



The Role of Food Security in Maintaining the Mental and Physical Health of Society

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Abstract

Food security is a critical condition that guarantees all members of society continuous physical and economic access to sufficient, safe, and nutritious food without fear of scarcity or deprivation. The primary objective of this article is to present a theoretical overview of food security, analyze its multidimensional determinants, and clarify its vital and reciprocal role in ensuring physical and mental safety within society, through which we aim to demonstrate the role of food security in achieving this safety in communities.

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1.Introduction:

Food security is fundamentally defined as a state in which all individuals, at all times, possess physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life. This access must be obtained in a dignified manner, without compromising basic human dignity.

Moreover, Physical availability is quantified by the aggregate supply of food—comprising local agricultural production plus net imports and strategic stocks—relative to the total population, adjusted for post-harvest losses and waste.

In addition, we have the biological utilization which is contingent upon the nutritional quality of the diet (protein, energy, and micronutrient intake), as well as the prevailing standards of public health infrastructure, water sanitation, and basic healthcare provision. In addition, stability assesses the resilience of the food system to climatic, economic, or political shocks.

This dimension relies heavily on the existence of robust strategic reserves, effective risk mitigation mechanisms, agricultural land productivity, water-use efficiency, soil nutrient recovery rates, and the overall efficiency of food supply chains.

Food security transcends merely the provision of basic calories; it is a critical prerequisite for social stability, sustainable economic growth, and global

peace. Addressing it remains an ongoing, complex scientific and policy challenge.

Also, it is a fundamental pillar that cannot be overlooked in discussions concerning the general stability of both individuals and society. It extends beyond merely alleviating hunger to encompass the consistent availability of healthy and sustainable food.

The capacity to secure adequate nutrition is intimately linked to mental health, providing a sense of reassurance and mitigating the chronic anxiety associated with survival. This nutritional stability nourishes the mind as well as the body, preventing individuals from falling into cycles of stress and depression resulting from food insecurity.

In light of the foregoing, we can pose the following research question: How can food security affect the physical and mental health within a community?

2. Food Security: Foundational Concepts and Historical Context:

2.1 The Concept of Food Security:

The formal definition of food security has evolved over time, shifting focus from a purely national concern regarding food supply to a household-level concern regarding food access.

The 1974 World Food Conference initially defined food security as: “the ability to provide at all times an adequate global food supply of basic commodities,

to sustain the steady expansion of food consumption, and to compensate for fluctuations in production and prices” (Boubaker, 2021).

This early definition highlighted supply-side stability. The availability of adequate quantities of food requires achieving balance and stability in supply chains, accounting for potential fluctuations in consumption patterns across different life stages and seasonal variations.

However, mere availability does not guarantee accessibility. As noted by (Bentarzi, 2016), many individuals remain food-insecure, because poverty prevents them from producing or purchasing the necessary food.

Contemporary definitions integrate these aspects, linking availability, accessibility, and utilization of food everywhere and at all times. This framework ensures that all members of society can access a sufficient quantity and quality of food under hygienic conditions, enabling normal, healthy human function. (Al-Bashir, 2007)

2.2 The Historical Development of Food Security Discourse and Practice

The challenge of securing food has been central to human existence since antiquity. Early human societies developed rudimentary mechanisms for food preservation and storage—such as drying meats, vegetables, and fruits using salt, vinegar, sugar, and oil to inhibit spoilage—to mitigate the risks associated with climate variability and seasonal

scarcity. Grains, requiring only desiccation, became foundational to stable civilization and long-term storage solutions.

The 18th century saw significant philosophical engagement with the issue of food insecurity in Europe, a time marked by widespread hunger and social misery. Philosophers like William Godwin analyzed the prevailing corrupt social systems, arguing that while nature is fundamentally benevolent and capable of meeting all needs, human socio-political structures are often the primary cause of systemic failure to ensure stability and provision.

A pivotal moment in modern food security discourse was the global food crisis of 1973–1974. This period, characterized by a sharp rise in commodity prices and a significant decline in global food stocks, had profound social, health, and international consequences. (Akroud, 2022)

The crisis shifted the international focus toward establishing early warning systems, market regulation, and coordinated global responses.

Recent data indicates ongoing challenges. Following a sharp increase in the prevalence of undernourishment in 2020 amid the global pandemic, and a slower rise in 2021 to 9.3 percent, the upward trend stabilized between 2021 and 2022 (WHO, 2020)

This cessation offers cautious optimism for a potential reversal of recent

trends toward achieving sustainable global food security goals.

2.3 The Pillars of Food Security: A Multidimensional Framework:

Experts universally identify four interdependent pillars that constitute a secure food system:

- **Availability:** Ensuring sufficient quantities of required food—whether sourced through stable domestic production, reliable imports, or aid mechanisms during crises or conflicts—is the foundational pillar. This requires robust logistics to facilitate access to clean, healthy food and water resources.
- **Access:** Individuals must have the capacity to acquire food in a dignified and sustainable manner. This involves ensuring adequate income relative to purchasing power and protecting individual rights within society. The realization that hunger often stems from poverty and the inability to access available food—rather than absolute scarcity—is critical to policy formation. Disasters and
- conflicts frequently erode this access mechanism.
- **Utilization:** This pillar addresses how the body makes the most of the food consumed. It requires safe food preparation, proper storage (e.g., cooking or refrigeration), and ensuring dietary diversity. Adequate intake of proteins, essential vitamins, and micronutrients is vital for physical growth and survival, predicated on the hygiene and safety of the food source.
- **Stability:** The system must guarantee continuous provision of food and water, insulating members of society from interruptions or shortages caused by scarcity, market monopolization, or price volatility. Building resilience to emergencies—such as floods, political instability, or armed conflicts—is paramount to maintaining long-term food security. (FAO, 2006)

Table 1. Global statistics on food security dimensions

Primary Dimension (Pillar)	Global Statistics and Percentages	Applied and Illustrative Examples
1. Food Availability	An estimated 735 million people suffered from chronic hunger in 2023 worldwide.	Example: Climate change and natural disasters destroy crops, reducing the available stock, where millions face acute levels of food insecurity.
2. Access to Food	Around 2.33 billion people faced moderate or severe food insecurity (equivalent to 28% of the world's population) in 2024.	Example: High food price inflation (over 55% in many low-income countries) has made it difficult for low-income households to afford sufficient food, even when it is physically available in the markets.
3. Food Utilization	The world is far off track to meet global nutrition targets, with more than 9 out of 10 children suffering from stunting.	Example: Even with food availability, a lack of nutritional awareness or the absence of clean drinking water and adequate sanitation prevents the body from effectively absorbing nutrients.
4. Stability of Supply	Hunger levels continue to rise in large parts of the world, highlighting the absence of long-term stability.	Example: Building strategic grain reserves and diversifying import sources are policies countries adopt to ensure food supplies are not exposed to sudden shocks like wars or global economic crises.

Source: developed by the authors

2.4 The Importance of Food Security

The importance of food security fundamentally lies in providing the healthy elements necessary for sound physical growth and psychological well-being. A nation's internal conditions, such as weak infrastructure or high purchasing costs during periods of conflict, significantly impede meeting these basic needs. During wartime, essential agricultural inputs like fertilizers, water, and seeds become scarce and costly, severely impacting agricultural production. This volatility affects both agricultural areas and market access for conflicting parties, ultimately threatening the lives of individuals and entire

communities. Large-scale assistance programs, whether governmental initiatives, the World Food Program, or non-governmental organizations, are crucial interventions that enhance food availability and accessibility. (Anthem, 2025)

2.5 Factors Affecting Food Security:

A range of intertwined factors influences the food security status of countries:

- **Demographic Factors:** Population growth is one of the most significant stressors, exerting intense pressure on finite natural resources. This manifests as drought, pollution, energy crises, food

shortages, rising prices, and famine. Meeting increasing demands necessitates continuous innovation in agricultural production systems.

- **Technological Factors:** Modern technology is vital for improving the efficient use of water and agricultural land. The FAO defines biotechnology, a key technological tool, as “a technique that uses a living organism to create or modify a product, improve plants and animals, and develop microorganisms for specific uses.”

- **Political Factors:** Geopolitical tensions and internal political instability significantly disrupt a country's food situation. Conflict often destroys infrastructure, displaces farmers, and disrupts supply chains, leading to acute food insecurity.

- **Climatic Factors:** A country's agricultural production is intrinsically linked to prevailing weather conditions (e.g., rainfall patterns and temperature ranges). Climatic fluctuations—such as droughts, floods, or extreme heat events—can cause widespread crop damage. The overarching issue of climate change resulting from global warming remains a major concern in modern food security planning. (Djenad, 2023)

2.6 Strategies to Achieve Food Security:

Achieving robust food security requires diversified and innovative strategies:

- **Support Urban and Home Farming:** Encourage and provide necessary tools

and training for families and urban communities to grow a portion of their food needs. Utilizing techniques such as vertical farming, green roofs, and home gardens reduces reliance on centralized supply chains.

- **Implement Effective Water Harvesting:** Introduce simple yet effective techniques for harvesting rainwater in arid and semi-arid areas, storing it for supplemental irrigation. This increases the resilience of local agricultural production against drought conditions.

- **Replace In-Kind Support with Targeted Vouchers:** Transition from general in-kind support to electronic voucher programs targeted at the most vulnerable populations. Vouchers empower beneficiaries to choose culturally appropriate food from local stores, stimulating the local economy and preserving consumer dignity.

- **Reduce Supply Chain Intermediaries:** Create local farmers' markets or simple e-commerce platforms to shorten the distance between producers and consumers. This ensures fairer prices for farmers and lower costs for end consumers.

- **Integrate Nutrition into Educational Curricula:** Incorporate concepts of proper nutrition, personal hygiene, and the importance of clean water as a mandatory part of the core curriculum. This ensures the next generation is well-versed in the importance of food quality and safety.

2.7. Global Food Security Transformations between the 2021 Assessment and 2026 Projections:

- **Structural Setbacks and 2026 Challenges**

The 2021 State of Food Security and Nutrition in the World (SOFI) report provides a critical transitional and forward-looking assessment, revealing an increase in global hunger rates to include approximately 811 million people in 2020. This reflects a qualitative setback in the trajectory toward achieving the 2030 Sustainable Development Goals due to the structural repercussions of the COVID-19 pandemic. (FAO et al., 2021)

By 2026, field realities demonstrate that these crises were not transient but have evolved into chronic structural pressures driven by protracted geopolitical conflicts and acute climate fluctuations that have exhausted local food system capacities. Updated estimates for this year indicate that the financing and logistical gaps have widened, making the "Zero Hunger" path face unprecedented complexities that require international intervention beyond mere emergency relief toward rebuilding value chains with greater resilience. (Global Network Against Food Crises, 2026).

- **The Nutrition Crisis and Current System Dynamics**

The report highlights the persistence of the child malnutrition crisis in its three forms (stunting, wasting, and overweight), warning that the continued structural weaknesses of current food systems will

hinder the attainment of global nutritional targets. Looking at 2026 indicators, we find that this structural fragility has become more deeply rooted due to the rising costs of healthy diets, pushing millions of families into "nutritional poverty" and a reliance on cheap, energy-dense but nutrient-poor calories. (UNICEF, 2021)

This deterioration not only threatens the health of rising generations but also places immense economic pressure on healthcare systems, confirming that the failure to address the root causes of malnutrition by mid-decade will lead to socio-economic consequences spanning generations. (World Bank, 2026).

In this context, the report emphasizes the necessity of adopting a strategy for radical transformation in food systems through six methodological pathways aimed at enhancing resilience and ensuring the availability of healthy, safe, and economically and environmentally sustainable dietary patterns for all communities. In 2026, these pathways gain paramount importance as the only practical framework to salvage the 2030 Agenda; the integration of agricultural technological solutions with equity-based social policies has become imperative. The success of implementing these transformations by the end of the decade depends on the international community's ability in 2026 to translate these pathways from theoretical recommendations into binding national policies that ensure access to healthy food for every individual, regardless of emerging crises (FAO, 2021).

3. The Role of Food Security in Maintaining the Mental and Physical Health of Society:

The strategic challenge facing the international community is to secure the food needs of 9 billion people by 2050, which necessitates the achievement of "food security" in its comprehensive dimensions. (WUR, 2024)

This concept is not limited to the mere provision of calories for survival; it extends to ensuring sustainable availability and the economic and physical access to safe, healthy food that meets personal preferences and nutritional requirements.

Providing this stable food system is the fundamental pillar for sound physical growth, disease prevention, and guaranteeing individuals' rights to an active and productive life, making it a core axis for sustainable development and global health security.

Food insecurity is directly linked to an increased risk of a wide array of chronic and non-communicable diseases. For instance, the inability to afford nutritious foods (such as fruits, vegetables, and lean proteins) often forces reliance on cheaper, highly processed, calorie-dense foods. This dietary pattern significantly elevates the rates of obesity, Type 2 diabetes, and cardiovascular diseases.

Children are often the most severely affected in the long term. Chronic undernutrition during the crucial "first thousand days" of life leads to stunting and physical growth delays that are

irreversible later in life. Research indicates that food security is essential for providing a balanced diet rich in vital micronutrients that support the immune system and ensure optimal physical performance. (WHO, 2020).

Nutritional stability is particularly critical for vulnerable groups like the elderly, pregnant women, and individuals managing chronic conditions, all of whom require specific dietary management. The absence of this stability makes managing their health conditions substantially more challenging.

The proper "utilization of food" also depends heavily on healthy infrastructure. Access to clean water and adequate sanitation is a vital factor that ensures the body fully benefits from available nutrients and reduces the burden of waterborne diseases that weaken the body (USAID, 1992). Consequently, investing in food security is not just a humanitarian effort; it is an economic investment in a productive workforce and a society less reliant on expensive healthcare systems.

The Arab Health Organization considers food security a strategic and vital sector aiming to ensure the availability of food for civil society. It serves as a fundamental starting point for physical health by ensuring the availability of safe food that protects the body, boosts immunity, provides energy and vitality, helps the body regulate its temperature, and supports bodily functions such as digestion while strengthening bones and muscles. Adequate nutrition

also contributes to maintaining healthy skin, eyes, and teeth.

Providing communities with food security saves effort and money and contributes positively to their development and improved mental health. Mental health is an integral component of public health, closely linked to physical health through a bidirectional influence. Therefore, providing integrated food security and health services has become essential. This necessity links mental health support to nutritional support, especially for countries suffering from famine, drought, and war.

Health services in these contexts must focus equally on mental and physical health, while preserving human rights regarding security, humanitarian support, dignity, physical safety, and psychological safety. Food security provides the necessary nourishment for physical and mental health, strengthening the body and reducing anxiety and stress caused by the fear of hunger or food shortages.

The relationship between food availability and mental health is an intricate and fundamental connection that extends far beyond simply meeting the body's basic biological needs. When an individual lives in a state of food insecurity, this situation does not only impact their physical health; it plunges their entire life into a cycle of chronic anxiety and perpetual uncertainty.

The persistent worry about where the next meal will come from creates enormous psychological pressure, generating fear, stress, and significantly

increasing the likelihood of developing depression and anxiety disorders. The absence of food security represents a direct threat to the basic sense of safety and stability that a human being requires to maintain mental well-being.

This vulnerability particularly affects children, as inadequate nutrition during crucial early developmental stages can lead to cognitive delays and subsequent psychological and behavioral problems later in life. Food security directly ensures the "availability" of the essential energy and nutrients required for optimal brain function, which in turn supports emotional stability, focus, and the capacity for learning. When food is accessible and reliable, an individual feels a sense of control over their life and their ability to care for themselves and their family, boosting self-confidence and mitigating feelings of helplessness.

Research has clearly indicated that households experiencing food insecurity report significantly higher levels of psychological distress compared to food-secure households. (Tarasuk, 2016). This distress stems not merely from physical hunger, but from the constant mental burden of planning how to stretch limited finances to acquire food, a process that exhausts mental resources and keeps the individual in a perpetual state of high alert. Furthermore, "access" to nutritious food critically supports mental health by providing essential vitamins and minerals that are vital for the production of neurotransmitters responsible for mood regulation.

There is a strong and direct association between food insecurity and a notable increase in depressive symptoms among adults, an association that remains significant even when controlling for other poverty-related factors. (Weiser et al, 2014)

Food security is not just about the survival of the body; it is the cornerstone of a healthy, productive mind, making it a crucial investment in overall public health and societal well-being. A healthy diet provides the brain with essential nutrients, such as precursors to dopamine and serotonin, which help regulate mood and reduce psychological disorders. Food insecurity is linked to an increased risk of depression, anxiety, and mood disorders, which can lead to social deviance and instability, thereby threatening national security.

Studies indicate that healthy diets may help treat the symptoms of some of these disorders, calling for the promotion of mental health in all countries. This promotion must include attention to the risks associated with food insecurity and work toward providing preventive measures and raising awareness of the critical link between physical health and nutritional balance.

These efforts would broadly promote mental health and help put an end to famines worldwide. In addition, it is necessary to guide health workers on providing psychological support and implementing programs that promote mental health for caregivers, children, and adolescents within health services. This

must be coupled with raising awareness of the importance of integrated nutrition and the necessity of providing it to affected countries to preserve human continuity and expand food security through international social institutions and global awareness campaigns conducted by various international organizations aimed at achieving a mentally, physically, and socially healthy society

4. Conclusion:

It is evident that food security is not an isolated developmental goal; rather, it is an essential and integrated pillar for building a healthy and prosperous society. The continuous ability to access sufficient and nutritious food weaves the threads of strong physical health—from an effective immune system to sound development—while simultaneously providing a solid foundation for stable mental health.

When anxiety about the next meal disappears, it is replaced by a sense of safety and dignity that enhances psychological well-being and unlocks individuals' potential for creativity and active social participation. Any comprehensive development strategy must place food security at the core of its priorities, as it is the key that opens the door to a decent, productive, and balanced life for all members of society.

The persistent challenge of ensuring global food security highlights critical governance gaps at local and international levels. True resilience requires proactive policies that mitigate climate risks, support smallholder farmers, and promote equitable market access.

Failure to invest in these areas creates a fragile global system vulnerable to widespread instability and humanitarian crises.

Therefore, food security must transition from a conceptual framework to tangible, actionable policy. Nations that prioritize the creation of resilient, sustainable food systems secure a competitive advantage in global stability and economic potential. The collective commitment to eliminating hunger is

fundamentally an investment in peace and prosperity for future generations. This holistic approach ensures that every individual can thrive, making food security the ultimate determinant of a society's potential.

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