

Block**3****FAMILY HEALTH CARE ISSUES AND CHALLENGES**

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BLOCK 3 FAMILY HEALTH CARE ISSUES AND CHALLENGES

Block 3 Consists of five units, these are as given below:

Unit 1- Nutrition and Malnutrition- This unit comprises of understanding nutrition, malnutrition and types of malnutrition, effects of malnutrition, treatment and prevention of malnutrition.

Unit 2- Mortality and Morbidity- This unit consists of mortality, morbidity: incidence, proportion, rate and prevalence, measures of mortality, mortality: during infancy and childhood mortality during adolescence and mortality during reproductive years.

Unit 3- Lifestyle Diseases- This unit comprises of major life style diseases: cvd (cardiovascular diseases),major life style diseases: diabetes, major life style diseases: cancer, and major life style diseases: chronic respiratory diseases.

Unit 4- Environment Pollution and Health Hazards- This unit consists of kinds of pollution and factors of environmental problems, main causes of environmental pollution, 4 environmental pollution and health hazards and prevention of environmental pollution.

Unit 5- Mental Health- This unit consists of mental health: concept, stigma and mental illness mental disorders, types of mental disorders and ways to improve mental health.

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UNIT 1 NUTRITION AND MALNUTRITION

Structure

- 1.1 Introduction
- 1.2 Understanding Nutrition
- 1.3 Malnutrition and Types of Malnutrition
- 1.4 Effects of Malnutrition
- 1.5 Treatment and Prevention of Malnutrition
- 1.6 Let Us Sum Up
- 1.7 References and Selected Readings
- 1.8 Check Your Progress –Possible Answers

1.1 INTRODUCTION

Nutrition is all about the study of food and how our bodies use it as fuel for growth, reproduction and maintenance of health. Nutrition comprises the process of providing the nutrients needed for health, growth, development and survival. Food is any substance (solid, semi-solid, or liquid) taken into the body to provide one or more nutrients.

Nutrition is a critical part of health and development. Better nutrition is related to improved infant, child and maternal health, stronger immune systems, safer pregnancy and childbirth, lower risk of non-communicable diseases (such as diabetes and cardiovascular disease), and longevity. Healthy children learn better. People with adequate nutrition are more productive and can create opportunities to gradually break the cycles of poverty and hunger.

Malnutrition is an imbalance between the nutrients your body needs to function and the nutrients it gets. Malnutrition, in every form, presents significant threats to human health. Today the world faces a double burden of malnutrition that includes both under nutrition and overweight, especially in low- and middle-income countries. There are multiple forms of malnutrition, including under nutrition (wasting or stunting), inadequate vitamins or minerals, overweight, obesity, and resulting diet-related non-communicable diseases.

After reading this unit, you will be able to-

- Understand nutrition
- Explain types of malnutrition
- Describe effects of malnutrition
- Suggest treatment and prevention of malnutrition

1.2 UNDERSTANDING NUTRITION

Nutrition is the science of food and health. It studies how we obtain nutrients from food and the effect it has on our bodies. Good nutrition is the bedrock of child survival and development. Well-nourished children are better able to grow, learn, play and participate in their communities. They are also more resilient in the face of crisis.

1.2.1 What is a balanced diet?

Balanced eating can be summed up in one word: variety! Not only eating from a variety of food groups, but also a variety of food within those food groups. Each food group provides important and vital macro and micro-nutrients that are essential for growth, development and body function. Balanced diet consists of the following-

a. Proteins

Foods containing protein are an essential part of balanced eating. On a portion plate, the protein comprise 1/4 of the meal. Amino acids found in proteins provide structure for muscle tissue, bone and skin. Protein is essential for life sustaining chemical reactions in the body, internal communication of cells, immune support, and is a source of energy and regulation. Our main dietary source of protein is from meat, eggs, legumes, nuts, and seeds.

b. Vegetables

Vegetables are important in a balanced diet, as they provide essential micronutrients necessary for development and function. Studies repeatedly show people who eat a diet high in vegetables have fewer rates of chronic diseases. Vegetables are plant food such as carrots, broccoli, cauliflower, peppers, squash, string beans, kale, and lettuce. It's important to eat a variety of vegetables as each sub-group of veggies, by color provide different nutrients. You can also increase the variety of veggies by cooking them in a variety of ways. Roasted, sauteed, steamed, baked, or raw can all taste so different and help you to find a way you enjoy a certain vegetable.

c. Fruits

Fruits help make a balanced diet as a healthy, whole food source of carbohydrates, fiber, and micronutrients. Fruit is rich in potassium, vitamin C, and folate. The fiber in fruit is vital for healthy digestive functioning. Fruit includes such foods as bananas, apples, strawberries, blueberries, grapefruit, oranges, watermelon and more.

d. Grains

Grains are considered essential to optimal health. Grains are a great source of energy in the form of carbohydrates, as well as B Vitamins. Whole grains can provide a good source of fiber and can be of benefit by providing a good environment for healthy bacteria to grow.

e. Dairy

Dairy made the list of a food group to have a balanced diet because it still is considered an easy, convenient food group to get essential calcium to build bones. Dairy also includes phosphorus, potassium, magnesium, and vitamins A, B12, and riboflavin. Dairy includes milk, cheese, and yogurt.

Many non-dairy plant based milks on the market today are fortified with calcium and vitamin D, making them also a good source of “dairy” for those who may be lactose intolerant.

1.3 MALNUTRITION AND TYPES OF MALNUTRITION

1.3.1 Malnutrition

Malnutrition is an imbalance between the nutrients your body needs to function and the nutrients it gets. It can mean undernutrition or overnutrition. You can be malnourished from an overall lack of calories, or you might have a protein, vitamin or mineral deficiency. You might also have more excess calories than your body knows what to do with.

Your body needs a variety of nutrients, and in certain amounts, to maintain its tissues and its many functions. Malnutrition happens when the nutrients it gets don't meet these needs. You can be malnourished from an overall lack of nutrients, or you may have an abundance of some kinds of nutrients but lack other kinds. Even the lack of a single vitamin or mineral can have serious health consequences for your body. On the other hand, having an excess of nutrients can also cause problems.

1.3.2 What are the types of malnutrition?

Malnutrition can mean under nutrition or over nutrition. It can also mean an imbalance of macronutrients (proteins, carbohydrates, fats) or micronutrients (vitamins and minerals).

i. Under nutrition

Under nutrition is what most people think of when they think of malnutrition. Under nutrition is a deficiency of nutrients. You may be undernourished if you don't have an adequate diet, or if your body has trouble absorbing enough nutrients from your food. Under nutrition can cause visible wasting of fat and muscle, but it can also be invisible. You can be overweight and undernourished.

ii. Macronutrient under nutrition

Also called protein-energy under nutrition, this is a deficiency of macronutrients: proteins, carbohydrates and fats. Macronutrients are the main building blocks of your diet, the nutrients that your body relies on to produce energy to maintain itself. Without them — or even just one of them — your body soon begins to fall apart, breaking down tissues and shutting down nonessential functions to conserve its low energy.

iii. Micronutrient under nutrition

Micronutrients are vitamins and minerals. Your body needs these in smaller amounts, but it does need them, for all types of functions. Many people are mildly deficient in certain vitamins and minerals from a lack of variety in their diet. You might not notice a mild vitamin deficiency affecting you, but as micronutrient under nutrition becomes more severe, it can begin to have serious and lasting effects.

iv. Over nutrition

The World Health Organization has recently added over nutrition to its definition of malnutrition to recognize the detrimental health effects that can be caused by excessive consumption of nutrients. This includes the effects of overweight and obesity, which are strongly associated with a list of non communicable diseases (NCDs). It also includes the toxicity that can result from overdosing specific micronutrients.

v. Macronutrient over nutrition

When your body has an excess of protein, carbohydrate and/or fat calories to use, it stores them away as fat cells in your adipose tissue. But when your body runs out of tissue for storage, the fat cells themselves have to grow. Enlarged fat cells are associated with chronic inflammation and with a host of metabolic disorders that follow. These can lead to NCDs such as diabetes mellitus, coronary artery disease and stroke.

vi. Micronutrient over nutrition

You can actually overdose on vitamin and mineral supplements. In general, micronutrient over nutrition is uncommon and doesn't occur from diet alone. But if you take mega doses of certain supplements, it can have toxic effects.

At least one in three children under 5 is affected by malnutrition in its most visible forms: stunting, wasting and overweight.

- i. **Stunting-** Children affected by stunting are too short for their age, and their brains may never develop to their full cognitive potential, hindering their ability to learn as children, earn as adults, and contribute fully to their societies.
- ii. **Wasting-** Children with wasting are desperately thin, have weakened immune systems, and face an increased risk of death. They require urgent treatment and care to survive.
- iii. **Overweight-** As global food systems shift and the consumption of processed foods high in fat, sugar and salt increases, childhood overweight is on the rise in every region of the world, particularly in middle-income countries.

Less visible forms of malnutrition, such as hidden hunger, can occur when children become deficient in essential vitamins and other micronutrients. Today, many countries are facing a double or triple burden of malnutrition – with concurrent problems of stunting, wasting, micronutrient deficiencies, and overweight. From pregnancy, through childhood, and in adolescence, poor diets are a leading cause of malnutrition in all its forms.

In this section, you have studied understanding nutrition, malnutrition and types of malnutrition. Now, answer the question given in check your progress 1.

Check Your Progress 1

Note: a) Answer the following questions in about 50 words.

- b) Check your answer with possible answers given at the end of the unit.

1. What do you understand by nutrition and malnutrition?

2. Explain briefly anyone type of malnutrition?

1.4 EFFECTS OF MALNUTRITION

In its broadest sense, malnutrition can affect anyone. Lack of knowledge of nutrition, lack of access to a variety of foods, sedentary modern lifestyles and economic disadvantages are all common contributors to malnutrition. Certain populations are more at risk of certain types of malnutrition. Malnutrition in children, adolescents, and women can impair health, educational attainment, and increase the likelihood of low birth weight children. For example, insufficient iron can cause anaemia, particularly in pregnant women, and can lead to pregnancy complications.

1.4.1 Populations more at risk of under nutrition include:

- **Poor and low income-** Whether in a developed country like the U.S. or in developing countries with fewer resources overall, poorer communities have less access to adequate nutrition.
- **Children-** Children have greater nutritional needs than adults in order to grow and develop. Disadvantaged children are especially at risk of under nutrition and its consequences.
- **Chronically ill-** Many chronic illnesses can directly affect appetite and/or calorie absorption. Some increase your caloric needs. Spending time in the hospital is also a risk factor for under nutrition.
- **Elderly-** As adults advance in age, their nutrition can deteriorate for several reasons, including reduced mobility, institutionalization, reduced appetite and reduced absorption of nutrients.

1.4.2 Populations more at risk of over nutrition include:

- **Poor and low income-** In developed countries, poorer communities often have easier access to fast foods, which are high in calories but low in nutritional value, than they have to nutritious whole foods. This can lead to macronutrient over nutrition with micronutrient under nutrition.
- **Sedentary-** Desk jobs, family obligations, health and social factors that keep people sitting all day instead of out and moving about can lead to significant weight gain.

1.4.3 What happens to the body during malnutrition?

Macronutrient under nutrition (protein-energy under nutrition) deprives your body of energy to sustain itself. To compensate, it begins breaking down its own tissues and shutting down its functions. This begins with its

body fat stores and then proceeds to muscle, skin, hair and nails. People with protein-energy under nutrition are often visibly emaciated. Children may have stunted growth and development. One of the first systems to begin to shut down is the immune system. This makes undernourished people highly prone to illness and infection and slower to recover. Wounds take longer to heal. Cardiac activity also slows down, leading to low heart rate, low blood pressure and low body temperature. People may feel faint, weak and apathetic about life. They may lose appetite, and parts of their digestive system can atrophy.

People who have macronutrient under nutrition are likely to also have micronutrient under nutrition. When overall calories are lacking, that affects vitamin and mineral levels too. Some of the complications of severe under nutrition conditions, such as marasmus and kwashiorkor, result from particular vitamin deficiencies. For example, vitamin A deficiency can cause vision problems, and vitamin D deficiency can cause soft bones.

Some people may consume a lot of calories, but not enough vitamins and minerals. In these cases, the effects of malnutrition may be less obvious. People may be overweight from macronutrient over nutrition but may have symptoms of anemia — weakness, faintness and fatigue — due to the lack of minerals or vitamins. People who have over nutrition may show symptoms of metabolic syndrome, such as insulin resistance and high blood pressure.

1.5 TREATMENT AND PREVENTION OF MALNUTRITION

1.5.1 Treatment of Malnutrition

a. Under nutrition is treated with nutritional supplements. This might mean individual micronutrients, or it might mean refeeding with a custom, high-calorie nutritional formula designed to restore everything your body is missing. Severe under nutrition can take weeks of refeeding to correct. But refeeding can be dangerous, especially in the first few days. Your body changes in many ways to adapt to under nutrition. Refeeding asks it to change back to its old way of operating, and sometimes that change is more than it's prepared to handle. It's best to begin refeeding under close medical observation to prevent and manage the complications of refeeding syndrome, which can be serious and even life-threatening.

b. Over nutrition is generally treated with weight loss, diet and lifestyle changes. Losing extra weight can help reduce your risk of developing secondary conditions such as diabetes and heart disease. Weight loss treatment may include diet and exercise plans, medications or medical procedures. You may also need to treat an underlying condition, such as thyroid disease, or a mental health disorder. Weight loss can be rapid or it can be long and gradual, depending on the path you take. But after you lose weight, it's the lifestyle changes you stick with that will help keep it off. This may involve long-term support systems such as counseling, behavioral therapy, support groups and education in nutrition.

1.5.2 Prevention of Malnutrition

Malnutrition is a global problem. In both the developed world and the developing world, poverty and a lack of understanding of nutrition are the leading causes. We can help control the disease of malnutrition with better worldwide education and support for the disadvantaged, including access to clean water, nutritious whole foods and medicine. Children and elders who may not be able to advocate for themselves are especially at risk and may need closer attention paid to their diet and health condition. The best way to prevent malnutrition is to eat a well-balanced diet with a variety of nutritious whole foods in it. If you have enough of all the nutrients your body needs, you will be less likely to overeat trying to satisfy those needs. Some micronutrient deficiencies are common even with a fairly standard diet. A blood test is one way to find out if you could benefit from micronutrient supplements. Your healthcare provider can help you determine the correct dose to take.

In this section, you have studied effects of malnutrition and treatment and prevention of malnutrition. Now, answer the question given in check your progress 2 .

Check Your Progress 2

Note: a) Answer the following questions in about 50 words.

b) Check your answer with possible answers given at the end of the unit.

1. Briefly explain the effects of malnutrition?

2. Explain anyone way to prevent malnutrition?

1.6 LET US SUM UP

Nutrition is about healthy eating. This means regularly choosing healthy foods and beverages. A healthy eating plan should give your body the energy and nutrients that you need every day. Nutrients include proteins, carbohydrates, fats, vitamins, minerals, and water. Malnutrition refers to deficiencies or excesses in nutrient intake, imbalance of essential nutrients or impaired nutrient utilization. The double burden of malnutrition consists of both under nutrition and overweight and obesity, as well as diet-related non communicable diseases. One should take every measure to have enough nutrition so that problems of malnutrition does not occur.

1.7 REFERENCES AND SELECTED READINGS

<https://my.clevelandclinic.org/health/diseases/22987-malnutrition>

<https://www.unicef.org/nutrition>

1.8 CHECK YOUR PROGRESS–POSSIBLE ANSWERS

Check Your Progress 1

1. What do you understand by nutrition and malnutrition?

Answer: Nutrition is all about the study of food and how our bodies use it as fuel for growth, reproduction and maintenance of health. Malnutrition is an imbalance between the nutrients your body needs to function and the nutrients it gets.

2. Explain briefly anyone type of malnutrition?

Answer: Under nutrition is what most people think of when they think of malnutrition. Under nutrition is a deficiency of nutrients. You may be undernourished if you don't have an adequate diet, or if your body has trouble absorbing enough nutrients from your food. Under nutrition can cause visible wasting of fat and muscle, but it can also be invisible. You can be overweight and undernourished.

Check Your Progress 2

1. Briefly explain the effects of malnutrition?

Answer: Malnutrition in children, adolescents, and women can impair health, educational attainment, and increase the likelihood of low birth weight children. For example, insufficient iron can cause anaemia, particularly in pregnant women, and can lead to pregnancy complications.

2. Explain anyone way to prevent malnutrition?

Answer: The best way to prevent malnutrition is to eat a well-balanced diet with a variety of nutritious whole foods in it. If you have enough of all the nutrients your body needs, you will be less likely to overeat trying to satisfy those needs.

UNIT 2 MORTALITY AND MORBIDITY

Structure

- 2.1 Introduction
- 2.2 Mortality
- 2.3 Morbidity: Incidence, Proportion, Rate and Prevalence
- 2.4 Measures of Mortality
- 2.5 Mortality : During Infancy and Childhood
- 2.6 Mortality : During Adolescence
- 2.7 Mortality During Reproductive Years
- 2.8 Let Us Sum Up
- 2.9 References and Selected Readings
- 2.10 Check Your Progress-Possible Answers

2.1 INTRODUCTION

Morbidity is the state of having a specific illness or condition. While morbidity can refer to an acute condition, such as a respiratory infection, it often refers to a condition that's chronic (long-lasting). Some examples of common morbidities include- diabetes, high blood pressure (hypertension), heart disease, obesity, lung diseases, such as asthma and chronic obstructive pulmonary disorder (COPD), stroke, chronic kidney disease, infections such as the flu, COVID-19, and HIV, cancer, Alzheimer's disease, mental health conditions such as anxiety and depression

Mortality is the branch of demography that studies rates and causes of deaths for a population as a whole.

After reading the unit, you will be able to-

- Understand what mortality and morbidity is
- Explain morbidity: incidence, proportion, rate and prevalence
- Analyze measures of mortality
- Describe mortality in infancy, childhood and adolescence

2.2 MORTALITY

Mortality refers to the number of deaths, particularly on a large scale in a population or geographical region being studied. It is expressed in terms of deaths per 1,000 people.

Mortality rate or death rate is a measure of the number of deaths (in general, or due to a specific cause) in a particular population, scaled to the size of

that population, per unit of time. Mortality rate is typically expressed in units of deaths per 1,000 individuals per year; thus, a mortality rate of 9.5 (out of 1,000) in a population of 1,000 would mean 9.5 deaths per year in that entire population, or 0.95% out of the total.

i. What is excess mortality?

Generally speaking, the number of deaths remains relatively consistent in many populations from year to year. However, deaths can increase when events such as disease outbreaks, natural disasters, or wars occur. Simply put, excess mortality is a comparison of the number of expected deaths versus the number of deaths that actually occurred. During COVID-19, it was a cause of excess mortality throughout the world.

ii. The bottom line

Morbidity and mortality are two terms that are commonly used in epidemiology. While they're related, they refer to different things. Morbidity and mortality are often expressed as a proportion or rate. Morbidity is when you have a specific illness or condition. Some examples of common morbidities are heart disease, diabetes, and obesity. You can have more than one morbidity at a time. When this happens, it's called co morbidity. Mortality is the number of deaths due to a specific illness or condition. For the year 2020, COVID-19 will also be a significant cause of mortality.

2.3 MORBIDITY: INCIDENCE, PROPORTION, RATE, PREVALENCE

- i. **Incidence:** Incidence refers to the occurrence of new cases of an illness or condition within a population over a defined period of time. It can be expressed as a proportion or a rate.
- ii. **Proportion:** An incidence proportion can be used to estimate the risk for developing a specific condition during a given time period. It's calculated by dividing the number of new cases during a specific period by the population at the start of the period. For example, let's say that 10 people became ill with food poisoning after eating undercooked chicken at a backyard barbecue. If 40 people attending the barbecue ate the chicken, the risk of food poisoning would be 25 percent.
- iii. **Rate:** The incident rate is the number of new cases of a disease within an at-risk population. This helps determine how quickly a disease is spreading. It's often expressed in units of population, such as "per 100,000 people." For example, say you're studying a population of 800,000 people at risk for developing hepatitis C. After 1 year, you find that 500 of those people have tested positive for the disease". To calculate the incident rate, you'll divide the 500 cases by the population of 800,000. You can then say that the incident rate of hepatitis C in this population is 0.000625, or 62.5 cases per 100,000 people per year.

- iv. **Prevalence:** Prevalence is the proportion of a population that has a condition or illness. Unlike incidence, it includes both new and existing cases. It can either be calculated at a specific point in time or over a specified period of time.

2.4 MEASURES OF MORTALITY

- (i) Crude Death Rate is the ratio between the number of live births in a population during a given year and the total mid-year population for the same year, usually multiplied by 1,000.

The crude death rate is calculated by dividing the number of registered deaths in a year by the mid-year population for the same year. The rate is expressed as per 1,000 population.

$$\text{Crude Death rate} = \frac{\text{Total number of deaths}}{\text{Total mid-year population}} \times 1000$$

This rate has a simple interpretation, for it gives the number of deaths that occur, on the average, per 1,000 people in the community. Further, it is relatively easy to compute, requiring only the total population size and the total number of deaths. Besides, it is a probability rate in the true sense of the term. It represents an estimate of the chance of dying for a person belonging to the given population, because the whole population may be exposed to the risk of dying of something or the other. However, it has also some serious drawbacks. In using the CDR, we ignore the fact that the chance of dying is not the same for the young and the old or for males and females, and the fact that it may also vary with respect to race, occupation or locality of dwelling.

- (ii) Specific Death Rate: is the number of deaths from a specified cause per 100,000 person-years at risk. The numerator is typically restricted to resident deaths in a specific geographic area (country, state, county, etc.).

$$\text{Cause - specific death rate} = \frac{\text{Total number of deaths due to some particular cause}}{\text{Total mid - year population}}$$

The rates could be made specific to sex by selecting the numerator and the denominator for each sex of the population.

In this section, you have studied, mortality morbidity: incidence, proportion, rate prevalence, mortality, measures of mortality. Now, answer the question given in check your progress 1.

Check Your Progress 1

Note: a) Answer the following questions in about 50 words.

- b) Check your answer with possible answers given at the end of the unit.

1. What is Morbidity and Mortality?

2. Briefly explain Crude Death Rate and Specific Death Rate?

2.5 MORTALITY : DURING INFANCY AND CHILDHOOD

Notwithstanding the recent declines in mortality in children, some 6.8 million boys and girls die prematurely and childhood remains a time of vulnerability to a wide range of health risks. Globally, deaths among children of both sexes below the age of five were mainly due to infectious diseases and complications associated with pregnancy and childbirth. In 2010, the five leading causes of deaths in children under five years old globally were;

- i. Lower respiratory infections
- ii. preterm birth complications
- iii. diarrheal diseases
- iv. Malaria and
- v. neonatal sepsis.

There are important regional variations however. For example, in high-income countries, and in countries of Southeast Asia, East Asia and Oceania, drowning and road traffic injuries were among the 10 leading causes of death in young children. By contrast, in sub-Saharan Africa, mortality in children continued to be dominated by infectious diseases, notably malaria, diarrheal diseases, meningitis and HIV/AIDS, along with peri natal conditions such as preterm birth complications and neonatal sepsis.

In most parts of the world, the two decades between 1990 and 2010 have seen dramatic declines in the proportion of infant and child deaths in infancy and childhood caused by infectious diseases. For example, in Latin America and the Caribbean in 1990, the leading cause of mortality in girls under five was diarrheal diseases; by 2010, this cause ranked only 6th, deaths having fallen from over 50,000 in 1990 to around 7,000 in 2010.

In North Africa and the Middle East, there have been significant declines in the proportion of female deaths due to both diarrheal diseases and protein-energy malnutrition.

Southeast Asia, the Pacific and Oceania saw important declines in the proportion of deaths among girls due to measles and tetanus.

In sub-Saharan Africa, measles dropped from the 5th leading cause of death

in girls to the 13th. On the other hand, sub-Saharan saw big increases in the proportion of deaths in children due to malaria and HIV/AIDS as well as complications associated with childbirth.

In general, because of their inherent biological advantage, girls are usually less likely to die in childhood than boys are. However, they also face social, cultural and gender-based disadvantages that place their health at risk.

Historically, in countries such as Bangladesh, China, India, Nepal and Pakistan, mortality rates in children under five were higher among girls than boys. In recent years, however, the female disadvantage has lessened in most countries. Nonetheless, data from household surveys indicate that this female disadvantage has tended to persist in India and may have worsened in some other countries such as Nepal and Pakistan. By contrast, recently released data for Bangladesh show that the gap has narrowed significantly over time and females under five years currently have lower mortality rates than males. In some settings, societal discrimination against females and parental preference for sons result in skewed sex ratios.

In India, for instance, the 2001 census recorded only 93 girls per 100 boys – a sharp decline from 1961 when the number of girls was nearly 98. In some parts of India there are fewer than 80 girls for every 100 boys. Low sex ratios have also been recorded in other Asian countries – most notably China where, according to a survey in 2005, only 84 girls were born for every 100 boys. This was slightly up from 81 during 2001–2004, but much lower than 93 girls per 100 boys as shown among children born in the late 1980s.

Female genital mutilation (FGM) affects some 3 million girls in Africa each year. It is estimated that 92.5 million girls and women above the age of 10 years in Africa are living with the consequences of FGM. Although available data are incomplete, it appears that there have been small decreases in the extent of FGM in recent years. However, the data indicate a growing tendency for FGM to be carried out by health professionals, a decline in the average age at which FGM is performed, and a marked increase in the proportion of girls who undergo FGM before the age of five years. Many of the health problems faced by adult women have their origins in childhood. Addressing the health needs of infants and children, preventing malnutrition, abuse and neglect and ensuring a supportive environment in early childhood will help girls to achieve optimal physical, social and emotional development and will avoid a significant burden of disease associated with chronic diseases, including mental health disorders and substance abuse, later in life.

2.6 MORTALITY: DURING ADOLESCENCE

For young women, adolescence is usually a time of low mortality, good health, and opportunities for growth and development. But this is also a time of major physical, social and emotional changes and can present risks, particularly in terms of sexual activity and substance use. Girls need support to deal with these changes and avoid becoming vulnerable to behaviors that put their future health at risk. The health of adolescents today, and the risks to which they are exposed, set the stage for their health and development as they mature into adults.

2.6.1 Mortality in Developing and Underdeveloped countries

The highest rates of mortality in adolescent girls are found in Africa and South-East Asia. In developing countries as a whole in 2010, the leading causes of death among adolescent girls aged 15-19 years old were, in rank order:

self-harm, maternal disorders, road traffic injuries, Malaria, fire-related injuries, HIV/AIDS, respiratory infections, diarrheal diseases tuberculosis and Interpersonal violence.

In sub-Saharan Africa, communicable diseases including HIV/AIDS were important causes of death in young women along with maternal causes. In more developed countries, the pattern was quite different; the leading causes of death among adolescent girls included external causes (road injuries, self-harm and interpersonal violence) as well as non communicable conditions such as leukemia, congenital anomalies, drug use and brain cancer. The prominence of self-harm among the leading causes of death among adolescent girls is a stark reminder of the vulnerability of young people as they navigate the passage from childhood to adulthood. Since adolescence is a time of social, emotional and physical change, it is perhaps not surprising to find that young women are at significant risk of mental health problems such as unipolar depressive disorders, schizophrenia and bipolar disorders. A striking recent development has been the growing importance of interpersonal violence as a cause of death among adolescents.

In Central Latin America, interpersonal violence is the leading cause of death among 15-19 year old girls. In Southern sub-Saharan Africa, interpersonal violence ranks second only to HIV/AIDS as the leading cause of death among female adolescents. Pregnancy and childbirth can be risky for very young adolescents.

Although adolescent birth rates have been declining globally they remain high in parts of Africa and Asia. Some 38% of girls in developing countries, notably in Asia, marry before the age of 18, and 14% before the age of 15. Adolescent pregnancy is more common in those who living in poverty, in rural areas, and among the less educated. In developing countries, complications of pregnancy and childbirth are the leading cause of death in young women aged between 15 and 19 years. About 15% of total maternal deaths worldwide, and 26% in Africa, occur among adolescents.

2.6.1 Effects of adolescents child bearing

The adverse health effects of adolescent childbearing are reflected in the poor health of their infants: perinatal deaths (stillbirths and deaths within the first week after birth) are 50% higher among babies born to mothers under 20 years of age than among those born to mothers aged 20–29 years. Because many adolescents face unwanted pregnancy, rates of unsafe abortion among young women are high: in sub-Saharan Africa, which has the highest burden of ill-health and death from unsafe abortion, one in four unsafe abortions is among adolescents aged 15– 19 years. Even when they do not result in death, the immediate and long-term health consequences of unsafe abortions – which include haemorrhage, reproductive tract infections and infertility – can be severe.

2.6.2 HIV and Adolescents

In 2010, about 3.2 million women 15–24 years old were living with HIV. Young women are particularly vulnerable to HIV infection, due to a combination of biological factors, lack of access to information and services, and social norms and values that undermine their ability to protect themselves. Their vulnerability may increase during humanitarian crises and emergencies when economic hardship can lead to increased risk of exploitation such as trafficking and increased reproductive health risks related to the exchange of sex for money and other necessities. Because young women tend to have sex with older men who are more sexually experienced and more likely to be infected with HIV, adolescent girls are much more likely to be infected than young men of the same age. The discrepancy is most stark in sub-Saharan Africa where, in 2010, 71% of the people 15–24 years old living with HIV were women. Eliminating new HIV infections among children requires ensuring that HIV prevention services reach this population and keep adolescent girls HIV-negative. Unsafe sexual activity is not the only important risk to health for adolescent girls.

In high-income countries, neuropsychiatric conditions such as unipolar depressive disorders, schizophrenia and bipolar disorders are responsible for a large share of the burden of ill-health among female adolescents. The risk factors driving these disorders go well beyond adolescent identity crises or peer pressure; they include exposure to violence (childhood sexual abuse, parental domestic violence, corporal punishment at school, bullying and sexual coercion), the devaluation or restriction of girls' opportunities, and poverty (especially where this affects the adolescent's ability to attend school).

2.6.3 Remedies for Adolescents Mortality

It is important to ensure that adolescent girls have access to both primary and secondary education, including comprehensive skill based sex education, and opportunities for adequate diet and physical activity. They need protection from early marriage, exploitation and abuse, including the prevention of intimate partner violence and sexual violence. Furthermore, female adolescents need to be able to access and use health services, particularly for sexual, reproductive and mental health care. Policy measures to limit tobacco and alcohol use and to improve road safety are important. Improved age and sex disaggregation of health information and intervention research will help to highlight the particular needs of adolescent girls and the approaches to address them. Societies as a whole must provide the support that girls need to deal successfully with the physical and emotional changes of adolescence and to make a healthy transition to adulthood.

2.7 MORTALITY DURING REPRODUCTIVE YEARS

For many women, the years between puberty and menopause (roughly the ages of 12/15 to 45/49 years respectively) offer multiple opportunities for personal fulfillment and development. However, this can also be a time of health risks associated with sex and reproduction that may result in a

significant burden of mortality and disability. The burden of ill-health in this age group is particularly high in Africa due to high rates of mortality and disability associated with HIV/AIDS and pregnancy-related conditions. Patterns of mortality during the reproductive years differ greatly between low-income countries and high-income ones. In the latter, the three leading causes of female deaths are, in rank order

breast cancer, self-harm and road traffic injuries

Together these account for more than one in every four deaths. In contrast, the three leading causes of death in low income countries are

- i. HIV/AIDS
- ii. maternal conditions and
- iii. tuberculosis

Which together account for one in every two deaths. Maternal mortality (i.e. the death of a woman during pregnancy, delivery or the postpartum period) is a key indicator of women's health and status, and shows most poignantly the difference between rich and poor, both between countries and within them. Estimates vary, but around a quarter of a million maternal deaths occur every year and, of these, 99% happen in developing countries. Given appropriate care, maternal mortality should be a very rare event. In high-income countries there are on average 16 maternal deaths per 100 000 live births, whereas this figure averages 410 per 100 000 live births in low income countries. Where high fertility is the norm, women face such risks with each pregnancy. Thus, a woman in sub-Saharan Africa may face a lifetime risk of death during pregnancy and childbirth as high as one in 46, compared with only one in 3,800 in developed regions. Unsafe abortion causes a significant proportion of maternal deaths. Again estimates vary, but globally, around 21.6 million women experience an unsafe abortion worldwide each year 18.5 million of which take place in developing countries . An estimated 47 000 women die from complications of unsafe abortion each year and deaths due to unsafe abortion remain close to 13% of all maternal deaths. The evidence shows that women who seek an abortion will do so regardless of legal restrictions. Abortions performed in an illegal context are likely to be unsafe and provided by unskilled persons in unhygienic conditions. Poor women and those affected by crises and conflicts are particularly at risk. The use of modern contraception has reduced the need for induced abortion, yet women, especially when they are young or unmarried, often face difficulty in obtaining contraception. Women's ability to plan the number and timing of the children they bear has greatly reduced the health risks associated with pregnancy and is an important success story. The use of contraception in developing countries rose from 8% in the 1960s to 62% in 2007. Even so, significant unmet needs remain in all regions. For instance, in sub-Saharan Africa, one in four women who wish to delay or stop childbearing does not use any family planning method. Reasons for non-use include poor quality of available services, limited choice of methods, fear or experience of side-effects, and cultural or religious opposition.

In this section, you have studied mortality: infancy and childhood, mortality:

adolescence and mortality during reproductive years. Now, answer the question given in check your progress 2.

Check Your Progress 2

Note: a) Answer the following questions in about 50 words.

b) Check your answer with possible answers given at the end of the unit.

1. What are the five leading causes of deaths in children under five years old globally ?

2. Briefly explain the causes of deaths among adolescence in developing countries?

2.8 LET US SUM UP

Morbidity and mortality are two terms that are commonly used in epidemiology. While they are related, they refer to different things. Morbidity and mortality are often expressed as a proportion or rate. Morbidity is when you have a specific illness or condition. Some examples of common morbidities are heart disease, diabetes, and obesity. You can have more than one morbidity at a time. Mortality refers to the number of deaths that have occurred due to a specific illness or condition.

2.9 REFERENCES AND SELECTED READINGS

<https://www.healthline.com/health/morbidity-vs-mortality#morbidity>

<https://www.unfpa.org/sites/default/files/resource-pdf/Overview.pdf>

2.10 CHECK YOUR PROGRESS-POSSIBLE ANSWERS

Check Your Progress 1

1. What is Morbidity and Mortality?

Answer: Morbidity is when you have a specific illness or condition. Mortality refers to the number of deaths that have occurred due to a specific illness or condition.

2. Briefly explain Crude Death Rate and Specific Death Rate?

Answer: Crude Death Rate is the ratio between the number of live births in a population during a given year and the total mid-year population for the same year, usually multiplied by 1,000.

Specific Death Rate: is the number of deaths from a specified cause per 100,000 person-years at risk. The numerator is typically restricted to resident deaths in a specific geographic area (country, state, county, etc.).

Check Your Progress 2

- 1. What are the five leading causes of deaths in children under five years old globally ?**

Answer: The five leading causes of deaths in children under five years old globally are:

Lower respiratory infections preterm birth complications diarrheal diseases Malaria and neonatal sepsis.

- 2. Briefly explain the causes of deaths among adolescence in developing countries?**

Answer: The leading causes of deaths among adolescents in developing countries are:

Self-harm

Maternal disorders

Road traffic injuries

Malaria

Rire-related injuries

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UNIT 3 LIFESTYLE DISEASES

Structure

- 3.1 Introduction
- 3.2 Major Life Style Diseases: CVD (Cardiovascular Diseases)
- 3.3 Major Life Style Diseases: Diabetes
- 3.4 Major Life Style Diseases: Cancer
- 3.5 Major Life Style Diseases: Chronic Respiratory Diseases
- 3.6 Let Us Sum Up
- 3.7 References and Selected Readings
- 3.8 Check Your Progress –Possible Answers

3.1 INTRODUCTION

Lifestyle diseases are ailments that are primarily based on the day to day habits of people. Habits that detract people from activity and push them towards a sedentary routine can cause a number of health issues that can lead to chronic non-communicable diseases that can have near life-threatening consequences.

3.2 MAJOR LIFESTYLE DISEASES: CVD (CARDIOVASCULAR DISEASES)

There are four major lifestyle diseases: CVD (Cardiovascular diseases), Diabetes, Cancer, Chronic Respiratory Diseases.

1. **CVD (Cardiovascular diseases)**- they are a group of disorders of the heart and blood vessels and may include:
 - a. Ischaemic heart disease/Coronary heart disease (CHD):
 - b. Stroke/Cerebrovascular disease
 - c. Peripheral arterial disease
 - d. Congenital heart disease

CVDs are the number 1 cause of death globally and account for more than 17 million deaths per year. The number is estimated to rise by 2030 to more than 23 million a year. It is estimated that by 2030, CVD will be responsible for more deaths in low income countries than infectious diseases, maternal and perinatal conditions, and nutritional disorders combined. CVDs are the face of lifestyle diseases and manifest in a number of ways, such as:

a. Coronary heart disease (CHD): Also known as coronary heart disease and ischaemic heart disease, CHD is one of the most common types of heart

problems faced today and is characterized by a reduction or blockage in the flow of oxygen-rich blood to the heart muscle. This puts exaggerated strain on the heart, which can lead to:

- a) **Angina** – chest pain caused by lack of flow of blood to the heart
 - b) **Heart attacks** – caused when the blood flow to the heart is suddenly but completely blocked
 - c) **Heart failure** – the failure of the heart to pump blood properly to the rest of the body
- b. Cerebrovascular disease (strokes and TIAs):** Cerebrovascular disease is the disease of blood vessels supplying blood to the brain. When the blood supply to the brain is cut off, a person suffers a stroke, which can be lethal. A transient ischaemic attack, popularly known as a mini-stroke, occurs when the blood supply to the brain is temporarily blocked. The acronym FAST is used to signify the symptoms of a stroke or TIA¹⁰. It stands for:

- a. **Face:** Face drooping on one side is the most common visible symptom, followed by dropping of mouth or eye.
- b. **Arms:** Weakness or numbness in one or both arms doesn't allow a person to raise both of his or her hands up and hold them there.
- c. **Speech:** Slurred or garbled speech in some cases, and in other cases: no speech
- d. **Time:** It is time to call the emergency services if you see any of these symptoms.

Other symptoms include:

- i. Blurred or complete loss of vision in one or both eyes
 - ii. One-sided weakness or numbness of the body
 - iii. Sudden memory loss or confusion
 - iv. Sudden dizziness combined with any of the above mentioned symptoms can be a definite sign
- c. Peripheral arterial disease:** Peripheral arterial diseases is a disease of blood vessels supplying the arms and legs. It happens when there is a blockage in the arteries to the limbs (usually the legs). Signs to watch out for:
- a) Dull or cramping pain that gets worse with walking and better with rest
 - b) Hair loss on the limbs
 - c) Numbness or weakness in the limbs
 - d) Persistent ulcers on the legs and feet

- d. Congenital heart disease:** Congenital heart disease is a problem with the structure of the heart, i.e. malformations of heart structure, that exist at birth. The problem can range from a small hole in the heart to a more severe problem such as a defective heart muscle. Some of the common symptoms are shortness of breath and having trouble exercising. In infants and younger kids, cyanosis, a bluish tint to the skin, fingernails and lips can be an important marker. Risk factors include:
- i. Use of certain medications, drugs or alcohol during pregnancy
 - ii. Viral infections in the mother in the first trimester
 - iii. Genetic problems or issues with chromosomes of the child .

3.2.1 Managing CVD: Depending on the type of CVD, an appropriate treatment plan can help alleviate the problem/s. There are a number of treatments ranging from medication to surgeries that can help, however, prevention is always recommended over treatment. To prevent CVD, one must:

- a) Stop smoking
- b) Have a balanced diet with plenty of fiber
- c) Exercise regularly (>150 minutes of aerobic activity per week)
- d) Maintain a healthy weight and body mass index (BMI; aim for a BMI below
- e) Cut down on alcohol

3.3 MAJOR LIFESTYLE DISEASES: DIABETES

Diabetes is a metabolism disorder that affects the way the body used food for energy and physical growth. There are 4 types of diabetes: Type 1, Type 2, Gestational, and Pre-Diabetes (Impaired Glucose Tolerance). Type 2 is the most common diabetes in the world and is caused by modifiable behavioural risk factors.

Diabetes, often referred to by doctors as diabetes mellitus, describes a group of metabolic diseases in which the person has high blood glucose (blood sugar), either because insulin production is inadequate, or because the body's cells do not respond properly to insulin, or both. Patients with high blood sugar will typically experience polyuria (frequent urination), they will become increasingly thirsty (polydipsia) and hungry (polyphagia).

3.3.1 Types of Diabetes:

1. **Type 1 diabetes:** The body does not produce insulin. Some people may refer to this type as insulin-dependent diabetes, juvenile diabetes, or early-onset diabetes. People usually develop type 1 diabetes before their 40th year, often in early adulthood or teenage years. Type 1 diabetes is nowhere near as common as type 2 diabetes.

Approximately 10% of all diabetes cases are type 1. Patients with type 1 diabetes will need to take insulin injections for the rest of their life. They must also ensure proper blood-glucose levels by carrying out regular blood tests and following a special diet.

- 2. Type 2 diabetes:** The body does not produce enough insulin for proper function, or the cells in the body do not react to insulin (insulin resistance). Approximately 90% of all cases of diabetes worldwide are type 2. Some people may be able to control their type 2 diabetes symptoms by losing weight, following a healthy diet, doing plenty of exercise, and monitoring their blood glucose levels. However, type 2 diabetes is typically a progressive disease - it gradually gets worse - and the patient will probably end up taking insulin, usually in tablet form. Overweight and obese people have a much higher risk of developing type 2 diabetes compared to those with a healthy body weight. People with a lot of visceral fat, also known as central obesity, belly fat, or abdominal obesity, are especially at risk. Being overweight/obese causes the body to release chemicals that can destabilize the body's cardiovascular and metabolic systems. Being overweight, physically inactive and eating the wrong foods all contribute to our risk of developing type 2 diabetes. The scientists believe that the impact of sugary soft drinks on diabetes risk may be a direct one, rather than simply an influence on body weight. The risk of developing type 2 diabetes is also greater as we get older. Experts are not completely sure why, but say that as we age we tend to put on weight and become less physically active. Those with a close relative who had/ had type 2 diabetes, people of Middle Eastern, African, or South Asian descent also have a higher risk of developing the disease. Men whose testosterone levels are low have been found to have a higher risk of developing type 2 diabetes.

Diabetes is a Metabolism Disorder Diabetes (diabetes mellitus) is classed as a metabolism disorder. Metabolism refers to the way our bodies use digested food for energy and growth. Most of what we eat is broken down into glucose. Glucose is a form of sugar in the blood - it is the principal source of fuel for our bodies. When our food is digested, the glucose makes its way into our bloodstream. Our cells use the glucose for energy and growth. However, glucose cannot enter our cells without insulin being present - insulin makes it possible for our cells to take in the glucose. Insulin is a hormone that is produced by the pancreas. After eating, the pancreas automatically releases an adequate quantity of insulin to move the glucose present in our blood into the cells, as soon as glucose enters the cells blood-glucose levels drop. A person with diabetes has a condition in which the quantity of glucose in the blood is too elevated (hyperglycemia). This is because the body does not produce enough insulin, produces no insulin, or has cells that do not respond properly to the insulin the pancreas produces. This results in too much glucose building up in the blood. This excess blood glucose eventually passes out of the body in urine. So, even though the blood has plenty of glucose, the cells are not getting it for their essential energy and growth requirements.

In this unit, you have read about major lifestyle diseases CVD (cardiovascular diseases) and diabetes. Now, answer the questions given in check your progress 1.

Check Your Progress 1

Note: a) Answer the following questions in about 50 words.

b) Check your answer with possible answers given at the end of the unit.

1. What is life style diseases?

2. What is diabetes? Explain briefly?

3.4 MAJOR LIFESTYLE DISEASES: CANCER

Cancer- Cancer affects different parts of the body and is characterized by a rapid creation of abnormal cells in that part and can invade other parts of the body as well. More than 7 million people die of cancer each year and 30% of those diseases are attributed to lifestyle choices.

What is cancer? Cancer is the uncontrolled growth of abnormal cells anywhere in the body. These abnormal cells are termed cancer cells, malignant cells, or tumor cells. These cells can infiltrate normal body tissues. Many cancers and the abnormal cells that compose the cancer tissue are further identified by the name of the tissue that the abnormal cells originated from (for example, breast cancer, lung cancer, and colorectal cancer). When damaged or unrepaired cells do not die and become cancer cells and show uncontrolled division and growth - a mass of cancer cells develop. Frequently, cancer cells can break away from this original mass of cells, travel through the blood and lymph systems, and lodge in other organs where they can again repeat the uncontrolled growth cycle. This process of cancer cells leaving an area and growing in another body area is termed metastatic spread or metastasis. For example, if breast cancer cells spread to a bone, it means that the individual has metastatic breast cancer to bone.

3.4.1 RISK FACTORS FOR CANCER

1. Heredity
2. Ionizing radiation
3. Chemical substances
4. Dietary factors – Meat, energy balance, fat, protein, alcohol, nitrates
5. Estrogens

6. Viruses
7. Stress
8. Age

3.4.2 What are cancer symptoms and signs? Symptoms and signs of cancer depend on the type of cancer, where it is located, and/or where the cancer cells have spread. For example, breast cancer may present as a lump in the breast or as nipple discharge while metastatic breast cancer may present with symptoms of pain (if spread to bones), extreme fatigue (lungs), or seizures (brain). A few patients show no signs or symptoms until the cancer is far advanced. Seven warning signs and/or symptoms that a cancer may be present, and which should prompt a person to seek medical attention are:

1. Change in bowel or bladder habits
2. A sore throat that does not heal
3. Unusual bleeding or discharge (for example, nipple secretions or a "sore" that will not heal that oozes material)
4. Thickening or lump in the breast, testicles, or elsewhere
5. Indigestion (usually chronic) or difficulty swallowing
6. Obvious change in the size, color, shape, or thickness of a wart or mole
7. Nagging cough or hoarseness

Other signs or symptoms may include the following

- Unexplained loss of weight or loss of appetite
- A new type of pain in the bones or other parts of the body that may be steadily worsening, or come and go, but is unlike previous pains one has had before
- Persistent fatigue, nausea, or vomiting
- Unexplained low-grade fevers with may be either persistent or come and go
- Recurring infections which will not clear with usual treatment

3.4.3 What are the different types of cancer?

- Carcinoma: Cancer that begins in the skin or in tissues that line or cover internal organs -- "skin, lung, colon, pancreatic, ovarian cancers" .
- Sarcoma: Cancer that begins in bone, cartilage, fat, muscle, blood vessels, or other connective or supportive tissue -- "bone, soft tissue cancers".

- Leukemia: Cancer that starts in blood-forming tissue such as the bone marrow and causes large numbers of abnormal blood cells to be produced and enter the blood -- "leukemia".
- Lymphoma and myeloma: Cancers that begin in the cells of the immune system – "lymphoma".
- Central nervous system cancers: Cancers that begin in the tissues of the brain and spinal cord -- "brain and spinal cord tumors".

3.5 LIFESTYLE DISEASES: CHRONIC RESPIRATORY DISEASES

Some of the most under-diagnosed conditions, chronic respiratory diseases (CRD) are a potent cause of death globally with 90% of the deaths taking place in low-income countries. Chronic obstructive pulmonary disease (COPD) and asthma are the two main types of CRDs. Chronic respiratory diseases are among the most common non-communicable diseases worldwide, largely due to the ubiquity of noxious environmental, occupational, and behavioural inhalational exposures. In addition to chronic obstructive pulmonary disease (COPD) and asthma, chronic respiratory diseases include interstitial lung disease, pulmonary sarcoidosis, and pneumoconioses, such as silicosis and asbestosis. Unfortunately, chronic respiratory diseases have received proportionately less public attention and less research funding than other disease entities such as cardiovascular disease, cancer, stroke, diabetes, and Alzheimer's disease. Therefore, to better inform prevention, screening, treatment, and research efforts dedicated to chronic respiratory diseases, it is crucial to understand their prevalence, morbidity, and mortality, both on global and regional scales.

In The Lancet Respiratory Medicine, Joan Soriano and colleagues leverage the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2017 to estimate the prevalence and attributable health burden of chronic respiratory diseases. They found that close to 545 million people in the world had a chronic respiratory disease in 2017, an increase of 39.8% since 1990. The high-income super-region had the highest prevalence of chronic respiratory diseases, while south Asia and sub-Saharan Africa had, somewhat surprisingly, the lowest prevalence. The most prevalent chronic respiratory diseases were COPD (3.9% global prevalence) and asthma (3.6%). Chronic respiratory diseases accounted for 3.9 million deaths in 2017 (an increase of 18.0% since 1990) and were responsible for 1470 disability-adjusted life-years (DALYs) per 100 000 individuals (112.3 million total DALYs, an increase of 13.3% since 1990). South Asia had the highest mortality attributable to chronic respiratory disease, while sub-Saharan Africa had the lowest. COPD and asthma were the top causes of chronic respiratory disease-related deaths worldwide, but interstitial lung disease and pulmonary sarcoidosis were the second leading cause of death in the high-income, Latin America and the Caribbean, and central Europe, eastern Europe, and central Asia super-regions. Smoking accounted for the highest proportion of disability attributable to chronic respiratory disease in all regions for men. However, for women, the leading risk factor for

disability varied by region: household air pollution from solid fuel use in south Asia and sub-Saharan Africa, exposure to ambient particulate matter in the southeast Asia, east Asia, and Oceania and the north Africa and Middle East super-regions, and smoking in all other super-regions.

These findings not only confirm that chronic respiratory diseases are common and are associated with substantial morbidity and mortality, but also highlight the heterogeneity of chronic respiratory disease-related health burden and risk factors by world region and sex. However, some of these estimates should be interpreted with caution. For example, the lower prevalence of chronic respiratory diseases in south Asia and sub-Saharan Africa might be due to under diagnosis in settings that lack or under utilize diagnostic capabilities. Furthermore, lower mortality in sub-Saharan Africa than in other regions could reflect differences in the age distribution of the population towards younger individuals, in whom deaths from communicable diseases occur in greater frequency than do deaths from chronic diseases.

In this unit, you have read about major lifestyle diseases –cancer and chronic respiratory diseases. Now, answer the questions given in check your progress 2.

Check Your Progress 2

Note: a) Answer the following questions in about 50 words.

b) Check your answer with possible answers given at the end of the unit.

1. What are the different types of cancer?

2. What are chronic respiratory diseases? Briefly explain?

3.6 LET US SUM UP

Lifestyle diseases characterize those diseases whose occurrence is primarily based on the daily habits of people and are a result of an inappropriate relationship of people with their environment. The main factors contributing to lifestyle diseases include bad food habits, physical inactivity, wrong body posture, and disturbed biological clock.

3.7 REFERENCES AND SELECTED READINGS

file:///C:/Users/NEW%20WORLD/Downloads/Lifestleart.pdf

file:///C:/Users/NEW%20WORLD/Downloads/Chapter-5.pdf

[https://www.thelancet.com/journals/lanres/article/PIIS2213-2600\(20\)30157-0/fulltext](https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(20)30157-0/fulltext)

3.8 CHECK YOUR PROGRESS-POSSIBLE ANSWERS

Check Your Progress 1

1. What is life style diseases?

Answer: Lifestyle diseases are ailments that are primarily based on the day to day habits of people. Habits that detract people from activity and push them towards a sedentary routine can cause a number of health issues that can lead to chronic non-communicable diseases that can have near life-threatening consequences.

2. What is diabetes? Explain briefly?

Answer: Diabetes is a metabolism disorder that affects the way the body used food for energy and physical growth.

Check Your Progress 2

1. What are the different types of cancer?

Answer: Carcinoma: Cancer that begins in the skin or in tissues that line or cover internal organs -- Sarcoma: Cancer that begins in bone, cartilage, fat, muscle, blood vessels, or other connective or supportive tissue

Leukemia: Cancer that starts in blood-forming tissue such as the bone marrow and causes large numbers of abnormal blood cells to be produced and enter the blood -- "leukemia".

2. What are chronic respiratory diseases? Briefly explain?

Answer: Chronic respiratory diseases are among the most common non-communicable diseases worldwide, largely due to the ubiquity of noxious environmental, occupational, and behavioural inhalational exposures.

UNIT 4 ENVIRONMENTAL POLLUTION AND HEALTH HAZARDS

Structure

- 4.1 Introduction
- 4.2 Kinds of Pollution and Factors of Environmental Pollution
- 4.3 Main Causes of Environmental Pollution
- 4.4 Environmental Pollution and Health Hazards
- 4.5 Prevention of Environmental Pollution
- 4.6 Let Us Sum Up
- 4.7 References and Selected Readings
- 4.8 Check Your Progress-Possible Answers

4.1 INTRODUCTION

The concept of environment is as old as the concept of nature itself. It is a composite term referring to conditions in which organisms consisting of air, water, food, sunlight etc., thrive and become living sources of life for- all the living and non-living beings including plant life. The term also includes atmospheric temperature, wind and its velocity. Before understanding what “Environmental Pollution” is it is equally necessary to-know what “pollution” is.

Pollution is an unfavorable alteration in the physical, chemical or biological characteristics of air, water and land that may or will adversely affect human life, industrial life, industrial progress, living conditions and cultural assets.

Environmental Pollution is not a new phenomenon, yet it remains one of the greatest threats to the health and well-being of humanity and one of the major environmental causes of death and morbidity. For example, substances such as plastic materials, heavy metals, etc., once released into the atmosphere. By natural processes, it cannot be degraded and are harmful to living organisms.

After reading the unit, you will be able to-

- Understand what is environmental pollution
- Explain kinds and factors of environmental problems
- Describe the main causes of environmental pollution
- Analyze environmental pollution and health hazards

4.2 KINDS OF POLLUTION AND FACTORS OF ENVIRONMENTAL POLLUTION

4.2.1 Kinds of environmental pollution may broadly be classified into:

- i. Natural pollution

- ii. Man-made pollution
 - i. **Natural Pollution:** Environment is polluted often by natural phenomenon, such as earthquakes, floods, drought, cyclones, etc.
 - ii. **Man-made Pollution:** is pollution which takes place because of human activities.

4.2.2 Factors of environmental problems- The environmental crisis“ is caused due to environment and ecological changes as a result of developmental process of the 'economic and technological man" of the present century. In fact if the present century is marked by socio-economic, scientific and technological development on the one hand, it is plagued by serious problems of environmental problems on the other hand. The environmental crisis arising out of the environmental deterioration caused by several forms of pollution, depletion of natural resources because of rapid rate of their exploitation and increasing dependence on energy consuming and ecologically damaging technologies, the loss of habitats due to industrial, urban and agricultural expansion, reduction and loss of ecological populations due to excessive use of toxic pesticides and herbicides and loss of several species of plants due to practice of monoculture removal of habitats through forest clearance has now become of global concern. The life of common man is being so rapidly adversely affected by environmental degradation caused by man himself that there has been a marked growth of interest within the last decade in the quality of the environment, the disruption of the earth's natural ecosystems and the depletion of resources.

The most striking reason of the environmental degradation and hence global environmental crisis is the fact of deteriorating relationship between man and environment because of rapid rate of exploitation of natural resources, technological development and industrial expansion. The rate of environmental change and resultant environmental degradation caused by human activities has been so fast and widespread.

The impact of man on environment through his economic activities are varied and highly complex as the transformation or modification of the natural condition and process leads to a series of changes in the biotic and a biotic components of the environment. The impacts of man on environment fall into two categories

- (i) direct or intentional impacts and (ii) indirect or unintentional impacts,
 - i. Direct or intentional impact of human activities are preplanned and premeditated because man is aware of the consequences, both positive and negative of any programme which is launched to change or modify the natural environment for economic development of the region concerned. The effects of anthropogenic changes in the environment are noticeable within short period and these effects are reversible. On the other hand
 - ii. Indirect or unintentional impacts of human activities on the environment are not premeditated and preplanned and these impacts arise from those human activities which are directed to accelerate the pace of economic growth, especially industrial development. The

indirect impacts are experienced after long time when they become cumulative. These indirect effects of human economic activities may change the overall natural environmental system and the chain-effects sometimes degrade the environment to such an extent that this becomes suicidal for human beings.

4.3 MAIN CAUSES OF ENVIRONMENTAL POLLUTION

The problem of environmental pollution, we face today, is a complex consequence of forces connected with various interrelating factors. There are clearly a number of divergent and conflicting views of what could be the basic factors underlying the environmental crisis.

Some of the main causes of environmental pollution are:

- i. **Population growth-** Modern thinkers consider that growth of population is the root cause for many human problems. This observation also applies to environmental degradation. Increase in the population will have a multiplier effect requiring proportionate increase in all requirements necessary for the existence of human beings. Population growth requires abnormal exploitation of natural resources to provide day-to-day essential requirements of life. It results in migration of people and growth of urban areas, thereby inviting new problems of health, ecology and human sustenance.
- ii. **Nature of Modern Technology:** The nature of productive technology in recent years is closely related to the environmental crisis. Commoner maintains that sweeping transformations of productive technology since World War II productive technologies with intense impacts on environment have displaced less destructive ones. This factor has been largely responsible for the generation of synthetic and non-biodegradable substances such as plastics, chemical nitrogen fertilizers, synthetic detergents, synthetic fibres, big cars, petrochemical and other environmentally injurious industries and 'disposable culture. Thus, environmental crisis is the inevitable result of a counter ecological pattern of productive growth. Ecologically benign technologies did and do exist but they are not utilized, for they are considered inconsistent with the short-term interests of private profit maximization.
- iii. **Deforestation:** Forests are invaluable property of a nation because they provide raw materials to modern industries, timber for building purposes, habitats for numerous types of animals and micro-organisms. Good fertile and nutrient-rich soils having high content of organic matter, offer protection to soils by binding the soils through the network of their roots and by protecting the soils from direct impact of falling raindrops. They encourage and increase infiltration of rainwater and thus allow maximum recharge of groundwater resources, minimize surface run-off and hence reduce the frequency, intensity and dimension of floods. They help in increasing the precipitation; they are natural sink of carbon dioxide because they use carbon dioxide to prepare their food during the process of

photosynthesis. They provide firewood to millions of people all over the world and food and shelter to innumerable humans and animals. In fact, forests are 'life line' of a nation because prosperity and welfare of the society directly depends on sound and healthy forest cover of a nation concerned. Forests are main component of the biotic components of the natural environmental system and the stability of the environment and ecological balance largely depend on the status of the forests of the region concerned. Deforestation gives birth to several problems encompassing environmental degradation through accelerated rate of soil erosion, increase in the sediment load of the rivers, siltation of reservoirs and river beds, increase in the frequency and dimension of floods and droughts, changes in the pattern of distribution of precipitation, intensification of greenhouse effects increase in the destructive force of the atmospheric storms etc. economic loss through damages of agricultural crops due to increased incidence of floods and droughts, decrease in agricultural production of loss of fertile top soils, decrease in the supply of raw materials to the industries and building matters etc. Thus deforestation cause a chain effects which adversely affect the natural environment.

- iv. **Industrial Development:** Rapid Industrial Development has given economic prosperity to human society. It has also given new dimension to socio-economic structure and has provided material comfort to the people of industrially developed countries but it has also created many fold environmental problems. In fact, the glittering effects of industrialization have affected the mind of the general public that industrialisation is now being considered as the parameter of modernity and as a necessary element of socio-economic development of a nation. Rapid rate of industrialization resulted into rapid rate of exploitation of natural resources and increased industrial output. Both the components of industrial development e.g. exploitation of natural resources and industrial production have created several lethal environmental problems and have caused large scale environmental problems and ecological imbalance at global, regional and local levels in a variety of ways. Exploitation of natural resources in order to meet the industrial demand of raw materials has resulted into
- i. the reduction of forest covers due to reckless falling of trees
 - ii. excavation of land for mining purposes
 - iii. reduction in arable land due to industrial expansion
 - iv. lowering of groundwater level due to excessive withdrawal of groundwater
 - v. collapsing of ground surface due to withdrawal of mineral oil and groundwater, etc.

Besides desired production there are numerous undesired outputs from the factories such as industrial wastes, polluted water, toxic gases, chemical precipitates, aerosol ashes and smokes etc. which pollute air, water, land, soils etc., and thus degrade the environment. The industrialized countries have increased the concentration of pollutants

emitted from the factories in the air, water and land to such an extent that they have degraded the environment to the critical limit and have brought the human society on the brink of its destruction. The adverse effects of industrialization may change the overall character of natural system and the chain effects sometimes become suicidal for human society. Majority of the impacts of industrialization are related to pollution and environmental degradation. The release of toxic elements into the environment through the application of chemical fertilizers, pesticides and insecticides (output of chemical industries) changes the food chains and food webs and physical and chemical properties of soils. Similarly the release of industrial wastes into stagnant waters of ponds, tanks, and lakes into rivers and seas contaminates water and causes several diseases and deaths of organism and thus disturbs ecological balance of aquatic ecosystem.

- v. **Urbanization:** Exodus of population from rural areas to urban centre and origin and expansion of new urban centres due to industrial expansion and development are responsible for rapid rate of exploitation of natural resources and several types of environment degradation and pollution in the developed and developing countries. The level of urbanisation in the developed countries of the world has already reached its peak. The accumulation of wealth and availability of more economic and job opportunity in the urban centres have resulted into the concentration of population in the congested metropolitan areas and thus the formation and growth of big slum areas. In fact, increasing urbanization means increase in the concentration of human population in limited space which results in the increase of buildings, roads and streets, sewage and storm drains, vehicles (motor cars, trucks, buses, motor cycles, etc.) number of factories, urban wastes, aerosols, smokes and dusts, sewage waters etc. which cause several environmental problems. For example, increasing population of the urban centres uses enormous amount of water for various purposes. The used waste water like sewage water, if untreated, pollutes the streams and lakes because the urban effluents are allowed to be drained into them. Urban centres when combined with industrial sectors become more hazardous from the standpoint of environmental problems and pollution. Huge quantity of aerosols and gases is emitted from Chimneys of factories and vehicles which form "Dust Domes" over the cities. These Dust Domes cause 'Pollution Domes' over the cities. The urban and industrial growth has resulted into rapid rate of deterioration of the quality of air because of heavy pollution of air through gases and aerosols emitted from the vehicles, factories and house-hold appliances. About 60 per cent, of the pollution of Indian capital city of Delhi is contributed by vehicles, Calcutta and Bombay metropolitan areas have also reached high level of air pollution.
- vi. **Poverty:** It is true that poor cause damage to environment. Due to poverty the people exploit excessively the natural resources of the country for meeting their basic needs (food, fuel, shelter, employment fodder for their cattle).

vii. Coal burnt Thermal Power: Plants Power Plants either in public or private sector mainly use coal for generation of electricity. About 62% of the coal produced in our country is utilized for generation of electricity which accounts of 65% of power generation. This process results in the accumulation of various by-products such as bottom ash, boiler slag and fly ash. Fly ash alone amounts to more than 70% of the total quantity. Disposal of this huge amount of fly ash is a difficult and sensitive task. Though this material can be used in manufacture of cement, brick and also used as soil conditioner but these activities have not gained much popularity due to economical and social consideration. Even if the fly ash is utilized for the above mentioned activities, it will not be possible to utilize even 30% to 40% of the ash produced. Thus there is a need to store the ash produced in such a way as to have minimum damage to air, water and soil bodies. A super thermal power plant built on about 800 acres of land normally requires 1200 acres for ash disposal. On the basis of the ash production trends the area requirement for dumping of the ash is around 40000 hectares. Power plants are preferably placed away from the human settlements and moreover on waste lands, but with course of time some of the cultivable area is also covered for ash mount site. Presence of ash particularly in the atmosphere is of major concern to the people living close to the plant site. This is particularly severe in summers due to prevailing high wind speeds. The finer fractions of fly ash are potentially harmful as they get deposited in lungs/pulmonary tissues of respiratory track when inhaled.

In this section, you have studied kinds of pollution and factors of environmental pollution and main causes of environmental pollution. Now, answer the question given in check your progress 1.

Check Your Progress 1

Note: a) Answer the following questions in about 50 words.
b) Check your answer with possible answers given at the end of the unit.

1. What are the kinds of environmental pollution? Explain briefly?

2. Briefly explain any two causes of environmental pollution?

4.4 ENVIRONMENTAL POLLUTION AND HEALTH HAZARDS

i. Air pollution

Air pollution is particularly a health problems in rural areas. Millions of

poor people in urban areas - also suffer from its effects, some estimates suggest that worldwide urban indoor air pollution kills about 600,000 people annually. Air pollution is a major health problem because worldwide almost 3 billion people rely on biomass fuels which are mostly wood, charcoal, and animal dung for household cooking and heating. These fuels do not burn cleanly. They emit large amounts of smoke, often directly inside dwelling houses without adequate ventilation. While rural areas may lack access to modern stoves, or clean fuels, the urban poor often cannot afford cleaner fuels such as kerosene, natural gas or electricity. They have no choice but to use biomass fuels. Women and children suffer most from indoor air pollution because they spend many hours each day in their homes, where often the air is polluted. For example, a study in Accra, Ghana, found that women faced particularly high level of exposure to chemical pollutants, especially if they burned wood and charcoal for cooking. In the urban environment infants and young children are often exposed because they are usually carried on their mothers' back or kept close to their mothers throughout the day.

Air pollution is a problem for all of us. However, some groups of people are especially sensitive to common air pollutants such as particulates and ground-level ozone. Sensitive populations include children, older adults, people who are active outdoors, and people with heart or lung diseases, or suffering from asthma.

ii. Water Pollution

Pollution of water refers to an impairment of water quality that interferes with the use of water, sewage, industrial wastes and agricultural. Chemical such as fertilizers and pesticides are the main causes of water pollution in developing nation; more than 95% of urban sewage is discharged untreated into rivers and bays, creating array or human health hazard.

According to (W.H.O. 1997) two thirds of urban population in developing countries does not have adequate sanitation in that they lack flush toilet sanitary latrine, or a pit that can be covered over. In addition, worldwide, about 2.3 billion people suffer from disease that are linked to water problems. Water related diseases kills millions of people each year preventing millions more from leading healthy lives and undermined developmental efforts. Water related diseases include diarrhea, schistosomiasis, trachoma, ascariasis, trichuriasis and hookworm disease. Diarrhea diseases are the major water borne malady, responsible for 90% of the health problems related to water supply and sanitation. An estimated 4 billion cases of diarrhea disease occur every year causing 3 million to 4 million deaths, mostly among children. Other diseases such as cholera can be endemic when there is poor food - hygiene, lack of sanitation or unsafe drinking water. The effects of water pollution are varied. They include poisonous drinking water, poisonous food animals (due to these organisms having bio accumulated toxins from the environment over their life spans), unbalanced river and lake ecosystems that can no longer support full biological diversity, deforestation from acid rain, and many other effects. These effects are, of course, specific to the various contaminants. Waterborne diseases caused by polluted drinking water:

- Typhoid
- Amoebiasis
- Giardiasis
- Ascariasis
- Hookworm Waterborne

Diseases caused by polluted beach water:

- Rashes, ear ache, pink eye
- Respiratory infections
- Hepatitis, encephalitis, gastroenteritis, diarrhea, vomiting, and stomach aches.

Conditions related to water polluted by chemicals (such as pesticides, hydrocarbons, persistent organic pollutants, heavy metals etc):

- Cancer, incl. prostate cancer and non-Hodgkin's lymphoma
- Hormonal problems that can disrupt reproductive and developmental processes
- Damage to the nervous system
- Liver and kidney damage
- Damage to the DNA
- Exposure to mercury (heavy metal)

iii. Noise pollution

Noise is a prominent feature of the environment including noise from transport, industry. Exposure to transport noise disturbs sleep in the laboratory, but not generally in field studies where adaptation occurs. Noise interferes in complex task performance, modifies social behavior and causes annoyance. Studies of occupational and environmental noise exposure suggest an association with hypertension, whereas community studies show only weak relationships between noise and cardiovascular disease. Aircraft and road traffic noise exposure are associated with psychological symptoms but not with clinically defined psychiatric disorder. In both industrial studies and community studies, noise exposure is related to raised catecholamine secretion. In children, chronic aircraft noise exposure impairs reading comprehension and long-term memory and may be associated with raised blood pressure. Further research is needed examining coping strategies and the possible health consequences of adaptation to noise.

There is no doubt that the noise affects human health adversely. The noise may result in loss of hearing, stress, high-blood pressure, loss of sleep, distraction affecting productivity, and a general reduction in the quality of life. The effects of noise are difficult to quantify because tolerance levels among different populace and types of noise vary considerably. There is a large amount of scientific literature assessing the effects of noise on human beings. Indiscriminate use of horn by the vehicles and wide spread use of loudspeakers in social and religious ceremonies caused several health hazards to the urban inhabitants. It may cause deafness, nervous breakdown, mental disorder, heart troubles, high blood pressure, dizziness and insomnia

. Exposure to noise pollution exceeding 75decibels for more than eight hours daily for a long period of time can cause loss of hearing. The hazards increase with the intensity of the noise and the period of exposure. The sound produced by a bursting cracker, exceeding 150dB, can cause a ringing sensation called ‘tinnitus’ and can impair hearing permanently. In general about 1 percent of the population suffers from noise-induced pollution. The noise level produced by household equipment and appliances sometimes reaches up to 97 dB which is more than double the acceptable noise level. This excessive noise could carry several ill-effects viz. annoyance, speech interference, sleep disturbance, mental stress, headache, and lack of concentration. The workers exposed to high noise levels have a higher incidence of circulatory problems, cardiac diseases, hypertension, peptic ulcers, and neuro sensory and motor impairment. The adverse effects of noise have not even spare the birds (Robins, sparrows, wrens and blackbirds). Those living near busy roads could not hear each other and thus unable to contact for propagation . Noise pollution is at its worst in densely populated areas. Unwanted sound, or noise, such as that produced by air planes, traffic or industrial machinery, or radio repairing shops is considered a form of pollution. It can cause hearing loss, stress, high blood pressure, sleep loss, distraction and low productivity.

iv. Soil Pollution

Soil pollution is the reduction in the productivity of soil due to the presence of soil pollutants. Soil pollutants have an adverse effect on the physical chemical and biological properties of the soil and reduce its productivity. Pesticides, fertilizers, organic manure, chemicals, radioactive wastes, discarded food, clothes, leather goods, plastics, paper, bottles, tins-cans and carcasses- all contribute towards causing soil pollution. Chemicals like iron lead mercury, copper, zinc, cadmium, aluminium, cyanides, acids and alkalies etc. are present in industrial wastes and reach the soil either directly with water or indirectly through air. (e.g. through acid rain). The improper and continuous use of herbicides, pesticides and fungicides to protect the crops from pests, fungi etc. alter the basic composition of the soils and make the soil toxic for plant growth. Organic insecticides like DDT, aldrin, benzene hex chloride etc. are used against soil borne pests. They accumulate in the soil as they degrade very slowly by soil and water bacteria. Consequently, they have a very deleterious effect on the plant growth stunting their growth and reducing the yield and size of fruit. Their degradation products may be absorbed by the plants from where they reach the animals and man through the food chains.

4.5 PREVENTION OF ENVIRONMENTAL POLLUTION

Some of the ways by which you can prevent environmental pollution are given below:

Environmental Pollution can be controlled by proper waste management and developing green chemistry. Instead of conventional fuels and energy systems, non-conventional fuels and non-conventional energy systems must be put into practice, this will cause less pollution and also by the following-

1. The growth of the population must be controlled.
2. Forests should be grown. Everybody must plant a tree and must protect it.
3. Every citizen should feel the social responsibility of protecting and keeping the environment clean and green.
4. Using public transports.
5. Turn off the lights when not in use.
6. Recycle and Reuse. .
7. No to plastic bags.
8. Reduction of forest fires and smoking..
9. Use of fans instead of Air Conditioner.
10. Use filters for chimneys.

In this section, you have read about environmental pollution and health hazards and prevention of environmental pollution. Now, answer the question given in check your progress 2.

Check Your Progress 2

Note: a) Answer the following questions in about 50 words.

b) Check your answer with possible answers given at the end of the unit.

1. Briefly explain the health hazards of water pollution?

2. What are the causes of soil pollution ?Explain briefly?

4.6 LET US SUM UP

Environmental Pollution is the effect caused by undesirable changes in our surroundings that have harmful impacts on plants, animals, and human beings.

4.7 REFERENCES AND SELECTED READINGS

Nayak, Dr Dilip Kumar, A Study of Environmental Pollution and Its Effects on Human Health,International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET) , Volume 9, Issue 7, July 2020

https://www.researchgate.net/publication/327779390_Environmental_Pollution_and_Its_Control#:~:text=Pollution%20is%20an%20unfavourable%20alteration,living%20conditions%20and%20cultural%20assets.

file:///C:/Users/IGNOU/Downloads/ssh275.pdf

file:///C:/Users/IGNOU/Downloads/Bakareetal1.pdf

<https://www.mass.gov/doc/health-environmental-effects-of-air-pollution/download>

<https://www.embibe.com/exams/environmental-pollution/>

file:///C:/Users/IGNOU/Downloads/Soil-Rajesh.pdf

4.8 CHECK YOUR PROGRESS –POSSIBLE ANSWERS

Check Your Progress 1

1. What are the kinds of environmental pollution? Explain briefly?

Ans. Kinds of environmental pollution may broadly be classified into:

i. Natural pollution

ii. Man-made pollution

(i) Natural Pollution: Environment is polluted often by natural phenomenon, such as earthquakes, floods, drought, cyclones, etc.

(ii) Man-made Pollution: is pollution which takes place because of human activities.

2. Briefly explain any two causes of environmental pollution?

Ans. (i) Poverty: is true that poor cause damage to environment. Due to poverty the people exploit excessively the natural resources of the country for meeting their basic needs (food, fuel, shelter, employment fodder for their cattle).

(ii) Industrial Development: Rapid rate of industrialization resulted into rapid rate of exploitation of natural resources and increased industrial output.

Check Your Progress 2

1. Briefly explain the health hazards of water pollution?

Ans. Water related diseases kills millions of people each year preventing millions more from leading healthy lives and undermined developmental efforts . Water related diseases include diarrhea, schistosomiasis, trachoma, ascariasis, trichuriasis and hookworm disease.

2. What are the causes of soil pollution ?Explain briefly?

Ans. Pesticides, fertilizers, organic manure, chemicals, radioactive wastes, discarded food, clothes, leather goods, plastics, paper, bottles, tins-cans and carcasses- all contribute towards causing soil pollution.

UNIT 5 MENTAL HEALTH

Structure

- 5.1 Introduction
- 5.2 Mental Health: Concept
- 5.3 Stigma and Mental Illness
- 5.4 Mental Disorders
- 5.5 Types of Mental Disorders
- 5.6 Ways to improve Mental Health
- 5.7 Let Us Sum Up
- 5.8 References and Selected Readings
- 5.9 Check Your Progress- Possible Answers

5.1 INTRODUCTION

Different definitions are used to define mental ill health. WHO uses the term 'mental disorders' broadly, to include mental illness, intellectual disability, personality disorder, substance dependence and adjustment to adverse life events (WHO 1992).

The Mental Health Foundation notes that mental health is defined by how individuals think and feel about themselves and their life, and that it affects how an individual copes and manages in times of adversity. Mental health is seen as affecting one's abilities to function and make the most of the opportunities that are available, and to participate fully with family, workplace, community and peers. There is a close link between physical and mental health, as they affect each other directly and indirectly.

Our mental health directly influences how we think, feel and act: it also affects our physical health. Work, in fact, is actually one of the best things for protecting our mental health, but it can also adversely affect it. Good mental health and well-being is not an on-off experience. We can all have days, weeks or months where we feel resilient, strong and optimistic, regardless of events or situations. Often that can be mixed with or shift to a very different set of thoughts, feelings and behaviours; or not feeling resilient and optimistic in just one or two areas of our life. This could lead to us developing a mental health condition such as anxiety, depression, substance misuse etc.

After reading this unit, you will be able to-

- Understand what mental health and the concept of mental health is
- Explain stigma and mental illness
- Describe Mental disorders and ways to improve mental health

5.2 MENTAL HEALTH: CONCEPT

Mental health is a positive concept related to the social and emotional wellbeing of people and communities.

The concept relates to the enjoyment of life, ability to cope with stress and sadness, the fulfillment of goals and potential, and a sense of connection to others. Mental health is about wellness rather than illness and is not merely the absence of a mental health condition. Like physical health, mental health is not fixed. Mental health exists on a continuum, or range: from positive, healthy functioning at one end through to severe symptoms of mental health conditions at the other.

A person's mental health moves back and forth along this range during their lifetime, in response to different stressors and circumstances. At the one end of the continuum, people are well; showing resilience and high levels of wellbeing. At another continuum, people may start to have difficulty coping. In another continuum, people have more difficulty coping and symptoms may increase in severity and frequency. At the end of the continuum, people are likely to be experiencing severe symptoms and may be at risk of self-harm or suicide.

Mental health does not exist on its own. It is an integral and essential part of overall health, which can be defined in at least three ways – as the absence of disease, as a state of the organism that allows the full performance of all its functions or as a state of balance within oneself and between oneself and one's physical and social environment. Which of these three definitions is used depends on the level to which the basic health needs are satisfied. These needs include food, shelter, survival, protection, society, social support, and freedom from pain, environmental hazards, unnecessary stress and from any part of exploitation.

The state of mental health implies that the individual has the ability to form and maintain affectionate relationships with others, to perform in the social roles usually played in their culture and to manage change, recognize, acknowledge and communicate positive actions and thoughts as well as to manage emotions such as sadness. Mental health gives an individual the feeling of worth, control and understanding of internal and external functioning. The Society for The Mental Health Foundation notes that mental health is defined by how individuals think and feel about themselves and their life, and that it affects how an individual copes and manages in times of adversity. Mental health is seen as affecting one's abilities to function and make the most of the opportunities that are available, and to participate fully with family, workplace, community and peers. There is a close link between physical and mental health, as they affect each other directly and indirectly.

5.3 STIGMA AND MENTAL ILLNESS

In this section the aim is to explore the concepts of, and the relationship between, stigma and mental illness. One possible reason for both conceptual confusion and reluctance to seek help is that the stigmatization of mental illness continues to be a worldwide phenomenon.

5.3.1 The nature and extent of stigmatization in adult mental illness

There are many factors involved in the formation of individuals' beliefs about mental illness, and their attitudes and behaviour towards those labelled as mentally ill. These include personal experience of mental illness, either personally or in someone known to them; the impact of the media; beliefs as to what causes mental illness (e.g. genetic, self-inflicted); and socio-cultural influences (Hinshaw 2005). Four possible explanations for the stigmatization of mental illness have been identified in the research literature:

- dangerousness;
- attribution of responsibility;
- belief that mental illness is chronic with a poor prognosis;
- disruption of normal social interactions based on social rules .

These explanations can be elaborated as follows: people with mental illness are perceived as dangerous and unpredictable; there is an implied belief that the mentally ill choose to behave as they do and have only themselves to blame for their situation; people with mental illness are believed to respond poorly to treatment, and outcomes are poor, therefore they are an embarrassment and should be avoided; the mentally ill are seen as difficult to communicate with and this makes for unpredictable social intercourse. These are enduring themes, provoking personal fear in others and threatening to upset the status quo .

Explanations for the stigmatization of the mentally ill include the following ideas.

From a biological perspective, a person suffering from mental illness may be viewed as a poor genetic choice in relation to reproductive potential and as a possible threat to the safety of the individual.

- The need to share understanding in order to survive as an individual and as a species means that when a person's way of perceiving the world is unfamiliar to us we can feel threatened and uncertain as to how to respond to them

5.3.2 Consequences of stigma

Stigmatization of the mentally ill is understood to be prejudicial to them, injurious to all aspects of their treatment in mental health services and damaging to their role as members of society. Stigmatization leads to individual and social discrimination against the stigmatized person. Several authors identify that the discriminatory behaviour displayed can be hostile or avoidant and that it operates throughout personal and social relationships, pervading the home, workplace, local community, health and social welfare systems. This can result in increased feelings of shame, increased personal and social impairment and isolation, perpetuation and worsening of an illness, reluctance to access health care and infringement of human rights. Stigmatization of the mentally ill is understood to be prejudicial to them, injurious to all aspects of their treatment in mental health services and damaging to their role as members of society. Stigmatization leads to individual and social discrimination against the stigmatized person. Several

authors identify that the discriminatory behaviour displayed can be hostile or avoidant and that it operates throughout personal and social relationships, pervading the home, workplace, local community, health and social welfare systems. This can result in increased feelings of shame, increased personal and social impairment and isolation, perpetuation and worsening of an illness, reluctance to access health care and infringement of human rights .

5.4 MENTAL DISORDERS

A mental disorder is characterized by a clinically significant disturbance in an individual's cognition, emotional regulation, or behaviour. It is usually associated with distress or impairment in important areas of functioning. There are many different types of mental disorders. Mental disorders may also be referred to as mental health conditions. The latter is a broader term covering mental disorders, psychosocial disabilities and (other) mental states associated with significant distress, impairment in functioning, or risk of self-harm. This fact sheet focuses on mental disorders as described by the International Classification of Diseases In 2019, 1 in every 8 people, or 970 million people around the world were living with a mental disorder, with anxiety and depressive disorders the most common.

1. In 2020, the number of people living with anxiety and depressive disorders rose significantly because of the COVID-19 pandemic. Initial estimates show a 26% and 28% increase respectively for anxiety and major depressive disorders in just one year
2. While effective prevention and treatment options exist, most people with mental disorders do not have access to effective care. Many people also experience stigma, discrimination and violations of human rights.

In this unit, you have read about mental health: concept, stigma and mental illness, mental disorders.. Now, answer the questions given in check your progress 1.

Check Your Progress 1

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1. What do you understand by Mental Health?

2. What are the consequences of Stigma?

5.5 TYPES OF MENTAL DISORDERS

i. Anxiety disorders

In 2019, 301 million people were living with an anxiety disorder including 58 million children and adolescents.

Anxiety disorders are characterised by excessive fear and worry and related behavioural disturbances. Symptoms are severe enough to result in significant distress or significant impairment in functioning. There are several different kinds of anxiety disorders, such as: generalised anxiety disorder (characterised by excessive worry), panic disorder (characterised by panic attacks), social anxiety disorder (characterised by excessive fear and worry in social situations), separation anxiety disorder (characterised by excessive fear or anxiety about separation from those individuals to whom the person has a deep emotional bond), and others. Effective psychological treatment exists, and depending on the age and severity, medication may also be considered.

ii. Depression

In 2019, 280 million people were living with depression, including 23 million children and adolescents. Depression is different from usual mood fluctuations and short-lived emotional responses to challenges in everyday life. During a depressive episode, the person experiences depressed mood (feeling sad, irritable, empty) or a loss of pleasure or interest in activities, for most of the day, nearly every day, for at least two weeks. Several other symptoms are also present, which may include poor concentration, feelings of excessive guilt or low self-worth, hopelessness about the future, thoughts about dying or suicide, disrupted sleep, changes in appetite or weight, and feeling especially tired or low in energy. People with depression are at an increased risk of suicide. Yet, effective psychological treatment exists, and depending on the age and severity, medication may also be considered.

iii. Bipolar Disorder

In 2019, 40 million people experienced bipolar disorder. People with bipolar disorder experience alternating depressive episodes with periods of manic symptoms. During a depressive episode, the person experiences depressed mood (feeling sad, irritable, empty) or a loss of pleasure or interest in activities, for most of the day, nearly every day. Manic symptoms may include euphoria or irritability, increased activity or energy, and other symptoms such as increased talkativeness, racing thoughts, increased self-esteem, decreased need for sleep, distractibility, and impulsive reckless behaviour. People with bipolar disorder are at an increased risk of suicide. Yet effective treatment options exist including psycho education, reduction of stress and strengthening of social functioning, and medication.

iv. Post-Traumatic Stress Disorder (PTSD)

The prevalence of PTSD and other mental disorders is high in conflict-affected settings. PTSD may develop following exposure to an extremely threatening or horrific event or series of events. It is characterised by all of the following:

- 1) re-experiencing the traumatic event or events in the present (intrusive memories, flashbacks, or nightmares);
- 2) avoidance of thoughts and memories of the event(s), or avoidance of activities, situations, or people reminiscent of the event(s); and
- 3) persistent perceptions of heightened current threat. These symptoms persist for at least several weeks and cause significant impairment in functioning. Effective psychological treatment exists.

v. Schizophrenia

Schizophrenia affects approximately 24 million people or 1 in 300 people worldwide . People with schizophrenia have a life expectancy 10-20 years below that of the general population . Schizophrenia is characterised by significant impairments in perception and changes in behaviour. Symptoms may include persistent delusions, hallucinations, disorganised thinking, highly disorganised behaviour, or extreme agitation. People with schizophrenia may experience persistent difficulties with their cognitive functioning. Yet, a range of effective treatment options exist, including medication, psychoeducation, family interventions, and psychosocial rehabilitation.

vi. Eating Disorders

In 2019, 14 million people experienced eating disorders including almost 3 million children and adolescents . Eating disorders, such as anorexia nervosa and bulimia nervosa, involve abnormal eating and preoccupation with food as well as prominent body weight and shape concerns. The symptoms or behaviours result in significant risk or damage to health, significant distress, or significant impairment of functioning. Anorexia nervosa often has its onset during adolescence or early adulthood and is associated with premature death due to medical complications or suicide. Individuals with bulimia nervosa are at a significantly increased risk for substance use, suicidality, and health complications. Effective treatment options exist, including family-based treatment and cognitive-based therapy.

vii. Disruptive behaviour and dissocial disorders

40 million people, including children and adolescents, were living with conduct-dissocial disorder in 2019 . This disorder, also known as conduct disorder, is one of two disruptive behaviour and dissocial disorders, the other is oppositional defiant disorder. Disruptive behaviour and dissocial disorders are characterised by persistent behaviour problems such as persistently defiant or disobedient to behaviours that persistently violate the basic rights of others or major age-appropriate societal norms, rules, or laws. Onset of disruptive and dissocial disorders, is commonly, though not always, during childhood. Effective psychological treatments exist, often involving parents, caregivers, and teachers, cognitive problem-solving or social skills training.

viii. Neuro developmental disorders

Neurodevelopmental disorders are behavioural and cognitive disorders, that arise during the developmental period, and involve significant difficulties in the acquisition and execution of specific intellectual, motor, language, or social functions.

Neurodevelopmental disorders include disorders of intellectual development, autism spectrum disorder, and attention deficit hyperactivity disorder (ADHD) amongst others. ADHD is characterised by a persistent pattern of inattention and/or hyperactivity-impulsivity that has a direct negative impact on academic, occupational, or social functioning. Disorders of intellectual development are characterised by significant limitations in intellectual functioning and adaptive behaviour, which refers to difficulties with everyday conceptual, social, and practical skills that are performed in daily life. Autism spectrum disorder (ASD) constitutes a diverse group of conditions characterised by some degree of difficulty with social communication and reciprocal social interaction, as well as persistent restricted, repetitive, and inflexible patterns of behaviour, interests, or activities.

Effective treatment options exist including psychosocial interventions, behavioural interventions, occupational and speech therapy. For certain diagnoses and age groups, medication may also be considered.

5.5.1 Who is at risk from developing a mental disorder?

At any one time, a diverse set of individual, family, community, and structural factors may combine to protect or undermine mental health. Although most people are resilient, people who are exposed to adverse circumstances – including poverty, violence, disability, and inequality – are at higher risk. Protective and risk factors include individual psychological and biological factors, such as emotional skills as well as genetics. Many of the risk and protective factors are influenced through changes in brain structure and/or function.

5.6 WAYS TO IMPROVE MENTAL HEALTH

1. Value yourself:

Treat yourself with kindness and respect, and avoid self-criticism. Make time for your hobbies and favorite projects, or broaden your horizons, example -do a daily crossword puzzle, plant a garden, take dance lessons, learn to play an instrument or become fluent in another language etc.

2. Take care of your body:

Taking care of yourself physically can improve your mental health. Be sure to:

- Eat nutritious meals
- Avoid smoking
- Drink plenty of water
- Exercise, which helps decrease depression and anxiety and improve moods
- Get enough sleep. Researchers believe that lack of sleep contributes to a high rate of depression in college students.

3. Surround yourself with good people:

People with strong family or social connections are generally healthier than those who lack a support network. Make plans with supportive family members and friends, or seek out activities where you can meet new people, such as a club, class or support group.

4. Give yourself:

Volunteer your time and energy to help someone else. You'll feel good about doing something tangible to help someone in need — and it's a great way to meet new people.

5. Learn how to deal with stress:

Like it or not, stress is a part of life. Practice good coping skills: exercise, take a nature walk, play with your pet or try journal writing as a stress reducer. Also, remember to smile and see the humor in life. Research shows that laughter can boost your immune system, ease pain, relax your body and reduce stress.

6. Quiet your mind:

Try meditating, and /or prayer. Relaxation exercises and prayer can improve your state of mind and outlook on life. In fact, research shows that meditation may help you feel calm and enhance the effects of therapy.

7. Set realistic goals:

Decide what you want to achieve academically, professionally and personally, and write down the steps you need to realize your goals. Aim high, but be realistic and don't over-schedule. You'll enjoy a tremendous sense of accomplishment and self-worth as you progress toward your goal.

8. Break up the monotony:

Although our routines make us more efficient and enhance our feelings of security and safety, a little change of pace can perk up a tedious schedule. Alter your jogging route, plan a road-trip, take a walk in a different park, hang some new pictures or try a new restaurant.

9. Avoid alcohol and other drugs:

Keep alcohol use to a minimum and avoid other drugs. Sometimes people use alcohol and other drugs to "self-medicate" but in reality, alcohol and other drugs only aggravate problems.

10. Get help when you need it:

Seeking help is a sign of strength — not a weakness. And it is important to remember that treatment is effective. People who get appropriate care can recover from mental illness and addiction and lead full, rewarding lives.

In this unit, you have read about types of mental disorders and ways to improve mental health. Now, answer the questions given in check your progress 2.

Check Your Progress 2

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1. Briefly explain any type of mental disorder?

2. Mention some ways to improve mental health?

5.7 LET US SUM UP

Mental health does not exist on its own. It is an integral and essential part of overall health, which can be defined in at least three ways – as the absence of disease, as a state of the organism that allows the full performance of all its functions or as a state of balance within oneself and between oneself and one’s physical and social environment .

5.8 REFERENCES AND SELECTED READINGS

file:///C:/Users/IGNOU/Downloads/What_is_mental_health.pdf

<https://www.un.org/en/healthy-workforce/files/Understanding%20Mental%20Health.pdf>

file:///C:/Users/IGNOU/Downloads/Defining_mental_health_and_mental_illness%20(1).pdf

<https://uhs.umich.edu/tenthings>

<https://www.cancer.gov/publications/dictionaries/cancer-terms/def/mortality>

<https://www.ncbi.nlm.nih.gov/books/NBK547668/>

5.9 CHECK YOUR PROGRESS-POSSIBLE ANSWERS

Check Your Progress 1

1. What do you understand by Mental Health?

Ans. The Mental Health Foundation notes that mental health is defined by how individuals think and feel about themselves and their life, and that it affects how an individual copes and manages in times of adversity. WHO uses the term ‘mental disorders’ broadly, to include mental illness, intellectual disability, personality disorder, substance dependence and adjustment to adverse life events.

2. What are the consequences of Stigma?

Ans. Stigmatization of the mentally ill is understood to be prejudicial to them, injurious to all aspects of their treatment in mental health services and damaging to their role as members of society. Stigmatization leads to individual and social discrimination against the stigmatized person.

Check Your Progress 2

1. Briefly explain any type of mental disorder?

Ans. Schizophrenia is characterised by significant impairments in perception and changes in behaviour. Symptoms may include persistent delusions, hallucinations, disorganised thinking, highly disorganised behaviour, or extreme agitation.

2. Mention some ways to improve mental health?

Ans. Value yourself, take care of your body, surround yourself with good people, volunteer your time and energy to help someone else.



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