of the 2018 Russian Novichok nerve agent that targeted a former Russian spy in the United Kingdom cost 7.5 million pounds (BBC, 2018). Since this attack was miniscule compared to the scale of Anfal, the amount of money needed for a proper recovery from CW in Iraqi Kurdistan would have been exponentially higher. According to the World Bank's most recent report on the area, Iraqi Kurdistan's GDP per capita in 2011 was $4,452 (World Bank, 2015). As a comparison, the United Kingdom's GDP per capita in 2011 was $39,731 (World Bank, n.d.). With knowledge of how much lower Iraqi Kurdistan's GDP per capita is compared to the United Kingdom, it is doubtful that Iraqi Kurdistan could fully handle the extensive long-term costs of Anfal decontamination the same way that the United Kingdom was able to handle the 2018 Novichok cleanup.

Secondly, other than the finances of decontamination, the burden cast on the Kurdish health care system by Anfal is considerable. As mentioned in the medical literature review, the chronic conditions caused by exposure to CW affect everything from reproduction to psychiatric well-being. To give a concrete example of how impactful this potentially is, an average cost analysis of leukemia can be presented. This is relevant to the Kurds, since the rate of hematological cancers have shown an increase since Anfal (Othman et al., 2011). According to

researchers on acute myeloid leukemia, the most common type of acute leukemia in adults, the average treatment cost per patient is around $104,386 (Uyl-de Groot et al., 2004; Mayo Clinic, n.d.). As a society where hematological cancers and other forms of debilitating chronic conditions exist at higher rates, the issue of healthcare clearly weighs heavily on Kurdish pocketbooks.

This literature review on how Anfal directly impacted Kurdish politics is limited due to lack of research; however, by presenting the effects of chemical warfare on issues that affect politics, the connection can be indirectly inferred. In a recent poll by Gallup on American voters in preparation for the 2020 presidential election, both the economy and healthcare jointly ranked as "extremely important" for at least 30% of participants (Hrynowski, 2020). If American society views these issues as highly influential to political matters, it is likely that Kurdish society does as well. Overall, Anfal had various negative impacts of the economy, healthcare, and politics of Iraqi Kurdistan. As the recent research suggests, there is also a lack of trust among some segments of Iraqi Kurdistan regarding how the political leadership instrumentalizes the legacy of Anfal (Watts, 2012).

RESEARCH DESIGN AND METHODOLOGY

General Methods

As this research is exploratory in nature, it seeks to unveil further questions and areas of potential research in relation to the long-term medical and political consequences of the chemical weapons utilized in the Anfal Genocide. In accordance with this goal, there was no specific hypothesis or set of variables that dictated data collection. Instead, the novel qualitative information of this research was gathered from semi-structured interviews with participants by the guidelines below.

Soran University and UCF's Kurdish Political Studies Program

This research would not have been possible without the relationship between Soran University and the Kurdish Political Studies Program (KPSP) at the University of Central Florida. Soran University is a public university in Soran, Iraqi Kurdistan that is sponsored by the Kurdistan Regional Government. Geographically, Soran is close to the border of Iran and the Kurdish vacation town of Rawanduz, which is known for its beautiful waterfalls. Due to its role as a local hub for academics, and its close location to other countries and tourist attractions, Soran is frequented by people of many nationalities.

The University of Central Florida (UCF) is connected to Soran University through its position at the forefront of Kurdish studies within the United States. Currently, UCF contains the only endowed Kurdish studies program in the entire country, known as the Kurdish Political Studies Program (KPSP). Led by the inaugural Jalal Talabani Endowed Chair, Dr. Güneş Murat

Tezcür, KPSP seeks to promote academic studies and awareness of the Kurds. One method by which KPSP realizes its goal is by hosting conferences and events that serve as forums for domestic and international scholars of Kurdish studies to gather. Among leading Kurdish figures drawn by KPSP is Dr. Najmaldin Karim, a Kurdish neurosurgeon and former governor of Kirkuk (2011 – 2017) who sponsors a Kurdish political studies fellowship at UCF.

As a recipient of this fellowship in 2019, the author met many individuals who would later assist her with fieldwork in Iraqi Kurdistan through KPSP events. Among Soran University's faculty, Dr. Kamal Kolo, Dr. Mohammed Hussain, Dr. Nahro Zagros, and Ph.D. candidate Shorish Mustafa Abdullah were integral figures in the fieldwork this project entailed. Not only did they aid with the fieldwork transportation and accommodations, but they also served as a bridge to the local Kurdish community that allowed for participant recruitment. Without the help of Soran University and the Kurdish Political Studies Program at UCF, this research would have remained indefinitely incomplete.

Participant Recruitment

Due to the interdisciplinary nature of this research, the participants recruited for interviews came from a variety of backgrounds. The three categories of interviewees were as follows: political figures, medical personnel, and non-governmental organization activists. By sampling among different populations, the goal was to cover multiple angles of the medical and political consequences of Anfal's chemical warfare. Participants were recruited with the help of established connections within Soran University and KPSP using the technique of snowball sampling. Snowball sampling, which relies on initial study participants for the recruitment of

further participants, is frequently utilized within the realm of Kurdish studies. In fact, the 1993 Human Rights Watch report on Anfal, which serves as one of the most extensive resources on the topic, operated through snowball sampling as well.

While in Iraqi Kurdistan in July of 2019, the political and the non-governmental organization interviews were completed. Medical interviews were completed upon return to the United States over the phone. The difference in circumstance for the interviews is recognized as a limitation for this research. Over the course of two weeks in Iraqi Kurdistan, the author networked primarily within a group of Kurdish politicians. For this reason, snowball sampling was more successful in producing political interviews and non-governmental organization interviews than medical ones.

Aside from the trouble with snowball sampling, the medical component faced two other hurdles. Due to lack of regional resources, Kurdistan does not have the medical infrastructure necessary to completely train doctors of certain specialized areas to Western standards. One area that is lacking is emergency medicine, which is a classic specialty for doctors with interest in chemical weapons and other forms of mass-casualty care. This shortage created difficulty in contacting doctors within Iraqi Kurdistan to interview during the two weeks of fieldwork. As a solution, a number of international medical professionals with extensive experience working in Iraqi Kurdistan were interviewed over the phone upon return to the United States.

Lastly, medical interviews were disrupted by the 2020 pandemic caused by COVID-19. COVID-19 led doctors worldwide to experience a surge in work commitment as it triggered unprecedented strain on modern healthcare. The first few months of 2020 also served as the

collection period for the medical interviews of this research, which in turn led to multiple physicians having to cancel interview intentions related to this project.

Overall, the intended sample size for this research was a maximum of 15 participants, with five in each of the three professional areas. Although the maximum number was not reached, with a total of 12 interviews conducted, the sample size is still valuable for the purposes of this study. If global health events in March 2020 had not disturbed medical interview appointments, the sample size would total 14 participants. The data and conclusions drawn from each of the 12 successful interviews can be found in the findings section of this paper.

Table 2. Political Interviews.

Participant Name	Job Description	Interview Date	Interview Location
Baravan Hamdi Hussein	Minister of Martyrs and Anfal Affairs	July 9, 2019	Erbil, Iraqi Kurdistan
Ayad Kakayi	Head of the Kurdistan Bar Association	July 9, 2019	Erbil, Iraqi Kurdistan
Shno Jamil Hamalaw	Halabja Community Leader	July 10, 2019	Halabja, Iraqi Kurdistan
Omid Abdullah Salah	Director of the Halabja Branch of the Ministry of Martyrs and Anfal Affairs	July 10, 2019	Halabja, Iraqi Kurdistan
Ashqi Mala Sheroky	Director of the Soran Branch of the Ministry of Martyrs and Anfal Affairs	July 15, 2019	Soran, Iraqi Kurdistan

Table 3. Medical Interviews.

Participant Name	Job Description	Interview Date	Interview Location
Gazi Zibari	Transplant Surgeon	February 12, 2020	Phone Interview
Lisa Moreno-Walton	Emergency Physician	March 24, 2020	Phone Interview
Lou Smith	Trauma Surgeon	March 29, 2020	Phone Interview

Table 4. NGO Interviews.

Participant Name	Job Description	Interview Date	Interview Location
Rekar Mzoiri	Activist and Writer	July 9, 2019	Erbil, Iraqi Kurdistan
Luqman A. Muhammad	Director of the Halabja Chemical Victims Society	July 10, 2019	Halabja, Iraqi Kurdistan
Hikmat Fayaq Arf	Halabja Chemical Victims Society Member	July 10, 2019	Halabja, Iraqi Kurdistan
Ruba Muhamad Salim	Halabja Chemical Victims Society Member	July 10, 2019	Halabja, Iraqi Kurdistan

Interview Design

Before constructing interview design, the major barrier that the author had to cross was that of language. In this issue, Soran University and its student body were exceedingly helpful. Soran University graciously connected the author with Shawan Saeed, a master's level English student who speaks native Sorani Kurdish, to serve as an interview translator. Shawan accompanied the author to all interviews that took place in Iraqi Kurdistan, and she provided invaluable help transcribing the interview responses from Kurdish into English. As all the medical professionals involved spoke fluent English, Shawan's help was not needed with the 2020 phone interviews that took place in the United States. Shawan's cousin and Soran University transportation employee, Rekan Kamal Kchka, drove the research team around Iraqi Kurdistan as the interview locations were often hours apart. As a solo traveler and an originally unfamiliar individual to the Kurdistan region, the author was incredibly grateful to have Shawan and Rekan's aid with the interview process.

The interviews followed a semi-structured format that began by following IRB-approved question sets specific to each of the three professional areas, which can be found in Appendix E.

After the pre-written questions were exhausted, the flexible portion of the interview continued based on the previous content from the participant. Typically, interviews lasted around 60 minutes. The conversation between the author, Shawan, and the participant was recorded to allow for referencing during data analysis. The 2020 phone interviews followed the same format, with the exception of translator usage and face-to-face interaction.

MEDICAL FINDINGS

Participant Introductions

Dr. Gazi Zibari, a renowned transplant surgeon, was born in the Kurdish village of Bira Kepra in 1955. As a young adult in 1975, he was forced to walk at least 10 days through the snowy Kurdish mountains as he escaped to Iran to avoid Iraq's persecution of the Kurds following the collapse of the Barzani rebellion. After living in a refugee camp in Iran, he eventually moved to Nashville, Tennessee through a refugee sponsorship program. In Tennessee, Dr. Zibari graduated both college and medical school before moving to Louisiana for his surgical residency. Since then, Dr. Zibari has accumulated awards like the 2007 Ellis Island Medal of Honor for immense contributions to the United States and the global community throughout his career.

Among his important contributions is an international medical outreach program serving the people of Iraqi Kurdistan, which Dr. Zibari founded in 1992 after being able to return home for the first time due in the aftermath of the First Gulf War. Since its establishment, Dr. Zibari's large medical team has grown to include doctors such as Dr. Lou Smith, a trauma surgeon, and Dr. Lisa Moreno-Walton, an emergency medicine physician. Their goal to improve the Iraqi Kurdish medical system has even been recognized in Roger Lindley's 2018 documentary entitled *Kurdish Factor: The Untold Story of The Gulf Wars*. Between Dr. Zibari, Dr. Smith, and Dr. Moreno-Walton, there exists a tremendous amount of expertise on the modern situation of Iraqi Kurdish healthcare, which made them ideal candidates for the medical interviews of this research.

How Chemical Weapons Shaped Iraqi Kurdish Healthcare

While the medical literature review on chemical warfare made it clear that Anfal had immense impact on Iraqi Kurdish health, an important component of the interviews was to collect more nuanced and personalized insights about this pattern. Each of the physicians offered unique takes on the issue, but all three supported the idea that chemical agents had undoubtedly caused long-term medical consequences for the Kurds. As directed by previous literature, main areas of interview conversation included topics like cancer, reproduction, and psychiatry.

From the somatic perspective, Dr. Zibari and Dr. Moreno-Walton indicated that they had perceived higher rates than typical of certain bodily conditions (2020). They both agreed that a predominant effect of chemical weapons in the Kurdish region has been an observed increase in cancer cases (2020). Dr. Zibari further elaborated by specifically noting that regional oncologists are concerned mostly about hematological cancers and lung cancers when in relation to chemical warfare (2020). Dr. Moreno-Walton additionally offered that birth defects are a problem she believes the Kurds have become more worried about since the attacks of Anfal (2020).

While these serious health conditions were brought up within the interviews, all three physicians focused most of their discussion on how Anfal shaped healthcare based on psychological effect. In Dr. Zibari's words, "what [the Kurds] need more than anything else is psychological help" (2020). Dr. Smith was in Iraqi Kurdistan in 2013, for the 25th anniversary of the Halabja Massacre, and she spoke of the poignancy of the commemoration (2020). At the same time that the massacre took place in 1988, Kurdish radio stations and media announced for everyone to go outside (Smith, 2020). Once the car she was in had pulled over, Dr. Smith and the other individuals in the area stood and faced the direction of the Kurdish town as a striking

symbol of remembrance (2020). In her thoughts referencing the experience, Dr. Smith said "it's uncomfortable to realize there are people that want to exterminate you, I have no clue what that is like," adding that for the Kurds it must be a daily "eerie feeling" (2020).

While not every citizen directly faced a chemical attack, it is said that everyone in Iraqi Kurdistan at least knows someone who did, and that this reality offers a community-wide mental burden (Smith, 2020). In one of their trips, Dr. Zibari's team met many people affected by chemical warfare while traveling throughout the region, including a village that had been almost entirely exterminated when a wedding celebration was gassed during Anfal (Smith, 2020). The only survivors, those who had been out of town, struggled with the loss of life as they knew it upon return (Smith, 2020). For the survivors and their descendants, Dr. Moreno-Walton expressed that there is a lingering fear similar attacks may await them in the future (2020). Since the population is "very conscious [Anfal] could happen again," it is imaginable that the psychological toll must be high, even in present-day 32 years later (Moreno-Walton, 2020).

The Kurds have seen many incidents of violence since the Anfal Genocide, including the recent massacres of the Yezidis, a Kurdish-speaking religious minority, by ISIS, which Dr. Zibari described as "Anfal all over again" (2020). Dr. Moreno-Walton expressed concern that this historic trail of conflict has not only led to a psychological decline in Iraqi Kurdistan's patient population, but also perhaps a psychological decline in their medical providers (2020). In fact, one of her current research partnerships, which will be discussed later, covers this topic (Moreno-Walton, 2020). While psychiatrists and other kinds of physicians routinely deal with stressful events, Dr. Moreno-Walton claims that "the magnitude of community suffering is so unusually high" in Iraqi Kurdistan, that it could theoretically lead to occupational distress (2020).

While the results of the research have not yet been completed, projects like this one may potentially add to the body of work detailing just how significant Anfal has been to Iraqi Kurdish health since 1988.

What Iraqi Kurdish Healthcare Needs

Upon arriving back in Iraqi Kurdistan in 1992, Dr. Zibari encountered a much different medical system than the one where he had learned to practice in the United States. In his interview, he described walking into a hospital that served a patient population of 1,000,000 people, only to find "empty pharmacy shelves" and "nonfunctioning x-ray machines," among other sights (Zibari, 2020). By Western standards, many of these deficits still exist in Iraqi Kurdistan today, as Dr. Zibari estimates the Iraqi Kurdish healthcare system to be "three decades behind" the ones of the United States and Western Europe (2020). However, as Dr. Zibari pointed out, when reviewing these shortfalls, it is important to consider how they historically stem from oppression by the Iraqi regime (2020).

Both prior to Iraqi Kurdistan's semi-autonomy and after its recognition in Iraq's 2005 constitution, the Iraqi government failed to provide resources to the Kurds (Zibari, 2020). Per its constitutional writing, Baghdad should be significantly aiding Iraqi Kurdistan's finances, but it has continuously failed to uphold this agreement (Zibari, 2020). To give an exact figure to Dr. Zibari's statement, according to Reuters, the Iraqi government should be sending 17% of its overall finances to the Kurdistan Regional Government annually (Zhdannikov, 2015). In recent years some negotiations have suggested a lower percentage, around 15%, after the Iraqi government's claims that Iraqi Kurdistan's GDP to population share should be lowered (Rudaw,

n.d.). Without this money to bolster Iraqi Kurdish healthcare, many patients go underserved, like children mentioned by Dr. Zibari who only receive some of the expensive chemotherapy courses their cancers desperately require (2020).

This lack of finances and resources leads to problems for the patient population, which includes the chemical warfare survivors of Anfal. Both the acute treatment of CW victims in 1988 and their long-term treatment in the 21st century have been affected by these insufficiencies. Before offering solutions that would lead to improvement in the quality of life for the Anfalakan, an alternate name for the survivors of Anfal, Dr. Zibari, Dr. Smith, and Dr. Moreno-Walton helped to iron out exactly what has room for improvement in Kurdish healthcare (Human Rights Watch, 1993). From an American perspective, this list includes "lots and lots of things that [Americans] take for granted" (Smith, 2020).

At the root of Iraqi Kurdish healthcare problems, is an underdeveloped medical education system (Zibari, 2020). As to not be misunderstood, this is not due to any lack of intelligence within the Kurdish population, but instead the lack of resources typically offered in Western areas (Moreno-Walton, 2020). For example, in the United States there are national organizations that handle both the "matching" of medical students into medical specialties, and the organization and standardization of residency training programs. These same national organizations do not operate in Iraqi Kurdistan, in fact many areas of medical sub-specialization are not offered at all for lack of training opportunity (Zibari, 2020). To show how this relates to the Anfalakan, a reproductive example can be proposed. If a baby is born with operable congenital anomalies, a family in the United States would likely immediately seek the attention of a pediatric surgeon. However, in Iraqi Kurdistan, many areas of pediatric surgery sub-

specialization are either limited in accessibility or nonexistent (Zibari, 2020). The same can be said about many other medical specialties, like obstetrics and gynecology, that are prevalent in the Western world (Zibari, 2020).

However, even the physicians who go into functioning medical specialties in Iraqi Kurdistan, like general surgery, face issues due to lack of supplies (Moreno-Walton, 2020). Without the tools necessary to perform their jobs to the highest degree, Kurdish doctors will encounter obstacles when attempting cutting-edge medicine (Moreno-Walton, 2020). For example, as Dr. Moreno-Walton commented, it does not matter how smart a medical professional is, if they never have access to ultrasound equipment, they will never know how to use an ultrasound properly (2020).

Medical tools, and Iraqi Kurdistan's lack of them, goes beyond handheld diagnostic devices or surgical appliances. Recognized medical centers, such as a national center for poison control, are also absent from the area (Zibari, 2020). Not only could a poison control center resolve common complications like accidental drug ingestion in children, but it could have also provided support related to the poisonous gases of Anfal and how to treat them (Moreno-Walton, 2020; Zibari, 2020). Many people lost their lives in 1988 during attempts to save themselves, like washing off their bodies in rivers that had been doused in chemical agents (Kurdistan Memory Programme, n.d.). Unfortunately, no place like a poison control center was around to educate the Kurds, leaving one to wonder how many lives it could have saved through medical guidance.

Additionally, as mentioned in the literature review as a limitation, Iraqi Kurdistan lacks several of the national databases utilized for decision-making and research in modern healthcare in many countries (Moreno-Walton, 2020; Zibari, 2020). Among the most important missing are

a national cancer registry and a database that tracks health outcomes related to traffic accidents (Moreno-Walton, 2020). While these may seem unimportant to the Anfalakan, without standardized datasets for Kurdish researchers to pull from, the scientific integrity of the research stemming from the region will continue to be doubted on an international scale (Moreno-Walton, 2020). If reports about the Anfalakan are considered statistically unsound, academic and public awareness about their chronic health conditions may not spread as far as it could.

Lastly, mentality surrounding medical care also has room for improvement in Iraqi Kurdistan. In the West, there is an expectation that physicians will promote transparent sharing of information, good or bad, with their patients. This system of healthcare aims to both hold physicians accountable and to involve patients in their medical decisions. Historically, these aspects of a physician's career were not taking place in Iraqi Kurdistan, due to the presumed authority of doctors within the community and the subordinate nature of patients (Zibari, 2020; Moreno-Walton, 2020). Aside from this, Dr. Smith also reports that many Kurdish physicians disregard general medical practices like wearing masks in operating rooms (2020). But, she added, before judging the character of medical professionals in Iraqi Kurdistan, it is important to consider their situation (Smith, 2020). Due to all the violence they have suffered, Dr. Smith suggested that the Kurds have become "people of the moment," who "might not worry about tomorrow since they might not be there" (2020). With this mantra in mind, the tendency of Dr. Zibari's health team to worry over physician-patient relationships and good hygiene derives from the privileged nature of the American healthcare system.

Potential Solutions and Methods for Improvement

For the healthcare of the Anfalakan and the rest of Iraqi Kurdistan's population to improve, Dr. Smith says the ideal solution would be if the Kurds "could be there on their own," and that escaping the grasp of Baghdad would "truly help them" (2020). However, after the failed independence referendum of 2017, this solution seems unlikely for the foreseeable future. Fortunately, medical routes that would help the Anfalakan exist without the necessity of Kurdish statehood. For example, the implementation and emphasis of sustainable global health programs, like the one started by Dr. Zibari, could be an integral solution. The phrase "sustainable" is a crucial component of this idea as global health programs that do not lead with long-term impact and ability may do more harm than good (Smith, 2020). According to Dr. Moreno-Walton, there are three steps that Dr. Zibari's team follows to act sustainably within Iraqi Kurdish healthcare (2020). Those steps are 1) to train native Kurdish physicians, 2) to train the "boots on the ground" workers of the area, and 3) to bring the tools needed for training to Iraqi Kurdistan and to return to the United States without them (Moreno-Walton, 2020).

While Dr. Zibari's team does help many patients while in Iraqi Kurdistan, the program is less about serving individual people than it is "educating the educators" (Smith, 2020). The team does not stay in Iraqi Kurdistan for enough of the year to make large impact by just seeing patients the way they would normally, so they extend their reach by exercising the idea of capacity-building (Smith, 2020; Zibari, 2020). The World Health Organization defines capacity building as:

> "the development of knowledge, skills, commitment, structures, systems and leadership to enable effective health promotion...[with] actions to improve health at three levels: the

> advancement of knowledge and skills among practitioners; the expansion of support and infrastructure for health promotion in organizations, and; the development of cohesiveness and partnerships for health in communities" (2006).

Capacity-building for Dr. Zibari's team revolves around teaching procedures to native Kurdish doctors that they would not otherwise have access to due to lack of sub-specialization training (Zibari, 2020). American medical residents and medical students may accompany the team but are never supposed to do more than observe, since the teaching is fully focused on native Kurds (Moreno-Walton, 2020). The argument for this is that global health programs are "not sustainable if they are not culturally competent" (Moreno-Walton, 2020). Not only do the native Kurdish physicians know how to practice within their culture, but after Dr. Zibari's team leaves, they can further the spread of impact by teaching even more Kurds the same skills in the interim between outreach sessions (Moreno-Walton, 2020).

This partnership has shown great success in many areas. For example, before a procedure led by Dr. Zibari in 2004, a living kidney transplant had never been completed in Iraqi Kurdistan (Zibari, 2020). For reference, the first living kidney transplantation in the United States occurred in 1954. From a comparative perspective, the time gap is astonishing. To an Anfalakan suffering from chronic conditions after exposure to CW, the development of the transplantation sector could theoretically lead to life-altering improvements of health. Dr. Zibari reported that at least 3,000 living kidney transplantations have been successfully completed by those who have learned from his medical outreach team and its branches of capacity-building (2020). Other examples of the many procedures and practices taught by the medical outreach team have included laparoscopic surgery, ultrasound technique, advanced trauma life support classes, and

lessons on shared decision-making in the physician-patient relationship (Moreno-Walton, 2020; Smith, 2020).

To further capacity-building on an international level, Dr. Zibari would like to expand the availability of American medical fellowships to physicians in Kurdistan (2020). When he first began his outreach in 1992, there had been no Kurdistan-trained physicians within the American College of Surgeons fellowship program (Zibari, 2020). Since then, there have been at least 35, but Dr. Zibari would like to see this number grow to cover more surgeons and more specialties (2020). In his interview, he proposed a model where major hospitals in the United States would each have one position open at a time for an international medical fellow from an underrepresented place like Kurdistan (Zibari, 2020). If this were to occur, the number of sub-specialized physicians in Iraqi Kurdistan would grow exponentially, and potentially pave the way to aiding the chronic conditions of the Anfalakan.

As the second step to sustainable global health, the team also works with so-called "boots on the ground people" (Moreno-Walton, 2020). The identity of these individuals varies within different communities, but in general they are integral members of a healthcare system who do not work as physicians (Moreno-Walton, 2020). When asked to give a non-Kurdistan example to help clarify, Dr. Moreno-Walton described a successful initiative in Uganda launched by the American College of Obstetricians and Gynecologists (2020). In Uganda, communities were experiencing an abnormally high number of head birth defects that led to mothers with children stuck in their birth canals (Moreno-Walton, 2020). This incredibly dangerous situation for mother and child often occurred far from hospitals, and once the patients arrived to doctors the babies were often found decaying within septic mothers (Moreno-Walton, 2020). As a "boots on

the ground solution," the American College of Obstetricians and Gynecologists partnered village midwives with Ugandan OBGYNs to teach the midwives the method behind caesarean section (Moreno-Walton, 2020). As for Iraqi Kurdistan, a substantial place for "boots on the ground" work is within the emergency response departments, which will be discussed within the next main section (Moreno-Walton, 2020).

Lastly, as the third step of sustainable global health, Dr. Zibari's team works to provide tools to the Kurdish medical professionals they partner with (Moreno-Walton, 2020). While the tools provided change over time, in the past they have donated things such as an ultrasound machine through the generosity of the American hospital system (Moreno-Walton, 2020). However, medical equipment is expensive, and there is a reality that the team "can only do so much within this context" (Smith, 2020). One way the outreach program offers tools that surpass traditional financial obstacles, is by collaborating with the Kurds on research projects (Moreno-Walton, 2020). Aside from the aforementioned research on provider psychology, Dr. Moreno-Walton is currently involved in two other research projects (2020). The first is tracking the patient outcomes of the transplantation services founded by Dr. Zibari's team and comparing them to outcomes in traditional Western fellowship programs. The second is evaluating the impact of martyrdom on the health of surviving families in Iraqi Kurdistan, which is highly relevant to the Anfalakan (Moreno-Walton, 2020). By starting projects with researchers, Dr. Moreno-Walton hopes to expand the capacity-building at the core of the medical outreach team's methodology (2020).

Medical Advice for the Recurrence of Chemical Warfare

From the interviews with Dr. Zibari's team, a clear takeaway is that expansion of sustainable medical outreach from the international community would help not only the Anfalakan, but also the Iraqi Kurdish healthcare system as a whole. As a benefit, their model does not require Kurdish statehood to function. However, this approach cannot calm the thoughts that many wonder – *what if something similar were to happen again in Iraqi Kurdistan?* From the medical perspective, Dr. Zibari, Dr. Moreno-Walton, and Dr. Smith were asked how the KRG could better handle another instance of mass casualty on the scale of the chemical warfare experienced in 1988. Overwhelmingly, their answers pointed to development of infrastructure within the Iraqi Kurdish emergency medicine division (Zibari, 2020; Smith, 2020; Moreno-Walton, 2020).

As President-Elect of the American Academy of Emergency Medicine, Dr. Moreno-Walton has extensive knowledge on mass-casualty situations and has served as a lecturer on chemical weapons (2020). According to her, the most effective step the KRG could take to prepare would be to "develop an organized incident command center" (Moreno-Walton, 2020). An ideal incident command center, she continued, would dispatch knowledgeable leaders in times of disaster who would then provide uniform instructions for the medical community throughout Iraqi Kurdistan (Moreno-Walton, 2020). If this center correctly performs its duties, the KRG should see "the least damage, to the least number of people, with the least number of resources," as compared to the widespread death that could occur without the center's leadership (Moreno-Walton, 2020). As a caveat, solely having an incident command center does not always result in the minimization of death. This stipulation was added by Dr. Smith when the

conversation turned briefly to the United States' handling of the COVID-19 pandemic, which occupied seemingly every headline at the time of this interview (2020).

This idea of emergency uniformity is something that is lacking, within Iraqi Kurdish healthcare (Smith, 2020). Dr. Smith's time as a trauma surgeon abroad supplied anecdotes supporting this claim (2020). During one of her shifts in an emergency hospital in Erbil, the capital of Iraqi Kurdistan, a family once drove up to her building with a gunshot wound victim (Smith, 2020). Moments later, the car sped away after speaking with hospital employees in the parking lot (Smith, 2020). Dr. Smith was told the patient had been sent away to the hospital that handled gunshots, since the staff reportedly did not treat them there (2020). As an individual with both the skill needed to save that patient and the knowledge that "time is of the essence" in critical medical situations, the incident was understandably frustrating for her (Smith, 2020).

When commenting on the lack of emergency organization, Dr. Zibari reflected again on Western privilege (2020). He mentioned that it is shocking how Iraqi Kurdistan, an area that has seen unspeakable violence and countless wars, has not a single hospital that could be classified as a Level I trauma center by Western standards (Zibari, 2020). Level I trauma centers, which represent the highest quality of care for emergency situations, can be found all around the United States. In fact, the University of Central Florida, the home of the Kurdish Political Studies Program, is a mere 20-minute drive from the nearest Level 1 trauma center. Given the absence of any recent chemical weapons attacks and genocidal campaigns in Central Florida, the inequality of the situation is remarkable. Per Dr. Zibari, the imbalance can once again be tied back to Iraqi Kurdistan's resource depravation (Zibari, 2020).

As for a tangible plan to achieve greater emergency services, the doctors highlighted three areas: a nationwide emergency phone number, ambulances, and hospital organization (Zibari, 2020; Smith, 2020; Moreno-Walton, 2020). Recently, Kurds gained access to 122, their equivalent of the American 911, after massive efforts by an Italian aid organization (Smith, 2020). However, the phone number is not accessible to everyone in the region and even if it was the responsive ability is low (Moreno-Walton, 2020). Not only are there few ambulances and paramedics, but the standards regulating them in the West do not exist in Iraqi Kurdistan (Moreno-Walton, 2020). Neither medical equipment nor level of personnel training is universal within their fleet of emergency vehicles (Moreno-Walton, 2020). In fact, Dr. Moreno-Walton once recalled watching two ambulance employees get a call for a patient in distress, only for them to tell the patient that they would come once their tea break was over (Moreno-Walton, 2020). The individuals, who did not have official paramedic training, meant no harm, they simply did not understand the urgency of the matter and their importance as "boots on the ground" employees (Moreno-Walton, 2020).

Once the patient has made physical contact with an emergency response team, getting to the local hospital is a whole new problem (Zibari, 2020). Traffic in Iraqi Kurdistan can be intense, with little adherence to road rules, and airlifting patients is not an option (Zibari, 2020). Due to these circumstances, which impair the "golden hour" after traumatic injury that life-saving maneuvers are most successful in, people frequently pass away on the busy highways (Zibari, 2020). If the patient were to make it to the hospital, and the right hospital at that, internal efficiency exists as the next hurdle (Smith, 2020). Dr. Smith stated that Iraqi Kurdish hospitals

lack operation room organization, leading to the financial waste of misplaced supplies and complications during surgery when necessary equipment cannot be located (2020).

When reading this litany of barriers to healthcare, the thought of Iraqi Kurdistan facing a recurrence of Anfal-like conditions is bleak. Since nationwide reform without proper economic support would be nearly impossible, the idea of a "citizen soldier" take on chemical weapons defense could be proposed. In this model, the Kurds would be distributed gas masks and other supplies that may defend against chemical agents with the intention of promoting self-defense (Moreno-Walton, 2020). Other countries, like Israel, have utilized this method in the past (Zibari, 2020). Though this method may appear more achievable than reform of an entire healthcare system, Dr. Moreno-Walton does not support it as a means of mass-casualty management (2020). In distressing times, people often panic or act in ways that subjectively help their family members over others (Moreno-Walton, 2020). For these reasons, relying on citizens instead of an objective incident control center may exacerbate fatalities (Moreno-Walton, 2020). If Iraqi Kurdistan were to implement national restructuring to their emergency services, the transformation would be an uphill battle and would require support from international allies, but it could save an invaluable amount of life.

POLITICAL FINDINGS

Participant Introductions

The Kurdistan Regional Government (KRG) emphasizes the importance of Anfal by establishing official government positions dealing with the issue. The highest office, the Minister of Martyrs and Anfal Affairs, is within the Cabinet of Iraqi Kurdistan's Prime Minister. Although the Cabinet has since been recomposed, Mr. Baravan Hamdi Hussein held this position in July of 2019. As the reigning expert on Anfal within the KRG, Mr. Baravan Hamdi Hussein provided not only a solid foundation for the political findings, but also facilitated the starting point of the snowball sampling that participant recruitment of this study relied on. An interview with the Minister of Martyrs and Anfal Affairs on any occasion would have been an Anfal researcher's honor, but to have interviewed him on his last day of office was particularly special.

Following the interview of the highest national office on Anfal, this project focused on regional and topical representatives within the KRG. The directors of the Soran and Halabja branches of the Ministry of Martyrs and Anfal Affairs, Mr. Ashqi Mala Sheroky and Mr. Omid Abdullah Salah respectively, were interviewed for the perspective of local politicians. Alongside Mr. Omid Abdullah Salah an outspoken community political leader, Mrs. Shno Jamil Hamalaw, was also interviewed in Halabja. Lastly, to showcase the legal dealings within the political realm of Iraqi Kurdistan, the Head of the Kurdistan Bar Association and Head Legal Consultant to the Kurdistan Regional Government, Dr. Ayad I. Kakayi, was questioned.

As the research design of this project stated, interviews fell into three categories: medical, political, and non-governmental organization (NGO) workers. While the political and NGO employees did discuss the medical impacts of the chemical warfare during Anfal, the vast

majority of their conversations focused on politics and topics that fall within the governmental sphere. Additionally, regarding the physiological component of the medical impacts on survivors, no new information was presented that has not already been thoroughly discussed within the medical literature review or the medical findings section. For these reasons, the political and NGO interviewees have been contained within the political findings of this research.

The three NGO workers that participated are members of the Halabja Chemical Victims Society, which operates in Halabja, Iraqi Kurdistan. This organization aims to serve the needs of the direct survivors and the descendants of the Halabja Massacre in 1988. According to the interviews, it is the only NGO in Iraqi Kurdistan with this goal (Muhammad, 2019). Those who contributed to the research discussion were the Head of the Society, Mr. Luqman A. Muhammad, and two long-term members, Mr. Hikmat Fayaq Arf and Mrs. Ruba Muhamad Salim. Lastly, to add another view to the NGO interview pool, Mr. Rekar Mzoiri was interviewed for his contributions as an activist and respected writer on Kurdish genocides.

How Chemical Weapons Altered Iraqi Kurdish Internal Relations

As discussed in the political literature review, the events of chemical warfare during Anfal influenced the long-term relationship between the KRG and its people. While the previous research on the attitudes surrounding the Monument of Halabja Martyrs suggested this relationship was damaged as a result of how the government deals with Anfal (Watts, 2012), the interviews held with politicians and NGO workers in Iraqi Kurdistan did not overtly support this viewpoint. When asked if the wishes of the public and the government differ in relation to Anfal,

Minister Baravan Hamdi Hussein claimed this was not the case (2019). In fact, he stated that since the Kurdish people formed the KRG, the two entities are one functioning unit and would not be able to hold different perspectives on the issue (Hussein, 2019). This idea of unity was echoed by the director of the Soran's branch of the Ministry of Martyrs and Anfal Affairs, Mr. Ashqi Mala Sheroky, who said that the KRG considers the needs of its survivors in every decision that it makes (2019).

These sentiments highlighted positive affiliation between the KRG and its citizens in relation to Anfal, but some of the statements recorded in the interviews also presented possible underlying discord. For example, views on the resources available for the chemical attack survivors were conflicting. Minister Baravan Hamdi Hussein stated that his office works to provide financial and medical support to the victims, with Mr. Ashqi Mala Sheroky adding that monthly salaries are given to the individuals affected throughout Iraqi Kurdistan (2019). While the notion of the KRG attempting provisions was constant throughout the interviews, the discrepancies lied in what was actually provided regularly. The matter of the hospital built in Halabja for the victims of Anfal illustrates this well.

Minister Baravan Hamdi Hussein stressed the hospital, which opened in 2019, as a method of KRG support for its citizens; however, many people in Halabja are still seeking medical treatment in other countries (Hussein, 2019; Hamalaw, 2019). Mrs. Shno Jamil Hamalaw, for instance, makes the arduous journey to Tehran, Iran once every three months for the treatment of her own chronic conditions caused by the chemical agents of Bloody Friday in March 1988 (2019). With a newly dedicated hospital constructed in town, the citizens would ideally receive care closer to home but are prevented from doing so by the hospital's lack of

specialized medical professionals and supplies (Salah, 2019). Additionally, the members of the Halabja Chemical Victims Society indicated that the area of greatest need, psychological support, has not received as much funding from the KRG as fully somatic conditions (Muhammad, 2019). Minister Baravan Hamdi Hussein's details of extensive programs focused on psychological recovery for the Anfalakan run contrary to these narratives (2019).

Mr. Ashqi Mala Sheroky supplied an important point that helps to contextualize these inconsistencies by noting that there are major political barriers to the medical care of survivors in Iraqi Kurdistan (2019). In times when the KRG's economic position is not doing well, the government is not realistically able to extend its victims services as far as they would like (Hussein, 2019). This reality is further impacted by the fact that the Iraqi government has allegedly not paid a single dollar in reparations for the survivors of Anfal (Luqman, 2019). If Iraqi Kurdistan's economy were to flourish, Minister Baravan Hamdi Hussein reported that the KRG would like to provide housing, education, and medical treatment at no expense to every Anfalakan (2019).

While some aspects of this ideal scenario are in place in present-day, the current ratio of chemical attack survivors to Iraqi Kurdish finances prohibits welfare program growth (Hussein, 2019). In the interviews with the politicians and NGO employees, it seemed universally understood that the KRG does its best to justly address the issue but is essentially caught in a geopolitical predicament with no easy answer (Salah, 2019). However, with prior knowledge of the burning down of the Monument of Halabja Martyrs, which has since been returned to its former shape, it leads one to ponder if the typical Kurdish citizen also understands the complexity of Anfalakan care and finances. If the average citizen in Halabja fully believed the

KRG was doing its best to equally and productively distribute survivor funds, it is inconceivable they would have burned down their town's own memorial. These actions, which do not fully match the words and sentiments of the unity expressed in the political and NGO interviews, suggest the interviews may have contained either an internal professional bias or a greater level of economic comprehension than an average person in Iraqi Kurdistan would have. Given the lack of transparency reported in sectors within Iraqi Kurdistan like the oil industry, a divide between the public and government in financial comprehension would not be surprising (Saeed, 2019).

How Chemical Weapons Impacted Iraqi Kurdish Economy

As was theorized indirectly within the literature review, the political and NGO interview participants largely supported the concept that the chemical warfare of Anfal had a strong negative effect on the economy of Iraqi Kurdistan. In his assessment of Anfal, Minister Baravan Hamdi Hussein claimed that the chemicals were destructive to the potential of prosperity the region had shown in the 1980s (2019). If the Iraqi violence, which forced the migration of thousands and destroyed infrastructure along the way, had not occurred, he believes that Iraqi Kurdistan would be a powerhouse in the industries of tourism and petroleum production (Hussein, 2019).

The idea of industry interference was commonly voiced within this set of interviews. Like the researchers in the literature review proposed, Dr. Ayad Kakayi suggested that a highly influential, yet infrequently discussed, component of the Anfal chemical attacks was the devastation of Kurdish agricultural society (Kakayi, 2019; Eklund et al., 2016). Aside from the

fact that Anfal's chemical violence led to the abandonment of farmland, Dr. Ayad Kakayi indicated that the chemicals brought stigmatization to the many crops (2019). For example, Dr. Ayad Kakayi noted that many consumers are unwilling to eat the once popular pomegranates that grow in Halabja for fear that the chemical agents have made them unsafe (2019). The members of the Halabja Chemical Victims Society reiterated this concern, saying that they no longer eat the fruit grown in areas affected by Bloody Friday (Luqman, 2019). This stigmatization of cropland made the economic recovery for areas that suffered during Anfal even more difficult, leading to further financial marginalization of victims.

Outside of industry, it was said in the interviews that personal contributions to societal production are also hindered by the chemical attacks (Mzoiri, 2019). For example, Mr. Rekar Mzoiri told a story of a woman so deeply psychologically affected after chemical exposure that she refused to leave her house for 27 years (2019). Mental health consequences this severe prevent some Anfalakan from working, which would theoretically contribute to the finances of Iraqi Kurdistan as a whole. Moreover, some families now incur travel expenses when visiting other countries for medical care (Salah, 2019). These expenses, which stem from Anfal, mean that families spend money on international travel that could be spent by buying domestically produced products. This cycle of less personal production and domestic spending, two crucial components to a functioning economy, undoubtedly casts a shadow on the modern financial situation of Iraqi Kurdistan.

How Chemical Weapons Changed the International Relations of Iraqi Kurdistan

Among the political conclusions of the interviews for this research, was one major theme that had not been suggested by the literature review conducted beforehand. This theme is as follows: the chemical weapons utilized in the Anfal Genocide contributed significantly to a decline in the international relations of Iraqi Kurdistan. The deterioration of relationships began shortly after Anfal ended, when the global response to the genocide was both lackluster and callous. For instance, when it came time for Saddam Hussein to speak for his war crimes, Dr. Ayad Kakayi stated that both countries in the Middle East and countries in the West sent lawyers to defend him (2019). Allegedly, the Middle Eastern lawyers were sent as a demonstration of unity between Arab countries and leaders (Kakayi, 2019). The Western lawyers, however, were sent as a means of protecting actions that stemmed from North America and Europe during the genocide (Kakayi, 2019).

To fuel his production of chemical weapons, Saddam Hussein purchased massive amounts of chemical precursors from countries including Germany, Spain, England, the Netherlands, the United States, and more (Kakayi, 2019; Mzoiri, 2019). After the conflict ended, records of the transactions were revealed that made it clear the chemical companies knew the buyer was the Iraqi regime at the time of purchase (Muhammad, 2019). It is thought that the Western lawyers sent to defend Saddam Hussein in his crimes were also meant to cover these tracks of involvement (Mzoiri, 2019). The fact that many countries of the West have refused to meaningfully acknowledge that role of their businesses in the Anfal Genocide has soured the relationship with the Kurds (Muhammad, 2019). It should be conceded that some countries have worked to acknowledge these dealings, such as the government of the Netherlands, which

sentenced Dutch businessman Frans van Anraat to 17 years in prison for selling chemical materials to Saddam's regime (European Court of Human Rights, n.d.).

In an attempt to seek justice on their own, the Halabja community has held four courtroom trials against the chemical companies as of July 2019 (Luqman, 2019). While they have tried to convince the West to bring disciplinary action against these companies, no representatives of the chemical companies have been mandated to attend these trials (Luqman, 2019). This lack of justice within the Halabja legal system is echoed internationally for the Kurds since the International Criminal Court (ICC) will not hear the case of the Anfal Genocide (Kakayi, 2019). Dr. Ayad Kakayi say the ICC refuses to bring the Iraqi regime to trial over Anfal because it occurred before the court began trying cases in 2002 and the ICC does not try cases from earlier timeframes by standard policy (2019).

These circumstances in which legal justice has been blocked by international players has made many Kurds upset with the value system of Western allies (Salah, 2019). When asked about the matter, Mr. Omid Abdullah Salah stated that the United States must support human rights and legal justice worldwide if it is going to count it among its national values (2019). The United Kingdom also falls into this frustration, since they have purportedly allowed members of the Iraqi military regime to seek asylum since Anfal ended (Kakayi, 2019). To have international governments recognize or discuss the disasters of Anfal, but to also house criminals and to legally support their faulty chemical companies is said to deepen the community-wide wound that was left by Saddam Hussein (Kakayi, 2019).

Amidst this dissatisfaction with other governments is also the reality that the chemical attacks have increased Iraqi Kurdistan's reliance on foreign aid. Since Anfal, numerous countries

have helped with the care of chronic conditions in some way, including Iran, Turkey, Sweden, Norway, and Germany among others (Hamdi, 2019). In an extreme example of this global care, a Kurdish man is currently living full-time under German medical supervision due to his need for artificial respiration (Hussein, 2019; Salah, 2019). While the KRG would like to have the means to treat its Anfalakan at home, the lack of funds means that they are obliged to send citizens abroad (Sheroky, 2019). While this system of medical dependence may appear a fully charitable association, from the Kurdish perspective any form of international dependence could be one step back on the pathway to statehood.

This thought of Kurdish statehood appeared frequently in conversation with the Kurdish politicians and NGO employees. While they voiced support for Kurdish independence, the topic was also used to highlight a double standard characterizing how the international community dealt with the Kurds. For example, when the Kurds announced intentions to hold an independence referendum in 2017, the global reaction was harsh and swift (Muhammad, 2019). Among numerous side effects of the referendum was the closure of Iraqi Kurdistan's airspace by the Iraqi government (Muhammad, 2019). In comparison, the global reaction to the Anfal Genocide, which may have killed as many as 182,000 people, was relatively nonexistent (Muhammad, 2019). With this as a backdrop to analyze foreign allies, it is understandable that many of the participants of this research saw the chemical attacks of Anfal as a factor negatively affecting Iraqi Kurdistan's international relations.

Political Advice for the Recurrence of Chemical Warfare

When asked about advice they would give for the potential recurrence of chemical warfare, the Kurdish politicians and NGO employees offered a distinctly different perspective than the medical professionals had. All nine of the individuals interviewed for the political findings were living in the Kurdistan region when Anfal occurred. None of the medical professionals interviewed can say the same, though Dr. Gazi Zibari did have many family members in Kurdistan in 1988. Aside from just residing in the region at the time of the genocide, many of them also lost people close to them in the chemical attacks. For example, 10 members of Mr. Hikmat Fayaq Arf's immediate and extended family perished in the Halabja massacre (2019). Mrs. Ruba Muhamad Salim and Mrs. Shno Jamil Hamalaw, on the other hand, are both widows from the same attack (2019). With this context established, it makes sense that the responses generated by this theoretical question were deeply emotional for those nine participants.

When the idea of chemical warfare recurrence was introduced in the interviews, most of the participant responses began as Minister Baravan Hamdi Hussein's did, by emphasizing that the Kurds never want any area of the world to experience the chemical horrors they suffered during Anfal (2019). The members of the Halabja Chemical Victims Society stated that anytime they hear of chemical weapons being used around the world, they feel very emotional for the victims (Muhammad, 2019). This sense of solidarity with survivors of similar attacks inspired the NGO to send messages of support and guidance to Syrian towns gassed by the Syrian regime during the country's ongoing civil war (Muhammad, 2019).

As far as strategic planning for the recurrence of chemical warfare, the Kurdish politicians and NGO employees all heavily favored the idea of actions that fuel deterrence over actions that focus on acute response to chemical violence. Instead of toying with the idea of another aftermath, they preferred to offer suggestions as to prevent another instance of chemical warfare altogether. The first suggestion for this method of deterrence was based in the International Criminal Court (Hussein, 2019). Minister Baravan Hamdi Hussein would like to see further development of this global court system through the creation of binding rules that forbid mass-casualty events like genocide and chemical conflict (2019).

While the court has tried individuals for genocide previously, such as the former dictator of Sudan Omar al-Bashir for his role in Darfur, certain cases have slipped past the court's capacity (BBC, n.d.). Only 123 states are current members of the International Criminal Court, and Iraq is not among them. An additional limitation is the fact that the court is tied to the United Nations Security Council. Among the five permanent members of the council, is Russia, which has been linked to recent chemical warfare in Syria. Although these facts cast a pessimistic shadow on the court's efficacy for convictions related to chemical agents, by emphasizing legal rules and enforceable punishments for their violations, Minister Baravan Hamdi Hussein believes that potential war criminals would be dissuaded and would not follow through with their plans (2019). Only through an international response to acts of violence does he predict the world can achieve a sense of trust and security (Hussein, 2019).

Aside from legal action, activist Rekar Mzoiri tendered education as a supplemental means to prevent further chemical warfare (2019). According to him, genocide like Anfal has been around since the beginning of humanity, and the actions taken thus far in history have not

been enough to put a meaningful stop to it (Mzoiri, 2019). Only by educating children of the value of humanity above everything else does Rekar Mzoiri believe that events like chemical warfare could be eradicated by future generations (2019). For the leadership behind this education, Mr. Omid Abdullah Salah thinks that Western countries that endorse the promotion of human rights should apply their financial resources to the issue (2019).

If legal and educational methods are not enough to halt potential chemical warfare, Mr. Ashqi Mala Sheroky says the best thing a community can do to recover from severe chemical bombardment is to maintain a sense of national unity as the Kurds have post-Anfal (2019). The mindset of unity, Mr. Ashqi Mala Sheroky asserted, is powerful enough keep a community afloat during trying times (2019). In all nine of the interviews that serve as content for the political findings, only a single positive thing about the chemical attacks of Anfal was said. In his seemingly unexpected statement, Mr. Ashqi Mala Sheroky concluded that although Anfal altered the fabric of Kurdish society, through its consequence of increased unity it has also helped Iraqi Kurdistan achieve a spotlight on its desire for freedom that may not have existed before (2019). This comment supports the earlier notion that Anfal is central to Kurdish aspirations for independence.

LIMITATIONS

Within the design of this research there are multiple possible sources of limitations, which are largely based around the literature review and the interview process. As aforementioned, scientific databases that provide statistically valid foundations for medical research in Iraqi Kurdistan are underdeveloped. While the Kurdish researchers cited within this paper have adapted their research methods in hopes of minimizing sources of error, it should be recognized that the standards for peer-review in Kurdish academic journals may not meet standards of academic journals abroad. In terms of impact to this research, this limitation likely affected the medical literature review, which in turn may have influenced interviews as it informed the questions asked to the medical professionals of the project.

The actual interview process is the source of greatest limitation within this research design. The author of this paper does not speak Kurdish, and so a translator was necessary for the interviews that took place with participants without fluency in English. In total the translator was utilized in nine of the 12 interviews, with the three medical interviews, which were conducted in English, not requiring translation services. It is possible throughout the translation and transcription services that personal biases may have been added to interpretation and that the interviewer may have had greater success connecting to the conversations she could follow by herself. For these reasons, the depth of the political and NGO interviews may have suffered as compared to the depth of the medical interviews.

Lastly, participant recruitment offers other research limitations. Within a total of 12 interviews, three were medical, four were NGO, and five were political. As previously mentioned, this uneven distribution was altered by the COVID-19 pandemic of 2020, which

prevented multiple medical professionals from following-through with participation in the interview process. Also, by IRB mandate, this project was only approved to speak to individuals in a professional capacity. As per this rule, the interview team did not reach out to citizens within Iraqi Kurdistan who do not serve a role with ties to the chemical attacks of Anfal. With the absence of feedback from typical Kurdish citizens, the professional information received through the interviews may not be representative of the usual Kurdish perspective.

FUTURE DIRECTIONS

As this research is exploratory by design, its completion likely warranted more questions than it answered. There is much potential for further research within both the medical and political dimensions of this project. From the medical perspective, long-term tracking of chronic conditions through reputable and statistically valid databases could warrant new research questions relating exposure to chemical weapons to cancer, birth defects, and other medical conditions. Also available for future research is the structure presented by Dr. Zibari's team for sustainable outreach and improvements to Iraqi Kurdistan's emergency response capacity. If enough resources and professional guidance were available, implementing the planned changes to medical infrastructure suggested by Dr. Zibari, Dr. Moreno-Walton, and Dr. Smith at a single hospital and tracking the resulting comparative outcomes over time would be a worthwhile endeavor. If Dr. Zibari's team and other medical outreach groups continue research-based development within the Iraqi Kurdish healthcare system, hopefully more academic interest will develop on this topic within the global health community and some of these projects may one day come to fruition.

Completing potential research related to the political analysis of this project is likely heavily reliant on the dynamics of Kurdish autonomy and power over time; however, multiple areas of further political inquiry do exist. Survey research among ordinary Kurds would offer insight into the public's perception of the KRG and its services for the survivors of chemical attacks. From a quantitative standpoint, economic assessments estimating how much productivity and money were lost in certain industries like agriculture would be difficult to execute; however, this research could shed light on the future finances of areas like Syria that have recently gone

through chemical attacks. Lastly, additional research on how chemical warfare and other acts of genocide affect international relations would bring greater depth to the political findings of this research project. Unfortunately, this would require the compliance of international research participants, and with the current state of geopolitics it is unlikely that Iranian, Iraqi, Turkish, and Syrian politicians would be willing to participate. This reality bears the harsh truth the much of Kurdish research is limited in many ways by the politics of the Middle East. With this in mind, the development of new political research with ties to this project will likely be reliant on the changes in Kurdish sovereignty that may occur in the coming years.

CONCLUSION

The Anfal Genocide, which was led by Saddam Hussein's regime against the region's Kurdish population, was highly destructive to the area known today as Iraqi Kurdistan through traditional artillery and chemical attacks. Generally, the significant loss of Kurdish life due to Anfal is acknowledged as the major consequence, while medical and political consequences of the chemical weapons are seldom considered. As a population that has recently experienced widespread chemical warfare, the Kurds provide a unique and valuable setting to study the long-term influence of chemical agents. This topic continues to be relevant to contemporary affairs because chemical weapons are still utilized in present-day, such as in the ongoing civil war within Syria. By researching this topic now, the results could theoretically help populations that may face similar issues in the future.

The interviews with medical professionals, politicians, and NGO employees provided unique insight into the medical and political legacy of chemical weapons in Iraqi Kurdistan. Dr. Gazi Zibari's medical outreach team illuminated the deficiencies within Anfalakan healthcare, the historical reasons behind the inadequacies, and a plan for emergency infrastructure development that could reduce loss of life if an attack similar to Anfal were to occur again. Politicians like Minister Baravan Hamdi Hussein and non-governmental organizations like the Halabja Chemical Victims Society, on the other hand, helped to evaluate the political challenges faced by the Kurds as a consequence of Anfal. These challenges included economic decline through agricultural stigmatization and decreased individual productivity and reduced Kurdish self-reliance through increased dependency on foreign medical aid. Following these discussions,

the political and NGO participants also suggested further development of global legal repercussions and education as a means of preventing future chemical genocide.

The severe medical and political effects of Anfal outlined in this research help to contextualize the complexities of Iraqi Kurdistan's desire for freedom through independent statehood. As this exploratory research reported the modern dilemmas faced by the Kurds as a result of Anfal's chemical warfare, it also shed light on the vast need for academic research and international awareness of Anfal-related obstacles within Iraqi Kurdistan. With knowledge of these consequences, the current state of Kurdish affairs can be analyzed from a more historically enlightened perspective.

APPENDIX A: IRB APPROVAL LETTER

UNIVERSITY OF CENTRAL FLORIDA

Institutional Review Board
FWA00000351
IRB00001138Office of Research
12201 Research Parkway
Orlando, FL 32826-3246

APPROVAL

June 24, 2019

Dear Gunes Tezcur:

On 6/24/2019, the IRB reviewed the following submission:

Type of Review:	Initial Study
Title:	The Lasting Legacy of Chemical Weapons in Iraqi Kurdistan
Investigator:	Gunes Tezcur
IRB ID:	STUDY00000444
Funding:	Name: Burnett Honors College
Grant ID:	
IND, IDE, or HDE:	None
Documents Reviewed:	• Soran University Ethics Approval Letter, Category: Letters of Support; • Tezcur and Dovydaitis: Interview Questions, Category: Interview / Focus Questions; • Soran University Ethics Approval Letter, Category: International; • KurdishTranslationofConsent, Category: Consent Form; • Protocol - HRP 503, Category: IRB Protocol; • Tezcur and Dovydaitis: Consent Form, Category: Consent Form;

The IRB approved the protocol on 6/24/2019 without a protocol expiration date.

In conducting this protocol, you are required to follow the requirements listed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system.

This approval does not substitute International requirements to conduct research. Researchers are responsible for confirming whether or not the local or national government outside of the U.S. has ethics review requirements for the use of humans in research. Please visit 2018 Edition of the International Compilation of Human Research Standards at https://www.hhs.gov/ohrp/sites/default/files/2019-International-Compilation-of-Human-Research-Standards.pdf for laws,

regulations and guidelines that govern Human Subject research 104 countries. If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

Renea Carver

Renea Carver
Designated Reviewer

APPENDIX B: INTERNATIONAL APPROVAL OF RESEARCH LETTER

إقليم كوردستان- العراق
رئاسة مجلس الوزراء
وزارة التعليم العالي والبحث العلمي
رئاسة جامعة سوران
مركز البحث العلمي - مكتب رئيس المركز

هەرێمی کوردستان- عێراق
سەرۆکایەتیی ئەنجوومەنی وەزیران
وەزارەتی خوێندنی باڵا و توێژینەوەی زانستی
سەرۆکایەتی زانکۆی سۆران
ساختەری توێژینەوەی زانستی - نووسینگەی سەرۆکی

زانکۆی سۆران
SORAN UNIVERSITY

Kurdistan Regional Government- Iraq Ministry of Higher Education & Scientific Res Scientific Research Center/Soran University

Ref. SRC/5/JD
Date: 04/17/2019

To whom it may concern:

I am writing to support the upcoming research protocol that we will be assisting Dr. Güneş Murat Tezcür, PI, and UCF student Jenna Dovydaitis, co-PI, in implementing, and to attest that the protocol will comply with all local laws, regulations, and customs in Iraqi Kurdistan (Northern Iraq).

The project will focus on the medical and political consequences of chemical weapons usage during the Anfal Genocide. It makes a significant contribution to scholarly research on the topic in three ways. First, it will assess the components of medical infrastructure necessary for handling the aftermath of a large-scale chemical weapons attack. Next, it will analyze the discussion between the Kurdistan Regional Government and its citizens on the political response to the events of Anfal. Finally, it aims to build a comparative advisory standard for other governments and organizations to examine their own level of preparation for the potential danger of chemical weapons.

This is an exploratory study that is not testing specific hypotheses. It primarily investigates the long-term implications of chemical weapons in Iraqi Kurdistan. The fieldwork is composed of in-depth interviews with Kurdish medical professionals, employees of the Kurdistan Regional Government, and nongovernmental organization members operating in the region. While conducting fieldwork in the region, the co-PI (Dovydaitis) will be monitored by the Scientific Research Center, Soran University. This guidance will include the oversight of a graduate student who will serve as a local guide and translator.

The Scientific Research Center at Soran University conducts research in the applied sciences, social sciences, and humanities, including regional literatures, archaeology, environmental sciences, and other multidisciplinary areas of research.

We certify that Dr. Tezcür and co-PI Dovydaitis' project, including the fieldwork, fulfills all the research ethics guideline approved by the Scientific Research Center, Soran University.

Should you need further clarification, please do not hesitate to contact me at kamal.kolo@soran.edu.iq.

Sincerely,

Dr. Kamal Kolo
Dean
Scientific Research Center
Soran University
Delyzian Campus
Soran-Erbil

APPENDIX C: HRP-502 CONSENT FORM (ENGLISH)

UNIVERSITY OF CENTRAL FLORIDA

Title of research study: The Lasting Legacy of Chemical Weapons in Iraqi Kurdistan
Investigator: Güneş Murat Tezcür, Ph.D.
Co-Investigators or Sub-Investigator(s): Jenna Dovydaitis

Key Information: The following is a short summary of this study to help you decide whether or not to be a part of this study. More detailed information is listed later on in this form.

Why am I being invited to take part in a research study?

We invite you to take part in a research study because you are a member of the Kurdish community or have experience working with the Kurds in a medical, governmental, or NGO context. You must be at least 21 years old to take part in this research.

Why is this research being done?

This research is conducted to analyze the medical and political consequences of the chemical weapons attacks of the Anfal Genocide. This study aims to present, in an objective and comprehensive way, a comparative model that other governments can use to assess their level of responsive infrastructure and their preparation for the aftermath of a chemical weapons attack. We hope the study will contribute to a more informed international understanding of the history of the Kurdish community and how their experience can contribute to modern political decisions.

How long will the research last and what will I need to do?

We expect that you will be in this research study for 60 minutes.

You will be asked to respond to a set of questions concerning your knowledge on the consequences of the chemical weapons usage in Iraqi Kurdistan during the Anfal Genocide.

More detailed information about the study procedures can be found under ***"What happens if I say yes, I want to be in this research?"***

Is there any way being in this study could be bad for me?

Some of our questions are related to the attacks experienced by the Kurdish community. Hearing these questions may make uncomfortable and upset. If you become upset during any time of the interview, we will suspend it immediately. If you then prefer to continue with the interview, we will proceed. If you would like to skip some of the questions, that is just fine. We will end the interview if you prefer not to continue.

What happens if I do not want to be in this research?

Participation in research is completely voluntary. You can decide to participate or not to participate. There are no costs for participation in this study.

What should I know about a research study?

- Someone will explain this research study to you.
- Whether or not you take part is up to you.
- You can choose not to take part.
- You can agree to take part and later change your mind.
- Your decision will not be held against you.
- You can ask all the questions you want before you decide.

Who can I talk to?

If you have questions, concerns, or complaints talk to Dr. Güneş Murat Tezcür at: tezcur@ucf.edu, 407-823-2040, 4297 Andromeda Loop N., Howard Phillips Hall, Rm. 302, Orlando, FL 32816-1356.

This research has been reviewed and approved by an Institutional Review Board ("IRB"). You may talk to them at 407-823-2901or irb@ucf.edu if:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You have questions about your rights as a research subject.
- You want to get information or provide input about this research.

How many people will be studied?

We expect around 15 people will be in this research study.

What happens if I say yes, I want to be in this research?

If you agree to participate in our research, we will start asking you a series of questions about your personal experiences as a medical professional, a governmental employee, or an NGO worker. The interview will take approximately an hour.

What happens if I say yes, but I change my mind later?

You can leave the research at any time, it will not be held against you. If you decide to withdraw from the study, you are not asked to explain the reason. We will not use any data we obtained from you before your withdrawal without explicit permission.

What happens to the information collected for the research?

With your permission, we would like to audio record this interview. If you prefer this interview not to be recorded, please just let us know and we will just take notes during the interview. In any case, we will treat your data confidential and not share with any third party.

If you give us our permission to record the interview, we will then transcribe the interview within the next two weeks and store as anonymized data in a secure electronic storage protected by a password. Likewise, interview notes will be scanned and stored as anonymized data in the same storage. Original auto records will be stored for five years. These records will not be publicized. Your information will be anonymized in all publications based in this study unless you explicitly prefer your name to be used.

Efforts will be made to limit the use and disclosure of your personal information to people who have a need to review this information. We cannot promise complete secrecy. Organizations that may inspect and copy your information include the IRB and other representatives of this organization.

Contact information for participants who wish to be sent the final project manuscript will be securely stored on the University of Central Florida's OneDrive cloud system upon return of the researchers to the United States. All other contact information will be deleted upon return.

What else do I need to know?

This research is being funded by grants from the Kurdish Political Studies Program of the University of Central Florida and the Burnett Honors College of the University of Central Florida.

If you would like, a completed manuscript of this research can be sent to you in Spring of 2020.

APPENDIX D: HRP-502 CONSENT FORM (KURDISH)

UNIVERSITY OF CENTRAL FLORIDA

ناونیشانی بابەتی تۆێژینەوە: میراتی ماوەدرێژی چەکی کیمیایی لە کوردستانی عێراق
لێکۆڵەر: گوننیش مورات تێزکور، دکتۆرا
لێکۆڵەرە هاوبەشەکان یان لێکۆڵەری لاوەکی(یەکان): جینا دۆڤیداتیس

زانیاریی سەرەکییەکان: *ئەمەی خوارەوە پوختەیەکی کۆرتە دەربارەی ئەم تۆێژینەوەیە بۆ ئەوەی یارمەتیت بدات لەوەی بڕیار بدەیت کە دەتەوێت ببیت بە بەشێک لەم تۆێژینەوەیە یان نا. زانیاریی تێروتەسەلتر دواتر لەم فۆرمەدا دادەنرێت.*

بۆچی من بانگهێشت کراوم کە بەشداریی لەم بابەتی تۆێژینەوەیە بکەم؟
ئێمە تۆ بانگهێشت دەکەین بۆ ئەوەی بەشداریی لەم بابەتی تۆێژینەوە بکەیت چونکە بۆ ئەندامێکی کۆمەڵی کوردیت یان ئەزموونی کارکردنیت هەیە لەگەڵ کوردەکان لە بوارەکانی پزیشکی، حکومی یان لە چوارچێوەی ڕێکخراوە ناحکومییەکان (NGO). دەبێت بە لایەنەی کەمەوە ٢١ ساڵ ببیت بۆ ئەوەی بەشداریی لەم تۆێژینەوەیە بکەیت.

بۆچی ئەم تۆێژینەوەیە ئەنجام دەدرێت؟
ئەم تۆێژینەوەیە بە مەبەستی شیکردنەوەی دەرئەنجامە پزیشکی و سیاسیەکانی هێرشەکانی چەکی کیمیایی لە ماوەی کۆمەڵکوژیی ئەنفال ئەنجام دەدرێت. ئامانجی ئەم تۆێژینەوەیە پێشکەشکردنی مۆدێلێکی بەراوردکارییە، بە شێوازێکی بابەتی و گشتگیر، کە حکومەتەکانی دیکە بتوانن بەکاریبهێنن بۆ هەڵسەنگاندنی ئاستی کاردانەوەی ژێرخانی ئابووریی خوێن و ئاستی ئامادەکاری بۆ دوای هەر هێرشێکی چەکی کیمیایی. ئێمە هیوادارین ئەم تۆێژینەوەیە بەشداربێت کە گەلاڵەبوونی تێگەیشتنێکی نێودەوڵەتیی بەرباڵاوتر لەسەر مێژووی کۆمەڵگای کوردی و چۆن ئەزموونی ئەوان دەکرێت بەشداربێت لە بڕیاری سیاسیی مۆدێرن.

تۆێژینەوەکە چەندێک دەخایەنێت و دەبێت من چی بکەم؟
بەپێی پێشبینیی ئێمە، تۆ بۆ ماوەی ٦٠ خولەک لەم تۆێژینەوەیەدا دەبیت.

داوات لێ دەکرێت وەڵامی پرسیارگەلێک بدەیتەوە دەربارەی زانیاریی خۆت لەسەر دەرئەنجامەکانی بەکارهێنانی چەکی کیمیایی لە کوردستانی عێراق لە ماوەی کۆمەڵکوژیی ئەنفال.

زانیاریی تێروتەسەلتر دەربارەی ڕێکارەکانی تۆێژینەوەکە دەکرێت لە ژێر بەشی "چی ڕوودەدات ئەگەر بڵێم بەڵێ،دەمەوێت بەشێک بم لەم تۆێژینەوەیە؟"

دەکرێت بە جۆرێک لە جۆرەکان ئەم تۆێژینەوەیە خراپ بێت بۆ من؟
هەندێک لە پرسیارەکان پەیوەندیی بەو هێرشانەوە هەیە کە لە لایەن کۆمەڵگای کوردییەوە ئەزموون کراون. بیستنی ئەم پرسیارانە ڕەنگە ناڕەحەت و بێتاقەتت بکات. ئەگەر لە ماوەی چاوپێکەوتنەکەدا بێتاقەت بووییت، دەستبەجێ چاوپێکەوتنەکە هەڵدەپەسێرین. ئەگەر پێتباشبوو لە چاوپێکەوتنەکە بەردەوام بیت، بەردەوام دەبین. ئەگەر ویستت هەندێک لە پرسیارەکان بپەڕێنیت و وەڵامیان نەدەیتەوە، زۆر ئاساییە. ئەگەر پێتباشبێت بەردەوام نەبیت، کۆتایی بە چاوپێکەوتنەکە دەهێنین.

چی ڕوودەدات ئەگەر نەمەوێت بیم بە بەشێک لەم تۆێژینەوەیە؟
بەشداریکردن لەم تۆێژینەوەیە بە تەواوەتی خۆبەخشانەیە. خۆت دەتوانیت بڕیار بدەیت بەشداری بکەیت یان نەیکەیت. هیچ تێچوویەک بەرامبەر بەشداریکردن لەم تۆێژینەوەیە نیە.

دەبێت چی بزانین دەربارەی بابەتی توێژینەوەکە؟

- کەسێک بابەتی توێژینەوەت بۆ باس دەکات.
- بەشداریکردن یان نەکردن نارەزوومەندانەیە.
- دەتوانیت بڕیار بدەیت بەشداری نەکەیت.
- دەتوانیت ڕەزامەندی دەربڕیت کە بەشداری بکەیت و دواتر بڕیارەکەت بگۆڕیت.
- بڕیارەکەت دژی خۆت بەکارناهێنرێت.
- دەتوانیت پێش بڕیاردان هەموو ئەو پرسیارانە بکەیت کە دەتەوێت.

دەتوانم قسە لەگەڵ کێ بکەم؟

ئەگەر هەر پرسیارێک یان سکاڵایەکت هەبوو، قسە لەگەڵ دکتور گوننیش مورات تیزکور بکە لە ڕێگەی: _ ,tezcur@ucf.edu
Orlando, FL 32816-1356. ,302Andromeda Loop N., Howard Phillips Hall, Rm. 4297 ,2040-823-407

ئەم توێژینەوەیە لایەن دەستەی پێداچوونەوەی دەستووری ("IRB") پێداچوونەوەی بۆ کراوە. دەتوانیت قسەیان لەگەڵ بکەیت لە ڕێگەی 2901-823-407 یان irb@ucf.edu ئەگەر:

- پرسیارەکانت، نیگەرانیەکانت، یان سکاڵاکانت لە ڕێگای تیمی توێژینەوەوە وەڵام نەدرانەوە.
- نەتوانیت بگەیت بە تیمی توێژینەوە.
- بتەوێت قسە لەگەڵ کەسێکی دیکە بکەیت جگە لە تیمی توێژینەوە.
- پرسیارت هەیە دەربارەی مافەکانت وەک بابەتی توێژینەوە.
- بتەوێت زانیاریی وەربگریت یان بۆچوون بخەیتەروو دەربارەی ئەم توێژینەوە.

چەند کەس توێژینەوەیان لەگەڵ دەکرێت؟

ئێمە پێشبینی دەکەین 15 کەس لەم توێژینەوەکاریان لەسەر بکرێن.

چی ڕوودەدات ئەگەر بڵێم بەڵێ، دەمەوێت بیم بە بەشێک لەم توێژینەوەیە؟

ئەگەر ڕازی بیت بەوەی بەشداری لەم توێژینەوەیە بکەیت، ئێمە دەستدەکەین بە ئاراستەکردنی پرسیارگەلێک دەربارەی ئەزموونی کەسیی تۆ وەک شارەزای پزیشکی، کارمەندی حکومی، یان کارمەندی NGO. چاوپێکەوتنەکە نزیکەی یەک کاتژمێر دەخایەنێت.

چی ڕوودەدات ئەگەر بڵێم بەڵێ، بەڵام دواتر بڕیارەکە بگۆڕم؟

دەتوانیت هەر کاتێک بتەوێت، توێژینەوەکە بەجێبهێڵیت، هیچ شتێک لە دژی تۆ ناگیرێتە بەر. ئەگەر بڕیار بدەیت لە توێژینەوەکە بکشێیتەوە، داوات لێ ناکرێت هۆکارەکەی ڕوونبکەیتەوە. بەبێ مۆڵەتی ڕەوانی خۆت، هیچ لەو زانیارییانە بەکارناهێنیت کە پێش کشانەوەکەت داوتە بە ئێمە.

چی بەسەر ئەو زانیاریانەدا دێت کە لە ئەنجامی توێژینەوەکە کۆدەکرێنەوە؟

بە مۆڵەتی تۆ، ئەم چاوپێکەوتنە بە دەنگ تۆمار دەکەین. ئەگەر پێتباشبێت چاوپێکەوتنەکە تۆمار نەکرێت، تکایە ئاگادارمان بکەرەوە بۆ ئەوەی تەنها لە ماوەی چاوپێکەوتنەکەدا تێبینی بنووسین. لە هەر حاڵەتێکدا، ئێمە داتاکانی تۆ بە نهێنی دەهێڵینەوە و لەگەڵ هیچ لایەنێکی سێیەمدا هاوبەشیی پێ ناکەین.

ئەگەر مۆڵەتمان پێبدەیت چاوپێکەوتنەکە تۆمار بکەین، دواتر چاوپێکەوتنەکە لە ماوەی دوو هەفتەی دواتردا دەنووسینەوە و وەک داتایەکی نەناسراو لە هەمبارێکی تۆکمەی ئەلیکترۆنیی پارێزراو بە وشەی تێپەڕ هەڵدەگرین. بەهەمان شێوە، تێبینیەکانی چاوپێکەوتنەکە سکان دەکرێت و لە هەمان هەمباردا وەک داتای نەناسراو هەڵدەگیرێت. تۆمارەڕەسەنەکە بۆ ماوەی پێنج ساڵ هەڵدەگیرێت. تۆمارەکە بڵاو ناکرێتەوە و چاپ ناکرێت. زانیارییەکانی تۆ بە شێوەی نەناسراو دەین لە هەموو چاپکراوەکان کە لەسەر بنەمای ئەم توێژینەوەیە چاپ دەکرێن مەگەر ئەوەی بە ڕەوانی بەڵاتەوە پەسەند بێت ناوی خۆت بەکاربهێنرێت.

تەنها دەرێت بەکار هێنان و ئاشکراکردنی زانیارییە کەسییەکانت بۆ ئەو کەسانە سنووردار بکرێن بە پێویستیان بە پێداچوونەوە بەو زانیارییانە هەیە. ئێمە ناتوانین بەڵێن بدەین زانیارییەکان بەتەواوەتی نهێنی دەین. ڕێکخراوەکان ڕەنگە زانیارییەکان بپشکنن و وێنەی لەبەر بگرنەوە، بە لەخۆگرتنی IRB و نوێنەرانی دیکەی ئەم ڕێکخراوە.

مۆلەتی بەشداریکردن لە لێکۆڵینەوەیەکی تویژینەوەی مۆریی

زانیاریی پەیوەندیی بۆ ئەو بەشداربووانەی کە حەزدەکەن بنیردرێن بۆ دەقی کۆتایی پڕۆژەکە بە تۆکمەیی هەمبار دەکرێن لەسەر سیستەمی هەوریی OneDrive ـی تایبەت بە زانکۆی ناوەندیی فلۆریدا، ئەمەیش دوای گەڕانەوەی تویژەران بۆ ویلایەتە یەکگرتووەکان. هەموو زانیارییە پەیوەندیەکانی دیکە لە کاتی گەڕانەوەیاندا ڕەش دەکرێنەوە.

دەبێت چیی دیکە بزانم؟

بودجەی ئەم تویژینەوەیە لایەن بەخششی (منحە) پڕۆگرامی لێکۆڵینەوەی سیاسەتی کوردی لە زانکۆی ناوەندیی فلۆریدا و کۆلێژی بیرنێت وەرگیراوە.

ئەگەر حەزدەکەیت، دەقی کامڵی کۆتایی ئەم پڕۆژەیە لە بەهاری 2020 بۆ تۆ دەنێردرێت.

APPENDIX E: INTERVIEWER GUIDE

Jenna Dovydaitis
Interview Questions

Before asking profession-specific question sets, introductory questions will be asked, such as the following:

1. What is your name and official profession title?
2. Where did you grow up?
3. How old are you?
4. How long have you been working in this job position?
5. What jobs did you have before this one?
6. What do your daily career duties consist of?

Set One: Medical Professionals
These are intended for practicing medical professionals and those in similar capacities.

1. What medical steps were taken to address the needs of chemical attack survivors after Anfal? What programs are still in place today to aid survivors with long-term health implications?

2. How did the health needs of the Iraqi Kurdistan region change after Anfal? Did you notice changes, such as increases or decreases, in the incidences of any health conditions? If so, which conditions?

3. From the health perspective, how did the chemical agent attacks lead to different outcomes for female and male patients? How did the medical needs differ between the two sexes?

4. If Iraqi Kurdistan were to experience large-scale chemical attacks again, is the current medical and public health infrastructure equipped to handle the aftermath?

5. What advice would you give to other medical professionals or foreign health ministries on building and maintaining health infrastructure that can address the needs of chemical weapons survivors?

6. Are there any actions, on the domestic or international level, you would like to see taken addressing chemical weapons and their medical consequences?

7. How can global health be addressed sustainably?

Set Two: Non-governmental Organizations

These are intended for non-governmental organizations with operations concerning Iraqi Kurdistan.

1. From your perspective, did the chemical attack components of Anfal lead to long-term consequences for the populations they affected? If yes, how?

2. Would you define the medical care given to regional chemical attack survivors as inadequate, adequate, or neither?

3. From the community perspective, did the chemical agent attacks lead to different outcomes for female and male survivors? If yes, how did they differ, and do they continue to differ today?

4. If Iraqi Kurdistan were to experience large-scale chemical attacks again, is the current medical and public health infrastructure equipped to handle the aftermath?

5. What programs are in place today to aid Anfal chemical attack survivors with any long-term medical care they may require? If there are existing programs, is your NGO connected to any of them?

6. Are there any actions, on the domestic or international level, you would like to see taken addressing chemical weapons and their medical and/or political consequences?

Set Three: Government Employees

These questions are intended for employees of the Kurdistan Regional Government or other local government structures.

1. From the political perspective, how did chemical weapons attacks change Kurdish society?

2. What policies and programs were implemented to address the needs of chemical attack survivors? Are they still running today?

3. Do you think the medical infrastructure of Iraqi Kurdistan was well-equipped to handle the aftermath of chemical weapons?

4. Have the public and the Kurdistan Regional Government had similar or different views on how to address the needs of Anfal victims? How so?

5. Are the chemical attacks of Anfal still important topics in the political area of Kurdish life today?

6. What advice would you give to other governments on building and maintaining infrastructure and policies that can address the needs of chemical weapons survivors?

7. Are there any actions, on the domestic or international level, you would like to see taken addressing chemical weapons and their medical and/or political consequences?

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