NUTRITION AND ENVIRONMENTAL SANITATION

INTRODUCTION

Nutrition is the intake of food, considered in relation to the body's dietary needs. Good nutrition is an adequate, well balanced diet combined with regular physical activity. Poor nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity. Balanced nutrition includes drinking plenty of clean water and regularly eating foods from each of six food groups: grains, vegetables, fruits, milk products, meat and beans, and oils. These foods contain six kinds of nutrients: proteins, carbohydrates, fats, minerals, vitamins and water. A person should regularly eat or drink enough of all of these nutrients to grow and remain healthy. Food and drink must also be clean and free from disease-causing germs (bacteria, viruses, and parasites) to be healthy.

The human body needs nutrients to function. Nutrients are essential for maintaining normal bodily functions and preventing health problems. Our body uses different nutrients for different purposes, so it is important to provide our body with a balance of all essential nutrients. To ensure this, we should consume a balance of a wide variety of food types. That is because foods provide a number of other substances that keep us healthy. Good nutrition helps in lowering the risk of some chronic diseases. Diet and nutrition are important factors in the promotion

and maintenance of good health throughout the entire life course.

On the other side, sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and faeces. Inadequate sanitation is a major cause of disease world-wide and improving sanitation is known to have a significant beneficial impact on health both in households and across communities. The word ‘sanitation’ also refers to the maintenance of hygienic conditions, through services such as garbage collection and wastewater disposal. Sanitation is also the practice of sterilization, or making sure that microbes or germs do not get into contact with humans, animals, food or water, causing infectious and sometimes fatal diseases. It also involves disposing of waste pratoperly, so that it does not threaten the environment. Practicing proper hand washing and surface cleaning techniques are all part of best sanitation practices.

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ENVIRONMENTAL SANITATION

Environmental sanitation is a set of actions geared towards improving the quality of the environment and reducing the amount of disease. By doing so, the hope is that living conditions will improve and health problems will decrease. The concept of environmental sanitation involves the installation of toilets, especially in developing countries where open defecation takes place. Environmental sanitation is the control of environmental factors that form links in disease transmission. Subsets of the category are solid waste management, water and wastewater treatment, industrial waste treatment and noise and pollution control. According to the World Health Organization, the building and maintenance of safe, clean

toilets is paramount. Also part of environmental sanitation, is teaching proper hand washing techniques before handling food and after handling excrement.

The activities aim at improving or Maintaining the standard of basic environmental conditions affecting the well-being of people. These activities include

(1) clean and safe water supply,
(2) clean and safe ambient air,
(3) efficient and safe animal, human, and industrial waste disposal,
(4) protection of food from biological and chemical contaminants, and
(5) adequate housing in clean and safe surroundings.

Some of the subsets of the category of environmental sanitation are explained below:

1. WATER MANAGEMENT

The water supply can directly impact pollution and the spread of disease. The most common sources of water include groundwater and surface water; the main sources of groundwater are usually wells and springs, while surface water comes from fresh water sources like lakes and rivers. Both require treatment before being consumed because various chemicals, particles, and biological contaminants, like bacteria, can enter the water.

2. WASTE MANAGEMENT

People throw away a large amount of garbage, which is usually referred to as solid waste. In many countries, some form of solid waste management system has been put in place. Some common ways to dispose garbage include incineration, which is the burning of waste, or landfills, which are places to store waste.

3. INDUSTRIAL WASTE TREATMENT

Environmental sanitation is not limited to the pollution of water and the improper disposal of household waste. When factories or businesses dispose off chemical and physical waste in ways that directly affect the environment, it is often referred to as industrial pollution. While the actual dumping site may occur several miles away from a main source of water, drainage and rainfall can cause chemicals and physical waste to mix with the water supply and pollute it. Some countries have developed a system to properly disposing off industrial waste and help protect the environment (as with household waste) some of these systems incorporate incarceration and landfills into their management strategies.

4. AIR AND NOISE POLLUTION

Another factor of a healthy environment is air pollution that creates a negative effect in the environment. Air pollution can also affect a person's ability to breathe, which can potentially increase the number of lung and heart problems in the members of a community. Irritating and excessive noise in the environment can also cause anxiety attacks or lead to distractions, among other things, which can lead to accidents and other potentially hazardous situations.

HEALTH IMPACTS

For any social and economic development, adequate sanitation in conjunction with good hygiene and safe water are essential to good health. Lack of proper sanitation causes diseases. Most of the diseases resulting from sanitation have a direct relation to poverty. The lack of clean water and poor sanitation cause many diseases and the spread of diseases. It is estimated that inadequate sanitation is responsible for 4.0 percent of deaths and 5.7 percent of disease burden worldwide. Lack of sanitation is a serious issue that is affecting most developing countries and countries in transition. The importance of the isolation of excreta and waste lies in an effort to prevent diseases which can be transmitted through human waste, which afflict both developed countries as well as developing countries to differing degrees. It is estimated that about 5 million people die each year from preventable waterborne diseases as a result of inadequate sanitation and hygiene practices.

Diarrhea

Deaths resulting from diarrhea are happening all over the world. Most of the affected are young children below the age of five. Children suffering from diarrhea are more vulnerable to become underweight (due to stunted growth) which makes them more vulnerable to other diseases such as acute respiratory infections and malaria.

Open defecation or lack of sanitation is a major factor in causing various diseases, most notably diarrhea and intestinal worm infections. It can also lead to malnutrition and stunted growth in children. Open defecation is a leading cause of diarrheal death; 2,000 children under the age of five die every day, one every 40 seconds, from diarrhea. Diarrhea caused by poor sanitation, lack of hygiene, and unsafe drinking water, is the second leading cause for children's death globally. Worse yet, diarrheal disease inhibits nutrient absorption leading to starvation even if sufficient nutrition is consumed. Even if diarrhea does not outrightly leads to death repeated bouts during early childhood has negatively impacted the physical and cognitive development of a child.

Malnutrition and stunting

The combination of direct and indirect deaths from malnutrition caused by unsafe water, sanitation and hygiene (WASH) practices is estimated by the World Health Organisation to lead to 860,000 deaths per year in children under five years of age. The multiple interdependencies between malnutrition and infectious diseases make it very difficult to quantify the portion of malnutrition that is caused by infectious diseases which are in turn caused by unsafe WASH practices. However, based on expert opinions and literature surveys, researchers at WHO arrived at the conclusion that approximately half of all cases of malnutrition in children under five is associated with repeated diarrhoea or intestinal worm infections as a result of unsafe water, inadequate sanitation or insufficient hygiene.

Under-nutrition accounts for more than one third of child deaths around the world. When children are undernourished, they have lowered resistance to infection and are more likely to die from diarrheal diseases and respiratory infections. Frequent illness also saps the nutritional status of those who survive, locking them into a vicious cycle of recurring sickness and faltering growth. A reduced growth rate, known as stunting, is a primary manifestation of malnutrition in early childhood, particularly malnutrition during fetal development due to malnourished mothers. The

first 1,000 days of a child's life are critical in fetal and child development because children are especially vulnerable to the adverse and chronic effects of intestinal diseases brought on in part by poor water sanitation.

LIST OF DISEASES CAUSED BY LACK OF SANITATION

Relevant diseases and conditions caused by lack of sanitation include

- waterborne diseases, which can contaminate drinking water.
- Diseases transmitted by the faecal-oral route
- Infections with intestinal helminths (worms) - approximately two billion people are infected with soil-transmitted helminths worldwide; they are transmitted by eggs present in human faeces which in turn contaminate soil in areas where sanitation is poor.
- Stunted growth in children.
- Malnutrition, particularly in children.

The list of diseases that could be reduced with proper access to sanitation and hygiene practices is very long. For example in India, 15 diseases have been listed which could be stamped out by improving sanitation - Malnutrition, Ascariasis (a type of intestinal worm infection), Campylobacteriosis, Cholera, Cyanobacteria toxins, Dengue, Hepatitis, Japanese encephalitis (JE), Leptospirosis, Malaria, Ringworm or Tinea (a type of intestinal worm infection), Scabies, Schistosomiasis, Trachoma, Typhoid and paratyphoid enteric fevers. Polio is in fact another disease which is related to improper sanitation and hygiene.

WASH (Water, Sanitation and Hygiene) AND NUTRITION

Lack of WASH causes diarrheal disease and is associated with environmental enteropathy, an intestinal disease caused by chronic exposure to fecal bacteria. Both of these inhibit the absorption and use of calories and nutrients, causing under-nutrition. In turn, under-nutrition makes children more vulnerable to enteric infections like diarrheal disease. WASH and nutrition programs are both necessary to achieve improved health outcomes.

The World Health Organization (WHO) estimates that 50% of malnutrition is associated with recurrent bouts of diarrhea, which often result from unsafe water, insufficient sanitation, and inadequate hygiene. There is growing evidence that environmental enteropathy contributes to stunting through diverting energy toward fighting infection and away from growth.

Safe drinking water, adequate sanitation, and proper hygiene can prevent under-nutrition and stunting in children by inhibiting environmental enteropathy and diarrheal diseases. WASH can prevent protracted morbidity and reduce the 860,000 under-nutrition related child deaths that occur each year. WASH interventions can reduce diarrheal disease systematically by reducing the prevalence of early childhood stunting. The most effective interventions are likely to be those that combine both improved nutrition and infection control and prevention efforts.

CONCLUSION

Safe drinking water, proper sanitation, and hygiene can prevent under-nutrition and stunting in children. Reductions in diarrhoeal disease alone through safe Water, sanitation and hygiene (WASH) can prevent long-term morbidity and deaths caused by under-nutrition. Hand washing with soap, an element of hygiene programming, can reduce the incidence of diarrhoea. Access to safe drinking water nearby also reduces risk of diarrhoeal.

Hand washing, water quality treatment, sanitation, and hygiene are core interventions for maternal and child under-nutrition and survival. The most effective interventions for child growth and development are those that combine improved nutrition with prevention and control of intestinal infections. Water, sanitation and hygiene (WASH) play a fundamental role in improving nutritional outcomes. So, a successful global effort to tackle under-nutrition must include WASH.