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AGNETA KALLSTRÖM

"THEY CANNOT STOP ME FROM HELPING"

QUALITATIVE RESEARCH ON EXPERIENCES, MOTIVES AND RESISTANCE OF HEALTHCARE WORKERS IN THE SYRIAN WAR 2011–2017

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"The world is a dangerous place to live; not because of the people who are evil, but because of the people who don't do anything about it."

Albert Einstein

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ABSTRACT

The Syrian conflict has lasted for more than a decade. It has been devastating to civilians. Millions of people have been forced to flee the violence of the parties involved in the fighting. Violence against health care, widely witnessed during the war, weakens the population's chances of receiving care in conflict-affected areas. The integrity of health care, guaranteed by international humanitarian law, has not been respected. Healthcare workers have found themselves in the middle of the fighting and have sometimes also been targeted. Despite the danger, many continue to work in the areas affected by the conflict.

This dissertation uses an explorative approach to understanding the unknown or poorly understood personal experiences of healthcare workers during the war. It aims to discover what kind of violence professionals have experienced and how this has affected them. In addition, the work explores the intrinsic and extrinsic motivations that drive healthcare workers to continue working in complex and life-threatening conditions.

The dissertation material is based on semi-structured interviews with 25 healthcare workers who worked in Syria during the conflict. Most interviews were conducted on the Turkish-Syrian border in 2016–2017. Participants

were obtained using the snowball sampling method. The material of this qualitative study was analysed using content analysis and inductive reasoning.

The results show that healthcare workers experienced violence from all parties to the conflict, but the actions of the Syrian government, in particular, were large-scale and partially intentional. The professionals experienced both mental and physical violence. They had endured threats, arrests, and torture and had been in ambulances and hospitals when assaulted. In general, healthcare workers faced general insecurity and instability, but when violence was intense, it became the reason why healthcare workers left Syria.

The results also show that healthcare workers were not only victims, but also active actors. When the unrest started in 2011, healthcare workers treated injured protesters despite the government's prohibitions. When the government defined as terrorists, all those belonging to the opposition or helping them, healthcare workers also became a legitimate target by definition, even though this is against international humanitarian law. The professionals continued to help people in various ways, such as setting up secret field hospitals. The operation later expanded to hospitals that were outside the government's control. In areas controlled by ISIS, professionals also faced problems with local authorities. Violence against healthcare workers was less frequent in areas held by non-state armed groups and Kurdish Forces.

Healthcare workers could be seen as creating a form of medical resistance based on the ethical values and norms of healthcare and humanitarian principles. Following these values, they refused to take orders from anyone who wanted to prevent them from treating people according to their needs. However, this medical resistance puts healthcare workers at risk of violence.

In recent years, violence directed against health care has been studied to an increasing extent. However, the voice of health professionals has been limited. This study fills this gap by describing the experiences of professionals themselves.

The conclusion is that the international community has not been able to protect healthcare workers from violence. Despite this, healthcare workers have treated the civilian population according to their morals, capabilities, and skills. Without these people and their actions, the civilian population would have been completely without medical assistance.

Keywords: violence, healthcare, war, healthcare workers, Syria, Middle East, motivation, migration, ISIS, nonstate armed groups, explorative, qualitative

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TIIVISTELMÄ

Terveydenhuoltoon kohdistuva väkivalta heikentää väestön mahdollisuuksia saada hoitoa konfliktialueilla. Yli vuosikymmenen ajan kestänyt Syyrian konflikti on ollut tuhoisa siviileille, ja miljoonat ihmiset ovat paenneet taisteluihin osallistuvien eri osapuolten väkivaltaa. Kansainvälisen humanitaarisen lain edellyttämää terveydenhuollon koskemattomuutta ei kunnioiteta sotatoimien aikana ja terveydenhuollon henkilöstö joutuu taisteluiden keskelle ja toisinaan itsekin väkivallan kohteeksi. Hengenvaarasta huolimatta moni kuitenkin jatkaa työskentelyä ihmishenkien pelastamiseksi.

Tämä väitöskirja käyttää eksploratiivista lähestymistapaa terveydenhuollon ammattilaisten henkilökohtaisten kokemusten ymmärtämiseen sodan aikana. Sen tavoitteena on selvittää, millaista väkivaltaa ammattilaiset ovat kokeneet ja miten se on vaikuttanut heihin. Lisäksi työssä tutkitaan sisäisiä ja ulkoisia motiiveja, jotka saavat terveydenhuollon työntekijät jatkamaan työskentelyä monimutkaisissa ja hengenvaarallisissa olosuhteissa. Tämän väitöskirjan tuottaa uutta tietoa terveydenhuoltoon kohdistuvasta väkivallasta konfliktialueilla.

Väitöskirja koostuu kolmesta osajulkaisusta. Ensimmäisessä osajulkaisussa selvitetään terveydenhuoltoalan ammattilaisten kokemuksista sodasta. Toinen osajulkaisu käsittelee syitä sille, miksi syyrialaiset terveydenhuoltoalan ammattilaiset pakenevat maasta. Kolmannessa osajulkaisussa tutkitaan motivaatioita, joita paikallisilla terveydenhuoltoalan ammattilaisilla on työskennellä väkivaltaisessa ympäristössä.

Väitöskirjan aineisto pohjautuu terveydenhuoltoalan ammattilaisten puolistrukturoituihin haastatteluihin, jotka tehtiin pääsääntöisesti Turkissa vuosina 2016–2017. Otantana käytettiin lumipallo-otantaa, joka mahdollisti haastateltavien löytämisen poliittisesti arkaluonteiseen tutkimukseen. Yhteensä haastatteluita tehtiin 25 kappaletta. Suurin osa haastateltavista oli syyrialaisia (n=23) terveydenhuoltoalan ammattilaisia, jotka työskentelivät tai olivat jossakin vaiheessa työskennelleet Syyriassa levottomuuksien alettua vuonna 2011. Kaikki osajulkaisut perustuvat näihin haastatteluihin. Tutkimuksen tuottama aineisto analysoitiin laadullisella sisällönanalyysilla ja induktiivisella päättelyllä.

Tulokset ensimmäisessä osajulkaisussa osoittivat, että väkivalta terveydenhuoltoa vastaan alkoi heti levottomuuksien alkaessa vuonna 2011 ja kaikki konfliktin osapuolet ovat kohdistaneet väkivaltaa terveydenhuoltoa vastaan. Ammattilaiset joutuivat kokemaan sekä henkistä että fyysistä väkivaltaa. He kokivat uhkailua, pidätyksiä ja kidutusta. Monet olivat olleet ambulansseissa ja sairaaloissa, kun niitä pommitettiin. Aineistosta nousi esille vahvasti Syyrian hallituksen toimet, jotka koettiin laajamittaisina ja osin tarkoituksellisena.

Toinen osajulkaisu keskittyi tutkimaan niitä syitä, jotka ovat johtaneet terveydenhuollon henkilöstön poislähtöön Syyriasta. Kaikki koettu väkivalta ei ollut suunnattu suoraan terveydenhuollon henkilökuntaan, vaan kokemuksiin liittyi paljon myös yleistä turvattomuutta ja epävakautta, joka kohdistui koko yhteiskuntaan. Väkivalta oli niin intensiivistä, että se oli anoa syy sille, että haastateltavat lähtivät pois maasta.

Terveydenhuoltohenkilöstö pakeni erityisesti Syyrian hallituksen, mutta myös Islamilaisen valtion aiheuttamaa henkistä ja fyysistä uhkaa. Väkivalta

saattoi kohdistua joko henkilöön itseensä, hänen ammattiinsa tai se saattoi olla yleistä väkivaltaa, joka liittyi meneillään olevaan konfliktiin.

Kolmannessa osajulkaisussa tarkasteltiin niitä motiiveja, joita edelleen Syyriassa työskentelevillä terveydenhuoltoalan ammattilaisilla oli jatkaa huolimatta todellisesta hengenvaarasta. Motiivit olivat joko sisä- tai ulkosyntyisiä. Sisäsyntyiset motivaatiot olivat tuloksissa vahvimmat. Tahto noudattaa humanitaarisia periaatteita sekä lääketieteellinen etiikka olivat merkittävässä roolissa työskentelylle keskellä sotaa. Ulkosyntyisinä motivaatioina olivat ammattitaidon ylläpito sekä taloudelliset tekijät.

Väitöskirjan tulokset osoittavat, että terveydenhuollon henkilöstö ei ollut ainoastaan uhrin asemassa, vaan he olivat myös aktiivisia toimijoita. Levottomuuksien alkaessa he hoitivat loukkaantuneita mielenosoittajia hallituksen kielloista huolimatta. Hallituksen määritellessä oppositioon kuuluvat ja heitä auttavat tahot terroristeiksi, myös hoitohenkilökunnasta tuli määritelmällisesti legitiimi kohde, vaikkakin tämä on kansainvälisten sopimusten vastaista. Henkilöstö jatkoi ihmisten auttamista erilaisin keinoin, kuten perustamalla salaisia kenttäsairaaloita. Toiminta laajeni myöhemmin sairaaloihin, jotka olivat hallituksen kontrollin ulkopuolella. Erityisesti ISISin hallinta-alueilla hoitohenkilökunta joutui ongelmiin paikallisten valtaapitävien kanssa. Muiden aseellisten järjestöjen ja kurdien hallinnoimilla alueilla henkilöstöön kohdistuva väkivalta oli vähäisempää

Terveydenhuollon henkilöstö muodosti konfliktin alkaessa vastarinnan, jonka perusteena ovat esimerkiksi lääkärin ammattiin kuuluvat eettiset arvot ja normit sekä humanitaariset periaatteet. Näihin arvoihin perustuen he kieltäytyivät ottamasta keneltäkään vastaan määräyksiä, jotka estäisivät heitä hoitamasta ihmisiä tarpeen mukaan. Tämä vastarinta puolestaan altisti heidät itsensä väkivallan uhalle.

Terveydenhuoltoa vastaan kohdistettua väkivaltaa on viime vuosina tutkittu enenevässä määrin. Kuitenkin terveydenhuoltoalan ammattilaisten oma ääni on jäänyt kuulumatta. Tämä tutkimus vastaa tuohon puutteeseen kuvaamalla ammattilaisten itse kertomia kokemuksia keskeltä sotaa. Johtopäätelmänä on, että kansainvälinen yhteisö ei ole kyennyt suojelemaan terveydenhuollon henkilöstöä väkivallalta. Tästä huolimatta terveydenhuoltoalan ammattilaiset ovat hoitaneet siviiliväestöä moraalinsa,

mahdollisuuksiensa ja taitojensa mukaan. Ilman heitä siviiliväestö olisi jäänyt täysin ilman lääketieteellistä apua.

Avainsanat: väkivalta, terveydenhuolto, sota, terveydenhuollon henkilöstö, Syyria, Lähi-itä, motivaatio, muutto, ISIS, aseelliset järjestöt. eksploratiivinen, kvalitatiivinen

FOREWORDS AND ACKNOWLEDGEMENTS

The idea for this dissertation emerged from my work as an orderly assistant at Töölö Hospital's Emergency Department in Helsinki. Witnessing the severe injuries and abuse, and the tireless efforts of healthcare workers to save lives profoundly affected me. It was distressing to see how innocent people endured such suffering, impacting their families and friends as well. Despite the healthcare workers' best efforts, not all patients survived.

Many professionals at Töölö Hospital were also part of the International Red Cross medical team, aiding in global disasters and conflicts. This deeply impressed me. This contrast between human hardships and the dedication of healthcare workers sparked my interest in the broader implications of violence and the role of medical professionals in conflict zones. An experienced nurse who had worked in Gaza once noted that also the professionals in conflict areas needed protection. The conversation led me to explore the challenges the medical staff faces in the Occupied Palestinian Territories for my master's thesis. At the same time, I needed to travel to Syria to study. There the great hospitality of the locals deeply touched me.

The Arab Spring in 2011 changed everything. Reading reports of healthcare workers being prevented from doing their work, and even violently assaulted, brought back the nurse's words to my mind. Her message was as clear as ever. My thoughts were left dwelling on them solidifying my resolve to address this issue in my dissertation. The conflicts in Syria, Ukraine and Gaza highlighted the vulnerability of healthcare and civilian infrastructure in war zones. It is essential to oppose violence and strive for change. This dissertation aims to give voice to civilians afflicted by war.

Writing this dissertation has been an emotionally challenging journey, and I am grateful to everyone who supported me. I want to present my special thanks to Orwa al-Abdulla for everything. He helped me in so many invaluable ways. I also appreciate the support and expertise of Johanna Korhonen, Lotta Nuotio, Noora Magd, Johanna Järveläinen, Mania al-Khatib, Samira Taina, emeritusprofessor Tari Haahtela, Taina Renkonen, Tiina

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I am also grateful to my husband and best friend, Jan Parkki, for his unwavering support and critical insights, and to my beloved cat Dagon, who provided comfort during challenging times. I also thank my parents, Pirjo and Max Kallström, whose experiences and values have profoundly influenced me.

My deepest gratitude goes to all the brave interviewees who overcame their fears and shared their experiences. It cannot have been easy to discuss such traumatic events, but without them, this work would not have been possible. I thank them all and hope the future will be more kind to them.

Finally, I dedicate this dissertation to all healthcare professionals who have died, disappeared, or become victims of violence during war. Their sacrifices must never be forgotten. Let us strive for a world where such horrors no longer exist.

8th of August 2024
Helsinki

Agneta Kallström

LIST OF ORIGINAL PUBLICATIONS

This dissertation is based on the following original publications:

I Kallström, Agneta; Häkkinen Mikko; al-Abdulla Orwa, Juusola Hannu & Kauhanen Jussi (2021). Caught in crossfire: health care workers' experiences of Violence in Syria. Medicine, Conflict, and Survival. 37:1, 34-54. https://doi.org/10.1080/13623699.2021.1889654

II Kallström, Agneta; al-Abdulla Orwa; Parkki Jan; Häkkinen Mikko; Juusola Hannu & Kauhanen Jussi (2021). "I had to leave. I had to leave my clinic, my city, leave everything behind in Syria. ' Qualitative research of Syrian healthcare workers migrating from the war-torn country. BMJ Open 2021;11:e049941. doi:10.1136/ BMJ open-2021-049941

III Kallström, Agneta; al-Abdulla Orwa; Parkki Jan; Häkkinen Mikko; Juusola Hannu & Kauhanen Jussi (2022). I don't leave my people; They need me: Qualitative research of local health care professionals' working motivations in Syria. Conflict and Health 16, 1. https://doi.org/10.1186/s13031-021-00432-y

CONTENTS

List of Tables

List of Figures

ABBREVIATIONS

AP	Additional Protocols
FSA	Free Syrian Army
GC	Geneva Convention
GCaD	Global Coalition against Daesh
GoS	Government of Syria
HCW	Health care worker
ICRC	International Committee of the Red Cross
IHL	International Humanitarian Law
IHRL	International Human Rights Law
INGO	International non-governmental organisation
ISIS	Islamic State in Syria
JaN	Jabhat al Nusra
JFS	Jabhat Fateh al-Sham
NGO	Non-governmental organisation
NSAG	Non-state armed group
PHR	Physicians for Human Rights
PYD	Partiya Yekîtiya Demokrat
SDF	Syrian Democratic Forces
SDG	Sustainable development goals
SSM	Snowball sampling method
UCDP	Uppsala Conflict Database Programme
UN	United Nations
UNSC	United Nations Security Council
WHO	World Health Organization
YPG	Yekîneyên Parastina Gel

1 INTRODUCTION

Conflicts make providing health care challenging, sometimes even impossible. Healthcare workers (HCWs), a crucial component of the health system, are often harassed, tortured, kidnapped, or killed. These professionals are a critical pillar of health care, but like other civilians, they often leave when the conflict escalates. (1–7) The remaining HCWs live and work in increasingly difficult settings with an overwhelming workload (8–13) and are subjected to traumatic stress, burnout, physical consequences, or disabilities. (8,14–20) When HCWs leave, the population that needs medical care is left without proper care. Whether preventive, such as vaccination campaigns, or curative, treatment becomes insufficient or unavailable. Diseases prevail with a limited or collapsed healthcare system and mortality increases. (17,21–25)

During the past 30 years, nearly 30 million civilians have died from diseases and injuries in armed conflicts around the world. Due to indirect causes, mortality, and morbidity increase and affect children under five years of age the most severely. (26) However, how many deaths are related to the poor or non-existent healthcare system remains unknown (27). Violence against health care endangers human rights to health. It has a detrimental effect on the provision of humanitarian aid during wars. Such actions are a challenge faced by humanitarian workers and an actual humanitarian problem (28).

The conflict in Syria has been raging for more than a decade. It has been described as one of the worst humanitarian crises of modern times. It is a complex conflict that involves several local, regional, and international parties. The effects on civilians have been horrendous.

Conflict-related deaths in Syria (this rate includes direct and indirect deaths resulting from conflict-related violence) are estimated at 874,00 persons. However, the total number is disputed. The United Nations (UN) estimated that 350,200 people were killed due to direct hostilities between March 2011 and March 2021 (29). The direct cause of death from 2011 to 2017 was due to aerial attacks (54.3% of war-related deaths). In the non-

state armed groups (NSAGs) controlled areas in northwest Syria, nearly 15 % of households have at least one person with a significant violence-related disability in 2022. (28)

The conflict has severely damaged the healthcare system. Almost 70 % of doctors have left the country, leaving the population without adequate healthcare (30). Migration of HCWs affects the provision of health services. When human resources are permanently lost, reconstruction efforts are at risk in the future (1,31).

There is limited research that studies the nature and extent of violence against health care and its impact on HCWs. Understanding the motives and dynamics of attacks and conflicts is essential to protect civilians and health care in crisis (26,32,33) There are several reasons for the lack of research. Documenting attacks against health care is challenging because many incidents go unreported due to inadequate reporting systems. Although violence threatens public health and even global health, only a small fraction of related research is done on conflict, post-conflict, or fragile state settings. Research typically focuses more on interpersonal violence than collective or political forms. In conflicts, non-lethal cases of violence, such as blocking the passage of ambulances at checkpoints, violent hospital intrusions, and threats, are rarely reported. (26) HCWs, especially physicians, migrating from less developed countries have been studied primarily from the perspectives of economic and health systems (1,34–36). Motivations include better income, future prospects for family, career opportunities, and a stable society, as seen in countries like Pakistan, Egypt, and Nigeria (36,37). The security aspects of migration have been less studied. However, not all HCWs leave, and some people choose to work in life-threatening conditions driven by different motives. Existing research often focuses on the motives and perspectives of Western humanitarian professionals. Media coverage typically highlights incidents involving personnel from industrialised countries. (36,38,39)

Conducting research in conflict settings is challenging. Problems typically include managing complex security environments and political challenges, ensuring a sufficiently representative sampling, and adapting methodologies to crisis circumstances. Other difficulties include maintaining

standards of research ethics, raising sufficient funding, and finding qualified researchers. (33,40–42)

This research gap also concerns studies related to the context of the Arab Spring. However, the number of these publications has increased recently (38,43). 81 % of these articles are grey literature, and only 9 % are primary studies conducted in conflict settings. (38,44) These articles describe the situation in Syria, Iraq, and Bahrain. Violence against HCWs was the subject of 63 % of the articles, followed by medical practice in conflict settings (19 %), migration (17 %), and education (10 %). (43,44)

Many nongovernmental organisations (NGOs), such as the World Health Organisation (WHO) and Physicians for Human Rights (PHR), collect data on attacks against health care in Syria (45).

The perspective of those who provide those health services in the middle of the war is often overlooked. Typically, destructive strikes, such as major aerial bombings, gain attention, while lower threats against HCWs go underreported. (46,47) Qualitative research on Syrian HCWs and the violence they have experienced is limited. Little is known about first-hand personal experiences and details of events in the field. The Syrian conflict, in which health care has been deliberately targeted according to multiple studies (7,11,32,48–50) and violated the IHL, has caused an urgent need for further research (11,51).

This dissertation explores violence against health care in Syria from the perspective of HCWs. This study aims to better understand the realities, perceptions, and interpretations of violence by the HCW.

The research is interdisciplinary. The aim of the research is related to health sciences. The study utilizes political science, especially conflict research and Middle Eastern studies, to define terms and understand the context. It studies HCWs' experiences and, especially, how violence affects HCWs, whose presence in a conflict area is essential when providing health care to those in need. From a broader perspective, a lack of healthcare negatively affects the public and possibly even global health.

This dissertation is based on three peer-reviewed journal articles that address conflict and healthcare.

Substudy I provides the context of the Syrian conflict and recognises the warring parties from the perspective of HCWs. Substudy II shows the reasons behind the migration of HCWs from Syria. Substudy III explores why some HCWs continue to work in Syria despite the ongoing conflict.

This dissertation deepens the understanding of violence against health care in conflict settings. It provides detailed information on the resilience of HCWs in Syria. In other words, it illustrates how HCWs manage to function despite adversity and challenging circumstances. In addition, it explores the factors that motivate some HCWs to leave the country while others choose to stay and work amid the conflict. Although HCWs are victims of violence, they are also active actors in the conflict. Understanding their experiences can help them during the war by amplifying their voices.

Recognising violence against health care is not enough. We must strive to mitigate and possibly even prevent it. A crucial step in this direction is documenting acts of violence. This is not just a mere academic exercise, but a vital process that equips the international community with sufficient information about what transpired. This information enables us to hold perpetrators of violence accountable under international humanitarian law (IHL) and human rights. (52)

This dissertation is structured as follows: Section 2 provides a background on violence against health care in contemporary conflicts. It also presents a brief history of modern Syria and shows how protests demanding human rights and democracy evolved into a complex conflict. Section 3 outlines the objectives of the study. Section 4 presents the research methods. Section 5 presents the findings of this dissertation, and Section 6 reflects on these findings, offering recommendations for further research.

Original publications are included at the end.

2 BACKGROUND

2.1 KEY DEFINITIONS

Since this dissertation studies violence against health care in conflicts, the key terms of the research are defined here.

This study follows the definition of organised violence provided by the Uppsala Conflict Data Base (UCDB, which is the leading global source of data on organized violence. It is the longest-running data collection project on civil war, and it has been spanning nearly four decades. Its definition of armed conflict has established the worldwide benchmark for the systematic classification and analysis of conflicts) (53). UCDP categorises such violence into three types.

The first one is state-based armed conflict, a *contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state*. This category is divided according to the three types of conflict. An interstate armed conflict is a dispute between two or more states, while internationalised internal armed conflict is a war between the government of a state and internal opposition groups who receive military support from other states. An internal armed conflict is a war between the government of a state and internal opposition groups. State-based conflicts vary from large-scale wars that last decades (e.g., Afghanistan) to small-scale conflicts that last only a short time (e.g., the attempted coup in Lesotho in September 1998).

The second one is non-state conflict, which refers to *the use of armed force between two organized armed groups, neither of which is the government of a state*. This group includes fighting between rebel groups, militias, and drug cartels (e.g., conflict between IS (Islamic State) and Taleban in Afghanistan since 2015). These also include conflicts between organised armed groups, with a common identification along ethnic, clan, religious, national, or tribal lines. Sometimes, an external state can also be involved as a warring party in a nonstate conflict, for example, when US forces supported the Syrian

Democratic Forces (SDF) in the fight against ISIS (Islamic State in Syria). (53,54)

The third is one-sided violence, which refers to *the deliberate use of armed force by the government of a state or by a formally organised group against civilians*. This group involves the targeted killing of vulnerable non-combatants (e.g., ISIS killing civilians worldwide). These mutually exclusive categories share the same intensity cutoff for inclusion, 25 fatalities in a calendar year. (53,54)

In this study, we have left out violence conducted by patients or their family members unless the aggression is related to the context of the conflict.

Violence against health care can be intentional or indiscriminate. The Safeguarding Health in Conflict Coalition (55) defines intentional attacks as *attacks in which the mode of operation or the effect on the health worker or facility shows beyond a reasonable doubt that the perpetrator must have intended to cause at least a degree of harm to a health worker or health facility. These events include the targeted injury, killing, arrest, or kidnapping of health workers; the entry or occupation of a health facility; and the theft or robbery of medical supplies.*

Indiscriminate attacks are *attacks without evidence that the perpetrator intended to harm a health worker or health facility. These events include military operations in the vicinity of health facilities or indiscriminate attacks on civilians that also affected health workers (such as a bomb in a public place).* (55)

HCWs are defined as professionals who provide various health services. They diagnose and treat patients, do research, or supervise other HCWS. They have an education in a health-related field. (56) Health facilities provide medical care or other direct patient support, such as clinics, hospitals, laboratories, makeshift hospitals, medical education facilities, mobile clinics, pharmacies, and warehouses. Health transport means all vehicles used to transport people requiring medical care. (55)

2.2 VIOLENCE AGAINST HEALTH CARE IN CONTEMPORARY WARFARE

Violence against healthcare care has been practised throughout the modern history of warfare. The hospitals were shelled during the Franco-Prussian War (1870–71). Hospital ships were intentionally and systematically targeted in World War I. In the Second Italo-Ethiopian War (1935–37), a Swedish Red Cross field hospital was bombed in Ethiopia, killing 28 patients and 50 patients and HCWs wounded. With only some previous conflicts mentioned, healthcare infrastructure was also intentionally targeted in Nanking, China, and by Biafra in Nigeria. (57)

The nature of contemporary conflicts has arguably changed since the end of the Cold War in the 1990s. Today, conflicts are intra-state rather than inter-state but have a robust global connection. Intrastate wars typically become protracted conflicts or complex emergencies, as multiple warring parties have interests in continuing violence for ethnic, political, or economic reasons. Several theories for the causes of the war tend to be context-specific and may depend on multicausal overlapping factors. (26,58–61)

During the conflict, physicians, but also women, children, older people, unarmed people, farmers, and religious ministers have been traditionally classified as individuals who should be specially protected and cared for. According to Slim (62), "civilian" is used to distinguish between combatants and noncombatants. Using the term civilian in the context of war shows that enemy fighters and civilians should be treated separately. Civilians, including HCWs, have a right to protection from hostilities.

In contemporary warfare, violations of medical neutrality have arguably been more widespread and systematic. Hospitals have been destroyed from Grozny in Chechnya to Kunduz in Afghanistan. HCWs have been assaulted, kidnapped, tortured, and killed. Hospitals, clinics, and first aid stations are looted and attacked. Ambulances have been routinely attacked, seized, or blocked. (2,13,26,63)

The targeting of healthcare has been argued to have become an increasing part of warfare over the past 30 years. This strategy is part of the

larger trends of the war on terror, especially in several Middle Eastern countries. (5,11,64) According to Fouad et al. (11), the weaponisation of health, in other words, *a strategy of using people's need for health care as a weapon against them by violently depriving them of care*, has been extensively used in the Syrian conflict.

Violence against healthcare varies[1] from verbal threats to HCWs to massive and deadly airstrikes against healthcare facilities. HCWs are subjected to general violence, intimidation, and 'everyday violence,' such as obstructions (e.g., checkpoints, roadblocks, and curfews). In addition to health care facilities, violence occurs at home, at work, and on the roads (26,65,66).

In 2021, the Safeguarding Health in Conflict Coalition (2) documented 806 incidents of violence or obstruction of health care in 43 countries and territories experiencing conflict or political instability. Furthermore, healthcare facilities were destroyed or damaged (n=175) and health transports were destroyed, damaged, stolen, or hijacked (n=7). The highest numbers of incidents were reported in Syria (n=121), Afghanistan (n=106), Yemen (n=81), and the Democratic Republic of the Congo (n=81). Most of these countries have experienced conflict for at least a decade.

Because HCWs are exposed to various mental and physical violence, they can experience significant stress and anxiety. Often, they do not have the necessary electricity, clean water, medical supplies, and medicines to treat patients as needed. (16,18,67,68) Lack of resources causes tension among locals, who can blame HCWs for problems, leading to mistrust among patients and even outbursts of violence. For example, some pregnant women in Yemen accused medical staff of hiding contraceptives. (16)

[1] violence included bombings, explosions, looting, robbery, hijacking, shooting, gunfire, forced closure of facilities, violent search of facilities, fire, arson, military use, military takeover, chemical attack, cyberattack, abduction of health care workers, denial or delay of health services, assault, forcing staff to act against their ethics, execution, torture, violent demonstrations, administrative harassment, obstruction, sexual violence, psychological violence, and the threat of violence

Professionals working in harsh conditions have various coping mechanisms, such as fatalism and religion, a sense of duty, and patriotism (16,69). Regardless of the political or religious background of HCWs, the aid provision in a humanitarian crisis should be based on widely accepted principles: humanity, neutrality, impartiality, and independence. These principles are based on the IHL and are defined as follows.

Humanity*: Human suffering must be addressed wherever it is found. Humanitarian action aims to protect life and health and ensure respect for human beings.*

Neutrality*: Humanitarian actors must not take sides in hostilities or engage in controversies of political, racial, religious, or ideological nature.*

Impartiality*: Humanitarian action must be carried out based only on need, prioritising the most urgent cases of distress and making no distinctions based on nationality, race, gender, religious belief, class, or political opinions.*

Independence*: Humanitarian action must be independent of any political, economic, military, or other objectives that any actor may hold concerning areas where humanitarian action is being implemented*. (70)

Additionally, physicians have an ethical obligation to respect and protect human life. This moral duty also applies during a conflict; as the Physician's pledge states, *I will maintain the utmost respect for human life*. (71)

Because many of their colleagues and other professionals have fled, HCWs must treat patient cases without training or experience. There is a shortage of specialists in fields such as emergency medicine. For example, a study conducted in Iraq shows that only 3 % of physicians working in emergency departments in active conflict areas had some degree in emergency medicine (72).

According to Aid Worker Security, in 2022, 98 % of aid workers who died from violence were national staff (73). This includes local HCWs who are at risk of violence due to working close to the front line, where medical aid is typically urgently needed and where international HCWs often do not operate. International organisations prefer not to remain in high-risk territories and instead transfer the risk to local and national organisations. Local workers do not enjoy the same security arrangements as their foreign counterparts**.** (65) Generally, humanitarian organisations are unwilling or

adequately equipped to work in high-risk areas. Preparation for chemical, biological, nuclear, and radiological attacks is insufficient. (6) According to Tammi (74), local actors' security needs and vulnerabilities are not correctly recognised in contemporary humanitarian aid.

One of the fundamental reasons health care in conflict areas collapses is the lack of competent HCWS. When hostilities begin, the HCWs flee with other civilians. Physicians tend to leave early in the conflict because they have the resources to do so (75). The brain drain from fragile or conflict-affected countries is significant. Nearly all HCWs have migrated from the areas controlled by NSAG Boko Haram, one of the largest Islamist militant groups in Africa, in Nigeria. Due to this absence of HCWs, 450 health facilities have been forced to close. (76) Migrating from conflict settings has been studied to some extent in Iraq, which has suffered from conflict, UN sanctions, sectarian conflict, and the rise of ISIS. Iraq has poor internal security and is plagued by corruption. Approximately 40 % of Iraqi physicians exposed to violence considered abandoning their profession, and 20 % thought of leaving the country due to violence. More than 80 % of the HCWs had a colleague who had migrated from Iraq. (15) The desire to leave the country was very high (76.5 %) among junior physicians (aged between 24 and 39 years), of which the majority (89.5 %) believed that it was better to leave Iraq. (77)

HCWs leave for various reasons, such as violence against healthcare and fear for their lives and the safety of their families. Deteriorating working conditions caused by enormous workloads, depleting resources, and workforce attrition also affect the decision to leave. Financial problems, the desire to continue studying, and the hope of better living standards compel HCWs to leave. Typically, the choice to migrate involves various reasons and motives. (3,4,78–81)

When a crisis begins, foreign HCWs are among the first to leave. Even if they decide to stay, their families are usually safe in their home countries. Locals have their families living nearby and are more likely to be affected by the crisis. Family members can be used to extort HCWs. (36) In Iraq, the family members of HCWs experienced significant violence: 42 % of HCWs had at least one relative kidnapped, injured or killed (3). Like other civilians,

the remaining HCWs are subjected to forced displacement and experience direct or indirect traumatic events (14). In Iraq, almost 25 % of the HCWs were displaced from their areas of residence. They were forced to leave because of sectarian violence or to protect themselves and their families from being attacked by NSAGs. (82,83)

A significant shortage of HCWs significantly complicates the reconstruction of the health system in the post-conflict phase (84). In the study conducted with Iraqi physicians who lived abroad in 2013, only 17 % wanted to return to the country, while 50 % of Iraqi physicians considered leaving the country. (1)

2.3 PROTECTING HEALTHCARE DURING CONFLICTS

The international legal framework for healthcare consists of treaties, regulations, and standards. The standards are derived from international humanitarian law (IHL) and medical ethics. It also covers human rights and criminal laws. Rules were developed to protect those not participating in hostilities, including HCWs, during armed conflicts and other crises. Standards aim to guarantee medical neutrality, protection of medical facilities, personnel, and patients from hostilities, humane treatment of civilians and wounded soldiers, the right of access to medical care, and nondiscriminatory treatment of the sick and wounded. (9,85)

Standards oblige the warring parties not to interfere with healthcare, whether patients are wounded soldiers or civilians. The conflicting parties must not attack, obstruct, or threaten the actions of health care. They must also refrain from using healthcare facilities for hostilities and spare patients from violence. The framework is intended to secure the autonomy of HCWs in their work duties amidst armed conflict, crisis, or violence. Furthermore, they are intended to protect health care against violence and ensure that health care provision is not intentionally used as a political tool against groups. (9,85)

2.3.1 International Humanitarian Law

The IHL is a universal set of international treaties and customary law rules. The IHL is intended to solve humanitarian problems that arise in armed conflicts, which can be international or non-international. The IHL regulates acceptable means and methods of warfare and provides the necessary laws to protect civilian targets, such as health care. It protects civilians and soldiers who no longer participate in hostilities by regulating and restricting means of warfare. (9)

The core treaties of IHL consist of the four Geneva Conventions (GCs) of 1949 and two additional agreements: the Additional Protocols (APs) of 1977 relating to protecting victims of international and non-international armed conflict, and the AP of 2005 relating to additional distinctive emblems. Since 1949, all UN members have ratified the GCs. The acceptance of the APs is growing. About 170 governments have ratified the APs. GCs and APs bind all warring parties, from state soldiers to combatants of NSAGs, in all circumstances of armed conflict. Intentional violence against healthcare facilities violates the IHL and can constitute a war crime. GC and APs authorise using the Red Cross and Red Crescent emblems. (86)

The attacker must follow the principles of distinction and proportionality. According to the principles of distinction, all parties involved in an armed conflict must distinguish civilian targets from military targets. Warring parties must refrain from attacking unless they can ascertain the nature of the target. Furthermore, the attacker must give a warning before attacking a civilian target. The principle also applies to fighters, who must be distinguishable as combatants and differentiate themselves from those who do not participate in hostilities. Force must use proportionality (military necessity) to avoid unnecessary civilian casualties. (87) By military necessity, Slim (62) means that harming and killing civilians is justified if the attacking party first takes all necessary precautions to protect people and tries to use safer fighting methods. Rubenstein (26) argues that 'military necessity' has been widely used to justify attacks against health care. For example, he mentions the battles in 2019 when the United States' military campaign sought to free Iraq's Mosul from ISIS control. According to him, the coalition

bombed the hospital, a command centre for ISIS, without warning or trying to minimise civilian casualties. At the same time, the hospital was in civilian use. The hospital's diagnostic equipment was destroyed in the attack, leaving the population without adequate health care.

GCs and APs state that HCWs are persons assigned exclusively to medical duties. These duties include the search for, collection, transportation, diagnosis, and treatment of those in need, disease control, and management and administration of medical units or means of transport. HCWs are protected by the IHL, which allows their work to be carried out according to humanitarian principles and medical ethics. IHL grants medical protection to HCWs, as carrying out medical activities aligned with ethical standards should never result in punishment for the practitioner, regardless of the beneficiary involved, under any circumstances. (87,88)

IHL requires that the treatment provided by the HCWs must be impartial and provided indiscriminately to civilians and wounded combatants of all warring parties. A wounded soldier who has stopped fighting is no longer a combatant. HCWs are allowed to prioritise patients only based on their medical condition. The purposeful killing of patients or causing suffering or injury is a grave violation of the GCs and can be considered a war crime. The warring parties must take all reasonably possible measures to search for and collect wounded and sick. They are not allowed to interfere with the provision of health care services but instead ensure adequate medical care without delay. (87,88)

However, there are situations where IHL ceases to protect healthcare. If health facilities, transport, patients, HCWs, or the Red Cross emblem are used outside of their humanitarian function and used for hostilities, they lose their immunity from attack. (9) The Israeli Defence Forces have accused Hamas, which controls the Gaza Strip, of using health facilities to hide command and control centres, shelter fighters, store weapons, and hide tunnel entrances (89). Transports are also misused against IHL, and warring parties may use ambulances to transport weapons or execute suicide attacks. For example, Taliban killed nearly 100 people with an ambulance bomb in Kabul, Afghanistan, in 2016. (90) Even if health facilities or

transports are misused, the warring party must minimise civilian harm and give a warning before an attack. (85)

All UN member states have signed GCs, but some have not recognised other significant treaties, such as the APs. These treaties apply only between or within those states that have ratified them. However, the International Committee of the Red Cross has interpreted requirements as customary law, also known as 'general' international law, rules based on the belief that, over time, have become legally binding norms. Customary law binds all warring states and parties, regardless of whether they have ratified the conventions and protocols. (85,91)

2.3.2 International Human Rights Law and Medical Principles During The War

The International Human Rights Law (IHRL) provides the framework for protecting health care at all times, in peace and conflict. The IHRL requires states to ensure access to and protect health care. Governments are not allowed to arbitrarily or discriminatorily deny or obstruct life-saving care for the injured.

Article 25 of the Universal Declaration of Human Rights (92) states that e*veryone has the right to a standard of living adequate for the health and well-being of himself and his family, including food, clothing, housing, medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age, or other lack of livelihood in circumstances beyond his control.*

IHRL can be derogated in times of war. Such measures can only be used when *strictly required*, must not be *inconsistent with other obligations under international law and do not involve discrimination solely on race, colour, sex, language, religion or social origin*. However, the state cannot restrict the most fundamental human rights, such as the right to live, the right not to be tortured or subjected to cruel, inhuman, or degrading treatment or punishment, and the right not to be subjected to arbitrary arrest or imprisonment. The rights to freedom of thought, conscience, and religion are also protected under all circumstances. (93)

The principles of medical ethics are essential to handling various legal issues during political unrest or war. The IHL 's duty to provide neutral medical care with confidentiality and national legislation (e.g., an obligation to report victims of violence to the police) may be in conflict. Providing healthcare may be considered locally a form of supporting the enemy and thus be outlawed. General laws can be used to punish HCWs for other grounds (e.g., participating in protests, spreading fake news) than for providing health services. However, the underlying reason for the prosecution prevents HCWs from offering care to people the state considers opponents. Administrative sanctions (e.g., suspension, harassment, or intimidation) are used to restrict the provision of health care. (94) IHL and medical ethics supersede other regulations and duties, such as reporting patients to the police. Physicians cannot be punished or prosecuted for providing medical aid to injured and sick people. (9)

In 2015, the World Medical Association, the International Committee of Military Medicine, the International Council of Nurses, and the International Pharmaceutical Federation adopted the Ethical Principles of Health Care in Times of Armed Conflict and Other Emergencies. The document provides a code of ethics for international healthcare organisations applicable in armed conflict and other emergencies. The regulations define the principles that guide the relationship between patients and HCWs. These ethical principles provide HCWs with a tool for negotiations with authorities and other actors. (95)

2.3.3 Reactions of The International Community Towards Violence Against Healthcare

Several international bodies have taken a stand on violence against health care by passing different resolutions. In 1993, the World Health Assembly, the governing body of WHO, adopted a resolution condemning attacks on health care. It also stated that such acts constitute war crimes. It emphasised the importance of adhering to the IHL and abstaining from all actions that could harm the provision of medical care. (96)

In 2011, the UNSC passed a resolution urging warring parties to avoid actions hindering children's healthcare access. The resolution also called on the Secretary-General to continue to monitor and report various violations, including the military occupation of hospitals, as well as attacks on or abduction of HCWs. (97)

At the height of the Syrian conflict in 2016, the United Nations Security Council adopted Resolution 2286 on 2 May 2016. The resolution condemned attacks and threats against the wounded, sick, HCWs and other humanitarian workers, medical transports, equipment, and medical facilities. This resolution also demanded that all parties to an armed conflict comply fully with their IHL obligation. (98)

The international legal system and institutions, especially the UN, have been strongly criticised. The international community has been unable or even unwilling to protect civilians, thus, health care during the conflict. There are several of these failures on a massive scale. An example of a tragic failure occurred in Srebrenica in 1995, where the UN peacekeeping forces did not intervene in the genocide committed by the Serb forces among Bosnian Muslims (99).

2.4 HEALTH CARE AND COUNTERTERRORISM

Since the beginning of the “war on terrorism” initiated by the United States in the early 2000s, the counterterrorism framework has challenged the IHL norms and human rights law. Counterterrorism policies and actions are often at odds with the rules of the IHL. The "anti-terrorism law" has been interpreted as meaning that civilian activities can be considered terrorist activities. The line between armed conflict and terrorism has blurred. (26,94,100) Policy often broadly defines terrorism, terrorist acts, support, and financing. Counterterrorism measures and the war against terrorism have had a negative impact on medical care and the implementation of human rights principles during armed conflicts. (101,102)

Anti-terrorism policies complicate and restrict humanitarian action in areas beyond the control of governments that NSAGs often rule. Providing medical and humanitarian assistance may be difficult or even impossible if

the organisations are classified as terrorists and cooperation with them is criminalised. Classifying groups and individuals as terrorists can lead to harassment, arrest, and prosecution of HCWs. (26,94,101,102)

According to Rubenstein (26), the logic behind this approach is to deny health care to those considered enemies and punish HCWs for their actions. Terrorism laws can endanger public health and hinder HCWs from performing their duties. By criminalising health care under the guise of terrorism, the principle of humanity, the ethical and humanitarian law obligations of impartiality and the human rights to life and health are severely undermined.

Laws can criminalise support for terrorists and other persons or groups opposing the state. Under some anti-terrorism laws, HCWs have been prosecuted as terrorists worldwide, from Iraq to the United States. (26,94) For example, when ISIS captured territories in Iraq, government officials technically worked under their administration. They have later been prosecuted in Iraqi courts for being ISIS collaborators, even when they have only performed typical civil society tasks, such as treating patients. (103)

2.5 EFFECTS ON PUBLIC HEALTH AND DELIVERING HEALTH CARE

Violence against health care deprives millions of health care. It threatens the UN's Sustainable Development Goals (SDGs), such as SDG 3, which ensures a healthy life for all people of all ages (104). The conflict creates an additional need for care and affects, in particular, vulnerable populations. Conflict-related injuries and disabilities increase. Some diseases may increase due to conflict-induced conditions (e.g., unsafe water supplies and overcrowding in camps). Some diseases may be exacerbated by disrupting routine health services (e.g. vaccination programmes). Chronic diseases (e.g. diabetes and cancer) may progrediate during the conflict as their treatment is interrupted. Mental health problems and sexual violence tend to increase in number. (17,23,24,69,105–107)

In addition to affecting the health of populations and communities, conflict hinders the functioning of the healthcare system and the delivery of health services in several ways; healthcare infrastructure and HCWs can be

subjected to violence, active fighting can prevent people from seeking treatment, and restrict the movement of ambulances. Fighting forces civilians, including HCWs, to flee the area, and violence also endangers the provision of preventive health measures. (32,105)

Countries that suffer from war often have inadequate health systems. Once a conflict begins, the demand for healthcare increases. Within an already strained system, the destruction of even a single hospital can significantly negatively affect the availability of preventive and curative care. (108)

For example, eradicating polio is a considerable challenge in Afghanistan and Pakistan because NSAGs choose to target vaccination personnel. (109,110). In Congo, in the middle of the 10th Ebola outbreak in 2020, HCWs were targeted, most likely due to their work in the Ebola response (111).

2.6 SYRIA

2.6.1 Geographical Location And Population

The Syrian Arab Republic is located in southwestern Asia, on the eastern coast of the Mediterranean Sea (Figure 1). The country consists of 14 governorates (Figure 2). The neighbouring countries are Türkiye in the north, Iraq in the east and southeast, Jordan in the south, and Israel and Lebanon in the southwest. Israel occupied the Golan Heights in 1967.

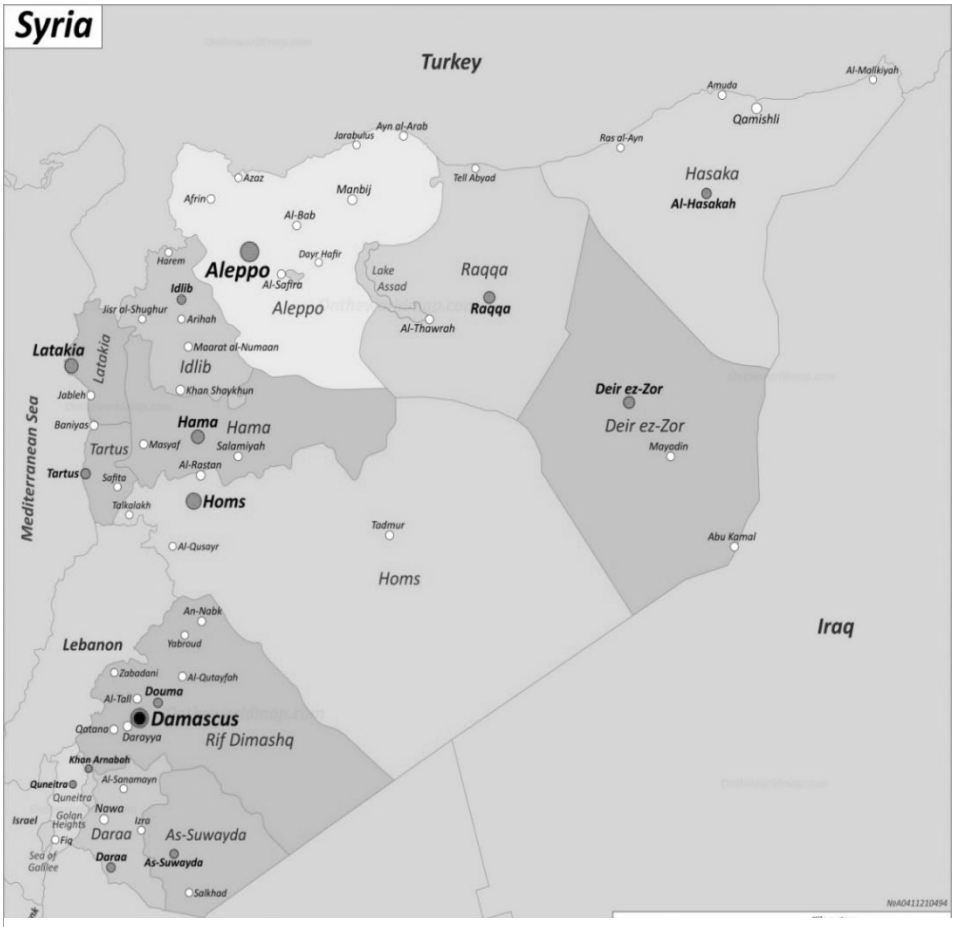

Figure 1 Map of Syria. Source: On the World Map.com. https://ontheworldmap.com/syria/

Figure 2 Governorates of Syria. Source: Source: On the World Map.com. https://ontheworldmap.com/syria/administrative-divisions-map-of-syria.html

Before the conflict, the population was about 22 million. The most populated areas were around Damascus in the south and Aleppo in the north. The age structure was relatively young. The ethnic and religious backgrounds were divergent; about 65 % were Sunni Muslims. The Alawites comprised 10-12 %, while Christians comprised 10 %. Ethnically, most of the population is Arab, but Kurds make up about 10 %. There are also other smaller minorities. (112–114)

2.6.2 Syrian Society Before the Conflict

After the dissolution of the Ottoman Empire after the First World War, the League of Nations gave Syria a French mandate. In 1946, the country became independent. Numerous changes in political power followed during the following decades. In 1963, several pro-Baath Party officers seized power. Among them was Hafez al-Assad, the forthcoming president of Syria, and in 1971, he was elected as the only presidential candidate. (115,116)

Since the 1963 coup, Syria has been politically relatively stable until 2011. However, all organised political opposition was suppressed. One of the events occurred in 1982. The troops besieged Hama, where officials from the outlawed Syrian Muslim Brotherhood organisation lived. After the siege, an estimated 20,000 people were killed. (117) Other riots also existed, such as in 2004 a violent clash in Qamishli, a governorate populated mostly by Kurds. (112)

The government strictly controlled the citizens and cultivated a surveillance society where everyone was expected to spy on and observe each other, regardless of their social status. The state of emergency rule was imposed after the coup on 8 March 1963. The Emergency Law allowed the the GoS to ban all opposition, monitor citizens, and restrict fundamental human rights, such as freedom of assembly and speech. It justified the arrest and detention of people whom the GoS considered a threat to public safety and order. Citizens were imprisoned for political reasons and subjected to torture and ill treatment that led to death. Human rights activists, as well as antigovernmental groups, were harassed and persecuted. The government monitored and controlled all forms of media. Punitive laws were applied to dissident citizens. Political power was centred around the president and the Baath party. (112,115,116,118)

President Hafez al-Assad died in June 2000 and his son, Bashar al-Assad, became president in July 2000 with 99.7 percent of votes without a standing opponent in the referendum (112,115). Figure 2 shows political events that are significant in understanding the context of this study.

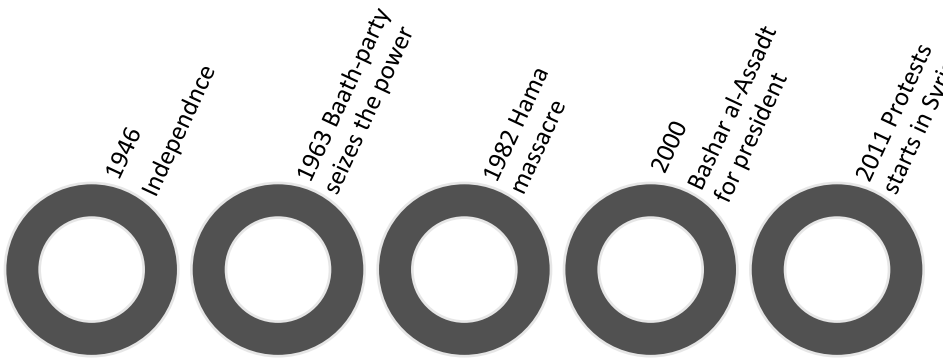

Figure 3: Political events in Syria before 2011

2.6.3 Health Care And Public Health

Before the conflict, Syria's health care system stood out in the region and among other low-middle-income countries for its relatively good performance. The Syrian constitution assigns the responsibility for providing health care to the state. However, the onset of the conflict in 2011 dramatically altered this landscape. (101,119)

Before 2011, the Ministry of Health (MoH) was the main provider of primary health services. Resources were unevenly distributed between rural and urban areas. Although high-quality care provided mainly by the private health sector was available in major cities such as Damascus and Aleppo, other areas did not have enough resources for effective and adequate provision of health services due to the lack of health facilities and equipment. Especially in the northern and eastern governorates, access to public hospitals was unequal. In the western and southern governorates (Damascus, Lattakia, Dar'a, and Tartous), the situation was better. Poor health system governance was common. (113,114,119)

Dewachi et al. (64) argue that by providing health care services, the government secured the social and political legitimacy of the state and strengthened an authoritarian one-party system. Monopolising healthcare

services allowed the government another tool to control the population in addition to violence. On the other hand, providing such services helped cultivate a sense of citizenship and appreciation for state authority.

Despite unequal access to healthcare care, the health status of the population had improved significantly before 2011. The country was in an epidemiological transition from communicable to noncommunicable diseases. Non-communicable diseases, such as cardiovascular disease and cancer, caused 77 % of deaths. (113,119) The population had high rates of hypertension, diabetes, and smoking-related diseases. The average expected life expectancy in 2006 was 74 years, while in 1960, it had been only 52 years. (114-116) Other health indicators, such as infant mortality and child immunisation rates, had improved significantly (117). The vaccination coverage was good. 94 % of newborns were vaccinated against tetanus in 2011, 90 % of infants had received BCG vaccination, and 75 % had received polio vaccination. Just two years before the war, in 2010, the country had 1.5 hospital beds and physicians available per 1,000 people. The number of nurses and midwives was 1.9 per 1,000 people. (21,113,119,120)

2.7 FROM PROTESTS TO FULL SCALE WAR

The Arab Spring, a series of uprisings against authoritarianism, corruption, and poverty, began in Tunis in December 2010 and quickly spread throughout the Arab world. In January 2011, Tunisian President Ben Ali was forced to flee the country. Following this, in February 2011, Egyptian President Hosni Mubarak was also compelled to resign. The wave of protests continued to ripple through the region, leading to the ousting of Colonel Gaddafi in Libya and President Saleh in Yemen.

In March 2011, protests began in Syria. A group of men chanted in Damascus, the capital of the country: *We sacrifice our blood and souls for you, Syria*. The protesters demanded the release of children who had been earlier arrested and tortured for spray painting the anti-government slogan *Your turn, doctor!* on a wall in Daraa, southern Syria. Despite this initial outcry, security forces quickly suppressed the protest, arresting several

demonstrators. (112,115,121) Subsequently, peaceful protests for human rights and democracy became a full-scale conflict with numerous belligerents. Initially unorganized, these demonstrations focused on demands for freedom, justice and dignity, but were met with violent repression by the GoS. Live rounds, tear gas, and arbitrary arrests characterised the government response. (115,116)

The conflict intensified as armed opposition emerged, leading to confrontations between government forces and various factions. In July 2011, the Free Syrian Army (FSA) was formed, marking the beginning of armed resistance. (116,122)

In July 2012, the International Committee of the Red Cross (ICRC) declared Syria a state of non-international armed conflict (123). In other words, the country was in a civil war.

Although southern Syria became a stronghold of the FSA faction, Islamist and jihadist NSAGs congregated and gained power in Homs and northern Syria. A radical Islamist group, Jabhat al-Nusra (JaN)[2], became the main faction. (122,124)

As the NSAGs gained territory, the GoS started to use barrel bombs in areas outside the control of the regime, especially the Aleppo governorate. Such bombs can cause high mortality and significant damage to buildings when they fall into inhabited areas.

A Salafi jihadist organisation, ISIS, appeared in Syria in 2014 and complicated the conflict landscape. The organisation claimed territories mainly in the northern city of Raqqa and the governorate of Deir Ez-Zour. Furthermore, ISIS conquered territories in Iraq and after capturing the city of Mosul, the organisation declared that a caliphate is established in northern Syria and western Iraq. (122)

Kurdish-majority regions in north Syria declared autonomy and started instituting Rojava's administration in early 2014 (111). Later, in 2016, the Kurdish Democratic Union Party and groups allied with it declared a federated area in the northeast (125).

[2] previously known as Jabhat Fateh al-Sham–JFS, currently known as Hayat Tahrir al-Sham

Gradually, foreign actors started to take an active military role in the conflict. The Global Coalition against Daesh (GCaD) was formed in 2014. GCaD aims to defeat ISIS (126). In 2015, airstrikes by GCAD led to mass civilian casualties in Iraq and Syria. (127) The Russian Federation entered the conflict in 2015, invited by the GoS. According to Russia's Ministry of Defence, the aim was to target and destroy terrorist organisations such as ISIS and JaN. (115,128) With the help of Russia and other local and foreign supporters, the GoS reclaimed the eastern side of Aleppo in 2016 from the NSAGs.

2.7.1 Warring Parties

The Syrian war can be defined as an internationalised internal war, according to UCDP, as an armed conflict between a government and a nongovernment party where the government side, the opposing side, or both sides, receive troop support from other governments that actively participate in the conflict. Syria has experienced state-based violence, nonstate violence, and one-sided violence. (53,129)

Most of our interviews were conducted in the summer of 2016. At that time, the conflict was in the full armed conflict stage. Military actions by GoS and Russia were frequent, and severe human rights violations occurred daily. Geographically and politically, Syria was divided into four main warring factions: 1) the GoS Syria and its allies, 2) NSAG with different ideological and political motivations, 3) ISIS, and 4) Kurdish Forces. Additionally, foreign actors have participated in the conflict.

The main warring party is GoS and its allies. Russia and Iran have supported GoS by providing military, financial and material support (130). The GoS has used *shabbihas*, for example, to suppress demonstrations with security forces. *Shabbihas* are local criminal groups that have become state-sponsored militias. (112,115) The UN Independent International Commission of Enquiry on Syria found that *shabbihas are* responsible for a massacre in 2012 in the village of al-Houla near Homs (131).

The second warring party is the non-state armed groups. NSAGs are defined as armed perpetrators of organised groups that are not affiliated

with state law enforcement, military, or security forces. They are engaged in a state-based armed conflict with a government or are involved in non-state conflicts or one-sided violence. This includes various organised armed groups, including private armies, rebel or guerrilla factions, and terrorist organisations. Additionally, it includes unidentified or unnamed armed groups when described in connection with rebels, extremists, or military-like structures or equipment without explicit ties to any state military[3]. (132)

In this study, the term NSAGs refers to a heterogeneous group of organisations with different motives and agendas. The group includes the nationalist FSA and several parties with radical Islamic backgrounds, such as the al-Qaeda-linked JaN. NSAGs fight mainly against the GoS, but sometimes also among themselves. Occasionally, they have practised some military cooperation. Up to 6,000 NSAGs were estimated to operate in the country in 2016. (133–136) The strength of Islamist organisations was that they could incorporate smaller groups and were better organised. They usually did not participate in criminal activities such as the robbery for which the FSA was accused. One of the most vital Islamist groups was JaN, which announced its existence in 2013. The organisation gained a foothold in Syria and attracted new members. At first, almost nothing was known about the group's goals in Syria. Furthermore, it participated in aid activities and thus gained popularity among people. (115,122) According to Petterson et al. (135), the Syrian conflict is characterised by the fragmentation of opposition groups[4]. This makes it difficult to distinguish between different armed groups and their activities. By definition, ISIS and the Kurdish Forces belong to the category of NSAGs. Because the ideology and motives of these groups are more easily distinguishable from the activities of other armed organisations in this study, the ISIS and Kurdish Forces are discussed separately from other NSAGs.

[3] Private security entities and unidentified or unnamed armed groups committing crimes such as robbery, burglary, theft, or fraud are excluded from this definition and study

[4] In addition the number of different NSAGs in 2016 was up to 6,000 groups (134)

The third warring party is the Islamic State in Syria[5]. ISIS is a Sunni-Salafi organisation whose interpretation of Islam is extremely conservative. The organisation favours ultraconservative religious practice and strict implementation of the Sharia law. The organisation originated from al-Qaeda in Iraq. In the early 2000s, its goal was to overthrow the Iraqi government, banish foreign troops, and establish an Islamic state. In 2013, ISIS strengthened its presence in Syria, and the following year the organisation announced that it had established a caliphate in parts of Syria and Iraq with Raqqa as its capital. Their main goal was to establish a global Islamic community under a theocratic state. ISIS is known for extreme violence against all those they consider infidels. The organisation is also jihadist and, therefore, believes in using violence to achieve political and religious goals. In Syria, the ISIS fought against all other parties to the conflict. By late 2017, ISIS had lost most of its territories in Syria and Iraq. Many states and actors have classified ISIS as a terrorist organisation. (67,137,138)

The fourth warring party is the Syrian Democratic Forces (SDF), an umbrella term for multiple NSAGs. The SDF is a military led by the Kurdish People's Protection Units and its parallel civilian Democratic Union Party (PYD). These groups are linked to the Kurdistan Workers Party. The US supported the SDF in the fight against ISIS, the main enemy of the SDF, from 2016 to 2017. (129,133) In this research, this NSAG is referred to as the Kurdish Forces.

Additionally, the US-led coalition, which includes 83 countries, was formed in September 2014 and participated in the conflict. GCaD aims to eliminate ISIS in Syria and Iraq. (126)

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[5] (ad- Dawlah islāmiyyah) Islamic State. IS is also known as Islamic State in Syria and Levant, ISIL: , (ad-Dawlah al-Islāmiyah fī 'l-ʿIrāq wa-sh-Shām). Islamic State in Syria. Daesh ,(dā'iš) is considered an offensive term by the group.

2.7.2 Fatalities and Civilian Casualties in Syria

Estimates of the number of people killed in Syria vary. The UCDP estimates the total number of dead at 405,739. Since the uprising in 2011, Syria has dominated state-based fatalities worldwide and was primarily responsible for the increase in fatalities from 2012 to 2014. 2013, the conflict accounted for more than three-quarters of all registered country-specific deaths, and the share has decreased yearly. It remained the highest number of deaths from state-based violence until 2019. The violence then escalated in Afghanistan, while simultaneously decreasing in Syria. Since 2016, all deaths have decreased significantly from more than 41,000 to 4,500 in 2020. (135) The reason for the significant drop rate in fatalities may be due to the fact that GoS reclaimed most of the territories, including Eastern Aleppo, after the military campaign. In addition, local ceasefires have contributed to a decrease in mortality and the fact that ISIS lost large areas of its administration. (139)

According to Pettersen et al. (135), while civilian casualties have remained high throughout the conflict, relatively few have resulted from direct and deliberate targeting against civilians. Most of the deaths were due to fighting between the government and the NSAGs. Less than 4 % of all fatalities are due to one-sided violence. Approximately 83 % have died from state-based violence and 12 % of deaths are caused by non-state violence. (Figure 3) Most civilian deaths are caused by barrel bombs, aerial bombardment, and regular warfare by the GoS with pro-government forces that committed massacres during the conflict. (130) The peak of one-sided violence occurred in 2011-2013 when the government violently suppressed demonstrations and killed people suspected of being opposition supporters. (135)

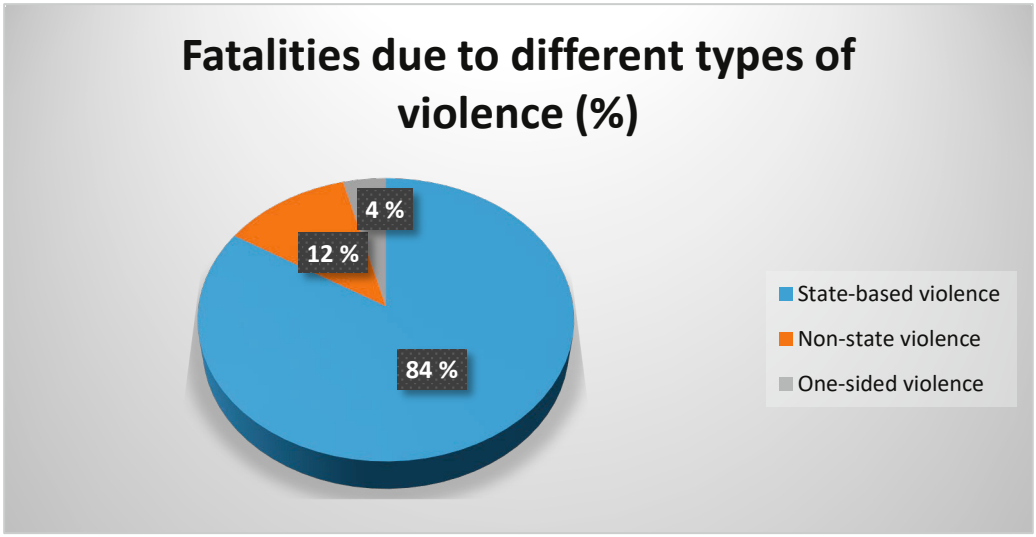

Figure 4: Fatalities due to different types of violence according to UCDP (130)

During the Syrian conflict, the state lost control over large parts of the country. In these areas, several NSAGs took over and exploited the territories to gain resources, including manpower, to fuel their campaigns against the GoS. A defining quality of the war in Syria is the formation of traditional battle lines, a development rarely seen in asymmetric conflicts. Although the fighting occurred primarily near these boundaries, large areas remained relatively unaffected. (135)

According to Petterson (135) the high death toll is mainly due to the indiscriminate use of artillery fire, air strikes near battle lines, and cities with significant populations. More than 100,000 deaths have been recorded in urban areas such as Homs, Aleppo, Rif Damascus, and their suburbs. The loss of life was more profound in the besieged cities, as civilians could not escape the fighting.

During the first stages of the conflict, the Syrian state was responsible for practically all one-sided violence, actively focusing on demonstrators and those suspected of working for the opposition. Since 2014, ISIS has been the main cause of one-sided deaths in 2015 and 2016. These figures have since fallen somewhat, and the focus of their activities has moved to Africa. One of the reasons for changing the regional sphere of influence is that the organisation lost its most significant areas of control in Syria and Iraq. (126,135)

2.8 HEALTH CARE AMIDST CONFLICT IN SYRIA

2.8.1 Violence Against Healthcare

Since the beginning of the unrest in 2011, according to multiple sources, GoS has attacked health facilities, personnel, and ambulances and denied medical care to protesters. Violence was occurring even before there was substantial armed resistance. (11,140,141)

The security authorities were actively trying to manage and control the health care, HCWs, and treatment of the injured in the protests. For example, two circulars were issued by the Homs Health Directorate of the Ministry of Health in April 2011. Patients with gunshot wounds or other injuries related to the violent suppression of the demonstration were ordered to be treated in military hospitals, such as the Homs Military Hospital. The circulars stated that if a patient is treated in facilities other than a military hospital, the Health Directorate must be informed. MoH also controlled blood banks and the distribution of blood in Homs. The health authorities were ordered to identify people believed to belong to the opposition or who had participated in demonstrations. The Homs Health Directorate authorities instructed hospitals to report daily those persons who had participated in activities against the government. (140)

HCWs, especially physicians treating injured protestors, were harassed, detained, tortured, and executed. (140–142). To justify these acts, the Parliament approved an antiterrorism law on 2 July 2012, which defines terrorism, terrorist acts, and enforcement of such acts (143). This law efficiently criminalized providing medical aid to protestors injured in anti-governmental protests. It made the HCWs participants in terrorist activities according to the interpretation of the government. (94,144)The HCWs were obligated to inform the security officers about the patients injured in the demonstrations or suspected of being part of the opposition. (94,101)

An underground health network was established to provide medical care to protesters without fear of arrest by the GoS. For example, these poorly equipped makeshift hospitals were in private houses or mosques. To protect medical facilities from artillery and airstrikes, which started in 2012, field hospitals were also built underground in cities such as Aleppo and

Damascus. The GoS repeatedly bombed and shelled health facilities to intimidate HCWs and patients in opposition-controlled areas, mainly in Aleppo, Damascus, Deir ez-Zour and Rif Damascus governorates. The government intensified its violence and started to use barrel bombs in densely populated civilian areas under NSAGs. (11,141,145)

In 2015, the Russian government joined the conflict alongside the Syrian government and the deadly air strikes intensified (146,147).

Already at the end of 2012, almost 60 % of public hospitals had been affected by violence. Of these, 20 % had been damaged and 11 % had become non-functional. Almost 80 % of the ambulances were damaged and more than half are no longer working. (148) In 2021, more than 50 % of the health infrastructure had been damaged or destroyed (30).

In the study by Elamein et al. (149) during November-December 2015, 938 people were victims of violence against healthcare in 402 different attacks. Of the victims, 72 % (n=677) were wounded and 28 % (n=261) died. Of the deaths, 24 % were physicians. Most of the victims were men (n=685), but a significant number were children under five years of age. In areas with a substantial presence of NSAG, approximately 44 % of hospitals and 5 % of clinics were attacked. They were hit mainly by aerial bombardment. A third of the facilities were attacked multiple times. Trauma care services were hit more frequently than other health care services.

2.8.2 Casualties among HCWs

Since 2011 through June 2022, at least 945 HCWs have been killed. Among HCWs, the highest number of deaths from violence was among physicians, with a total of 278 deaths (29,42 %). The most affected professions were paramedics (23,60 %) and nurses (22,86 %). The rest of those killed consisted of other HCWs, such as dentists, medical technicians, and pharmacists. (45,141)

Most of the deaths of HCWs date back to the first four years of the conflict. Shelling, aerial attacks, small arms fire, torture, or executions were the causes of the death of HCWs. Air strikes and artillery fire were the leading cause of death (54 %). According to PHR, GoS and Russia are responsible for

93 % of the deaths of HCWs. NSAGs, ISIS, and Kurdish Forces can be held responsible for 7 % of deaths. (11,45,141)

Most of the deaths (69 %) of HCWs occurred between 2012 and 2015 (Figure 4). The highest increase in death occurred in 2012 when 190 HCWs were killed. After 2015, death rates declined sharply[6]. Most of the HCWs' deaths occurred in the governorates of Aleppo, Idlib, Daraa and Rif Damascus (Figure 5). In the early years of the conflict, most HCWs died in the Rif Damascus and Daraa regions. In 2014, the highest number of deaths occurred in the Aleppo governorate. (45)

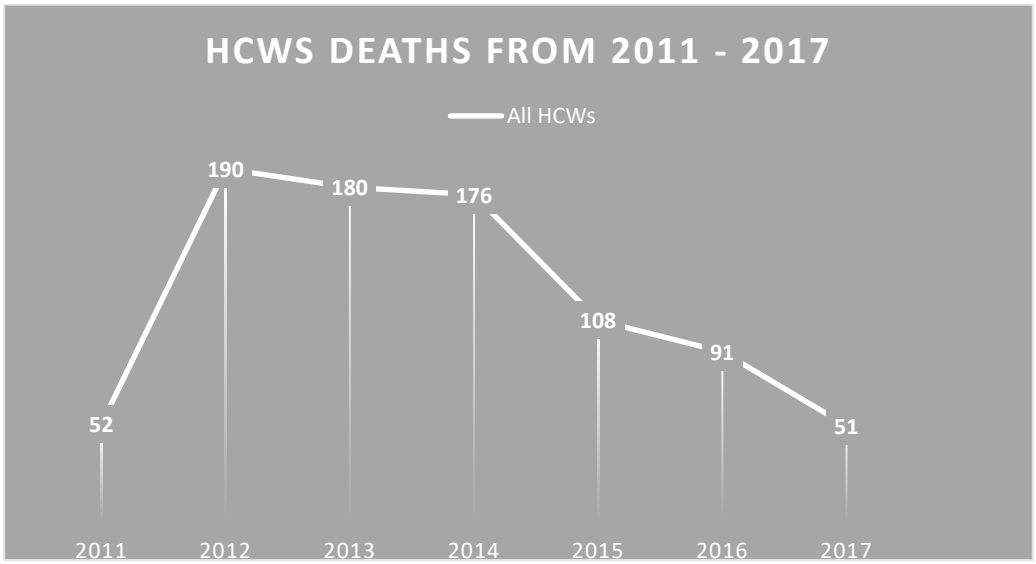

Figure 5: HCWs' deaths from 2011 to 2017 according to PHR (45)

[6] This reduction of HCWs deaths after 2015 reported by PHR cannot be interpreted as an indication of an improved security situation. Rather, the phenomenon likely results at least partly from the significant decrease of HCWs remaining present in the area.

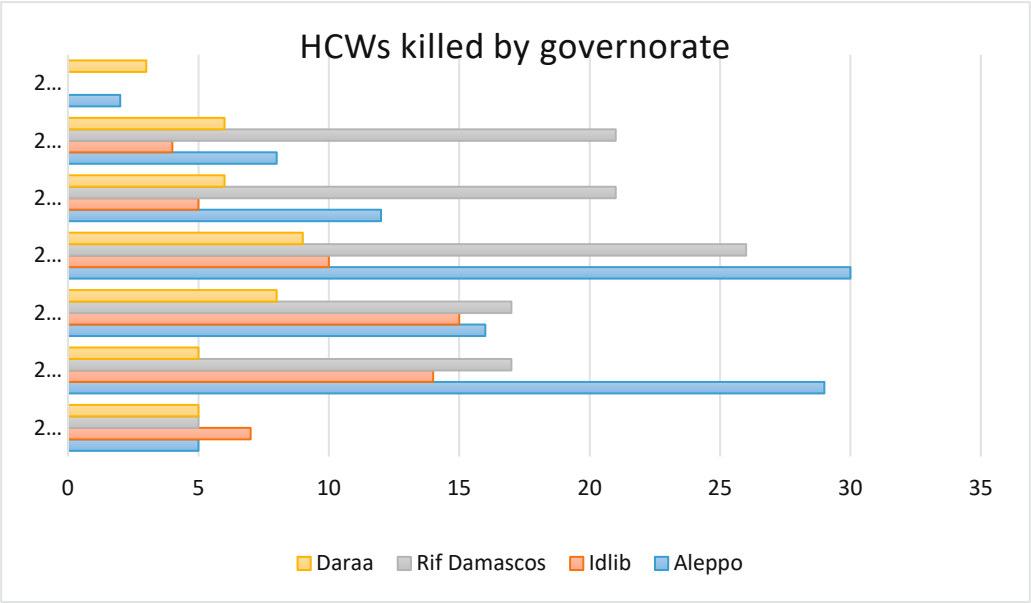

Figure 6: HCWs killed by governorate according to PHR (45)

2.8.3 The Collapsed and Fragmented Healthcare System

In 2016, the country's health care system was divided into three separate systems: 1) the official health care system run by the Ministry of Health (MoH), 2) health care under different NSAGs or Kurdish forces, and 3) the health system maintained by the Islamic State. (150,151)

Studies conducted in government areas are almost non-existent. Most of the healthcare professionals in the country lived in government-controlled areas. The capacity to provide services varies between regions. HCWs experienced security threats in these areas. Indirect fire from the NSAGs and government checkpoints added to the feeling of insecurity. Furthermore, doctors have reported breaking their medical oath due to severe pressure from the GoS. (11)

In areas controlled by NSAG, HCWs were forced to live in challenging environments. They often were under siege (e.g., in eastern Ghouta in Rif Damascus, enclaves in Idlib, and Homs). They experienced chemical attacks by GoS (such as those in Douma Ghouta in Rif Damascus in 2012 and Khan Shaykhun in Idlib in 2017). HCWs had to cope with increasingly overwhelming daily workloads due to continued bombardment and

shortages of medical supplies and human resources. Conflict-induced health problems, such as conflict-related trauma, mass influxes of displaced people, and epidemics of easily treatable infectious diseases (e.g. poliomyelitis), significantly strain the health system. Since many of the most experienced and senior medical personnel have fled the area, younger and less experienced physicians have had to treat patients without sufficient skill or training. In addition, HCWs face ethical challenges and moral distress. (8,10,11,13,14,18,20,51,120)

Alhaffar et al. (34) found that foreign fighters created insecurity among HCWs. They hold extremely conservative interpretations of Islam and have restricted women's presence in public spaces. Female HCWs extensively participated in healthcare services because many male colleagues have died or fled. The presence of radical NSAGs led many local men not to allow male physicians to examine their wives and demand female physicians, according to the research.

Providing healthcare in ISIS-controlled areas has been studied significantly less than in opposition areas. A study conducted in Iraq found that HCWs encountered many problems related to the organisation's strict interpretation of Sharia law. They were forced to swear their allegiance to ISIS and feared being arrested or executed. Female physicians had to follow the ISIS dress code, and their activities were restricted to treating patients of the same sex only. The Islamic police, *al-Hesba,* supervised HCWs and patients in hospitals. Health workers were forced to treat mainly ISIS fighters, regardless of the urgency of patient needs. Medical supplies and medicines had to be reserved to treat ISIS members. (67)

To prevent HCWs from fleeing, ISIS threatened to seize their homes and clinics if they did not show up at their workplaces. At the same time, they felt a moral obligation to stay to help civilians. After the organisation lost control of its last territories in 2019, HCWs who stayed and worked under ISIS are in danger of being prosecuted in Iraq for belonging to a terrorist organisation. (67,152)

There are no studies on violence against health care conducted by the Kurdish Forces.

Violence has resulted in a mass exodus of HCWs. Estimates of physicians who reside and work in Syria vary depending on the source, and reliable data are scarce. (11). Although there were almost 30,000 doctors in the country in 2009 (153), in 2016, it was estimated that around 15,000 had fled Syria. In 2015 in NSAG-controlled eastern Aleppo, PHR reported that more than 95% of the HCWs had fled, been detained, or been killed. Areas without physicians were the most affected by the fighting. Many of these areas were sieged. (11,141,154)

The conflict has been so intense that many international non-governmental organisations (INGOs) have been forced to evacuate non-local HCWs. To provide humanitarian aid to hard-to-reach, besieged, and opposition-controlled areas, the UNSC adopted Resolution 2165 in 2014. With notification to Syrian authorities, the resolution allows UN agencies and humanitarian partners to use four border crossings from Türkiye, Jordania and Iraq to ensure that aid, including medical and surgical supplies, reached people in need throughout Syria through the most direct routes. (155,156)

Due to the deteriorated health care system, the incidence of infectious diseases, such as poliomyelitis, meningitis, measles, hepatitis A, leishmaniasis and scabies, increased in the Syrian population and refugee camps in neighbouring countries. (21) War trauma injuries, disruption of chronic disease treatment, and mental problems threatened public health already in the early stage of the conflict.(114,148) The conflict has markedly negatively affected life expectancy, which has fallen almost 20 years after the war began. (30)

2.8.4 The Politicisation of The Provision of Medical Care in Syria

The GoS has used the term 'terrorism' from the beginning of the conflict to legitimise the violent repression of widespread protests (157). In July 2012, the Parliament approved an anti-terrorism law that defines terrorism, terrorist acts, and enforcement against such acts (143). The law allowed authorities the right to arrest and charge anyone considered a threat to "public safety" committed “by means of any tools”. This also applied to HCWs who treated patients injured in the protests. (94,144,157)

3 AIMS OF THE STUDY

This dissertation aims to explore how HCWs experienced violence against healthcare in the context of the conflict in Syria between 2011 and 2017.

More specifically, the aims are:

1. How do HCWs understand the diverse forms of violence against healthcare
2. Explore how violence affects HCWs in the Syrian conflict

4 METHODOLOGY AND SOURCES

4.1 PHENOMENOLOGICAL APPROACH AND LITERATURE REVIEW

This study uses a phenomenological approach. This means that the research method aims to describe a studied subject from the perspective of those who have experienced it. The main questions of the approach include *what* and *how* it has been experienced. The phenomenology is attributed to Edmund Husserl. He rejected the absolute emphasis on objective observations of the external world of positivism. Instead, he encouraged studying phenomena as perceived through individual consciousness. Phenomenological analysis should be devoid of assumptions about philosophical or scientific theory, deductive logic methods, or other empirical or psychological speculations that should not influence it. Instead, the weight should be directly accessing an individual's intuition and exploring what is immediately given in experience. (158,159)

This study is qualitative exploratory research, which can be used when there is limited understanding or knowledge of the studied topic or phenomenon (160). When using this approach, it is possible to explore the subjective experiences and perspectives of HCWs, which are shaped by individual and contextual elements, as in conflict settings in Syria. Research conducted in conflict areas is very challenging. Partly for this reason, very little previous research on the subject exists. This is particularly true concerning Syria. When the research topic was chosen, the conflict in the country only lasted a few years and the situation was rapidly evolving.

Before creating the interview structure, a literature review was performed using the PubMed and Scopus databases. The search terms 'Syria,' 'conflict,' 'armed conflict,' 'health care workers,' 'violence,' 'experience, and different permutations were used. The chosen time frame was from 2005 to 2015 (ten years). No language restrictions were applied. Studies from countries that do not experience armed conflict or political unrest were excluded as research studying interpersonal violence. Only a limited number of similar studies on the experiences of healthcare workers in conflict zones were

found. These articles describe the experiences of HCWs with violence in conflicts in Burma, Uganda, and Iraq. (1,3,4,81,161) The selection parameters for the review are shown in Table 1. It appears that the state of understanding of the conflicts, especially from the viewpoint of the individual-level experiences of the HCWs, was incomplete. This indicated the need for more research.

Table 1: Selection parameters of the literature review

Databases	PubMed Scopus
Search terms	'Syria,' 'conflict,' 'armed conflict,' 'health care workers', 'violence,' 'experience'
Included	The research studies the violence against HCWs in war/conflict The study evaluates the experiences of HCWS during the war. The research targets HCWs Violence is related to conflict
Excluded	The study does not address violence against HCWS in conflict settings The study researches interpersonal violence
Timeframe	2005–2015

Since very few academic publications were found, the material was mainly based on grey literature. This consisted of the decisions and reports

of the various UN councils, such as the Security Council and the Human Rights Council. Situation reports from various INGOs were also used. The emphasis was mainly on actors who were focused on providing health care. These organisations included Physicians for Human Rights (PHR) and Médecins Sans Frontières (Doctors Without Borders). Both organisations are well known for their activities in conflict areas. The project 'Health Care in Danger' of the International Committee of the Red Cross (ICRC) was also closely followed.

In addition to the material mentioned above, reports, news, databases and literature on Syria, conflict, and IHL were used to understand the ongoing and constantly changing nature of the conflict.

4.2 STUDY DESIGN AND SAMPLING

The questionnaire was formed based on the available information and source material. The multi-disciplined research team conducted it.

A thematic questionnaire interview framework was created for the interview. The key themes were "experienced violence" and "effects of violence." "Experienced violence" refers to the different violent acts that HCWs may have encountered during the conflict. This includes e.g. physical assaults, verbal abuse, and threats. "Effects of violence" include the consequences of these acts on HCWs. These include emotional and psychological distress, physical injuries, and impacts on the ability to provide medical services.

The questions were almost all open-ended. Data collection aimed to explore the phenomenon as widely as possible. The questionnaire consisted of three thematic parts. The first was the personal information and lives of the participants before the conflict. This section aimed to gather relevant background information and help participants relax by asking them easy-to-answer questions before moving onto potentially stressful topics and experiences of violence in the second part and tangible effects in the third. The interview questions were pre-tested with a Middle Eastern researcher and a Finnish physician.

4.3 DATA COLLECTION

In total, 25 HCWs were interviewed. The selection criteria included that participants must have been formally HWCs as defined by the International Labour Organisation's International Standard Classification of Occupations (162) and have worked in Syria at some point in the conflict.

Data was collected mainly in southern Türkiye in Gaziantep, a Turkish municipality, between June and July 2016. This location was chosen due to its proximity to the Syrian border, about 60 kilometres south of Gaziantep. Additionally, Gaziantep is a hub for many INGOs providing cross-border humanitarian aid to Northwestern Syria. It was known that the HCWs resided there. Due to high-security risks, conducting interviews in Syria was impossible.

During this period, two interviewers conducted individual interviews (n=13). In most cases, one researcher interviewed and the other took notes. Because the internal political situation in the country escalated into a coup attempt on the night between July 15 and 16, interviews were interrupted for security reasons. More interviews (n=5) were conducted in Gaziantep in spring 2017. At this time, only one researcher was the interviewer. Nineteen interviews were conducted in English and six in Arabic.

Some interviews (n=7) were conducted in Europe in late 2016–2017. To protect the identities of the interviewees, no further information is provided on the locations and dates of the interviews in Europe. One interviewer conducted these interviews. Figure 6 shows the SSM chain used to gather information.

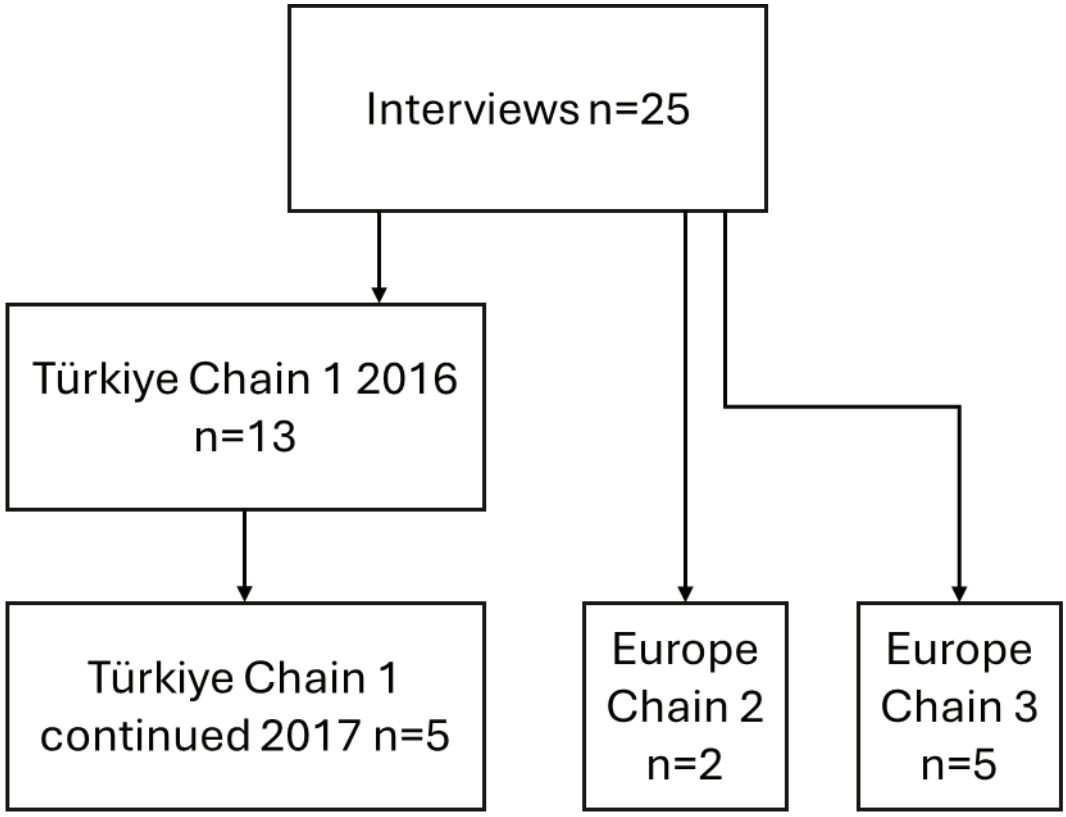

Figure 7: SSM chains

The snowball sampling method (SSM) was used to find suitable participants for the research because it allows for the location and contact of potential participants who may otherwise be difficult to contact due to the political sensitivity of the research. Finding participants, especially in conflict areas, is challenging because the atmosphere and attitudes are distrustful and suspicious due to ongoing hostilities. The conflict environment and the community can be sceptical of all outsiders and refrain from contact. Distrust is high, especially in communities and societies where people have limited political freedoms, such as freedom of speech, as is often the case in authoritarian states. The security of participants may also be at risk. SSM is often used when the environment is not optimal for research and other possible methodologies are unavailable (40). Based on the news and reports from INGOs about violence against HCWS, as well as knowing the lack of

freedom of speech and political oppression in Syria, it was reasonable to assume that the participants would be difficult to reach.

SSM starts as researchers start with a few initial contacts and invite them to participate. The first contacts provide the researcher with the name of the next potential participant, who gives the name of a third one, etc. (163,164) This network and chain referral system allows researchers to reach groups and individuals who do not wish to be found or contacted for different reasons, such as the topic's sensitivity (165). As Häkkinen (166) points out, one of the strengths of SSM is that it enhances security in an unstable environment. Going into an interview is safer when you know you are meeting someone recommended by another already-known individual. A weakness of SSM is selection bias. Participants may suggest individuals with similar backgrounds and worldviews, limiting the generalisability of the study findings (40,165). It soon became apparent that it was not possible to interview professionals who were still working in areas controlled by ISIS or under the GoS.

Three referral chains were launched to reduce this selection bias: one in Türkiye and two in Europe. All three chains were developed separately. The first contact in the referral chain was a Syrian HCW who lived in Gaziantep, Türkiye and was already in contact with the University of Eastern Finland. He was suitable for the study and was willing to participate, so he started the chain in Türkiye. The first chain in Europe began at an international conference on humanitarian aid in 2016. The second chain started with the help of an NGO. To protect the identities of the participants, no further information is provided on the locations and times of the interviews in Europe.

All interviews were individual. There was a justification behind opting for individual interviews over group interviews. When recruiting participants, their political views and opinions are unknown. It would have been possible for representatives of different warring parties to be present in the group interview. This may have potentially endangered the participants. This possibility became evident during the interviews when one of the participants requested that no other Syrians be present. It was essential for the interview environment to be safe so that the participants dared share

their possible traumatic experiences without fear of consequences. In Syria, the government restricts freedom of speech and closely monitors residents' opinions. In the worst-case scenario, the risk would have been that the information the participants shared became known to, for example, the GoS or ISIS. This might have severe consequences not only for themselves but also for their friends and families, but also for their and colleagues.

Also, the expected social hierarchy between professions and gender status contributed to the reason why group interviews were not conducted. The assumption was that the interviewees would talk more openly about things in individual rather than group interviews.

Before the interview, the participants were informed about the objectives and relevance of the study. The researchers introduced themselves and the university they represented. The research permit was then presented to the participants. They received an information sheet (Appendix I) containing the contact information of all researchers, the background of the study, purpose, handling, and archiving of the study material, conducts the participants are subjected to, benefits and risks to the participants, use of the results of the study, and the rights of the participants. They were shown a letter of recommendation from the research director (Appendix II)

Data were collected using a semi-structured interview (see Appendix III). Semi-structured interviews are commonly used in qualitative research. Participants are asked the same questions in practice, but the order or wording may vary. This method allows for a continuous dialogue between the researcher and the participant. It allows the researcher to explore thoughts, feelings, experiences, and beliefs about a specific topic and issue. It also allows one to delve deeply into participants' personal and sometimes sensitive issues. (167)

The interviews started with background questions. In this part, the participants' age, nationality, marital status, and place of birth were asked. This information, especially the place of birth, can provide insights into the individual's cultural and social background (e.g., the Kurdish minority in northeastern Syria). Since the study also inquired about experiences before the conflict, we wanted to understand the historical and political context in which the person might have lived. In Syria, certain areas have previously

experienced politically turbulent events (e.g., Hama and Aleppo), and these factors could have influenced the individual's experiences with violence. After the background questions, we moved to the main semi-structured part. Participants were encouraged to freely discuss their experiences. The process was broadly guided by a semi-structured, multilayered questionnaire divided into thematic parts. First, participants were asked to describe their life before the conflict. Before the conversation shifted towards violence, the interviewees were presented with the WHO's definition of violence. In part II, the participants were prompted to share any encounters they may have had with violence. The conversation proceeded chronologically, beginning with inquiries about incidents of violence preceding the war. Subsequently, the focus shifted to occurrences post-2011, during which the participants recounted first-hand observations and experiences of violence. In part III, participants were asked about the tangible effects of violence.

The interview process can be iterative, with research questions occasionally refined and clarified (168). The research questions were adjusted and dynamically selected during the interviews based on previous responses from the participants. In addition, supplementary questions or clarifications that had emerged from the answers of previous participants were posed to the interviewees. The questions became more specific as the research proceeded and knowledge accumulated from previous interviews.

This method allowed researchers to understand the values, thoughts, and feelings of the participants more thoroughly than a structured interview format would allow.

After the interview, the participants were asked to provide names of other potential candidates interested in participating in the research. People interested in participating in the study contacted the research team. In some cases, the participant already brought along a potential interviewee. The interviews lasted 20 to 90 minutes.

Typically, the researcher conducts interviews until saturation, meaning the participants cease providing qualitatively significant new themes and new information (165). When studying a hard-to-reach population, the research sample is typically small (40). In this research, the saturation point

was achieved after about 20 interviews. After that, five more interviews were conducted to ensure no further relevant information would emerge. In the early stages of the study, it was assumed that the HCWs committed to the Syrian government could not be reached for interviews. This was later confirmed in practice, as no individuals from that reference group emerged and its unfeasibility became apparent. At this point, the data was considered to have reached saturation.

4.4 DATA ANALYSIS

After the interviews, the recordings were transcribed verbatim. Subsequently, a professional interpreter translated all six interviews conducted in Arabic. An independent translator who randomly sampled segments of the recorded interviews validated the accuracy and fidelity of the translation. After transliteration, the recordings were erased.

Altogether, the translated material consisted of 360 Word document pages (Times New Roman, space line 1.5, font 12) .

To protect the anonymity of the participants, all identifiable information, such as names and organisations, was removed from the transcripts.

The handwritten notes were triangulated. In practice, this meant that notes were taken on details that were not necessarily verbalised during the interview. These included descriptions of visual materials, such as photos and videos, shown to researchers and mentions of specific locations that the participant showed on the map. Additionally, if a location was mentioned in Arabic, efforts were made in some cases to identify its equivalent in Kurdish and vice versa. In Gaziantep, when two interviewers were present, notes were reviewed collaboratively and discussed after the session. Some participants provided precise details on incidents of violence that could be triangulated. Some of these incidents were so significant and major that information about them could be found in the news and PHR's database. These primarily included airstrikes on hospitals and actions carried out by ISIS.

The data was analysed using content analysis, a qualitative research technique used to analyse written, verbal, or visual communication

messages (169). This technique allows exploring a phenomenon and its associated attributes, providing new knowledge, facts, and insights through a condensed and broad description of the phenomenon (170,171).

Content analysis can be used inductively, as this study did. This approach generates classifications based on the data without a predefined classification framework. Inductive reasoning is guided by the research's purpose and the question's formulation. The material is examined systematically and without preconceived notions. The aim is to find an answer to the research question from the material. The process begins with open coding of the material. Subsequently, categories are created, and finally, abstraction occurs, wherein the material is synthesised into a comprehensive whole to answer the research questions. This approach is particularly suitable when previous studies on the phenomenon are lacking or when available information is fragmented. (170,172). This approach was chosen because very little information was available on the topic, as the literature revealed. Preliminary notes were taken during the interview and transliteration phases. The transcripts were read multiple times to gain an overall understanding, with relevant points underlined. The material was then shortened, removing sections unrelated to the research question, such as topics related to global politics and detailed job descriptions preceding the conflict.

In substudies II and III, the analysis of the unit was a segment of interview text, each consisting of one or more conceptual units. In substudy II, there were 35 units, and in substudy III, 101 units.

All interviews (n=25) were used as sources and analysed in Substudy I. For Substudy II, we only used interviews with Syrian HCWs who had fled the country (n=20). In substudies I and II, the Syrian participants interviewed in Europe had spent several years away from Syria. Before leaving the country, they had worked as HCWs in Syria during the conflict.

In substudy III, interviews with HCWs who still worked in Syria (n=20) were used and analysed. Details about the substudies are shown in Table 2.

Table 2: Objectives, sample sizes, and original publications of substudies I–III

	Aim of the Article	Sample size	Original publication
Substudy I	To explore healthcare workers' experiences of Violence	n=25	Caught in crossfire: health care workers' experiences of Violence in Syria. Caught in crossfire: health care workers' experiences of Violence in Syria. Med Confl Surviv. 2021 Mar;37(1):34–54
Substudy II	To explore the reasons why HCWs leave Syria	n=20	*I had to leave. I had to leave my clinic, my city, leave everything behind in Syria*. Qualitative research of Syrian healthcare workers migrating from the war-torn country. BMJ Open. 2021.Nov3;11(11):e049941.
Substudy III	To explore the motivations of Syrian HCWs to work in a country affected by conflict.	n=20	*I don't leave my people; They need me*: Qualitative research of local health care professionals' working motivations in Syria. Conflict and Health volume 16, Article number: 1 (2022)

In Substudy I, the focus was on violent acts against health care. The timeline ranged from before the conflict started in July 2011 to December 2017. Emerging themes were used to categorise events of violent acts against health care, including HCWs and health facilities. The following classification parameters were used: time of the attack, object (i.e., type of target), type of attack, assumed perpetrators, place of the incident, and results of the attack (see Appendix IV). Table 3 shows examples of categorisation used for substudy I.

Table 3: An example of categorisation in substudy I

time	**place**	**object**	**type of attack**	**perpetrators** (known or assumed)	**result**
2016, 2nd quartile of the year	Aleppo City [retracted specific name]	health facility [name retracted]	airstrike	GoS	HCWs and patients dead, injured
2015	ISIS-controlled area	HCW	threatening, arresting HCWs	ISIS	clinic closed
2015	N/A	HCW	kidnapping	NSAG	missing person
2015	Aleppo	ambulance	shooting	PYD	minor damage to the ambulance.

The cases were entered into an Excel chart and further analysed by identifying the commonalities and differences resulting from the material. Even if not all necessary data were present, the descriptions were classified according to the assumed perpetrator and, if necessary, the estimated time of occurrence to try and understand the nature of the violence and identify possible patterns and underlying strategies.

In Substudy II, migration was a repeated theme in the overall data, which is why the HCWs left Syria. The classifications were based on experiences that indicate motivational factors for leaving. Example analyses of substudy II are presented in Table 4.

Table 4: An example of an analysis in substudy II

Original expression	Codes	Subcategory	Subcategory	Main Category
"The siege became more intensive. I knew that something is going to happen. When Kobane was besieged [by ISIS], I left for Türkiye. I had to."	Intensification of the conflict, anticipation, leaving	Generalised Violence	Experienced violence that was a reason for leaving	HCWs leave conflict-affected areas due to violence conducted by warring parties
"Staff members were taken from the hospital to interrogations."	Healthcare workers, arrests	Profession-related	Experienced violence that was a reason for leaving	HCWs leave conflict-affected areas due to violence that is due to their profession
"I cannot live with my children under these circumstances."	Children, circumstances	Related to personal issues	Experienced violence that was a reason for leaving	HCWs leave conflict-affected areas due to violence for personal reasons

Substudy III focused on the motivations of HCWs to continue working in Syria. Motivational factors were categorised as intrinsic and extrinsic with subgroups. Similarly, analysis examples for substudy III are shown in Table 5.

Table 5: An example of an analysis in substudy III

Original expression	Codes	Subcategory	Subcategory	Subcategory	Main Category
"The main reason or the main purpose is the humanitarian aspect of my work."	Humanitarian, purpose	Humanitarian values	Humanitarian reasons	Intrinsic	HCWs have different reasons to work in the middle of the conflict
"For my country. People of my country."	Country, people	Patriotism	Ideological reasons	Intrinsic	HCWs have different reasons to work in the middle of the conflict
"We are brothers of Islam"	Islam, ummah	Religion	Ideological reasons	Intrinsic	HCWs have different reasons to work in the middle of the conflict
"I see myself as responsible for the revolution to succeed."	Revolution	Political	Ideological reasons	Intrinsic	HCWs have different reasons to work in the middle of the conflict
"If you don't work for two years, you'll lose your ability to work, your ability to do surgeries. You lose your medical knowledge."	Work, lose ability, knowledge	Professional	Professional	Extrinsic	HCWs have different reasons to work in the middle of the conflict
"I need work because I need to survive with my family, to have income."	Survive, family, income	Economic	Economic	Extrinsic	HCWs have different reasons to work in the middle of the conflict

Quotes were used to illustrate themes and findings and give participants an authentic voice. For this purpose, individual identifiers were assigned to the interviews. These identifiers varied between different publications to prevent the formation of identifiable events from quotations. Sandelowski (173) argues that quotations illuminate experience, support the researcher's arguments, illustrate ideas, evoke emotions, and provoke a response. Quotes in qualitative research increase the credibility, reliability, confirmability, and transferability of research (174).

Consolidated criteria for qualitative research reporting were used during the process.

4.5 ETHICS OF THE STUDY

Ethics here refers to doing good and avoiding harm when conducting research. Harms are prevented or reduced by applying ethical principles that include beneficence, autonomy, and justice. (175,176) Ethical aspects were taken into account from the beginning of this research and followed at every study stage following the guidelines of The Finnish National Board on Research Integrity on good scientific practice. These included, for example, the voluntary consent of participants, the anonymity of interviewees, the production of information, and the analysis and reporting of the final results. (176,177).

The subject of this qualitative study was to explore the experiences of HCWs amid conflict. Since the subject is politically and emotionally sensitive and can cause an increased risk of violence against the participant, a preliminary ethical assessment was requested from the Eastern Finland University Committee on Research Ethics. It approved the study (STATEMENT 9/2016, 25 May 2016). This research followed the guidelines of the General Data Protection Regulations.

Research must be valuable and meaningful. This research is justified by the fact that qualitative research among people in conflict areas is essential because statistical studies alone cannot describe all the effects of modern warfare on individuals, the population's health and human rights, and IHL violations. According to Ford et al. (178), personal stories are an essential

part of the overall picture of the conflict. Their stories also contain evidence of violent events and perpetrators. This is an essential aspect for people who are victims of violence to obtain justice.

To protect health care during the conflict, it is imperative to know the nature, causes, manifestations, and reasons for the war and the factors that affect it as precisely as possible. Knowledge and understanding can help prevent attacks, mitigate the effects of violence, and prosecute crimes against IHL and IHRL. Documenting violence can help identify vulnerabilities, place perpetrators of violence in international focus, and develop security strategies to protect civilians and healthcare. Making these events internationally known will facilitate the prosecution of the perpetrators. Information about the scope, scale, and effects of violence can help international and local actors allocate resources to targets experiencing violence, and organisations can support recovery processes. (178) To put it in brief, this study aims to provide information to alleviate and reduce the suffering of those civilians caught in the middle of the war.

Conducting research in conflict areas demands particular attention and responsibility from the researcher. The research could not be conducted in Syria for security reasons. Although the border area between Türkiye and Syria was not precisely a conflict zone, the spill-over effects of the war were evident in Gaziantep. Researchers knew that, for example, ISIS had active military cells in Türkiye, especially in Gaziantep. ISIS carried out devastating bombings in Istanbul[7] and Gaziantep[8] during the field period. It was also assumed that there were representatives of the Syrian government in Gaziantep, not to mention the fighters of the NSAGs.

Protecting participants is imperative and is the researcher's ultimate responsibility (175,179). Additionally, researchers should not put themselves in danger. They should ensure their and the research team's safety in exceptional environments (166). Understanding the research environment, following specific safety protocols, and having close contact with a reliable member of the Syrian research team living in the area allowed the

[7] 28.06.2016: Istanbul, Atatürk Airport; assault, fatalities 30 civilians

[8] 20.06.2016: Gaziantep, Şahinbey; a suicide attack, fatalities 57 civilians

researchers to work safely. During the field period, a coup attempt occurred in Türkiye, and the political situation became unstable. For security reasons, it was decided to leave the planned interviews in Kilis, which is very close to the Turkish-Syrian border. Despite this setback, more interviews were conducted later in Gaziantep.

Research in conflict situations involves special ethical issues, mainly the vulnerability of participants (175). Although the research could not be conducted in Syria for security reasons, the researchers paid particular attention to the safety of the participants. Potential benefits and risks to participants were also carefully evaluated. The interviews were conducted outside of the conflict area, so it can be concluded that the participants were not directly exposed to the threat of violence. As professionals who have worked inside Syria, it is reasonable to assume that the interviewees understand the problems their profession may cause them. Before the interview, information was provided on the nature of the study and other important research-related topics. Based on this information, individuals interested in the study could also assess the potential risks of participating. Participants were allowed to choose the interview location themselves. This often happened in a public space, such as a restaurant or coffee shop. The participants were not asked to sign the consent; they gave it verbally when we started the interview. This was considered more appropriate in the context of this research. The reason for verbal consent was to protect the participants and their anonymity. Participants were told they did not have to mention the names of the persons or organisations they worked for or the exact places and dates. However, if they still provided identifiable information, such as names, this was not preserved in the literation phase.

Participation in the study was voluntary, and no compensation was paid. The participants were told they had the right to stop the interview at any time.

Recalling and discussing traumatic experiences can increase participants' anxiety and trauma (178). This issue was carefully addressed during the interviews. The participants were informed of their right to take breaks or halt the interview. Throughout the session, researchers monitored participants' distress levels. They allowed them to skip questions deemed

too burdensome to answer, such as detailed questions about prison experiences. However, as a rule, the participants were willing to share the experiences they encountered. Several participants stated that they were delighted that the violence directed at them is being studied and made public. Hutchinson, Wilson, and Wilson (179) argue that interview research can improve participants' mental well-being by giving them a voice. After the interview, participants were encouraged to contact the research team to discuss the interview or any challenging emotions it may have evoked. Additionally, participants were encouraged to ask any questions they wanted after the interview.

4.6 POSITIONALITY OF THE RESEARCHER

It is well known that research in social sciences cannot be completely free of subjective values (180,181). Researchers' perspectives on and interpretations of their social environments are shaped by features such as their societal context. The point of view from which researchers observe the world influences the disposition of research, methodologies, interactions with participants, the design of the analysis and the data analysis. (182)

Many features of my identity and background have affected this research by potentially presenting strengths and biases. Awareness of these effects is vital for maintaining reflexivity and objectivity. I critically examined my positionality and tried to understand how it could affect the process and outcomes. I remained aware of my perspectives and actively sought to understand and incorporate the points of view and experiences of healthcare workers in Syria. I created a social identity map to understand and reflect on my strengths, biases, and power position, modifying it based on Jacobson's and Mustafa's (182) model (Appendix V).

Based on my social identity map and my experiences in the Middle East, language skills and studies in culture and politics have given me a good understanding of the region's complex conflicts and healthcare challenges.

Also, my experience in hospital and volunteer work with conflict victims may have helped me understand the experiences, stress, and needs of HCWs in Syria. I have gained insight into the challenges faced by HCWs.

My liberal worldview has probably influenced the research. It may have influenced my approach to human rights and emphasised the importance of fair treatment and equal access to healthcare. This worldview may have led me to research the experiences of HCWs in Syria, trying to bring a voice to those professionals whose experiences have been forgotten. Social identity is not fixed, but a constantly changing state (182).

During the research process, my whole life and identity also naturally changed. After the interviews, my husband and I had a child. Later, my father passed away suddenly. Both events likely had an impact on the research process. In particular, the death of my father may have increased my understanding of the participants' experiences of grief and sorrow.

The birth of our child automatically changed my social status when I became a mother. Both events supposedly fostered deeper empathy and resilience, strengthening my commitment to pursuing justice and equity in health care. Both events fostered greater empathy and resilience, which drove my commitment to advocating for justice and equality in healthcare.

Despite knowing the context, social identity inevitably influences the researcher (180,182). Biases may include personal characteristics (such as gender), affecting how participants respond and see the researcher. Cultural identity (being Western) and an upper middle-class background can also influence the study. Values and beliefs can also affect interpretation, such as how I frame justice, governance, and social order in the Syrian context.

As said above, the researcher's experience and perspective may influence the whole research process, especially when conducting interviews and interpreting the data. However, a Syrian physician was also involved as an interviewer, whose interviews did not differ in content from those conducted by other researchers. Also, the data was analysed by other members of the research team, so it was not based solely on one researcher's interpretation.

It should be noted that the research does not seek to take a position on the conflict itself, but instead attempts to explore violence against healthcare and experiences from the perspective of HCWs. Regardless of the methodologies used, the information obtained from conflict areas is

unreliable at best, and the results are likely to be challenged due to the very political nature of the research (178).

5 RESULTS

5.1 PARTICIPANTS

A total of 25 HCWs were interviewed for the study. The participants consisted of 21 men and four women between the ages of 26 and 69. The median age was 32 years. Of the Syrian respondents (n=23), about half (n=12) were born in the Aleppo governorate. The other half represented a variety of other Syrian governorates; Homs (n=2), Deir ez-Zour (n=2), Hama (n=1), Raqqa (n=2), Idlib (n=1), Rif Damascus (n=1), Daraa (n=1), and Homs (n=1). One participant was born in Saudi Arabia, and two were Western expatriates[9]. No interviewees born in the governorates of Suwayda, Qunteira, Damascus, Tartus, Latakia, or Hasakah were reached.

The majority of the people interviewed were physicians (n=17) with a speciality (n=11). Other physicians were generalists or medical students (n=6). Most physicians (n=11) studied medicine at Aleppo University. The participants also included other HCWs: nurses (n=2), pharmacists (n=3), health service managers (n=2), and a dentist. Some medical students or specialising physicians had to suspend their studies because of the war. Before the conflict, some participants had lived, studied, and worked abroad. The participants' working experience as HCWs ranged from almost none to 43 years.

Most of the participants were married (n=20) and had at least one child. Many of those interviewed in Gaziantep lived with their families in Türkiye. Their demographics are shown in Table 6. Only two people mentioned that they lived permanently in Syria. All Syrian participants had worked in government hospitals or institutions in Syria before the start of the conflict or in the early years. During the interviews, five participants did not work in Syria. Some participants had worked in ISIS-controlled areas but left. During

[9] The participants were Western expatriates but had travelled to NSAGs areas and worked there as a HCWs during the conflict

the interviews, no one visited or worked there. Most of the participants continued to operate in NSAGs or Kurdish-administered areas.

Those participants who still provided health services in Syria travelled there regularly for work. They worked for international non-governmental or local organisations mainly operating in the Aleppo governorate. To guarantee anonymity and safety for participants, the interviewers did not ask about the organisations where the HCWs worked. If the organisation's name came up during the interviews, it was not transliterated. Visits ranged from a few days to several weeks and, in many cases, occurred monthly. The UN cross-border mechanism allowed participants interviewed in Gaziantep to cross the border and work inside Northern Syria as humanitarian workers.

The interviews were conducted outside Syria in Europe. Participants included people with tourist, study, or refugee visas.

Table 6: Demographic information from interviewees

Total participants	25
Gender male female	 21 4
Median age (years)	32
Marital status married single	 20 5
Citizenship Syrians Western countries	25 23
Birthplace of the Syrians	
Aleppo	12
Dara	1
Deir Ez-Zour	2
Hama	1
Homs	1
Idlib	1
Raqqa	2
Rif Damascus	1
Abroad	1

Profession	
physicians with speciality	11
generalist physician + medical student	5+1
pharmacists	3
dentist	1
nurses	2
health service manager	2

5.2 SUBSTUDY I: EXPERIENCED VIOLENCE

5.2.1 Life As a Healthcare Worker in Syria Before The Conflict

Many participants talked about their lives and Syrian society before the conflict started. They had not experienced physical violence from the GoS or any other organised group while studying or practising their profession. Instead, especially physicians felt respected in the community due to their profession. Participants who said they belonged to a minority[10] stated that society accepted them better when they were physicians. Otherwise, those professionals of Kurdish ethnicity noted that they experienced discrimination in society as citizens due to their background.

Medical people were well respected in the community, even by the army or anyone. When everyone knew that my father was [also] a doctor, they respected him. Before the crisis. (B12)

Participants studied, worked, and considered their lives relatively normal. When you followed the orders, you avoided consequences. Some considered Syria a relatively good place for an obedient citizen to live, and some participants thought that the political situation was improving even though people feared the government. Some older participants recalled how the government defeated resistance in Hama in 1982 and used lethal violence against protestors in al-Hasakah governorate in the Qamishli uprising in 2004.

In the 1980s, they [GoS] destroyed the city of Hama. Thousands of opposition and the government took them to death or prison in Palmyra. This is a famous prison in Syria, now occupied by ISIS. Many people were doctors and engineers.

[10] We did not ask participants'ethnical or religious background.

All were killed or jailed for 30 or 20 years. Just in prison, without any court. Maybe some were the opposition, and some just went to the mosque to pray. They [GoS] took them to prison just for going to the mosque. This was in the 1980s. After that, after the situation was calm, things got better, better, better. But still, people have inside fear of the government. Every one of the people cannot say anything against the government because we are afraid. (B12)

Although participants expressed that they did not experience state-based violence due to their profession, they mentioned many problems related to government and society. In particular, the participants mentioned the lack of fundamental human rights, especially freedom of speech. Some specific topics and issues were strictly forbidden to be discussed. One of those topics was criticising the president or the government, another religion. The discussion of these topics was considered dangerous.

This period [before conflict] in Syria was very stable. You can work and live, but you have red lines. Do not speak about the president, his family and his relatives. It is a very deep red line. If someone speaks about this kind of matter, he will be arrested. Security, in Arabic, mukhabarat. Their job depends on the president's order. Another red line is religion. You can pray and go to a mosque but do not speak about it. Just pray and go back to your home. (L22)

Some participants mentioned that they, their friends, or colleagues had been detained and severely abused because of their political activism, expressing anti-state opinions and demands for human rights. In some cases, the reason for being detained remained unknown and they were probably tortured in prison.

One of my colleagues was caught by security. After he came back, there was damage in his mind. He did not continue his study. He started to walk in the street and speak something. We did not understand what he said, [he had] a mental disorder. He started speaking and dressing strangely. This happened because of what happened inside security [prison for a year]. (K21)

Many participants expressed that the government sent a strong message that they are closely observed. Monitoring other citizens was built into the society and reporting of their other citizen's opinions and acts to the GoS was expected. The atmosphere of fear was always present, and the indirect and direct threats from the security representatives were constant.

Psychological violence was directed at both the participants and their family members.

I remember the interview with this security guy asked me twenty to thirty questions. All questions were general information. They want to give me the feeling that I am monitored. (D14)

When I was at the university, [officers from] the security branch regularly, every three months, had the security check. They were visiting my father and threatened [saying], "Your son is in Aleppo. Do not be so comfortable. We advise you to be aware that your son is playing with fire." (M23)

Sometimes, difficult situations in society were solved by bribing the authorities. Corruption was a cross-cutting feature of society, affecting daily life and advancing studies and work. If an individual wanted to advance in society, he had to pay bribes to various authorities. According to the participants, supporting the Baath party was also a requirement for advancement.

There is a lot of corruption. Every citizen has been stopped by a traffic officer. Even if you are not doing wrong, just like standing in traffic, that is wrong. 'Give me money' Everywhere at the university, we gave money to register our marks. They delayed the marks to a week, sometimes for a month—everyone at the university, not only medicine, everyone. We had to give some money to get marks. (H18)

They tried to make me apply for al-Baath party. I did not believe them. I was obligated to apply for it. When you ask for a job or residency card, you have to apply. They always [asked in a] interview, "Why aren't you applying? Don't you believe in the government and our God, Bashar and Hafez?" "No. I am not so interested in politics." But then they obligate you to apply. (M23)

Most participants worked in state hospitals, but physicians' wages were said to be too small (200 USD) regarding the responsibility and time used for the work. Many physicians worked in private clinics or were presentative of pharmaceutical products for better income.

Before the conflict, things were good. But as a doctor, if I wanted to live in Syria, I had to work in more than two or three places. I used to wake up every morning at seven and go to the hospital. I was a specialist working in a government hospital. My salary was about 200 dollars per month. It is too low. I

should work in my practice clinic. I returned every day to my home at maybe eleven o'clock. (D14)

5.2.2 Early Stage of Conflict: From Verbal Abuse to Killings

According to many participants, hostilities against HCWs started simultaneously with the protests in early 2011. Violence ranged from verbal threats to severe abuse or even killings before establishing the NSAGs, ISIS or Kurdish-controlled areas. The GoS was known for using force, but participants had not expected brutal violence and the killing of unarmed civilians.

The shock at that time was that they were very young and ambitious. Some were medical school students who were arrested [and later found dead]. We could not imagine. (C13)

As the GoS increased its violent stance, many hospitals became military bases. Snipers were placed on the roofs of government buildings, such as hospitals, and sometimes HCWs were targeted. The security apparatus was interested in patients brought to the hospital who could be protestors. Not only were patients monitored at the hospital, but the actions and attendance of the HCWs were closely followed by shabbihas or security forces.

I live there [Aleppo]. I know that there are many intelligence members who are always in the hospital. They have a shift five people every day, and then they shift them. They check every patient and the records of every patient. They check the records of the doctors and the activities of the doctors. (J20)

In addition, co-workers and colleagues also observed each other's actions and sayings. Sometimes, co-workers reported each other's actions to security forces.

Doctor [name retracted] wrote a report about doctor [name retracted] to the security service, and this doctor was taken away by the security service. We never saw him again. They came to pick him up from the hospital. (X32)

We were in the hospital, and many of us were captured from the hospital because there was a report of the intelligence given by one of our colleagues. The car will come, they will open the back of the car, they will put you there, and then they will go. That is it. (Z33)

Those injured in the protests and brought to the hospital were arrested. Many victims were afraid to come to the hospital, fearing being captured by the security authorities. HCWs started treating patients in secret locations, e.g., schools or mosques. GoS searched for these field hospitals, according to the participants.

They [GoS] were always looking for private hospitals. They raided private hospitals because they suspected that they [HCWs] treated patients and injured people. They made many arrests and even spread rumours about this hospital or that doctor. They were always looking for these field hospitals that treat injured people. (Q27)

Not only were field hospitals searched for, but the GoS also looked for physicians treating the injured and people equipping field hospitals, such as pharmacists. If the HCWs were caught, they were sometimes arrested while treating the patient.

We were helping some of the underground hospitals that started to treat people in revolutions. We have been trying to support them with some pharmaceutical goals. Those at that time are very sensitive issues to the regime. We are working undercover with many field hospitals, and three of our colleagues were arrested and then, after one week, burnt to death by the regime. (C13)

They could occasionally get away by bribing the authorities, but many arrested participants were imprisoned for up to nine months. Some HCWs were never seen alive again.

If you pay money, they will bring them out soon. Some of them were burnt alive. We found their bodies on Castello Road [three names retracted]. They were burnt. Some of them were never seen again. I can mention many names. (J20)

While the protests continued, NSAGs formed, armed resistance increased, and the security situation deteriorated. Being an HCW became dangerous. Their families and relatives were threatened. Participants suspected that GoS was tapping their phones.

My brother told me that the intelligence department came to him and asked about me and about Doctor X [name retracted]. They warned him that Doctor [name retracted] could be arrested later. Before I was arrested, I noticed some echoes during calls. I asked one engineer about this echo. He told me that meant that my phone was listened to. (G17)

Respondents described that some violence against healthcare facilities was already present in the early days. The assaults were carried out with artillery and aerial assaults.

A mortar hit the fourth floor of the hospital. I could not even see around me because of the dust and smoke. The staff was very afraid for me, but I came out of there and escaped. I was living next to the hospital and living in the hospital, the hospital above floors had been struck, barrel bombs were dropped, thirty, forty, fifty metres away. The doors came off the hinges. All the windows were already broken by that time. There were daily strikes by Assad's army. (N24)

5.2.3 Violence Escalates

As the conflict continued, many participants moved to areas outside of GoS control. Despite this, they were not safe. The government struck from the air against healthcare facilities in the NSAG areas–some were hit multiple times. Some of the severely damaged buildings had to be closed entirely. The patients had to be evacuated to other sites due to fear of new air strikes or because the buildings had become unstable and were at risk of collapse. The unexploded weapon caused an additional threat.

I worked in Aleppo as a doctor in a hospital [name retracted]. It [the hospital] was targeted by the Syrian regime airstrike after 20 days. That was when the regime started to carry out airstrikes against civilians against hospitals. After this first targeting, they kept working there. After two months, the hospital came out of service, and it collapsed because of another bomb by air. (V34)

There was an airstrike against the rehabilitation centre again, and some bombs were not exploded. That was a bad situation. The rehabilitation centre was completely out of service. They had to close because this was unexploded. It was dangerous to go there. (U31)

Some participants mentioned that the targeted hospitals were previously established or new secret field hospitals. According to them, hospitals were chosen not to be explicitly marked as required by the IHL. Many hospitals had been in operation for a long time, even before 2011, and were well known. According to the participants, GoS bombed hospitals that were entirely for civilian use and did not treat wounded soldiers.

In Syria, no health facilities are marked with the red crescent or cross. This building is known as a health facility. This hospital [that was targeted] was mainly treating children, it is a paediatric hospital with some delivery cases, some caesarean sections, and emergency caesarean sections, but it was not performing any surgeries or fighting trauma surgeries. It was well known that it was a health facility providing services for women and children. (F16)

It clearly was planning to hit the hospital, but it was only five meters only hit the building that was exactly near to the hospital and made much damage to the hospital. The regime knew it was a hospital. The building was a hospital before the revolution, so the regime knew exactly it was a hospital. (H18)

Some participants had been in a hospital during an attack. They said the GoS also bombed supporting health functions such as blood banks and ambulances. A participant also mentioned that he had experienced a double tap attack by the Syrian forces. In that case, a target was bombed, and another strike came when he went to save the injured civilians with other rescuers. This second strike was even more destructive and killed many first-aid responders.

According to [my] experience, the aircraft throw a barrel bomb, and when the civil defence, the White Helmet, people, and the ambulance come to collect people from the ground. Another aircraft comes and targets this collection with a missile. In the same targeted area in [name of place retracted], a neighbourhood was a bomb thrown into the building and destroyed. (Z23)

That was the most horrific violence ever. When you are in the [health care] centres, you know that you can hear the aircraft in the sky any minute. In a minute, you can be the target. At any second, this whole building can collapse or ruin. So much violence that you can ever feel inside Syria. I was in [name retracted] hospital in Aleppo. The battle came one and a half kilometres away. It was an experience of violence: sound, ashes. The people running around then did not know where to go. It was an experience of violence. (D14)

According to the interviewees, air strikes against health care became more deadly after Russia joined the conflict. In their opinion, the biggest problem for healthcare was the airstrikes by the GoS and Russia. Had they not had this capability, life could have returned to mostly normal in the NSAG-controlled areas.

Attacks by the regime and Russian forces led to the martyrdom of several colleagues. Among them was Dr. [name retracted], an orthopaedic, and Dr. [name retracted], a cardiologist, and several nurses and other staff who died as a result. Direct targeting against the hospital where we worked [names of hospitals retraced]. These were just the hospitals where we worked, so there were attacks elsewhere; for example, the health centre was hit by aerial bombardment. (V34)

None of the participants mentioned that the GCAD had conducted airstrikes in Kurdish or NSAG-controlled areas. Airstrikes in ISIS-controlled areas were mentioned, but the participants had not personally experienced them.

5.2.4 Violence Against Health Care in Areas Outside Government Control

Although government and Russian air strikes were considered the worst health care problems, other circumstances threatened health care and people in areas controlled by NSAGs, ISIS, and the Kurdish Forces. The situation was described as chaotic, and the atmosphere felt unsafe in these areas.

The participants' attitudes toward NSAGs were ambivalent. Some considered NSAGs a threat, while others had no problem controlling organisations.

With FSA and al-Nusra, there was no problem. We were allowed to do everything. We were not monitored. We would get the funds and [medical] equipment. (V34)

Some participants thought that NSAGs needed HCWs as they were valuable resources. For this pragmatic and practical reason, it was possible to negotiate with JaN, for example, about handling practical issues related to health care. On the other hand, some participants said that NSAGs also wanted to intervene in hospital management and personnel selection.

When a vacancy opens up, it does not take long for someone with a long beard [an expression used for fighters with a long Islamist beard] to contact you and tell you that you should appoint this and that guy to the job. Someone with a metre-long beard puts pressure on you. When we are looking for a nurse, a

woman, they [NSAG] then bring us an 18-year-old guy so that he could become an employee. (U31)

JaN insisted that a strict interpretation of Islam should also be followed in hospitals; for example, women and men should be separated from each other.

The participants said that physicians, in particular, were at risk of being kidnapped due to ransom demands, and physicians were at risk of being taken forcibly to the front line to provide medical aid to wounded NSAG fighters.

If a doctor is at work and receives some salary in dollars, he is constantly threatened that someone will rob him or kidnap a family member and ask for a ransom. Then there is the fear that when someone notices you are a doctor, they will grab you, take you with them and say, "Come, we need you". (X32)

When I was in Aleppo, there was one group of FSA, and the leader of their group, he is dead now, kidnapping doctors, lawyers, the person who had money [at that time, 10 million Syrian pounds]. They always called the family [saying] "We will kill you. We kill your doctor. We kill him and send part of him to you." (I19)

ISIS had threatened, arrested, kidnapped, and executed HCWs. The organisation was not only dangerous for HCWs, but according to interviewees, all highly educated and politically influential people, such as journalists and lawyers, were in constant danger for their lives. The attitude towards ISIS was negative; none of the participants worked in the areas controlled by the organisation at the time of the interview.

The violence committed by the Kurdish Forces against health care has not been widely discussed. One incident involved the arrest of HCWs and another a shooting at an ambulance.

5.2.5 Healthcare Workers as Actors

In addition to being the target of violent acts, the HCWs were active actors. Some HCWs said they participated in peaceful demonstrations against the government early in the conflict. Some said they had participated in the

demonstrations even before the conflict. They had been demanding equal human rights for all Syrians.

Some participants said that they were also involved in organising demonstrations. These demonstrations occurred at the university, and medical students and staff participated. However, not all interviewees preferred demonstrations; instead, they wanted to avoid them by staying home or working.

When the situation became violent and GoS started shooting protestors, the HCW began to provide medical assistance to the injured. At the same time, the GoS started to detain, arrest, and even kill HCWs. Fear of violence did not prevent the interviewees from treating the injured patients in the demonstrations. Instead, they started making secret home visits even though they had become aware that treating a protester could be life-threatening.

I give my number to persons secretly. If someone has something [health problems] and calls me and says, "Someone has pain in the abdomen, can you come and see him?" "Okay, I am coming." I know that some of our colleagues have been caught by security. Fortunately, I have survived. (M23)

The HCWs established secret and hidden field hospitals in schools, mosques, and private houses to help injured protesters. People were scared to go to government hospitals because the risk of being detained by GoS was too high.

When you go to the demonstration, you see that some of your friends have been hit or shot. Then you will never go with them to the government hospital. You have to carry him to field hospitals that the opposition makes. Who is going to support these field hospitals? Then it is you, the civilian. (P26)

I travelled to this area because the government shot the demonstrators. When these people go to the general hospital, they will arrest them. I travelled to another area to give medical services, and we started having some small medical points, such as one room in one house or school. Staying in this situation for about seven months and after that, we began to think that we needed more, like an operation room, because many people had been injured, so that we could do it in a small room. We begin a small field hospital. (U31)

In addition to providing treatment, the HCWs also provided training and distributed medical equipment and drugs through their established network.

I tried to help. I trained people. We sent some medical support to Homs and Daraa those days, and they [GoS] were aware of that. A lot of people reported directly to the intelligence forces and there were a lot of offices in Aleppo. As a doctor, I had to also help with medications, in general. All of those were reported to the intelligence forces, and then they arrested me for 15 days (V34).

Providing medical help was dangerous to HCWs and participants lost their colleagues.

We are working undercover at a field hospital and three of our colleagues were arrested. After one week, they were burnt to death. They were friends of ours on the same network. We were working together and supported this medical point. (N24)

5.3 SUBSTUDY II: HEALTHCARE WORKERS AND FORCED DISPLACEMENT

Participants who had left Syria mentioned that violence was their only reason for displacement and leaving Syria. Violence was widespread, directed at the person himself or herself, or related to the profession. Almost half (n=12) of the participants had experienced direct violence, some multiple times, and from different warring parties after 2011. They had been arrested, imprisoned, tortured, or in an ambulance or health care facility when assaulted by an air strike or artillery fire. All participants had experienced psychological violence, such as threats and insults. Most of the incidences occurred in the Aleppo governorate, mainly in the city areas.

Some participants left Syria soon after the unrest began in 2011–2012, and others when the conflict escalated and ISIS gained territories, for example, in Ayn al-Arab (Kobane). The environment became perpetually more dangerous and unpredictable. Travelling to work was difficult due to constant checkpoints and security forces everywhere. The volatile situation caused widespread psychological stress among the participants. People were arbitrarily arrested and disappeared.

A soldier can just come and take your phone if he finds some picture or for any other reason]. You cannot know for sure. He can take you with him and you are not seen again. No one can ask after you because he can also disappear. This has happened. (R28)

Fear of being caught and arrested by GoS was omnipresent among the participants.

We do not care about death and killing us. The only fear is being arrested. Because it is not the end of life, it is another life in jail, tortured for nothing. I think [dying] is easier and better than being arrested by the regime. (A11)

Many decided to leave in 2014 because they felt the situation was dangerous when the government started using barrel bombs, especially in Aleppo. Some said that they decided to leave when ISIS gained territories.

ISIS took Deir Ez-Zour and Raqqa. My family was living there. If we had stayed, they [ISIS] might have arrested and killed me. Or someone else may have killed me. (X32)

Some participants did not mention any specific event or reason for leaving. The constantly worsening situation and anxiety and stress were too much for some participants, who decided to leave. The choice to leave the government side was not always easy because, according to the participants, fleeing inevitably branded them as terrorists in front of the Syrian government.

It is a tough decision for us. It is either to stay in the government or to leave the government. If we leave the government, they will investigate us because you have to have a reason to leave the hospital, or else you are working with others. It was so easy: just like that, they can accuse you of working with terrorists. (M23)

Typically, the participants migrated to opposition-controlled areas, especially eastern Aleppo or from ISIS-controlled areas to NSAGs' territories or outside Syria, mainly to Türkiye. A small part of the participants continued to Europe as asylum seekers or were in Europe for other reasons.

5.3.1 Generalised Violence

Fear of widespread violence was the main stress factor among participants who had worked in the country. Many participants stressed that typical violence was not specifically targeted.

It cannot be said that [GoS] targets a specific person, but that violence is directed at everyone, the whole nation, the whole of society and all the residents who are present. The first thing here is the constant sense of threat. (X32)

The atmosphere became gradually oppressive as the conflict spread and became a full-scale war. Civilians experienced random violence that resulted in material damage, injuries, and even loss of human life.

One of my friends, who also studied at the University of Damascus, was coming to the university. She was travelling on a bus when it was hit by a hand grenade in Umayyad Square. She had to be taken to the hospital. Another friend who had studied medicine was also hit by a bomb on Umayyad Square and her legs were broken. (T30)

As the conflict expanded and different parties joined, the fighting intensified. Government forces could no longer control the escalating situation, which led to a power void filled by various NSAGs. Although GoS

was considered the primary source of violence, ISIS and NSAGs, such as FSA and JaN, carried out violence against civilians.

There was al-Nusra, Ahrar al-Sham. I saw with my own eyes how civilians were injured. They were kidnapping civilians and doctors. (I19)

They [ISIS] killed this year 30 people inside their home. They killed civilians. People were sleeping; children, women, and older people. (Z33)

5.3.2 Violence Related to The Person

The departure could also be related to the participant who experienced violence or threat of it. Most of the participants were married and had at least one child. Protecting the family was a significant factor in the decision to leave the country, as keeping the children safe from hostilities was impossible in Syria. Most of the participants were the primary source of income in the family. They worried that their families would face financial problems if they died or were injured.

Because my family was with me and there were highly volatile attacks on the eastern side of Aleppo. The regime jets. My priority was to take my family out of this city. I succeeded, alhamdulillah. (J20)

According to the participants, the GoS checkpoints were oppressive. The soldiers checked identities and whether the person had been in the army. Some male participants expressed their anxiety about being taken into the Syrian army. Joining the army was not an option for them; partly because of this, they left, especially from areas controlled by GoS.

Some participants mentioned their ethnic backgrounds. As the political situation tightened as violence progressed, some Kurdish backgrounds felt threatened by their ethnicity. They perceived some radical Sunni Muslim NSAGs as risk and felt uncomfortable.

One of my colleagues was working in Tell Abiyat [a district within the Raqqa governorate]. Somebody came and told him to flee because he was Kurd. It is dangerous for him. Not safe. Because he [who came to warn] was an Arab, he knows some groups [radical Islamist] and what they are thinking about. (V34)

Detention of family or friends or even monitoring of warring parties, especially the GoS, led to a situation in which the participant felt compelled

to leave. If GoS detained a friend, colleague, or family member, there was a fear that the participant would be picked up next or that the entire family would be punished collectively.

Being under surveillance by ISIS also forced the interviewees to leave. If participants publicly expressed their opposing views or thoughts about ISIS, the fighters or their ideology, they were in danger. According to the participants, the organisation considered not only the HCWs, but all educated people undesirables, and they were persecuted and killed. Often disputes with ISIS were explicitly related to religious and political issues.

They [ISIS] are against people who have graduated from university, even from secondary school. They came to the hospital where I was working. There were some debates about ISIS. After five minutes, they started to shout their mouths. One of the debates was with a member of IS. He accused me of being not religious or Muslim. I was using [wearing] the Free Syrian Army flag. The IS member said that this is not allowed and does not represent Islam; this flag was used in Syria during the French occupation of Syria. I said I know Syria better than you because you are from Morocco. Then the conversation finished, and [after that] I was threatened by IS. I had to leave the hospital. (G17)

ISIS required people to swear allegiance to the organisation, and refusal could lead to execution.

They [ISIS] executed a judge. They call you to be loyal. There is no other choice. [He said] "I don't, I do not care about you guys. I am just a normal person." Then they just executed him. (P26)

The escape of participants from ISIS-controlled areas was often preceded by a situation in which the organisation started surveillance, and their friends or colleagues had been captured or executed.

5.3.3 Profession-Related Violence

According to the participants, all parties in the conflict had used violence against health care. However, the extent and intentionality of violence varied significantly between parties; 36 % mentioned ISIS and 24 % NSAGs, such as FSA and radical Islamist groups, as perpetrators. In some cases, the name of

NSAG remained unknown. Kurdish Forces were mentioned by 12 %. In some cases, the perpetrator remained unknown.

GoS, and later Russia, was considered the main perpetrator of the violence among the participants. GoS was responsible for threatening, detention, torturing, and killing HCWs in the early stages of the conflict. As the conflict continued, GoS was held responsible for the use of barrel and cluster bombs against health facilities. Together with Russia, the government was responsible for the airstrikes, according to the participants.

NSAGs and Kurdish forces mainly targeted HCWs. They threatened and arrested the HCWs and randomly shot at the ambulances. According to the participants, NSAGs were held responsible for only one death and the Kurdish Forces had not killed a single HCW.

Aleppo is one of the most dangerous parts where we work. We go there by ambulance [from Gaziantep, Türkiye]. I remember one time when we were targeted by a shooting. The PYD was shooting us on Castello Road. (J20)

Instead, ISIS carried out widespread violence against healthcare workers and health workers. The organisation had threatened, kidnapped, and killed HCWs. According to the participants, the organisation robbed hospitals and clinics and made them their military bases. In addition, the ambulances were destroyed.

One of the ambulance drivers and the nurse were killed because [ISIS] put a bomb on the ambulance. (I19)

They killed two people in the hospital, two girls. After that, they take the hospital as a base. They steal equipment. (I19)

5.4 SUBSTUDY III: MOTIVATIONS TO PROVIDE HEALTHCARE

Despite known dangers and the stressful working environment and conditions, many participants continued to work on the Syrian side. Typically, participants had several different motivations to continue working. Despite the well-known risks, the HCWs had intrinsic and extrinsic motivations to continue working in Syria. Intrinsic motivations included humanitarian principles and medical ethics. In addition, this category

included ideological reasons and subcategories that included patriotic, political, and religious motivations. Extrinsic motivations consisted of professional reasons and financial problems.

5.4.1 Intrinsic Reasons

The most crucial reason that HCWs worked in Syria was to comply with humanitarian principles (humanity, neutrality, impartiality, and independence) and medical ethics. Although the different parties to the conflict had threatened and targeted participants, they stressed the need to protect the impartiality and neutrality of care provision. They emphasised that all patients should receive medical care despite their political opinions or cultural background. Furthermore, physicians felt that the Hippocratic Oath obliged them to help suffering people and expressed a feeling of responsibility for providing health care to civilians. The future and well-being of children were a specific concern of many participants.

My motivation was to help make a difference, especially in the lives of children. (N24)

The participants felt that their professions gave them the ability and obligation to help those in need. They knew that there was a severe shortage of HCWs, and civilians would be left without any treatment without their contribution. Due to this practical reason, some participants said that they and some of their colleagues had refused to accept visas or grants abroad.

As a physician, you see these people seeking your help and your profession. You cannot say no to them. This is the greatest motivation you to keep working with these children. Especially in a situation when health facilities lack physicians. (O25)

Because I made a commitment to both this cause and those people, my colleagues. (P26)

Participants also had ideological reasons to continue work. Patriotism was one of those reasons. They said they loved their country, hometown, and people, so they continued to help civilians. Only one of the interviewees mentioned religious reasons as motivation.

Some of the interviewees mentioned political reasons for their work in Syria. They wanted equal human rights for all citizens and the democratisation of the country. Some of them had already participated in demonstrations demanding democracy before the conflict. After 2011, some participants were actively involved in organising peaceful antigovernmental demonstrations. Several protesters had been beaten, arrested, and even killed. These interviewees felt obligated to continue the resistance they had started.

Two western HCWs also participated in the study. In addition to the desire to help civilians and the principles of humanitarian aid, they felt an obligation to help their Syrian colleagues and witness violence against civilians and health care.

I thought it was important for a Westerner to actually go to witness the devastation that was happening. Both to the population and, more specifically, from my personal life, to stand in solidarity with healthcare workers. (O25)

5.4.2 Extrinsic Reasons

In addition to intrinsic motivations, the HCWs had extrinsic motivations to continue working in Syria. These reasons were financial and the need to maintain professional and practical skills.

Several interviewees mentioned that economic reasons affect their motivation to work in Syria. At the beginning of the conflict, several interviewees did not want to leave their jobs, such as the hospital, because they received a salary there. However, as the conflict escalated, the interviewees left their jobs and many ended up living with their families on the Turkish side. However, life in Türkiye was expensive and money was needed for daily living. Physicians were unable to practice their profession due to Turkish legislation.

Some physicians especially wanted to work to maintain their professional skills because they could not work as physicians on the Turkish side.

6 DISCUSSION

6.1 TRUSTWORTHINESS OF THE STUDY

The main objection of this dissertation was to explore the experiences of HCWs who experienced violence against healthcare care in the Syrian conflict between 2011 and 2017. The research was conducted using qualitative semi-structured interviews and analysed using inductive content analysis. Research should also always be examined in terms of trustworthiness. In a qualitative study conducted in a conflict zone or related to a conflict area, the trustworthiness of the research is crucial. The hostile environment is associated with significant mistrust, exaggeration, disagreement, and suspicion. These factors can affect various stages of the research process. (33,40,46)

The trustworthiness of qualitative content analysis is often verified through terms such as credibility, dependability, reflexivity, and transferability. These factors ensure that the findings accurately reflect the reality being studied. It relates to all aspects of the study, not just the research results. (172,183)

The credibility of this study is enhanced by the diverse demographic variables of the research team, including gender, age, academic background, ethnicity, and nationality (Western and Syrian researchers). Western researchers had extensive fieldwork experience in the Middle East and conflict settings. The Syrian team member had personally worked during the Syrian war and possessed exceptional knowledge. This combination strengthens the credibility of the dissertation. Furthermore, the Syrian team member contributed to decisive understanding and cultural sensitivity.

Dependability in research refers to the stability and consistency of the research process over time, ensuring that all steps are visible and transparent (172). Each phase of the study was described as clearly as possible. The characteristics of the interviewees were described in detail to strengthen the reliability of this research. We accurately identified and described the research participants. They were described as accurately as

possible while maintaining anonymity. At some points, we had to balance characterising the backgrounds of the participants while maintaining their anonymity.

Reflexivity means that the researcher must be aware of their starting points, evaluate how they influence the data and research process, and report these starting points and evaluations in the research report (184). For this purpose, I created a social identity map to understand the impact of my personality on the research process and ensure that the reader is aware of the background factors. I mainly independently analysed the material, but the results were reflected and discussed in the research group. Notably, throughout the entire process, the research team reflected upon the research and its results. This started from the fieldwork phase in Türkiye. Unfortunately, the participants could not reflect on the material because the interviews were conducted to guarantee anonymity, and the researchers did not have the participants' contact information to maintain anonymity. Having been able to gain their views would have improved the reflexivity of the study, but it was impossible due to the circumstances.

In addition, the three substudies (or drafts) were presented at conferences or workshops focused on research on the Middle East, conflict, or global health. Feedback validated the results, which have also been examined in light of existing international publications in the field.

The concept of transferability requires the researcher to provide sufficient descriptive information about the participants and their life situations, allowing the reader to evaluate the applicability of the results to other contexts (180). In the study, we comprehensively asked participants for background information and provided their demographic and professional characteristics. Due to the sensitivity of the research, however, we did not enquire about the participants' political or religious affiliations, but these often emerged during the interviews. Additionally, the context of the study and research progress were described in detail to improve the transferability of this study.

6.2 DISCUSSION OF THE MAIN RESULTS

6.2.1 Healthcare Workers and Experienced Violence

The Syrian government is authoritarian, and it has used repression and denial of fundamental human rights to control the population. Using violence against citizens and dissidents has been an integral part of its operation since the 1963 coup, when the Baath Party and the Assad dynasty took over control of Syria. (112,124) Before the war, HCWs considered that they were not targeted due to their profession, according to this study (substudy I). HCWs were integral to the system due to their roles, though they did not hold politically privileged positions as citizens. For some, particularly physicians and those of ethnic minorities, the profession offered a better social status. Like other civilians, HCWs operated within an authoritarian and corrupt society. Still, they were not forced to choose between obedience to the government and the ethics of their profession.

When the GoS began to use violence against protesters in 2011, the attitude towards HCWs became hostile when HCWs treated injured protesters.

HCWs wanted to follow their ethical obligations by providing medical aid, but their acts led the GoS to label them as terrorists or enemies of the state. Classifying HCWs as terrorists or enemies is a phenomenon that has also been used worldwide (26,94,185). This classification and confrontation by GoS forced HCWs to choose their side, as they could not be neutral actors, even if some urged it. Some HCWs drifted into this role because they continued to provide medical aid and refused the orders of the officers not to treat wounded protesters.

According to Dewachi et al. (64), providing health care services had been part of the administration's way of strengthening its power and controlling citizens before the conflict. When HCWs disobeyed orders against their principles and ethics, it is possible that the GoS perceived this as an effort to challenge the legitimacy of their power and started to consider HCWs a legitimate enemy target, justifying violence against them. Over time, this

violence expanded to include healthcare infrastructure, which, as HCWs did, symbolised resistance.

Substudy I shows that all parties to the conflict used violence against HCWs and that many of them also used violence against health infrastructure. However, the number of detrimental actions varies between the parties. The actions of GoS were described as the most large-scale and deadly. HCWs had been threatened, imprisoned, and tortured, and their colleagues had disappeared and been executed by GoS.

As the conflict progressed, healthcare facilities in areas controlled by NSAGs began to be bombed. Especially when Russia joined the conflict militarily in 2015, air strikes became more destructive. The results of this study reinforce the other studies (7,8,11,19,47,74,149,186,187) that the GoS and later Russia destroyed ambulances and health facilities.

According to this study, ISIS was also considered dangerous and had a strong negative impact on HCWs. However, ISIS did not care about a person's profession, but obedience to the organisation was critical. This research confirms the results of the study conducted in Iraq by Mitchlig et al. (67) on the conditions described by local HCWs in the ISIS healthcare system. It provides more detailed information on the conditions and environment of the HCWs. The organisation threatened, arrested, kidnapped, and executed HCWs.

Substudy I presents new information on HCWs' experiences of violence in areas under the control of NSAGs. This topic has not been explicitly studied before. HCWs' attitudes toward NSAGs were ambivalent. On the one hand, these organisations were perceived as a threat. On the other hand, their activities did not threaten the HCWs. The violence caused by the Kurdish Forces towards health care was inconsequential in this study, and the subject has not been studied before.

The complexity of the war and the multiple warring parties made life dangerous for all civilians. Violence affected health facilities and was directed at all civilian infrastructure, such as mosques, universities, and grocery stores, as found also in several other studies (18,107,193,194).

6.2.2 Tangible Effects of Violence on HCWS

The role of HCWs is essential to provide health care in conflict-affected countries. Like other civilians, HCWs generally want to leave unstable and conflict-prone areas. The HCWs' reasons for leaving Syria have not previously been studied. There is little research on the reasons why HCWs leave unstable areas. In these studies, there are several reasons to leave, such as better educational opportunities and financial motivations. Fear of violence did not emerge as the primary reason. (3,82,190)

According to the dissertation results (substudy II), widespread violence and insecurity were the main reasons why HCWs left Syria to protect their lives or their families. This discovery indicates that the level of generalised violence has been exceptionally high.

Part of the harm inflicted on both HCWs and civilians can be attributed to indiscriminate attacks caused during confrontations between conflicting parties. The experience of violence is influenced by the fact that battles have taken place in large cities, such as Aleppo and Homs, especially between the GoS and the NSAGs (135), where most of the participants in this study were born and worked. Most civilians, including HCWs, were killed in airstrikes (45,135). Typically, the main hospitals are located in the middle of densely populated areas and thus suffer heavier collateral damage when the GoS carries out airstrikes on targets it claims are bases of NSAGs. However, within the scope of this study, it is impossible to assess how many hospitals, other health facilities, or ambulances were deliberately targeted or the result of collateral damage. However, according to the experiences of the HCWs, there are indications that the objects were intentionally destroyed. Other reports and studies have stated that aerial bombardments have deliberately targeted civilian targets throughout Syria (8,18,32,45,48,191).

Private actions and characteristics of HCWs, such as ethnicity, partly influence reasons to leave their hometown or even Syria. These factors impacted the departure, especially in the early part of the conflict, when the GoS arrested, imprisoned, and killed HCWs. These actions were proven to be intentional and even coordinated. However, the reasons why the HCWs were arrested and killed cannot be determined with absolute certainty

based on this research. It is unclear whether the government's actions were because of their role in health care, their assumed antigovernmental opinions and actions, or for unknown reasons.

In the case of ISIS, violence appears to have been aimed not at the HCWs but rather at individuals who did not adhere to ISIS ideology. Furthermore, the actions of ISIS prompted healthcare workers to flee the area. The notorious reputation of the organisation also contributed to HCWs' decisions to leave.

The findings of this dissertation emphasise the severe impact of violence on HCWS in conflict settings. The analysis indicates that violence, whether general, profession-related or personal, carried out by warring parties was the only motivation for HCWs to leave the area or even the country. Conflict not only disrupts entire societal structures and institutions, such as the healthcare system but also exposes the vulnerability of HCWs working in the middle of the fight. As other civilians, HCWs are just as vulnerable to violence despite their crucial role in providing medical assistance. In war, their profession may even increase the risk of becoming targets compared to other civilians.

HCWs could move their families to Türkiye while continuing to work in Syria (mainly in the Northwest). UNSC Resolution 2165, passed in 2014, allowed humanitarian workers, including HCWs, to cross into Syria without needing permission from the GoS. This special arrangement allowed the HCWs to work part-time during the war. They played an essential role in providing health care to civilians in areas outside of GoS control, even if only partially.

According to this dissertation (substudy III), those HCWs who continued to work in Syria had internal and extrinsic motivations. One of the extrinsic motives was economic. In Türkiye, living costs were high, and finding a job was difficult. Economic reasons for working were also observed in research conducted in Uganda during the conflict and post-conflict periods (81).

Another external motivation was maintaining professional skills, which was impossible in Türkiye. In particular, surgeons wanted to preserve their skills. Working allowed HCWs to gain valuable experience. Being an HCW

who provided help and care to those in need was possible due to the professional knowledge and skills that made it possible.

One intrinsic reason was patriotism. This ideology was separated from the Baath regime and President al-Assad. The reason for helping was love for the homeland, especially those living there, not the “presidential monarchy”.

Political reasons were also partially behind the motivation. The goal was to achieve human rights and democracy for all Syrians, values that drove the 2011 demonstrations in which some HCWs had participated. The religious reasons for providing medical care were less significant than other motivations. This result may be due to the long-established secularism in modern Syria, one of the fundamental elements of Baathist ideology. The acceptance of a secular order and the concept of religion (156) as a personal choice have been the defining features of society (192).

As said above, the HCWs have several motivations to work in Syria. Still, the most significant are humanitarian principles (humanity, neutrality, impartiality, and independence) and professional ethical values. These values may be the most common in this study because the participants were highly educated and primarily physicians. The Hippocratic oath obliges physicians to help all those in need and is closely aligned with humanitarian principles. For example, truck drivers who deliver humanitarian aid may have different motivations than HCWs. However, Slim (80) states that humanitarian principles serve as a motivating source for local actors.

On the contrary, Duclos et al. (156) found that implementing neutrality can sometimes be challenging for local workers. They have their political views and may have experienced or witnessed war crimes committed by the warring parties. These factors can negatively affect compliance with humanitarian principles, especially impartiality and neutrality.

According to the dissertation, HCWs could not adhere to all these values because the warring parties, especially GoS but also ISIS, intervened in providing health care services. In areas controlled by the NSAGs, HCWs were allowed primarily to comply with their ethical and moral obligations as long as they followed the organisation's interpretation of Sharia law. Complying with this requirement was preferable to leaving people without medical aid.

In practice, this meant gender segregation. Loyle (193) notes that NSAGs often need civilian support for their claim to rule the region. One-sided violence alone would not be sufficient to rule these areas without some degree of support and acceptance from the locals. This study indicates that NSAGs seek to build their credibility by providing health care to the local population. However, Alhaffar et al. (34) have noted that especially foreign fighters demanded strict compliance with Sharia. It can be assumed that the local fighters of the NSAGs were more moderate and that cooperation with them was manageable for the HCWs. This presence of foreign fighters and their interference in managing civil affairs may partly explain why the NSAGs were viewed negatively. Although resources were limited, NSAGs and Kurdish forces resisted large-scale, one-sided violence against HCWs. Organisations typically treated workers with respect and did not interfere with their work. The material supports this claim (45,98), indicating that the incidence of reported violence against HCWs by NSAG and Kurdish forces was significantly lower than by GoS and ISIS.

Although the violence against civilians perpetrated by the NSAG and Kurdish forces is less than that of GoS or ISIS, there have been reports of one-sided violence by these organisations. Also, even when violence rarely resulted in death, it is worth remembering that the deterrent effect of NSAGs and Kurdish forces on HCWs may be significant.

The findings of this study highlight the dedication and resilience of HCWs during war. Despite substantial life-threatening risks, HCWs are determined to provide medical assistance according to their ethical standards. Their dedication and determination make it possible to provide aid to those in conflict areas. Although HCWs were victims of violence, they were also active participants during the conflict. They defied the prohibitions and orders of the warring parties not to provide care to those in need and wanted to follow their professional ethics. They formed civil resistance, which we call "resistance through treatment[11]."

[11] see Kallström et al. "Resistance through treatment–professional based civil resistance in Syrian war" (forthcoming)

6.3 CONSEQUENCES OF VIOLENCE ON PUBLIC HEALTH

The multiplicative or knock-on effect of migration, injury, or death of even one HCW can significantly harm public health. This loss reduces the availability of medical care. It places additional pressure on the remaining HCWs, leading to increased burnout and decreased quality of care. This loss can be exacerbated in regions already suffering from a shortage of HCWs. The shortage of trained and experienced HCWs and the destruction of healthcare infrastructure and other civil infrastructure exacerbates medical care challenges, such as outbreaks of infectious diseases such as poliomyelitis and cholera (14,22,25,194,195). In northern Syria alone, 15% of households have reported at least one conflict-related disability (28). It remains unknown how many of the civilians have died or been indirectly injured.

Health care in the country was moderately good before the conflict. Cardiovascular disease and cancer were the most common causes of death. (113,119) When the conflict began, access to healthcare services became difficult, and monitoring and treating chronic diseases were interrupted or even stopped. These indirect events have affected the population's health but are not reflected in direct war mortality. The deterioration of health services can be seen in the health and well-being of the population long after the war has ended. Functional health care and social services support peacebuilding in the region. (196). Regional violence against HCWs can hinder the achievement of the UN's SDGs and exacerbate inequalities between countries and populations. Violence may prevent the international community from effectively providing aid to conflict areas, and controlling easily treatable infectious diseases remains a challenge. In its worst case, this situation can significantly threaten global health and security. Violence against healthcare workers has a multitude of consequences on different scales. In Figure 8, the effects are categorised by their primary level of influence.

Individuals	Health care system	Society	Global Health
•Increased burnout /mental trauma • Migration • Increased mortaliy •Increased morbidity	•Loss of HCWs •Decreased quality of care •Distruption of services •The heavy workload of the remaining HCWs	•Distrust in health insitutions •Weakened health outcomes •Increased vulnerability to health related crisis •Social tension	•Threatens the UN's Sustainable Development Goals •Increases the burden of diseases •Obstructs international efforts •Increases health inequities •Treathens global health and security

Figure 8: Impact of violence against HCWs in conflict settings

A qualified workforce is genuinely needed in Syria for health care to be functional and effective. Still, the return of health workers to Syria remains a challenge. As this dissertation shows, many professionals have specifically fled the violence caused by the GoS or the threat of it. Furthermore, the HCWs provided medical services to those injured in demonstrations. Many of them worked in areas controlled by NSAG. The government has not changed, so it can be assumed that many who have left do not necessarily dare to return to the country due to the fear of being rejected in this settlement progress. A growing number of reports state that many returning refugees have been arrested, tortured, or killed (197–199).

Especially those HCWs who have ended up in Western countries are likely to have integrated into their new host societies. They may have obtained jobs and a family. They do not necessarily have the desire to return to a country where the same oppressive political structure is in power. In Iraq,

another country suffering from violence, the government has tried to attract doctors who left with financial benefits but with no success (4). However, getting educated people back would be crucial to rebuilding society. The primary condition is that people can be guaranteed safety. Money alone is not a sufficient motivation, as observed in this dissertation.

6.4 THE DYSFUNCTIONAL INTERNATIONAL SYSTEM AND PROTECTION OF HEALTHCARE

IHL provides the legal framework for war as it aims to protect HCWs and health facilities in times of war. This dissertation has explored how IHL principles, especially violence against HCWs, have been violated in Syria. This study also shows that despite their lives being in danger, HCWs want to keep up those principles and provide health services. In addition, this study provides more detailed information on violence against HCWs and facilities by examining the violence conducted by different warring parties. The study also demonstrates how IHL violation affects how HCWs experience the impact of violence on their daily lives and on their ability to provide medical care for those in need.

Russia, one of the warring parties in Syria, continues to commit war crimes in Ukraine against civilian targets. The Russian invasion of Ukraine in February 2022 and the subsequent destruction of civilian infrastructure, including hospitals, underscore that healthcare is not respected despite the IHL and other laws protecting the civilian population and healthcare. The international system is unable and not always willing to protect healthcare from violence in the middle of the war.

Since the international protection system does not function adequately, grassroots action is a viable option. Local healthcare providers will need specific support and more effective security solutions. Since 2014, the UN mandate to secure the cross-border delivery of medical aid to Syria has allowed access to NSAG-controlled areas. This practice has saved many lives and significantly reduced human suffering. However, as we have seen, aid provision has been highly politicised throughout the crisis. Again, the

February 2023 earthquake in Türkiye and Syria revealed how difficult it is for humanitarian aid to reach contested areas (200).

As statistics show (60), internal conflicts are the main type, despite the ongoing war of aggression by Russia in Ukraine. As the war in Syria has shown, this type of conflict is particularly devastating to the civilian population. Securing healthcare is also a challenge in a constantly changing environment, with partly asymmetric battles raging in the middle of populated areas.

6.5 STRENGTHS AND LIMITATIONS OF THE STUDY

This study has significant strengths. However, some limitations and challenges need to be acknowledged. One of the greatest strengths of the study is the direct access to HCWs who had personally experienced the phenomena studied. Gaining the participants' trust and obtaining extensive material of difficult-to-obtain data can be considered a significant accomplishment.

Due to mistrust and suspicion, the SSM method was chosen due to its general suitability for research settings. The interviews were conducted. Sometimes, the interview data could be triangulated with other sources (typically, this was news of an airstrike against a well-known hospital) to validate the information.

SSM has some risk of distorting the sample distribution (40). Still, few applicable approaches to counter this were reasonably available. The use of multiple SSM networks was designed to compensate for this shortcoming.

The participants were mainly physicians. However, it would also be necessary to learn more specifically about the experiences of other professionals. They also provide treatment, and their role is essential for the functionality of healthcare.

Although no specific choice was made to interview male participants, in practice almost all the participants reached were men. Cultural reasons are likely to cause this, as women tend to be less willing to express their opinions openly in Syria. In addition, HCWs working in war-afflicted areas are

probably predominantly male. Information is not available on the gender distribution of HCWs in Syria.

Most of the HCWs interviewed who were still working at the time of the interviews worked mainly in NSAG-controlled and Kurdish-held areas in northern Syria. Obtaining a broader selection of participants was not feasible due to security concerns. As said, the interviewed sample was not entirely representative of the potentially relevant population, as interviewing HCWs on the side of the GoS was impossible. Within the scope of this study, it is impossible to discuss in more detail the activities of the NSAGs that the interviewees found problematic. In 2016, more than 6,000 organisations operated in Syria (134). For this reason, organisations have been treated as a single entity, although there are differences in their activities and goals. However, the material reveals that the confrontation was mainly with Islamist organisations. Sometimes, the interviewees did not even know or want to mention the organisation by name. On the other hand, the participants did not express that they were participating in an armed struggle. However, this does not mean that they were not part of NSAGs or participated in hostilities.

In addition, as a highly sensitive and political topic, participants may overemphasise certain viewpoints that are important to them. Trauma may also have affected responses to some extent. This aspect was considered by closely adhering to ethical principles and paying particular attention to selecting a safe space for the participants. They may also leave things unsaid, such as their involvement in armed activities. These challenges were addressed by placing the highest analytical weight on findings obtained from multiple independent sources.

All publications (I–III) applied a semi-structured interview. The themes were presented to the interviewees in a predetermined order. The lead researcher and two male researchers, one Finnish and the other Syrian, conducted the interviews. Rich materials were successfully collected despite the mixed gender and cultural backgrounds of the interviewers. Responses did not vary significantly depending on the researcher conducting each interview. The fact that the material obtained was comprehensive indicates that the interviewees chosen were relevant to the study. (201)

The methods are well suited for measuring HCWs' intended concepts and experiences. There were no reasons to doubt the validity of their input.

The material received appears suitable and valid to explore, understand and describe war violence and its importance to health care. Although the results of the interviews and their analysis are affected by subjective elements of both the interviewees and the researcher, no grounds for questioning the validity of the approach emerged during the study. It seems likely that the results adequately approximate the actual consequences of the violence and behaviour of the HCWs.

Research describing the experience can be carried out, limiting it to a specific research object. In this dissertation, the focus was on HCWs who had worked in Syria. This type of study aims to produce detailed and intensive information about a specific case. It does not aim at generalisability, but at profoundly understanding and interpreting individual cases in their specific context. The analysis seeks to find information on the dynamics, mechanisms, processes, and internal similarities related to the phenomenon. With this, the research results can be shown to have a broader meaning, thus generalisability or transferability. (202)

7 CONCLUSIONS

This dissertation explores the experiences of healthcare workers (HCWs) who faced violence in the Syrian conflict from 2011 to 2017. Increasing knowledge of violence against HCWs in conflict is essential. We can try to mitigate or prevent violence when we understand how and why local HCWS operate in high-risk areas. The purpose of the dissertation is also to give a voice to HCWs whose voices are unheard. Despite the danger to their health and lives, professionals continue to work in Syria. Their profession-related ethical norms guide their resistance. Protecting health care and its workforce requires a broad analysis of the prevailing conditions and situational dynamics. We must study all the reasons why HCWs are forced away. Additionally, the effects of mental trauma and its impact on HCWs merit further study. In addition to purely harmful effects, these experiences may lead to increased resilience. This can act as a catalyst for future change. We must also learn why many still treat patients under dangerous conditions. This way, we might find answers to maintaining health care during the war. The experiences and motives of the HCWs should be investigated in more detail. In particular, research should focus on local actors, as they bear the most significant burden and risk. Their expertise is of primary importance in providing health services. Their experiences are not just professional, but also personal. At the same time, they are also parents, siblings, and members of civil society who share the same fears and suffering as other civilians. Still, many have the will and ability to alleviate people's suffering. This passion drives them to face dangers. The reasons why the government used violence against health care are partially unclear. Elucidating the reasons behind the motivations requires further research. By understanding the motivation of the party that commits violence, it is possible to try to find means of protection against it. Asymmetric internal wars such as the one in Syria can be expected to continue.

At the time of writing, Sudan is on the brink of civil war, and the war in Yemen is still raging after it started during the Arab Spring. As the conflict in Syria shows, the changing nature of war and the volatility and multiple warring

parties create a significant challenge in providing health care services. Understanding the operating environment and predicting changes is of the highest importance, but this can sometimes be very difficult, if not impossible. By understanding the operational models and ideology of various organisations that allow healthcare care services for civilians, we can strive to strengthen on-the-ground operations. The international community must develop and enforce robust security strategies, including establishing safe zones for healthcare workers and ensuring strict adherence to IHL. Furthermore, the international community is responsible for ensuring that IHL is followed and that universal human rights are respected. Without these conditions, providing health care services during conflicts is severely endangered.

The Syrian conflict evokes a broad spectrum of emotions and opinions. There is no single objective truth to be found, except that civilian suffering must be alleviated irrespective of political views. What is certain is that war cannot be won by destroying health care. Such actions only strengthen the resolve of those resisting. However, it may lead to local and, in some cases, even global health hazards, such as infectious disease epidemics. As we learnt during the COVID-19 pandemic, diseases do not respect borders. Our universal responsibility is to ensure that everyone in need receives the health services to which they are entitled, regardless of circumstances.

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APPENDICES

APPENDIX 1: Fact Sheet for Research Participants

Violence Against Health Care Workers in the Syrian Conflict
Researcher Contact Information

Heads of Research: Jussi Kauhanen [contact information]
Agneta Kallström [contact information]
Mikko Häkkinen [contact information]
Orwa al Abdullah [contact information]
Jan Parkki [contact information]

Study Background

This study is part of one of MA Kallström's Doctoral Thesis articles, which will be prepared for the Department of Health Sciences of the University of Eastern Finland. The results of this study will be published in an international scientific publication in 2015. The study has received funding from the Finnish Institute of Middle Eastern Studies to carry out field research.

Intent, Goal, and Significance of the Study

The study explores healthcare personnel's past and possibly current experiences in their work during the Syrian Conflict. It aims to determine the effect of possibly experienced violence on healthcare professionals' coping and examine the overall effect of the conflict on healthcare. The results are to be generalized to cover current modern conflicts more widely where applicable. Such outcomes will be used to improve healthcare worker safety and mental coping in a physically and emotionally challenging environment.

Purpose, Handling, and Archiving of the Study Material

The collected information will be used as study material for preparing the scientific publication. Interviews are recorded and then transcribed on a computer. After the transcription process, the original audio files are deleted. Only the researchers have access to the material, which is comprehensively secured. After the conclusion of the study, the material is deposited into the University of Eastern Finland's data archive.

Conducts the Participants are Subjected to

Health care professionals with current or past work history after 2011 within Syria are chosen as research participants. More specifically, the interviewees for this study are to be chosen so that the previous participants recommend one or more personal contacts for the following interviews (snowball selection method).

A single interview typically lasts slightly more than one hour. During the interview, a number of open questions will be presented. For these, you are expected to answer freely using your own words. It will be up to you to choose how elaborately and in what level of detail you choose to answer the questions. The wish of the researchers naturally is that you tell them as much as possible about your experiences so that they can develop a good understanding of what is going on in Syria.

Benefits and Detriments to the Participants

The purpose of the study is to explore the detrimental effects and problems that the Syrian Conflict has caused to the health care of the nation. By participating in the study, the interviewees can disclose information that can greatly help understand the anti-health care violence in Syria. Comprehending the nature of the phenomenon improves the prospect of securing healthcare personnel in conflict situations. Reducing threats against healthcare workers improves the capabilities of healthcare and, thus, the welfare and health of the civilian population.

The subjects to be discussed may be emotionally distressing due to the participants' experiences. The researchers take this into account by carefully monitoring the interviewees. As necessitated by their condition, the interview may be interrupted or terminated based on the participants' psychological state.

Use of the Results of the Study

The research project's results may be used in a scientific article as described above and presented in conferences covering health care and Syrian conflict-related issues.

If you are interested in receiving a copy and the final study article, please e-mail the researchers.

Rights of the Participants

Participating in the study is strictly voluntary, and you are allowed to end the interview at any time. It is also possible to request breaks if you so desire.

The organization of the study and reporting of its results are confidential. In practice, no details that would allow participant identification will be asked in the interview. The

research team will only use the background information. Should a participant express such information during the interview that could be connected to that person, the researchers will publish the results in their report so that no identification of a particular person is possible. For these reasons, participation in this study presents no security risk for the interviewees.

The participants can receive additional information concerning the study from the research team members at any time.

APPENDIX 2: Recommendation Letter

Faculty of Health Sciences
Department of Medicine
Institute of Public Health and
Clinical Nutrition

October 4, 2016

UNIVERSITY OF
EASTERN FINLAND

*University of
Eastern Finland*

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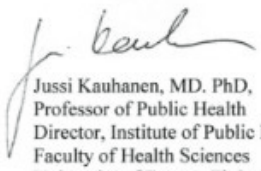
To Whom It May Concern

Dr (Mr) Mikko Häkkinen, PhD, Dr (Mr) Orwa al-Abdulla, MHealthSci, BDent) and Mrs Agneta Kallström, MA, are conducting scientific research on violence against health care workers. In this case the focus of the study is on the Syrian conflict. Their study is a part of a larger research project run by the University of Eastern Finland, Kuopio, Finland. Other academic institutions involved are the University of Helsinki, Finland, and the Karelia University of Applied Sciences, Joensuu, Finland. From the public health point of view, the study is extremely important. It will provide essential information on the issue that has recently been globally recognized by WHO and other agencies.

Dr Häkkinen is a senior researcher with a doctoral degree (PhD) in Health Sciences. He is also a professionally qualified psychotherapist. Dr al-Abdulla is a licenced dentist with a higher degree in health sciences, having professional experience from humanitarian crises. Mrs Kallström has a Master's degree in the Middle Eastern studies from the University of Helsinki. Currently she is a doctoral student of Public Health with the University of Eastern Finland. Her dissertation work, supervised by Dr Hakkinen and myself, is also part of the current research project. I can assure that researchers Kallström, al-Abdulla and Häkkinen have adequate knowledge and capacity to carry out the study process and data gathering. They have wide international experience in working at unstable environments and with different cultures. The Research Ethics Committee of University of Eastern Finland has approved this research. I appreciate your full support to the research project and to our researchers. Do not hesitate to contact me for any other information concerning this study.

Yours sincerely,



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APPENDIX 3: Questionnaire

PART I Background Information

Demographics
Age (+sex)
Nationality: 1) Syrian 2) Dual citizenship 3) Foreign
Occupation
Career length I.e. for how many years have you worked in this field?
Have you worked as a healthcare professional in Syria before the year 2011?
What kind of work did you do at that time?
Where did you work?
Have you worked as a healthcare professional in Syria after the year 2011 (after conflict)?
What kind of work did you do?
In which municipality (muhafazat) did you primarily work?

PART II Experiencing violence

If you have worked as a healthcare professional before the year 2011, please answer the following:
Please describe the nature of your work before the conflict.
Did you at that time experience occupational violence or threat of violence?
Have you worked as a healthcare professional since the start of the war?
During what time period(s) have you worked in health care (years)?
Do you currently work in health care in Syria?
Have you experienced violence or seen violence towards your co-workers?
If yes; what kind of violence have you seen/experienced, and how often?
Please describe these events.
ii. What do you believe has been the motive behind such violence?

PART III Tangible effects of the violence

In what ways has violence affected your work career and your sense of purpose in work?
How has it affected your coping with work and related stress?
If you do not work anymore as a health care professional in Syria AND you have experienced violence earlier in your work:
Why did you stop working in Syria?

What kind of role did violence and its threat have in your decision to stop working in Syria?
What kind of thoughts does the violence against healthcare workers evoke in you?
Do you believe some kinds of measures exist that could have prevented these events?

APPENDIX 4: Classification Of Substudy I

Class	Type
Objects	Healthcare workers (HCW), healthcare facilities, ambulances
Types of attacks	Threatening, kidnapping, arresting, imprisonment, looting, beating, torture, shooting, killing, executing, car bombs, artillery fire and airstrikes
Perpetrators	The Government of Syria (GoS) and its allies, non-state armed groups (NSAGs), Syrian Democratic Forces (SDF), Islamic State in Syria (ISIS)
Results of attacks	Material damage, human physical casualties
Syrian governorates	Rif Damascus, Aleppo, Hama, Latakia, Deir ez-Zour, Homs, Qunteira, Daraa, Tartus, Raqqa, Suwayda, Hasaka, Idlieb, Damascus

APPENDIX 5: Social Identity Map

Personal Characteristics:

- **Gender**: Female
- **Age**: Middle-aged
- **Race**: White, Caucasian
- **Family Status**: Married to a Finnish male physician, with one small child

Cultural Identity:

- **Nationality**: Finnish, European
- **Religion**: Atheist
- **Cultural background:** Western

Social Class:

- Upper middle class with middle-income

Professional Background:

- **Work History**: Previously worked in the hospital's emergency department, operating theatre, and ICU as a hospital assistant during studies. Currently working in different academic research teams. Also, a start-up entrepreneur with experience in health-related companies. Additionally, she has worked in a non-governmental organisation (NGO) advocating for children, and conflict victims.

Cultural and Geographical Experiences:

- **Experience in the Middle East**: Studied Middle Eastern conflicts, spent periods in several Middle Eastern countries
- **Education**: Master of Philosophy Studies in language, culture, and politics. Has also done public and global health studies.
- **Global Connections**: Has friends and colleagues from around the world, especially from the Middle East

Values and Beliefs:

- **Political Views:** Holds liberal political views: e.g. individual rights, freedom, equality, the rule of law, civil liberties, social justice

ORIGINAL PUBLICATIONS (I–III)

I

Caught in crossfire: health care workers' experiences of violence in Syria

Kallström, A., Häkkinen, M., Al-Abdulla, O., Juusola, H., & Kauhanen, J.

***MEDICINE, CONFLICT AND SURVIVAL*, *37*(1), 34–54, 2021**

https://doi.org/10.1080/13623699.2021.1889654

Medicine, Conflict and Survival

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Caught in crossfire: health care workers' experiences of violence in Syria

Agneta Kallström, Mikko Häkkinen, Orwa Al-Abdulla, Hannu Juusola & Jussi Kauhanen

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Routledge
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Caught in crossfire: health care workers' experiences of violence in Syria

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ABSTRACT

Health care is attacked in many contemporary conflicts despite the Geneva Conventions. The war in Syria has become notorious for targeted violence against health care. This qualitative study describes health care workers' experiences of violence using semi-structured interviews (n = 25) with professionals who have been working in Syria. The participants were selected using a snowball sampling method and interviewed in Turkey and Europe between 2016–2017. Analysis was conducted using content analysis. Results revealed that the most destructive and horrific forms of violence health care workers have experienced were committed mostly by the Government of Syria and the Islamic State. Non-state armed groups and Kurdish Forces have also committed acts of violence against health care, though their scope and scale were considered to have a lower mortality. The nature of violence has evolved during the conflict: starting from verbal threats and eventually leading to hospital bombings. Health care workers were not only providers of health care to injured demonstrators, they also participated in non- violent anti-government actions. The international community has not taken action to protect health care in Syria. For health workers finding safe environments in which to deliver health care has been impossible.

ARTICLE HISTORY Accepted 19 January 2021

KEYWORDS Syria; health care worker; violence; experience; conflict

1. Introduction

The Geneva Conventions obligate all parties in the time of war to respect the neutrality of health care. Combatants are required to differentiate between military and civilian objects. Medical professionals may not be punished for treating those in need of help (ICRC 1949, 1977). Despite legal protections, health care has been targeted in many armed conflicts (Briody et al. 2018;

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Druce et al. 2019; Rubenstein and Bittle 2010; Footer et al. 2014; Lafta and Falah 2019; The Safeguarding Health in Conflict Coalition 2020).

In 2019, attacks against health care were reported in 20 conflict-affected countries. The attacks left 151 health care workers (HCWs) dead. Forms of violence ranged from verbal threats to executions and hospital bombings. Many of the reported attacks took place in Syria (The Safeguarding Health in Conflict Coalition 2020). At the time of writing, the Syrian war has continued for almost a decade and hospital bombings have become a tragic characteristic of the conflict.

The Government of Syria (GoS) and the Government of Russia (GoR) are considered to be responsible for the majority of the deaths (91%) of HCWs. Non-state armed groups (NSAGs) have contributed to the violence to a lesser extent. Over half of the deaths of HWCs were caused by airstrikes and artillery fire. Other identified causes include small arms fire, torture, and executions (Fouad et al. 2018; Physicians for Human Rights 2019).

The estimated number of HCWs killed between 2011 and March 2020 exceeds 923 persons. In addition, more than 350 health care facilities have been attacked (Physicians for Human Rights 2019). These attacks have taken place mostly in NSAG-controlled areas. Roughly half of the hospitals, especially those providing trauma care, were targeted by air strikes – some of them multiple times (Elamein et al. 2017a). By the end of 2019, 25% of public hospitals were reported to be partially functioning and 25% as non-functioning (WHO Regional Office for the Eastern Mediterranean 2019). The majority of qualified HCWs had left the country (Fouad et al. 2018; Physicians for Human Rights 2020). Those HCWs who have stayed in Syria are operating in challenging environments risking their health and psychological well-being (Footer et al. 2018; Fardousi, Douedari, and Howard 2019; Blanchet et al. 2016; Fouad et al. 2018).

Some of the violence against health care appears to have been intentionally targeted. This has raised concerns. In May 2016, the UN Security Council condemned attacks against medical facilities and personnel in the time of conflict (Security Council 2016). It has become increasingly vital to understand the context, motives, and dynamics of what may be intentional attacks against health care. This applies particularly to the Syrian conflict where health care has been repeatedly and according to Fouad et al. (2018) and others intentionally attacked.

Conducting research in conflict settings is challenging for various reasons. These include practical difficulties, including bias in data collection, lack of funding, applicable research methods and terminology (Cohen and Tamar 2011; Patel et al. 2017). A significant knowledge gap exists regarding the nature and extent of violence against health care that appears to be targeted and its impact on HCWs (World Health Organization 2016a). In Syria, research regarding violence against health care, including that which appears to be

targeted has focused on airstrikes against facilities and ambulances. Also the majority of data collected is quantitative.[1] High-profile attacks, such as hospital bombings, gain attention while less destructive and fatal acts, such as threats against HCWs, may go underreported. Only a few qualitative and descriptive studies about HCW experiences in the midst of war exist.[2] However, qualified HCWs play a crucial role in delivering medical assistance for those in need. Without their contribution, the public health system would collapse.

In this research, we describe violence against health care from the perspective of HCWs working in Syria during – at the time of writing – the ongoing conflict. We explore what they have witnessed since the conflict began, their experiences and their thoughts about the different warring parties and their acts of violence. We also study how the changing nature of the conflict has influenced the different forms of violence against HCWs. We don't regard HCWs only as passive subjects of violence, as many of them have had an active role in opposing the President and the Government of Syria. The political role of HCWs during the conflict, especially in the early years, will also be discussed.

2. Methods

This qualitative study is based on semi-structured interviews of 25, mostly Syrian, HCWs who worked in Syria after the conflict started in 2011. From June 2016 to December 2017, 18 interviews were conducted near the Syrian border in Gaziantep, Turkey. In addition to this, 7 interviews were conducted in Europe.

2.1 Setting

In spring 2011, demonstrations were held against President al-Assad and the Baath party who have held power in Syria since 1963. The GoS can be described as authoritarian and is known for practicing discrimination, torture, and extrajudicial killings (Ziadeh 2013). As unrest spread from the southern city of Daraa across the country, the GoS responded with force. Violence escalated gradually into an armed conflict. The Free Syrian Army (FSA) opposition group was established. We consider this as a starting point of the war. Meanwhile groups with an Islamic background, such as Jabhat al-Nusra (JaN),[3] were gaining power and recruiting fighters in Northern Syria (Lister 2015, p. 83–116).

In spring 2013, a Salafi jihadist organization, Islamic State (IS), emerged in Syria. The organization focused its actions on the northern city of Raqqa and the governorate of Deir ez-Zour. After capturing the city of Mosul in Iraq, IS declared itself a caliphate in north-eastern Syria and western Iraq. In the same year, 2014, the Global Coalition Against Daesh[4] led by the United States (US) began airstrikes against IS with the aim of defeating them (The Global Coalition against Daesh 2020). In 2015 the GoR entered the conflict on the side of the GoS.

According to Russia's Ministry of the Defence, the aim was to target terrorist organizations such as IS and JaN (RT Question More 2015). In March 2016, the Syrian Kurdish Democratic Union Party (PYD) established the Autonomous Administration of North and East Syria (NES), also known as Rojava.

The majority of interviews were conducted in mid-2016 when Syria was geographically fragmented between four main factions:

(1) The GoS. The Syrian Arab Armed Forces, the armed forces of the Syrian Arab Republic, allied with the GoR. The GoS has also recruited paramilitaries and made pacts with Iranian ground forces and foreign Shi'ite militias (Heller 2016). The term *shabihas* is used in this article to refer to members of pro-government militias.
(2) NSAGs. Here the term NSAGs is used to refer to a heterogeneous group of organizations from nationalist FSA fighters and moderate Islamist groups to al-Qaeda-aligned jihadists, such as the Hay'at Tahrir al-Sham (HTS). These groups fight against the GoS and some practice military cooperation, although some of them also fight against each other (Heller 2016).
(3) IS. IS is known as the Salafi jihadist organization and its atrocities against civilians are well known. IS is fighting against all parties in the conflict (Heller 2016; Stern and Berger 2015).
(4) The Syrian Democratic Forces (SDF). SDF is an umbrella term used to refer to several armed groups. SDF is dominated by the Kurdish People's Protection Units (YPG) and its civilian parallel, Democratic Union Party (PYD). These groups are linked to the Kurdistan Workers' Party (PKK). The coalition is backed by the US to fight against IS. SDF is mainly fighting against IS and occasionally the GoS (Heller 2016; Uppsala Conflict Data Program UCDP 2015). In this study, we refer to this group as the Kurdish Forces.

Additionally, the Global Coalition against Daesh has participated in the conflict. The US-led coalition includes 83 countries and was formed in September 2014 to defeat IS in Syria and Iraq (The Global Coalition against Daesh 2020).

At the time of writing at the end of the 2020, NSAG-controlled Idlib was the last true stronghold out of GoS control. Also, IS had lost all territories they controlled. In March 2019, the US Administration announced the defeat of IS in Syria and Iraq (The Global Coalition against Daesh 2020).

2.2 Study population

Most of the interviews (n = 18) were conducted in Gaziantep, a Turkish municipality adjacent to the Syrian border. Interviewing participants in Syria was impossible for security reasons.

Many of those interviewed in Gaziantep lived in Turkey but travelled to Syria regularly to work for different international non-governmental organizations (INGOs) or local organizations the majority of which operated in Aleppo governorate. They typically visited Syria monthly and the duration of their visits ranged from a few days to several weeks.

Those participants who were interviewed in Europe (n = 7) had worked as HCWs in Syria during the conflict. This group consisted of Western expatriates and Syrians with refugee or student status or with a visiting visa.

Participants consisted of 21 males and 4 females. Their ages ranged from 26 to 69 years; the median age was 32 years. Of the Syrian participants (n = 23), about half (n = *12*) were born in Aleppo governorate. The other half originated from a variety of other Syrian governorates. One was born abroad in another Middle Eastern country. We reached no interviewees from the governorates of Suwayda, Qunteira, Tartus or Hasakah.

Most of the participants were physicians (n = 17). The amount of pre-war health care work experience varied from almost none to 43 years. The demographic characteristics of the interviewees are summarized in Table 1.

2.3 Data collection

One female and two male researchers collected semi-structured interview data. Nineteen interviews were conducted in English and six in Arabic.

Table 1. Interviewees' demographic information.

Demographics	Number
Interviews	25
Median age (years)	32
Sex distribution	
males	21
females	4
Citizenship	
Syrians	23
Western expatriates	2
Birthplace of the Syrians (governorate)	
Aleppo	12
Raqqa	2
Deir Ez-Zour	2
Hama	1
Rif Damascus	1
Homs	1
Dara	1
Idlib	1
Abroad (Middle East)	1
Profession	
physicians with a speciality	11
generalist physician + medical student	5 + 1
pharmacists	3
dentist	1
nurses	2
health service managers	2

The open-ended questions were designed to meet two core research goals:

(1) Identify and describe violence, particularly targeted violence as experienced by HCWs in Syria.
(2) Identify the perpetrators responsible and/or involved in the violence.

The participants were recruited using a snowball sampling method (SSM). We chose this method because it enables the identification of individuals who avoid publicity or are otherwise hard to find (Atkinson and Flint 2001). The participants required for this research tended to avoid attention due to the sensitive political nature of the topic and the related threat of violence. Only those with an occupation represented in the World Health Organizations' (WHO) classification of the health workforce were included in the study (The World Health Organization n.d.).

The starting point of the first SSM chain was a HCW in Gaziantep, Turkey. This first participant indicated three further possible contacts. Another two SSM chains started in Europe. All three chains developed separately accumulating unrelated interviewees. The interviews continued as long as the participants were able to provide new information.

2.4 Data analysis

In this study 'violence' was defined according to the World Health Organization as: The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation (World Health Organization 2002).

Qualitative content analysis was applied using an inductive approach. The interviews were transcribed verbatim. Transliteration coding was then performed and themes relevant to the study were identified. These themes were used to categorize the information present in the interviews and classify the events. The following classification parameters were used: time of attack, object (i.e. type of target), type of attack, assumed perpetrators, place of the incident and results of the attack (see appendix I). The timeline of the violence ranged from before the conflict started in spring 2011 to December 2017.

Only cases where the interviewee or a colleague of theirs had been present were included. Cases were entered in an Excel chart and further analysed by identifying commonalities and differences resulting from the narrative. Even if not all necessary data were present, the descriptions were classified according to the assumed perpetrator and if necessary the estimated time of occurrence to try and understand the nature of the violence and identify possible patterns and underlying strategies.

One of the main purposes of this study was to identify potentially significant qualitative phenomena. Therefore, all interview findings deemed important or interesting by the authors were included in the results regardless of whether they were brought up by multiple interviewees or just one person.

In this article quotations are used to provide evidence and to further illustrate the experiences of the participants. The language in italics has not been corrected in order to preserve its original tone and authenticity. In some cases, details such as names or places have been omitted to protect the participants' identities.

2.5 Research ethics

The interviews were recorded with permission from the participants. We elicited no names or any other personal information that could be used to identify the interviewees. We obtained the consent to participate verbally. Participants were informed about the research and its aims and purposes.

An ethical permit for the study was obtained from the University of Eastern Finland's Committee on Research Ethics.

3. Results

In the results section we first describe the conditions of Syrian health care workers before 2011 and the escalation of the conflict. Then we proceed to investigate the actions of the GoS against health care at each point of time. Next, we explore the role of other significant factions in the violence. Finally, we describe health care workers' own political role during the conflict.

3.1 The Syrian society before conflict

The participants described how HCWs, especially physicians, were respected in Syrian society before the conflict. They did not experience state-based violence due to their profession. However, as citizens, they were subjected to violence by the GoS.

The majority of Syrians was [experiencing] violence, physical and psychological threats. But as a doctor, there was no violence against me. But as a human, as a Syrian, there was violence. (participant 3)

The participants described the problems of society, such as corruption and discrimination. Human rights, especially freedom of speech, were severely restricted and challenging authority was considered risky. Some of the participants had been detained and abused for expressing anti-state opinions and taking part in political activism, such as human rights activism. Some thought that abiding by the rules allowed one to avoid consequences from the system. For a submissive citizen, many participants considered Syria to be a relatively good place to live.

Don't question anything, just do your normal life, your daily work. Don't ask why there is corruption, the institutions, why there is bribery, why this is not working, why they arrested this guy . . . Just eat, sleep, buy . . . (participant 5)

3.2 Perpetrators and forms of violence

Nearly half of the interviewees had personally experienced direct physical violence after 2011, some of them multiple times. Some had experienced violence from several different perpetrators.

According to the interviewees, all four main factions had committed violence. All participants mentioned the GoS as a perpetrator. Half of the interviewees named IS as responsible for violence, while less than half of the interviewees indicated NSAGs. In some cases, particular NSAGs like FSA, and radical Islamist groups were named. Kurdish forces were mentioned a few times.

Violence is happening everywhere inside Syria. You see airstrikes and ISIS on the ground, even some FSA is performing sometimes bad behaviour against medical staff. There are very good people inside FSA, but they are still armed group. Everyone inside Syria is practicing violence. (participant 21)

Those interviewees who had become victims of direct physical violence had been beaten, arrested, imprisoned or tortured or they had been in an ambulance or a health care facility when it was assaulted. They also described the experiences of colleagues that they had heard about or even witnessed. Their colleagues had been arrested, detained, tortured, killed or assaulted while in a health care facility.

Fortunately, I was not in this time in the hospital. But I came to the hospital [after air strike] and saw, that some of our friends, colleagues being killed. (participant 22)

3.3 Targeted violence against health care by the government of Syria

3.3.1 Health care workers

According to some participants, intentional violence against health care started simultaneously with the unrest that spread across Syria in 2011–2012. Even though the GoS was known for its extensive use of force, some participants had not anticipated such violence.

[Colleagues] were arrested. We couldn't imagine that they would be killed. It happened in early 2012. In Aleppo there was not much violence, only some gunshots and people run away. Then the regime [the GoS] catch some people and keeps them inside the jail for a month, three months, six months and they go out. But after [colleagues having been arrested and then killed] we knew the regime [the GoS] is targeting health workers. (participant 22)

Before some health care workers fled from the GoS-controlled areas into FSA-controlled areas, security forces of the GoS had a strong presence at government locations, including hospitals. Members of pro-government

militias, *shabihas*, were monitoring HCWs. *Shabihas* questioned the HCWs' political activities. Also, HCWs' presence at hospitals was carefully monitored.

HCWs treated injured anti-government protestors and, because of the protestors' fear of being caught in state hospitals, secret field hospitals started to emerge in locations such as schools or mosques. Some of the HCWs were called in for home visits.

Those HCWs who were helping demonstrators or supporting the field hospitals were under constant threat of being arrested by the GoS. In some cases, colleagues disappeared or were detained and were sometimes found dead with marks of severe abuse.

We lost a lot of our colleagues. There was a doctor [name retracted]. They kidnapped him. After 15 days we saw his body and his eyes were taken off. There were other doctors that were killed under detention. (participant 15)

Those imprisoned were held from a few days up to nine months. They were questioned and occasionally tortured. They witnessed the torture of other prisoners and their inhumane conditions. Those who spent an extended period in jail were in poor condition when released.

I have seen people been killed, injured. I witnessed death of almost eight people. People got crazy or died or go from craziness to death. This was the most difficult experience of my life. I wasn´t tortured. But I was beaten. We were 97 people in a one 22 m^2. We could not go to toilet. There was no food, no medicine. I lost 13 kilos. I saw death. I was about to die. (participant 14)

3.3.2 Health care facilities and ambulances

As the conflict escalated, the interviewees had to move to opposition-controlled areas to escape the GoS persecution. Still, they gained little respite. A new type of danger to health care emerged: the GoS started airstrikes using mostly barrel and cluster bombs. Participants described how some violence against health care facilities was already present before opposition areas were established but such events were reported to be mostly against hidden field hospitals. Assaults against secret field hospitals were carried out using mortars, shelling and missiles. The participants considered the GoS to be responsible for these actions; however, sometimes, the perpetrator remained unknown.

We started a field hospital in [name retracted] mosque. We were targeted by helicopters and missiles three times after 20 days. (participant 18)

Participants described the year 2014 as the barrel bomb period in Aleppo. Barrel bombs are unguided bombs that, by their nature, are inaccurate. Despite or because of this inaccuracy, there were incidents in which barrel bombs struck health care facilities. Some strikes were described as having been conducted on purpose; some were described as accidental. In September 2015 the GoR entered the conflict and brought in more accurate weapons. Participants described airstrikes as more intense and deadlier. They

mentioned that well-known hospitals were damaged or destroyed and not only colleagues, but also patients were killed.

We call the regime [the GoS] aeroplanes or choppers clumsy or stupid aircraft. They cannot target directly. But the Russians really can target the hospitals. That's why we lost [name retracted] hospital, lost a couple of medical points in [name of the place retracted]. The third hospital was targeted two days ago from the Russians. (participant 15)

According to the participants, the health care facilities included both well-known, long-established public hospitals and hidden field hospitals. The interviewees believed that the location of official hospitals was known to the GoS and the GoR. Covert field hospitals were located in buildings such as schools or mosques. The residents living near field hospitals were opposed to them because they were afraid that their presence would attract more airstrikes. It was believed that the locations of these targets were known to the GoS or identified during combat and then purposefully attacked, although this cannot be confirmed beyond doubt. Participants mentioned that other civilian infrastructure such as schools, mosques and water stations were bombed.

We were working in a [name retracted] mosque. We were doing it as a civil hospital, but secretly because no-one should know about it, because it may be destroyed immediately. The injured people were coming to it every day. It was famous, and it was known by all people, all neighbours. Maybe someone told the government that there is a civil hospital here in this mosque, so it was destroyed in an airstrike. (participant 17)

Airstrikes caused significant loss of human life and varying degrees of structural damage to buildings. Fear of more damaging strikes forced the evacuation of facilities to other places and necessitated moving underground where possible, according to the interviewees. Even if the airstrike missed the facility or caused only minor damage, the risk of structural weakening and potential collapse had to be taken into account. Similarly, undetonated bombs forced the HCWs to evacuate the facility.

After 3rd attack [airstrike] the building is very fragile. If another attack happens, even it is near to hospital, it may collapse. We are moving in about a month to another hospital. It is close to the area. (participant 15)

Participants considered airstrikes to be the main threat to health care. They named the GoS and the GoR as responsible for the airstrikes against health care facilities. No participant indicated that the Global Coalition Against Daesh had conducted airstrikes in NSAG-controlled areas or Kurdish territory. They, however, mentioned strikes in IS-controlled areas but had not personally experienced them. Some participants thought that without airstrikes, life could be almost normal in NSAG-controlled areas.

The air strikes are 90% of the problems. For example, one city inside Syria, when air strikes stopped, only for two, three weeks, you see the life is coming again. People start buying and selling homes, cars, and a market will come

again. It will be normal, if there is no air strike in specific area, the life will come again. (participant 3)

Health care facilities were not the only ones targeted; ambulances were attacked both from the ground and the air causing loss of human life. Some participants described double-tap attacks. These consisted of an initial strike on a target and a secondary bombing after the rescuers had arrived, thus also killing the rescuers. The ambulances were also used for non-medical purposes.

In [name retracted] neighbourhood bombs were thrown at the building and destroyed. When the civil defence and ambulances went to the place, I was a health worker I was going to the site and I saw how another aircraft targeted people by missile. (participant 24)

3.4 Targeted violence against health care by non-governmental actors

The conflict in Syria gradually fragmented into territories under different warring parties: NSAGs, IS and Kurdish forces. Participants described the situation as chaotic, especially in Aleppo governorate, because of the presence of these many different factions.

In 2013 Syria started to be divided. In 2014 the radicals came. Then [Syria] was more divided. Then the Kurds came and was more divided. Then ISIS started, and now it's chaos. Total chaos. (participant 15)

3.4.1 Non-state armed groups

Living and working under NSAGs control was challenging not only because of the airstrikes but also because of war-induced chaos and the resulting power vacuum, which the NSAGs exploited. Some participants described the atmosphere as chaotic and unsafe.

It's the tension all over. There is a complete security vacuum in these areas. Anyone can come to threaten or blame you for something. Anyone can bring a patient if he is wounded and just put the gun to your forehead and say 'heal him.' (participant 24)

The attitude towards NSAGs was two-fold: Some participants considered them to be a threat while others tolerated them. NSAGs saw HCWs as an opportunity for monetary gain. Wealthy people, including physicians, were kidnapped for ransom. Participants described how some groups took them to the front line to provide medical services for wounded fighters.

Some armed groups kidnapped [HCWs] and asked ransoms. Also, [one of NSAGs] tried to force them to serve in the frontline. They tried to kidnap one doctor in front of the hospital, but there were people who came to prevent this. (participant 24)

Some participants mentioned that NSAGs were involved in acts of arbitrary violence, including arrests, kidnapping and torture. Despite this, participants recounted only one incident in which a HCW was killed by a NSAG.

Jabhat al-Nusra kidnapped two of our workers. We went to their Sharia court. It was direct threat against us [as an institution], but not personal. (participant 1)

While some participants viewed NSAGs negatively, others accepted their actions. Some participants said that HCWs were respected as a valuable resource by the NSAGs. For example, among the different NSAGs, JaN/JFS was considered to be a pragmatic organization as HCWs were able to negotiate practical arrangements with the group.

They respect the doctors that are the only resource that take their treatment. They need doctors so much, so they respect us. (participant 16)

The NSAGs were Islamist according to some interviewees. Radical Islamists groups such as JFS/JaN/HTS focused on ensuring that HCWs observed religious norms. Some groups interfered with the administering of health care for religious reasons.

They [JaN] don't have a problem with us. As long as we are providing services. But because they are radicals, they are always focusing upon there are no females with males in the same area. That's the only thing that they are focusing upon. But they [Islamistic NSAGs] don't really interfere with our work. (participant 23)

3.4.2 Islamic state

Some participants described conditions in IS-controlled areas. At the time of the interviews, none of the participants were visiting or working in IS-controlled areas. HCWs had been threatened, arrested, kidnapped, or killed by the IS. The organization not only targeted HCWs but other people with higher education or politically sensitive professions, such as journalists, were also under threat. All participants viewed the IS negatively, with great reservation and trepidation.

They [IS] arrested me. They put a knife on my throat. Those seven hours that they interrogated me was the moment that changed my life. [After being released] People in Raqqa said that this time we got free, next time we won´t. (participant 11)

As the IS gained power and territory, further problems with health care providers started to emerge. Some participants noted the destruction of medical facilities and ambulances as well as the theft of medical equipment. IS forced clinics to close, causing INGOs to withdraw from many areas, thus halting the provision of medical aid. Some HCWs found IS so intimidating that they chose to leave areas where the organization was present or, in some cases, cease operations in Syria completely.

Beginning of 2015 IS started making problems for all INGOs working in this area. They closed everything, took everything, all the medical equipment. It was very easy for them; they came in and took everything and closed [clinic]. They even arrested some people. (participant 22)

3.4.3 Kurdish forces

Only a few participants mentioned violence by the Kurdish forces. HCWs were arrested in Kurdish-controlled areas, leaving them unwilling to work again.

It was arresting our medical personnel. Closing the health care facilities but not the hospital. They were arrested because they are working in health sector . . . After this incidence, [services] continued. You know how it will be after releasing people from jail . . . they killed their motivation to work. (participant 3)

Ambulances were shot at on Castello Road which connects Aleppo to Turkey. Those participants who experienced it considered the Kurdish Forces were behind the attack. However, it remains unknown whether the Kurdish Forces shot at the ambulances on purpose.

3.5 Health care workers´ political role

Some participants described how when the demonstrations started and spread across the country, they and their co-workers supported and participated in the protests. Like the other demonstrators, they were dissatisfied with the GoS and President Bashar al-Assad. Some participants not only participated in the demonstrations but also had an active role in organizing protests in secret groups, for example at the universities. Other political anti-government activities were also described, such as speaking publicly against the GoS and attending political meetings. Some participants were found and arrested because of their actions.

Some doctors from our groups were arrested. For example, [security forces] came to ask one doctor who wrote to the wall 'down Iranian dog' [refer to President al-Assad]. (participant 11)

HCWs were suspected to be part of NSAGs. They were stopped at checkpoints and inspected by all warring parties when trying to cross battle lines.

[Security forces] stopped us at checkpoints in Deir Ez-Zour. We had to get out of the car and give ID. If they noticed that we were doctors, they made a full-scale inspection. They asked in what hospital we are working, are we treating fighters. (participant 11)

Some participants denied any connection to NSAGs and expressed negative opinions about them. They did not consider their work as health care providers counted as supporting the NSAGs. However, some participants recounted how they were treating injured FSA fighters as well as civilians.

The judge asked if I have any connections to militias. I am totally against. I am not linked to any militia, and if you are accusing me of delivering aid, I don´t see this as a charge because I am against it. I have never done to support the militias. I am not convinced of their movements. I think that the uprising was hijacked by militias. Then things went upside-down. Their agendas are not fine. (participant 16)

According to those who had been in jail, people were imprisoned for two different reasons: for participating in demonstrations and for treating injured protestors. While in prison, the officials of the GoS questioned HCWs about

their work, colleagues and the location of field hospitals. Also, connections to NSAGs were investigated.

The air force intelligence arrested me because I tried to help the injured [protestors]. I stayed for six months in jail. The first main reason was because I treated demonstrators and second because I participated in demonstrations. They asked about doctors in field hospitals, those who were treating injured people. Those under the FSA. (participant 1)

4. Discussion

In this research, we focused on intentional violence against health care. The findings are based on the perspectives of HCWs who had been working in Syria from 2011 to 2017. The study indicates that violence against HCWs started immediately in 2011 when demonstrations were met with violence by the GoS.

During the first years of the conflict, violence consisted of threats, torture and execution by the GoS. Anyone opposing the GoS and its policies was at risk of being imprisoned. The GoS effectively criminalized giving medical aid to injured demonstrators. Belonging to NSAGs is punishable according to Syrian law (Human Rights Council 2013). HCWs found providing any medical aid to demonstrators might be considered to be helping terrorists and therefore they would be considered terrorists themselves. It appears that the detention of HCWs was due to the fact that they were assisting injured demonstrators or had anti-state opinions. Notably, the GoS had been authoritarian even before the conflict. Human rights, such as freedom of speech, were limited. Attacking HCWs who had assisted injured demonstrators or expressed their anti-government views was just an extension of GoS pre-war policies.

As the conflict evolved, the GoS continued ground-based violence against HCWs but also started airstrikes against civilian infrastructure, including health care facilities. The severity of violence reached a peak when the GoR joined the war in September 2015. In June 2016 alone, 18 attacks took place against health care facilities, including many well-known hospitals in NSAG-controlled areas (Physicians for Human Rights 2020).

All parties have committed targeted violence against health care but the scale and scope of violence vary. The GoS and the GoR were the foremost perpetrators of violence. This is in accordance with many reports and studies (Fouad et al. 2018; Physicians for Human Rights 2019; Security Council 2016; Wong and Chen 2018). HCWs also experienced targeted violence by IS, NSAGs and the Kurdish Forces when Syria fragmented between these different factions and lines of battle were formed.

As indicated in previous studies, the working conditions of HCWs were terrible outside of the GoS-controlled areas (Footer et al. 2018; Fardousi, Douedari, and Howard 2019). IS posed a great threat to the HCWs. Working or delivering aid to IS-controlled areas was considered to be very difficult or

even impossible. To protect HCWs, humanitarian organizations chose to withdraw from areas controlled by the organization. Working conditions for HCWs in the IS-declared caliphate have been described in a study carried out in Mosul, Iraq (Michlig et al. 2019). Our findings confirm and underline the horrors that HCWs have experienced under IS control.

Overall NSAGs have committed less severe forms of violence than IS, such as threatening and arresting HCWs. Participants reported an execution carried out by NSAGs. Other sources have also reported abuse and killings (Amnesty International 2015). The Kurdish Forces were mentioned as perpetrators of violence only a few times and only in one case was violence intentional. However, in the literature the Kurdish Forces are known for atrocities against civilians, violations of human rights and abuses (Human Rights Watch 2014; Human Rights Council 2017). The Global Coalition against Daesh have targeted infrastructure to a disproportionate degree considering its impact on the civilian population. (Human Rights Council 2017; Amnesty International 2019). However, the interviewees had experienced no violence on the part of the coalition.

Many HCWs felt that they were in a challenging position and that it was not safe anywhere. The violence against HCWs has led to a situation where professionals have decided to leave Syria (Baker 2014; Cousins 2014) leaving the Syrian population without adequate health care. Morbidity and mortality have risen among the population (Blanchet et al. 2016).

Fouad et al. (2018) suggest that health care has been weaponized; health care has been targeted deliberately and depriving people of health services is used as a strategy of war. Several reports and studies state that the bombing of hospitals and ambulances shows patterns that indicate intent (World Health Organization 2016b; Haar et al. 2018; Ri et al. 2019; Elamein et al. 2017b; Fouad et al. 2018; Physicians for Human Rights 2020).

Our interviews indicate that other relevant infrastructure such as schools, water stations and mosques has also been destroyed. This is in agreement with several reports (Human Rights Watch 2019; Global Coalition to Protect Education from Attack 2018; Human Rights Watch 2020). We propose that the phenomenon of alleged intentional targeting of health care by airstrikes should be considered in a broader context. It is most likely that attacks are made intentionally against health care. However, they may also be part of a larger-scale strategy to destroy non-military infrastructure.

Based on our interviews, it is uncertain whether targeting health care facilities was initially planned or merely collateral damage due to a lack of precision weapons. GoS and GoR were initially informed of the location of official health care facilities, while the locations of unofficial field hospitals were not reported. On the other hand, had there been a coordinated campaign to attack these facilities, it is unlikely that any would have escaped total obliteration. The evidence doesn't seem to support this either. The most likely theory appears to be that some attacks were intentional or at least little attention was paid by the GoS

to protecting these buildings from damage. If health care facilities were damaged due to indiscriminate attacks this is also a violation of the Geneva Conventions.

4.1 Limitations

Our study has limitations, especially concerning data collection. It was limited to HCWs in NSAG-controlled and Kurdish-held areas, geographically mostly in northern Syria. We obtained some information from the IS-controlled regions. We acknowledge that HCWs in the GoS controlled areas face challenges but collecting more detailed information concerning their situation was not within the scope of this study.

The SSM can be criticized because the participants were not selected randomly creating the possibility of selection bias (Kaplan, Korf, and Sterk 1987). To reduce this, we used three parallel SSM networks. Notably less women than men were interviewed. This is mostly due to the fact that male participants named other men as further contacts. Experiences of women HCWs and gender-based violence should be studied in more detail in follow-up studies.

In analysing the data, the participants' strong personal sentiments have to be taken into account. Interviewees may over-emphasize their viewpoints. Practically all participants were opposed to the GoS. Many had actively participated in non-violent anti-government actions, such as participating in or even organizing demonstrations. It remains unknown if any were supporters or members of the NSAGs or had participated in armed combat.

Traumatic experiences as well as personal opinions may influence the objectivity of the narrative. We countered this effect by placing most value on information received from several individual and unrelated participants.

4.2 Strengths

This study also has notable strengths. Collecting data and finding volunteers to interview in conflict settings is challenging due to the sensitivity of the subject matter. Through a qualitative study with semi-structured interviews, it is possible to obtain information that reflects the reasons and chains of events leading up to the acts of violence against health care workers. It seems that less severe forms of harassment, such as verbal threatening, may not even be considered as violence by the victims. Such events often go unreported. However, we consider that such forms of less severe violence can have a substantial impact on HCWs' psychological well-being and on their decision to leave the country.

5. Conclusion

This study contributes to the limited literature on the personal experiences of violence against health care in the Syrian conflict. This research gives a voice

to those who worked in the midst of war. Violence against health care workers and health care facilities disrespects medical neutrality and under certain circumstances can constitute a war crime.

The results of this study indicate that the goals and actions of all the armed factions active in the Syrian conflict should be studied to fully appreciate the mechanisms of violence against health care. While preventing high-profile military action such as airstrikes against health care facilities is primarily an international political challenge, it is likely that significant positive results could be reached by influencing the actions of ground-based actors such as IS and JaN.

Examining violence in Syria more comprehensively on all levels, from individual to the large-scale political, would allow the construction of additional models and more effective intervention and protection guidelines for health care in conflict scenarios. Drawing from the experiences of HCWs, a better understanding of the structure of intentional violence may enable the international community to find better solutions to protect health care in the future. In particular hands-on practical-level methods of intervention merit further research.

Health care facilities, among other civilian infrastructure, must be safeguarded. It is paramount to continue to research anti-health care violence, not only in Syria but in all countries that are experiencing armed conflict. It is feasible to hypothesize that events in Syria foreshadow a growing trend in which health care is an increasingly strategic resource and viewed as a valid target of war. In the eye of the conflict, well-functioning health care is vital for the civilians. One participant put it well when they said:

When hospitals are destroyed, there will be no life. Anyone can live without food for a month, but if there is a bleeding artery, he can't live for more than ten minutes. (participant 16)

Notes

1. see for example Wong and Chen (2018); Elamein et al. (2017a).
2. see Footer et al. (2018); Fardousi, Douedari, and Howard (2019).
3. previously also known as Jabhat Fateh al-Sham – JFS, currently known as Hay'at Tahrir al-Sham – HTS.
4. Daesh is an Arabic acronym from intitial letters of al-*Dawla al-Islamiya fil Iraq wa al-Sham*, the Islamic State in Iraq and Syria.

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Appendix I: Classifications and Lists Used

Class	Type
Objects	Health care workers (HCWs): health professionals, health associate professionals, health management and support personnel Health care facilities: public and private hospitals, clinics and field hospitals Ambulances: marked transports
Types of attacks	Threatening Kidnapping, arresting, imprisonment Looting Beating and torture Shooting Killing and executing Car Bombs Artillery fire Airstrikes
Perpetrators	The Government of Syria (GoS) and allies Non-state armed groups (NSAGs) Syrian Democratic Forces (SDF) Islamic State in Syria (IS)
Results of attacks	Material damage: damage to structures of health care facilities Human physical casualties: from minor injuries to death
Syrian governorates	Damascus Rif Damascus Aleppo Hama Latakia Deir ez-Zour Homs Qunteira Daraa Tartus Raqqa Suwayda Hasaka Idlieb

II

I had to leave. I had to leave my clinic, my city, leave everything behind in Syria. **Qualitative research of Syrian healthcare workers migrating from the war-torn country**

Kallström A, Al-Abdulla O, Parkki J, Häkkinen M, Juusola H, Kauhanen J.

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BMJ Open

I had to leave. I had to leave my clinic, my city, leave everything behind in Syria. Qualitative research of Syrian healthcare workers migrating from the war-torn country

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ABSTRACT

Objectives To explore the reasons why healthcare workers migrate from Syria, a country where conflict has been raging for over a decade.

Design A qualitative study was performed using semistructured interviews. Semistructured questions guided in-depth interviews. Content analysis was used.

Setting Participants were Syrian healthcare workers who had worked in the country after the conflict started in 2011, but at some point left Syria and settled abroad. The interviews took place in Turkey and Europe in 2016 and 2017.

Participants We collected data from 20 participants (18 males and 2 females) through snowball sampling method.

Results Healthcare workers migrated from Syria only because of security reasons. In most cases, the decision to leave resulted from the generalised violence against civilians by different warring parties, mainly the Government of Syria and the Islamic State. Intentional attacks against healthcare workers were also one of the main reasons for leaving. Some participants had a specific notable trigger event before leaving, such as colleagues being detained or killed. Many participants simply grew tired of living under constant fear, with their families also at risk.

Conclusions This research adds to the body of literature on violence against healthcare workers in Syria. It helps to understand the reasons why healthcare workers leave the country. The study also indicates that the international community has failed to protect Syrian healthcare workers. The intensity of the conflict has left many healthcare workers with no other option than to leave. Understanding this migration will enable the discovery of new solutions for protecting healthcare workers in current and future conflicts.

Strengths and limitations of this study

- ► This qualitative, semistructured interview study, employing snowball sampling method, explored the reasons behind high numbers of Syrian healthcare workers' migration.
- ► Previous empirical research, especially qualitative explorations of the migration of Syrian healthcare workers, is almost non-existent.
- ► A multidisciplinary research team conducted the interviews, including experienced local front-line healthcare workers, allowing unique access to sensitive information.
- ► Although the interviews were conducted with a relatively small sample of participants, the saturation point for the data was reached.
- ► Most of the participants were male physicians with a specialty, were born in Aleppo governorate and resided in Turkey during the study.

INTRODUCTION

Armed conflicts challenge normal healthcare provision. Healthcare workers (HCWs), one of the most crucial factors of healthcare services, often migrate away from conflict-affected areas.[1–3] In 2020, at least 162 HCWs in 20 countries were killed and 152 injured.[4] Notably, attacks against HCWs took place during the events known as the Arab Spring, a revolutionary wave of demonstrations and protests starting in 2010 from Tunisia. Anti-government demonstrations escalated into violence in several states around the Middle East. In Syria, the events turned into an armed conflict that is still ongoing. Especially in Syria, Bahrain, Yemen and Iraq, HCWs have been targeted since the Arab Spring.[5–7]

During the decade of war, hospital bombings have become a trademark in the Syrian conflict. Violence against HCWs and thus the denial of healthcare services to the population has been used as a war strategy[7] even though the International Humanitarian Law (IHL) stipulates that the healthcare system is protected in a time of war. The government must protect HCWs' medical neutrality,

which means freedom for the HCWs to take care of patients regardless of their political affiliations.[8] From the beginning of the conflict, the Government of Syria (GoS) is reported to have punished HCWs for treating injured protestors[9 10] regardless of the IHL statute that *under no circumstances shall any person be punished for carrying out medical activities compatible with medical ethics, regardless of the person benefiting from them.*[11] In 2012, the GoS effectively criminalised healthcare provision to people belonging to the opposition.[10 12]

At least 930 HCWs have been killed in Syria from 2011 through March 2021. All warring parties have attacked HCWs; however, the GoS with Russia has been held responsible for this 91%. Non-state armed groups (NSAGs), Islamic State in Iraq and Syria (ISIS) and Kurdish or unidentified forces are responsible for 9%. The primary cause of death (55%) is aerial or ground bombardment. HCWs have also died when detained and tortured or just executed.[13–16] More than 70% of qualified HCWs have left the country. In some areas, specific specialties are absent.[17 18] Further, medical students have had to leave their basic and specialisation studies.[19] The absence of professionals will add to the challenges of both current and future treatment of the population.

HCWs, especially physicians, tend to migrate at the early stage of the conflict because they have the resources to leave.[20] The financial issues, desire for further education and a better lifestyle are some key reasons for migration.[21] Further, generalised insecurity, targeted violence and the desire to protect one's family are also known reasons.[22 23] In Iraq, a country that has experienced perpetual violence for decades, male physicians over 30 years of age face a significantly increased risk of being kidnapped or assassinated.[1 24]

In the study by Doocy *et al*,[25] leaving Iraq was associated with a violent event for nearly 61% of HCWs. Of the physicians who left the country, 75% had experienced violence against their household members before reaching the decision to leave. In another study by Al-Khalisi,[26] 60% of participants had left Iraq for security reasons. However, factors demoralising the HCWs are complex, and the decision to leave is made based on multiple reasons.[1 24]

Although research on violence against HCWs has increased in recent years, the number of studies is still limited. Violence in Iraq has been studied somewhat more extensively than that of other conflict-afflicted countries. However, the violence against HCWs in Iraq differs from that in Syria, with almost no airstrikes against healthcare facilities. In Syria, Fouad *et al*[7] have argued that the bombing of hospitals is part of the weaponisation of healthcare, a strategy of war, by the GoS.

Most analyses of violence against the healthcare system in Syria have focused on damage to healthcare infrastructures, such as hospitals and ambulances.[27–29] Few studies have explored HCWs' personal experiences through the conflicts,[17 30] and none of them examine the reasons for professionals leaving Syria. Furthermore, existing reviews do not consider how violence by different warring parties, such as arrests, detention and kidnappings, affects the decision to leave. There are significant missing data on secondary trauma, such as witnessing killings of civilians and colleagues and how the constant fear of the conflict itself affects the outward mobility of healthcare professionals.

Initially, we aimed to study HCWs' experiences of violence in the ongoing conflict. From that data, a repeating pattern behind migration emerged organically. Consequently, this study focuses on the reasons why HCWs leave Syria. Such loss of resources in a crisis setting is detrimental to the functioning of healthcare and public health. Understanding this behaviour is highly beneficial in order to limit its effects.

METHODS

Study design and sampling

The participants were identified using a snowball sampling method (SSM). They had to represent the category of HCWs according to the International Labour Organization's International Standard Classification of Occupations-08.[31] SSM was chosen to increase trust in the research, given the sensitivity of the topic.[32] The first participant in the chain was a Syrian healthcare professional living in Gaziantep, Turkey. He had contacted the University of Eastern Finland earlier and was asked to participate (as he was well suited for this study). One female (AK) and two male (MH, OA-A) researchers conducted the interviews in English or Arabic. The participants selected a suitable place for the interviews, and only the researchers and the participants were present at the time. Participants were informed of the researchers' previous research and backgrounds. They were also given a written handout with relevant study description and contact information. They were given information about the aim and goals of the study. In practice, the interviews started with background questions and then moved onto the semistructured main part. After the interview was concluded, the participants were asked to name a few other potential candidates interested in participating in the research. Volunteers among them contacted our research team.

The duration of the interviews varied from 45 to 90 min. We terminated interviews when further inquiry provided no significant new themes.

Measurement and analysis

A semistructured in-depth interview guided the discussion with the participants. The study was focused on HCWs' reasons for migration from the country after 2011. This approach was based on a constant dialogue between the researcher and the interviewee. While there was a common base list of structured questions to guide the general direction of the interview, open-ended elaboration was encouraged. Additional personalised questions were asked ad hoc to explore any further relevant themes each interviewee knew and was willing to talk

about. Such flexible technique enabled the interviewer to explore the values and feelings of the participants more thoroughly than any strictly structured interview format would allow.[33]

We defined violence as '*the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation*'.[34] The attacks against HCWs were understood here as *any act of verbal or physical violence or obstruction or threat of violence that interferes with the availability, access, and delivery of curative and/or preventive health services during emergencies.*[35]

After the interviews were transcribed verbatim and triangulated with handwritten notes, the transcripts were examined. In order to identify the relevant themes, we used inductive content data analysis. The most significant repeating theme in the overall data turned out to be an emphasis on migration, that is, the reasons why the HCWs left the country. Answers were coded into categories using the Excel program. The classifications were based on experiences that indicated motivational factors for leaving the country. These factors were sought both from the direct answers to structured questions and from the free form replies. These were then classified into thematically unified subgroups. No previously set system for such division was used, but the classification emerged organically from the population of factors introduced by the interviewees.

Quotations have been used to illustrate the themes and findings and provide an authentic voice to the participants.

Table 1 Interviewees' demographic information

Interviews	20
Gender	
Male	18
Female	2
Age range	26–47 years
Mean age	36 years
Place of birth (governorate)	
Aleppo	12
Deir Ez-Zour	2
Raqqa	2
Hama	1
Homs	1
Idlib	1
Abroad	1
Family status	
Married	16
Children	14
Professions	
Physicians, total	14
Physician with specialty	9
General practitioner	5
Pharmacist	3
Nurse	1
Dentist	1
Healthcare manager	1

Ethical approval

The interviews were recorded with the permission of the participants, and consent was obtained verbally. Anonymity and confidentiality were ensured. Participants had an opportunity to ask questions concerning the study. Participants were informed that they could interrupt or abandon the interview if wanted.

The principles in the Declaration of Helsinki were observed in all stages of the study.

Patient and public involvement

No patients or members of the general public were involved in the conduct of this research.

RESULTS

Study population

The qualitative study is based on semistructured interviews (n=20) of Syrian HCWs who have left the country since 2011. Interviews (n=17) were conducted in Gaziantep, a Turkish municipality adjacent to the Syrian border where participants resided at the time of interviews in June to July 2016 and early 2017. Additional interviews (n=3) were conducted in Europe from late 2016 to early 2017. Altogether, participants consisted of 18 males and 2 females.

The age of participants ranged from 26 to 47 years. The mean age was 36 years. Most of the participants were born in the Aleppo governorate (n=12). The other participants represented a variety of other Syrian provinces. Most of the participants were married (n=16) and had at least one child (n=14) (table 1).

The majority of people interviewed (n=14) were physicians with postgraduate specialty; surgery and paediatrics were most common (n=9). Other healthcare professionals, such as nurse (1), pharmacists (3), health service manager (1) and dentist (1), were also interviewed. All those interviewed had worked in Syria during the conflict at some point. The working experience varied from almost none to over 20 years.

One of the participants was a medical student and few general practitioners were residents in specialty training. They all had to suspend their studies because of the ongoing violence and leave Syria.

All reasons for leaving Syria were related to violence that started after the demonstrations against the regime in 2011. The HCWs suffered either from general strain under the violent environment, or were targeted by several specific violations or both. All participants expressed that their profession was the reason for targeting. The

relative impact of these different forms of insults is further discussed in the study's conclusions.

The participants gradually migrated during the conflict. Some left early when the violence started in 2011–2012, while others left later as the war escalated. Some of them moved to opposition-controlled Eastern Aleppo, some other moved directly to Turkey. Many of those who initially remained in Eastern Aleppo followed. Some migrated to Lebanon due to geographical reasons. Once outside Syria, some HCWs continued to Europe to seek asylum.

Generalised violence

When demonstrations escalated and violence spread after 2011, the participants considered this as one of the turning points in their life. They described their experiences and feelings about what they had witnessed. They had seen atrocities against civilians, including their family and friends. People had been arbitrarily arrested and others randomly disappeared.

> My friends were arrested in front of me. They were beaten, tortured in the streets. I saw these incidents. Everyone in Syria saw this. [The GoS was] killing people and shooting. Using tear gas, live bullets. (General practitioner, male)

Before the territorial division between different warring factions, especially the parting of NSAG-controlled Eastern and GoS-controlled Western side of Aleppo, the participants had regularly commuted through GoS checkpoints. They described that the atmosphere had become oppressive. Constant check-ups, arbitrary decisions, such as detainment by the GoS, and increased violence caused widespread psychological stress among the participants.

> This fear of daily violence caused stress and anxious feelings. I could not sleep. I was very afraid. I decided to stop working. The reason for this was that I was stopped and bullied at the military checkpoint. I was asked ID card. All kinds of questions: 'what you are doing in this city that is not your hometown, and where does your family live'. They just wanted to bully me. Fear of being detained was the reason I left Syria. (Pharmacist, female)

A participant said that the situation became impossible for GoS to control, and this resulting power vacuum gave NSAGs room to operate. Some participants expressed their mistrust of these organisations and could not expect any help from the dwindling GoS force.

As the conflict evolved, participants witnessed barrel bombs, chemical attacks and airstrikes against civilians.

> I saw more than fifteen burnt Kurds, not far from the health care [centre]. Russian airstrike. Their relatives came. They didn't [recognised them] because the bodies were burned. Disgusting. (Specialty doctor, male)

Other warring parties, mainly ISIS and NSAGs, conducted acts of violence against civilians, according to participants. While GoS was considered the main perpetrator, ISIS and other NSAGs, such as Free Syrian Army (FSA) and Jabhat al-Nusra, threatened, mistreated, abducted and killed people as participants described.

> FSA took one nurse, tortured him for five hours. Then he died. Just because his name was the same as some else's. (Specialty doctor, male)

ISIS inspired both fear and animosity against its ideology and values in the participants. The participants shared unnerving anecdotes of the organisation that were circulating and creating an oppressive atmosphere of insecurity. Participants described their friends having severe problems with the organisation. Some of the participants decided to go to Turkey when they noticed ISIS advancing toward the city of Kobane, Aleppo governorate in northern east Syria. They believed fleeing from the organisation was their only option.

> One of my friends was kidnapped. The siege became more intensive. I knew that something is going to happen. When Kobane was besieged [by ISIS], I left for Turkey. I had to. (Nurse, male)

Some participants did not indicate a single reason for leaving but instead said they succumbed to the constant stress, fear and harassment because of the escalating situation.

Violence related to personal issues

While participants were concerned about the generalised violence, their own and their families' safety played an important role in the decision to leave Syria. When violence spread, many participants wanted to take their families to Turkey for safety. Many noted that they wanted to keep their children safe, and in Syria, it was impossible.

> I cannot live with my children under these circumstances. I saw what happened in Homs. I saw what happened in Deraa…using guns and aeroplanes… I felt this will happen in my area. This happened for 2–3 days [after leaving] my home. (Health service manager, male)

Participants were told that if a family member was arrested, the entire family would be investigated, and any suspected antigovernment views or actions could lead to family-wide punishments.

> After the second time detention [by GoS] my family said: 'Leave the country now'. I left. My family was afraid that I will go to jail again. Four days after I had left, they took my brother and told him, 'Tell your brother that if we catch him'… (Specialty doctor, male)

In many cases, the participant was the breadwinner of the family. Therefore, they were concerned about the financial well-being of their family, should they die. One

participant mentioned that he would most likely live and work in Syria without a wife and children.

> My family is dependent on me. Their existence is depending on me and my survival. I don't want to cause them danger or die as a martyr, and they lost me. It would be my family that would pay the high price. (Specialty doctor, male)

Some male participants expressed the fear of being conscripted in the Syrian forces. Many participants had witnessed atrocities performed by the GoS, and some had even been detained and tortured. They wanted to avoid becoming part of the military forces, and the only option was to leave.

> We had to go. I knew that they [the GoS] were after me. I had to leave my studies and leave. I should have gone to the army. That's why the regime was after me. (Specialty doctor, male)

Becoming remarked by ISIS for expressing opposing sentiments or oppressing them in any way was highly dangerous, as many participants noted. Those participants who had fallen in disfavour of the organisation had little option. They had to leave because of the risk of being arrested or even executed.

> We talked about ISIS that they are not from Syria and we are not accepting their presence here etc. Later, my friends told me that ISIS is observing my home. I moved to another area. After this incident, one of them [friends] was arrested by ISIS. (Specialist doctor, male)

Although the participants were not explicitly asked for their ethnic background because of the sensitivity, several of them mentioned their Kurdish roots, the minority in Syria. The Kurdish participants felt that they were targeted explicitly by radical Sunni Muslim NSAGs because of their background.

Violence related to being an HCW

Most of the participants had personally experienced violence that they considered to be connected with their profession. All thought that their profession made them a target. Participants described their experiences since 2011 in detail. The violence included verbal assaults, beatings, detainment and torture. They had been shot at or been in an ambulance when assaulted. Some participants described the situation when they had been in a healthcare facility at the time of the aerial bombardments by GoS and later by Russia.

> This [name retracted] hospital was targeted by a Russian airstrike. One of my friends died in this airstrike, the doctor [name retracted]. I'm very sad about him. (Specialty doctor, male)

All participants described the violence that their colleagues had experienced, and those were similar to their own. Some colleagues and coworkers were arrested, had gone missing and were never seen again. Some were later found dead with marks of severe abuse. Participants had also lost their colleagues in airstrikes.

> I have seen colleagues killed in front of my eyes. In [place retracted] was a doctor, and she was taken. They [the unknown perpetrator] took her. Later she was found raped and dead. (Specialty doctor, male)

Participants saw and experienced their colleagues being humiliated and occasionally arrested in the hospitals, sometimes in the middle of medical operations.

> [Name retracted] was like a brother. He got arrested in a real, humiliating way. He was changing the bandages to the patient. They [GoS] took him from the room. [They] covered his face in front of the staff of the hospital. They didn't let anyone talk to him or ask where [GoS] were taking him. (Specialty doctor, male)

Some participants decided to leave once their colleagues had been arrested, gone missing or found dead. The fear of being caught by the GoS was a significant reason to escape. In addition, many participants were afraid that their captured colleagues were giving up their name under torture. However, a relationship marked by solidarity existed among the professionals.

> One of my colleagues was arrested. Under a lot of pressure, they have the methods that you talk. He mentioned my name. I had to pay to get out of Syria and out of Aleppo. I left everything behind. (General practitioner, male)

Additionally, as HCWs, participants were concerned about the roadblocks. Crossing them was considered stressful when travelling for work. Participants described the incidents on the checkpoints. Sometimes they were stopped for extended periods and inspections, sometimes detained. Participants considered that this was due to their profession.

> At the [GoS] checkpoints, many doctors were arrested. One orthopaedic and his wife. This doctor had no problems [with GoS], and he had done nothing. He was taken from the roadblock. He was in prison for five months. His wife had to pay 800 000 Syrian pounds to get him away. This was in 2013. (General practitioner, male)

Hospitals became threatening due to constant military and GoS presence, according to participants. Armed soldiers were seen as intimidating and reduced the willingness of HCWs to show up at work, as many participants depicted. In addition, one of the participants described having seen sharpshooters on hospital roofs aiming at people and even shooting them.

> In the hospital where I worked, the situation changed. It started to look like a military base. The soldiers were going in and out with their weapons.

> Most doctors and other healthcare workers did not come to work because they were afraid of the soldiers with guns. They could cause you troubles for no reason. (Specialty doctor, male)

Many participants described that in many cases, when the governmental forces arrived to investigate the hospital, HCWs warned their colleagues in danger of being arrested. The warnings allowed them to avoid capture. However, this was very dangerous, and in several cases, the participants reported that GoS had arrested their colleagues.

> I heard that my name was asked in the hospital I am working. I felt that I was in danger. I fled out of the country. When someone is asking about you in Syria, that is the mukhabarat [security service]. My friend was arrested in front of the hospital. One week before his arrest, they start to ask about him. One nurse in the hospital called me and [said] 'There is someone from the military department and asked about you'. (General practitioner, male)

The opposite was also confirmed, as some participants remembered. A fraction of the workers sided with the GoS. They could spy on their colleagues, record their conversations and then turn them in. Due to strict internal monitoring, antigovernment discussions, even in private settings, could be carried to government officials according to participants.

> They [security forces] opened the phone, and there were conversations between doctors. Some doctor or nurse have recorded conversations and then give them to the security service. We were arrested for 24–28 hours. (Specialty doctor, male)

Some participants said that they were persuaded to abandon their country only after being personally threatened or imprisoned—some for extended periods.

> After [released from the prison after six months], another intelligence department [officer] came to my house. They were looking for me. They were asking for my house - again. I left Aleppo for Turkey. (Specialty doctor, male)

A few years after the beginning of the conflict, other warring parties started causing problems for HCWs. The participants considered ISIS as the most significant threat after the GoS.

> ISIS arrested me. It was scary in 2014 in Tel Abyad. For seven hours, then they let me leave. This was the main reason I decided to leave Syria. After being interrogated by ISIS, I decided that even I have studied for 12 years, I am not ready for this, getting 1000 to 2000 USD per month [salary]. Those seven hours they interrogated me was a changing moment in my life. It was the first time when something like that happened to me. Those seven hours felt like seven years. (Specialty doctor, male)

HCWs are more likely to encounter events and become victims of mistreatment due to the very nature of their profession. Many participants were forced to witness the abuse of civilians while practising their work. The participants describe having seen people subjected to violence and taken by GoS. Many of those persons imprisoned had been tortured before they were brought to hospitals.

> We have seven patients taken by intelligence. We were receiving patients from the intelligence after torturing in prison to cure them. Sometimes they bring dead bodies and throw them in front of us. Sometimes they took patients from the hospitals. Somebody who went to protest was shot or stabbed by Shabbiha [pro-government militia]. He [patient] came with his family or ambulance or himself to the hospital to take treatment. They knew [GoS] that he was there, and they would come. Even before treating him. Or while treating him. I know many cases. (Specialty doctor, male)

DISCUSSION

To our knowledge, this is the first research to examine the reasons why Syrian HCWs migrate from the conflict-affected country. This qualitative study is based on semi-structured interviews of the 20 Syrian HCWs who left the country after 2011. In previous studies in conflict settings, avoiding the violence of war has not been the HCWs' sole reason to leave; financial issues and concerns regarding education were also mentioned as reasons for leaving.[21 22] However, we found no HCWs indicating either factor as the primary cause for leaving. Doocy *et al*[25] state that the choice to go is a sum of many different factors. Our study suggested that all reasons to leave Syria were related to security issues. It appears that the ever-present violence and complexity of the war in Syria superseded all other concerns.

HCWs considered their profession to be a reason for the violence they experienced. The GoS seemed to target HCWs specifically because of their profession. This intentional targeting is in accordance with multiple reports and studies.[7 14 27 28 30 36] The GoS was also responsible for generalised violence and violence related to personal issues. ISIS was primarily accountable for generalised violence and sometimes attacked the participants for their individual actions such as expressing their political opinions.

Many HCWs had to weigh the lack of prospects and accumulating stress against the equally intimidating challenge of actually trying to leave the country. While some participants had a specific notable trigger event, such as a colleague being detained or killed, many just grew tired of living under constant threat and fear.

The average participant in this study was a 36-year-old male doctor with a specialty. He was married and had a family and at least one child. This profile is in accordance with other studies[23–25] that have shown male gender and

similar age structure associate with the risk of targeted violence and migration. On the other hand, the need to protect one's family is an important reason to leave. As one of our participants said, he would be working in Syria if he did not have a family. When experienced HCWs leave the country, the remaining personnel are left without sufficient professional expertise, as has happened in Iraq.[1] This reduces the quality of healthcare services and adds to the workload of those staying.[17 30]

The emotional distress of violence on HCWs is enormous, as noted in the study by Hamid *et al*.[37] Participants have lost colleagues, friends and family members. In addition to their experienced traumas, they are most likely to have secondary traumas through witnessing atrocities against civilians while working as HCWs near the front line of war. Despite this, some of our participants were visiting Syria every month for humanitarian work. The motivations for this should be studied more closely because it might help find solutions to get senior HCWs back permanently to Syria now, as the violence starts to show signs of decreasing. The availability of healthcare personnel is one of the central issues in rebuilding civil society. However, finding qualified HCWs is challenging when the majority of them have left the country.[17] Additionally, medical students had to leave their undergraduate studies and postgraduation training to flee the violence.[19] These amount to a significant loss of human capital for the Syrian healthcare system. Restoring both current and future provisions of services to an acceptable level will be highly demanding.

Strengths and limitations

The present research is subjected to several limitations. First, while we reached participants from several different Syrian governorates (Homs, Daraa, Deir Ez-Zour, Raqqa, Hama, Rif Damascus), most were originally from Aleppo. On the other hand, they had worked in different locations and had experienced violence in areas under all warring parties. More studies should focus on recruiting participants from all these areas, especially from those that ISIS had controlled. Many interviewees considered ISIS as one of the main factors for leaving. Second, the SSM is conducive to selection bias.[32] We used three different parallel SSM networks to reduce this. Third, the perspectives of female HCWs are partly missing. Future research should concentrate on sex-based violence and on the experiences of female HCWs and their reasons for leaving Syria.

Obtaining data in a conflict setting, especially first-hand accounts of personal experiences, is challenging. However, one of the authors is a Syrian HCW who has lived and worked mainly in NSAG and Kurdish force-controlled areas. His first-hand knowledge made this study more valuable and provided a better understanding of the situation in such regions of Syria that researchers generally have not been able to visit due to severe security risks.

CONCLUSION

This research explores in detail why HCWs have left conflict-torn Syria. Our study explains that local HCWs had no other alternative but to leave their homes and work to protect themselves and their families. In addition, this study gives a voice to Syrian HCWs who have witnessed horrors of conflict with extensive destruction.

Our interviewees described such acts of violence and attacks against healthcare that may constitute violations against Geneva Conventions. Thus, these actions might be considered war crimes and would then require perpetrators to be held accountable.

A better understanding of this type of forced migration is needed to develop approaches to support HCWs psychologically and practically in a time of war. This study enables creation of actionable protocols of intervention diminishing or prevents similar future events.

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III

I don't leave my people; They need me: Qualitative research of local health care professionals' working motivations in Syria

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I don't leave my people; They need me: Qualitative research of local health care professionals' working motivations in Syria

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Abstract

Background: The Syrian conflict has endured for a decade, causing one of the most significant humanitarian crises since World War II. The conflict has inflicted massive damage to civil infrastructure, and not even the health care sector has been spared. On the contrary, health care has been targeted, and as a result, many health professionals have left the country. Despite the life-threatening condition, many health professionals continued to work inside Syria even in the middle of the acute crisis. This qualitative study aims to determine the factors that have motivated Syrian health professionals to work in a conflict-affected country.

Methods: The research is based on 20 semi-structured interviews of Syrian health care workers. Interviews were conducted in 2016–2017 in Gaziantep, Turkey. A thematic inductive content analysis examined the motivational factors Syrian health care workers expressed for their work in the conflict area.

Results: Motivating factors for health care workers were intrinsic and extrinsic. Intrinsic reasons included humanitarian principles and medical ethics. Also, different ideological reasons, patriotic, political and religious, were mentioned. Economic and professional reasons were named as extrinsic reasons for continuing work in the war-torn country.

Conclusions: The study adds information on the effects of the Syrian crisis on health care—from healthcare workers' perspective. It provides a unique insight on motivations why health care workers are continuing their work in Syria. This research underlines that the health care system would collapse totally without local professionals and leave the population without adequate health care.

Keywords: Syria, Motivation, Health worker, Conflict, Violence, Qualitative, Experience

Background

Health care workers (HCWs) everywhere face verbal and physical violence to a degree. In peaceful and stable societies their lives are rarely at risk. The perpetrators are commonly patients or private citizens [1]. Such aggression can have a negative impact on professionals' well-being and motivation. At worst it can put the provision of health care at risk or compromise its quality.

In fragile states and conflict settings, HCWs may also experience political and collective violence [2]. The warring parties may harm health care infrastructure, personnel, and logistics regardless of the International Humanitarian Law (IHL) that stipulates the healthcare system is protected in time of war [3, 4]. The United Nations Security Council (UNSC) has strongly condemned attacks against medical facilities and workers in UNSC resolution 2286 in 2016 [5].

Five years after the resolution was adopted, the number of HCWs killed in conflict settings in on the increase.

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In 2020 over 800 incidents of violence against health care were reported in conflict-affected countries and 185 HCWs were killed [6].

In Syria, the violence against health care has been alarmingly intense and used as a war strategy. The situation became worse after Russia joined the conflict in 2015 [7, 8]. From 2011 through March 2021, at least 930 HCWs have been killed. In most cases (55%), the primary cause of death is aerial bombardment or artillery fire by Government of Syria (GoS) and their Russian ally [8]. Health care facilities and ambulances have been subjected to airstrikes [9–11]. HCWs have been arrested, tortured, and executed by GoS. Other warring parties, such as numerous non-state armed groups (NSAGs)[1] and the Islamic State in Syria and Iraq (ISIS), have also perpetrated against health care [8, 11–14].

Local Syrian HCWs working in highly stressful conditions are exposed to severe mental trauma, such as secondary traumatic stress and burn-out [15]. We have shown earlier that HCWs in Syria have specifically experienced violence due to their profession and may have lost relatives or even close family members [12].

Conflict situations cause qualified HCWs to depart their country [16, 17]. Mass migration of professionals and collapse of the health care system and infrastructure leave the civilians without adequate health care, thus increasing mortality and morbidity among the population [18–22]. The violence in Syria has been so intense that more than 70% of HCWS have migrated from the country. The figure is equal regardless of whether HCWs worked under ISIS rule in parts of Syria or NSAG controlled areas [12, 19, 22–24]. Our recent study points out that reasons for HCWs to leave to leave Syria were all related to security concerns [25]. The International Non-Governmental Organizations (INGOs) and most international organisations (IOs) have been forced to evacuate their non-local personnel due to security reasons leaving local workers to operate remotely across the neighbouring countries [26–28].

Due to the lack of qualified personnel, many HCWs who have stayed in Syria have had to work beyond their specialist academic training or experience. At the same time, 38% of physicians had less than 2 years of medical training. In addition, 38% of all HCWs had received no formal medical training at all. Significant variance exists between different regions. This lack of training and experience significantly increases the strain on the few remaining experts [23, 29]. Attempts at providing training on-spot use, e.g. through telemedicine for the HCWs, have been made [29, 30].

Despite the danger, some HCWs decide to risk their lives to provide health care services in a highly complicated and dangerous environment [23, 24]. This research aims to determine the motivations that influence the decision of HCWs to work in a country where the conflict has been raging for a decade.

Up to this point, only a small number of studies seek to understand why local HCWs decide to stay and work in active conflict settings with potentially life-threatening risks.

Although local HCWs usually bear the most significant responsibility and risk of the effects of war, the reviews on the motivations to operate in conflict settings have mainly focused on the motives of expatriates, especially those of Western humanitarian workers.[2]

The work motivation of humanitarian expatriates and locals may be different. The reasons for non-local workers vary from altruistic motives to adventure-seeking, while local humanitarian workers choose to help their communities and uphold humanitarian principles. However, there are often many different motives, and they usually overlap [31].

The research studying HCWs in conflict and post-conflict settings in northern Uganda identify several motivating factors such as community support, effective and flexible working conditions and, good leadership and communication [32].

In a study conducted in Yemen, a country with protracted violent conflict, fatalism and religious reasons were mentioned as essential motivations to work amidst war. In addition, Yemeni HCWs felt obliged to serve their countrymen and provide health care to them even when faced with peril [32].

Salary, job security, career advancement and attaining technical training are known motivators. Humanitarian agencies are considered reliable employers in damaged or deteriorating economic settings, offering relatively high payroll and employee benefits [31, 32].

We could not find previous research on the motivations of HCWs in Syria to establish a baseline for the study. The situation in Syria differs from many earlier conflicts because some of the HCWs operate from Southern Turkey, where they live with their families. They have

[1] in this study we refer to non-state groups that includes all armed groups with different motivations and ideologies from Free Syrian Army to jihadist Hay´et al.-Tahrir. This definition excludes Islamic State (IS) and Kurdish Forces.

[2] see Oberholster, A.J., Clarke, R., Bendixen, M. and Dastoor, B. (2013), "Expatriate motivation in religious and humanitarian non-profit-organizations", Journal of Global Mobility, Vol. 1 No. 1, pp. 7–27. https://doi.org/10.1108/JGM-09-2012-0007, Bjerneld M, Lindmark G, McSpadden LA, Garrett MJ. Motivations, concerns, and expectations of Scandinavian health professionals volunteering for humanitarian assignments. Disaster Manag Response. 2006 Apr-Jun;4(2):49–58. https://doi.org/10.1016/j.dmr.2006.01.002. PMID: 16,580,984.

obtained permission to enter Syria and perform humanitarian work there [12]. This delivery of humanitarian aid cross-border to Syria was authorised by UNSC in resolution 2165 and the mandate since then regularly renewed. The most recent renewal was done in July 2021. In southern Turkey lies the province of Gaziantep, one of the regional hubs for humanitarian organisations that deliver aid to Syria [33]. In the early years of the conflict, the role of HCWs in Syria was to maintain services and coordinate aid efforts. Their efforts allowed building the system of cross-border humanitarian activities when external contributors arrange the resources from abroad, and the remaining physicians facilitate their distribution inside the country [34].

Methods

This research aims to determine the factors motivating Syrian HCWs to work and even risk their lives in a war-affected country. The main question was: "What are the motivations for the local HCWs to work in Syria?".

Study setting

In total, 20 semi-structured interviews were conducted in Gaziantep, Turkey, between 2016 and 2017. Gaziantep was chosen because of its vicinity to the Northern Syrian border. Interviews in Syria were not possible due to security reasons.

Starting from Tunis in 2010, demonstrations against the repercussions of authoritarian rule spread across the Middle East. In Syria, civil protests against the regime were met with violence when government forces opened fire in Daraa, the southern parts of Syria, in March 2011.

The violence spread throughout Syria, and in July of 2011, an armed group, the Syrian Free Army (FSA), was established. Groups with radical Islamic backgrounds, such as the al-Qaeda linked Jabhat al-Nusra, were formed and gained influence mainly in the Northern part of the country [35]. In 2013, the Islamic State (IS, Daesh) became a significant force in Syria.

The Global Coalition against Daesh, led by the United States, started a military campaign in 2014 in Iraq and Syria to crush the organisation [36]. In September of the following year 2015, the Government of Russia began military intervention after an official request from the GoS [37]. IBy early 2014, three Kurdish majority regions in the north had declared an autonomous area and began instituting a new administration called ROJAVA [38]. In 2016 Kurdish Democratic Union Party and groups allied with it declared a federal area in the northeast, arguing that federalism is a future for Syria [39].

During the interviews in 2016 and 2017, the conflict in Syria was in a full armed-conflict stage. Military actions by GoS and Russia were common and severe human rights abuse frequent. At that time, Syria was divided between the four main warring factions (1) The Government of Syria and its allies, (2) Non-state armed groups with different ideological and political motivations, (3) Islamic State in Syria, (4) Kurdish Forces.

After 10 years of war, the GoS controls most of the country. However, regions in the Northern parts are governed by different factions. The GoS with Russian and Iranian allies and proxies, Turkey, Israel, and the United States operate or maintain military forces in the country. In addition, different NSAGs groups and proxies and IS have a presence in Syria [40]. One could argue that Syria is entering a post-conflict phase, even though the situation is very fragile, volatile, and varies between different areas. Those Syrian refugees returning to the country may face extrajudicial killings, torture, kidnappings, and sexual violence even if they have had security clearances from the government before returning [41].

Notably, violence against dissident crowds or groups in early 2011 is not a new phenomenon in Syrian domestic politics. For example, in 1982, the military troops besieged the city of Hama, where officials of the outlawed Sunni Islamist Syrian Muslim Brotherhood organisation lived. When the siege ended, an estimated 20,000 people were killed [42].

The Arab-nationalist Baath Party has led Syria since the 1963 coup. Especially under the presidency of Hafiz al-Assad and his son, Bashar, Syria has been relatively stable. Despite the country's relatively politically peaceful stability, the regime had strict control over its citizens. The state of emergency rule was declared after the coup.[3] This legislation gave the security apparatus the power to justify arbitrary arrests and detentions and ban all oppositions. Even before the conflict, imprisonment, e.g. political reasons, torture and ill-treatment leading to death, was reported. Human rights defenders, as well as, anti-governmental groups were harassed and persecuted. The state monitored and controlled all forms of media, and the freedom of expression was strictly restricted. For dissident citizens, punitive laws were used [43].

The regime has tried to maintain that it has represented the whole Syrian national community, even though Alawis[4] have always been overrepresented in the leadership positions in the state and the security apparatus, This fact has created a kind of dissonance between sectarian reality versus official ideology [38]. During the long Baath era, the nature of the regime has, in fact, changed significantly, even though its official character as secular and nationalist has remained intact. During

[3] the emergency rule was abolished after the demonstrations started in 2011.

[4] "heterodox" Shiite.

the Assads' rule, Syria has developed into what has been described as a "presidential monarchy." Personality cult has been underlined, whereas the original socialist and secular character of the party-state has waned. In parallel, the introduction of neoliberal economic reforms has significantly shifted the social basis of the regime support from rural peasants to the (upper) middle class of the cities. Historically, the opposition to the regime has come mainly from Syrian Islamists, who even mounted an insurrection in the late 1970s and early 1980s. To counter radical Islamists, especially during Bashar's period, accommodation with moderate Islam increased while, at the same time, control of Islam continued. In practice, this policy undermined the traditional secularism of Syria [44]. What is a significant shift, official presidential rhetoric has become explicitly religious and anti-secular since 2011. It has been argued that Syrians have developed a new version of popular Syrian nationalism to counter the official state nationalism represented by the Baath party, especially during the uprisings. This new nationalism can be understood as a continuation of the national movement whose project was abolished by the Baathist coup in the early 1960s. Later on in the conflict, this new anti-dictatorial and practical version of nationalism have been increasingly challenged by the growing importance of religious, sectarian and tribal identities, in addition to the official state nationalism [45].

Study design and data collection

A qualitative study design was used and based on semi-structured interviews ($n = 20$) among Syrian HCWs who worked in the country during the conflict. Interviews were done by a female interviewer (AK) and two males (MH and OA).

We used a snowball sampling method (SSM) to access potential participants that may be in hiding because of the political sensitivity of the research and possible security threat against participants. SSM, also known as a chain referral, enables researchers to locate and contact hard-to-reach groups and individuals. SSM may help researchers to overcome the unwillingness to participate due to distrust [46].

We started two different separate SSM chains in Gaziantep, Turkey, to avoid selection bias. The selection criteria required participants to be over 18 years old, Syrian and qualified HCWs. We used the International Labor Organization's International Standards Classification of The Occupations (ISCO-08) for the criteria of HCWs [47].

We obtained permission to record the interviews from the participants. Hand-written notes were made during the session. Part of the interviews was conducted in English, part in Arabic. These interviews were later translated into English by a professional translator. The quality and correctness of the translation were confirmed by an independent translator using random extracts from the material. Interviews lasted between 30 and 90 min. When no new information emerged from the interviews, i.e., the data was saturated, we stopped collecting interviews.

Measurement and analysis

The interviews were transcribed verbatim and triangulated with hand-written notes. All identifiable information that participants mentioned were deleted from the material to respect participants anonymity. First, we (AK, JP, OA) read through the transcripts to familiarise ourselves with the research data. After that, we divided motivations into intrinsic and extrinsic categories. Motivators can be divided into intrinsic or extrinsic. Intrinsic motivators arise from within the individual itself. They include motives and values such as empathy, altruism, and pride. These motivators are unaffected by external rewards and embraced only when a person finds them inherently valuable. Extrinsic motivators are generated from external rewards and include money and opportunities for employment, non-monetary material rewards, and non-material rewards, such as heightened social status and increased knowledge [48, 49].

Then the text was analysed using thematic content analysis and inductive reasoning. The transcripts were coded based on a topic, and the identified motivations were categorised into intrinsic and extrinsic and further divided into sub-groups.

Quotations were chosen to enrich the text and give a voice to the participants and illuminate the participants' motivations. They also validate the assertions of this study.

Ethics considerations and informed consent

The participants were informed of the purpose and aims of the research. They had an opportunity to ask questions from the researchers. The participants gave verbal informed consent, and they were notified that they might refuse questions or withdraw from the interview at any time. No such data was requested that would allow the identification of the participants. Participants chose the location of the discussions.

One of the interviewers (MH), a psychotherapist, monitored the participants' well-being during the interviews. Participants were given contact details of the interviewers and were encouraged to contact the research team if they felt the any need for discussion. Anonymity and confidentiality were guaranteed to the participants.

The University of Eastern Finland Committee on Research Ethics approved an ethical permit for the

study. The principles in the Declaration of Helsinki were observed.

Results

In this research, we studied motivating factors which Syrian HCWs had while working in conflict settings in Syria.

The main categories of intrinsic and extrinsic motivations used in this study emerged from data analysis. Each of these categories was further split into two sub-categories. Intrinsic motivations include (1) humanitarian principles and medical ethics, and (2) ideological reasons (patriotic, political and religious). Extrinsic motivations consisted of (1) professional reasons and (2) financial issues. These results will be presented below with quotations.

Sample characteristics

Of the 20 participants of this study, 18 were males, and 2 were females. The age range was 23–47 years, and the mean age was 37.5 years. The majority of the participants were born in Northern Syria, specifically in the Aleppo governorate (*n = 12*). Additionally, several participants from different parts of Syria was reached. One of the participants was born abroad.

Most of the participants (*n = 16*) were married at the time of the interview and had (n = 14) at least one child.

We interviewed mostly physicians (*n = 13*) with a speciality (*n = 9*). Other physicians (*n = 4*) were generalists who had started their specialisation but had had to suspend their studies because of the war. Occupations of the interviewees included pharmacists (*n = 3*), health service managers (*n = 2*), a nurse, and a dentist.

The UN border crossing mandate allows humanitarian workers, including HCWs, across Turkey to Syria [33]. Most of the participants had migrated from Syria with their families and resided in Gaziantep. Only a few still lived in Syria. They went to Syria monthly and worked there from a few days up to 1 month. Some worked no longer as clinical physicians but as health service managers for different international non-governmental organisations (INGO) or local non-governmental organisations (NGOs).

A fraction of the interviewees were still living in Syria, and they all worked according to their educational background. Those NGOs and INGOs in which participants mainly worked in areas controlled by the Kurdish forces or non-state armed groups (NSAGs) in the Aleppo governorate. All participants had worked under GoS at the time of the beginning of the conflict, and later many participants had worked in IS-controlled areas before leaving the area (Table 1).

Table 1 Participants demographic

Total participants	***n = 20***
Gender	
Male	18
Female	2
Age range	from 23 to 47 years
Mean age	37.5 years
Place of birth (governorate)	
Aleppo	12
Deir Ez-Zour	2
Raqqa	2
Hama	1
Homs	1
Idlib	1
Abroad	1
Family status	
Married	16
Children	14
Profession	
Physician with speciality	9
General practitioner	4
Pharmacist	3
Nurse	1
Dentist	1
Health care manager	2

Intrinsic motivations to work in Syria

Participants indicated several coincident reasons for their choice to work in Syria. We analysed two intrinsic groups of motivations. Practically all participants named at least one reason from the four humanitarian principles (humanity, neutrality, impartiality, and independence) as their motivation for resuming their practice in Syria. The second group was ideological motivators, subdivided into a patriotic and political ideology and religious reasons.

Humanitarian principles and medical ethics

The most significant reason for HCWs to work in the middle of the conflict was to fulfil the humanitarian principles and medical ethics. Improving people's lives and reducing suffering were among the most significant factors affecting HCW behaviour. Participants felt their professions granted them the ability to help others. They believed that it was their duty to alleviate the suffering of civilians and expressed a feeling of responsibility for them.

> *The main reason is the humanitarian aspect of my work. They [civilians] are suffering because of the conflict. We have the skills to cope with the conflict*

because we are educated. Elderly women, elderly men and children, those who cannot cope with this crisis in Syria. They need our help. (general practitioner)
I'm very sorry for patients that have lost their arms, their eyes, their legs… We have a lot of patients like this. There is a lot of disability. There is a lot of people living in camps in bad situations, in the summer, under the sunlight… in the winter, under the rain and snow. (speciality doctor)

It appears that many of the interviewees had genuine empathy for Syrian children. Most of the participants were parents themselves and were concerned about the possible effects of the conflict on the children's future.

Whenever I go to Syria, my biggest daughter sits with me and asks: Why do you want to go? Why you? Why not someone else? I think that it's the picture of children. You can never take it away from your memory – a small child in Syria. Whenever you enter [Syria], you will see the orphans, the children in the poor area with nothing. No education, no safe water, nothing. You ask: "Why is it like this?". When you go to help, it helps them, and it affects them. At least feeling that there is someone who wants to care about them. This motion keeps you going. (health service manager)

Many of the participants were threatened and sometimes targeted by different warring parties. They emphasised the need to protect the impartiality and neutrality of care provision. They noted that they would serve all those in need, despite the patients' political opinions or cultural background.

We can understand the motivation of the regime, we can understand the motivation of the opposition, but we don't want to be between them… People are dying, but let the war continue. At least to stop those [hospital bombings]. To have a chance to work normally like any doctor in this world. (speciality doctor)
If I see a person needing medical help, I will give. I will give the medicine. I don't care about nationality, religion… (speciality doctor)

Some of the participants expressed practical motivators, such as maintaining the workings of the healthcare system, which would undoubtedly collapse without their contribution. They wanted to avoid leaving the population without any health services.

To continue to help, to treat the pediatric population. It's important to me that the IDPs [internally displaced person] there in the area that they receive some care. There's not enough care. It's medically underserved. There is a great population that needs to be helped. There is a shortage of pediatric specialists. There is a shortage of medical staff. I can continue to help. (nurse)

Some participants mentioned that they and their colleagues had been offered visas and grants to study or work abroad. However, the interviewees had refused to leave because they felt obliged to carry the burden left by those HCWs who chose to vacate the country.

Somebody should do it. Many doctors went to Germany. There are more doctors in Frankfurt than we have doctors in Aleppo. Syrian doctors. Who will do that [work]? (speciality doctor)
I want to give something to others. This is the meaning of being a doctor. Otherwise, there is no meaning. It's not only about money. Sometimes you have to have a meaning in your life. To touch this kind of humanitarian issue that we are facing here. This is the only thing that I can think about. (speciality doctor)

Ideological reasons: patriotic, political and religious

Ideological reasons were divided into patriotic, political and religious causes to continue working. Many participants mentioned their love for their home country and the people as a significant reason to endure the hardships. They felt that they had to help civilians inside the country. Some even underlined their role as patriotic professionals.

They are my people. It is my country. It is my city. Somebody should do that. I know that it will be a risk. (general practitioner)
The reason that made me work in health care and continue my work; I was able to serve my people by giving health care in the middle of the war. (pharmacist)

Some participants mentioned political reasons; they said that they wanted democracy and human rights for all Syrians. Some participants described their role widely as pro-democracy and human rights activists even before the conflict started. Some had been under the surveillance of GoS already because of their political thoughts that the regime considered dangerous.

It was the year 2005—the day of the Declaration of International Human Rights. I participated in this [demonstration] with about 30 other students at the university. We just stand up. The day after, the security called my family, and I got a call from the military investigation to attend their office. (special-

ity doctor)

Many participants said that they actively participated in non-violent demonstrations and even organised them in the early stage of the conflict. These demonstrations were met with violence. Many protesters were beaten, detained or also killed by GoS. Still, some of the participants continued to be motivated by political ideology. They believed they had the responsibility to carry on the liberation of their country from Assad's regime.

The main reason that as an activist, I wanted to take part in the demonstrations. I see myself as responsible for my country. I see myself as responsible for the revolution to succeed. A lot of people have now been arrested; a lot of females are now in al-Assad's prisons. A lot of people have been killed. Me and all the other people in [name of the city retracted] in Syria are still trying to win this war, revolution to succeed. See yourself as responsible for all of that. We have to take responsibility for everything we have started with. That's why I am still there [in Syria]. (general practitioner)

Religious motivations were mentioned only by one of the participants.. Being a part of ummat al-Islām, i.e. the collective Islamic community, is a reason to continue work in challenging conditions in Syria.

We are brothers of Islam. There is a religious idea that we are serving our brother in religion, and we cannot turn our back from them. (speciality doctor)

Extrinsic motivations

Additionally, participants expressed extrinsic motivation for their work in Syria. The participants mentioned economic and professional reasons.

Economic reasons

In the initial stages of the conflict, few physicians dared to abandon their work at governmental hospitals in fear of losing their salaries. Money was one of the causes they remained in GoS controlled territory, even though some of them worked voluntarily and secretly at underground hospitals and networks providing health care services for those injured by GoS. They were careful to hide these activities. Those caught would be detained by GoS. In some cases, not even their family members were aware of their secondary jobs.

There wasn't any kind of financial support for doctors. We were all volunteering. If you want to have a stable income for your family, you have to stay in a hospital that really can give you a salary to survive. Some doctors stayed in hospitals. The decision was so hard to make. We had to work under the table, we had to have our channels, and then we started to practice, like helping a small number of people. [at the same time] we stayed in our hospitals. (general practitioner)

Several interviewees regarded economic reasons as important motivators behind their return to work in Syria. When the violence intensified, and the conflict escalated, many HCWs migrated outside Syria. Most of the participants settled with their families in Gaziantep, Southern Turkey. However, daily expenses were high, and the participants were unable to find any work. Working as a physician in Turkey was not an option. Turkish laws would require them to have a local license, which was not easily granted. Lack of funds forced them to consider working opportunities in Syria.

There's no work permission. I hire a small apartment here [in Turkey], it costs about three hundred dollars a month. This is without electricity and a mobile phone. It's a little bit expensive for the refugees here. (speciality doctor)
I need work because I need to survive with my family, to have income. I'm lucky because I have work [in Syria], and I can help my country at the same time. (speciality doctor)

Some participants mentioned the need to maintain their medical skills and knowledge for continuing their work. This was most commonplace among the doctors. Without the opportunity to practice their profession in Turkey, they feared their skills would diminish over time.

I'm a doctor. I should work. If you don't work for two years, you'll lose your ability to work, your ability to do surgeries. You lose your medical knowledge. You should stay in contact with health care [profession]. (speciality doctor)

Discussion

This qualitative research studied the motivations for Syrian HCWs to work in the country. Our study adds to the small body of existing research on why local HCWs keep working during ongoing violent conflicts. It provides specific information on motivational factors that help Syrian HCWs to continue or even return to work amidst the war. This research creates a baseline study on the motivations of health care workers in Syria, since no previous studies have been conducted in the country, and overall the studies of this subject regarding contemporary conflicts are limited.

From the Syrian HCWs experiences, we identified both intrinsic and extrinsic motivators. Intrinsic motivations

included humanitarian and medical ethics. These were the most common motivations among the participants, who felt they had a moral obligation, duty, and skills to help people in Syria. HCWs' feeling that they are the last chance for the civilians in the middle of the conflict, is also noted in the recent study conducted in Yemen [50].

Many participants emphasised the humanitarian values, such as impartiality and neutrality of their work. They HCWs wanted to stay out of the hostilities and only focus on saving lives. This is in accordance with Slim [31], who argues that one of the motivations for local workers is to uphold humanitarian principles. In addition to saving people's lives, HCWs felt that they had a moral obligation to prevent health care from collapsing entirely. Without their effort the civilians would likely have been left completely without health care in many parts of Syria.

Another intrinsic group of motivators was ideological reasons, which we divided into three different sub-categories (1) patriotical, (2) political, and (3) religious motivations. The patriotic motivations were most common, while religious motivations were, quite unexpectedly, less frequent and only mentioned by one participant.

In our research, patriotic reasons were a common motivator for the participants. Syrian nationalism has long roots in the modern history. However, the ideology among participants is not connected with the ruling Baath party nor president Bashar al-Assad, but the Syrian people themselves.

Slim [31] also argues that local humanitarian workers do their work to help their communities. As the case has been in Yemen [50], supporting local people is also a valid motivator among Syrian HCWs. The al-Assad rule's central doctrine has been unifying Syrian nationalism and loyalty to the Baath party indistinguishably. As many of the participants came under state persecution, they abandoned what little loyalty they might have had for the regime. Still, they continued to honour a tradition of patriotic pride separate from authoritarian notions. Many described their love for Syria as their home nation as a significant reason to continue helping the civilians during wartime. Those with political motivations had hopes of bringing about democracy and new nationalism to the country.

The political motivations are related to assisting the popular uprising. This approach is not primarily tied to their profession but rather an expression of their world views. Among other Syrians, medical professionals and students participated in and organised anti-government rallies [12].

Most interviews were conducted during June and July of 2016. At that time, GoS had not yet recaptured Eastern Aleppo. However, in autumn 2021, GoS controlled around 65–70% of the country. Approximately one-fourth of the country is governed by the Autonomous Administration of North and East Syria. In northwestern parts of the country, the Salvation Government, led by Hay'at Tahrir al-Sham and Turkish-backed factions, control around 5–10% of the territory [51]. After the interviews were done, GoS has successfully recaptured many major cities and strategically essential territories, rendering the uprising practically unviable. It's unlikely that today the hope for a successful popular revolution against the regime is a significant motivator for Syrian HCWs.

Economic reasons came up as one of the motivating factors. This result is consistent with the study conducted in conflict and post-conflict settings in Uganda [32]. The Syrian HCWs were not allowed to work in Turkey. The financial situation among refugees in Turkey was difficult in 2017. Nearly 64% of the Syrians lived below the poverty line [52]. NGOs and INGOs represent a reliable source of income [31], and the participants felt that working for such organisations was an opportunity for them to take care of their families. In 2021 the Syrian economy has deteriorated due to over a decade of war, economic malpractice and corruption, economic sanctions, and Lebanon's deep financial crisis that has accelerated Syria's economic collapse. The families in Syria cannot secure basic food rations or household items [53]. Today, financial motivations may have an even more substantial impact than at the time of interviews, especially among participants who live in Syria and gain their salary from NGOs or IOs.

Professional reasons were mentioned as motivating factors, especially among physicians. Without the opportunity to practice medicine, they were afraid to lose their skills. On the other hand, inexperienced physicians can gain valuable work experience in that situation. Professional training can be enhanced, for example, by distance learning, as has already been done to in Syria [29].

Religious motivations were mentioned only by one participant. This notable when compering to study conducted in Yemen where the religious motivations and fatalism were most common among Yemeni professionals [50]. The relative lack of open religious motivations may testify to the long-established secularism in modern Syria, which has been one of the central tenets of the official Ba'thist ideology. During the long tenure of Hafiz al-Assad (1970–2000), the earlier aggressive version of secularism was modified and the regime ended its earlier secularization agenda and religious discourse gained more presence in the public sphere. This trend has event strengthened during Bashar al-Assad's Presidency. Yet, the acceptance of a basically secular order of the society and the concept of religion as a personal choice has remained [51].

Strengths and limitations

This study has several notable contributions. This research is the first study trying to understand local HCWs working motivations during the conflict in Syria. The interviewing team consisted of people with different academic backgrounds. The interviewers were a female (AK) and two males (MH and OA). The non-Syrian interviewers (AK, MH) are familiar with working and interviewing persons in the Middle East and conflict settings. The researcher of Syrian origin (OA) is an experienced front-line health service provider. The results from all interviewers were almost identical, indicating that the methodology was efficient and the personality or background of the individual interviewers did not introduce systematic error. We also managed to reach Syrian HCWs for this study and gain their trust, and even the topic is politically susceptible and controversial.

These findings are subjected to limitations. The sample is not fully representative, and the results cannot be fully generalised to all Syrian HCWs. Due to the nature of snowball sampling methods, we did not have any HCWs working in the regime nor ISIS-controlled health facilities at the time of interviews. Due to the interviews in Southern Turkey, we reached primarily professionals working in the opposition-controlled Aleppo governorate. We also had a limited number of perspectives of women and their motives to work in Syria. It is also possible that healthcare workers currently operating in Syria are primarily men.

Having access only to HCWs on the opposition side is arguably the most distorting shortcoming. It's highly likely that professionals willingly operating under GoS would paint a more favourable picture of the regime. These HCWs may view loyalty to al-Assad as true patriotism and consider the opposition as traitors to Syria. Their motivations for working would most likely present an entirely different spectrum of reasons. Unfortunately, due to practical circumstances, they could not be interviewed for this study.

Similarly, HCWs supporting Islamistic NSAGs were not reached for this study, or participants did not express their affiliation to organisations. Such a group has most likely differing ideological and practical reasons to operate in war-zone and might have expressed treating wounded soldiers for strategic reasons as a significant motivation.

The woman perspective in the circumstances, where the difference between genders carries a high cultural significance, would undoubtedly be categorically different. In addition, having a higher number of religious participants could have revealed more about ideological motivations. It is also possible that participants did not want to discuss their religious reasons, and we did not ask about participants' beliefs. It remains unknown whether having more HCWs besides physicians or more participants from other territories would have changed some of the weights, such as the significance of financial or skill-maintenance relater motivators.

Conclusions

Since the Syrian conflict has shown signs of de-escalation, restoring the civil infrastructure, including hospitals with qualified HCWs, has become topical. The war-induced challenges to health care in Syria are enormous. Reinstating health care functionality will be impossible without a sufficient number of qualified personnel. The COVID-19 pandemic and ongoing economic crisis has placed additional strain on the health care system. The political situation is very fragile overall, although some parts of the country can be considered to be in a post-conflict stage.

Many professionals have migrated from the country, but as this study indicates, HCWs have strong motivations to continue their work despite harsh conditions. HCWs want to fulfil humanitarian values and medical ethics. Their connection to the locals is strong. Despite these factors, it may be challenging to attract HCWs to work areas under GoS. The harsh rule of the regime may deter potential returnees. Some people who have voluntarily returned to the country have been persecuted. It likely that HCWs will not return to GoS controlled areas, if they fear for their life. In particular, those physicans who have ended up in the Western countries have likely integrated the new place. If they are able to practice their profession within the host country health care systems and their children have grown into these societies, they have little reason to return. Mere money or other extrinsic factors are are likely to be insufficient incentives for return, and do not bring solution insufficient to resolve the problem of understaffed health care.

To overcome such resistance and attarct the HCWs back to areas under GoS, understanding of their inner values and motivations is imperative. If returnees could be given credible guarantees for their safety, their willingness to consider moving back to Syria would likely increase.

The international community's responsibility is to ensure that international humanitarian law is followed and universal human rights are respected. This is a critical precondition for maintaining the provision of high quality health care services during conflicts. In order to proceed efficiently, the crisis dynamics of relevant human resources need to be properly understood. Studying the motivations of HCWs will provide the international community and researchers with much needed insight into these behauviors. The findings presented in this article can be developed into practical-level tools for protecting

and restoring health care resources in complex humanitarian settings.

Abbreviations
GoR: The Government of Russia; GoS: The Government of Syria; HCW: Health care worker; INGO: International non-governmental organisation; ISIS: The Islamic State in Syria; NGO: Non-governmental organization; NSAG: Non-state armed group; UNSC: United Nations Security Council.

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Author contributions
All authors contributed to designing and conceptualising the study. AK, MH OA, carried out the data collection. AK, OA, and JP analysed and interpreted the data. AK led the manuscript writing with contributions from all authors. All authors accepted the final manuscript.

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Availability of data and materials
The datasets generated and/or analysed during the current study are not publicly available due to security reasons but are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate
An ethical permit for the study was applied for and obtained from the University of Eastern Finland Committee on Research Ethics in June 2016. The principles in the Declaration of Helsinki were observed in all stages of the study. No patients or members of the public were involved in the conduct of this research.

Consent for publication
Not applicable.

Competing interests
The authors declare that they have no competing interest.

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Publisher's Note

AGNETA KALLSTRÖM

The war in Syria exposed the vulnerability of healthcare workers, who faced arrest, torture, and death. Through interviews with Syrian healthcare workers, this study reveals their harrowing experiences of persecution and forced displacement. Yet, from the interviews, another story emerges – one of resilience and bravery. Some chose to remain or return to the war-torn country at the risk of their own lives. This study gives voice to their struggle, their courage, and their hope for a future where healthcare is protected, even in war.

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