



The ongoing Israel-Hamas conflict: a humanitarian health crisis

Rick Maity, MBBS^a, Harendra Kumar, MBBS^b, Arkadeep Dhali, MBBS, MPH, PGCert Clin Ed, FRSPH^{c,d}, Jyotirmoy Biswas, MBBS^e, Bharat Kumar, MBBS^{f,*}

Dear Editor,

The ongoing conflict between Israel and Hamas has created a public health emergency that requires urgent attention. According to the United Nations (UN), the persistent violence in Gaza has resulted in a significant mortality and morbidity burden, with at least 34,622 deaths and over 77,867 injuries^[1]. Israel has also suffered significant human casualties, with over 1200 people killed and at least 5400 injured^[1]. The disproportionate impact on women and children, who account for more than 70% of all casualties, is a cause for concern^[1]. However, the consequences are not limited to the war's immediate aftermath. The violence has resulted in the internal displacement of around 1.7 million Gazans, who are facing additional hardship due to the closure of the majority of primary healthcare facilities and large-scale hospitals in Gaza on account of bombings or a lack of resources^[1].

Populations living in areas affected by armed conflict are more vulnerable to infectious disease outbreaks^[2]. Overcrowding, inadequate water supply, compromised sanitation and waste management, a lack of basic hygiene and medical supplies for infection prevention and control, disruptions to routine vaccination campaigns, and a collapsing healthcare system all increase the risk of epidemic-prone diseases spreading further^[2,3]. Cases of communicable diseases such as acute respiratory infections, diarrhea, scabies and lice, skin rash, chickenpox, and hepatitis-related jaundice have skyrocketed in Gaza since the conflict began^[4]. Children under the age of five account for almost half of the cases of diarrhea, a rate that is 23 times greater than in 2022^[4]. The World

Health Organization (WHO) has sounded an alarm over the deteriorating healthcare situation, warning that untreated illnesses may eventually claim more lives in Gaza than airstrikes^[5]. Since 80% of Gazans were already dependent on humanitarian aid prior to the conflict, this catastrophe has brought Gaza to its knees, exacerbating the chronic suffering endured by its densely populated areas^[6].

The working conditions in the few hospitals that are barely functional in Gaza are appalling^[7]. Hospitals are stretched beyond their limits, operating at 254% of their bed capacity^[4]. Patients are being treated on the floor due to an acute shortage of hospital beds. Limited medical supplies have further added to their woes. There is an acute shortage of essential medical equipment, such as anesthetics, intensive care supplies, antibiotics, and painkillers. Doctors are compelled to perform surgeries without anesthesia. Some patients have had to be transported to hospitals on donkeys and horses, as the healthcare system is highly overwhelmed^[7]. The director of Al-Awda Hospital reported that patients' wounds were "rotting" from being left untreated for weeks. He added that electricity blackouts have forced doctors to perform surgeries by the light of headtorches^[6]. Due to the short supply of painkillers, doctors are unable to treat injured and severely burnt patients effectively, leaving them to "scream for hours and hours"^[7]. Thus, Gaza's health system is on the verge of collapsing due to a lack of supplies, equipment, and manpower to cope with the influx of trauma victims^[1,4].

Yet, the affliction is not restricted to physical injuries and immediate casualties; it permeates the very core of society, leaving deep psychological scars. As Gazans endure a ceaseless barrage of violence, they grapple not only with physical wounds but also with profound mental health challenges^[3]. Post-traumatic stress disorder (PTSD), anxiety, and depression have gripped the population at unprecedented levels^[3]. While the WHO strives to provide mental health and psychiatric assistance, the magnitude of the crisis far exceeds their capacity, leaving many suffering with emotional wounds that may haunt them for years^[3,4].

The humanitarian crisis unfolding in Gaza further compounds the dire health situation. The population faces a scarcity of the most fundamental necessities: food, clean water, shelter, fuel, and electricity^[1]. These deplorable conditions expose individuals, particularly those with chronic diseases or disabilities, to significant health risks^[3]. Access to safe drinking water, adequate sanitation, and proper hygiene, the cornerstones of public health, are compromised, increasing the potential for infectious disease transmission, including diarrheal illness and hepatitis A^[1,4]. Women, children, and newborns, the most vulnerable segments of the population, are disproportionately bearing the brunt of the ongoing crisis^[8]. The hostilities have severely disrupted maternal

^aInstitute of Post Graduate Medical Education and Research, Kolkata, India,

^bDepartment of General Medicine, Dow University of Health Sciences, Karachi, Pakistan, ^cInternal Medicine Trainee, Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK, ^dNIHR Academic Clinical Fellow, University of Sheffield, Sheffield, UK, ^eDepartment of General Medicine, College of Medicine and Sagore Dutta Hospital, Kolkata, India and ^fDepartment of General Medicine, Nepal Medical College, Kathmandu, Nepal

R.M. and H.K. are co-first authors.

Sponsorships or competing interests that may be relevant to content are disclosed at the end of this article.

*Corresponding author. Address: Nepal Medical College, Attarkhel, Jorpati, Kathmandu, Nepal. Tel.: +977 987 142 6591. E-mail: bharatkumar130@rediffmail.com (B. Kumar).

Copyright © 2024 The Author(s). Published by Wolters Kluwer Health, Inc. This is an open access article distributed under the Creative Commons Attribution-NoDerivatives License 4.0, which allows for redistribution, commercial and non-commercial, as long as it is passed along unchanged and in whole, with credit to the author.

Annals of Medicine & Surgery (2024) 86:4313–4315

Received 30 December 2023; Accepted 24 May 2024

Published online 20 June 2024

<http://dx.doi.org/10.1097/MS9.0000000000002242>

Table 1
Health impact analysis: Gaza and Israel humanitarian crisis^[1–4,8]

Aspect	Gaza	Israel
Health system	Overwhelmed due to the influx of casualties, shortage of medical supplies, and staff scarcity caused by Israel's blockade. Limited capacity to provide essential medical care. Health facilities damaged or destroyed.	Strained by the high number of casualties and increased need for trauma and mental healthcare due to Hamas attacks. Diversion of resources impacts regular healthcare services.
Infectious diseases	Increased risk due to crowded living conditions, compromised sanitation, inadequate medical care, and limited access to safe water and food.	Elevated stress and anxiety may weaken the immune system, increasing susceptibility to infectious diseases.
Mental health	Increased stress, anxiety, depression, and post-traumatic stress disorder due to persistent violence. High demand but limited availability of mental health services.	Significant psychological trauma due to constant fear and stress. Mental health services stretched thin.
Chronic conditions	Disrupted access to essential medications and treatment for those with chronic diseases. Long-term consequences of halted treatment.	Potential disruptions in treatment due to the diversion of healthcare resources.
Health workers	Face violence, harassment, and intimidation from both sides, impacting their ability to provide care.	Shortages of staff, equipment, and supplies due to diversion of resources to the emergency response.
Malnutrition	Food shortages and compromised food supply systems increase the risk of malnutrition, affecting vulnerable populations such as children and the elderly.	Increased stress-related eating habits may impact nutrition.

and child health services in Gaza, with a large number of pregnant women facing increased risks of maternal deaths, stress-induced miscarriages, stillbirths, and premature births due to the lack of access to adequate care^[8]. The conflict has also led to an increased risk of malnutrition, disease, and death among children and newborns. Premature babies who rely on neonatal and intensive care services face the threat of death if hospitals run out of fuel for incubators and essential medical devices^[8]. Thus, the consequences stemming from the war ripple outward, disrupting critical healthcare services, causing chronic diseases to go untreated, halting vital immunization programs, and jeopardizing maternal and child healthcare, with those bearing pre-existing health concerns enduring elevated risks as the war's relentless march continues (Table 1).

Moreover, we must unflinchingly acknowledge that this conflict is an egregious violation of basic human rights and international humanitarian law. The deliberate targeting of non-combatants and civilian infrastructure defies the tenets of the Geneva Convention, which grants civilians protection from military action in and around a war zone^[9]. It is alarming to witness residential areas, hospitals, schools, and other civilian sanctuaries subjected to relentless assaults^[1]. The civilian casualties, piling up as the conflict rages on, serve as a harrowing testament to the dire need for immediate intervention to protect the rights and lives of the innocent^[1].

One of the most concerning aspects of this battle is the deliberate and systematic targeting of hospitals and healthcare organizations from both sides. In a media briefing on 3 April 2024, the WHO Director-General reported a whopping 906 verified attacks on healthcare (which includes health facilities, mobile clinics, and ambulances) since the conflict began, resulting in 736 fatalities and 1014 injuries^[10]. The attacks have targeted major hospitals in Gaza, including Al-Shifa Hospital, Al-Quds Hospital, Al-Ahli Arab Hospital, Al-Nasr and Al-Rantisi Hospitals, and the Indonesian Hospital. These facilities have been besieged, stormed with tanks and heavy gunfire, and forcibly evacuated, killing scores of patients and leaving the displaced people without access to critical medical care^[11]. In the first week of the conflict, rocket attacks on Israel struck Barzilai Medical Center in Ashkelon and landed in the vicinity of Soroka Medical Center in Beersheba. The assaults

caused disruptions to the critical operations of both facilities and injured both patients and dedicated medical professionals^[12,13]. Since the start of hostilities, a staggering 492 health workers have lost their lives in the line of duty^[11]. These horrific statistics highlight the critical need for international participation in defending the integrity of healthcare institutions and the dedicated healthcare workers who risk their lives every day.

In light of these sobering realities, we urgently implore the international community, with a particular appeal to the UN, the United States, the Middle East, and other key stakeholders, to exercise their diplomatic authority and exert influence to expedite a cease-fire. The adoption of the UN Security Council resolution calling for an “immediate cease-fire” for the month of Ramadan was a step in the right direction^[14]. A similar effort must be undertaken to adopt and enforce a permanent cease-fire, for the cessation of hostilities is a foundational step to prevent future civilian casualties and address the region's pressing healthcare needs.

Furthermore, the imperative of enabling unhindered humanitarian access to Gaza cannot be overstated. The international community has mobilized to provide humanitarian aid and medical support during the Israel-Hamas conflict, with the UN launching a \$2.822 billion “flash appeal” to address the urgent needs of the affected population, following a similar appeal on 12 October 2023^[15]. Major agencies of the UN, including WHO, UNRWA (United Nations Relief and Works Agency for Palestine Refugees in the Near East), UNICEF (United Nations Childrens Fund), and WFP (World Food Programme), have been working to deliver essential supplies and services such as medical care, food, and other critical assistance. While these efforts have helped to alleviate the suffering of people in Gaza, challenges remain in ensuring the effective delivery of aid, including restrictions on aid entry, limited funding, the need for adequate supplies, private sector involvement, and necessary visas and permits for humanitarian staff^[15]. Humanitarian organizations must be afforded the liberty to administer relief and medical aid to those in dire need. It is incumbent upon the international community to collectively dismantle the barriers that obstruct the prompt delivery of essential supplies and medical services.

In tandem with these actions, it is imperative to hold accountable those responsible for war crimes and human rights

violations. Justice must be served, not only for the victims but as a deterrent against future transgressions. Ultimately, a just and enduring peace can only be attained through a political dialogue addressing the root causes of this protracted conflict. Moving beyond conflict management, the international community's advocacy for a comprehensive, equitable peace agreement that respects the rights, security, and dignity of both Israelis and Palestinians is an indispensable step forward. The fundamental issues fueling this decades-long strife, such as the Israeli occupation, the lack of Palestinian statehood and rights, the refugee crisis, and the asymmetry of power between the two sides, must be addressed, working resolutely toward a lasting solution that bestows peace and security upon the region^[15].

Simultaneously, we fervently call upon the global citizenry to extend their solidarity to the beleaguered people of Gaza and Israel. Raising awareness is a pivotal step towards garnering support and empathy for their pressing humanitarian needs. Donations to local humanitarian organizations can provide immediate assistance to those in desperate circumstances. Advocating for peace and justice through the channels of social media, within communities, and on political platforms represents a vital means to express solidarity and demand transformation.

The grievous health repercussions wrought by the ongoing Israel-Hamas conflict must not be allowed to continue without a swift and decisive response. It is our shared responsibility to decry this violence, to shield the defenseless, and to ardently pursue a just and enduring peace that reverses the rights and dignity of all.

Ethical approval

Ethics approval was not required for this editorial.

Consent

Informed consent was not required for this editorial.

Source of funding

Not applicable.

Author contribution

Conceptualization: A.D.; writing—original draft preparation: H.K., A.D., J.B., B.K. All authors have read and agreed to the published version of the manuscript.

Conflicts of interest disclosure

The authors declare no conflicts of interest.

Research registration unique identifying number (UIN)

NA, this is an editorial letter article.

Guarantor

Dr Arkadeep Dhali acts as guarantor of the article.

Data availability statement

This is an Editorial letter article. No primary data were generated.

Provenance and peer review

Not commissioned, externally peer-reviewed.

References

- [1] UN OHCA. Hostilities in the Gaza Strip and Israel - reported impact | Day 210. United Nations Office for the Coordination of Humanitarian Affairs - occupied Palestinian territory. Published May 3, 2024. Accessed May 3, 2024. <http://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-reported-impact-day-210>
- [2] Kearney JE, Thiel N, El-Taher A, *et al.* Conflicts in Gaza and around the world create a perfect storm for infectious disease outbreaks. *PLOS Glob Public Health* 2024;4:e0002927.
- [3] Beiraghdar F, Momeni J, Hosseini E, *et al.* Health crisis in Gaza: the urgent need for international action. *Iran J Public Health* 2023;52: 2478–83.
- [4] World Health Organization - Regional Office for the Eastern Mediterranean. oPt Emergency Situation Update: Issue 28, 20 April 2024. World Health Organization; 2024. Accessed May 3, 2024. https://www.emro.who.int/images/stories/Sitrep-issue_28b.pdf
- [5] Rascoe A. WHO expert warns of disease risk in Gaza amid a collapsing health care system. *NPR*. Published December 3, 2023. Accessed May 3, 2024. <https://www.npr.org/2023/12/03/1216836548/who-expert-warns-of-disease-risk-in-gaza-amidst-a-collapsing-healthcare-system>
- [6] UNCTAD. *Preliminary Assessment of the Economic Impact of the Destruction in Gaza and Prospects for Economic Recovery*. United Nations Conference on Trade and Development; 2024. Accessed May 3, 2024. https://unctad.org/system/files/official-document/sgsinf2024d1_en.pdf
- [7] Cuddy A. Gaza doctors: 'We leave patients to scream for hours and hours.' Published February 18, 2024. Accessed May 3, 2024. <https://www.bbc.com/news/world-middle-east-68331988>
- [8] Ben Saad H. Urgent humanitarian appeal: protecting the lives of women and children in the Gaza Strip (Palestine). *J Public Health Res* 2024;13: 22799036241229312.
- [9] Geneva Convention relative to the Protection of Civilian Persons in Time of War. United Nations Human Rights Office; 2024. Accessed May 3, 2024. <https://www.ohchr.org/en/instruments-mechanisms/instruments/geneva-convention-relative-protection-civilian-persons-time-war>
- [10] WHO Director-General's opening remarks at the media briefing. World Health Organization. 2024. Published April 3, 2024. Accessed May 3, 2024. <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing---3-april-2024>
- [11] Polglase K, Mezzofiore G, Mackintosh E, *et al.* How Gaza's hospitals became battlegrounds. *CNN*. Published January 12, 2024. Accessed May 3, 2024. <https://www.cnn.com/interactive/2024/01/middleeast/gaza-hospitals-destruction-investigation-intl-cmd>
- [12] Efrati I. Direct rocket hits, partial protection: How a hospital operates in Israel's most bombarded city. *Haaretz* 2024. Published November 1, 2023. Accessed May 3, 2024. <https://www.haaretz.com/israel-news/2023-11-01/ty-article/.premium/hospital-serving-israels-most-bombarded-city-operating-at-30-percent-capacity/0000018b-8887-dd28-a7df-9897d1dd0000>
- [13] Wen LS. We Cannot Forget What Happened at Israel's Soroka Hospital.. *Time*. Published October 30, 2023. Accessed May 3, 2024. <https://time.com/collection/time100-voices/6329919/israel-soroka-hospital-october-7/>
- [14] UN. Security Council (79th year: 2024). Resolution 2728 (2024) / adopted by the Security Council at its 9586th meeting, on 25 March 2024. Published online March 25, 2024. Accessed May 3, 2024. <https://www.un.org/unispal/wp-content/uploads/2024/03/n2408081.pdf>
- [15] UN OHCA. Flash Appeal for the Occupied Palestinian Territory 2024. United Nations Office for the Coordination of Humanitarian Affairs - occupied Palestinian territory. Published April 17, 2024. Accessed May 3, 2024. <http://www.ochaopt.org/content/flash-appeal-occupied-palestinian-territory-2024>