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From Sailor's Disease to Refugee's Plight: Scurvy as a Neglected Public Health Concern

In the 1970s and 80s, war, famine, and natural disaster hit Ethiopia at once. Mass migrations followed suit, with refugees seeking food and shelter in other locations. Many of these refugees, particularly children, suffered from scurvy, a potentially fatal vitamin C deficiency. Scurvy is a disease that has been historically associated with sailors and explorers, but it still affects vulnerable populations worldwide, including refugees. The high prevalence of scurvy among Ethiopian refugees in the 1980s highlighted the importance of adequate nutrition, especially for those who are displaced and lack access to a variety of fresh foods. Today, the issue of scurvy among refugees still leaving Ethiopia as a result of the same conditions continues to be a public health concern that requires effective interventions to ensure adequate nutrition and prevent this debilitating disease.

Ethiopia is located in the Horn of Africa and has a population of over 109 million people (“Overview about Ethiopia”). Around 15% of the population lives in urban areas, while the remaining 85% lives in rural areas. Ethiopia is a Federal Democratic Republic, and its current prime minister is Abiy Ahmed. The country has faced multiple conflicts, including the 1979-81 Ogaden war, in which over 100,000 Ethiopians fled to northern Somalia, and 300,000 to eastern Sudan (Desenclos et al.).

Agriculture makes up approximately 40% of Ethiopia’s GDP, with agriculture being the largest sector of the economy. The major crops include coffee, oilseeds, cereals, vegetables, and fruits, with coffee being the largest export. However, despite being an agricultural country, Ethiopia still faces food insecurity due to various factors such as poor infrastructure and fragmented cultivation (Wendimu).

Ethiopia has a diverse climate and geography, with highlands, lowlands, and deserts (“Overview about Ethiopia”). The country experiences two main seasons—dry and rainy. The dry season can lead to droughts and water shortages, while the rainy season can cause flooding and landslides.

The typical family diet in Ethiopia consists of grains such as teff, wheat, and barley, legumes such as lentils and chickpeas, vegetables such as kale and carrots, and occasionally meat such as beef or goat (Selinus). Fruits formerly were known for their high cost and limited availability; however, as of 2022, avocados were expected to take root as a primary export (Gessesse).

Families often get their food from local markets or through their own agriculture, but access to nutritious food can be a challenge due to poverty and food insecurity. The majority of jobs in Ethiopia are in agriculture. Access to education and healthcare in Ethiopia is limited, especially in rural areas, and can be costly for families (Massow 20). This lack of access to basic services contributes to the cycle of poverty and malnutrition.

Clean water, toilets, and electricity are not always available, especially in rural areas, and access to telephones and roads can be limited. Local markets can be far away and difficult to access, making it challenging for families to obtain nutritious food.

Overall, the major barriers that typical families in Ethiopia face include earning a living, accessing nutritious food, and accessing basic services such as education and healthcare. These barriers are further compounded by conflict, climate change, and poor infrastructure, making it difficult for families to break the cycle of poverty and malnutrition.

A necessary nutrient that many Ethiopians lack is vitamin C, also known as L-ascorbic acid. Since vitamin C cannot be synthesized by humans (unlike other animals), it is a vital nutritional component (Carr and Maggini). Vitamin C works together with various regulatory enzymes in the body. Without it, infections become much more likely, and metabolism becomes slow.

Scurvy is a disease stemming from insufficient levels of vitamin C. Its side effects include swollen joints and gums, leading to reduced mobility and often bleeding (Berry-Koch et al. 1). It has been linked to mortality in pregnant women and others. Scurvy widely fell out of mainstream attention after the Irish Potato Famine until a sudden spike in the 20th century. It was estimated that scurvy was endemic in 30% of Somalian refugee camps from 1985-90. Although the refugee crisis in Ethiopia from famine and Ogaden aftermath marked one of the most prominent spikes of scurvy in history, as conflict in Ethiopia continues with the 2020 Tigray conflict, refugees remain at risk of displacement.

Scurvy does not develop immediately but rather takes anywhere from two to three months to fully develop. Vitamin C is a reputedly unstable substance. It is quickly rendered useless from oxidation, heat, and light. As such, transportation and storage are notoriously difficult. However, once degraded, vitamin C notably does not become toxic, although its potency becomes greatly reduced.

Rural populations lack equitable access to education, making preventative measures or education on the effects of malnutrition difficult; this is coupled when they are already disproportionately affected by displacement from geopolitical conflict (Massow 30).

Refugees already come to camps with traumatic memories, often on the brink of death and starvation. Although better than nothing, rations in times of emergency such as cereal crops often offer little to no nutritional value.

In Sudanese emergency camps taking in Ethiopian refugees in 1985, 32% to 52% of preschool-age children were estimated to be malnourished (Shears et al. 1). Overall mortality rates wavered from 8-9 per 1,000, while in children, they went up to 22 per that same number of people.

The impact of scurvy on the environment is relatively limited. However, the lack of access to a variety of fruits and vegetables may lead to overconsumption of other foods, such as grains and cereals, which can have negative environmental impacts, including deforestation and soil degradation (Ritchie et al.).

While vitamin C requirements may be difficult to meet during times of crisis, especially being such an unstable necessary good, there are some solutions to scurvy epidemics. Two options present themselves as solutions to this problem: increasing accessibility of vitamin C existing in the area and increasing levels of vitamin C directly provided as aid.

In order to address scurvy at the beginning stages of a crisis, it may be necessary to resort to supplements. Vitamin C tablets have proven themselves able to prevent the signs of scurvy (“Scurvy and Its Prevention” 44). Supplements can be easily distributed and do not require the logistical challenges associated with distributing fresh produce. This principle of directly providing vitamin C to challenged communities can also be used in support of the fortification of foods already existing in Ethiopian diets, such as teff, wheat, and barley, as mentioned above.

While functional as a short-term solution, though, the distribution of supplements alone does not address the underlying issues of food insecurity and malnutrition that contribute to scurvy. Doing so without simultaneously creating infrastructure to prevent scurvy long-term may also lead to dependency on aid.

Fresh is how the majority of developed nations' residents acquire vitamin C. The United Nations World Food Programme has implemented a program called the Fresh Food Voucher System in Jordan to provide Syrian refugees with access to fresh produce ("Syrian Refugees Begin Using WFP Vouchers"). The program has been successful in increasing the consumption of fresh fruits and vegetables among refugees. Similar programs could be implemented in countries with other refugees to increase access to preexisting fresh produce.

Community gardens have also been proposed as a viable option for fresh produce, where foods rich in vitamin C (such as tomatoes or potatoes) are grown by refugees themselves. This reduces the amount of transportation needed from source to refugee, similar to voucher systems. Community gardens also act as a long-term form of infrastructure that can be maintained for years, continuing to benefit the people putting effort into them, thus being more sustainable as a long-term solution.

However, both of these systems have their drawbacks. Vouchers may not address other underlying issues such as lack of access to fresh produce or knowledge about its nutritional value, though they can be coupled with education programs to rectify this. They can also be difficult to implement at large scales during the emergency stage of a refugee crisis. Community gardens can be similarly difficult to implement immediately after a sudden influx of refugees and require some level of technical expertise and raw materials before producing gain. The time taken to grow produce may also be taken into consideration. Thus, though these can be regarded as important tools in the long-term prevention of scurvy, they may be insufficient vehicles for larger outbreaks.

Preventing scurvy in refugee camps is a necessary aspect of ensuring the health and well-being of the world's most vulnerable displaced populations. The patterns of scurvy among Ethiopian refugees in the 1980s serve as a powerful reminder of the devastating consequences of inadequate nutrition in these settings. However, with the right combination of long-term infrastructure and immediate aid, the world can work to prevent scurvy and other (along with it) other nutritional deficiencies and diseases among refugees.

To achieve this, a multi-faceted approach is required. In the short-term, aid in the form of vitamin C supplements and the distribution of fresh produce vouchers can help to ensure that refugees have access to adequate nutrition. However, efforts must also be made to improve the overall infrastructure of refugee camps to support the cultivation and distribution of fresh produce. Preexisting organizations can make it a point to recognize the plight of scurvy in refugee populations while preparing relief and humanitarian aid.

Ultimately, it is essential that the international community recognizes the importance of preventing scurvy and other nutritional deficiencies among refugees in order to take steps toward providing the necessary resources and support to render it powerless once again. With a concerted effort and a commitment to long-term solutions, it can be ensured that refugees have access to the nutrition they need to stay healthy and thrive, even in the most challenging circumstances.

Works Cited

- Berry-Koch, Angela, et al. "Alleviation of Nutritional Deficiency Diseases in Refugees." *Food and Nutrition Bulletin*, vol. 12, no. 2, June 1990, pp. 1–7, doi.org/10.1177/156482659001200215.
- Carr, Anitra C, and Silvia Maggini. "Vitamin c and Immune Function." *Nutrients*, vol. 9, no. 11, 3 Nov. 2017, p. 1211, www.ncbi.nlm.nih.gov/pmc/articles/PMC5707683/.
- Desenclos, J. C., et al. "Epidemiological Patterns of Scurvy among Ethiopian Refugees." *Bulletin of the World Health Organization*, vol. 67, no. 3, 1989, pp. 309–316, pubmed.ncbi.nlm.nih.gov/2788528/.
- Gessese, Andualem Sisay. "An Overview of Fruits Production, Export of Ethiopia." *New Business Ethiopia*, 27 Feb. 2022, newbusinessethiopia.com/agribusiness/an-overview-of-fruits-production-export-of-ethiopia/.
- Massow, Fra von. *Access to Health and Education Services in Ethiopia: Supply, Demand, and Government Policy*. Oxfam GB, 2001. *JSTOR*, www.jstor.org/stable/j.ctt1hj5617.
- "Overview about Ethiopia." *Embassy of Ethiopia*, 25 Jan. 2019, ethiopianembassy.org/overview-about-ethiopia/.
- Ritchie, Hannah, and Max Roser. "Environmental Impacts of Food Production." *Our World in Data*, Jan. 2020, ourworldindata.org/environmental-impacts-of-food.
- "Scurvy and Its Prevention and Control in Major Emergencies." *Www.who.int*, 23 Feb. 1999, www.who.int/publications/i/item/WHO-NHD-99.11.
- Selinus, Ruth. "The Traditional Foods of the Central Ethiopian Highlands." *Ethnomed*, 1 Jan. 1971, ethnomed.org/resource/the-traditional-foods-of-the-central-ethiopian-highlands/.
- Shears, Paul, et al. "Epidemiological Assessment of the Health and Nutrition of Ethiopian Refugees in Emergency Camps in Sudan, 1985." *British Medical Journal (Clinical Research Edition)*, vol. 295, no. 6593, 1987, pp. 314–318, www.jstor.org/stable/29527811.
- "Syrian Refugees Begin Using WFP Vouchers to Buy Food at Zaatari Camp." *Www.wfp.org*, 17 Sept. 2013, www.wfp.org/news/syrian-refugees-begin-using-wfp-vouchers-buy-food-zaatari-camp.
- Yigezu, Gebissa. "The Challenges and Prospects of Ethiopian Agriculture." *Cogent Food & Agriculture*, vol. 7, no. 1, 1 Jan. 2021, p. 1923619, doi.org/10.1080/23311932.2021.1923619.