Genocide through Health Care Violence: The Systematic Destruction of Health Facilities in the Tigray War

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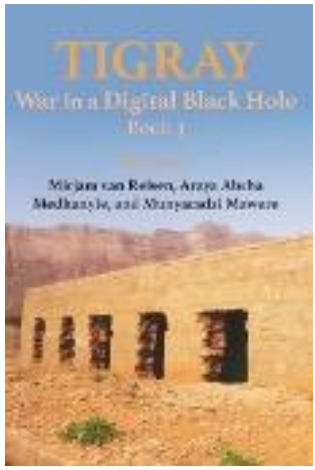

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The list of figures in colour can be found here: https://raee.eu/wp-content/uploads/2024/10/Figures_Tigray.-War-in-a-Digital-Black-Hole-Volume-3-1.pdf

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Chapter 10

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The king is the protector of the citizens as the vulture is looking for meat.

Abstract

The study analysed the destruction of Tigray's health system, revealing that it was intentional, systematic, and widespread, affecting all levels and geographic areas. Eritrean forces were involved in most of the attacks in which health facilities were destroyed and looted in Tigray. In this research, we adopted the integrated, cross-sectoral, and multilevel (ICM) framework of health system resilience to assess the widespread destruction across all health system levels and related sectors. The deliberate destruction of Tigray's healthcare system calls for the urgent rethinking of health system resilience frameworks. The destruction led to the collapse of the health system in Tigray, reverting health profiles to conditions in the early 1990s. The attacks on health facilities reveal a deliberate targeting of Tigray's healthcare system. The study argues that these acts amount to war crimes, crimes against humanity, and genocide.

Keywords: health system destruction, genocide, war crimes, international law, Tigray war, Eritrea, Ethiopia

Introduction

War-induced violence against healthcare, including health facilities, healthcare providers, and transport, is a grave violation of human rights and international humanitarian law (Footer & Rubenstein, 2013; Jabre *et al.*, 2016). The World Health Organization (WHO) defines an attack on healthcare as any act of verbal or physical violence, threat of violence, or other psychological violence or obstruction that interferes with the availability, access, and delivery of curative and/or preventive health services (WHO, 2016).

Violence against healthcare and healthcare workers can happen in the form of deliberate targeting of health facilities with explosive weapons; burning down and looting of clinics and hospitals; the indiscriminate shelling and bombing of areas where health facilities are located; arrest and kidnapping of and threats against health workers; and the deliberate obstructing of patients' access to healthcare (Insecurity Insight, 2021). These acts contradict the rules of engagement provided under international humanitarian law, which strictly require parties under hostilities to adhere to the rules of distinction, precautionary measures, and proportionality (GC III & IV) (Jabre *et al.*, 2016). These attacks may vary across contexts and can range from violence with heavy weapons to psychosocial threats and intimidation. Moreover, in certain cases, the deliberate destruction of the health system can amount to the crime of genocide, provided that the intent element is substantially established under Article 2(c) & (d) of the Genocide Convention of 1951 (Radhakrishnan, 2020), as in the judgment of the International Criminal Tribunal for Rwanda Trial Chamber in the case of Akayesu (UN, 1998).

Healthcare violence is increasingly widespread. Since 2016, over 4,000 attacks on healthcare have been reported in contexts of armed conflict. In 2022, the Safeguarding Health in Conflict Coalition documented 1,989 instances of violence against or obstruction of healthcare in conflicts across 32 countries and territories (SHCC, 2020).

Tigray's health system, which was relatively well-organised and well-performing in Ethiopia before the war, virtually collapsed (Davies *et al.*, 2023; Kuhlmann *et al.*, 2023). An assessment of healthcare damage carried out during the war revealed that about 80% of the health facilities in the region were vandalised, looted, and/or destroyed. Transport such as ambulances were also damaged and looted. Health workers and patients were intimidated and killed (Gebregziabher *et al.*, 2022; Gesesew *et al.*, 2021; Human Rights Watch & Amnesty International, 2022), and access to and utilisation of services blocked for millions of people. The Health Resources and Services Availability Monitoring System (HeRAMS) Tigray Baseline Report 2023, an operational status of the health system carried out by WHO reported that about 89% of the health facilities buildings were partially or fully damaged (WHO, 2023). As a result, the maternal mortality ratio in Tigray has increased fourfold (Legesse *et al.*, 2023), and neonatal mortality two to threefold postwar (Tsadik *et al.*, 2024).

The extent and nature of the deliberate destruction of the Tigray health system has not been well documented. This study investigates the following research question: *What is the extent and nature of the destruction of the health system in Tigray?*

More specifically, this study aimed to answer four main sub-research questions:

Q1. What types of healthcare attacks took place in the Tigray war?

Q2. What was the extent of the healthcare attacks?

Q3. How systematic were the healthcare attacks?

Q4. Do the acts of attacking the healthcare amount to core international crimes?

Theoretical framework

To explore the extent and nature of the destruction of the Tigray health system, the interdisciplinary, cross-sectoral, and multi-level (ICM) framework for healthcare resilience was adopted (Tan *et al.*, 2023). This framework is the result of a meta-narrative systematic review and synthesis of reviews done on healthcare resilience, at the

organisational and system level. We chose this framework for four reasons. First, we found it helpful to explore the destruction of the Tigray health system at hierarchical levels. This framework recognises four hierarchical levels: individual (micro), facility or organisation (meso), health system (macro), and planetary or international (meta). This framework is the latest systematic review and synthesis of reviews of available and good quality reviews and frameworks on healthcare resilience that spans across a shift of paradigms from the Alma Ata Declaration in 1978 to WHO building blocks of health in 2010 and to Global Health Security Index in 2021.

The healthcare resilience framework gives a unified framework for incorporation of various shocks that may happen in healthcare organisations and systems such as a pandemic, natural disaster, armed conflict, financial crisis, or climate change. This is important since it was not only the health system that was destroyed during the Tigray war, but other sectors too such as education and agricultural. This framework is developed to allow analysis and synthesis for an interdisciplinary, cross-sectorial, and multi-level framework for healthcare resilience. The Tigray war also happened during the COVID-19 pandemic, and there was a danger of imminent hunger and starvation (Gebremariam, 2021). The destruction of the Tigray health system happened in the context of multiple crises. Resilience increasingly takes an all-hazards approach and a process-oriented perspective.

The four hierarchical levels are operationalized and contextualised for our investigation:

- **The meta (international) level** refers to the prohibition or denial of healthcare or humanitarian services from international organisations, violating global conventions and prohibiting global solidarity.
- **The macro level** refers to the attack on the healthcare system at the regional and national level. These include obstruction of healthcare services to a community in a given place or region and a violation of international norms or guidelines of global institutions such as WHO or a country's policy.

- **The meso level** refers to attacks on healthcare facilities, and teams of healthcare workers in health facilities such as the deprivation of patients or healthcare workers to safety prevention tools or resources, and the destruction of healthcare infrastructure.
- **The micro level** is the violence and attack at the individual level such as individual healthcare worker's psychological trauma, and violence against individual patients or healthcare workers.

In addition to the ICM framework, the chapter relies on normative frameworks to answer two of the sub-research questions: whether or not the attacks were deliberate and if the attacks violate international norms and standards. For these purposes, relevant international laws, standards, established concepts, and frameworks of intranational laws are considered as frames of analysis. More specifically, normative frameworks that govern the core international crimes (war crimes, crimes against humanity, and genocide) are considered in evaluating the acts committed against the health system in general (International Committee of the Red Cross, 2014; United Nations, 1948).

Research method

The compiled data for the healthcare system attacks covers a period of two years from November 2020 to November 2022. For this study, we used distinctive sources of data, which were compared and triangulated.

EEPA Situation Reports

The first data source is the European External Programme with Africa (EEPA) daily Situation Reports. The Situation Reports had daily records on the Tigray war. The EEPA Situation Report started on 17 November 2020 with daily reports on the status of events in Tigray. The aim was to provide a first warning of events reported from Tigray.

For the study a coding labelling was carried out on all the reports from November 2020 to April 2023. The database had 236 varied sources of reports on the health system attacks from 5 December

2020 to 12 April 2023. The EEPA Situation Reports include the following sources on health-related matters:

- Local witnesses, principally hospital medical directors and medical doctor's reports to media and visiting organisations
- Reports on social media
- Reports from local and international media were also used as sources of data for the attack
- UN organisations reports, Médecins Sans Frontières (MSF), International Committee of the Red Cross (ICRC), and other international organisations

The EEPA Situation Reports compiled events based on trusted sources but required that verification on the ground be done for further use. This study is one attempt to triangulate this with information compiled through other sources, particularly:

- **Autobiographical observations:** *During the war*, two of the research team members (GGA and AAM) documented and wrote notes on the destruction of health facilities as much as they could from the start of the war and throughout the war period.

- **Verification of autobiographical observations:** Additional data collected via phone calls, WhatsApp, Telegram, and emails. Additionally, this dataset collected photos and videos of the damaged health facilities including the healthcare system resources. This data was collected *after the war*, after the Pretoria Cessation of Hostilities Agreement was signed on 2 November 2022.

The records from the Situation Reports were compared with the autobiographical observations and verification of those.

Data collected on the ground in Tigray

Other data collected for this research was collected on the ground in Tigray by way of a field survey. For the field survey, a group of health workers coordinated by GGA collected data on the destruction of health facilities in Tigray. They used phone calls, WhatsApp, Telegram platforms, and personal memos to compile data on the

healthcare system attacks. This was implemented *after the war*. All healthcare professionals who have WhatsApp and Telegram addresses were asked to send the damage data that they had at hand through the platforms. Additionally, part of the data was also collected through phone calls. Additionally, the health workers who had images of the damaged health facilities were asked to upload the images to the WhatsApp and Telegram groups. The health workers indicated that they took the images after the armed forces attacked the health facilities and departed. The health workers were eyewitnesses. The datasets underwent a thorough data-cleaning process. The scope of the research included 160 health facilities which were assessed. From this group, 57 health facilities were collected for close examination. Among the selected facilities there was 1 tertiary hospital, 2 general and 4 primary hospitals, and f50 health centres from 2 zones – North Western and Central Tigray.

The data collection included survey-information obtained from the following actors:

- Doctors
- Health system leaders across all levels including health facility leaders
- Workers in NGOs,
- Members of professional associations
- Local charity organisations
- Health service providers
- University academics and researchers
- Senior specialists

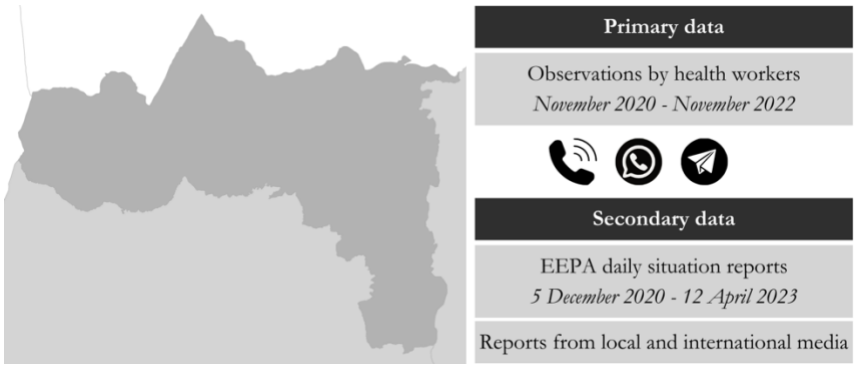

Figure 10.1. Overview of data used and collected in the study

Data analysis

We used a hybrid data analysis technique, deductive and inductive, to analyse the data compiled from both sources. The deductive analytical approach was used to analyse the types of healthcare attacks that took place during the Tigray war. We adopted the methodology of the WHO Surveillance System for Attacks on Health Care (WHO, 2018) to analyse the types of healthcare attacks. We also used this WHO methodology to assess the data certainty. This enabled us to validate the accuracy of the data, and the safety and confidentiality of data sources (WHO, 2018).

The WHO methodology assisted us in the definitions and selection of criteria of information certainty, type, and nature of the healthcare attacks. Accordingly, we used the WHO Surveillance System for Attacks on Health Care methodology, to classify the impact of healthcare attacks into the following four types.

- **Direct impact and targeted attack**: Incidents that directly target an aspect of the healthcare system, and have a direct impact on health service delivery, availability, and accessibility.
- **Direct impact, but not targeted attack**: Incidents that are not specific violence or targeted towards an aspect of the healthcare system, but have a direct impact on health service delivery, availability, and accessibility
- **Indirect impact but targeted attack**: Incidents that directly target an aspect of the healthcare system, but have an indirect impact on health service delivery, availability, and accessibility.
- **Indirect impact and targeted attack**: Incidents that are not specific violence or targeted towards an aspect of the healthcare system, and do not have a direct impact on health service delivery, availability, and accessibility. These types of events fall under the "grey area" and need to be considered on a case-by-case basis.

Additionally, we used the ICM framework (Tan *et al.*, 2023) for analysing the extent of the attack using the four hierarchical levels: micro, meso, macro, and meta levels. Newly emerged themes that did

not fall within these levels and categories of the WHO healthcare attack were thematised inductively. Moreover, we employed a doctrinal method of analysis (McConville & Chui, 2007) to evaluate whether the attacks amount to one of the core international crimes or not.

Two of the research team members (MVR and JS) designed the data set and extracted quotations for healthcare attacks from the EEPA daily Situation Reports for coding and analysis by the other two research members (AAM and ADW). AAM and ADW did the coding independently and produced the final themes together through discussion and consensus. The data was coded and analysed thematically using Atlas.ti qualitative software.

Results

The findings from the EEPA daily situation report are presented in seven themes that were identified: (1) source of information, (2) level of certainty of the information, (3) perpetrators of attack on health system, (4) nature (deliberate, systematic) and type of health system attack, (5) extent and level of the attack, (6) consequences and impact of attacks, and (7) what international crimes do these attacks amount to.

Source of information

Out of the 236 EEPA-reported incidents, 102 of the reports of attacks on the healthcare system came from United Nations (UN) agencies and international and national NGOs. The information for the 66 incidents reported in the Situation Report was provided by victims, eyewitnesses, or healthcare workers in locations where the attack took place. Additionally, 21 reports of incidents were obtained from mainstream or social media, 46 reports of incidents were obtained from regional, and a few incidents were from unspecified sources. The reports were compared with the observations made by the researchers on the ground during the war. Below the most salient points are discussed.

Level of certainty of information

We used four distinct categories by the WHO to assess the certainty of the attacks on healthcare systems: confirmed, probable, plausible, and rumours. Approximately 110 (47%) of the data sources recognised these attacks as confirmed. Additionally, results indicate that 84 (35%) of the attacks were rated as plausible, 9 (4%) as probable, and 33 (14%) of the reported attacks were classified as rumours.

Perpetrators of attacks

The report identified the perpetrators of the health system attack in Tigray. These were collectively called 'allied forces' that included the Ethiopian National Defence Force (ENDF), Amhara forces (Amhara special policemen, Amhara militia, and Fano-Amhara vigilante group), Special Forces from all regions of the country, and Eritrean Defence Forces (EDF) identified as the attackers of the healthcare system of the Tigray region jointly and on more than one occasion. Most of the reported incidents of attack on the health system, 217 (69%), were executed jointly by the allied forces, ENDF, Amhara forces, and EDF. The EDF and ENDF were identified as being responsible separately for 13 (5%) and 12 (5%) health system attacks, respectively.

Nature and type of attack

Regarding the type of attacks on healthcare resources inside the health system, 84 mentioned attacks on health facilities. In addition, it was reported that health facilities were changed into military camps and became fortresses for the armed forces. Within this dataset, 141 attacks targeted health services, while 33 attacks were directed towards health workers. The attacks on health workers were executed in the form of killings, kidnappings, tortures, and sexual abuse.

An example of a report of looting was:

> *Attempts by federal troops and Eritrean troops to loot the Ayder hospital, the main referral hospital in Mekelle, where 80% of patients were wounded by the bombardment of the city. Two civilians were killed and four injured as they resisted.* (EEPA, 2020, SR 17)

Additionally, 37 reports of attacks were on transportation infrastructure, including instances of ambulance looting and destruction. It was also reported that the armed forces blocked the transportation of casualties as a result of air or drone strikes. The observational reports matched the descriptions of the events in the EEPA Situation Reports.

There were also 33 reports of attacks on other infrastructure. Strikingly, reports indicated a cessation of patient referrals due to the unavailability and blockage of transportation, forcing pregnant women to deliver at home. It was reported that the armed forces confiscated the ambulances used for referrals at the healthcare facilities. In Adigrat town, around 20 ambulances were taken and reportedly seen being used by the soldiers to transport goods near the Eritrean border (EEPA, 2021, SR 104). There were 78 recorded civilian deaths recorded as a result of healthcare attacks, including attacks on the patients themselves.

Details and illustrations of the type of healthcare attacks are presented in Table 10.1. All WHO reportable types of healthcare attacks happened in the Tigray war.

Table 10.1. Types of attacks on the healthcare system in Tigray, based on WHO criteria

Type of attack	Illustrative quote on type of attack
Abduction	*Health professionals who were working in Western Tigray, and are still under occupation, remain unaccounted for. In early November 2020, some fled to Sudan, while those who remained and did not come to Tigray [zones under the Tigray Government administration] were abducted, their whereabouts unknown.* (Interview by a 38-year-old male nurse, displaced from Humera Hospital, interview by Abebe, 25 May 2021)

Type of attack	Illustrative quote on type of attack
The armed or violent search of healthcare personnel, facility, or transport	*The soldiers stormed the hospital in the early hours of Sunday morning, raiding the student dormitory, doctors, and patient wards. They were contaminating the operating room, and stopping all surgical operations* (EEPA, 2021, SR 151)
Arrest	*Ethiopian, Eritrean, and Amhara forces were arresting healthcare workers, particularly women and the elderly, who remained in the districts under their control instead of fleeing.* (Interview with a 30-year-old female midwife, interview by Abebe, 20 June 2023). *When the soldiers arrived, I stayed with my mother, who is a nurse. They asked us where did our father go; we said no, we are doctors. They took me away from my mother and detained me for two months, I experienced all kinds of suffering. There were also three other health professionals arrested.* (Interview with a 30-year-old female midwife, interview by Abebe, 20 June 2023).
Assault	*In March 2021, ENDF raped a medical student, and 10 female staff had been raped. In June 2021 Eritrean forces assaulted a vaccination team health worker, and later that month three MSF health workers were murdered by ENDF.* (The Hill; The assault on healthcare in Tigray, Document review, August 2021)
Chemical agent	*There are rumours that 40 tons of Phosphorus chemicals have arrived in Mekelle Airport on 06 June 2021 based on*

Type of attack	Illustrative quote on type of attack
	internal sources. This appears part of the preparation for what is called the "final" war. (EEPA, 2021, SR 163)
	Three independent reports confirm that chemical weapons arrived in Mekelle. According to new information received tonight from a new source, 42 tons of chemical weapons have arrived on Mekelle through Djibouti. The chemical weapons arrived in Mekelle from Addis Abeba on flight ET3160 ETAUQ on June 5, B789 departing from Addis Abeba at 08:22. The place is reported to have delivered a phosphorus chemical. The carrying capacity of the plane is 51 tons. (EEPA, 2021, SR 167)
Detention	*Tigrayans that have not been deported yet are being put under 'quarantine'. They have little to no access to food and emergency supplies.* (EEPA, 2021, SR 95)
Militarisation of civilian healthcare facility	*Every fifth health facility visited was occupied by soldiers. In some instances, this was temporary; in others, the armed occupation continued. In Muglat, east Tigray, Eritrean soldiers are still using the health facility as their base, and the hospital in Abi Addi in central Tigray, which serves a population of half a million, was occupied by Ethiopian forces until early March.* (EEPA, 2021, SR 104)
Obstruction to healthcare delivery (e.g., physical, administrative, or legal)	*…ambulances sent from Mekelle to help bring injured civilians to Togoga have been denied passage by ENDF soldiers who control the checkpoints.* (EEPA, 2021, SR 173)

Type of attack	Illustrative quote on type of attack
Psychological violence/ threat of violence/ intimidation	*Aid workers who were stopped by Eritrean troops in Adigrat, Tigray were told: "We don't care if you work for the UN or USAID, we will burn your cars if you go beyond this point.* (EEPA, 2021, SR 131)
Removal of healthcare assets	*Medical equipment and pharmacies of health centres in Wukro, Negash, Idagahamus, and Adigrat towns were destroyed and looted – allegedly by Eritrean troops.* (EEPA, 2020, SR 42)
Removal of healthcare personnel or patients	*16% of participants in a study were reportedly kidnapped and/ or imprisoned during the war and about 88% of healthcare workers witnessed sexual abuse, while 33% treated one or more victims of sexual abuse.* (EEPA, 2023, SR 401)
Setting fire	*Trucks that were transporting facemasks and other protective equipment for COVID-19 to the Tigray region were intentionally set on fire and destroyed by Ethiopian and Eritrean forces.* (EEPA, 2021, SR 129) *They confiscated medicines and medical equipment, including heavy machinery, and burnt and destroyed the remaining medical supplies. They also vandalized the premises by smashing doors and windows, leaving medicine and patient files scattered across the floor.* (Interview with a 45-year-old- male health centre director, interview by Abebe, 8 August 2023)

Type of attack	Illustrative quote on type of attack
Sexual assault	*At least eight health workers were killed, 13 were sexually assaulted, and 42 health facilities were attacked.* (EEPA, 2022, SR 237)
Violence with heavy weapons	*Artillery attacks at the start of the armed conflict struck homes, hospitals, schools, and markets in the city of Mekelle, and the towns of Humera and Shire, killing at least 83 civilians, including children, and wounding over 300* (EEPA, 2021, SR 95)
Violence with individual weapons	*The soldiers removed bandages and intravenous fluids from patients and pointed their guns at doctors and nurses who objected to them.* (EEPA, 2021, SR 151)

Source: EEPA Situation Reports

Extent and level of attack

The extent of the healthcare attack in the Tigray war covers all geographic areas of Tigray and all levels of the health system. Our analysis showed healthcare attacks from all zones of Tigray and across all levels of the health system and healthcare facilities. Hospitals and health centres were damaged, looted, and deliberately vandalized to make them non-functional which is reprehensible and has happened to almost 90% of the region's health centres. (EEPA, 2021, SR 106)

The findings of our analysis on the extent and nature of the deliberate destruction of the entire Tigray health system at the hierarchal level clearly show how it was systematic and targeted (Table 10.2). A total of 12 themes were identified across the four hierarchal levels. Four themes are under the meta level (international), three themes under the macro (national), three themes under the meso (health facility), and two themes under the micro (Individual person's) level.

Meta (international) level

Four themes were identified under the meta (international) level, violating basic human rights, targeting civilians that amount to war crimes, crimes against humanity and genocide, the irresponsibility of a government, and prohibiting global partnership and solidarity. The attacks on Tigray's health facilities had a devastating impact on people; health facilities and health staff who lacked protection from the Ethiopian government, under international humanitarian law (EEPA, 2021, SR 104). Despite this, the people of Tigray took desperate actions to protect the health facilities:

> *The source states Ethiopian defense force could not help protect the institution from the Eritrean defence forces. The information that the Eritrean soldiers were on their way to Ayder referral hospital went around very fast through the megaphone system. The elders instructed the community to block the road. "My house is ten minutes away from there and everything was blocked." The source concludes: "the community protected Ayder hospital from major looting. They did the same for the Telecom (TV and satellites)."* (EEPA, 2021, SR 71)

The observational reports matched the descriptions of the protection of the attack on the Ayder Hospital from the EEPA Situation Reports. The Ethiopian government did not intervene to stop the deliberate destruction of health facilities in Tigray while ENDF passively observed the damage:

> *The source states: "Eritrean soldiers came with vehicles to take goods. The soldiers were few. The source says that the elders asked the ENDF colonel at the hospital campus whether they would prohibit the looting and that they would follow orders from the ENDF. The ENDF colonel said they had no mandate to tell Eritrean soldiers what to do. The elders then asked ENDF to give weapons to defend the hospital which is a public property of the Ethiopian government."* (EEPA, 2021, SR 71)

The Eritrean troops transported the looted medical equipment to Eritrea. The observational reports correspond with the EEPA Situation Report descriptions of the protection of the attack on the Ayder Hospital. Further, witnesses indicated a substantial influx of

looted vehicles, university equipment, and other medical and factorial goods into Asmara.

> *Confirmation from Asmara that it is flooded with cars, university equipment, lab equipment, pharmaceutical equipment, and equipment from factories, including a textile factory, and food, brought from Tigray as looted by the Eritrean military.* (EEPA 2020, SR 18)

This evidence shows the involvement of Eritrean troops in the destruction of the Tigray health system and that they used a high degree of organisation to identify and transport the items that were stolen. The observations of the researchers indicated that the Eritrean soldiers were backed up with specialised teams who selected with knowledge what was of value and how best to transport the stolen equipment.

Macro (national) level

Three themes highlighting the healthcare attack at the macro (national) level are identified in this study. These are:

- Demolition of regional leadership and governance structure
- Blockage of banking services, and
- Complete communication shutdown

For instance, the blockage of banking services forced health facilities to stop health insurance and free medical services to those who would have been eligible:

> *A letter is posted at Ayder Referral Hospital in Mekelle stating that patients who were beneficiaries of community-based health insurance, free, and other scheme users are no longer considered for health services if they are not able to pay.* (EEPA, 2021, SR 88)

This was observed directly by the members of the research team. Due to the total siege and blockade of financial services, health facilities encountered shortages of medicines and diagnostic equipment. As a result, the facilities stopped providing free services to patients who could not afford to pay:

> *Previously patients who were unable to pay were able to get health services for free when they provided a support letter from their respective administration. At this*

critical time, free health services are stopped for people who are not able to pay. (EEPA, 2021, SR 88)

This report corresponded directly with the observations made during the war by the research team. This justifies the conclusion that the health system, which was under direct attack, was undermined further because of the collapse of other sectors such as banking, communication, and transportation.

Meso (health facility) level

Destruction of healthcare infrastructure or health facilities, the collapse of health services delivery, and looting of medical supplies and equipment are the three themes identified under the meso (health facility) hierarchical level. Many reports during the war showed similar situations:

Medical equipment, including ultrasound machines and monitors in Adwa Hospital, had been deliberately smashed. The health facility in Semema was reportedly looted twice by soldiers before being set on fire, while the health center in Sebeya was hit by rockets, destroying the delivery room. (EEPA, 2021, SR 104)

Additionally, another witness has reported that:

90–95% of the health facilities are not working and were especially struck by the "systematic aggression to the health facilities and looting of the facilities in the rural area's health posts. (EEPA, 2021, SR 90)

The damage to the Tigray health system is more pronounced and visible at the organisational or health facility level. All the WHO's six building blocks of the health system were damaged and affected. These building blocks are:

- Health systems governance and leadership
- Health services delivery
- Health workforce
- Healthcare financing
- Health information systems
- Medical supplies, technology, and medical equipment

The analysis of the EEPA situation report showed there is adequate evidence of incidents of attack on the health system in all the six building blocks of the health system.

Micro (individual level)

Two themes were identified under the healthcare attack that happened at the micro (individual) level. These themes are the violence against healthcare workers and criminalising healthcare. About 20,000 healthcare workers were denied their salary for about two years. Intimidation and the killing of healthcare workers were reported. It was also reported that Ethiopian soldiers armed with machine guns, sniper rifles, and grenades raided a hospital in the Tigray region twice. (EEPA, 2021, SR 151)

The invading forces seized control of healthcare facilities and used them as fortresses. Additionally, they conducted raids on patient wards, and student dormitories, contaminating operation rooms to halt service provision. Moreover, reports indicated that the forces were involved in threatening healthcare workers whom they perceived as uncooperative. For example, the soldiers were demanding a "list of the names of doctors who will not cooperate with the military's investigation into the hospital" (EEPA, 2021, SR 151). This was confirmed with the autobiographical notes of the researchers living in Tigray during the war.

The denial of salary for about two years, intimidation, and killing of healthcare workers by armed forces resulted in mental health problems, hunger, and anxiety of the healthcare workers, and their fear of going to health facilities to providing health services and staying at their duty stations. This was confirmed with the observations made by the team that worked in hospitals in Tigray during the war.

Table 10.2. Major themes and subthemes emerging during analysis of deliberate destruction and attacks on the health system in Tigray

Hierarchical level	Theme	Subtheme
Meta (international) level	Violating basic human rights	Right to life Inviting foreign forces and governments to attack their people Violating international human rights laws
	War on people (war crime, crime against humanity and genocide)	Total siege (no travel from and to Tigray, no land and air transport from and to Tigray, no banking services, communication blackout, no money transfer) Denying basic lifelines (no food, no water, no electricity, no market) Artillery and bombardment on public places/killing civilians/massacres (war on the people, forced displacement, hate speech, massacres, killing civilians)
	The responsibility of government	Not protecting health facilities Government not protecting its people Government not providing public health services to its people Lack of protection of healthcare workers
	Global partnership and solidarity	Red-cross could not distribute medical supplies Partners discouraged by the lack of protection for health

Hierarchical level	Theme	Subtheme
		facilities and continued looting. Allowing access to international humanitarian organisations
Macro (national level)	Demolition of regional leadership and governance structure	No functional government structures No police and security officers Managers and leaders of the health system targeted because of their affiliation
	Blockage of banking services	Backing services closed/no money No budget/no salary No risk protection/health security No humanitarian aid/no community-based health insurance (CBHI) / no free services Local organisations prevented from accessing banking services.
	Complete communication shutdown	No means of communication (Communication blackout, Internet shutdown, No electricity) No means of reporting and documentation (Computers looted and destroyed, health records destroyed along with health facilities destruction)

Hierarchical level	Theme	Subtheme
Meso (health facility/healthcare workers) level	Destruction of healthcare infrastructure or health facilities	Destroyed health facilities Health centres destroyed Hospitals destroyed All levels of the health system were attacked …hospitals, health centres, and health post. Widespread attack on healthcare in all zones, all cities, and throughout Tigray Burned health facilities Ambulances stolen
	Collapse of health services delivery	Occupation of health facilities by the military No place for service delivery No medical supplies and equipment No health workers No food and water at health facilities No referral service (no transportation, ambulance stolen, no fuel, curfew, no communication) Inaccessible hospitals/health facilities No immunisation
	Looting and destruction of medical supplies and equipment	Looting of medical equipment and supplies (health facilities looted and destroyed, medicine factory destroyed and looted) No medicine and equipment in cities (all drug stores and pharmacies closed, no money to buy, no medicine and supplies entered Tigray)

Hierarchical level	Theme	Subtheme
Micro level (individual healthcare worker/human resource for health)	Violence against healthcare workers	No salary for healthcare workers (20,000 healthcare workers without salary)
		Death of healthcare workers
		Killing health workers
		Trauma
		Victims of war
		Hunger of healthcare workers
	Criminalising healthcare	Intimidating healthcare workers
		Fear of intimidation going to health facilities and providing services

Consequences and impact of attacks

Tables 10.1 and 10.2 describe the types of healthcare attacks and almost all attacks were either direct attacks or had a direct impact on the health of the people. For example, Eritrean forces intentionally destroyed infrastructure including hospitals, schools, water services, and vocational training centres in the towns of Dewhan and Alitena. (EEPA, 2022, SR 281). Another example is that eyewitnesses reported that ENDF and the allied forces were systematically destroying cars carrying medical supplies such as oral rehydration solutions for children (EEPA, 2021, SR 129). The data demonstrates that direct attacks happened intentionally and had a direct impact.

All reported healthcare attacks in this study can be categorised into the three WHO classifications based on their impact: direct impact and target attack, direct impact but not targeted attack, and indirect impact but targeted impact. Our analysis showed three key direct consequences/impacts:

- Total collapse of the health system
- Reoccurrence of easily preventable diseases
- Death of hundreds of thousands of civilians

The collapse of the health system was across all levels of the healthcare delivery system, types of health facilities, and in all the geographic zones of Tigray.

> *A study reported that the invading forces made the healthcare facilities in the region non-functional. Nearly all facilities outside of the regional capital, Mekelle, were reported to be non-functional.*
>
> *A study assessed the geographical distribution of the health crisis due to the war in Tigray and found only 3.3% in Western, 3.3% in South Eastern, 6.5% in North Western, 8% in Central, 14.6% in Southern, 16% in Eastern and 78.6% in Mekelle are fully functional.* (EEPA, 2022, SR 213)

Similarly, other studies documented the non-functionality of the healthcare facilities in the region. This non-functionality refers to all types of health facilities.

> *A study by researchers from Mekelle University and various US universities exploring the impact of war in Tigray on health facilities revealed that only 9.7% of health centers, 43.8% of general hospitals and 21.7% of primary hospitals are currently fully functional.* (EEPA, 2022, SR 213)

Moreover, it was reported that the health system in Tigray had experienced a complete collapse. As a result of the total collapse of the health system, easily preventable diseases that were almost controllable before the war were reported and emerging as outbreaks during the time of war. Local health officials in Tigray warned of the rise of deadly diseases such as measles, tetanus, and whooping cough, as vaccination levels had fallen from over 90% before the war to under 10% in 2022. (EEPA, 2022, 272)

Some reports estimated that more than a million lives were lost in the two years' war in Tigray. However, there are no rigorous numbers on the total lives lost in Tigray due to the deliberate destruction of the health system and its consequences. The available reports showed that the death toll of civilians was high.

A high maternal mortality rate was reported because of limited access to medication for safe delivery and abortion. This had happened due to total siege and blockade. Women in Tigray were unable to access

medicines for safe delivery and abortion, resulting in 840 maternal deaths per 100,000 live births in 2022. (EEPA, 2022, SR 278)

Moreover, the Tigray war had used total siege and blockade as a means of warfare. Medical services were halted due to a lack of medication, and the expiry of drugs, leading to numerous deaths among pensioners and patients. Starvation was also reported as a cause of death. There had been a progressive decrease in drug alternatives to treat patients since July 2021. This had compelled patients to use expired drugs and Tigray ran out of all drugs in June 2022, costing the lives of many (EEPA, 2022, SR 230). The observations of the medical team of the researchers who lived in Tigray confirmed this situation.

The war and total siege in Tigray also had a significant effect on the cardiology services in the region. A call-to-action article published in the European Heart Journal highlighted that over half of the cardiac patients receiving life-saving treatment were lost. This article reported that the number of cardiac patients that had been treated had dramatically decreased by over 50%, leading to the untimely loss of lives with many preventable home deaths (EEPA, 2022, SR 230). This is corroborated by the notes of the situation recorded by the autobiographical notes. Healthcare providers were unable to save the lives of these patients due to a lack of medication and care. This caused much frustration and mental health strain on the health workers.

Survey through volunteered health workers

The survey through volunteer health workers inventorised the following:

- Description of the attacks, date of report
- Date of attacks, location (e.g., name of zones, district, facility)
- Type of attack (e.g., abduction, shooting, the threat of violence)
- Impact on health service delivery, (direct/indirect, targeted/not targeted)

- Health resources involved (e.g., health facility, ambulance, health worker, patient)
- Source of data
- Health system resources attacked
- Types of people affected in the attack: health workers, auxiliary health staff, healthcare personnel, healthcare workers and patients' causalities and perpetrators

The findings were coded and labelled for analysis.

Attacks on health system resources

The volunteer health workers reported a total of 62 attacks on healthcare resources. Attacks on health facilities accounted for 15 (25.4%), whereas 15 (25.4%) were attacks on health services. The attack on healthcare transport accounted for 12 (20.3%). There were also reported casualties of 15 (25.4%) health workers and 2 (3.4%) civilians.

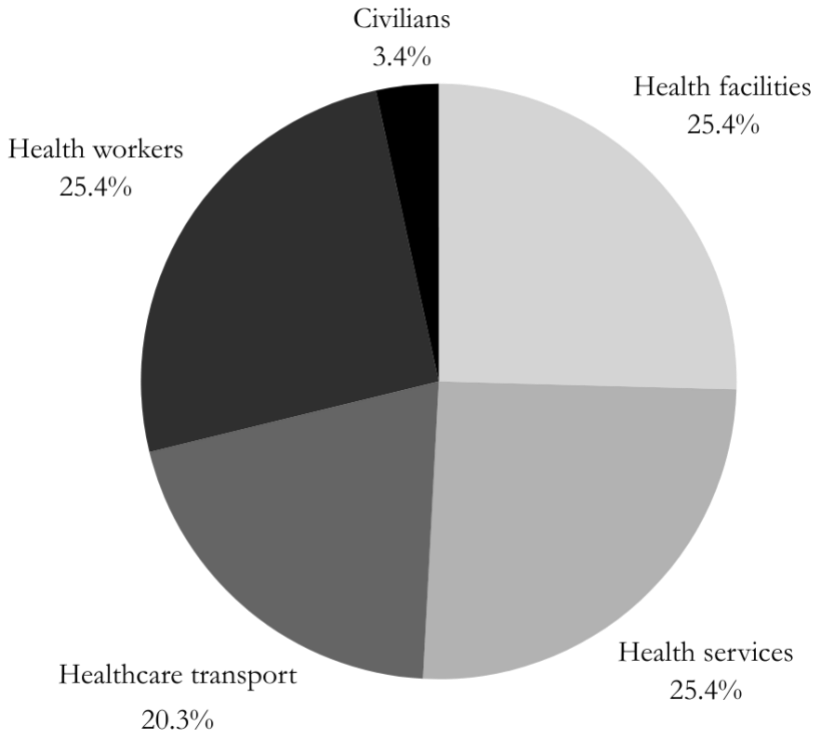

Figure 10.2. Overview of attacks perpetrated on healthcare resources

The attacks on the healthcare system happened in the form of drones, airstrikes, and shelling; deliberate damage, destruction, and looting of healthcare facilities; damage and looting of ambulances; intimidation and killings of health workers; and civilian casualties, including patients. According to the compiled dataset, out of a total of 57 reportedly attacked health facilities, 35 health facilities were reportedly destroyed, and the other resources were looted by the allied forces. Moreover, an additional 10 health facilities were subjected to destruction and burning, followed by looting of the resources of the health facilities. In 8 health facilities, the primary cause of the attack was looting. According to the dataset, all the attacks on the healthcare system of the Tigray region were direct and targeted.

Misuse of health facilities and ambulances for military purposes

General hospitals, along with approximately 86.5% of primary hospitals, were converted into military camps and housing facilities for the allies which invaded Tigray. This was particularly pronounced in the South Western and Central zones of Tigray, which were heavily occupied during the second intense and bloody conflict by both forces. Almost all hospitals were targeted and used as military camps.

Perpetrators of attacks

Close to half (42%) of the attacks on the healthcare system in Tigray were carried out exclusively by Eritrean forces. The ENDF and Eritrean soldiers carried out the remaining attacks jointly. The allied forces attacked the health facilities in phases, each of which was marked by a different attack. Furthermore, the health workers reported that the allied armed forces—EDF, ENDF, and Amhara forces—jointly attacked the health facilities in Tigray in various rounds. They added that the perpetrators used a variety of tactics to attack the healthcare infrastructure, including looting medicines, medical supplies, heavy machinery, generators, and ambulances. In the first round, they looted the medical equipment and supplies, including heavy machines such as generators, refrigerators, x-ray machines, ultrasound, oxygen suction, aesthesia materials, and

microscopes, and transported them to Eritrea. In the second phase, the Eritrean forces came and looted mattresses, tables, and chairs and damaged all the remaining materials and supplies. They deliberately looted and burned ambulances and motorcycles. They were also trying to destroy the buildings. The doors and windows were demolished. The forces were repeatedly visiting the health facilities to destroy them.

The health workers illustrated the attacks on the healthcare system as follows:

> *Eritrean forces severely damaged Adidaero Primary Hospital. In 2021, as a result, the hospital was out of service for the whole year. Again, in October 2022, the allied forces shelled the hospital with heavier weaponry once more and destroyed it. Over the same month, an Eritrean airstrike killed more than 50 civilians and injured more than 80 civilians.* (Interview with a 28-year-old female health officer, interview by Abebe, October 2023)

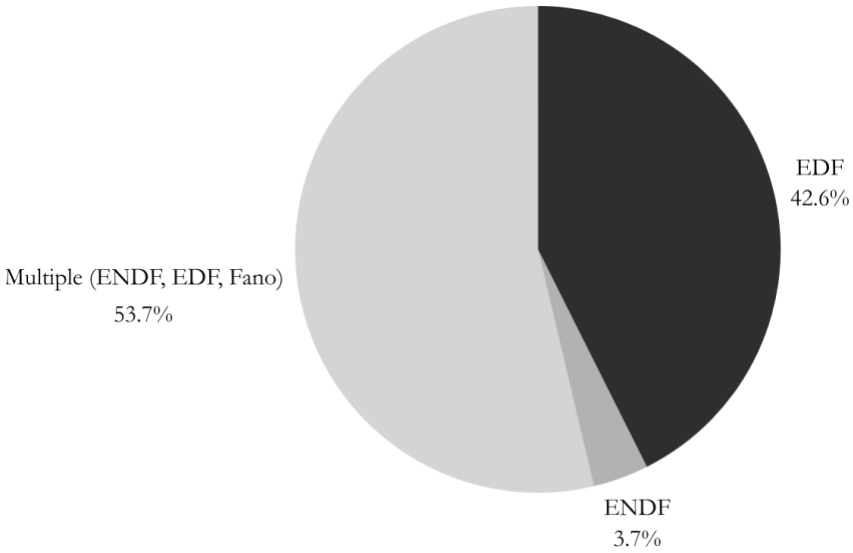

Figure 10.3. Overview of perpetrators of attacks on healthcare system in Tigray

Additionally, the joint forces also attacked the health centres.

> *Semema health centre was destroyed by joint forces – Ethiopian National Defence Force and Eritrean Defence Forces. The hospital rooms were destroyed, and heavy*

> *operating room materials, x-ray machines, ultrasound, oxygen suction, anaesthesia materials, patient beds, chairs, mattresses, and delivery materials were looted. The remaining were destroyed. Moreover, the Eritrean Defence Forces killed five clients at the hospital.* (Interview with a district [woreda] MCH head, interview by Abebe, 30 August 2023)

As a result of the deliberate and repeated attacks, the health facilities in Tigray were left without medical equipment drugs, and transportation access. This jeopardised the region's ability to deliver essential medical services. The healthcare system of the region stopped providing services to the population.

Additionally, the healthcare workers reported several civilian casualties including the killing of patients who had been admitted to hospitals. Health workers were also victims. It was reported that ENDF, upon occupying towns, were mercilessly killing anyone they found on their route to the towns. Eventually, after ENDF left the towns, the Eritrean forces reoccupied them. It was also reported that the Eritrean forces were very savage and massacred innocent civilians including health workers. They executed the killings by going from house to house. For example, Eritrean forces killed 60 civilians in Adihageray Tabia, Maekel Adiabo *woreda*, and North Western Tigray and left them unburied for weeks. An Eritrean jet also struck Adidaero town, North Western Tigray.

Our analysis of the healthcare attack on these 57 health facilities complements and strengthens the findings from the EEPA daily situation report.

Legal interpretation of the results

The acts targeting health facilities in Tigray were committed in the context of an armed conflict. Acts such as shelling, bombardment, and attacking healthcare facilities, and the killing and torturing of health workers, etc., are prohibited under the laws and customs of war. Acts targeting health systems are typically characterised as war crimes under Article 8 of the International Criminal Court (ICC) statute. The deliberate misuse of health facilities contravenes the rules and customs of war, as provided under Article 35 of the Additional Protocol I to the Geneva Conventions (United Nations-Human

Rights, 1999). Therefore, the acts targeting the health system in Tigray may amount to war crimes, as they are in contravention of the rules of engagement under international humanitarian law.

Evaluating the nature and pattern of the attacks, it can be argued that the above-mentioned acts reveal a deliberate targeting of Tigray's health system across the region. The destruction of 89% of the region's health system illustrates the scale of the attacks and shows the widespread and systemic nature of the attacks. One of the criteria for a crime against humanity is "causing widespread and systematic attacks against civilians" (ICC, 2002). Attacks on health facilities in Tigray directly resulted in attacks on civilians. Moreover, the attacks inflicted against health workers were committed as part of widespread and systematic attacks that included murder, rape, and torture, which may amount to crimes against humanity, as provided under Article 7 of the Rome statute:

> *In his opening remarks, (US) Senate Foreign Relations Committee Chairman, Bob Menendez (D-NJ), said that he sees "echoes of Darfur. There are reports of extra-judicial killings, sexual violence, and forced displacement of Tigrayans. Armed actors have looted and destroyed health and education installations and attacked refugee camps." and that "We appear to be witnessing war crimes and crimes against humanity."* (EEPA, 2021, SR 157)

The Rome Statute, in Article 8 (Melander *et al.*, 2021), states that attacks directed against health facilities are classified as war crimes. Moreover, the Geneva Convention protects civilians and civilian facilities, explicitly prohibiting attacks on health systems. Article 18 of the Geneva Convention (IV) on Civilians, 1949, stipulates "civilian hospitals, including those that provide care for the sick, wounded, maternity cases, and the infirm, should not be attacked. Instead, the parties to the conflict must protect and respect these hospitals" (Ristaino, 2022, p. 175).

The Tigray war was further characterised by the imposition of siege-induced starvation against the Tigray population. Siege becomes a violation of human rights and humanitarian law (rules and customs of war) or an international crime when it causes deprivation of indispensable items necessary for civilian life, such as food and

medicine. Article 8(2)(b)(xxv) of the Rome Statute states that denying such necessities is a crime, and impeding relief supplies, as outlined in the Geneva Convention, is prohibited. Impeding the delivery of relief to an encircled area is a violation of humanitarian law that can result in war crimes (Melander *et al.*, 2021). Accordingly, it is likely that the type and nature of the attacks on the health system in Tigray constitute war crimes and crimes against humanity. Tefera (2024) has shown that the perpetrators of these acts clearly understood the context under which the destruction was committed.

The context of the Tigray war was also characterised by anti-Tigrayan rhetoric and media propaganda by the federal government of Ethiopia. Subsequent actions by the government, such as the blockade and siege-induced starvation, which included the denial of necessities for survival, such as medical facilities, are circumstantial evidence of acts of health system destruction, which may amount to the crime of genocide. In line with this, the report published by New Lines Institute on para 287 indicates:

> *[…] complete collapse of Tigray's health system with the outbreak of the conflict is exceptional. While a decrease in medical coverage may generally be consequential upon armed conflict, targeted acts against health facilities, together with the imposition of a systematic blockade or siege, progressively led to conditions of life that are capable of bringing about the destruction of the Tigrayan group.* (New Lines Institute for strategy and policy, 2024)

Understanding that all attacks against civilians during the Tigray war were committed within a context that dehumanised and specifically targeted ethnic Tigrayans contributes to establishing the special intent required for the crime of genocide.

Here the legal action brought before the International Court of Justice (ICJ) by South Africa concerning the Application of the Convention on the Prevention and Punishment of the Crime of Genocide, Geneva Convention in the Gaza Strip (Alexander, 2024) is highly relevant. The case was motivated by Israel's acts of destruction of health facilities and denial of access to medical facilities, among other things, contrary to Article 2(C) of the Geneva Convention. Article 2(C) prohibits "deliberately inflicting on the [protected] group

conditions of life calculated to bring about its physical destruction in whole or in part". The case passed a clear message to the international community, adding to the existing jurisprudence on genocide, that the destruction of the health system is an instrument to wipe out a protected group under the Genocide Convention. This needs explicit recognition and condemnation as an act amounting to genocide.

Similarly, the siege-induced starvation imposed on the Tigray population by the government of Ethiopia was inflicted with the knowledge that the consequence of the siege could result in the partial, if not total, destruction of the Tigray population. This leads to the conclusion that there are reasonable grounds to believe that the destruction of the health system in Tigray was committed with genocidal intent, as a total blockade combined with the destruction of the health system would undoubtedly lead to mass destruction of the targeted population (Tefera, 2024).

Given the direct and indirect (foreseeable) knowledge of the aforementioned acts, the destruction of the health system Tigray falls within the definition of acts of genocide under Article 2 of the Genocide Convention. The genocidal intent of these acts is supported by other acts such as killings, torture, inflicting conditions of life aimed at bringing about the physical destruction of the targeted population, and even prevention of births. These actions are explicitly prohibited under Article 2 of the Genocide Convention (United Nations-Human Rights, 1999).

Discussion

A recent WHO assessment on the status of the health facilities in Tigray conducted in May/June 2023 showed that 89% are partially or completely non-functional (WHO, 2023). This corroborates the findings in the research here presented. The methodology of the WHO Surveillance System for Attacks on Health Care does not indicate the weaponisation of healthcare attacks. It identifies the types of attacks and categories as direct or indirect attack/impact. However, it does not set a criterion for understanding the intention behind the deliberate destruction of the health system. Similarly, the 1949 Geneva Conventions, which were ratified by all Member States

of the UN, and most international humanitarian laws consider the destruction of health facilities in times of armed conflict to be a war crim. However, such destruction is not necessarily considered a crime against humanity or a crime of genocide. This understanding of the destruction of health facilities as a war crime masks the extent and the nature of the crime that was committed against the people of Tigray through the systematic and widespread destruction of the health system.

The evidence presented in this study shows a clear violation of international laws and basic human rights. The attacks on civilian healthcare facilities in Tigray were committed in the context of armed conflict. Violating the rules of international humanitarian law that protect civilians and civilian facilities is regarded as a war crime (Ristaino, 2022). Moreover, the incidents and attacks described under the theme of meta (international) level illustrate the widespread and systematic nature of the attacks on health facilities, which amount to attacks on civilians, as they resulted in civilian deaths and torture (ICC, 2003). Hence, it is argued that these acts amount to crimes against humanity. Additionally, the acts may also constitute acts of genocide, as outlined in Article 2, in particular the first three acts (a–c): (a) killing members of the group; (b) causing serious bodily or mental harm to members of the group; and (c) deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part; and (d) imposing measures intended to prevent births within the group. To establish genocide, special intent must also be established, drawn from the context in which the attacks were committed, here resulting in the partial if not complete destruction of the ethnic Tigrayans (Tefera, 2024).

Studies have estimated about 600,000 lives perished during the two years of the Tigray war (Pilling & Schipani, 2023). This fact, coupled with the intentional destruction of the health system and weaponizing of the obstruction of healthcare in Tigray, calls for responsible international, regional, and domestic courts to investigate whether the destruction of the health system in Tigray amounts to a war crime,

crimes against humanity, or genocide. In line with this, the report published by the New Lines Institute (in paragraph 64) found:

> *[…] by intentionally destroying the health care system in Tigray, […] removing these necessities of life over an extended period not only severely endangered the civilian population but actually caused widespread harm and death.* (New Lines Institute for strategy and policy, 2024)

Similarly, the statement of the Director General of WHO mentioned

> *In Syria, Myanmar, Yemen and Tigray millions have been denied access to essential health services, where health facilities have been destroyed and health workers have been attacked and intimidated […].* (EEPA, 2021, SR 104)

"Imposing conditions of life calculated to bring about the destruction of the target population" is a material element of the crime of genocide under Article 2(c) of the Geneva Convention. In establishing the special intent of this act, it is an established precedent to adhere to objective standards even in the absence of direct evidence. For example, the International Criminal Tribunal for the former Yugoslavia, the Trial Chamber in the case of Prosecutor V. Radoslav Brđanin stated:

> *In the absence of direct evidence, in inferring whether the "conditions of life" imposed on Bosnian Muslim and Bosnian Croat detainees amounted to conditions calculated to bring about their physical destruction in part, TC has focused on the objective probability of these conditions leading to the physical destruction of the group in part. In evaluating this objective probability, the Trial Chamber has focused on the actual nature of the "conditions of life" and on the length of time that members of the group were subjected to them.* (*Prosecutor v. Radoslav Brdanin*, 2004)

Taking the above objective probability standard, the result of the destruction of health facilities in Tigray coupled with the complete siege, blockage of food and medicine, fuel, and electricity could be nothing more than the destruction of the target population in part. This intention can be inferred from the actions and possible consequences of the acts.

The importance of qualifying the intentional destruction of the healthcare system as crimes of genocide in the context of the Tigray war is more pronounced, as it was accompanied by the forced

displacement of close to 2 million people, ethnic cleansing, and rampant sexual violence towards an estimated 120,000 women (Fisseha *et al.*, 2023). This includes the deliberate transmission of HIV/AIDS (Kidanu & Tefera, 2024), deliberate starvation and famine as a weapon of war and total siege all of which are interrelated and contribute to the stress of the healthcare system and death of up to 700,000 people in Tigray (Pilling & Schipani, 2023).

Conclusion

This study adopted the ICM framework for health systems resilience to analyse the destruction that happened across all levels of the health system and related sectors in Tigray, to identify potential capacity for resilience. The deliberate destruction of the healthcare system in the Tigray war poses a unique scenario that requires an urgent need for the rethinking of health system resilience frameworks.

This study analysed and documented the types, nature, magnitude, and manner of the destruction inflicted upon the Tigray health system over the two years of the Tigray war. The destruction was intentional, systematic, and widespread across all levels of the health system, health facilities, and geographic areas of Tigray. All types of WHO reportable healthcare attacks occurred and were documented. The deliberate destruction of the health system in Tigray is unique, as it was executed by the government and its allied forces, including foreign forces of the EDF. Close to half of the attacks on the healthcare system in Tigray were carried out exclusively by Eritrean forces, making up most of the destruction. This deliberate destruction resulted in the complete collapse of the health system threatening the life and existence of the Tigray population. As a result, the achievements in the health profiles in the Tigray region made over the last three decades preceding the war were wiped out. Health profiles in the Tigray region have reverted to the status that they were in the early 1990s.

Taking the intention, context, consequences, and impact of the deliberate destruction of the health system in Tigray, it is argued that the acts amount to war crimes, crimes against humanity, and potentially genocide. So far, the literature on international

humanitarian law has characterised the destruction of health systems as a war crime. It is purported in this chapter that this understanding of the legal interpretation will undermine the efforts to ensure accountability and have ramifications for putting the appropriate legal and political measures in place to mitigate and prevent attacks against healthcare systems in times of war. Globally, attacks on healthcare are an emerging global health problem and are being used in modern warfare to commit genocide. Thus, building global solidarity among the health community to put the necessary legal and political measures in place, at global and national levels, is vital to mitigate and prevent the deliberate destruction of health systems in times of war, with the grave consequences this destruction has for civilians.

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Authors' contributions

Araya Abrha Medhanyie and Mirjam Van Reisen conceived the idea of the research. Araya Abrha Medhanyie designed and implemented the research. Initial preparation of the data set from the EEPA and coding of the data was made by Mirjam Van Reisen and Joëlle Stocker. Araya Abrha Medhanyie and Alem Desta Wuneh did a second round of coding, and analysis of the data set prepared by Mirjam Van Reisen and Joëlle Stocker. Araya Abrha Medhanyie and Alem Desta Wuneh identified the themes that are presented in the manuscript. Additional data was collected and analysed by Gebreamlak Gidey Abebe. A. H. Tefera provided the legal analysis of the chapter. Araya Abrha Medhanyie wrote the first version of the manuscript. All authors, including Gebru Kidanu, participated and contributed in the interpretation of the findings and write up of the subsequent versions of the manuscripts. All authors have read and approved the final version of the manuscript.

Ethical considerations

'The Tigray War and its Consequences on Health and Peace of the People of Tigray' (Reference Number CHS/DHC/020/22). The Tigray book project is reviewed and registered at the Institutional Review Board (IRB) office of the College of Health Sciences of Mekelle University.

This chapter should be read in conjunction with the 'Note on Content and Editorial Decisions'.

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