Nutritional Scarcity and objective of fortification

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Nutritional Scarcity and Food Insecurity

Worldwide, nutritional scarcity is common. Nutritional deficiency is caused by the increased rate of poverty and food insecurity. The shortage of nutrients is continuously growing. Nutrient dearth includes food deficient in micronutrients whereas macronutrients. Micronutrients are nutrients required in small amounts, while macronutrients are those nutrients needed by the body in large amounts. In developing and economically deprived countries, nutrient deficiencies are increasing daily. Due to these deficiencies, the rate of disease has also increased. A food fortification technique is used to control the shortage of nutrients. Fortification is a technique through which these essential nutrients are added to food. Food fortification is defined as the process in which the intentional addition of essential nutrients takes place. Essential nutrients can be vitamins, minerals, and trace elements. These nutrients are added to specific food to enhance its nutritional value. Food fortification is highly effective in reducing malnutrition. It serves as a tool for addressing global population deficiencies such as rickets and bone disease caused by vitamin D deficiency. This disease can be controlled by consuming milk, which is fortified with vitamin D. Food fortification aims to combat the shortage of nutrients by adding nutrients in an appropriate range. The primary objective of fortification should only provide health benefits to people, and it should not have any harmful effect on public health (Chandrapala et al. 88-98).

Food fortification plays a critical role in preventing and controlling micronutrient malnutrition. Nowadays, Food fortification is likely to have played a critical role in the current nutritional health scenario. The food fortification method is considered an effective intervention among the public to prevent dietary deficiencies. That is why public health scientists and policymakers have developed guidelines to assist the design, implementation, and evaluation of food fortification programs. The shortage of essential dietary food can be controlled by dietary diversification, supplementation, and food fortification, which have been adopted. So, Food fortification is considered a long-term and sustainable strategy in the present scenario. The government mainly regulates the fortification of specific nutrients in food to ensure public health. Now a day’s fortification common examples are milk fortification of vitamin D, Iron addition in cereals, and as well as the addition of folic acid to flour (Samaniego-Vaesken, Alonso-Aperte, and Varela-Moreiras 148-153).

Food Fortification as a Nutritional Intervention

The fortification technique is one of the best cost-effective nutritional interventions available. Fortified foods are different because they add essential nutrients that enhance the value of food and improve health benefits by meeting the body's requirements. Discretionary fortification means adding some vitamins and minerals by a few firms for marketing purposes only; it is not the point of a public health concern. Discretionary fortification is adding mineral deposits and vitamins to the food, which is unnecessary. There is no advantage to that food because consumption of that food replaces healthier food consumption. The use of discretionary food leads to harmful effects, e.g., the consumption of food that contains high fat and high calories points toward obesity problems, high blood pressure, and depression.

Sufficient amounts of certain minerals and vitamins are needed in a balanced diet to perform physical activities, maintain health, and prevent disease due to a lack of essential dietary nutrients. Vitamin A deficiency is responsible for the cause of night blindness, mostly in children. The consumption of more nutrients than is required by the body also causes severe problems. In other words, more consumption leads to toxic effects, e.g., too much use of vitamin A during pregnancy can cause severe abnormalities in the fetus, sometimes leading to abortion. Excessive zinc consumption instead of immune system stimulation suppresses it. High consumption of niacin symptoms ranges from blurred vision to severe liver toxicity ("Health Effects From Excess Vitamins And Minerals").

Sustainable Food Production and Agricultural Improvement

An important step is first to develop environmentally friendly food, maintain agriculture, apply good animal husbandry methods, and improve cross-breeding. By implementing these strategies, not only will water and the environment improve, but they will also have a positive impact on health. Fortification programs as the country's nutrition strategy are supported by the World Health Organization (WHO), the United Nations International Children's Emergency Fund (UNICEF), and (GAIN) the Global Alliance for Improved.

A few daily used products that are consumed on a regular basis include Cereal, bread, milk, salt, margarine, butter, snacks, and juices. The deficiency of iodine is fulfilled by the use of iodized salt. Iodized salt is also fortified salt with iodine which prevents goiter, and as well a lack of iodine lead to mental retardation, goiter, and many other abnormalities ("List Of Fortified Foods"). Snacks and orange juice contain calcium. Margarine and some butter are fortified with sterol, and they control cholesterol levels. Vitamin D deficiency leads to rickets, osteoporosis, and cancer disorder. The consumption of fortified milk which contains vitamin A and D are responsible for controlling such disease. Cereal and bran bread are mostly fortified with vitamins B and iron, e.g., Nestle breakfast cereal is fortified with five vitamins and two minerals (WHO/FAO Expert Consultation"). These are the

nutritional values and ingredients of products such as cereal, salt, and bran bread.

Fortified Bread as a Product Example

(“Ingredients List Of Fortified Dawn Bread – Google Search”)

Labelling and Evaluation of Fortified Foods

Nutritional and ingredient claims and the names of ingredients are mentioned clearly. Labeling and presentation are specific to the products. The accuracy and clarity of products are based on scientific evidence.

The food fortification technique has proved successful because it makes regularly used food more notorious without disturbing daily consumer habits. The main objective of fortified food is to supply such food, which is notorious, whereas it appropriately fulfills the nutritional deficiency. The consumption of food that has nutritional value prevents disease, makes a strong immune system, and improves cognitive development and productivity. The most common fortified foods nowadays include wheat, rice, and maize flour. Essential minerals and vitamins can be obtained by taking a balanced diet. Such food is consumed because

- To prevent nutritional anemia
- Increase the rate of productivity
- Reduce the risk of congenital disabilities of the brain and spine
- It is also responsible for the improvement of progress
- Physical activity and a healthy diet are necessary for a healthy lifestyle.
- Eat a proper or balanced diet to maintain the body’s physical activities.
- Food that is notorious should be consumed instead of supplements. When supplements are consumed, one should remember that an adequate amount should be consumed.
- When introducing fortification programs, take care of preventing overdose consumption.
- Assure that fortified food has more health benefits and has fewer health risks.
- In food fortification, complementary country-specific guidelines should be used and implemented.
- Implementation of such guidelines has a positive effect on the country’s economy.
- It also encourages proper food techniques to overcome the deficiency of nutrients in food.
- Campaign and programs are carefully performed to assure the proper use of these fortified food.

References:

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