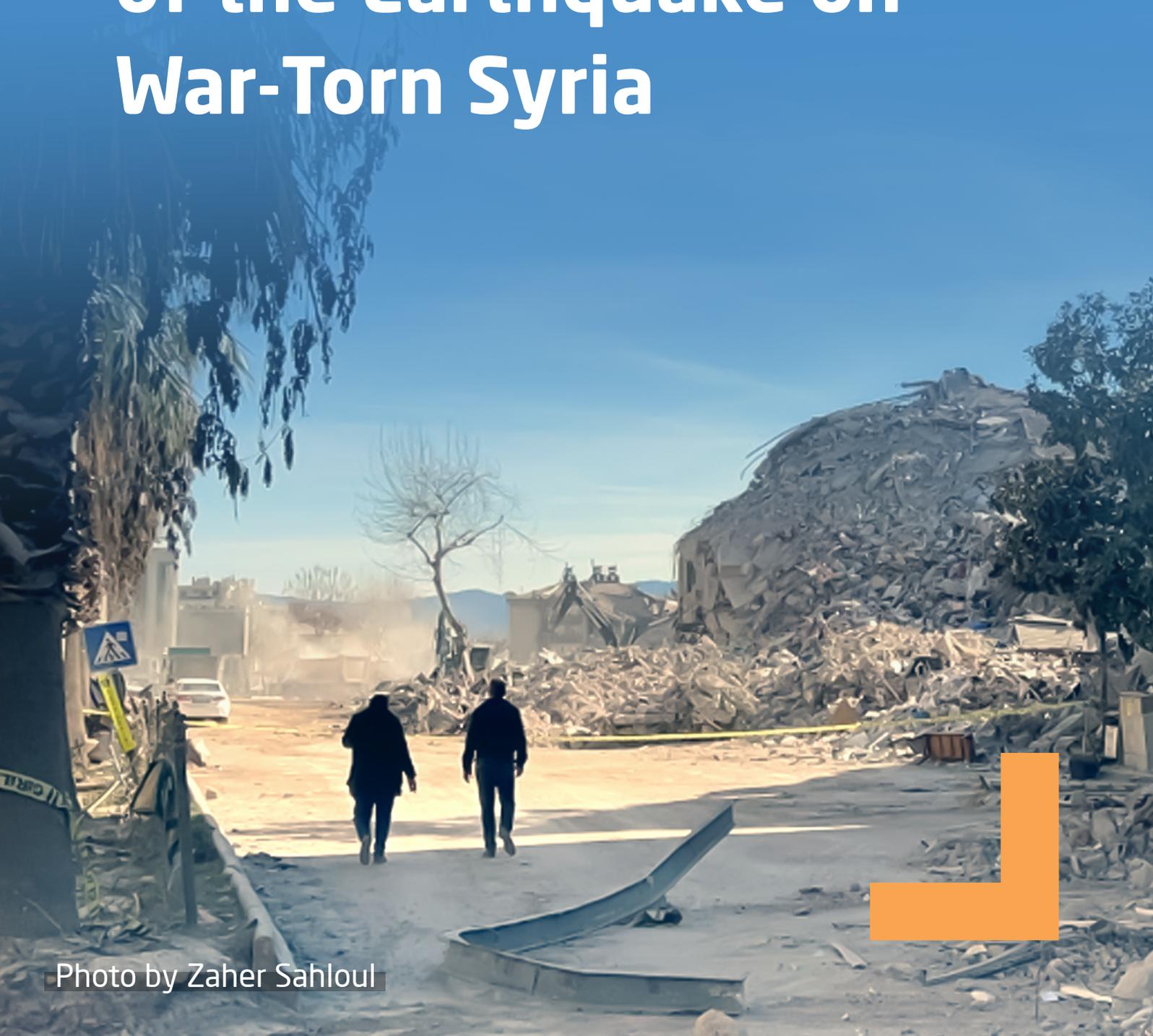


Retraumatized

The Psychological Impact of the Earthquake on War-Torn Syria





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Table of Contents

06	Executive Summary
08	Introduction
09	The Syrian War and Its Impact on Healthcare
16	The Syrian War and Mental Health
17	MedGlobal Mental Health and Psychosocial Support Program in Syria
20	The Scale of the Turkiye-Syria 2023 Earthquake
21	The Impact of Earthquakes and Natural Disasters on Mental Health
24	MedGlobal Team Post-Earthquake Observations
31	MedGlobal Mental Health Training Methodology and Data Analysis
34	The Role of Faith
35	Post-Crisis Recovery and Reconstruction
37	Policy Recommendations



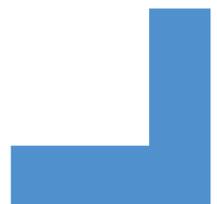


About MedGlobal

MedGlobal is a humanitarian charitable non-governmental organization that provides emergency response and health programs to build resilience among vulnerable communities around the world. Our health programs support victims of wars and disasters, refugees, internally displaced persons, and marginalized communities in disaster-affected and low-resource settings.

MedGlobal was launched in 2017 by a diverse group of doctors, nurses, global health specialists, and humanitarians to address the health needs of the most vulnerable populations. MedGlobal partners with local communities to address their health priorities, builds resilience through training and education and deploys healthcare volunteers, and donates medical equipment, medications and supplies.

MedGlobal field teams support local health programs for vulnerable populations in North and Latin America, Africa, MENA region, Europe, and Southeast Asia. Our growing field teams and partner organizations are supported by selfless volunteer nurses, and medical professionals of all specialties from 27 countries who embrace our mission. In 2022, MedGlobal programs impacted more than 12 million people in disaster regions.



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We give special thanks to all of our donors, especially the Latter Day Saints Charities that have supported our programs to provide medical relief to the Turkish and Syrian victims of the earthquake. We are grateful for the 650 medical volunteers who have provided quality healthcare to our patients with compassion and utmost altruism. We thank the Turkish Ministry of Foreign Affairs, and Turkish airline for facilitating this mission. We thank the Turkish people and government for hosting more than 4.5 million Syrian refugees and providing humanitarian support to the Syrian people in northern Syria. Above all, we would like to thank and dedicate this report to the more than 14 million Syrian refugees and internally displaced people including the newly displaced 3,000,000 civilians from the earthquake, most of whom have been displaced multiple times, survived atrocities, and continue to face daily challenges in the camps.



Photos in report taken by MedGlobal volunteers and photographer: Dania Albaba, Zaher Sahloul, Huda Taktak, and Qusay Shbeeb

Executive Summary

Earthquakes and natural disasters as a whole have noticeable and immediate impacts on the physical and psychological landscape of a nation. Natural disasters have been shown to result in a higher likelihood of the development of mental health disorders in numerous studies following hurricanes, tsunamis, earthquakes, and floods alike. A 7.8 magnitude earthquake devastated southern Türkiye and northern Syria on February 6, 2023. It impacted 23 million people in both countries and was the worst earthquake that hit the region in the past 200 years.

The Syrian conflict, now in its twelfth year, has resulted in a complex humanitarian emergency, including the displacement of half of its population, a global refugee crisis, and the disintegration of the public health system. Syria has been divided into four regions that are controlled by different groups, each with its separate health-care system. The crisis has also created an unprecedented strain on health services and systems due to the protracted nature of the warfare, the targeting of medics and health care infrastructure, the exodus of physicians and nurses, the shortage of medical supplies and medications, the unprecedented and enormous displacement of populations internally and externally, and the disruption of medical education and training.

The Syrian conflict has had a severe psychological impact on its civilians, resulting in high levels of mental health problems such as depression, anxiety, and post-traumatic stress disorder. Many Syrians have experienced traumatic events such as bombings, shootings, and forced displacement that have contributed to these mental health problems. The lack of access to mental health care and support further exacerbates the psychological impact of war on Syrians, leaving many without adequate treatment or resources.

The goal of the MedGlobal Mental Health and Psychosocial Support Program is to utilize lessons learned from work experience in the Syrian context to improve access to mental health services for the victims of war and displacement, especially marginalized and vulnerable communities. MedGlobal achieves this goal through partnerships with local organizations to provide a variety of mental health services in the Turkish-Administered areas in Northern Syria.

In February 2023, MedGlobal deployed a team of psychiatric professionals to conduct post-disaster mental health training in Northwest Syria. The training covered a myriad of subjects that were found to be essential in the sub-acute disaster period. Following the training, surveys were distributed to the participants. The survey showed that 46.5% of the participants had never encountered a training similar to what we had presented, 100% of the respondents reported that they were able to learn new information from our presentations, and 97.2% reported that they felt they could use lessons learned from the trainings to apply to their work on the ground.

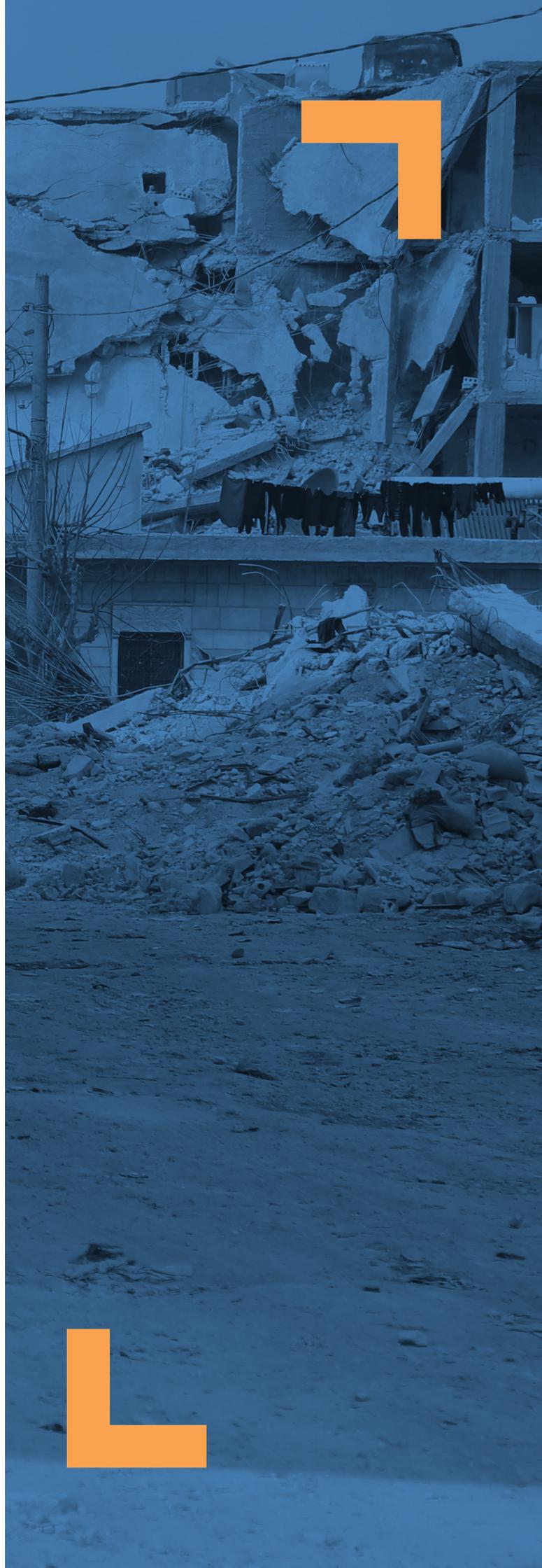
In the aftermath of the earthquake, rebuilding Syria's shattered health system should be a priority. Such undertaking requires a holistic approach that addresses a number of issues. Among the most important ones include focusing on the retention of health workers, providing support and training, and establishing incentives for those who have left to return. Additionally, building resilience through training should be a priority for healthcare authorities, non-governmental organizations, and funders. Healthcare workers should receive training on vulnerabilities, screening, and trauma-informed, culturally-specific mental health and medical treatments for sequela and harm from trafficking. They should receive services on child trauma and refugee mental health. NGOs should be trained in Psychological First Aid and Skills for Psychological Recovery in accordance with the

World Health Organization Information Sharing and Analysis Center (WHO ISAC) recommendations. This could be integrated into current trainings on gender-based violence, or mental health in disasters. Trainers must adopt a multifactorial approach when addressing mental health. Mental health issues are complex and can be influenced by various social, economic, and cultural factors. It is crucial to consider all of these to effectively address mental health issues.

In the wake of disaster and after twelve years of war, the use of substances as a maladaptive mechanism to cope increased in Syria among vulnerable populations including healthcare workers. The use of the drug Captagon, narcotics, and pain medications have become a significant issue. There must be an orchestrated effort to create awareness campaigns surrounding substance abuse, educate healthcare workers on symptoms of withdrawal and intoxication, create a substance use training program to educate local psychosocial support staff and establish more substance abuse recovery programs.

The United Nations (UN) and other funders should direct more funds towards mental health support, training of healthcare providers, nurses, and community health workers. Additional funds should also be directed to education to reduce the impact of the crisis on the mental health of children. Cross-border humanitarian aid under the auspices of the United Nations should be maintained through the current open three border crossings and expanded further to prevent the delay or disruption of humanitarian aid to northern Syria. Plans should be developed for post-crisis recovery, linking the disconnected healthcare systems, and rebuilding the healthcare system with the involvement of local health authorities and healthcare-focused NGOs. The United Nations should reach a political solution for the Syrian conflict based on UNSCR 2254.

Photos in report taken by MedGlobal volunteers and photographer: Dania Albaba, Zaher Sahloul, Huda Taktak, and Qusay Shbeeb



Introduction

A 7.8 magnitude earthquake devastated southern Turkiye and Northern Syria on February 6, 2023. It impacted 23 million people in both countries and was the worst earthquake that has hit the region for the past 200 years. Syria is in the midst of a brutal war that led to the displacement of half of the population, a global refugee crisis, and the disintegration of the public health system. It is divided into four regions that are controlled by different groups. Each has its separate healthcare system.

The international community rallied to provide aid to the victims. There was a noticeable delay in sending aid to Northwest Syria, which was hit hard by the earthquake according to the UN. Civic society and non-governmental organizations mobilized to provide search and rescue and to support the victims by providing shelter, food, psychiatric support, and healthcare services.

The MedGlobal team, already present in southern Turkiye and Northwest Syria, responded in the early hours by distributing much-needed medical supplies, providing fuel to the search and rescue operations, and organizing mobile clinics to support the health needs of the displaced population. MedGlobal-supported hospitals received hundreds of patients and provided surgical and medical support.

MedGlobal organized a group of 10 US and Turkiye-based volunteer physicians to help in the aftermath of the earthquake in northwest Syria. The team arrived in northwest Syria in a Resiliency Medical Mission (RMM), in order to provide training to healthcare workers, and local NGOs, and perform surgeries on the injured patients. The team consisted of mental health specialists,

surgeons, critical care, anesthesia, emergency, and internal medicine specialists.

The MedGlobal mental health team was led by Sophia Banu, child, adolescent and adult psychiatrist, an Associate Professor of Psychiatry at Baylor College of Medicine. Dr. Banu has 20 years of experience in working with refugees and survivors of torture in Nepal, New York and Houston. She is the founder of the Clinic for International Trauma Survivors at Baylor College of Medicine, and Psychiatry Director of the Alliance Wellness clinic for refugees, co-director and cofounder of the Global Mental Health Division. She has global health experience in post disaster response (man-made and natural), including response to the Nepal earthquake 2015, Hurricane Harvey in Texas 2017, and the Rohingya refugee crisis and genocide in 2017. She was joined by Dania Albaba, and Nora Abdullah. Both are third-year psychiatry residents and second generation Syrian Americans who have close ties to their homeland, and experience of providing mental health to diverse refugee populations in the US, Turkiye, and Syria.

This report describes the impact of the earthquake on the mental health of the Syrian population in northwest Syria, and how it pertains to health care delivery specifically in the field of mental health and psychosocial support based on the experience of the MedGlobal mental health team, its training sessions, data generated by the training sessions, and its observations on the ground. It is followed by policy recommendations on how to address the mental health consequences of the earthquake and the war in retraumatized populations.





The Syrian War and Its Impact on Healthcare

An overwhelming crisis

The Syrian conflict that started in 2011 has resulted in a complex humanitarian emergency. The Syrian crisis, now in its twelfth year, has created an unprecedented strain on health services and systems due to the protracted nature of the warfare, the targeting of medics and health care infrastructure, the exodus of physicians and nurses, the shortage of medical supplies and medications, the unprecedented and enormous displacement of populations internally and externally, and the disruption of medical education and training¹.

The movement which was a part of the Arab spring in 2011, turned into the largest refugee crisis of the modern world, with more than half of the Syrian population fleeing their neighborhoods and cities and becoming either refugees in other countries, or internally displaced in their own country. The crisis caused enormous destruction to the civilian infrastructure, healthcare system, social status of the population, economic crisis, and an increasing need for humanitarian support from the international community.

Before the conflict

Before the current war, health indicators improved consistently in the Syrian Arab Republic over the past three decades according to data from the Syrian Ministry of Health with life expectancy increasing from 56 years in 1970 to 73.1 years in 2009; infant mortality dropped from 132 per 1000 live births in 1970 to 17.9 per 1000 in 2009; under-five mortality dropped significantly from 164 to 21.4 per 1000 live births, and maternal mortality fell from 482 per 100,000 live births in 1970 to 52 in 2009².

The Syrian Arab Republic was in an epidemiological transition from communicable to non-communicable diseases with the latest data showing that 77% of deaths were caused by non-communicable diseases². Total government expenditure on health as a percentage of Gross Domestic Product was 2.9 in 2009². Despite such low public investment, access to health services had increased dramatically since the 1980s, with rural populations achieving better equity than before².

Despite the apparently improved capacity of the health system, a number of challenges persisted including inequities in access to health care between urban and rural areas, between the poor population and the wealthy, between refugees and displaced populations and host communities, between loyal populations to the regime and populations that were perceived as opposing to the regime, and between the capital and other cities.

Other problems included poor quality of care, lack of health insurance to most of the population, inadequate national policies, lack of medical research, corruption and nepotism, the brain drain that was exacerbated due to a decade of war and economic deterioration, worsening economy, lack of vetted data, lack of transparency, inadequate utilization of capacity, inadequate coordination between providers of health services, uneven distribution of human resources, high turnover of skilled staff and leadership, inadequate number of qualified nurses and allied

health professionals. In the past two decades, there has been an uncontrolled and largely unregulated expansion of private providers, resulting in uneven distribution of health and medical services among geographical regions. Standardized care, quality assurance, and accreditation are major issues. A study done during the last pandemic revealed that mortality rates among critically ill patients admitted to the intensive care units with severe 2009 H1N1 influenza A was 51% in Damascus compared to an APACHE II-predicted mortality rate of 21%.

At the start of the civil war in 2011, NCDs represented nearly two-thirds of the burden of death and disability in Syria².



The impact on the healthcare sector

Prior to the conflict, Syria's health system was comparable with that of other middle-income countries; however, the prolonged conflict has led to a significant destruction of the health infrastructure. The lack of security and the direct targeting of health workers and health facilities have led to an exodus of trained staff leaving junior health workers to operate beyond their capabilities in increasingly difficult circumstances. This exodus together with the destruction of the health infrastructure has contributed to the increase in communicable and non-communicable diseases and the rising morbidity and mortality of the Syrian population. Strengthening the health system in the current and post-conflict phase requires focus on the following 3 areas: 1. retention strategy for the remaining health workers 2. incentives to bring back health workers who have left 3. engagement with the expatriate Syrian and international medical communities for additional support³.

The health sector was hit hard by this war. Up to 50% of the health facilities have been destroyed and up to 70% of the healthcare providers fled the country seeking safety, which increased the workload and mental pressure for the remaining medical staff^{4, 5}. The international community failed to prevent the destruction of healthcare infrastructure, which resulted in the collapse of Syria's healthcare system and left millions of internally displaced people (IDPs) in desperate need of medical assistance⁴.

Within a decade, the life expectancy of resident Syrians has declined by 11 years. Over the first 11 years of the conflict, at least 350,200 civilians died from injuries incurred in the violence from March 2011 to March 2021 according to the United Nations; although other estimates put the number around 650,000 deaths due to injuries⁶. One in 13 of those who died in the conflict was a woman and about 1 in 13 was a child. Although there is no exact data, it is estimated that more than twice as many civilians, including many women and children, have probably died prematurely of infectious and noncommunicable chronic diseases (NCDs) due to a shortage of adequate health care⁷. Doctors, local administrators, and nongovernmental organizations are struggling to manage the consequences of the conflict under substandard conditions, often using unorthodox methods of health care delivery in field hospitals and remotely by telehealth communication. Much-needed medical supplies are channeled through dangerous routes across the borders from Lebanon, Jordan, Iraq, Turkey, and European countries.

With the war came economic hardship and collapse. 9 out of 10 Syrians live below the poverty line according to the United Nations⁷. Spending on health became a lower priority for most families struggling to sustain basic necessities including shelter and food. Most families can't afford to spend on medications, expensive treatments, elective surgeries, cancer treatment, dialysis, or medical devices, especially with the lack of health insurance.



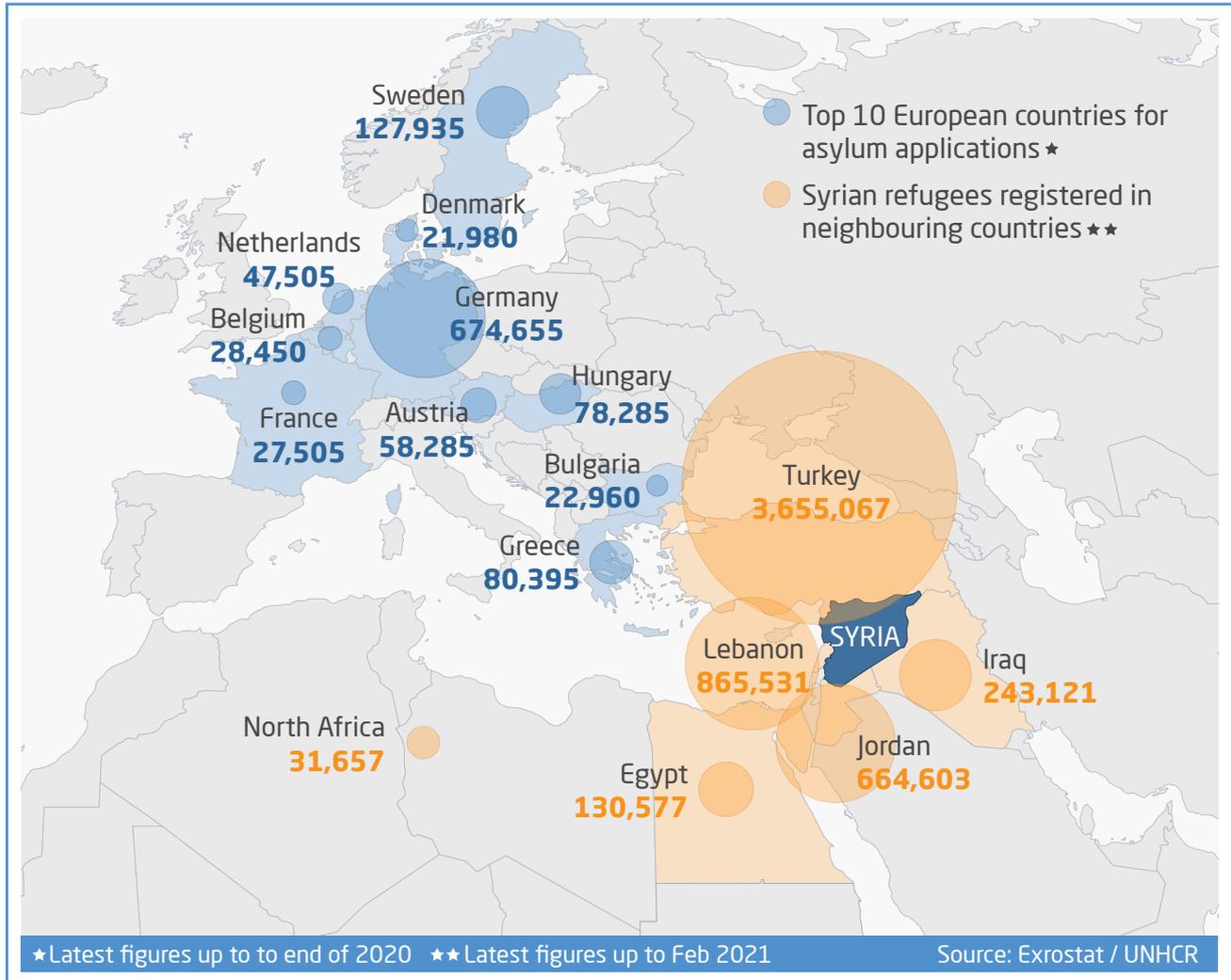
A crisis of refugees and displacement

The conflict in Syria created the worst refugee crisis since WW2. According to the United Nations Refugees Agency (UNHCR), half of pre-war Syria's population is displaced internally or externally. Syria had a population of 22 million before the crisis⁸. 1 out of 4 refugees and 1 out of 5 displaced persons in the world are from Syria. Currently, there are 6.6 million Syrian refugees, residing mostly in neighboring countries including Turkey (3.7 million), Lebanon (851,000), Jordan (672,000), Iraq (252,500), Egypt (136,000).

Syrian refugees have been resettled through UNHCR resettlement programs in many European and Western countries. There are 674,000 Syrian refugees in Germany and 128,000 in Sweden. About 23,000 Syrian refugees were resettled in the US and 44,600 in Canada^{9,10}. Syrians fleeing the war took refuge in 125 countries including the Gaza strip and Somalia. Currently, Syria is the first country in terms of the origin of refugees for the past 6 years. Most Syrian refugees are non-camped. 75% of Syrian refugees are women and children. Syrian refugees don't have consistent or adequate access to primary, secondary or tertiary healthcare, including diagnosis and treatment of psychiatric disorders, especially in Lebanon, Jordan, and Iraq^{11,12}. Many of the governments hosting the most refugees spend relatively little on health and are already struggling with a fast rise in NCDs in their native populations. The majority of Syrian refugees reside in Jordan, Lebanon, and Turkey, where NCDs already account for more than three-quarters of the deaths in each of these countries.



Where have all the Syrian refugees gone?



According to the UNHCR, in addition to refugees, there are an estimated 6.9 million internally displaced people inside Syria⁸. There are over two million people, (56% of which are children and 23% of which are women), living in 1,760 informal settlements and planned camps, often hosted in inadequate shelters and with limited access to basic services. 86% of the camps are located in the north-west of the country.

Households in overburdened host communities and those who have returned to their (often destroyed) places of origin continue to face major challenges in meeting their most basic needs. As the economic situation continues to deteriorate, its impacts are being acutely felt by virtually all populations. The earthquake led to further displacement of an additional 300,000 people in northwest Syria who lost their homes.

In rebel-controlled northwestern Syria, the earthquake has wrought disaster on communities already devastated by over a decade of civil war. More than 4.1 million of the area's 4.5 million population are dependent on humanitarian aid¹³. Over 2.8 million people were already internally displaced from other parts of Syria — 1.7 million of whom were in some ways spared the worst of the earthquake by living in camps in situations of abject deprivation. Buildings across northwestern Syria were severely damaged before the earthquake by years of shelling by the Syrian government, and survivors of building collapses are being displaced to city streets and already overstretched IDP camps in freezing temperatures. Since early 2015, the border between Turkey and northwestern Syria has been effectively closed to refugees, meaning that communities displaced by the earthquake have nowhere to go¹⁴.

Four healthcare systems

After a decade of unrest and war between different warring parties and involvement of different countries including Russia, Iran, the USA, Turkiye, and others, Syria is divided administratively into at least four different areas. Each has its own political and military authority. And each has its own healthcare system, administration, priorities, funding, and statistics. There is minimal or no coordination among the four areas.

The government-controlled area includes major urban centers including the capital Damascus, Rif Dimashq, Daraa, Sweida, Qunaitera, Homs, Hamah, Aleppo, Tartous, and Latakia. It has a population of 13.6 million living in 60% of the country¹⁵. There are eight public universities and 22 private universities in government-controlled areas including 6 medical schools¹⁶.

The Northwest is controlled by the opposition group Hay'at Tahrir al-Sham(HTS). It is supported by Turkiye. It depends mostly on cross-border humanitarian aid from the Bab-Al Hawa border crossing that was established by the UNSC in 2015. It has a population of 3.4 million, half of them are IDPs. 1.4 million live in IDP camps. The main cities are Idlib, Ariha, Al-Dana, Salkeen, Kafr Takahreem, Jisr Shughour, Darkush, Harem, Alatarib, and Sarmada. There are two public universities- Idlib and Aleppo, 3 private universities, and 2 branches of Turkish universities. It has two medical schools.

The Turkish-administered region is controlled by Turkiye and the "Syrian National Army, another opposition group. It is further divided into three administrative areas: Euphrate Shield, Olive Branch, and Peace Spring. It has an estimated population of 1.7 million. The main cities are Azaz, Efrin, Al-Bab, Jarabulus, Tal Abyad, and Raas Al-Ein¹⁷.

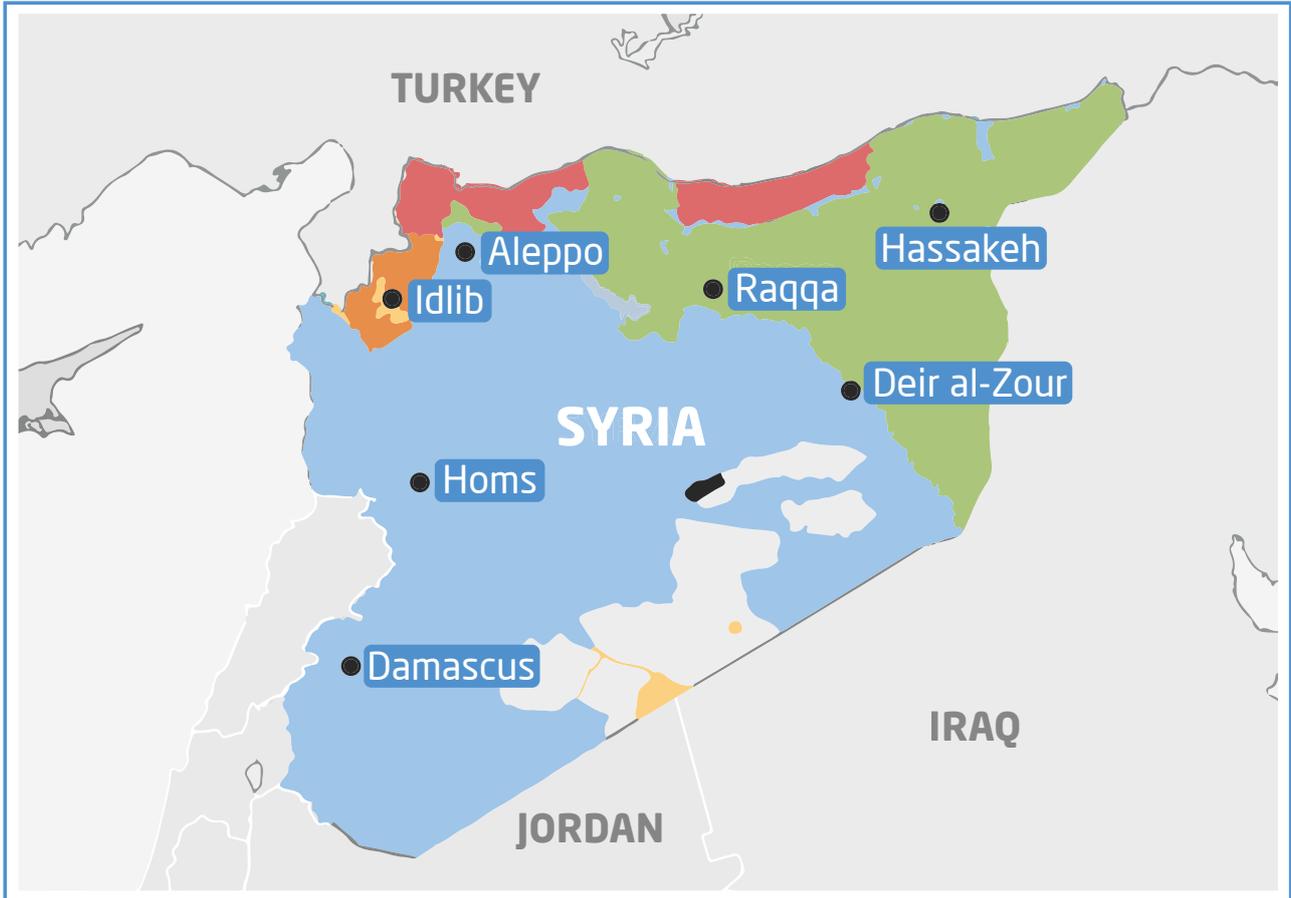
The Northeast is controlled by the "Syrian Democratic Front", a group of Kurdish-Arab Syrians that aspires for a self-autonomous region. It is supported by small American troops. This region was controlled by ISIS until it was defeated in 2017-2018. It has an estimated population of 1.8 million. The main cities are Raqqa, Deir Al Zour, Hasaka, and Kamoshli.

Healthcare services in the opposition-controlled areas are limited and hard to access; some attempts to rebuild the healthcare system have already begun; however, no significant change has been made until now. For the refugees in the neighboring countries, access to healthcare services is different depending on the host country. Financial problems, limited access to healthcare, and the outbreaks of many diseases were the major challenges. In these host countries, mental health services for the most part are very inadequate, accounting at most for 5% of total government health expenditures¹¹. Jordan and Turkiye offer free mental health services to refugees, but in the region as a whole, such mental health care is limited to specialized psychiatric services to patients with severe mental illnesses.

Who controls what in Syria



- Kurdish forces
- Turkish-backed Syrian rebels and Turkish military
- Syrian government
- Jihadist forces
- Syrian rebels
- Islamic State group



The Syrian War and Mental Health

The Syrian conflict has had a severe psychological impact on its civilians, resulting in high levels of mental health problems such as depression, anxiety, and post-traumatic stress disorder. Many Syrians have experienced traumatic events such as bombings, shootings, and forced displacement that have contributed to these mental health problems. The lack of access to mental health care and support further exacerbates the psychological impact of war on Syrians, leaving many without adequate treatment or resources.

In a study of mental disorders and PTSD among Syrians living in Syria in wartime, 44% had a likely severe mental disorder, 27% had both likely severe mental disorder and full PTSD symptoms, 36.9% had full PTSD symptoms, and only 10.8% had neither positive PTSD symptoms nor mental disorder on the K10 scale¹⁹. Around 23% had low overall support. Half of the responders were internally displaced, and 27.6% were forced to change places of living three times or more due to war. Around 86.6% of the respondents believed that the war was the main reason for their mental distress.

Refugees and asylum seekers are also susceptible to developing common mental disorders due to their exposure to stressful experiences before, during, and after their flight. The Syrian Civil War, which started in 2011, has led to a massive number of Syrians seeking refuge and asylum in European countries. Symptoms of mental disorders and feelings of uncertainty, frustration, and injustice were the most common psychological problems and were mentioned by more than one-third of the participants in one of the studies⁴. The finding that almost half of the participants reported typical symptoms of mental health disorders suggests that a considerable number of Syrian refugees and asylum seekers might need mental healthcare.



MedGlobal Mental Health and Psychosocial Support Program in Syria

There are myriad factors that affect the field of mental health in Syria, including prolonged war and massive displacement, stigma against mental health disorders, a misunderstanding of the concept of psychosocial support, staff shortages, and consequently, an inability to effectively provide a much-needed service.

The goal of the MedGlobal Mental Health and Psychosocial Support Program is to utilize lessons learned from work experience in the Syrian context to improve access to mental health services for the victims of war and displacement, especially marginalized and vulnerable communities. MedGlobal achieves this goal through partnerships with local organizations to provide different mental health services in the Turkish-administered areas in Northern Syria.

There are only two psychiatrists in northwest Syria, a shortage that has very significant implications. To address the severe shortage of psychiatrists, MedGlobal relies on training and deploying primary care physicians who have been trained in the WHO- Mental Health Gap Action Program (mhGAP), which aims to provide interventions in mental, neurological, and substance use disorders in non-specialist health settings.¹⁹

To address the stigma against mental health and improve access to vulnerable populations, MedGlobal integrates mental health projects within existing medical and protection programs in the organization's primary health centers and other health facilities. MedGlobal supports four primary health centers, two mobile clinics, a training program, two hospitals, and deploys a team of twenty-nine community health workers. In addition, MedGlobal supports the only psychiatric hospital for serious mental illness and an outpatient psychiatric clinic in the Euphrates Shield area.

A MedGlobal psychiatrist conducted a series of trainings to all primary care physicians, nurses, and community healthcare workers on the following areas: physicians, nurses, and community healthcare workers on the following areas:

01. | Mental Health Gap Action Program to equip primary care physicians with the knowledge needed to diagnose and treat common psychiatric disorders like anxiety, depression, PTSD, and psychosis.

02. | Psychosocial Support (PSS): to detect and refer common psychiatric conditions safely and without stigma.

03. | Gender-Based Violence (GBV)

04. | Postpartum depression for midwives

Mental Health services are delivered through the following facilities:

Primary Health Centers (PHC)

MedGlobal runs four Primary Health Centers (PHCs), which serve 192,000 people annually. Each PHC has at least one mh-GAP trained physician, one psychosocial support (PSS) worker, and one gender-based violence (GBV) worker. The four PHCs provide an average of 60 mhGAP consultations, and about 300 Psychosocial Support (PSS) sessions per month.

The following are the locations of MedGlobal Primary Health Centers:



Kansafra PHC

Serves **6,000** patients monthly on average.
Location: Idleb - Dana - Burdaqli- Kansafra Camp



Al-Bab PHC

Serves **6,000** patients monthly on average.
Location: Aleppo Al Bab City



Tel Al-Hajer PHC

Serves **2,000** patients monthly on average.
Location: Aleppo - Jarablus - Al-Gandoura - Tel Al-Hajer



Tel Abiadh PHC

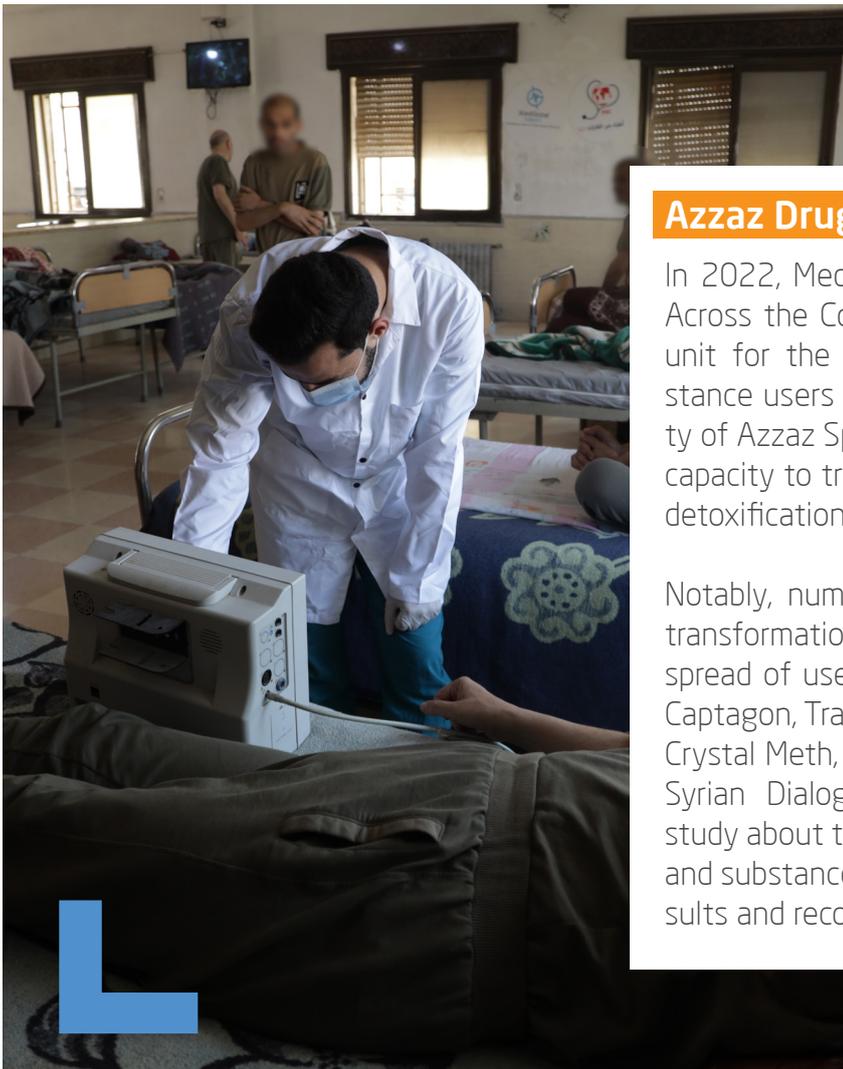
Serves **2,000** patients monthly on average
Location: Al-Raqqah - Tel Abiadh



Azzaz Speciality Psychiatric Hospital

This psychiatric facility is supported and managed by MedGlobal in partnership with Physicians Across the Continents. It was established to accommodate serious chronic mental health cases for Syrians that had escaped from the Ibn Khaldoun mental hospital in Aleppo during the war.

It is the only facility in northwest Syria with an inpatient section for advanced chronic psychiatric disorders. There are 95 male and 25 female inpatients in this hospital. Its outpatient clinic provides about 600 consultations per month

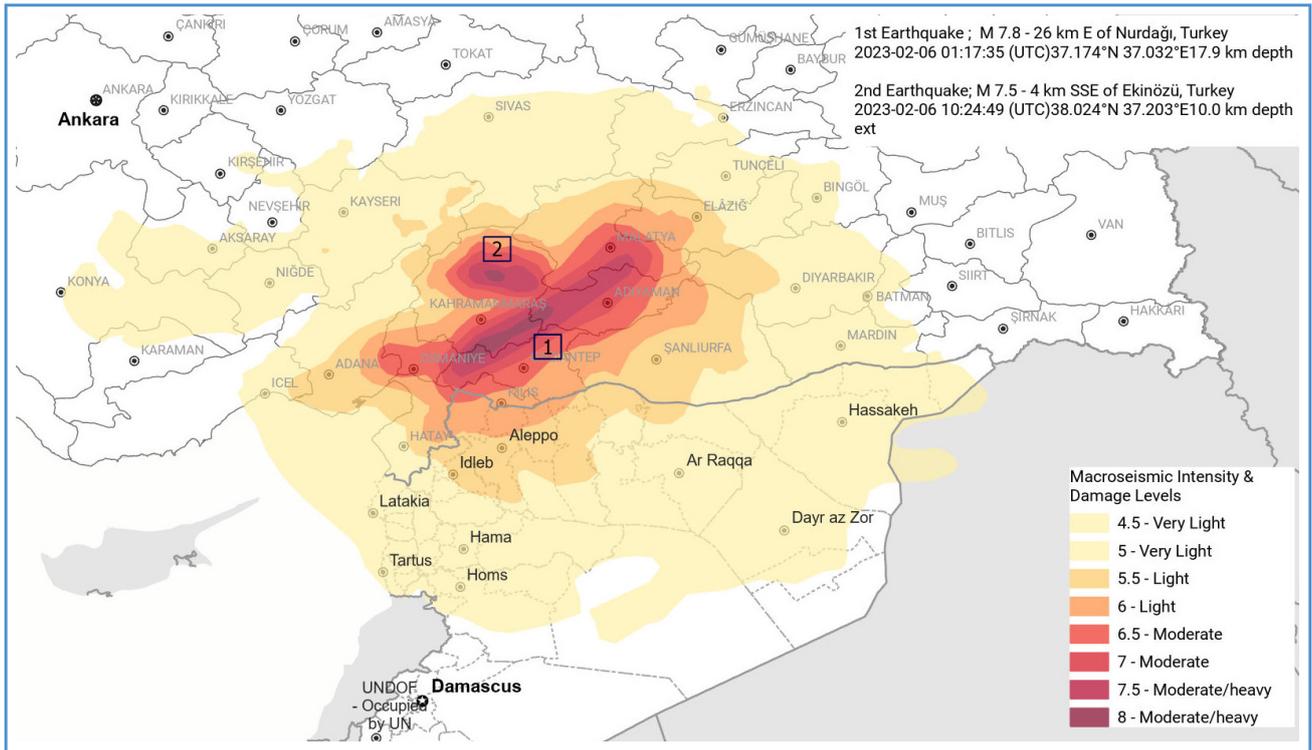


Azzaz Drug Rehabilitation Center

In 2022, MedGlobal in partnership with Physicians Across the Continents, launched the first and only unit for the treatment and rehabilitation of substance users in Northwest Syria at the same facility of Azzaz Specialty Psychiatric Hospital. It has the capacity to treat patients who are undergoing both detoxification and rehabilitation from substance use.

Notably, numerous recent reports highlighted the transformation of Syria into a narco-state²⁰, the spread of use, and trafficking²¹ of illegal drugs like Captagon, Tramadol, other opiates, pain medications, Crystal Meth, and Cocaine. In collaboration with the Syrian Dialogue Center, MedGlobal conducted a study about the prevalence of drug abuse, addiction and substance use disorders in Northwest Syria. Results and recommendations are pending publication.

The Scale of the Turkiye-Syria 2023 Earthquake



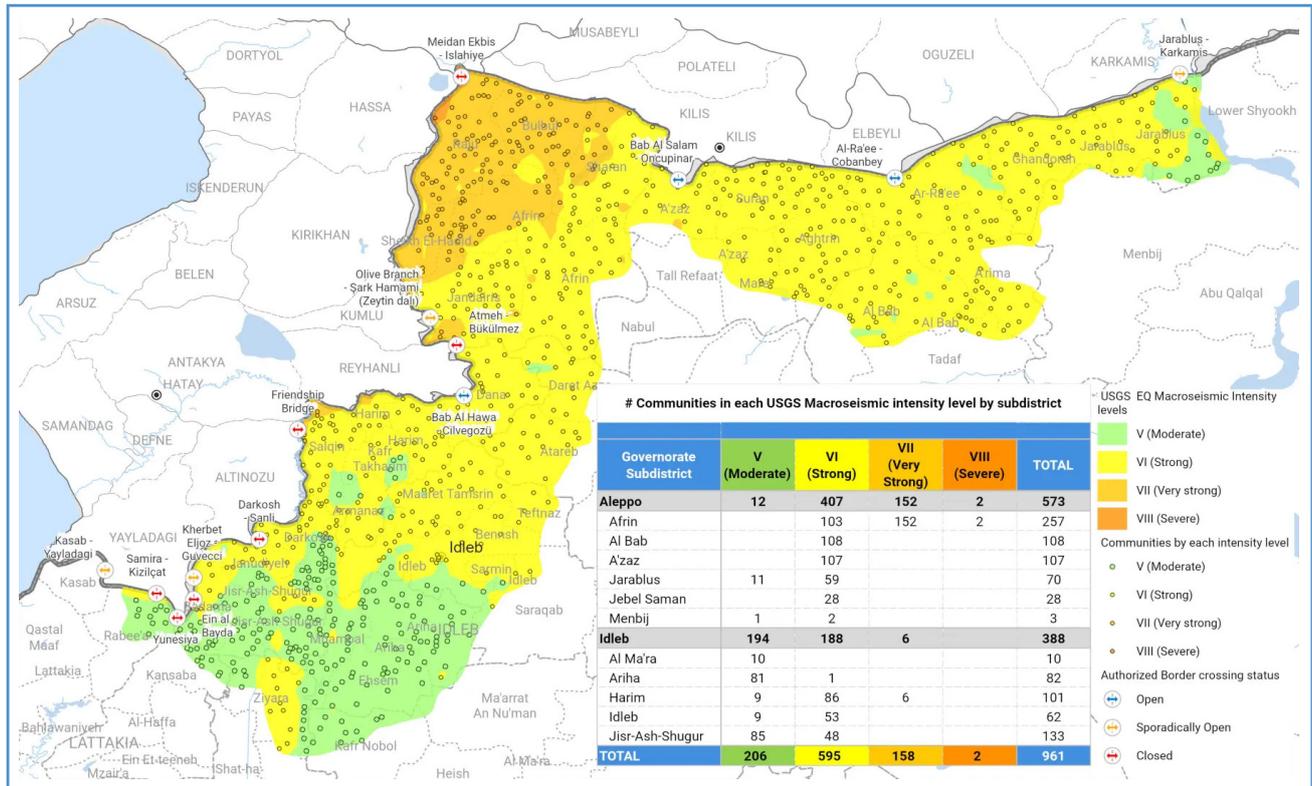
On February 6, 2023, a magnitude 7.8 earthquake with an epicenter near Nurdagi, rocked southern Turkiye and northern Syria. This was followed 11 minutes later by a 6.7 magnitude after-shock. Nine hours later, this quake was followed by a second magnitude 7.5 earthquake with an epicenter about 60 miles to the north of the prior earthquake²². The first earthquake was the most powerful to occur in Turkey in more than 20 years. Both earthquakes have been followed by thousands of aftershocks as of March 2023, including a 6.3 earthquake that hit the region on February 20th. The area is predicted to continue to have aftershocks for some time.

The scale of the disaster has been unimagin-

ably devastating for both southern Turkiye and northern Syria. The death toll in both Syria and Turkiye has topped over 50,000; though this is likely an underestimate in Syria, as many were buried prior to being registered. The earthquakes struck in an area of Turkiye that houses nearly 50% of the total Syrian refugee population, about 1.7 million refugees²³. In Turkiye, 1.9 million are seeking shelter in tents and temporary shelters. Over 500,000 have been made homeless in Syria in addition to those who had already been living in tents due to the impact of over a decade of conflict. According to UNHCR, 10 million were affected in Syria, nearly half of the country's population²⁴. Additionally, according to the World Bank's GRADE report, Idlib was the second most severely hit governorate in Syria, with an estimated damage of 1.9 billion dollars.^{25,26}

NORTHWEST SYRIA

Earthquake Affected Communities and Border Crossings



The Impact of Earthquakes and Natural Disasters on Mental Health

Earthquakes and natural disasters as a whole have noticeable and immediate impacts on the physical and psychological landscape of a nation. More insidious, but undoubtedly significant, are the long-lasting impacts which are often not visible immediately after the disaster.

Natural disasters have been shown to result in a higher likelihood of development of mental health disorders in numerous studies following hurricanes, tsunamis, earthquakes, and floods alike. The most common disorders found in the aftermath of such traumas are anxiety disorders, depression, and post-traumatic disorder (PTSD), which can last for months or even years after the disaster. One meta-analysis studying Haitian mental health after the 2010 earthquake found that people had markedly increased likelihood of developing mental health disorders in the aftermath of the disaster, with approximately 50% of the population reporting symptoms of PTSD, and 23% reporting symptoms of depression²⁷.

The factors which contribute to the mental health burden in the context of these natural disasters can be broken down into several large categories: displacement and lack of stability, physical injuries and illness, economic hardships, loss of social support and networks, and loss of loved ones. Each of these factors are expanded upon in Table 1 below.

Table 1. Factors Contributing to Mental Health Burden after Natural Disasters

 Displacement and Property Damage	Displacement and the subsequent lack of stability and routine can lead to feelings of hopelessness and helplessness ²⁸ . A study conducted after Hurricane Sandy found that individuals who had experienced property damage and were displaced had higher rates of anxiety, depression, and PTSD than those who had not experienced property damage ²⁹ .
 Physical Injuries and Illness	In addition, physical injuries and illnesses resulting from natural disasters can exacerbate mental health problems. A study conducted after the 2011 Japan earthquake and tsunami found that individuals who were injured in the disaster had higher rates of depression and PTSD than those who were not injured. ³⁰
 Economic Hardships	Natural disasters frequently contribute to mortality and also have the potential to ravage the infrastructure, homes, and businesses of a community. The economic consequences of this loss of property and resources on top of the loss of loved ones can have severe downstream consequences to the mental health of a nation, particularly in developing nations.
 Loss of Social Support	The loss of social support and networks can have a profound impact on an individual's mental health and lead to long term downstream consequences. A study following youth affected by Hurricane Katrina found that the presence of social support was a protective factor against the future development of PTSD ³¹ .
 Loss of Loved Ones	Loss of loved ones has been identified as a particularly significant risk factor for psychological distress and trauma. One study conducted after Hurricane Katrina demonstrated that the loss of loved ones was identified as a significant risk factor for the development of PTSD ³² . Losing a child, specifically, was studied by one group who found a strong association with the development of mental health disorders ³³ .

Developing nations are disproportionately affected by natural disasters as they are more likely to have inferior warning systems, less robust emergency response, and poorer disaster control systems and acute relief programs^{34,35}. This, on top of higher average population densities, means that 70% of disaster-related deaths in the past 50 years have occurred in developing nations based on data from the United Nations Office of Disaster Risk Reduction. Additionally, they have ten times more significant economic impact compared to the richest countries³⁶.

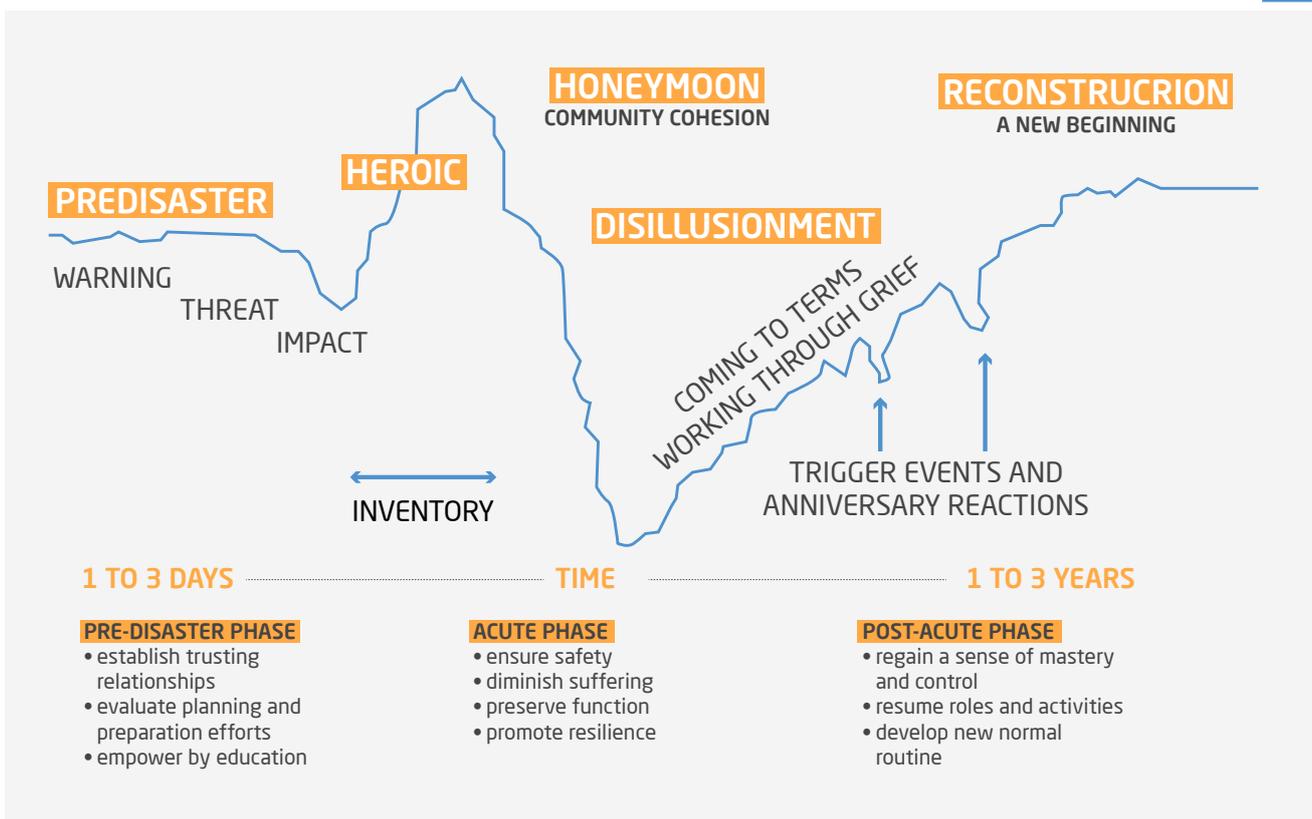
It is also important to consider that different demographics may also be impacted in unique ways by natural disasters. Children are a partic-

ularly vulnerable population; the loss of family members, friends, and their home has been frequently linked to the development of anxiety and depression³⁷. Studies have found that the young victims of such trauma may also have difficulties adjusting to school, socializing with their peers, difficulty sleeping and may exhibit symptoms of PTSD for an extended period after the initial traumatic natural disaster^{38,39}. This becomes particularly relevant to Syrian youth, as it compounds the preexisting risks of mental health adverse outcomes. A cross-sectional study of the medical records of approximately 1000 children in Aleppo found that 2% of the records had a primary psychiatric complaint and an additional 5% had a secondary psychiatric diagnosis.⁴⁰

Nevertheless, children are not the only vulnerable population; a 2015 meta-analysis found that older adults were 2.11 times more likely to experience PTSD symptoms and 1.73 more likely to develop adjustment disorder when exposed to natural disasters when compared with younger adults⁴¹. Another population that often gets overlooked is that of healthcare workers. Earlier in December 2022, an anonymous survey of more than 700 healthcare workers across Syria had reported a striking 41% high burnout level⁴². Notably, this study did not account for healthcare inequities in different regions of Syria, particularly the hardest hit and most marginalized northwest, where one can extrapolate higher rates of burnout⁴³.

Looking at the impact of the earthquake alone, from a disaster psychiatry lens, it is important to note that the most common psychological outcome in disaster settings is resilience, a finding that has been widely documented⁴⁴. A common description of community psychological reactions is depicted in Figure 1 – showing that even those who develop adverse outcomes, will likely develop subsyndromal stress responses rather than full-blown psychiatric morbidities, with a decreasing risk after the first year. While this may help us anticipate large scale reactions, it can also inform recovery goals at different stages of the disaster aftermath.

Figure 1 - Psychological phases of disaster and goals of recovery at those phases ^{45, 46}



That being said, the picture becomes more bleak and convoluted when one thinks of the compounding disasters that have hit Syria, as the country suffers from both man-made and natural disasters repeatedly. When examining the curve depicted in Figure 1, one can recognize that individuals in Syria are constantly shifting from reconstruction (or the “new norm”) to an acute disaster and heroism then disillusionment. This emotional rollercoaster, on a public scale, raises the question of whether the above statement still holds true in this case— which states that most people, in the long-term, would not develop psychiatric illnesses, and would still be resilient.

MedGlobal Team Post-Earthquake Observations



Sophia Banu, MD

Feb 9th 2023 10.00 pm 3 days after the first earthquake struck Turkiye and Syria, I called Dr. Dania Albaba, to ask about the welfare of her family in Syria and to find out if she knew of any organization who would be interested in providing mental health training on the ground.

Dr Albaba then contacted her classmate Dr Nora Abdullah in Dallas, who was helping run a clinic in Imdat, Syria. MedGlobal was one of the first organizations that was contacted and the response we got from them was swift and amazing and before we could say “Ahmad” , we were on our way to the airport with the training materials all translated to Arabic and modified to make it culturally appropriate.

In the wee hours of Monday morning, we landed at the airport, and we were greeted and warmly welcomed by MedGlobal ground staff. As we made our way to the hotel after loading humongous boxes of donated medications and supplies that we had brought on board, the most striking observation I witnessed was the calmness around the city of Gaziantep.



Our first training scheduled on Tuesday morning was canceled because of another earthquake that struck the same region on Monday night, the night we landed in Istanbul. We were told that the attendees were all terrified, rightfully so, and the last thing on their minds was to attend a training. Due to this cancellation, we had the opportunity to visit the nearby city, and the scale of the devastation was enormous. I found myself getting emotional as I witnessed the remnants of people's lives - dolls, Qurans, clothes, identity papers, school notebooks, pots and pans. The empty eerie alleyways with some houses that were completely destroyed, some partially destroyed buildings hanging on leaning sideways, filled with an air of desolation. I couldn't imagine that barely 2 weeks ago, this town was a bustling ski town, filled with tourists and locals, going about their way.



I want to share an anecdote about a therapist who approached me after one of the training sessions. He said, "I have a question. I need your help with this child I have been visiting in the hospital. He is not talking. What can I do to make him talk?"

This 3-year-old child had lost his entire family in the aftermath of the earthquake, was hospitalized with some injuries, and had an aunt who would visit him in the hospital daily and a therapist who also visited him. After discussing various options for handling the situation with the child, focusing on his age, I made some recommendations for age-appropriate interventions.

I asked him how he was doing in the midst of all this chaos and losses, how was his family doing? He nodded his head, almost afraid to speak, on the verge of breaking down but holding on. I could see the desperation in his eyes, most likely mirroring the child's desperation, his feelings of helplessness were palpable in the air. He stated, "Not well, I am angry when I go home. I don't want to talk to anyone. I don't want to be with my children. I just want to be left alone."

It was clear to me that besides suffering from the aftermath of the earthquake, that he was carrying the burden of this child's angst, unable to shake it off upon returning home to his family. I share this story to remind ourselves to inquire about the trainers and their coping skills, provide education about the importance of self care and increase awareness of secondary trauma.





Nora Abdullah, MD

The stories of trauma are too many to count. Between war and an earthquake, the Syrian people truly have not caught a break.

Prior to arriving in Syria, an NGO worker messaged me complaining that he hadn't been able to sleep since the earthquake. In our conversation, he mentioned that while he was volunteering at a center where bodies that were found under the rubble were transported, a father came looking for the body of his daughter. He saw the bodies laying and identified a young girl as his daughter. The NGO worker gave him the body so he could bury her with her family. A few hours later, a mother came looking for her daughter. She showed the picture of her daughter to the NGO worker. He recognized her from earlier and told her that the father had already come by to take her. The mother with the picture of her daughter was stunned, and began screaming hysterically that her husband had been dead for years now. When the NGO worker was able to locate the man who took the body of the girl, he was shocked to hear the truth. The man who took the girl's body was desperate to find his own daughter and was unable to locate her. In order to give his wife some comfort that their daughter had been buried and had a grave they could visit...in a moment of desperation, he took the body of any girl who looked similar to his own daughter.



Dania Albaba, MD

Of all the sites we visited in Syria, some of the most heartbreaking stories we heard were in Mercy Hospital in Darkush. Nearly everyone there had someone in their family die in the earthquake. They told us and showed us photos of the dead and the barely living, the ones alive yet traumatized after 20+ hours under the rubble. I think of how many more died waiting as the world twiddled its thumbs.

I think of the story shared of an ambulance driver in Darkush that was helping to rescue people during the earthquakes. His son was in Turkey visiting some of his family. When the earthquakes happened, he responded, going from site to site inside Syria. En route to a rescue, he heard the building collapse where his son was. He persevered, continuing to drive the ambulance to rescue others,





saying that he didn't know yet if his son was gone and that he had a duty to help others trapped under the rubble. When they said, "We just found out that his cousin is dead" he said, "I have to continue helping here where I'm needed". Then when they said, "We found your son dead," he said, "This was God's will, but I can't forsake my people when they need me." In hearing this story, I found myself wondering "What parent could have the strength to help others knowing his child was possibly dead? He was a true hero."

I think of a young boy we met there on the second day of our training. His name was Hussein. Standing by his father, I saw a young frail child, no older than 4 years old, completely distraught. He seemed to be reliving the same nightmare, over and over again. He did not respond to anyone's questions, just repeating "I want my father, I want my father." His father stood there, reassuring him, but the child did not seem to see him. During the earthquake, he had been with his mother and siblings visiting a family member. His father was not there, and all of his family except for his father were killed. PSS staff begged us for help with his case, as he seemed to be in a trance. They tried reenactment with puppets, and tried to do art with him, but none of this worked. He was not present. I will never forget the fear in his eyes, the sound of his voice. I will never forget the stories of all the children we heard about.



Story from Kansafra Primary Healthcare Center

Ahmed was a teacher, and as a result of the conditions of displacement, bombing, insecurity, and the loss of work, suffered from symptoms of severe depression over the past four years that prevented him from practicing his life normally and caused great suffering to his family. He had a feeling of frustration and a loss of will to live, a constant feeling of fear and anxiety and unwillingness to communicate with others, even his children.

His wife said: "I was able to understand Ahmed's condition and that he had a problem, but I was worried about the children who did not realize what was happening, and who often stayed outside the house. I'm tired of visiting doctors to no avail." When she learned from her neighbor that there was a psychiatric clinic in the camp, his wife, who was trying to support him in the past period, accompanied him to the psychiatric clinic, where he was diagnosed and took the appropriate treatment.





She said, "Now I'm starting to see a clear improvement in Ahmed. This is the first Ramadan that we all sit together as a family at one table."

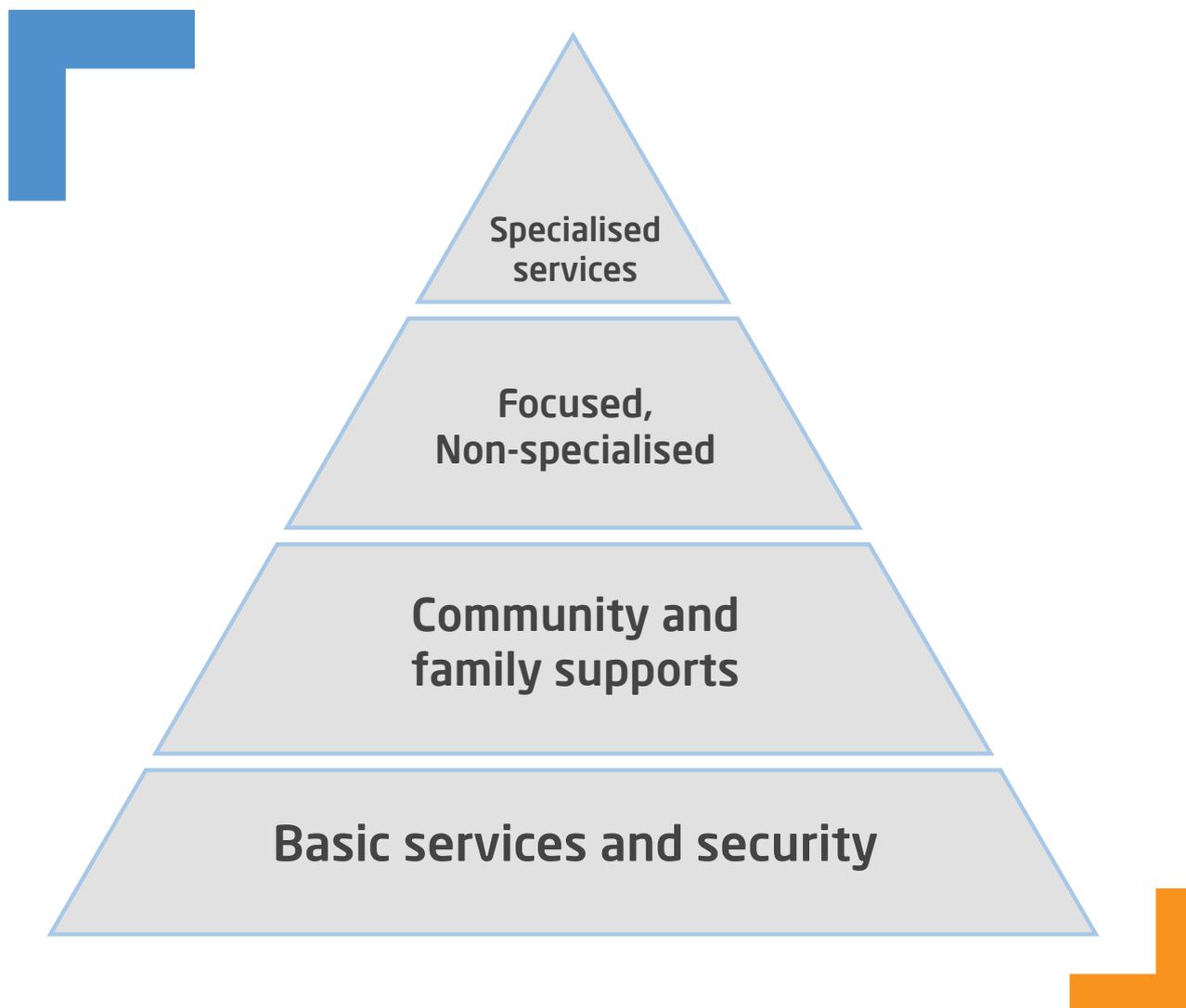
His wife said,
"After the earthquake occurred, Ahmed's condition deteriorated and his symptoms of fear and sadness increased, but upon seeing the doctor again, he stressed the importance of continuing the treatment that we receive free of charge at the Kansafra Center. I am afraid that his condition will deteriorate after improvement. And I thank Allah for the availability of treatment for free in the camp."



MedGlobal Mental Health Training Methodology and Data Analysis

Background

Figure 2. IASC guidelines for post-disaster response



On February 20, 2023, only two weeks after the earthquake, MedGlobal deployed a team of psychiatric professionals to conduct post-disaster mental health training in both Gaziantep, Turkey and Northwest Syria. In the IASC guidelines for post-disaster response, this training falls under the third level, focused, non-specialized support⁴⁷. Prior to our arrival, in discussions with NGOs on the ground, the team discovered that basic services and security as well as community and family support were categories that had already been focused on in the weeks prior. Additionally, the needs within north-west Syria were unique in that they had been undergoing repeated crises for more than a decade.

Methods

The trainings that were presented to the audience consisted of 4 parts and a couple of exercises: We began with an exercise, which set the stage for the training and consisted of labeling our feelings and when we feel them. The audience was divided into groups, asked to discuss the above and write down their answers. We found that this helped to lower their guard to feel at ease in discussing the challenging topics we had prepared. This served as a good gateway into forming relationships with other participants and being ready to attend the following sessions:

1. Trauma Through The Ages

- Explore post-disaster trauma symptoms in children and adolescents
- Discuss normal developmental stages and what trauma looks like at each stage
- Discuss how healthcare providers, parents, and educators can help children cope with post-traumatic symptoms

2. A Public Health Approach To Human Trafficking

- Create awareness and education about the vulnerability of survivors of disasters to human trafficking
- Discuss ways to screen at community organizations.

3. Skills for Psychological Recovery (SPR)

- Present a manualized, evidence-informed intervention that is intended to foster short and long-term adaptive coping in disaster survivors who are exhibiting moderate levels of distress
- Offers simplified, brief application of skills that are commonly related to improved recovery in post-disaster/emergency settings

4. Retraumatization, Vicarious Trauma and Self Care/Compassion

- Increase the awareness of individuals in the community working in post-disaster settings in recognizing signs of vicarious trauma
- Discuss the importance of self-compassion and self-care.

In between sessions, we taught grounding and mindfulness techniques such as “5,4,3,2,1”, “leaves on a stream”, and deep breathing. The training then ended with an exercise known as “web of goodness”.

The exercise starts with a ball of yarn in which participants are asked to say one good thing about themselves and then throw the yarn to the next person. After the exercise, everyone is holding a piece of yarn, connected to the web created by the yarn. The trainer concludes the exercise by stating that we all have something good within us, and that when we feel helpless and wonder how one person creates a change or help, we know that we are all connected in this web of goodness. Each one of us brings this goodness to the people we are helping so you are not alone; we can create a change and help people. What unites us in this space is the goodness we have within us.



Results and Discussion

An important consideration is that this group opted out of the Psychological First Aid training, as the audience had consistently demonstrated that they had already been familiar with its materials. Prior to their deployment, an interest form was sent out, with over 300 participants expressing interest in training. Of the 300 participants, only 100 participants were trained due to time and space limitations. Of the 100 participants, 71 completed the survey. The results of the survey include the following: 46.5% of the participants had never encountered a training similar to what we had presented, 100% of the respondents reported that they were able to learn new information from our presentations, and 97.2% reported that they felt they could use lessons learned from the trainings to apply to their work on the ground. Additionally, in the open ended feedback section, 59.2% had no additional suggestions, and 29.6% of the participants had requested additional topics or trainings for the future. 12.7% had negative comments about the training, most commonly that the training was not long enough (5.7%).



The Role of Faith

During our training sessions and in breaks, we asked the participants about their experiences, what their clients were reporting, and how they were coping. Participants reported that following government shellings, bombings, and attacks, they felt an intense amount of anger towards the government. However, following the earthquake, the response was quite different. They had a sense of acceptance, with many participants reporting that, "It was God's will", "He will provide", "He only gives us what we can bear". It was apparent that they were able to cope more fully with this crisis. Our conclusion in anecdotally communicating with survivors was that their faith played a strong role in creating post traumatic growth, which increased their ability to create more meaningful relationships, increase in spirituality, recognize their strength, and have a greater appreciation of life.

An important note about faith should be made here as well. In the trainings conducted, the providers were of a similar faith as the participants. We found that it was necessary to incorporate aspects of the participant's faith into the trainings. Feedback provided after the trainings indicated that this was a point of strength in our presentation in comparison to training others had previously conducted. Incorporating coping skills that are culturally and religiously appropriate was well-received.

Another important consideration to make is that not all religious commentary was welcomed by those being trained. For one woman in a training in Azaz, she reported that in the immediate aftermath of a crisis, some individuals would not appreciate being reminded of religious teachings.



Post-Crisis Recovery and Reconstruction

Several measures are required to address population health needs both inside Syria and for refugees outside the country, and a concerted effort must be made to retain and train health workers in both the current and post-conflict period. The ongoing and complex nature of the conflict further undermines the health of the population and delays the rebuilding of the health infrastructure. As long as it is unsafe for refugees and IDPs to return to their homes, it will be difficult to persuade health workers to remain in Syria or to return. As such, efforts to end the conflict, protect civilians and enforce medical neutrality will have the greatest impact on the health of IDPs and refugees. All these factors are affected by the uncertain security situation inside Syria.

Re-establishing the health infrastructure in the current and post-conflict period could be a way of establishing peaceful co-existence and promoting the rights of marginalized groups, allowing for civil society participation and government accountability³. As such, the health system could enhance the legitimacy of the emerging government, particularly if based on principles of equity of access, non-discrimination, and transparency. This can be seen as an opportunity to build a strong health system that serves the current and future needs of the population.

The recovery and post-conflict period will present numerous challenges as well as opportunities to establish health systems that can reduce excess mortality and mortality. The aim should be to establish community-based, integrated basic health services to reach areas in need. Maintaining a supply chain for medical equipment and medication is essential.



Rebuilding Syria's shattered health system is a must³.

The priorities for the rebuilding process include:

1. A harmonized approach to the collection and sharing of data should be actively sought, as health information systems (HIS) are required for real-time assessments of disease prevalence and population health needs. A functioning HIS would help identify new health needs as they arise⁴⁸.
2. Increased utilization of "m-technology," mobile devices to collect epidemiological data in focused efforts by individuals trained in collecting epidemiological data, or by healthcare providers themselves, may prove increasingly important for real-time data³.
3. Focusing on the retention of health workers, by providing competitive salaries, support, and training.
4. Address the epidemic of burnout and psychological trauma among healthcare workers.
5. Establishing incentives for those who have left to return.
6. Supporting those who remain and identifying the barriers preventing those who have left to return are key to the development of a successful health service.
7. Identifying the most needed specialties and providing training and salaries are important.
8. Encouraging innovative approaches including the harnessing of technology will aid the remaining health workers, and task shifting will allow for the training of enough health workers to support the health needs of the population.
9. Engagement with expatriate Syrian and international medical and humanitarian organizations is key in supporting the health needs of the Syrians both inside and outside of Syria. An example of such a response is the work of medical relief organizations like MedGlobal and others have done in response to the COVID19 pandemic and the aftermath of the Earthquake in Syria⁴⁹. During the COVID-19 pandemic, MedGlobal launched "Operation Breathe" to provide Oxygen concentrators, CPAP, and BIPAP machines to patients treated at home with mobile health teams and in partnership with a network of local Non-Governmental health Organizations in different cities; in addition to providing training on management of COVID19 to Syrian doctors and nurses using online platforms and building sustainable Oxygen generators in several hospitals. "Operation Breathe" was funded by individual donors from the Syrian diaspora community in the US and grants from other foundations⁴⁹. That can be set as a model to follow in the post-crisis and recovery phase.
10. Given that there is likely to be an ongoing shortage of healthcare workers in the current and post-conflict period, innovative ways to support and build the capacity of the current health workers, volunteers, and community members, will be increasingly important. This may be a part of telemedicine programs that have been successfully established or through the training of community health workers⁵⁰.
11. Rebuild and empower the non-profit health sector and encourage sustainable approaches to healthcare using the successful experiences of local non-profits that survived the conflict and expanded their services in spite of the strain on the system.
12. Embrace the humanitarian principles of humanity, medical neutrality, impartiality, and independence, and address the laws and legislations that are in conflict with these principles. Such essential reforms will provide protection for healthcare workers during protracted conflicts.
13. Expand health insurance to provide coverage to Syrians with low income and to prevent catastrophic healthcare expenses.

Policy Recommendations

Recommendations to Local Healthcare Authorities

Clinical Opportunities

Rebuilding Syria's shattered health system requires a holistic approach that addresses a number of issues. Among the most important are focusing on the retention of health workers, providing support and training, and establishing incentives for those who have left to return. Encouraging innovative approaches including the harnessing of technology will aid the remaining health workers, and task shifting will allow for the training of enough health workers to support the health needs of the population. Policies that uphold medical neutrality and the safety of medical workers and prohibit attacks on medical facilities are key to protecting the remaining health workers. Given the protracted nature of the conflict and the funding shortage, engagement with the expatriate Syrian and international medical communities is key in supporting the health needs of the Syrians both inside and outside of Syria.

Research Opportunities

The infrastructure of medical research in Syria is limited, but recent individual efforts by Syrian physicians have been noticed, particularly in areas related to the impact of conflict on public health, communicable diseases like tuberculosis, the use of telehealth, the use of field hospitals to improve access of healthcare to populations in war zones or under-siege, and COVID19^{1, 51,52,53,54}. To address gaps and barriers for mental health in Syria, the development of infrastructures for medical research is critical.

Thus, addressing these mental health priorities requires several steps:

- Funding availability to healthcare directorates and universities to assess the accurate prevalence of psychiatric disorders
- Participation in international studies related to mental health is essential
- Conducting need assessment studies to address research priorities specific to Syrian patients (both under government and outside government-controlled areas)
- Collaboration with neighboring countries on affected population studies is beneficial, especially between health directorates and/or academic institutions
- Use validated tools (such as questionnaires) for mental health research translated to local language (Arabic) to ensure accurate results and feasibility of implementation in the near future in clinical settings.
- Mentoring junior researchers and providing opportunities to present in conferences and meetings of American and global mental health, global health, and psychiatric associations.
- Partnering with WHO members and international educational institutions to provide necessary tools for research and education to the public and physicians

Public Awareness Opportunities

Several initiatives could be explored using clinical and research innovations and increasing public awareness. Many of these initiatives have been adopted by other countries to overcome these challenges and barriers. These challenges interact and overlap; therefore, any proposed solution should be comprehensive and holistic.

The presence of several barriers and significant challenges requires collaboration and partnership with the public. Like other countries around the world, this can be achieved in several ways, such as establishing organizations that can raise awareness of mental health issues and are culturally and linguistically sensitive.

There are several systemic gaps that need to be addressed by local health authorities (Directorate of Health in Idlib, Directorate of Health in North Aleppo, Turkish Directorates of Health responsible for Turkish-administered areas), ministries of planning, health, higher education, interior, transportation, and information, labor unions, and medical schools and universities.

Policy Recommendations to Non-Governmental Organizations (NGOs) and Health Authorities

- Non-Governmental organizations in partnership with local health authorities and academic institutions working in post disaster/post conflict areas should receive training on vulnerabilities, screening and trauma informed, culturally specific mental health and medical treatments for sequelae and harm from trafficking. They should receive services on child trauma and refugee mental health. NGOs should be trained in Psychological First Aid and Skills for Psychological Recovery in accordance with the WHO ISAC recommendations. This could be integrated into current trainings on gender based violence, or mental health in disasters.
- There is a need for more advanced training in mental health. Healthcare workers and NGO staff reported that they had already been familiar with Psychiatric First Aid.
- NGOs should focus on meeting basic needs of food, shelter, and education to mitigate individual and community risk for labor and sex trafficking and to reduce the risk of mental health harm caused by disasters.
- Partners offering trafficking specific services may consider OHTSS to monitor service utilization for trafficked persons.⁵⁵
- Non-Governmental organizations in partnership with local health authorities and academic institutions should adopt a multifactorial approach when addressing mental health. Mental health issues are complex and can be influenced by various factors such as social, economic, and cultural factors. It is crucial to consider all these factors to effectively address mental health issues.
- Non-Governmental organizations in partnership with local health authorities and academic institutions should address the ongoing substance abuse and addiction crisis:
 - In the wake of disaster, use of substances as a mechanism to cope can increase in vulnerable populations
 - In Syria, the use of the drug Captagon has become a significant issue, particularly among

fighters in the ongoing civil war. Captagon is a powerful amphetamine-based stimulant that is used to enhance performance and reduce fatigue. It is often smuggled into the country from neighboring countries and has been used as a tool of war by some groups.

- Create awareness campaigns surrounding substance abuse.
 - Educate healthcare workers and the public on symptoms of withdrawal and intoxication
 - Create a substance use training program to educate local psychosocial support staff.
 - Establish more substance abuse recovery centers.
- Non-Governmental organizations in partnership with local health authorities and academic institutions should focus on education:
 - Education and supporting schools are also important aspects of promoting mental health in communities. Education provides children with opportunities to develop essential skills and knowledge, which can enhance their well-being and mental health. Schools can also provide a safe and supportive environment for children, which is crucial for their mental health.
 - Addressing mental health issues in communities requires a comprehensive approach that considers various factors. Supporting education and schools is an essential component of this approach, and it is crucial to focus on providing basic school supplies, meals at school, uniforms, and paying teachers to enhance the well-being and mental health of children in disadvantaged communities.
 - Education is crucial in keeping children out of trouble and providing them with a brighter future, especially in conflict-affected areas like Northwest Syria. Education not only helps to improve children's cognitive and intellectual development but also provides them with essential life skills, critical thinking, and problem-solving abilities.
 - In conflict-affected areas, children are often at a high risk of being recruited into armed groups, child labor, or early marriage. Education can provide them with alternative paths and opportunities, reducing their vulnerability to such risks. By providing education, NGOs can help break the cycle of poverty and conflict in these communities.
 - Furthermore, education can also provide a sense of normalcy and stability for children in conflict-affected areas. It can provide a safe and supportive environment for children and help them cope with the trauma and stress of living in such environments.

Policy Recommendations to UN, Influencing States, and Funders

- The UN and other funders should direct more funds for mental health support, and training of healthcare providers, nurses, and community health workers.
- More funds should be directed to education to reduce the impact of the crisis on the mental health of children.
- Cross-border humanitarian aid under the auspices of the United Nations should be maintained through the currently open three border crossings and expanded further to prevent the delay or disruption of humanitarian aid to Northern Syria.
- Plans should be developed for post-crisis recovery, linking the disconnected healthcare systems, and rebuilding the healthcare system with the involvement of local health authorities and health-care-focused NGOs
- There should be an orchestrated effort to disrupt the drug trade originating from Syria before it gets out of control and threatens the whole region. People and groups responsible for the production, dissemination, and trafficking should be held accountable.
- The United Nations should reach a political solution for the Syrian conflict based on UNSCR 2254.



Conclusion

The Syrian conflict compounded by the COVID-19 pandemic and now with a devastating earthquake has had a severe psychological impact on its civilians, resulting in high levels of mental health problems such as depression, anxiety, and post-traumatic stress disorder. Many Syrians have been re-traumatized and experienced traumatic events such as bombings, shootings, and forced displacement that have contributed to these mental health problems. The lack of access to mental health care and support further exacerbates the psychological impact of war on Syrians, leaving many without adequate treatment or resources.

A concentrated effort by the local health authorities, non-governmental organizations, funders, and the UN should address this mental health crisis that has implications on the future generations and the whole region.

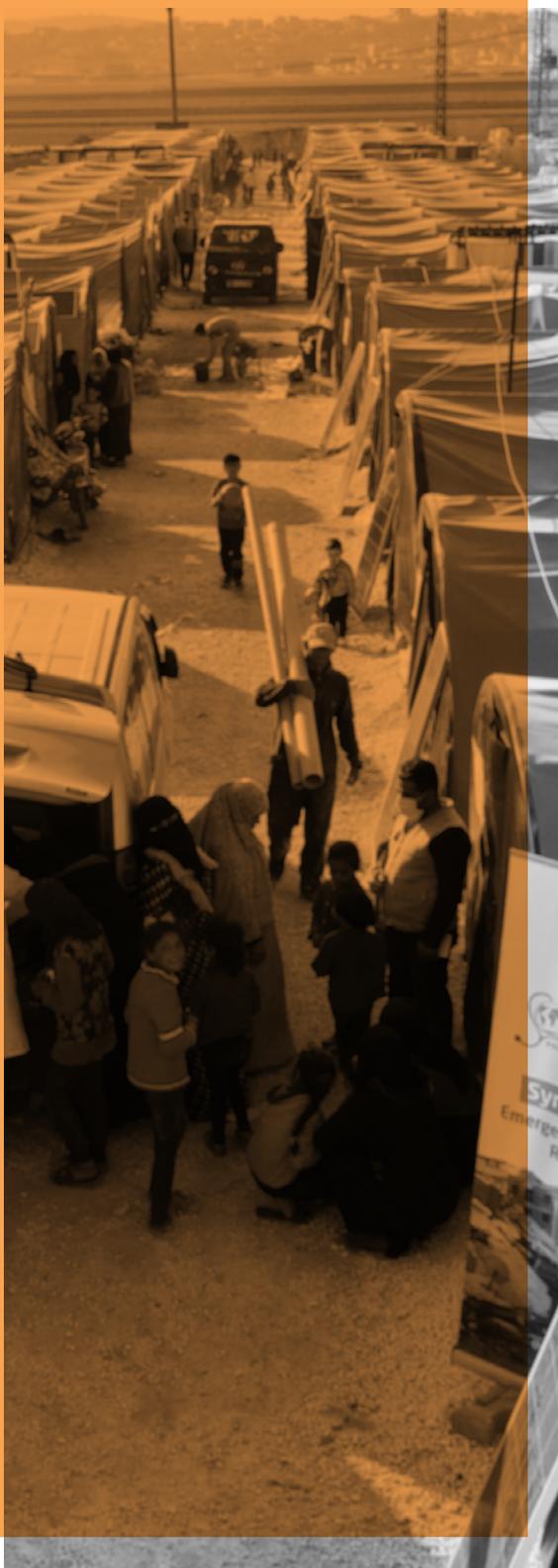


Bibliography

1. Sahloul MZ, Monla-Hassan J, Sankari A, et al. War is the Enemy of Health. Pulmonary, Critical Care, and Sleep Medicine in War-Torn Syria. *Annals of the American Thoracic Society*. 2016;13(2):147-155. doi:<https://doi.org/10.1513/annalsats.201510-661ps>
2. Kherallah M, Alahfez T, Sahloul Z, Eddin KD, Jamil G. Health care in Syria before and during the crisis. *Avicenna Journal of Medicine*. 2012;2(3):51-53. doi:<https://doi.org/10.4103/2231-0770.102275>
3. Abbara A, Blanchet K, Sahloul Z, Fouad F, Maziak AC and W. The Effect of the Conflict on Syria's Health System and Human Resources for Health. *World Health & Population*. 2015;16(1). Accessed March 29, 2023. <https://www.longwoods.com/content/24318/print>
4. Alhaffar MHDBA, Janos S. Public health consequences after ten years of the Syrian crisis: a literature review. *Globalization and Health*. 2021;17(1). doi:<https://doi.org/10.1186/s12992-021-00762-9>
5. Sahloul MZ. What They Don't Teach You In Medical School. *New Lines Magazine*. Published July 9, 2021. Accessed March 29, 2023. <https://newlinesmag.com/first-person/what-they-dont-teach-you-in-medical-school/>
6. United Nations. Syria: 10 years of war has left at least 350,000 dead. *UN News*. Published September 24, 2021. <https://news.un.org/en/story/2021/09/1101162>
7. As Plight of Syrians Worsens, Hunger Reaches Record High, International Community Must Fully Commit to Ending Decade-Old War, Secretary-General Tells General Assembly | UN Press. *press.un.org*. Published March 30, 2021. <https://press.un.org/en/2021/sgsm20664.doc.htm>
8. Nations U. Syria emergency. *UNHCR*. Published 2011. <https://www.unhcr.org/en-us/syria-emergency.html>
9. Refugee Processing Center. *Refugee Processing Center*. Published 2019. <https://www.wrapsnet.org/admissions-and-arrivals/>
10. Immigration R and CC. #WelcomeRefugees: Key figures. *aem*. Published December 2, 2015. <https://www.canada.ca/en/immigration-refugees-citizenship/services/refugees/welcome-syrian-refugees/key-figures.html>
11. Sijbrandij M, Acarturk C, Bird M, Bryant RA, Burchert S, et al. Strengthening mental health care systems for Syrian refugees in Europe and the Middle East: integrating scalable psychological interventions in eight countries. *Eur J Psychotraumatol*. 2017 Nov 7;8(sup2):1388102. doi: 10.1080/20008198.2017.1388102. PMID: 29163867; PMCID: PMC5687806.
12. Gornall J. Healthcare for Syrian refugees. *BMJ*. 2015 Aug 4;351:h4150. doi: 10.1136/bmj.h4150. PMID: 26243793.
13. "North-West Syria." *Situation Reports*, <https://reports.unocha.org/en/country/syria/>.
14. Simpson, Gerry. "Turkey: Syrians Pushed Back at the Border." *Human Rights Watch*, 27 Oct. 2022, <https://www.hrw.org/news/2015/11/23/turkey-syrians-pushed-back-border>.
15. Aydintasbas A. A new Gaza: Turkey's border policy in northern Syria. *ECFR*. Published May 28, 2020. https://ecfr.eu/publication/a_new_gaza_turkeys_border_policy_in_northern_syria/
16. List of universities in Syria. *Wikipedia*. Published April 21, 2022. Accessed March 29, 2023. https://en.wikipedia.org/wiki/List_of_universities_in_Syria
17. Hoffman M, Makovsky A. Northern Syria Security Dynamics and the Refugee Crisis. *Center for American Progress*. Published May 26, 2021. <https://www.americanprogress.org/article/northern-syria-security-dynamics-refugee-crisis/>
18. Kakaje A, Al Zohbi R, Hosam Aldeen O, Makki L, Alyousbashi A, Alhaffar MBA. Mental disorder and PTSD in Syria during wartime: a nationwide crisis. *BMC Psychiatry*. 2021;21(1). doi:<https://doi.org/10.1186/s12888-020-03002-3>
19. World Health Organization, Mental Health Gap Action Programme (mhGAP): <https://www.who.int/teams/mental-health-and-substance-use/treatment-care/mental-health-gap-action-programme#:~:text=mh-GAP%20operations%20manual,to%20achieve%20universal%20health>.

20. Carnegie Endowment For International Peace: The Al-Assad Regime's Captagon Trade, Taim Alhaji: <https://carnegieendowment.org/sada/88109>
21. Newlines Institute: Special Captagon Trade Project, Caroline Rose: <https://newlinesinstitute.org/power-vacuums-program/special-captagon-trade-project-2/>
22. M7.8 and M7.5 Kahramanmaraş Earthquake Sequence near Nurdağı, Turkey (Türkiye) | U.S. Geological Survey. www.usgs.gov. Published February 17, 2023. <https://www.usgs.gov/news/featured-story/m78-and-m75-kahramanmaras-earthquake-sequence-near-nurdagi-turkey-turkiye>
23. Earthquake Damage in Türkiye Estimated to Exceed \$34 billion: World Bank Disaster Assessment Report. World Bank. Published February 27, 2023. <https://www.worldbank.org/en/news/press-release/2023/02/27/earthquake-damage-in-turkiye-estimated-to-exceed-34-billion-world-bank-disaster-assessment-report#:~:text=ANKARA%2C%20February%2027%2C%202023%E2%80%94>
24. Northwest Syria Earthquake February 2023, Daily Highlights - 13/02/2023 - Syrian Arab Republic | ReliefWeb. reliefweb.int. Published February 13, 2023. Accessed March 29, 2023. <https://reliefweb.int/report/syrian-arab-republic/northwest-syria-earthquake-february-2023-daily-highlights-13022023>
25. Earthquake Direct Damage in Syria Estimated at \$5.1 billion in Areas Already Severely Ravaged by Long Conflict and Displacement. World Bank. Published February 28, 2023. <https://www.worldbank.org/en/news/press-release/2023/02/28/earthquake-direct-damage-in-syria-estimated-at-5-1-billion-in-areas-already-severely-ravaged-by-long-conflict-and-displa>
26. Syrian Arab Republic. OCHA. Published January 30, 2018. <https://www.unocha.org/syria>
27. Cénat JM, McIntee SE, Blais-Rochette C. Symptoms of posttraumatic stress disorder, depression, anxiety and other mental health problems following the 2010 earthquake in Haiti: A systematic review and meta-analysis. *Journal of Affective Disorders*. 2020;273:55-85. doi:<https://doi.org/10.1016/j.jad.2020.04.046>
28. van Griensven F. Mental Health Problems Among Adults in Tsunami-Affected Areas in Southern Thailand. *JAMA*. 2006;296(5):537. doi:<https://doi.org/10.1001/jama.296.5.537>
29. <https://pubmed.ncbi.nlm.nih.gov/27149315/>
30. Nakaya N, Nakamura T, Tsuchiya N, Tsuji I, Hozawa A, Tomita H. The Association Between Medical Treatment of Physical Diseases and Psychological Distress After the Great East Japan Earthquake: The Shichigahama Health Promotion Project. *Disaster Medicine and Public Health Preparedness*. 2015;9(4):374-381. doi:<https://doi.org/10.1017/dmp.2015.52>
31. McGuire AP, Gauthier JM, Anderson LM, et al. Social Support Moderates Effects of Natural Disaster Exposure on Depression and Posttraumatic Stress Disorder Symptoms: Effects for Displaced and Nondisplaced Residents. *Journal of Traumatic Stress*. 2018;31(2):223-233. doi:<https://doi.org/10.1002/jts.22270>
32. Lisa D Mills I, Trevor J Mills, Marlow Macht, Rachel Levitan, Annelies De Wulf, Natasha S Afonso. Post-traumatic stress disorder in an emergency department population one year after Hurricane Katrina 2011.06.124: <https://pubmed.ncbi.nlm.nih.gov/22365529/>
33. Xu Y, Herrman H, Tsutsumi A, Fisher J. Psychological and social consequences of losing a child in a natural or human-made disaster: A review of the evidence. *Asia-Pacific Psychiatry*. 2012;5(4):237-248. doi:<https://doi.org/10.1111/appy.12013>
34. Ferrier B, Spickett J. Natural Disasters in Developing Countries: An Environmental Health Perspective. *Asia Pacific Journal of Public Health*. 2007;19(1_suppl):18-24. doi:<https://doi.org/10.1177/101053950701901s04>
35. Julca A. Natural Disasters with Un-Natural Effects: Why? *Journal of Economic Issues*. 2012;46(2):499-510. doi:<https://doi.org/10.2753/jei0021-3624460225>
36. Disaster Risk Reduction in Least Developed Countries. <https://www.undrr.org/disaster-risk-reduction-least-developed-countries>
37. Balaban V. Psychological Assessment of Children in Disasters and Emergencies. *Disasters*. 2006;30(2):178-198. doi:<https://doi.org/10.1111/j.0361-3666.2006.00314.x>

38. Lai BS, La Greca AM, Auslander BA, Short MB. Children's symptoms of posttraumatic stress and depression after a natural disaster: Comorbidity and risk factors. *Journal of Affective Disorders*. 2013;146(1):71-78. doi:<https://doi.org/10.1016/j.jad.2012.08.041>
39. La Greca AM, Silverman WK, Vernberg EM, Prinstein MJ. APA PsycNet. psycnet.apa.org. Published 1996. Accessed March 29, 2023. <https://psycnet.apa.org/record/1996-00468-010?doi=1>
40. van Berlaer G, Elsafti AM, Al Safadi M, Souhil Saeed S, Buyl R, Debacker M, Redwan A, Hubloue I. Diagnoses, infections and injuries in Northern Syrian children during the civil war: A cross-sectional study. *PLoS One*. 2017 Sep 8;12(9):e0182770. doi: [10.1371/journal.pone.0182770](https://doi.org/10.1371/journal.pone.0182770). PMID: 28886038; PMCID: [PMC5590741](https://pubmed.ncbi.nlm.nih.gov/PMC5590741/).
41. Parker G, Lie D, Siskind DJ, et al. Mental health implications for older adults after natural disasters – a systematic review and meta-analysis. *International Psychogeriatrics*. 2015;28(1):11-20. doi:<https://doi.org/10.1017/s1041610215001210>
42. Swed S, Bohsas H, Alibrahim H, Hafez W, Shoib S, Sawaf B, Rais MA, Aljabali A, Shaheen N, Elsayed M, Rakab A. Health-care provider burnout in Syria during COVID-19 pandemic's Omicron wave. *Medicine (Baltimore)*. 2022 Dec 16;101(50):e32308. doi: 10.1097/MD.00000000000032308. PMID: 36550866; PMCID: [PMC9771336](https://pubmed.ncbi.nlm.nih.gov/PMC9771336/).
43. Abdelrahman S, Haar RJ. The Effect of Conflict on Healthcare Workers in Syria: Results of a Qualitative Survey. 2021. *Berkeley Scientific Journal* doi: 10.5070/BS326157104
44. Math SB, Nirmala MC, Moirangthem S, Kumar NC. Disaster Management: Mental Health Perspective. *Indian J Psychol Med*. 2015 Jul-Sep;37(3):261-71. doi: 10.4103/0253-7176.162915. PMID: 26664073; PMCID: [PMC4649821](https://pubmed.ncbi.nlm.nih.gov/PMC4649821/).
45. Zunin, LM, Myers, D. Training manual for human service workers in major disasters (2nd ed.). DHHS Publication No. ADM 90-538. Department of Health and Human Services; 2000.
46. Quitangon, G. What do we need to know about disasters? In: Quitangon G, Evces MR, eds. *Vicarious Trauma and Disaster Mental Health: Understanding Risks and Promoting Resilience*. Routledge; 2015:156-17
47. Committee IAS. IASC Guidelines on Mental Health and Psychosocial Support in Emergency Setting; 2007.
48. Taleb ZB, Bahelah R, Fouad FM, Coutts A, Wilcox M, Maziak W. Syria: health in a country undergoing tragic transition. *International Journal of Public Health*. 2014;60(S1):63-72. doi:<https://doi.org/10.1007/s00038-014-0586-2>
49. Responding to Covid-19 Crisis in Syria. *MedGlobal*; 2021.
50. Belayachi D. An app to help treat patients in Syria, 10,000 km away. *The Observers - France 24*. Published July 28, 2016. Accessed March 29, 2023. <https://observers.france24.com/en/20160728-app-doctors-syria-hospitals-telemedecine>
51. Abbara A, AlKabbani H, Al-Masri I, Sahloul Z, Sparrow A. Populations under siege and in prison require investment from Syria's national tuberculosis programme. *The Lancet Respiratory Medicine*. 2018;6(7):e34. doi:[https://doi.org/10.1016/s2213-2600\(18\)30182-6](https://doi.org/10.1016/s2213-2600(18)30182-6)
52. Moughrabieh A, Weinert C. Rapid Deployment of International Tele-Intensive Care Unit Services in War-Torn Syria. *Annals of the American Thoracic Society*. 2016;13(2):165-172. doi:<https://doi.org/10.1513/annalsats.201509-589ot>
53. Sankari A, Atassi B, Sahloul MZ. Syrian field hospitals: A creative solution in urban military conflict combat in Syria. *Avicenna Journal of Medicine*. 2013;03(03):84-86. doi:<https://doi.org/10.4103/2231-0770.118467>
54. Mohsen F, Bakkar B, Armashi H, Aldaher N. Crisis within a crisis, COVID-19 knowledge and awareness among the Syrian population: a cross-sectional study. *BMJ Open*. 2021;11(4):e043305. doi:<https://doi.org/10.1136/bmjopen-2020-043305>
55. Outcomes for Human Trafficking Survivors: User Guide.; 2020.



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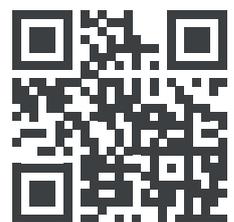
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