

## Oxford Handbooks Online

### **An Overview of Ethical Issues in Food, Water, and Nutrition in Public Health**

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The Oxford Handbook of Public Health Ethics

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### **Abstract and Keywords**

Food, water, and nutrition are fundamental components of public health. Though the need for food and water is essential, the conceptual and practical applications for food, nutrition, and water are rife with ethical implications. This chapter provides an overview of the ethics of food, water, and nutrition, one of the areas of focus in The Oxford Handbook of Public Health Ethics, and it introduces the chapters in the related section of this volume that examine the ethics of water security, malnutrition, and obesity prevention. One of society's major challenges is providing enough nutritious food and water for the planet's growing population in an environmentally sustainable way, a concern that is reflected by the authors' focus on justice, equity, and fairness for humanity and the planet alike.

Keywords: malnutrition, water, obesity, public health ethics, justice, equity, food, nutrition

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## **Introduction**

Food and water are essential to public health, as well as to the development and sustainability of nations and the planet. Yet climate change, an expanding global population, and an increasingly globalized, geopolitical world present ethical challenges to ensuring the availability of these resources. Today, more than ever before, there is a need to take stock of the critical assets that allow human societies to thrive.

## **Food and Nutrition**

As major contributors to the health status of populations, food and nutrition play an important role in addressing the global burden of malnutrition. Through food and diets, nutrition ensures that nutrient needs are met to sustain a healthy life. The ramifications

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of malnutrition have a direct impact on human health and well-being. From a child suffering cognitive impairment as a result of stunting to the many countries grappling with obesity epidemics and rising rates of noncommunicable disease, food is a key component in establishing positive health outcomes.

### **Malnutrition**

Malnutrition affects every country, whether developing or developed, and it presents a considerable challenge for governments around the world. Different types of malnutrition can coexist in the same country, community, or household, and even at the individual level. Globally, one person in three today is malnourished (Development Initiatives, 2017). The UN aims to end hunger and all forms of malnutrition by 2030, but if current trends continue, one person in two could be malnourished by then (GloPan, 2016).

Food security has been defined as a state in which “all people at all times have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (FAO, 2009, 1). The causes of malnutrition are complex, though access to food that meets the FAO’s definition is a core issue. Other causes include immediate if chronic problems, such as disease burden, as well as more systemic factors, such as political or social issues that prevent or hinder equal distribution of food resources (HLPE, 2017).

### **Undernutrition**

Globally, 815 million people are undernourished, despite progress made during recent decades (FAO et al., 2017). The number of people who are undernourished globally will likely increase because of the 2017 famine crisis, in which Nigeria, Somalia, South Sudan, and Yemen are at risk of or are facing famines. Undernutrition is most prevalent among impoverished groups that lack food security. The most vulnerable are unborn children, infants and children under five, women of reproductive age, and older persons. The consequences of undernourishment are lifelong and intergenerational, potentially leading to negative impacts on child growth and development, quality of life, resistance to infection, and survival (HLPE, 2017).

Chronic food insecurity at the household, community, or larger societal level is often at the core of undernutrition. Food insecurity may occur as a result of socioeconomic pressure, urban or rural residence, or disruption due to civil instability and conflict. “Hidden” forms of undernutrition that result from insufficient levels of energy, protein, and micronutrients are less apparent than instances of severe, “wasting” undernourishment, though “hidden” undernourishment is more common.

Undernutrition is the main form of malnutrition among children under five, though this is decreasing (Black et al., 2013; WHO, 2017b). Still, it is the underlying cause of approximately 45 percent of deaths among this age group, mainly in low- and middle-income countries (LMICs) (WHO, 2017a). The burden of stunting, or chronic undernutrition, in children under the age of five is significant. In 2017, nearly 151 million

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children under the age of five (22.2 percent) worldwide were stunted. Globally, 50 million children under the age of five (7.5 percent) suffered from wasting or were moderately acutely malnourished, and 16 million suffered from severe wasting. Nearly all of these children resided in Africa and Asia (Development Initiatives, 2018; UNICEF, WHO, and World Bank, 2017).

### **Overweight and Obesity**

Overweight and obesity affect almost every country in the world and are rapidly rising in all age groups. Globally, obesity has nearly tripled since 1975 (WHO, 2017b). The greatest burdens are experienced by high-income countries and countries experiencing a nutrition transition, a process in which diets shift from traditional staple foods to processed foods (Popkin, Adair, and Ng, 2012). This dietary change, coupled with increasingly sedentary lifestyles, has fueled a global increase in the risk of noncommunicable diseases, which represent the leading causes of adult morbidity and mortality (Gakidou et al., 2017).

Overweight and obesity represent the main burden of malnutrition for adults. The WHO (2017b) estimates that overweight and obesity are now responsible for more deaths than undernutrition. It is estimated that 2.01 billion adults suffer from overweight and obesity (38.9%), while 462 million adults are underweight (Development Initiatives, 2018; WHO, 2017a; WHO, 2017b; Ng et al., 2014).

Children are also increasingly at risk of being overweight or obese. Over 38 million children under the age of five (5.6 percent) were overweight or obese in 2017, compared to 30 million in 2000. Overweight and obesity now affect young children in developing countries, with 20 million overweight children in Asia and 10 million in Africa (Development Initiatives, 2018; UNICEF, WHO, and World Bank, 2017).

## **Water**

As is the case with food, water is integral to human health and well-being. The essential nature of water is interwoven with that of food: water is needed for drinking, cooking, and personal hygiene, as well as for agricultural production. As such, it is also central to addressing the global burden of malnutrition.

In contrast to food, however, there is no clear definition or internationally agreed upon framework for water security. In some contexts, water insecurity is understood in relation to the “institutional and governance aspect of access to water” (Lopez-Gunn, De Stefano, and Llamas, 2012, 90). Elsewhere, it is defined by a lack of physical infrastructure and storage (Lopez-Gunn, De Stefano, and Llamas, 2012).

Although the global community has yet to agree on a universal definition of water security, millions of people around the world experience the daily realities of going without clean water. Approximately 844 million people worldwide—or one in ten—do not have clean water (WHO and UNICEF, 2017). At the current rate of progress, clean

drinking water for all those living in LMICs will not be achieved until 2039 (WHO and UNICEF, 2017).

### **Burdens on Health and Nutrition**

The lack of clean water threatens health and nutrition through both direct and indirect pathways. Each year, approximately 3.4 million people die from water-related disease as a result of unsafe drinking water and poor sanitation (WHO, 2001). As with diet-related mortality, the greatest burden of ill-health is in developing countries, where 97 percent of annual water-related mortality occurs because of inadequate public health infrastructure (CDC, 2016).

Many of these disease burdens, such as stunting, intestinal helminths, and diarrhea, lead to negative effects on nutritional status. Water, sanitation, and hygiene (WASH) play a fundamental role in improving nutritional outcomes. Indeed, 50 percent of malnutrition is associated with repeated diarrhea or intestinal worm infections resulting from WASH inadequacies (WHO, 2008).

A lack of safe water close to home has many indirect effects on nutrition. In such conditions, people are often left with no choice but to drink unsafe water from unprotected sources. WASH interventions—including solar disinfection of water, provision of soap, and improvement of water quality—have been identified as having an impact on stunting reductions in children under five years of age, although further research is needed to better elucidate these connections (Dangour et al., 2013).

Human health and nutrition is also dependent on agricultural production, which carries complex implications for water. Agriculture is reliant on water; indeed, it uses 70 percent of all available freshwater worldwide (World Bank, 2007). However, agriculture is also a major source of pollution, comprising the largest source of water pollution in developed nations (World Bank, 2007). In addressing the relationship between agriculture and water, the health of future generations is also at stake. Protecting natural resources such as water and land now will ensure that there will be clean water and food for the world's growing population.

## **Public Health Ethics**

The ethical concerns and implications of food, nutrition, and water have resonance for both planetary well-being and human health. The health of our species is intertwined with that of our environment: humanity cannot survive without enough food and water to nourish the world's people, but the planet's resources are suffering from the ramifications of a changing climate. Food and water also hold a special status: they are essential to survival, but their inherent benefits lie in their consumption. Given that human health and nutrition thus relies on an ongoing cycle of depletion and

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replenishment of these resources, there is a unique moral need to ensure that food and water are constantly available (Thompson, 2010).

By 2050 there will be an estimated 9 billion people sharing the globe, with the greatest growth in urban centers and the world's poorest countries (UN, 2015). The current population of 7 billion uses nearly 40 percent of the world's land and 70 percent of its freshwater supply to produce its food (UNEP, 2010). In turn, agricultural production is a major driver of climate change, contributing over one-quarter of all greenhouse gas emissions (Vermeulen et al., 2012). Food, nutrition, and water are essential for human health, but their practical applications are rife with ethical quandaries.

Some of the most significant public health ethics issues arising in food, water, and nutrition have been selected for close examination: the three chapters of *The Oxford Handbook of Public Health's* food, water, and nutrition section scrutinize issues related to water security, malnutrition, and obesity prevention. They are briefly summarized below.

In "Water, Justice, and Public Health," Madison Powers delves into the threats posed to water security by both traditional and more contemporary challenges. He presents the reader with a framework for understanding the connection between water and public health that elucidates the fundamental human right to water and sanitation. With this framework of justice and water as a backdrop, Powers explores the health implications of access to water and sanitation, as well as ethical issues posed by the management and global commodification of water resources.

Jessica Fanzo presents an analysis of malnutrition that spans time and space in "Malnutrition, Public Health, and Ethics." Addressing the full spectrum of malnutrition, from stunting and wasting to overweight and obesity, Fanzo illustrates the importance of nutrition within the public health context. She examines intergenerational issues of justice and inequities of diets around the world as part of the chapter's focus on disease burdens associated with malnutrition.

Anne Barnhill's chapter, "Obesity Prevention and Promotion of Good Nutrition: Public Health Ethics Issues," continues the theme of food and nutrition, as Barnhill provides a deeper analysis of overweight and obesity. As overweight and obesity rates rise around the world, so too do related disease burdens and mortality risks. In addition to the human health costs, Barnhill considers the financial costs of overweight and obesity in her discussion of the public health community's efforts to encourage healthy eating. The chapter highlights how obesity prevention efforts raise ethical concerns about stigma and moral blame, as well as individual choice and market regulation.

As these three chapters illustrate, the ethical implications of food, water, and nutrition are tied to justice, equity, and fairness. These concerns span the continuum of time, as justice must be broadly envisioned across generations. The same holds true for geography, as the dietary choices of those in high-income countries carry tangible repercussions for the quality of life of people in low-income countries. In short, justice cannot be constrained to one time and place. Stigma and blame are components of this

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discussion, as are the concepts of individual choice and market regulation. These ethical issues, which all too often hinge upon poverty and power, must be clarified and addressed to ensure justice in the context of policies affecting food and water.

Poverty, exploitation, and social injustice are at the root of food and water insecurity. These larger systemic issues, which ultimately give rise to the health burdens resulting from food and water insecurity, must be addressed through a comprehensive approach that addresses inequities. As Lopez-Gunn et al. (2012) argue, insecurity cannot be addressed solely through technical solutions. Instead, government and the development community must employ approaches that address how ethical values and political will affect food and water resources, and how these constraints ultimately influence malnutrition and burdens related to water, sanitation, and hygiene.

## Conclusion

Amartya Sen (1982, 459) said “there is no such thing as an apolitical food problem.” The same can be said for water. The governance and power issues associated with these resources are rife with ethical complexity. Ensuring human health requires that we foster the well-being of our growing population and our planet, a task that is both seemingly insurmountable and of paramount importance, and one that requires us to both consider and act upon the ethical implications of how we engage with food, nutrition, and water.

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