

Triple Burden: Famine, Diabetes, and Oral Health as Human Rights Violations in Gaza¹

Dr. Sahar Bolbol

Dental Surgeon, Global Public Health Researcher ✉

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1. Introduction

Famine and malnutrition continue to impact millions of individuals globally, with severe consequences on physical, mental, oral and metabolic health. Among the most vulnerable systems affected by nutritional deprivation is the oral cavity, which serves as both a mirror and a gateway to overall health. Despite its importance, oral health is often overlooked in humanitarian and medical responses to famine, which deprives many of their right to health and can be fatal, especially among children, who experience lifelong developmental and dental consequences from early malnutrition.

Simultaneously, diabetes mellitus, particularly type 2 diabetes, is on the rise worldwide and is closely tied to both nutritional status and oral health. Poor glycemic control can lead to a cascade of oral complications, from dry mouth and dental caries to severe periodontal disease. When malnutrition and diabetes coexist, especially in populations already facing humanitarian crises such as in Gaza, the oral consequences can be debilitating and life-threatening.

These overlapping health crises are not just biomedical issues, they are direct manifestations of structural inequality and systemic neglect. In conflict-affected settings, the denial of access to adequate food, health services, and oral care constitutes a violation of the fundamental human right to health, especially for women, children and other vulnerable groups.

This article aims to explore the intersection of famine, malnutrition, and oral health in the context of diabetes mellitus. By reviewing current evidence and drawing attention to the gaps in integrated care, this paper underscores the urgent need to address oral health as part of comprehensive public health responses, especially in crisis-affected populations. It also advocates for a rights-based approach to health that upholds equity and prioritizes the most vulnerable.

2. Famine and Malnutrition (A Global Health Challenge)

Famine and malnutrition are urgent global health issues that disproportionately affect populations in low-income, conflict-affected, and disaster-prone regions.

According to the 2023 State of Food Security and Nutrition in the World report, an estimated 735 million people faced chronic hunger globally, with a sharp rise observed in areas impacted by war, climate change, and economic instability (FAO, IFAD, UNICEF, WFP and WHO, 2023). Malnutrition, especially in its severe forms such as protein-energy malnutrition and micronutrient deficiencies, impairs nearly every organ system in the body, including the oral cavity. Children are disproportionately affected by malnutrition, facing stunted growth and long-term oral complications such as enamel hypoplasia.

Famine is not merely the absence of food; it reflects systemic failures in food distribution, healthcare, and governance. It often leads to mass displacement, poor sanitation, limited access to healthcare, and increased vulnerability to infections. In children, prolonged undernutrition results in stunted growth, delayed

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development, and compromised immune function. In adults, it increases susceptibility to chronic diseases, including type 2 diabetes, due to metabolic dysregulation triggered by cycles of deprivation and stress.

This pattern reflects a broader violation of social justice and the right to food and health. Inadequate nutrition, particularly in childhood, is not just a health issue, it constitutes a denial of a basic human entitlement with lifelong consequences.

2.1. Gaza Crisis Spotlight: How Famine, Chronic Disease, and Oral Health Collide

The ongoing humanitarian crisis in the Gaza Strip presents a stark and urgent example of how famine and malnutrition manifest in real time, particularly under conditions of protracted conflict and siege. Years of blockade, repeated military escalations, and severe restrictions on access to food, clean water, and medical supplies have culminated in a devastating public health emergency. Recent UN reports highlight alarming levels of acute malnutrition, especially among children and pregnant women. These conditions not only threaten survival but also significantly compromise oral health, particularly in individuals with chronic conditions such as diabetes mellitus.

Since the outbreak of war in October 2023 and the intensified blockade beginning in March 2025, the health toll in Gaza has grown increasingly severe. According to the Ministry of Health (2025), at least 66 children have died from severe malnutrition since the start of the war. The World Health Organization (2025) similarly reported 57 deaths among children under five during the blockade period. In the first 80 days of the siege alone, 326 deaths were recorded due to malnutrition and medical supply shortages, including 58 caused directly by starvation and 242 linked to the lack of essential care (Gaza Media Office, 2025). The deteriorating health environment has also contributed to over 300 miscarriages, reflecting a broader collapse in maternal health. As of May 2025, UNICEF (2025) documented over 5,000 cases of child malnutrition, including 636 cases of severe acute malnutrition (SAM).

Malnutrition weakens the immune system, leaving individuals more vulnerable to infections and serious complications. In this context, the lack of access to critical treatments, such as insulin for diabetes and emergency dental care, further amplifies mortality risks. Oral infections, often overlooked in emergency responses, can progress rapidly and become life-threatening when left untreated, especially among immunocompromised individuals like those living with diabetes (Gaza Media Office, 2025). The compounded burden of famine, malnutrition, and poor chronic disease management has led to a sharp rise in mortality in Gaza, particularly among young children, pregnant women, and the elderly. This intersection of crises highlights the urgent need for integrated health interventions that address nutrition, chronic illness, and oral health in a holistic manner (UNICEF, 2025).

The situation in Gaza is not simply a public health emergency, it is a human rights crisis. The preventable deaths of children due to hunger and lack of medical care point to a collapse of protective systems and amount to an egregious violation of the right to health as defined by international human rights law. Vulnerable groups, especially children with diabetes, pregnant women, and the elderly, are disproportionately bearing the brunt of this systemic failure.

2.2. Dental Healthcare Before and After the War in Gaza

Prior to the escalation of war in Gaza, dental services were available through a combination of governmental primary healthcare centers, private practices, and UN-supported health facilities. Preventive programs for school children, routine dental check-ups, and basic restorative treatments were accessible to large segments of the population, despite resource constraints.

More than a year into full-scale conflict since October 2023, the displacement of over 1.7 million people has exacerbated the crisis, forcing many into overcrowded shelters where maintaining oral hygiene is practically impossible. The destruction of dental clinics, shortages of dental supplies, lack of hygiene products, and the collapse of routine services have dramatically worsened the situation (OCHA, 2024; Baroudi and Al Shobaki, 2024). The ongoing siege has restricted the entry of mobile dental clinics, dental material, anesthetics, disinfectants, sterilization supplies, dental instruments, and even basic items like toothbrushes and toothpaste.

As a result, preventive care and advanced treatments became scarce or unaffordable for most of the population, and oral health care has shifted from being preventive and restorative to strictly emergency-based, with most patients seeking care only for acute pain or infections. This regression in care delivery has profound implications, particularly for patients with chronic illnesses such as diabetes, who require consistent oral monitoring and management. People with diabetes and malnutrition are particularly affected, facing elevated risks of oral infections and complications due to delayed treatment, poor hygiene, and lack of therapeutic nutrition.

3. The Impact of Malnutrition on Oral Health

Malnutrition, especially among children and vulnerable populations in Gaza, significantly exacerbates oral health problems. The prolonged blockade and war have led to food insecurity, with many families struggling to provide balanced diets. Nutritional deficiencies, particularly of vitamins A, C, D, calcium, and protein, have been linked to impaired tooth development, increased susceptibility to dental caries, periodontal diseases, and delayed wound healing (FAO, IFAD, UNICEF, WFP and WHO, 2023).

Children with chronic malnutrition often present with enamel hypoplasia, which increases their risk for cavities and tooth sensitivity, delayed tooth eruption and enamel defects which can impair speech,

nutrition, and self-esteem well into adulthood. Malnourished children have compromised immune systems, making oral infections more frequent and severe. The interplay between malnutrition and oral health is bidirectional: poor oral health can reduce food intake due to pain and discomfort, thereby worsening nutritional status.

Recent reports and clinical observations from Gaza during the current war highlight an alarming rise in malnutrition-related oral health complications. The lack of therapeutic feeding programs, interrupted access to micronutrient supplementation, and disrupted healthcare services have compounded these effects. Malnutrition also impairs systemic health, exacerbating chronic conditions such as diabetes, which itself is a significant risk factor for oral disease (Ministry of Health - Gaza, 2025). From a human rights perspective, malnutrition and its oral health consequences represent a grave form of neglect and violation. The right to adequate nutrition and healthcare is enshrined in international treaties, and the failure to ensure these rights during conflict disproportionately harms children and other vulnerable groups.

4. Diabetes Mellitus and Oral Health in Conflict Settings

According to the World Health Organization (2023), diabetes mellitus, a metabolic disorder affecting over 463 million adults globally and expected to rise to 643 million by 2030, is a condition deeply intertwined with oral health, especially among children. These figures are likely underestimated in regions facing chronic conflict, where data collection is disrupted and diagnosis often delayed. In the Eastern Mediterranean Region alone, the burden of diabetes is surging, exacerbated by conflict, poverty, and health system disruptions (WHO-EMRO, 2022). Malnutrition, especially in the context of food insecurity and displacement, combined with chronic stress, disrupted healthcare systems and lack of preventive screening, can significantly impair glycemic control in children with diabetes. This, in turn, accelerates the development of oral complications such as periodontal disease, xerostomia and dental caries.

The interplay of these factors not only increases the risk of diabetes onset but also worsens outcomes among already diagnosed children. This underscores the need for proactive metabolic and oral health strategies in humanitarian settings.

4.1. The Situation in Crisis Settings

People in conflict zones are not only deprived of their right to food, but also of their right to medical care and essential medicines.

Diabetes mellitus (DM) is a growing public health concern globally, and its prevalence is rising alarmingly in Gaza. Conflict and crisis settings, like Gaza, intensify the challenges of managing chronic diseases such as diabetes, due to disrupted healthcare infrastructure, medication shortages, and increased psychological stress.

In conflict zones and famine-affected regions such as Gaza, diabetic patients face compounded challenges:

- Lack of access to insulin or glucose-monitoring supplies
- Irregular diets and frequent hypoglycemia or hyperglycemia episodes
- No access to preventive oral care
- The absence of systemic screening for periodontal disease

Combined with malnutrition, diabetes becomes a multiplier of risk for severe oral pathology. Reports from healthcare workers and dentists in Gaza indicate that diabetic patients during the war exhibited:

- Rapidly-progressing periodontitis
- Recurrent abscesses
- Severe halitosis
- Oral lesions indicative of fungal overgrowth and tissue necrosis

These signs reflect the acute need to address both general and oral health management in diabetic patients during times of crisis.

Diabetes significantly impacts oral health, increasing the risk and severity of periodontal diseases, oral infections, delayed healing, and xerostomia (dry mouth). Poor glycemic control correlates with higher rates of dental caries and oral candidiasis. In Gaza, the overlap of diabetes and conflict-related barriers to care leads to worsening oral health outcomes and overall health deterioration (WHO, 2025). Recent field studies during the ongoing war show diabetic patients experiencing aggravated oral complications due to interrupted access to insulin, dental care, and diabetes education. The bidirectional relationship between diabetes and periodontitis is of particular concern, as poor oral health can worsen glycemic control, creating a vicious cycle of health decline.

The compounded effect of diabetes and oral health issues in conflict zones exemplifies systemic neglect and breach of the right to health. Vulnerable groups, especially children with chronic diseases, face compounded risks during humanitarian crises. Holistic approaches integrating diabetes management and oral health promotion are urgently needed within emergency health interventions.

5. Impact of the Triple Burden on Vulnerable Populations

The convergence of famine, diabetes, and poor oral health in conflict settings such as Gaza creates a “triple burden” that disproportionately affects the most vulnerable groups: children, women, the elderly, and those with pre-existing health conditions.

Children suffer from early childhood caries worsened by malnutrition and insufficient access to preventive dental care. Women, often primary caregivers, experience higher stress levels and limited healthcare access, which exacerbates diabetes management challenges and oral health deterioration. The elderly face cumulative risks due to age-related health decline compounded by inadequate nutrition and chronic disease burdens.

Evidence from Gaza’s recent conflict shows increased rates of malnutrition-related dental problems, poorly controlled diabetes, and untreated oral infections, leading to significant morbidity and reduced quality of life (Gaza Media Office, 2025).

This triple burden represents a clear violation of fundamental human rights, particularly the right to health and adequate nutrition. In conflict-affected populations, such violations intensify existing inequalities and underscore the need for integrated, multi-sectoral humanitarian responses that prioritize oral health as a key component of overall wellbeing.

5.1. Literature Review from Other Conflict-Affected Regions

While Gaza is currently among the most critical cases, similar intersections between malnutrition, diabetes, and oral health have been documented in other humanitarian crises. Comparative analysis from other humanitarian crises reveals a similar pattern, as documented in reviews exploring oral health challenges in conflict-affected humanitarian settings (Alzaharani and Almutairi, 2021). In Yemen, the collapse of health systems during the war led to a steep rise in untreated dental conditions and worsening oral hygiene across vulnerable groups (Al-Ezzi and Ali, 2020). In South Sudan and Syrian refugee camps, studies have shown that malnourished children exhibit significantly higher levels of dental decay and oral infections compared to their nourished peers (Hassan *et al.*, 2021; Al-Oraibi *et al.*, 2019). These findings stress the need for integrated healthcare responses that recognize oral health as a key component of overall well-being, particularly in emergencies.

The synergy between famine, malnutrition, and diabetes mellitus thus forms a vicious cycle: poor nutrition worsens diabetic outcomes, which in turn magnify oral complications, especially in the absence of proper care. Public health strategies in conflict zones must integrate oral health screenings and treatments within broader nutrition and diabetes programs. A holistic approach will not only alleviate suffering but also contribute to long-term resilience in communities recovering from crisis.

These findings from multiple crisis settings reinforce the necessity of viewing oral health as a critical, yet often neglected, component of global health interventions in emergencies.

6. Conclusions and Recommendations

The evidence from Gaza and comparable humanitarian crises underscores the urgent need to address the intertwined challenges of famine, diabetes, and oral health as a unified “triple burden.” Traditional siloed health interventions fail to capture the complexity of these overlapping epidemics, particularly in conflict settings where resources are scarce and vulnerability is heightened.

6.1. Recommendations for humanitarian actors and policymakers include:

- Implement integrated nutrition, diabetes management, and oral health programs that are culturally sensitive and accessible.
- Prioritize preventive oral health care in emergency and post-conflict health services, with special focus on vulnerable groups.
- Establish an emergency pediatric dental program and child-focused nutrition support that ensure micro-nutrient supplementation, early screening and treatment for malnourished children.
- Enhance data collection and research on the epidemiology of oral diseases in humanitarian crises to inform tailored interventions.
- Promote awareness campaigns linking nutrition, diabetes, and oral health to empower affected communities.
- Advocate for recognition of oral health as a fundamental human right within the broader context of health and nutrition in crisis settings.

In conclusion, addressing the triple burden in Gaza is not only a medical necessity but a human rights imperative. Integrated, multidisciplinary approaches are essential to mitigate the compounded health risks faced by conflict-affected populations and to uphold their dignity and right to health.

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