

Forum: World Health Organization Committee (WHO)

Issue # 17-02: The question of regulations on sugar and food chemicals
in edible products

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Introduction

Noncommunicable diseases (NCDs) are the world's leading cause of death. In 2017, they were responsible for 73% of all deaths worldwide. Many of those deaths were under the age of 70 and occurred mainly in low and middle income nations. Some of the most common causes of NCDs are unhealthy diets.

In the last ten years, there has been an increase in demand for food. This is because of the fact that populations continue to grow and incomes continue to rise. The need to increase agriculture production to meet the daily demand of food has caused production organizations to use pesticides and plant hormones in order to deliver the foods the population consumes. These chemicals can cause problems if they are consumed by humans in large amounts. National authorities are encouraged by WHO to ensure that food chemicals in food and beverages that are produced in their countries comply with permitted uses, conditions and legalisation.

Food chemicals are the chemical components found in all biological and nonbiological food. Biological food is produced by methods that comply with standards of organic farming, while nonbiological foods are the foods are processed and have chemicals added to them by humans. These chemical substances added to food can play a significant role in food production and preservation. For instance, additives are added to food make food more desirable and prolong the shelf life of foods. The agriculture industry relies vastly in large number of chemicals which may be toxic in nature. Some of these chemicals may get absorbed by our body and may cause a negative impact. Although the toxicants cannot be avoided, the level

of toxins can certainly be reduced by making use of organic, sustainable and less toxic resources. Additionally, The World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO) have divided food additives into three categories based on their function: flavouring agents, enzyme preparations, and other additives. This helps the organizations in assessing and evaluating chemicals that may harm people's health.

Sugar, up to a certain extent, is toxic to the human body. Eating too much added sugar can lead to several health effects. An excess of sugary foods and beverages can cause weight gain, blood sugar issues and an increased risk of heart disease, among other threatening diseases. WHO recommends, "the intake of free sugars should be reduced to less than 10% of total energy intake." Free sugars contribute to the overall energy density of diets and higher intakes of free sugars lowers the nutrient quality of the diet by significant energy without specific nutrients, leading to various NCDs, including unhealthy weight gain.

Food chemicals and sugar in food and beverages can cause harm to people's lives, and the amount of these components being consumed should be controlled in order to provide a longer lives and a healthier lifestyle to the populations. Different regions tend to have different policies, as the diet of people vary depending on where they reside. Some of these policies include taxation, subsidies, and distribution. Since the policies vary, some can be beneficial while others can cause a negative impact on the population. For instance, if there are flaws in the policies on how food is produced in a certain country, there might be food being distributed which might cause a negative impact on people's health. "WHO's priority actions is to achieve the aims of ensuring healthy lives and promote well-being for all ages", but there are obstacles to face in order to follow the path that will have a positive impact in people's lives.

Definition of Key Terms

Free Sugars

Simple sugars added to food by the manufacturer or consumer. Additionally, they

are also exceptions where sugars that are found naturally in certain products, such as honey, fruit juices, and syrups.

Tax

An obligatory contribution to state revenue, imposed by the government on business profits and on workers' income, or added to the cost of some goods and services. At times, taxes are also placed to discourage the consumption of a good.

Subsidy

Money paid to producers to reduce costs of a good or to encourage the good's production.

Food Regulatory Organizations

Organizations that impose regulations under the Food and Drugs Act and they are intended to provide consumers protection against health hazards and fraud in the production, manufacture, sale of foods, advertising, packaging, and labelling.

Noncommunicable Diseases

Diseases that are not transmitted directly from one person to another. They include genetics, age, gender, exposure to pollution, and behaviors such as having an unhealthy diet which can lead to hypertension, obesity, and other diseases.

Food Additives

Food additives are substances that are added to food in order to maintain or improve the safety, freshness, taste, texture, or appearance. It is essential that food additives should be checked for potential harmful effects on human health.

Flavouring Agents

They are agents added to food to improve aroma or taste. These make up the most amount of additives used in foods. A wide variety of food items ranging from confectionery and soft drinks to yogurt and cereal include hundreds of varieties of flavoring agents.

Food Adulteration

Refers to the process by which the nature or the quality of a food is reduced through the removal of vital substances or addition of adulterants. An adulterant is a substance found within another substance.

Nutrient quality

The value of the product for the consumer's growth and development. Consumer's well-being is based on the certainty and indulgence by eating, purchasing, and satisfaction with the food being provided.

Agricultural production

Products that are obtained from cultivated plants or animals to sustain or enhance human life.

Pesticides

Its is a toxic substance that is used for eradicating insects and other organisms to cultivated plants or to animals.

General Overview

The edible products consumed by people consist of certain food chemicals that may cause negative effects in their daily life. The following are various important subtopics to be covered when discussing the impacts of food chemicals. Do keep in mind these are not the only generalities involved in this issue, and that there are many more branches that can be addressed.

Foodborne Disease Outbreaks

Foodborne diseases are a common occurrence throughout the world. The World Health Organization estimates that nearly 600 million fall ill and 420,000 deaths occur each year from consuming contaminated food. It mainly occurs when two or more people experience a similar sickness after eating the same food. The economic costs in relation with foodborne disease can be severe on the stakeholders;

population, food companies, and country reputation. Foodborne diseases are yet to be under control, and outbreaks cause health and economic losses. The causes are unhygienic practices in harvesting, preparation and food production. There are around thirty-one main foodborne pathogens causing diseases; some important ones to note are salmonella non-typhoidal, campylobacter, listeria, and toxins are monitored by national authorities. It is important to note that health officials investigate outbreaks to control them, so more people do not get ill, and learn how to prevent similar disease outbreaks from happening in the future.

Outbreak investigations link etiologies with specific food products, allowing health officials, regulatory agencies, and the food industry to investigate how food become contaminated. The data recorded and studies from foodborne outbreaks is also used to identify emerging food safety issues and to assess whether programs to prevent illnesses from edible products are positively impactful.

Naturally occurring Toxins

Living organisms tend to naturally produce toxic compounds. These naturally occurring toxins are not injurious to the organisms themselves but they affect other living creatures, including humans, when eaten. There are different chemical compounds produced that consist of different structures and toxicity. In terms of the toxins produced by plants, plants use the toxins as a defense mechanism as consequence of infestation with microorganisms it responds to climate stress; such as high level of humidity and droughts. Microscopic algae and plankton also produce chemical compounds that are toxic to humans but not fish or shellfish that consume these toxin-producing organisms. When people consume these fish that contain toxins, illnesses tend to rise. Some toxins are the following; aquatic biotoxins, mycotoxins, poisonous mushrooms, a

In order to protect the well being of people, they should avoid exposure to natural toxins. Additionally, these toxins also have an impact on food security and nutrition by reducing the public's access to healthy food. The World Health Organization encourages nations to monitor and ensure the levels of the naturally occurring toxins in their food supply is at a minimum.

Obesity

Obesity is a medical condition involving excessive amount of body fat. Through obesity health problems arise, such as heart disease, diabetes and high blood pressure. Obesity can be diagnosed by calculating one's body mass index (BMI). People are able to estimate their body fat through BMI. Obesity is most commonly caused by a mixture of genetics, excessive food intake, and a lack of physical activity. There are a couple cases where obesity is caused by medications and disorders. In 2015, 600 million adults and 100 million children were obese in 195 countries. Overweight and obesity are now become a major issue in most of the countries in the world, from high to low income countries, mainly in urban settings. Obesity in most cases is treated through weight loss. Weight loss programs require changes in one's increased physical activity and eating habits. Reducing the calories one consumes and practicing healthier eating habits are significant to overcoming obesity.

Diabetes

Diabetes is a disease in which a person's blood sugar levels are too high. One gets glucose from the food they eat. In relation to glucose, insulin is a hormone made by the pancreas that allows the sugar to be transmitted into a person's cells in order to give them energy. There are two types of diabetes; type 1 diabetes and type 2 diabetes. With type 1 diabetes, a person is unable to produce insulin. Without insulin, the body can't get glucose from the bloodstream and into the cells in the body. With type 2 diabetes, insulin is not used properly; insulin resistance. There are cases where the pancreas tends to make more insulin than needed. Over time the pancreas isn't capable of making extra insulin because it can't keep up with it. One of the main things that stops the success of a diabetic person from being in a healthy lifestyle is eating all sorts of unhealthy food, alcohol, sweets and saturated fat. For those with type 1 diabetes, one of the approaches to that is to be taken as treatment is using an insulin pump or taking insulin injections. And for those with type 2 diabetes, professionals recommend medicines that provide insulin or medicines that help reduce the insulin, depending on the person's condition. Additionally, having a healthy diet is very critical when it comes to this disease, as one has to take into consideration what they are eating to maintain a stable sugar level.

Chromium Deficiency

When there is insufficient dietary intake of the mineral chromium, it is known as chromium deficiency. There are several consequences due to lack of chromium in a person's body; a decrease in the body's ability to metabolize glucose and fats, an inhibition in the body's production of protein, and a production of excess cholesterol. Chromium losses are found in diets with large quantities of refined foods, especially simple sugars. Dietary intakes of chromium cannot fully be determined because the components of the mineral foods is substantially affected by manufacturing and agricultural methods. Meat and whole-grain, as well as some spices, fruits, and vegetables are relatively good sources of chromium. Having a diet that consists of foods that are high in chromium, will allow a person to be healthier and help avoid diseases.

Effect on Early Hormonal Change

Professional pediatrics have conducted studies on how food additives can negatively impact a child's hormones, growth and development. Children have developing brains, and their brains tend to be more susceptible and vulnerable. The American Academy of Pediatrics (AAP) have evidence that these chemicals in a child's body can affect neurological development and the endocrine system, which regulates hormones. The endocrine system is essential when it comes to growth and hormones, so if these chemicals affect the testosterone or estrogen, it can also affect a person's development during puberty and fertility. A person can be exposed to additives at a very early age, but the impact can be seen as a person's hormones are changing.

Government Regulations

The vast majority of foods have ingredients added to them. All food additives are carefully regulated by federal authorities and several international organizations to ensure that these edible products are safe to eat. Although, the government ensures that it is safe to consume the food distributed in the region, they aren't so observant on how much of the ingredients should be consumed by the population. Certain food chemicals may have a negative impact on the health of the public, especially sugar. The majority of foods and sugar-sweetened beverages consist of sugar. Excessive sugar is a key factor in promoting several diseases. The intake of free sugars has increased in populations, and this has caused the intake of foods

containing more nutritionally adequate calories to reduce. The government can control this issue through several evidence based interventions, that may include: reformulating foods and beverages containing high levels of sugar to lower levels of sugar, eliminate sugar subsidies provided by the government, and the government should provide routine health education to populations. Some of the processes used to reduce sugar intake can similarly be used to reduce the intake on food chemicals that are injurious to health. This way populations may not consume as much additives that are unhealthy. WHO is collaborating within the Global strategy physical activity, diet and health and closely with government in order to meet the nine global target to reduce non communicable diseases and provide people with a healthier lifestyle by 2025.

Major Parties Involved and Their Views

The Joint FAO/WHO Expert Committee on Food Additives (JECFA)

JECFA is a joint international committee operated by the World Health Organization and the Food and Agriculture Organization of the United Nations. This committee has been meeting since 1956, to evaluate the safety of food contaminants, naturally occurring toxicants and residues of veterinary drugs in food. JECFA has evaluated approximately 40 contaminants and more than 2,500 food additives. This committee provide support to national authorities in developing modern, effective national food laws and regulations. For example, they are trying to establish policies to protect children from the marketing of unhealthy foods and drinks. The technical support is provided through teams of legal advisors collaborating with food safety experts. According to JECFA, millions of people aren't getting enough to eat and millions of others are eating too much of the wrong foods. Many families can't afford enough nutrient rich food like fresh fruits and vegetables, beans, meat and milk, so they consume foods and drink high in fat, sugar and salt are cheap and readily available, leading to a rapid rise in the number of people who are obese and overweight in poor as well as rich countries. Undernutrition and overweight are clearly problems affecting people within the same communities. JECFA are trying to provide as much information and education to consumers, so they can make

healthy choices. Healthy systems are strong and agriculture and trade policies support good nutrition.

United States of America

The United States of America leads the world in consumption of added sugars and ranks third in the world in sales of sugary foods. Additionally, the United States has one of the highest overall obesity rates in the world. Over 30 million Americans have diabetes, and 84 million are at risk of developing diabetes. Sugar is added to four out of the 5 products found locally. Generally, an American consumed about 17 teaspoons of added sugar per day, which is about 50 percent more than what is recommended by the World Health Organization. Overall, sugar consumption the United States has decreased, but it is still too high. In order to decrease the consumption of sugar, some states have placed a soda tax. Additionally, changing the marketing of packaged foods to make it easier for the population to reduce sugar intake to recommended levels is a strategy that helped increase the consumption of healthful food in the United States.

The United States of America has a federal agency known as the Food and Drug Administration (FDA), who are responsible for protecting and promoting public health through the control and supervision of food safety. As of 2015, the agency regulates more than 450 billion food products. According to the FDA, “any food additive that is intended to have a technical effect in the food is deemed unsafe unless it either conforms to the terms of a regulation prescribing its use or to an exemption for investigational use.” Additionally, the United States has a unique framework for food chemicals which is the exemption from premarket approval requirements for the use of food ingredients that are recognized as safe by experts.

Hungary

In order to combat diseases caused by the overconsumption of sugar, in 2011, Hungary placed a 4-cent tax on packaged foods and drinks that contain high levels of sugar in certain product categories, such as, condiments and soft drinks. The effect of placing the tax, caused the consumption of “non-essential” foods to decrease by nearly 10 percent. WHO looked at the Hungary tax and responded, “Consumers of unhealthy food products responded to the tax by choosing a

cheaper, often healthier product, consumed less of the unhealthy product, changed to another brand of the product or substituted some other food." The revenue from excise taxes can also be used to treat the population's health. In its first four years in operation, the WHO reported, Hungary's tax raised 219 million dollars for public health spending. Hungary food tax have effect among low-income groups and people who previously consumed unhealthy food. Additionally, Hungary set policies for food manufacturing companies, causing about 40 percent of them to change their recipes in ways that make them healthier. To increase the consumption of organic foods, the European Union provides Hungary with agricultural subsidies. Through subsidies and taxes, Hungary is able to regulate the food chemicals and sugar consumed by their population.

China

Food safety in China is a growing concern. The Chinese government oversees agriculture production as well as the manufacture of food packaging and chemical additives. In 2003, the Chinese government attempted to consolidate food safety regulations by establishing the State Food and Drug Administration of China. Former Chinese politician, Li Keqiang stated, "Food is essential, and safety should be a top priority. Food safety is closely related to people's lives and health and economic development and social harmony." By maintaining the quality and safety of agriculture products, China is focusing to provide healthier foods to their population. For instance, they are focusing on controlling high-toxic pesticides in vegetables and clenbuterol hydrochloride contamination livestock products. In accordance with the Food and Drug Administration of China, companies who plan to establish health food Chinese market must apply and obtain the health food registration certificate, therefore some companies must pass a certain criteria. The world's second largest economy, have taken these initiatives to decrease the consumption of foods that may harm people, in order to have a future that consist of healthier diets.

India

In 2019, the Centre for Science and Environment (CSE) welcomed the Food Safety and Standards Authority of India's recently introduced draft of food safety and standards regulations. The general director of CSE, Sunita Narain stated, "This is a big step, which will enable people to identify unhealthy foods that are high in fats, sugar

or salt. It should help to contain the growing incidence of obesity and non-communicable diseases." The draft proposes an obligatory declare quantity of added sugar, saturated fats, and cholesterol. This allows consumers to have knowledge about the food they are consuming and how the quantity they consume may or may not affect their health. Additionally, the Food Safety and Standards Authority of India (FSSAI) monitor the food products that are provided to the consumers to assure that they aren't any excesses of chemicals that causes a negative impact to the population.

Timeline of Events

Date	Description of events
1930	Denmark is the first country to impose sugar taxes on food.
1958	The Joint FAO/WHO Expert Committee on Food Additives (JECFA) was created to control food safety and additives for the general population-s health.
2000	The average daily sugar consumption in the United States reaches its peak of 2.7oz per day.
2000	Various sugar free diets and products start trending across the world.
2002	33% of the adult population in the United States are obese
2005	WHO estimates that at least 400 million adults are obese
2010s	Various states and cities in the United States start implementing a local soda tax.
2012	The EU creates a framework aiming to subsidize the production of healthy foods across Europe.
2014	At the Second International Conference on Nutrition, the global community and Member States committed to eliminate malnutrition. Additionally, this regulation was articulated in the Rome Declaration on Nutrition, a common visionary global action.
2016	United Nations establishes the framework regulation that sets out general safety requirements for all food contact materials, to ensure that substances do not migrate into food quantities large enough to endanger human health.
2015	Member States agreed by 2030, they must intend to end all forms of malnutrition.
2018	The EU bans additive sugars in a range of food products advertised for diet usage.

UN involvement, Relevant Resolutions, Treaties and Events

The United Nations and several intergovernmental organization are trying to approach this issue for the benefit of the populations' health.

- On May 13th of 2010, The General Assembly adopted the resolution (A/64/L.52 and Add.1)
In May 2010, the General Assembly adopted the resolution, "Prevention and control of non-communicable diseases". It focused on building public health systems, so low-income populations can be directed in appropriate way in order to achieve good health. Additionally, the resolution recommends governments to provide subsidies on agricultural foods, this way people can consume a foods part of a healthier diet.
- On December 10th of 2010, The General Assembly adopted the resolution of (65/238)
In the thirty-fourth session of the Human Rights Council committee, aspects of human health care were reported. The topic of food chemicals causing negative health impacts was brought to attention. It was emphasized that pesticides found in both plant and animal food sources, resulted in significant exposure risk for consumers. It was agreed that nations should monitor the agricultural foods before they are distributed to the populations, as it would allow people to consume healthy food and the risk of getting a disease would be less.
- In 2013, the Health Assembly agreed to nine global voluntary targets for the prevention and control of NCDs. These targets include a halt to the rise in diabetes and obesity, and a 30% relative reduction in the intake of sugar by 2025. The "Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020" (10) provides guidance and policy options for Member States, WHO and other United Nations agencies to achieve the targets.

Evaluation of Previous Attempts to Resolve the Issue

As seen through UN involvement, the UN have tried to reinforce the well-being of populations by adopting resolutions and discussing the issue of NCDs in assemblies. However, it has focused on a couple food chemicals that may cause harm, while the resolutions should also focus on the other substances that have caused negative health effects in populations. It has to put its efforts primarily on regulating the food chemicals and sugars in edible products, in order for the NCDs to be avoided, and it has to raise awareness about the consequences that people may have, if they consume too much of the substances that isn't necessarily beneficial for them. Additionally, the UN should have a resolution encouraging nations to control the amount of sugars they are providing to the public, as it is one of the main causes for diseases such as obesity and diabetes. It is understandable that some regions depend on certain food chemicals and sugary foods, as their economies rely on these foods, but, higher authorities should provide guidance about other alternative ideas that they could offer to populations and still remain economically stable. Additionally, as the General Assembly adopted resolution "Prevention and control of non-communicable diseases", it should also have focused on all populations including the middle and high income populations. Because NCDs are diseases that many consist of, and it should be reduced as it opposes a major threat to the world, as it is the leading cause of death.

Possible Solutions

Given the fact that part of the issue lies within the national food authorities not doing a efficient job in setting regulations in the processing and the distribution of the foods, it would be very difficult to ensure that the populations are getting the foods that won't have a negative impact on their health. Nations should come to a mutual understanding among each other, to set common regulations that must be followed, and if not followed then there should be a consequence for the national food authorities. Additionally, if populations insist on consuming foods with excess sugars and chemicals that may cause a negative side effect on their health, then, nations should place laws of taxes and subsidies to direct people to having a healthier diet. Looking for substitutes for the harmful foods, is another approach that

nations can take to solving this issue. Additionally, raising awareness about this issue could also encourage the populations to be more conscious about what they are consuming. This a critical issue where there are several paths that could followed in order to solve it. Regulating the sugars and food chemicals in edible products is a way to decreasing the number of deaths caused by NCDs.

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Appendix

- I. Outline on the basic components of health insurance and how it works.

<https://www.thebalance.com/how-does-health-insurance-work-3306069>

- II. Analysis on the impacts of high drug prices on the physical and financial health of patients and various types of waste that contribute to high drug prices.

<https://www.thebalance.com/healthcare-costs-3306068>