

Food Policy and Its Impact on Population Health: A Global Perspective

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Abstract: This research paper explores the intricate interplay between food policy and population health on a global scale. Recognizing the pivotal role of food in shaping health outcomes, the study delves into the historical evolution, contemporary challenges, and future considerations of food policies worldwide. From nutritional guidelines and accessibility to agricultural subsidies and international trade agreements, each facet is examined in the context of its impact on the health of diverse populations. The paper synthesizes existing research, case studies, and policy analyses to provide a comprehensive overview of the multifaceted relationship between food policy and population health. It underscores the need for a holistic, collaborative, and culturally sensitive approach to address the global challenges of malnutrition, obesity, and diet-related diseases.

Keywords: Food Policy, Population Health, Nutritional Guidelines, Education Initiatives, Food Accessibility, Food Affordability, Local Agriculture, Sustainability, Global Health

I. Introduction

In an era defined by unprecedented global interconnectedness, the intricate relationship between what we eat and the health of populations has become a focal point of concern and inquiry. Food, beyond its fundamental role as sustenance, is a dynamic force shaping the well-being of individuals and communities worldwide [1]. The policies governing the production, distribution, and consumption of food emerge as pivotal determinants of population health, influencing everything from nutritional choices to the prevalence of diet-related diseases. This research endeavors to unravel the complexities of this relationship, delving into the multifaceted

landscape of food policy and its profound impact on the health of diverse populations across the globe. In the intricate tapestry of global health, the nexus between food policy and population well-being stands as a pivotal thread, weaving together socio-economic factors, nutritional choices, and public health outcomes[2]. The choices we make as individuals, communities, and nations regarding what we grow, distribute, purchase, and consume have profound implications for our collective health. As societies grapple with the complex challenges of modern living, understanding the intricate relationship between food policy and population health becomes paramount. Food, beyond its elemental role as sustenance, is a reflection of cultural identity, economic structures, and societal norms. The policies that govern the production, distribution, and consumption of food exert a profound influence on the health outcomes of individuals and communities[3]. This exploration delves into the multifaceted dimensions of food policy, dissecting its impact on the intricate web of population health. The evolution of food policy is intertwined with the growth of civilizations and the transition from agrarian societies to complex urban centers. Historically, communities relied on subsistence farming and local trade, with food policies dictated by immediate needs for survival. However, as societies expanded and globalized, the challenges associated with ensuring food security and nutritional adequacy necessitated the formulation of comprehensive policies. The early 20th century witnessed a shift towards industrialized agriculture, with policies increasingly focused on maximizing yields and ensuring a stable food supply[4]. Post-World War II, the Green Revolution introduced new technologies, transforming agricultural practices and triggering a surge in food production. While these advancements addressed immediate hunger concerns, they also laid the groundwork for subsequent challenges, including issues of overproduction, environmental degradation, and diet-related health problems. In the 21st century, the globalized nature of food production and distribution poses both opportunities and challenges for public health. Trade agreements, technological innovations, and interconnected supply chains have facilitated the movement of food across borders, offering diverse choices but also exposing populations to the risks associated with the homogenization of diets. Food policy in this era encompasses a spectrum of issues, ranging from nutritional guidelines and education to agricultural subsidies and international trade agreements[5]. The interplay between these policies and population health is dynamic, influenced by a myriad of factors such as cultural diversity, socio-economic disparities, and environmental sustainability. Nutritional Guidelines and Education: Empowering Choices

for Health At the forefront of food policy's impact on population health are nutritional guidelines and educational initiatives. Governments worldwide recognize the importance of guiding individuals towards healthier dietary choices. Clear, evidence-based guidelines serve as beacons, illuminating the path towards balanced nutrition and fostering informed decision-making. Education, both formal and informal, plays a crucial role in translating these guidelines into practical, everyday choices. Schools become battlegrounds for nurturing healthy habits, and public awareness campaigns strive to dismantle myths surrounding nutrition. The empowerment of individuals to make informed choices through education becomes a cornerstone in the foundation of a healthier society.

Food Accessibility and Affordability: Bridging the Divide While knowledge is a potent catalyst for change, its impact is limited without addressing the fundamental issues of food accessibility and affordability. Inequities in access to nutritious food, often manifested as 'food deserts'—areas with limited availability of fresh and healthy options—underscore the systemic challenges embedded in food distribution. Governments, in crafting effective food policies, must grapple with the socio-economic factors that contribute to these disparities. Initiatives that promote the establishment of farmers' markets in underserved areas, subsidies for nutritious foods, and incentives for local producers can act as levers in dismantling barriers to access. A holistic approach to food policy recognizes that health disparities are often rooted in economic inequality and endeavors to bridge the nutritional divide.

Agricultural Subsidies: Shaping the Food Landscape The allocation of agricultural subsidies stands as a powerful instrument in shaping[6] the food landscape. Governments deploy subsidies strategically to support specific crops, influencing their availability and pricing. This practice, while integral to ensuring the economic viability of agriculture, can have profound implications for public health. Subsidies directed towards staple crops form the backbone of food security measures, ensuring a stable supply of affordable basics. However, the nuanced impact of subsidies on the production of fruits, vegetables, and other nutrient-rich foods requires careful consideration. A judicious balance in subsidy distribution can align agricultural practices with nutritional goals, contributing to a more diverse and health-oriented food supply.

Regulation of Food Advertising and Labeling: Navigating the Information Landscape In an era dominated by information overload, the regulation of food advertising and accurate nutritional labeling emerge as critical components of effective food policy. The omnipresence of marketing messages, particularly those targeting vulnerable populations such as children, can sway dietary choices

towards unhealthy options. Regulations that restrict misleading claims and promote transparent nutritional labeling empower consumers to make choices aligned with their health goals. The endeavor to create a level playing field for all food products, irrespective of their nutritional profile, forms the bedrock of policies aimed at cultivating a discerning and health-conscious consumer base. School Nutrition Programs: Cultivating Health from an Early Age Recognizing the formative role of early experiences in shaping lifelong habits, many governments implement school nutrition programs[7]. These initiatives extend beyond the confines of traditional education, recognizing schools as hubs for holistic development, including physical and nutritional well-being. Schools, through the provision of balanced and nutritious meals, not only address immediate hunger but also instill healthy eating habits. Nutrition education programs complement these efforts, fostering a generation equipped with the knowledge and skills to navigate the complex terrain of food choices. Food Safety Regulations: Safeguarding Public Health Ensuring the safety of the food supply is a non-negotiable imperative for governments worldwide. Food safety regulations, encompassing rigorous standards for production, processing, and distribution, protect populations from the scourge of foodborne illnesses. Effective policies in this realm require a comprehensive approach, integrating surveillance systems, international collaboration, and stringent enforcement mechanisms. The safeguarding of food safety not only shields individuals from acute health risks but also contributes to the prevention of chronic diseases linked to long-term exposure to contaminants[8].

A. The Significance of Food Policy in a Global Context

Food, as a universal necessity, intersects with every facet of human existence. It is not merely a source of nourishment but a cultural expression, an economic force, and a nexus where environmental sustainability converges with human well-being. Consequently, the policies crafted to regulate the production, distribution, and consumption of food assume a role of paramount importance in shaping the health outcomes of populations on a global scale. The global landscape of food policy is characterized by an intricate web of regulations, trade agreements, nutritional guidelines, and cultural influences. As nations grapple with the dual burdens of malnutrition and diet-related diseases[9], the need for comprehensive, evidence-based, and culturally sensitive food policies becomes increasingly apparent. The stakes are high,

with the World Health Organization estimating that diet-related factors contribute to a substantial portion of the global disease burden.

B. Historical Evolution: From Agrarian Societies to Globalized Food Systems

To comprehend the current state of global food policy and its impact on population health, one must trace its historical evolution. The transition from agrarian societies to the complex, globalized food systems of today is marked by significant shifts in agricultural practices, trade dynamics, and nutritional patterns. Historical milestones, such as the Green Revolution and the emergence of industrialized agriculture, have left an indelible mark on the way societies produce and consume food[10]. Understanding this historical context is crucial for contextualizing the challenges and opportunities that contemporary food policies confront. It illuminates how past decisions, shaped by the imperatives of food security and economic stability, have set the stage for the intricate relationship between food and health in the present day.

C. Contemporary Challenges in Global Population Health

In the 21st century, the global community grapples with a spectrum of health challenges intricately tied to dietary habits. Escalating rates of obesity, malnutrition, and diet-related non-communicable diseases present a formidable public health crisis. The World Health Organization identifies poor dietary choices as a leading risk factor for mortality, underscoring the urgency of addressing the root causes embedded in contemporary food systems. As populations become more urbanized, lifestyles shift, and dietary patterns undergo transformation, the impact of food policies on health becomes increasingly pronounced[11]. The globalization of food markets introduces both opportunities and risks, creating a complex tapestry where local choices reverberate globally, and global decisions resonate locally.

D. Scope and Objectives of the Research

This research aims to provide a comprehensive examination of the global perspectives surrounding food policy and its profound implications for population health. By scrutinizing the various dimensions of food policy—from nutritional guidelines and educational initiatives to trade agreements and agricultural subsidies—the research endeavors to illuminate the intricate web of factors shaping the health outcomes of diverse populations. Through a synthesis of existing research, case studies, and policy analyses, this study seeks to uncover patterns, identify

gaps, and offer insights that can inform evidence-based decision-making at local, national, and international levels[12]. By exploring historical trajectories, contemporary challenges, and emerging trends, the research strives to contribute to a nuanced understanding of the complex interplay between food policy and population health on a global scale.

II. Background Study

: Global Dynamics of Food and HealthIn an interconnected world, trade policies wield considerable influence over the availability and affordability of certain foods. International agreements and trade partnerships shape the global food landscape, determining which products traverse borders and reach the tables of diverse populations. Policies that prioritize the import and export of nutritious foods contribute to the creation of a globally diverse and balanced diet. Simultaneously, careful consideration must be given to the potential pitfalls, as unrestricted trade may also expose populations to the influx of unhealthy processed foods, contributing to the rise of diet-related health issues.

Taxation on Unhealthy Foods: Economic Levers for HealthGovernments, faced with the escalating burden of diet-related diseases, increasingly explore economic instruments as levers for health. Taxation on foods and beverages high in sugar, salt, or unhealthy fats seeks to disincentivize their consumption while generating revenue for health initiatives[13]. The efficacy of such policies hinges on a delicate balance, as excessive taxation may disproportionately impact lower-income populations. A nuanced approach considers both the health implications and the socio-economic ramifications, striving to create a financial environment that aligns with public health goals.

Support for Local Agriculture: Nurturing Sustainability and DiversityThe resurgence of interest in local and sustainable agriculture reflects a growing recognition of the interconnectedness between food systems, ecosystems, and human health. Policies that support local farmers, prioritize sustainable practices, and champion agro-biodiversity contribute to resilient and health-oriented food systems. Local agriculture not only bolsters regional economies but also enhances food security by reducing reliance on global supply chains[14]. The promotion of diverse crops, including indigenous varieties, enriches diets, fostering a connection between communities and the land that sustains them.

Public-Private Partnerships: Collaboration for Holistic ImpactThe complexities of the food-health nexus demand collaborative efforts that transcend the boundaries of government sectors. Public-private partnerships emerge as a potent strategy, leveraging the

strengths of various stakeholders to address multifaceted challenges. Industry engagement, combined with governmental oversight, can lead to innovations in product formulation, marketing practices, and supply chain dynamics. Non-profit organizations, academia, and healthcare institutions become integral partners, contributing expertise in nutrition, community engagement, and health promotion. Together, these partnerships amplify the impact of food policies, creating a synergy that resonates across sectors and communities[15].

III. Data Source

Researchers exploring the intricate dynamics of food policy and its impact on population health often rely on a diverse array of data sources to draw comprehensive insights. Government agencies, including the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC), offer a global and national perspective, providing health statistics and reports. International institutions such as the World Bank and the International Monetary Fund (IMF) contribute valuable economic and financial data on an international scale. Academic journals, including the "American Journal of Public Health" and "Food Policy," serve as repositories of scholarly research on the subject. National health surveys, conducted in many countries, furnish critical data on health behaviors, nutrition, and overall population health.

Data Source	Focus Area	Coverage	Access	Notes
World Health Organization (WHO)	Global Health	Worldwide	Open Access	Provides comprehensive global health data, statistics, and reports.
Centers for Disease Control and Prevention (CDC)	Public Health (U.S.)	United States	Open Access	Offers health-related data and information, particularly in the United States.
Food and Agriculture Organization (FAO)	Food and Agriculture	Global	Open Access	Focuses on food and agriculture-related data on a global scale.
World Bank	Economic and Health	Worldwide	Open Access	Provides global economic and health-related data.
RAND Corporation	Policy	Varied	Some	Conducts research on

	Research		Open Access	various policy-related topics, including health and nutrition.
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Table 1. Summarizes the Sources of Data used for Analysis

Global health data platforms, exemplified by the Global Burden of Disease Study (GBD), offer comprehensive insights into global health trends. World Trade Organization (WTO) data proves significant for understanding the impact of trade policies on food systems. National agriculture and food agencies provide country-specific information on production, consumption, and trade, while non-governmental organizations like Oxfam and the World Food Programme (WFP) contribute reports and data on food policy and global health. Additionally, databases specializing in nutrition and food composition, such as the USDA National Nutrient Database, offer essential information for nutritional analyses. Researchers must judiciously evaluate the credibility and timeliness of these sources to ensure the robustness of their analyses and policy recommendations.

IV. Nutritional Guidelines and Educational Initiatives

In the multifaceted landscape of food policy, nutritional guidelines and educational initiatives stand as sentinel pillars, guiding individuals towards informed dietary choices and fostering a culture of health. The influence of these policies on population well-being is profound, transcending geographical boundaries and cultural contexts. This section explores the pivotal role of nutritional guidelines and educational initiatives in shaping global dietary habits and, consequently, overall health outcomes.

A. The Power of Knowledge: Nutritional Guidelines as Beacons of Health

Nutritional guidelines serve as compasses, providing individuals and communities with evidence-based recommendations on what constitutes a balanced and healthful diet. These guidelines, often developed by national health agencies or international organizations, distill scientific research into accessible information, empowering individuals to make informed decisions about their food choices.

B. 1.1 Development and Evolution of Nutritional Guidelines:

Understanding the historical development of nutritional guidelines is crucial for discerning their contemporary impact. Early guidelines focused on addressing nutrient deficiencies, but as our understanding of nutrition expanded, so did the complexity of these recommendations. The evolution of guidelines mirrors scientific advancements, societal changes, and shifting paradigms in public health.

C. Challenges and Criticisms: Striking a Balance

While nutritional guidelines play a pivotal role, they are not without challenges. Criticisms often revolve around the potential for guidelines to oversimplify complex nutritional science, leading to a one-size-fits-all approach. The balance between offering clear, actionable advice and accounting for individual variations in dietary needs remains a perennial challenge for policymakers.

D. Global Consensus and Divergence:

In the era of globalization, divergences and convergences among national nutritional guidelines spark debates. Harmonizing global nutritional recommendations while respecting diverse cultural dietary patterns is a delicate task. Understanding where consensus emerges and where divergence persists sheds light on the challenges of creating universally applicable guidelines.

V. The Role of Nutritional Education Initiatives

Nutritional education initiatives complement and amplify the impact of guidelines by translating complex nutritional information into practical knowledge. These initiatives operate in diverse settings, from schools to community programs, aiming to cultivate a population equipped with the skills and understanding to make healthy food choices.

A. Nutrition Education in Schools:

Schools serve as crucibles for shaping lifelong habits, and nutritional education programs within educational institutions contribute significantly to this endeavor. These programs not only expose children to the fundamentals of nutrition but also instill a holistic understanding of the interconnectedness between dietary choices and overall well-being.

B. Community-Based Nutrition Programs:

Beyond the classroom, community-based initiatives bridge the gap between nutritional knowledge and its application in everyday life. Workshops, cooking classes, and community gardens foster a hands-on approach to nutrition education, promoting a sense of empowerment and self-efficacy in making healthier choices.

C. Leveraging Technology for Education:

In the digital age, technology becomes a powerful ally in nutritional education. Mobile applications, online platforms, and interactive tools provide accessible and personalized information, catering to diverse learning styles and demographics. Understanding the potential and limitations of technology in nutritional education is integral to designing effective interventions.

D. Evaluating the Impact: Measuring the Efficacy of Guidelines and Education

Assessing the impact of nutritional guidelines and educational initiatives requires a comprehensive evaluation framework. Metrics such as dietary patterns, health outcomes, and population-level changes in chronic diseases offer insights into the effectiveness of these policies. However, attributing health outcomes solely to nutritional guidelines and education poses methodological challenges, necessitating robust study designs.

E. Population-Level Health Outcomes:

Evaluating the impact on population health outcomes, such as the prevalence of diet-related diseases (e.g., obesity, diabetes, cardiovascular diseases), provides a macroscopic perspective. Longitudinal studies and epidemiological analyses help establish associations between adherence to nutritional guidelines, participation in educational programs, and health outcomes.

F. Behavioral Changes and Adherence:

Microscopic evaluations focus on individual-level behavioral changes. Surveys, interviews, and observational studies explore the extent to which individuals incorporate nutritional knowledge into their dietary practices. Understanding the factors influencing adherence helps refine educational strategies and guidelines.

G. Socioeconomic Disparities:

Evaluations must also consider socioeconomic factors, as access to nutritional education and the ability to follow guidelines may vary across diverse demographics. Assessing the impact on health equity ensures that these policies contribute to narrowing, rather than widening, health disparities.

VI. Challenges and Future Directions

While nutritional guidelines and educational initiatives wield significant influence, they face inherent challenges and must evolve to meet the dynamic demands of modern societies.

- A. A nuanced approach to nutritional education acknowledges cultural diversity in dietary practices. Tailoring educational initiatives to align with cultural preferences and traditions enhances their effectiveness and fosters inclusivity.
- B. In the age of information, individuals encounter a barrage of nutritional advice from various sources. Navigating this landscape requires not only refining the clarity of guidelines but also equipping individuals with critical thinking skills to discern credible information.
- C. The integration of technology into nutritional education opens new avenues for engagement. Embracing innovations such as virtual reality, gamification, and personalized digital platforms enhances the accessibility and appeal of nutritional education, particularly among younger demographics.
- D. Collaboration across sectors, including education, healthcare, and the food industry, is essential for a holistic approach. Integrating nutritional education into broader health and wellness programs ensures a seamless transition from knowledge acquisition to sustained behavior change.

VII. Conclusion

In summary, our comprehensive exploration into the nexus of nutritional guidelines, food accessibility, affordability, and local agriculture underscores the intricate web of factors influencing global population health through food policy. The journey began by recognizing the significance of educational initiatives in shaping dietary choices and empowering communities with nutritional knowledge. Delving into the challenges of food accessibility and affordability,

we unveiled spatial and economic disparities, highlighting the need for policies that bridge these gaps. The discussion expanded to emphasize the pivotal role of local agriculture in cultivating sustainability, economic vitality, and social cohesion. This interconnected narrative illuminates the call to action for policymakers, communities, and individuals to collaboratively champion holistic, culturally sensitive strategies that weave health, equity, and sustainability into the fabric of future food systems. The conclusion serves as an invitation to collectively nurture a landscape where every decision, whether in policymaking or individual choices, contributes to a more nourished, equitable, and resilient global community.

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