Review

From Crisis to a Solution, Approaches to Global Nutrition Challenges: A Comprehensive Review

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From Crisis to a Solution, Approaches to Global Nutrition Challenges: A Comprehensive Review

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Abstract

The global economic crisis, rising commodity prices, and climate change have a severe impact on nutrition and health, particularly among vulnerable groups. This review identifies challenges such as urbanization, economic inequality, and environmental degradation, contributing to food insecurity and diet-related problems. Targeted interventions for children, pregnant women, and the elderly, alongside sustainable agricultural practices, are crucial. The paper highlights the need for strict regulation against misleading marketing strategies adopted and promotes nutrition education along with public policy reforms to combat malnutrition and obesity. Thus, multisectoral collaboration advocates fortification, supplementation, and improved dietary quality. Therefore, coordinated global action is required to initiate equitable access to nutritious foods.

Keywords: food security; public health; urban nutrition; nutrition education; sustainable agriculture

1. Introduction

The current global economic crisis, compounded by climate change on existing price hikes, poses immediate and long-term threats to nutrition and health, impacting vulnerable populations. This necessitates urgent action to mitigate the detrimental effects on individuals and societies, safeguarding the well-being and development of millions of children worldwide requiring enhanced dietary quality and adequacy through strategies like fortification and supplementation [1]. Furthermore, the global food system is facing food insecurity and a degrading environment, with an increased incidence of diet-related chronic illness [2]. Additionally, undernutrition accounts for over 3.5 million preventable deaths among children under 5 annually, due to suboptimal breastfeeding, low birth weight, stunting, severe wasting, and deficiencies in critical micronutrients like vitamin A and zinc [3]. About 80% of the population in most developing countries suffer global economic crises, and climate change directly impacts their nutrition. Similarly, 250 million children are at risk of compromised development and related health crises as a significant portion of their family income (50–80%) is spent on food, making them vulnerable to food price hikes [4]. As nutrition involves ingestion, digestion, absorption, transport, metabolism, and utilization of the food ingested, the processes are influenced by an individual's or population's nutritional status, impacting health outcomes in both health and disease contexts [5].

The 1943 UN Conference on Food and Agriculture established a global goal to eradicate hunger, stressing cooperation between agriculture and nutrition. Over the subsequent 50 years, agriculture prioritized calorie production, while nutrition focused alternately on proteins and micronutrients with limited integration. Presently, there is improved alignment in integrating agriculture and food to tackle diverse nutritional challenges [6]. However, the effectiveness of the Sustainable Development Goals (SDGs), adopted by the UN in 2015, reveals a persistent trade-off between socioeconomic growth and environmental sustainability, as shown by trends in the Human Development Index (HDI) and the Ecological Footprint (EF). A stronger focus on environmental aspects in SDG implementation is essential to protect critical ecosystem services [7].

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Recent advancements in the food industries have raised concerns for the general population's health. One study indicates, that 95% of Ultra-Processed Foods (UPF) contained added sugars, presented in thirty-four different ways; 55% displayed a Health Star Rating (HSR); 56% featured nutrition claims (18% in compliance with regulations); 25% included health claims (79% compliant); and 97% utilized common food marketing tactics. Nearly half (47%) of UPF packaging targeted children, with an average health star rating out of 5, 1.5 health and nutrition claims, and 2.6 marketing techniques per product. Additionally, 45% of UPF (ultra-processed food) had an HSR of 3.0 or lower out of 5.0 [8]. This concern necessitates official/regulatory interventions and better awareness platforms from the authorities. Additionally, dietitians, nutritionists, and GPs were the most trusted resources for nutritional education and awareness; however, many depended on sources like the internet (62.9%), friends (59.8%), family (58.8%), and magazines (57.7%) [9]. Thus, information sources (physical/digital) equally dictate the pattern in general awareness in the community.

2. Emerging Challenges in Public Health Nutrition Globally.

2.1. Global economic crisis and impact on nutrition.

The 2020 Global Nutrition Report highlights the health, economic, and nutrition challenges in developing nations. Recently, COVID-19 has heightened vulnerabilities in the food supply and security outlook. It disrupted income generation and school meal programs, impacting the most vulnerable population. Thus, a post-crisis focus on nutrition is needed as integral to health, education, and economic development [10] [11]. Similarly, a Global Report on Food Crises (GRFC) 2020, a collaborative assessment by 16 partner organizations, revealed a record 135 million people in Crisis or worse, comparing 50 countries across both reports [10] [11]. It rose from 112 to 123 million people, driven by conflicts and economic shocks. Additionally, around 183 million people in 47 countries faced stressful situations, highlighting vulnerability to further shocks [12]. The current economic and health crisis has affected diet quality and food security, raising concerns about long-term access to affordable, nutrient-rich diets. Women and individuals with low socio-economic status are most at risk [13].

Similarly, food price fluctuations significantly affect the Sustainable Development Goals (SDGs), with data from 163 countries showing that rising global food commodity prices create trade-offs with 13 SDGs having mostly negative impacts on the rest. Addressing these price spikes, such as those seen in the 2022 food crisis, is essential for achieving the 2030 SDG agenda [14]. Rising incomes and urbanization drive a shift towards diets high in non-vegetarian and animal-source foods, sugar, fats, and processed foods, leading to increased obesity and diet-related diseases globally. Urban areas experience the fastest transition, facilitated by easy access to unhealthy foods, intensifying disparities in diet quality, especially for the urban poor [15]. Moreover, urban diets are associated with higher odds of hypertension, overweight, and type 2 diabetes [16]. Furthermore, childhood mortality, stunting, and underweight are lower in urban than rural areas, while wasting and infectious disease morbidity are higher in urban areas. Intra-urban variation highlights significant disparities within cities, emphasizing the need for targeted policies to address high levels of childhood mortality, morbidity, and malnutrition in impoverished urban areas. Specific, scientific strategies are required to effectively combat these issues and improve health outcomes in vulnerable urban populations globally [17]. Therefore, urbanization creates a paradigm shift in approaching and addressing nutrition and general health issues.

2.2. Inequalities in access to nutrition:

As the global population rises, food inequality is a concern. International trade may alleviate food deficits in countries with limited production, but its impact on fulfilling the right to food hinges on addressing food inequalities within the country [18]. Urban food security and nutrition programs face challenges in assessing and targeting due to the mobile nature of the population and dense living conditions. Despite urban areas' perceived advantages, access to healthcare, education, and sanitation

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remains limited for the urban poor, highlighting the need for adapted approaches and multisectoral coordination to address nutritional disparities [19]. Food insecurity among children correlates with increased risks of birth defects, anemia, cognitive impairments, behavioral issues, and poorer general health. Similarly, adults experiencing food insecurity are prone to decreased nutrient intake, mental health disorders, diabetes, hypertension, and poor sleep outcomes [20] [21]. Shifts in human dietary patterns over the past decades have led to increased energy imbalance, overweight, obesity, and other nutrition-related cardiometabolic issues globally. While some changes offer benefits such as food convenience and safety. There is a critical need to transition towards healthier, less processed diets rich in nutrient-dense foods. Addressing the rising epidemic of obesity and related health issues requires evidence-based interventions and policies focusing on improving dietary patterns worldwide [22].

The focus on protein malnutrition diminished as it was believed that young children in developing countries only needed sufficient energy intake. However, recent evidence suggests that the lack of quality protein and essential amino acids in the diet can adversely affect child growth and cause stunting among children. It's crucial to reconsider the importance of protein in the global health agenda and adopt a balanced approach that addresses all essential nutrients [23].

Despite efforts to reduce stunting and wasting, there is a notable loss of traditional, agrobiodiversity, and food system knowledge due to urbanization, lifestyle changes, imported foods, and deforestation [24].

Early childhood is a critical period for shaping future health and earning potential. Short-term food price rises can have lasting negative impacts, necessitating efficient interventions to stabilize prices, make food affordable, and provide social protection. Effective strategies include nutritional support for young children, pregnant women, and mothers, emphasizing exclusive breastfeeding and appropriate complementary feeding. Interventions should be context-specific, using tools like food assistance, cash transfers, and vouchers to ensure adequate micronutrient access. Future efforts should focus on developing surveillance systems to monitor food security and vulnerability [25]. Thus, the rising global population widens inequalities in food access and distribution.

2.3. Environmental impacts on the food system.

The environment plays a critical role in nutrition and health. With rapid population growth, urbanization, and unhealthy dietary transitions, cases of obesity and undernourishment are rising. [26]. Reducing food loss and waste (FLW) holds significant potential for environmental impact mitigation. Targeting food service, food processing, and household consumption sectors for a 50% reduction could yield substantial reductions in greenhouse gas emissions, energy use, land use, eutrophication potential, and water conservation [27]. Global food supply chains face increasing environmental and socio-economic challenges due to population growth, evolving consumer needs, and changing consumption patterns. Life cycle thinking and assessment are crucial for identifying sustainable solutions, avoiding burden-shifting, and optimizing food supply chains [28]. The concept of "urban advantage" is challenged in accessing healthy food. Further, the right to food is compromised for those in urban poverty, requiring efficient framework and coordinated efforts from social and public health sectors to address food security among the urban poor. Urgent actions like avoiding unhealthy food, reducing food waste through behavioral changes, and making healthy food choices are vital [29].

2.4. Globalization impacts the healthcare system.

Globalization, urbanization, foreign direct investments, and the presence of transnational food corporations significantly influence food security and nutrition. Thus, the spread of processed and nutrient-poor Westernized foods in developing countries can lead to adverse health effects like malnutrition, disease conditions, and poor economic productivity [30].

Urbanization is central to national agendas globally, especially with the population living in cities, making urban food issues critical. Urban food systems are embedded in global markets and

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rely on complex logistics networks. Despite overall food security, urban populations face noncommunicable diseases, environmental impacts, socioeconomic disparities, and food waste [31]. Hence, monitoring the accountability of globalization and corporate practices is crucial in addressing these challenges and achieving more equitable, sustainable, and healthy food systems globally.

2.5. Intersectoral collaboration in nutrition advocacy.

Multisectoral/intersectoral collaboration in nutrition, as evidenced by successful ventures between civil society and universities, demands transparent practices and evidence-based decision-making to address nutritional challenges [32]. Promoting nutrition involves utilizing cost-efficient mass-reach strategies in education, advocating for food regulation, subsidizing industries for healthier product development, implementing dietary policies in government institutions, combating misinformation, supporting national research strategies, and training health personnel in nutritional standards. These measures aim to improve public health and facilitate informed dietary choices [33]. For instance, the healthcare system's general practitioners (GPs), with approximately 20,000 active GPs, serve 80% of the population annually. While around 15-17% of GPs show interest in nutrition, particularly in addressing conditions like heart disease, hyperlipidemia, obesity, and diabetes, the actual extent of nutrition counseling appears to be less than acknowledged, indicating a potential gap in intersectoral collaboration in addressing nutrition and health [34]. This shows the need for intersectoral collaboration to address nutritional health challenges. Similarly, sustainable agriculture enhances environmental health, economic profitability, and social equity by reducing pollutants, supporting food security, and promoting fair labor practices. Aligning food production with health needs ensures access to healthy and nutritious food produced in underserved communities [35]. Nevertheless, implementing multi-faceted strategies to tackle infectious diseases and NCDs. Simultaneously, addressing malnutrition is crucial [36]. Beyond the disease, transportation systems also influence access to jobs, healthcare, food, education, and other essentials. Active functional public transportation reduces pollution, lowering the risk of several chronic diseases. It also offers low-cost transport options and links to job centers [35]. Intersectoral collaboration in nutrition and health in areas like embracing bold ideas, aligning nutrition goals with powerful sectors, focusing on common goals, creating cross-sector collaboration spaces, and using success evidence to gain acceptance increases the likelihood of achieving nutrition goals and benefits all involved sectors [37]. Thus, multisectoral collaboration helps in overall nutritional health.

2.6. Maternal and child nutrition and education.

Improving maternal nutrition is crucial for maternal health and mortality reduction [38]. In many countries, maternal health dietetic services remain under-resourced with significant staffing variations. Maternal health dietitians are crucial in advocating for improved staffing, development, evaluation, and implementation of care models to enhance preconception, antenatal, and postnatal nutrition [39]. Early childhood development (ECD) is essential for future social capital, yet 250 million under-5 children face developmental risks due to poverty. Nutrition interventions alone are insufficient; ECD is influenced by multiple factors, demanding integrated policies [40]. MCH nurses monitor growth and provide infant feeding advice for obesity prevention. They should promote formula feeding, encourage physically active and interactive play, and limit sedentary behavior. Enhancing behavior change counseling and integrating these topics into parent education can empower nurses to address weight concerns effectively [41]. A study indicates a birth weight of 3.1kg to 3.6kg is linked to optimal maternal and fetal outcomes for full-term infants. Macrosomia (birthweight > 4.5 kg) is associated with obstetric complications and higher neonatal morbidity and mortality. Risk factors for low birthweight (LBW) include low pre-pregnancy BMI, poor diet, smoking, alcohol, or drug use during pregnancy, often correlated with low socioeconomic status [42]. These are very concerning to the health of a mother and a child. There is also a need to review women's dietary intakes and micronutrient status to set supplementation criteria and address motivations for behavior change to improve nutrition during preconception and pregnancy [43].

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Even from a newborn perspective, more research is needed to establish a scientific basis for nutrition in fetuses and preterm infants. Issues like inadequate testing of vitamin E, rickets in breastfed preterm infants, and trial-and-error approaches to intravenous nutrition highlight the need for cautious clinical trials. Advances in surfactant therapy for respiratory distress offer hope for better nutrition research and outcomes in preterm infants [44]. Breastfeeding is not recommended for HIV infection or galactosemia, except where infant formula and clean water are scarce. Increased breastfeeding rates provide substantial economic savings for health systems [45].

2.7. Addressing Vulnerability: Targeted Interventions in Nutrition Crisis.

Food and beverage industries target children and adolescents to influence purchasing behavior and brand loyalty. They use television, the internet, and in-school marketing to promote products high in sugar and fat. These marketing efforts often conflict with dietary recommendations. [46]. Proper nutrition education can alter dietary intake and anthropometric measurements. Key interventions include involving school staff, teachers, and parents. Modifying school canteens, food supply, and vending machines significantly changes dietary intake in 10 to 18-year-olds. [47]. Effective interventions engage parents through face-to-face sessions and identify specific behaviors for modification. Enhanced teacher training or expert involvement is crucial. Maintaining interventions for at least 6 months and using age-appropriate activities are helpful strategies. [48]. Similarly, pregnant women are also targets for which antenatal care providers play an important role in promoting better nutrition. Custom tools, especially when integrated with mHealth (mobile health) technologies, enhance nutrition communication in antenatal care efficiently and sustainably [49]. Maternal obesity is a concern in low and middle-income countries (LMICs). Balanced energy protein (BEP) supplementation reduces stillbirths, perinatal mortality, low birth weight (LBW), and small for gestational age (SGA) infants [50]. Further, food distribution programs (FDP) enhance mean birth weight, decrease stunting, and wasting and obesity prevention interventions reduce mean birth weight.

The correlation between poverty and nutrition in low-income countries is evident, leading to undernutrition and overnutrition. This shift poses significant challenges, requiring urgent action to address malnutrition in all its forms [51] [52]. Rapid dietary and occupational changes in lower- and middle-income countries, especially due to urbanization, increase adult obesity. These changes pose major concerns for adult health like the rapid increase in chronic diseases which indicates the need for an urgent intervention [53]. Youth from low-income households often have lower height percentiles and a higher prevalence of BMI ≥85th percentile, especially among girls. Additionally, these households show disparities in calcium and vitamin D intakes. Girls in low-income, food-insecure households consume less milk and more sweetened beverages [54].

To educate consumers accurately on the nutritional content of foods, commercial advertisements should not provide misleading information. This is because some food companies are often accused of misleading information to promote poor food choices with profiteering interest. Hence, food companies must be accountable for exaggerated claims. Many discrepancies exist in infant formula advertising, often misrepresenting essential minerals. This has led to bans and strict regulations in many countries. Continuous monitoring of quality and food additives is necessary [55]. Advertising for maternal milk substitutes contributes to low breastfeeding rates. Legal measures aim to protect breastfeeding habits. There is some evidence that several technical-scientific and commercial advertisements violated regulations, often lacking required information [56]. Unethical digital marketing of breastmilk substitutes violates international guidelines, leading to conflicts of interest and indiscriminate formula use. Legal gaps allow these practices, requiring stronger regulations to ensure informed parental decisions and protect children's nutrition [57]. Pervasive marketing across multiple channels, negatively influences children's food knowledge, preferences, behavior, and body weight. There is a need for public policy to protect children from exposing inaccurate information about food contents and its benefits to prevent poor diet-related diseases and safeguard children's development from corporate interests [58]. Young adults are influenced by unhealthy food

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advertisements, disrupting their health. Digital advertisements and algorithms hinder healthy eating influencing young adults to make unhealthy dietary choices. Health professionals should use broader marketing strategies. The study advocates for ads promoting affordable and nutritious food [59]. Food companies target children to build early brand loyalty, initiating long-term unhealthy eating habits. This marketing significantly contributes to childhood obesity and other related diseases. Strict monitoring and promoting healthy foods are crucial making the companies accountable. Schools can each standardize healthy eating criteria to reduce unhealthy eating practices. A shift towards education and promoting healthy eating is essential to fight childhood obesity [60]. Young adults are heavily targeted by marketing for energy-dense, nutrient-poor foods, making them vulnerable to unhealthy eating and weight gain. Their identity development and changing influences affect their eating behaviors, dictating targeted health interventions. Prioritizing young adults in obesity prevention is urgent because their bodies respond rapidly by gaining weight [61]. Food advertising significantly influences children's food preferences and dietary behaviors. Frequent and repetitive advertisements persuade children to consume advertised foods without understanding the intent. In such cases, parents, especially mothers, play a crucial role in protecting children from negative advertising effects. Indian mothers generally have a negative attitude towards advertising, especially those targeted at children and food on television [62]. Negative stereotypes about breastfeeding have decreased in media portrayals, but breastfeeding product advertisements still perpetuate some negative stereotypes compared to infant formula [63]. The study shows that women with low dietary control remember more television advertisements than those with stable dietary control. This difference can lead to unhealthy eating habits and health problems. Controlling eating and overeating are separate issues, explaining the lack of a link between overeating and recalling commercial advertisements. The study highlights that dietary control affects eating habits, body weight, and advertisement recall, and this effect persists even when considering weight [64], [65].

A report has shown that the diet in 99 low-income countries is influenced by production, economic conditions, and trade, which affect food availability and accessibility [66]. WHO recommends calcium supplementation during pregnancy to reduce preeclampsia risk, while antenatal iron supplementation improves hemoglobin but has limited success in high-burden areas. Although vitamin A deficiency raises maternal mortality risk, universal vitamin A supplementation is only advised in high-deficiency regions. Preventing adolescent pregnancies and providing nutrition support for adolescents is crucial to improving adult height and reducing labor complications. Nutrition interventions through antenatal platforms can significantly enhance maternal health and survival in undernourished populations with high maternal mortality rates [67]. Nutrition among elderly individuals is influenced by social, psychological, aging-related, and biomedical factors. Emotional issues are associated with insufficient fluid intake. Subjective nutrition evaluation can serve as a preventive measure for identifying undernutrition risk in the elderly population [68]. Adequate nutrition is crucial for the elderly, impacting cardiovascular health, cognition, and musculoskeletal health. National health strategies should prioritize addressing their nutritional needs. Optimal nutrition recommendations include meals rich in fiber, iron, folic acid, calcium, and vitamin D, with reduced salt intake [69].

Marketing efforts targeting all ages influence dietary choices. Interventions such as nutrition education and parental engagement can lead to positive changes. Addressing maternal nutrition and poverty-related dietary shifts is crucial to combating malnutrition, including obesity.

Table 1. Target Groups, Influencing Factors, and Nutrition Interventions.

Serial No.	Group	Reason	The mood of Influence	Interventions	References
1	Children	Influence purchasing behavior and brand loyalty.	Television, internet, in-school marketing.	Nutrition education alters dietary intake and measurements. Involve school staff, teachers, and parents. Modify school canteens and vending machines. Maintain interventions for 6+ months.	[46]. [43]. [44].

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2	Adolescents and adults	Influence purchasing behavior and brand loyalty.	Television, internet, in-school marketing. Dietary and occupational changes, due to urbanization.	Nutrition education, parental engagement. Modify school food environments. Use age-appropriate activities. Expert involvement enhances effectiveness. Need for further interventions.	[46]. [47]. [44].. [53].
3	Pregnant women	Concerns regarding maternal obesity in LMICs.	Antenatal care providers, mHealth tools.	BEP supplementation reduces adverse outcomes. FDP enhances birth weight and reduces stunting.	[49]. [50]
5	Breastfeeding mothers	Marketing of breastmilk substitutes.	Digital marketing, unethical advertising.	Legal measures to protect breastfeeding. Stronger regulations are needed. Address negative stereotypes in ads.	[52] . [49].
6	Low-income family	Disparities in nutrition, Low-income youth have lower height percentiles and higher BMI ≥85th percentile, especially among girls.	Not applicable. Poverty influences their disparity and malnutrition.	Address calcium and vitamin D disparities. Reduce sweetened beverage intake.	[54].
7	Weaning discrepancies	Misleading advertising of infant formula.	Misrepresentation of essential minerals influenced by inaccurate advertisements.	Bans and regulations on misleading ads. Continuous monitoring of food quality and additives.	[60], [61], [51], [52].
8	Elderly/ old age	Nutrition influences overall health	Social, psychological, and biomedical factors.	Subjective nutrition evaluations. National strategies for optimal elderly nutrition.	[68]. [69].
9	General population	Influence on dietary choices	Marketing efforts targeting all ages.	Nutrition education, parental engagement. Address maternal nutrition and poverty-related dietary shifts. Combat malnutrition and obesity.	[51]. [52].

3. General Strategies for Public Health Nutrition Interventions.

A policy instrument that can be introduced to reduce nonnutritive caloric intake and generate funds for health programs can be done by taxing unhealthy food and beverages. Key factors for support include evidence of effectiveness, proper use of funds, addressing industry claims, and ensuring equity [70]. Further, taxes on unhealthy foods and beverages reveal reduced purchases of targeted products, indicating credible effectiveness in reducing consumption, but also suggests a possibility of substituting non-taxed unhealthy options, emphasizing the need for careful taxation design [71]. Investments utilizing the I + PSE model (Individual plus Policy, System, and Environmental Conceptual Framework for Action), like Let's Eat Healthy, drive positive behavior change and community health improvement. Collaborative efforts across disciplines are essential for navigating challenges in a rapidly changing environment. Improving access to healthy food and nutrition education is most effective through collaborative strategies [72]. Similarly, different school programs on nutrition awareness positively impact students, schools, and communities. Despite coordination barriers, collaboration, and advocacy efforts are essential for effective nationwide implementation and expansion of any program [73]. Across countries, urbanization and foreign direct investment drive increased consumption of processed foods, influenced by transnational food corporations' marketing and business strategies. Monitoring and accountability of globalization and corporate practices are crucial to addressing these challenges and achieving more equitable, sustainable, and healthy food systems globally [30]. Malnutrition kills millions and hampers the potential of billions, with poor diets and malnutrition being the largest contributors to the global disease burden. Agriculture, the main livelihood for the nutritionally vulnerable, is insufficient in addressing this issue. Key recommendations include creating supportive institutional and policy environments, making agricultural programs more nutrition-sensitive, and developing capacity and leadership to improve decision-making with appropriate evidence [74]. Childhood stunting, the most prevalent form of child malnutrition, is a key indicator of children's well-being and social inequalities, affecting millions globally [75]. The COVID-19 pandemic has caused food shortages, increased prices,

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and income loss, triggering global food insecurity alerts. This crisis threatens millions of children and adolescents, emphasizing the need to prioritize food security and healthy eating behaviors to safeguard their current and future well-being [76]. The COVID-19 pandemic increased dietary supplement (DS) use, highlighting their health benefits and risks due to the market's poor regulation. Global standardization efforts aim to ensure consumer safety. Comprehensive studies on DS efficacy and safety are needed. Regulatory frameworks and compositional databases are crucial for public health monitoring. Despite rising DS usage, maintaining healthy dietary habits is essential for overall well-being. [77]. Foods are often contaminated, negatively affecting health. Widespread mycotoxin contamination in food crops requires large-scale surveys and standardized methods to assess global contamination and health impacts. [78]. Efforts to combat world hunger face challenges like limited resources, natural disasters, climate change, poverty, illiteracy, and disease. Achieving food security needs a multifaceted approach integrating science, technology, and education. Potential conflicts among solutions must be addressed. International collaboration is crucial for sustainable, equitable food security, especially for vulnerable populations [79]. Mineral malnutrition imposes significant health, social, and economic burdens due to insufficient dietary intake, prompting interventions such as fortification and supplementation. Agricultural sciences play a vital role in increasing the micronutrient content of staple crops, offering cost-effective solutions. Community-based approaches and international cooperation are crucial for the successful adoption of biofortified crops, particularly in overcoming regulatory barriers in export markets [80]. Effective nutritional advocacy is key to reducing stunting and other nutritional issues. Well-planned advocacy can achieve significant results quickly. Strong investments in strategic and operational capacities, including human, organizational, and financial resources, are essential for success [81]. Therefore, taxes on unhealthy foods reduce consumption and fund health programs, but careful design and addressing industry claims are crucial; collaborative efforts and monitoring are essential to tackle challenges in the evolving food system and ensure equitable, healthy nutrition worldwide.

4. Summary

The global economic crisis, compounded by rising commodity prices and climate change, poses significant threats to nutrition and health, particularly for vulnerable populations. This review highlights the multifaceted challenges and approaches to addressing global nutrition issues, emphasizing the need for fortification, supplementation, and better dietary quality. It underscores the impact of urbanization, economic inequality, and environmental degradation on food security and diet-related diseases. Effective strategies include multisectoral collaboration, targeted interventions for children, pregnant women, the elderly, and the promotion of sustainable agricultural practices. This paper advocates regulatory measures against misleading marketing, especially targeting children and breastfeeding mothers, and stresses the importance of nutrition education and public policy to mitigate malnutrition and obesity. It calls for urgent, coordinated global action to enhance food stability, ensure equitable access to nutritious foods, and address the complex interplay of factors influencing global nutrition and health.

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