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Editorial: Food systems, food insecurity, and racial and ethnic health disparities

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Editorial on the Research Topic
Food systems, food insecurity, and racial and ethnic health disparities

Achieving the four pillars of food security, namely—availability, access, utilization, and stability, is essential to sustaining human health via a sustainable food system. Food systems are comprised of farms that grow crops and fruit trees; as well as those that raise sheep, cows, chickens, and other animals; processing facilities; institutions that prepare and serve food; food distributors and retailers, food banks, charitable organizations, and consumers (Henne et al., 2016). Sustainability of these systems is influenced by food prices, food production and transportation, civil unrest and war, and/or agricultural trade. For instance, the price of rice, the staple food of many nations worldwide, increased by 19% from 2022 to 2023 (Henne et al., 2016). Moreover, while the prices of vegetable oils have decreased by about 35%, meat prices have increased by about 7% (World Bank, 2023). In 2023, Taylor et al. reported that the prices of protein foods such as meat and dairy have increased 1.2-fold within a period of 12 years (2007 to 2019). In addition, the covid-19 pandemic and Ukrainian-Russian war affected the quality and quantity of the food available to, and consumed by, customers across the globe. For example, the global production of sunflower oil, wheat, maize, and corn decreased by 75%, 30%, 17, and 15%, respectively between 2022 and 2023 (The Food and Agriculture Organization, 2023; World Bank, 2023). Changes in the agricultural trade are another factor that has altered global food transportation. For example, the current amount of wheat produced by the European Union in 2023 has decreased by 145 tons when compared with that of 2022 (Taylor et al.). Similarly, the quantity of wheat that Brazil imported in 2023 was 400 tons less than the previous year (Taylor et al.). The United Sates Department of Agriculture also reported that the prices of fruits and vegetables rose by up to 28% due to a 100% increase in the price of diesel during the past decade (Market Monitor, 2023). These price increases will have an alarming impact on food security among those living on low incomes (Global Food Consumers' Forum, 2013).

Researchers and various governments recently intensified their efforts to address food insecurity by augmenting food sustainability through seawater desalination, green house construction, home garden promotion, and the use of genetically modified foods to increase agricultural production and nutritional quality of food (Global Food Seucrity Index, 2023). Adoption of such sustainable solutions is associated with reduced food prices (The Food and Agriculture Organization, 2023). These solutions depend on the development and use of local natural resources; however, these projects exerted global financial pressures. In

April 2022, the World Bank allocated $30 billion to advance agricultural programs that aimed to alleviate food insecurity and enhance food system sustainability (World Bank, 2023). Alternatively, food rescue is a tactic that minimizes food insecurity by redistributing surplus food to those who need it, as well as decreasing food waste (Mousa and Freeland-Graves, 2017; Mousa, 2020). This is a significant issue since more than one-third of the food produced is wasted by food businesses, restaurants, and/or consumers (Mousa, 2022). Consequently, investigators should focus on the development of sustainable food systems that integrate processes for food industries and outlets to donate their excess unsold food to low-income and food insecure populations.

Sustainable food systems are critical to achieving food security, a primary condition supporting optimal human physical and mental health. The food insecure are at increased risk of stress, anxiety, depression (Mousa and Freeland-Graves, 2017; World Food Program of the United Nations, 2019; Becerra and Becerra, 2020; Raskind et al., 2020; Fang et al., 2021; Wolfson et al., 2021). Lack of psychological wellbeing also results from low accessibility to and/or affordability of food, which reduces the quality of food consumed (World Food Program of the United Nations, 2019).

Food insecurity is especially common in underdeveloped countries, and nations that suffered from conflict (Taylor et al.; World Food Program of the United Nations, 2019; Becerra and Becerra, 2020). The latter frequently experience homelessness, poverty, and limited drinking or irrigation water and food (Global Food Seucrity Index, 2023). These nations include Syrians, Yemenis, Palestinians, Djiboutian, Somalis, Sudanese, Malians, Ethiopians, Kenyans, Nigerians (Global Food Consumers' Forum, 2013; Market Monitor, 2023; The Food and Agriculture Organization, 2023), and Ukrainians (The Food and Agriculture Organization, 2023). In fact, the Global Report on Food Crises reported that at least 193 million individuals of the world's population were food insecure in 2021 (Raskind et al., 2020). The number of malnourished is expected to double in 2023 (Becerra and Becerra, 2020). The World Food program also indicated that 828 million humans did not know the source of their next meal in 2023 (Becerra and Becerra, 2020).

Refugees are at especially high risk of food insecurity for many reasons, including limited income (Wolfson et al., 2021). Globally, there are currently over 27 million individuals who meet the UNHCR definition of a refugee, 53 million internally displaced, and 4.6 million asylum seekers; many of whom were displaced by war and conflict (Shankar-Krishnan et al., 2021). Many refugees, particularly those fleeing armed conflicts, forced displacement, or natural disasters, leave their assets behind, and once in the host country they cannot easily recover from loss of material goods and social support structures (Metallinos-Katsaras et al., 2012). Refugee women, in particular, represent a highly vulnerable population as they often adopt multiple roles to which they are not accustomed, including physical work, while also caring for the family after arrival in a host country (Liu and Eicher-Miller, 2021).

Low-income families, as well as women and children are at high risk of food insecurity (Sharkey et al., 2012; Ratković, 2013; Morrissey et al., 2014; Fang et al., 2021; Moodi et al.). Root causes likely include unemployment, poverty, and cultural constraints that affect women's educational achievements and employability. Thus, future studies should examine racial and cultural factors contributing to food insecurity among women and children. This is crucial since women occupy key roles in food acquisition, preparation, and distribution to family members. When women are empowered to participate in the labor market they will have increased purchasing power; and when combined with nutrition education, women will have enhanced capacity to purchase and prepare nutritionally adequate foods for their families.

Achieving food security will require a multipronged approach that includes focus on food availability through increased food production and redistribution of potential food waste; food accessibility through women's empowerment and labor participation; optimal food utilization through nutrition education; and stable access to food through developing sustainable food systems in a peaceful environment. Focused attention and collaboration by all agents embedded in the food system will be required to address the current food insecurity crisis faced by the poor, the displaced, women and children.

Author contributions

TM searched the literature and wrote this editorial. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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