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CASE STUDY ON LIFESTYLE DISORDERS AND THEIR TREATMENT STRATEGIES

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ABSTRACT

In a time of unclean eating habits and bad lifestyle choices, the number of ailments is likewise rising daily. Thus, in order to maintain the health and prosperity of the community, this is a cause for concern and requires investigation. This study will highlight the need for preventive measures to control their spread. It will also help identifying the risk factors for lifestyle diseases such as smoking, unhealthy diet, and physical inactivity. As a result, the information gathered from the surveys conducted in the village regions served as the foundation for this study, and the knowledge gathered from them is briefly described in the following paragraphs of this report. Thus, in order to live a healthy life, one must consume healthy diet, proper sleep, regular exercise, stay hydrated, regular check-ups. All these factors can cause problems as well as can also help to overcome them.

Keywords: Ailments, Preventive measures, Survey, Unhealthy diet, Physical inactivity, Checkups.

INTRODUCTION

Lifestyle Diseases

In an era of unhealthy lifestyles and unhygienic diet, the number of diseases is also increasing day by day. So, this a matter of concern and is needed to be looked into to keep the community healthy and flourishing. Therefore, this study is based on the records collected by the surveys in the areas of villages, and the knowledge gained by these surveys is briefly written in the upcoming paragraphs of this report respectively. Human beings need to carry out fundamental actions such as food consumption and sleep, i.e., a daily lifestyle, which affects physical, pathological, and physiological health conditions **(McAlpine *et al.*, 2016)**. Hypertension and diabetes are well recognized as daily lifestyle related diseases. Under lifestyle diseases there comes both communicable as well as

non-communicable diseases. According to World Health Organization (WHO), Non-communicable diseases (NCDs) are main cause of death worldwide, and responsible for 71% of total deaths in each year. The most severe killers among NCDs with highest possibilities of death are cardiovascular diseases (CVDs) (17.9 million deaths annually), cancers (9.0 million), respiratory diseases (3.9 million) and diabetes (1.6 million). NCDs consists a wide range of health problems, such as hepatic, renal, and gastroenterological diseases, hematological, and neurological disorders, dermatological conditions, genetic disorders, trauma, mental disorders, and disabilities (e.g., blindness and deafness **(WHO *et al.*, 2020)**.

Communicable Diseases: Pathophysiology, Prevention & Control

Communicable diseases (CDs) are defined as an illness of infectious nature which can spread from one person to another directly or indirectly via an infectious agent. Infected person which does not show the clinical symptoms of the disease and act as reservoir of infectious agent is called carrier.

Modes of Transmission

- **Direct Contact:** Exposure to infected body fluids such as blood or saliva.
- **Vectors/Reservoirs:** Germs are spread by an animal or insect, usually through a bite.
- **Food And Water:** Food and water can become contaminated with microbes and people can get sick when they eat or drink them.
- **Airborne:** Germs are spread through the air, for example when someone coughs or sneezes.

Indirect contact: Pathogens remain on surfaces that were in contact with an infected person.

Examples: Chicken pox, filariasis, AIDS, malaria, tuberculosis, rabies, STDs etc. **(LaRocque *et al.*, 2019)**.

Pathogens can be transmitted by the modes discussed above, for more detailed knowledge refer figure 1.

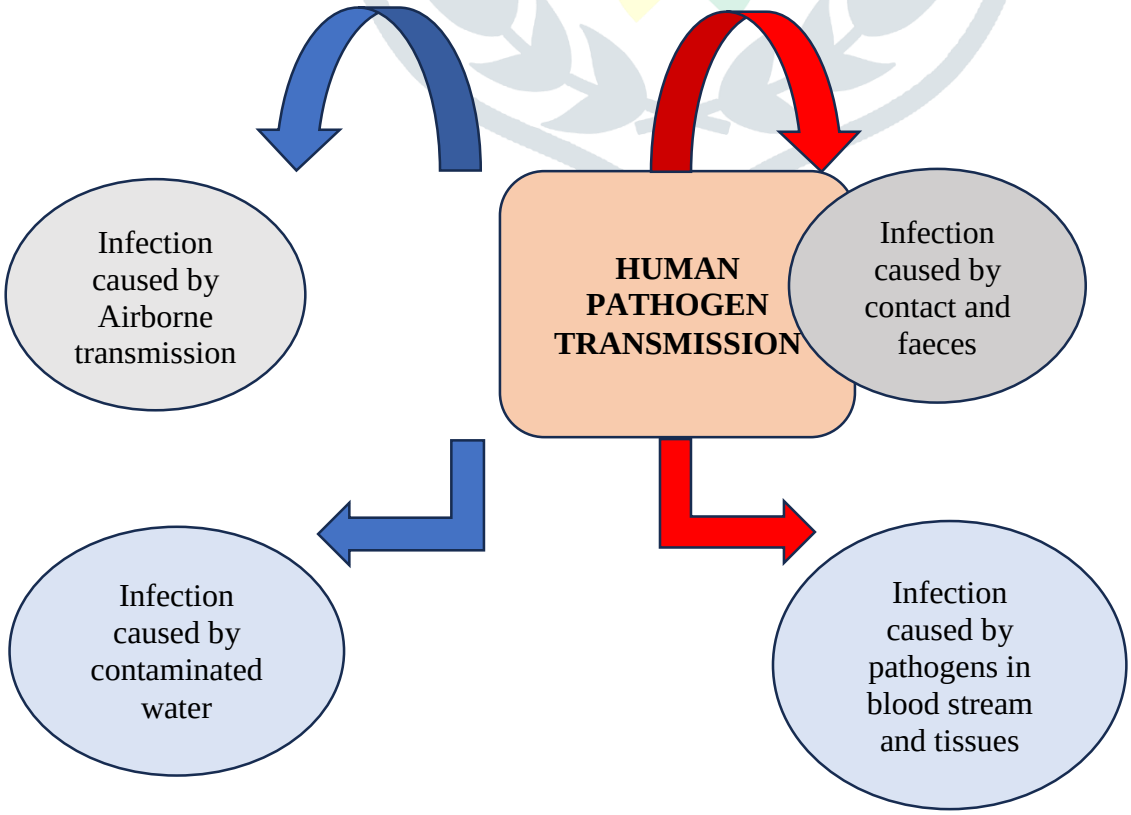

Figure 1 Modes of Transmission of Communicable Diseases

Etiology of Communicable Diseases

For any kind of disease either communicable or non-communicable, there is a causative agent or a micro-organism is responsible. So, in order to know the treatment of that disease, one must have the knowledge of the micro-organism or pathogen causing that problem. Once identified, the suitable medication for the treatment can be assessed. In simple words pathogens are the invaders that attack our bodies. Pathogens usually require a host for their survival and multiplication. A human host is nutrient rich, warm, and moist environments, which remains at a uniform temperature and constantly evolves itself. After this we will discuss the common features that micro-organisms must have in order to be infectious. Further we will explore the wide variety of organisms that are known to cause disease in humans. The human body is a complex and thriving ecosystem. Pathogens include-viruses, bacteria, fungi, protozoans and rickettsia **(Jameson *et al.*, 2019)**.

Prevention Strategies for CDs

The preventive measures for the CDs are washing hands, handling food properly, eat a balanced diet, avoid sharing of eating utensils. For thorough understanding, see figure 2.

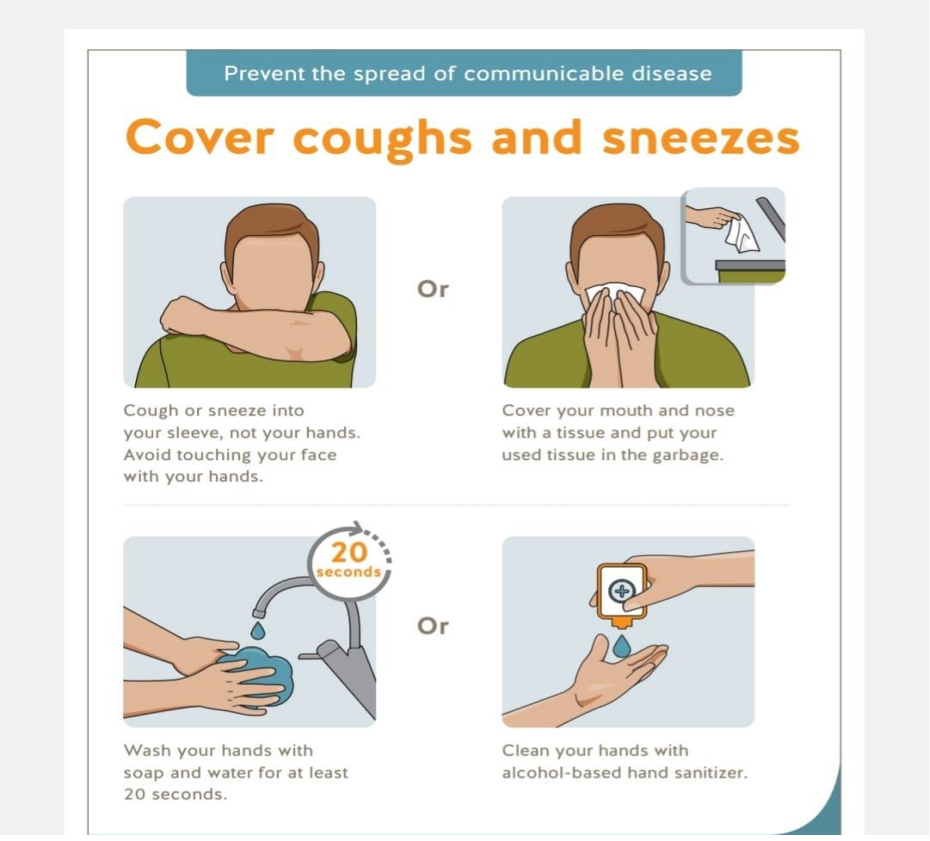

Figure 2 Preventive Measures for Communicable Diseases

- **Diagnosis**

For the diagnosis of any communicable disease laboratory tests and imaging scans are used to determine what is causing your symptoms.

a) Laboratory Tests

Many infectious diseases have similar signs and symptoms. Samples of body fluids can reveal evidence of the particular microbe that is causing the illness. Following are the basic tests used for the diagnosis of CDs

- **Blood tests**. A technician obtains a sample, by pricking a vein, usually in the arm.

- **Urine tests.** It is the painless method used for the testing and diagnosis. In this, only you have to do is urinate into a container. To avoid contamination of sample, you may be instructed to cleanse your genital area with an Antiseptic pad and to collect the urine midstream.
- **Stool sample.** The patient is instructed to collect a stool sample so a lab can check the sample for parasites and other organisms.
- **Throat swabs.** Samples from the throat, or other moist areas of the body, maybe obtained with a sterile swab **(Ryan *et al.*, 2019)**.
- **Spinal tap (lumbar puncture).** In this procedure the sample of cerebrospinal fluid is obtained through a needle carefully inserted between the bones of the lower spine. The patient is usually asked to lie on the side with the knees pulled toward the chest.

b) Imaging scans

Imaging procedures- such as X-rays, computerized tomography and magnetic resonance imaging are used to detect pinpoint diagnosis.

c) Biopsies

During a biopsy, a tiny sample tissue is taken from an internal organ for testing. For example, a biopsy of lung tissue can be tested for variety of fungi that can cause a type of pneumonia **(Kumar *et al.*, 2019)**.

Treatment

When the type of micro-organism causing the illness is identified, it's easier to choose the appropriate treatment. Following are the drugs or antimicrobial agents that are commonly used-

- **Antibiotics**

  Antibiotics are generally used for bacterial infections, as these drugs have no effect on viruses. Certain types of bacteria are especially susceptible to particular classes of antibiotics. Treatment can be more precisely done when the causative agent of the illness is well known. The overuse of antibiotics may develop the resistance.
- **Antivirals**

  The drugs have been developed to treat some, but not all, viruses. Examples include the viruses that cause: HIV/AIDS, Hepatitis B, Hepatitis C, Influenza, Herpes etc.
- **Antifungals**

  Basically, topical antifungal agents and medications can be used to treat skin or nails infections caused by fungi. Oral antifungal agents are the medication used for the treatment of fungal infections of lungs and mucus membrane. More severe fungal infection requires intravenous (I.V) antifungal medications.
- **Anti-parasitic agents**

  Malaria is basically the example of disease caused by parasites. Usually, the drugs which are used to treat these diseases, in most of the cases the parasites have developed resistance to the drugs **(Facts about infectious diseases, 2019)**.

Non-Communicable Diseases, Types, Prevention and Control.

Non-communicable diseases (NCDs), also known as chronic diseases, are conditions that are not transmissible from one person to another. They typically develop over a long period and are often caused by a combination of genetic, environmental, and lifestyle factors. NCDs are a major public health concern worldwide, accounting for a significant proportion of deaths and disability. They pose a significant burden on healthcare systems and economies, and their impact is disproportionately felt in low- and middle-income countries **(WHO *et al.*,2019)**.

Types of NCDs

Cardiovascular Diseases

- Heart Disease
- Stroke
- High Blood Pressure

Cancers

- Lung Cancer
- Breast Cancer
- Colorectal Cancer
- Prostate Cancer

Chronic Respiratory Diseases

- Chronic Obstructive Pulmonary Disease (COPD)
- Asthma
- Tuberculosis (TB)

Diabetes

- Type 1 Diabetes
- Type 2 Diabetes
- Gestational Diabetes

A complete description of types of NCDs is shown below in the figure 3.

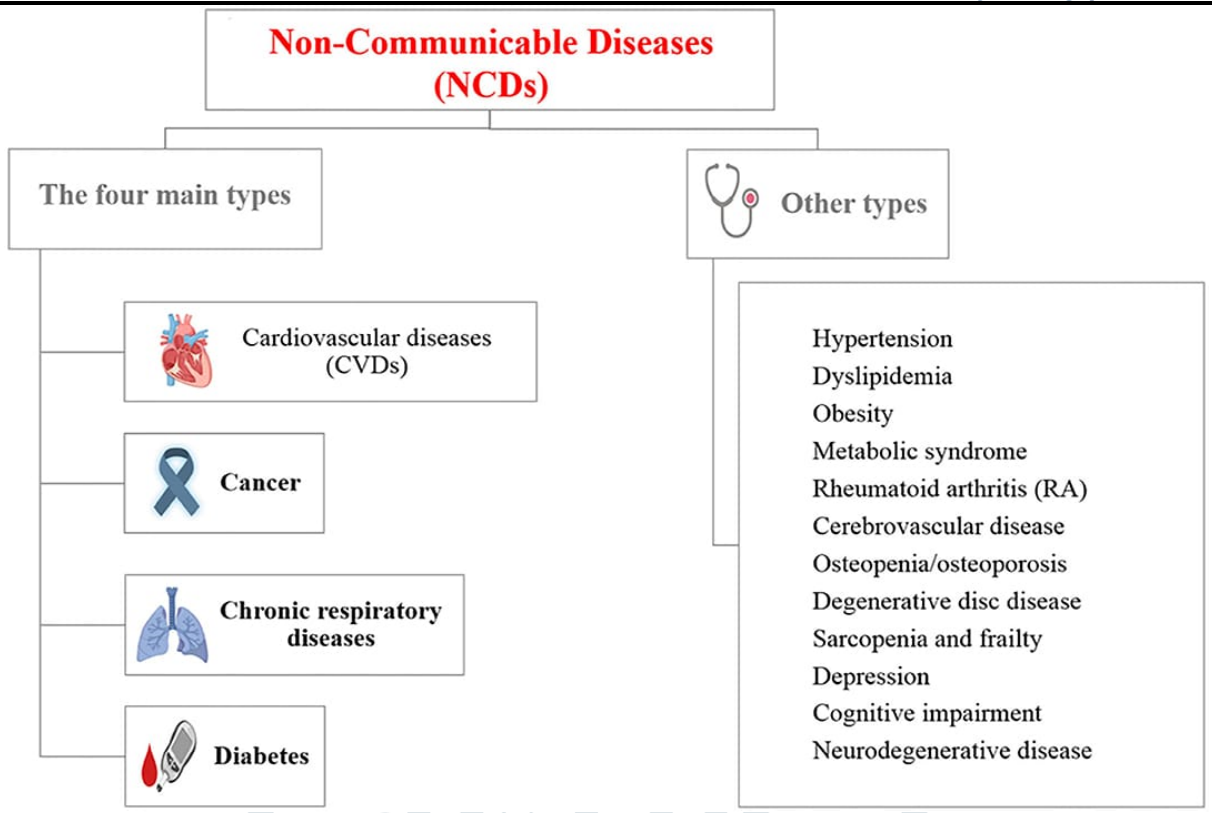

Figure 3 Types of Non-communicable Diseases

Etiology of NCDs

- **Genetic and Environmental Factors**

Some people are genetically predisposed to certain NCDs.

- **Environmental Factors**

Environmental factors, such as air pollution and exposure to certain chemicals, can increase the risk of NCDs **(IDF *et al.*, 2015)**.

- **Lifestyle Factors**

Lifestyle factors, such as smoking, poor diet, and lack of physical activity, can also contribute to the development of NCDs **(Cooper *et al.*, 2014)**.

Prevention and Management of NCDs

Following are the preventive measures, used to prevent NCDs, for easy understanding refer figure 4.

- Healthy Diet
- Eating a healthy diet can help prevent and manage NCDs.
- Regular physical activity can help reduce the risk of NCDs.
- Smoking cessation is essential for preventing and managing NCDs.

- Early detection and treatment of NCDs can improve outcomes **(Billingsley *et al.*, 2018)**.



Figure 4 Guidance for Healthy Lifestyle

MATERIAL & METHODS

Material

The case studies were conducted based on the surveys; the data was collected by door-to-door survey method. A survey form was generated to collect all the data related to the survey. The following is the format of the survey form, and below is a presentation of the questions which were asked during the survey.

Survey for Case study on Lifestyle Diseases

(*Required)

a. Enter your name *

b. What is your gender? *

- Female

- Male
- Prefer not to say

c. How old are you? *

- <18
- 18-25
- 26-35
- 36-45
- 46-55
- 56-65
- 66-75

d. Are you suffering from any disease? *

- Yes
- No

e. Which kind of disease are you suffering from? *

- Communicable Disease
- Non-communicable disease

f. Which of the following mentioned non-communicable disease are you suffering from?

- Cardiovascular Disease
- Cancer
- Respiratory Disease
- Diabetes
- Inflammatory Disease
- Metabolic Disorder
- Depression
- Cerebrovascular Disease
- Neurodegenerative Disease
- None of these

g. Describe the name of non-communicable disease or disorder.

h. Which of the following Communicable disease are you suffering from?

- Fever
- Chickenpox
- Filariasis

- HIV/AIDS
- Malaria
- Hepatitis
- Tuberculosis
- Dengue
- Skin infection
- Common cold
- Influenza (flu)
- Diphtheria
- Whooping cough
- Mumps
- None of these

i. Describe the signs and symptoms of your disease

j. From how much time you are suffering from this disease? *

- Less than 5 days
- 5-10 days
- 20-30 days
- More than 3 months
- More than 6 months
- More than 1 year

k. What kind of treatment are you taking? *

- Therapy
- Medicines
- Other

l. Describe the therapy or medicinal treatment you are using. *

Methods

The main methodology used in this case study was collecting all the knowledge related to a disease, including the cause, pathophysiology, treatment, lifestyle modifications etc. for this a door-to-door survey was conducted. In which a population of 400 people was selected, for which the age criteria were from 25-75.

- **Survey method:** A door-to-door survey was conducted. A method of gathering information using relevant questions from a population of people.
- **Population selected:** A population of 400 people were selected for the survey.
- **Age criteria:** The age criteria of the population selected was 25-75.
- **Questions asked:** Questions such as name, age, gender, type of disease, signs and symptoms, time, treatment etc.
- **Diseases selected:** The main focus of the survey was to collect all the information related to the lifestyle diseases, which usually occur due to the alteration in the lifestyle, such as unhealthy diet, no physical activity, exposure to contaminated environment etc.
- **Treatment:** The treatment criteria for the survey was "Therapy" and "Medicines".

RESULT & DISCUSSION

In the survey conducted it was recorded that the main cause of these diseases in unhealthy lifestyle which leads to the progression of these problems. In order to overcome these problems, one must follow a healthy lifestyle followed by balanced diet, drinking enough water, sufficient sleep, regular exercise, regular check-ups, socializing etc. If an individual wants to live a healthy life he or she must focus on their daily activities. By this one can easily notice all the alterations that cause a person to get ill. In order to know the cause, one must note all the activities he or she is performing. For example, in hypercholesterolemia the blood vessels get blocked due to accumulation of triglycerides plaque which occurs due to intake of oily and junk food, so in this case a person is himself responsible for the progression of ailment. Hence, in this case one must avoid junk food and oily diet. Therefore, avoiding all the things in the end after getting ill, is of no use. Thus, one must have control over their will and must keep in mind what is healthy for their life and what can be threatening. In the survey the results are found as following:

- 55% population is Females
- 93% population is suffering from non-communicable diseases
- Most of people are suffering from Cardiovascular and Metabolic Disorders
- 23% of the population is having Hypertension
- 20% of the population is found diabetic (Diabetes Mellitus)
- 11% of the population is suffering from Hypothyroidism
- 5% of the population is having Hyperlipidemia
- 5% of population have Jaundice
- 3% of the population is having inflammatory disorders
- 2% is having Poly Cystic Ovarian Syndrome (PCOS)
- Most of the people are using medicinal treatment

The following result of the case study was obtained, with the help of surveys conducted. The below attached pie charts and the record of the survey are presented.

Table 1 Results of the Investigation Done in the Survey (**A**= Which of the following mentioned non-communicable diseases are you suffering from? **B**= Describe the name of non-communicable disease or disorder, **C**= Describe the signs and symptoms of your disease, **D**= Describe the therapy or medicinal treatment you are using)

Name: Aman	
A	None
B	None
C	Runny Nose, Cough, Sneezing
D	Paracetamol, Anticold Tablet
Name: Seema Devi	
A	Diabetes
B	Diabetes Mellitus
C	Increased thirst, fatigue and blurred vision
D	Metformin, Vildagliptin, Glimepiride
Name: Banita kumari	
A	Metabolic Disorder
B	Hypothyroidism
C	Sweating, Increased Appetite, Fatigue, Weight Loss, Insomnia
D	Thyrox 50mg
Name: Richa	
A	Metabolic Disorder
B	Polycystic Ovarian Syndrome
C	Weight Gain, Excess Hair Growth, Acne, Infertility, Irregular Menstrual Period
D	Ginette-35 (Ethinyl Estradiol-0.035mg and cyproterone 2mg)
Name: Indira Thakur	
A	Metabolic Disorder

B	Hypothyroidism
C	Sweating, Increased Appetite, Fatigue, Weight Loss, Insomnia
D	Thyroxine-88mg
Name: Prem kumar	
A	Inflammatory Disease
B	Gastritis
C	Abdominal Pain, Chest Burn, Loss of Appetite, Nausea
D	Pantosec-DSR (pantoprazole+domeperidone)
Name: Ravi kumar	
A	Metabolic Disorder
B	Diabetes Mellitus
C	Weak Eyesight, Fatigue, Increased Thirst, Weight Loss
D	Ozomet-PG (500mg) (Glimepiride pioglitazone and metformin)
Name: Brahmi devi	
A	Metabolic Disorder
B	Hypercholesterolemia
C	Chest Pain, Slurred Speech, Pain in Lower Legs.
D	Atorvastatin 10mg Ezetimibe 10mg
Name: Manju thakur	
A	Inflammatory Disease
B	Piles
C	Itchy Anus, Pain, Lumps
D	Xylocaine and Anaproct ointment
Name: Kanta devi	
A	Metabolic disorder

B	Hypothyroidism
C	Weight loss, Increased appetite
D	Thyrox 12.5
Name: Gurdei	
A	Diabetes
B	Diabetes Mellitus
C	Thirst, Frequent Urination, Hunger, Fatigue and Blurred Vision
D	Metformin 1000mg
Name: Sher Singh	
A	Cardiovascular Disorder
B	Hypertension
C	Headaches, Chest Pain, Dizziness, Nausea
D	Telmisartan 40mg
Name: Savitri devi	
A	Metabolic Disorder
B	Hyperthyroidism
C	Increased appetite, weight loss
D	Thyrox 25mg
Name: Balak Ram	
A	Cardiovascular Disease
B	Hypertension
C	Dizziness, Headache, Chest Pain
D	Amlodipine 5mg
Name: Fulla devi	
A	Metabolic Disorder

B	Diabetes, Hyperthyroidism
C	Weight loss, insomnia, fatigue
D	Glycomet-GP (1000mg), Thyronorm 25mg
Name: Achhro devi	
A	Cardiovascular disease
B	Hypertension, Bodyache
C	Headache, Weakness, Blurred Vision
D	Amlodipine 5mg, Zerodol-P
Name: Heena	
A	Metabolic Disorder, Inflammatory Disease
B	Cholestrol, Arthritis
C	Joint Pain, Swelling, Chest Pain, Dizziness
D	Atorvastatin 10mg, Efonox-TH (etoricoxib & thiocolchicoside)
Name: Sheela devi	
A	Inflammatory Disease
B	Gastritis
C	Joint Pain, Swelling, Chest Pain, Dizziness
D	Omeprazole
Name: Aatma ram	
A	Diabetes
B	Diabetes Mellitus
C	Blurred Vision, Excess Urination, Fatigue
D	Glycomet-GP 1000mg
Name: Anjana kumari	
A	Cardiovascular Disease, Diabetes

B	Hypertension, Diabetes
C	Headache, Excess Urination, Blurred Vision
D	Amlodipine-5mg, Glycomet-GP 1000mg
Name: Anil kumar	
A	Diabetes
B	Diabetes Mellitus
C	Urination, fatigue, blurred vision
D	Glycomet-GP 1000MG
Name: Hoshiyaar Singh	
A	Cardiovascular Disease
B	Hypertension
C	Headache, Weakness
D	Telmisartan 40mg
Name: Sarla Sharma	
A	Metabolic disorder, Diabetes, Cardiovascular Disease
B	Hypertension, Hypothyroidism, Cholestrol
C	Headache, Bodypain, Insomnia, Weight loss
D	Thyroxinol-25mg, Atorvastatin 20mg, Telmisartan 40mg
Name: Sukhu Ram	
A	Respiratory Disease, Cardiovascular Disease
B	Asthma, Hypertension
C	Cough, chest pain, headache, wheezing
D	Etophylline And Theophylline, Levosalbutamol Ipratropium Bromide Inhalation Pump 20mg
Name: Brij Lal	

A	Metabolic Disorder
B	Hyperlipidemia
C	Left Side Chest Pain, Slurred Speech, Dizziness
D	Atorvastatin 10mg
Name: Kamla	
A	Diabetes
B	Diabetes Mellitus
C	Increased Thirst, Hunger, Fatigue, Blurred Vision
D	Metformin 500mg And Glimepiride 1mg
Name: Ajay thakur	
A	Metabolic Disorder
B	Jaundice
C	Yellow Skin, Dark Brown Urine, Clay-Colored Stools, Tiredness
D	Ursodeoxycholic Acid Tablet 300mg
Name: Narendra Kumar	
A	Respiratory Disease
B	Asthma
C	Cough, wheezing
D	Deriphylline retard 150, saliprair L -20
Name: Onkar Singh	
A	Diabetes
B	Diabetes Mellitus
C	Fatigue, Blurred Vision, Increased Thirst
D	Metformin 500mg
Name: Lajja devi	

A	Respiratory Disease, Diabetes, Cardiovascular Disease.
B	Asthma, Hypertension, Renal Failure, Diabetes
C	Headache, Cough, Chest Pain, Fatigue, Increased Thirst
D	Deriphylline Retard 300, Dapamac 10mg, Amlodipine 10mg, Sevelamer Carbonate 800mg

Below are the pie-charts of the recorded data, which are mentioned in the figure 5.1.

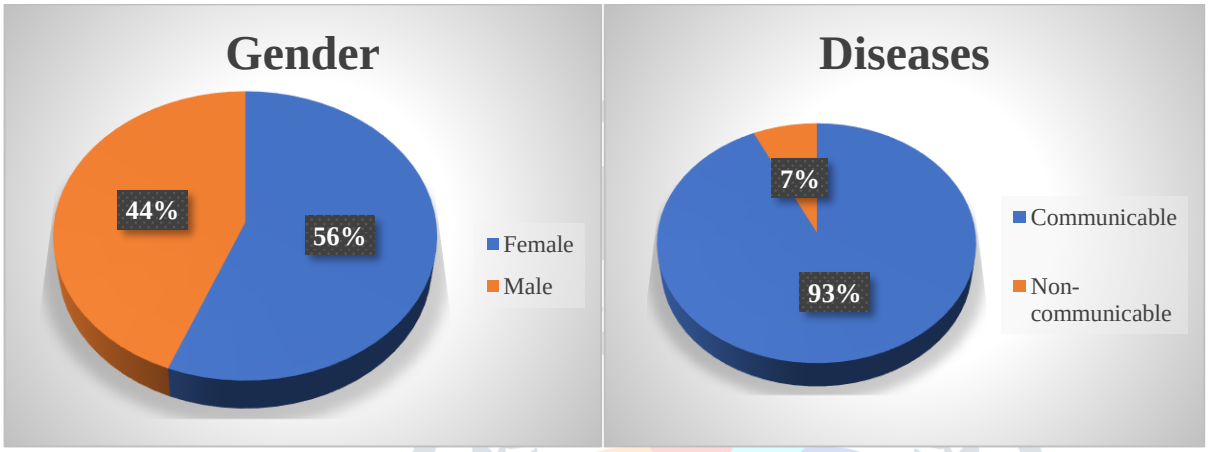

Figure a) Gender Pie Chart **Figure b)** Diseases Pie Chart

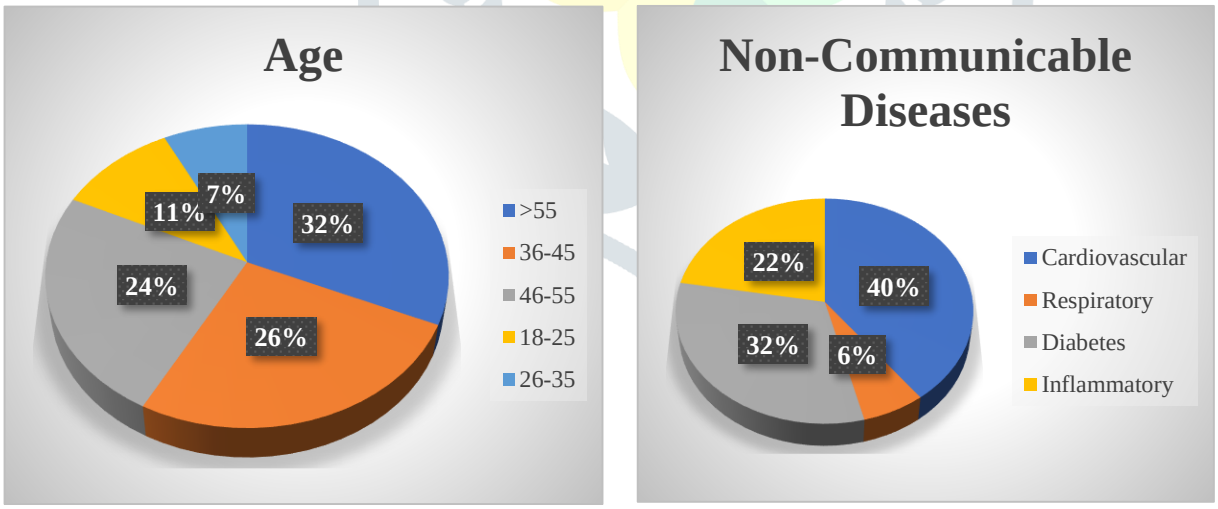

Figure c) Age Pie Chart **Figure d)** Non-Communicable Diseases

Figure 5 Pie Charts of The Survey Results

SUMMARY & CONCLUSION

Human beings need to carry out fundamental actions such as food consumption and sleep, i.e., a daily lifestyle, which affects physical, pathological, and physiological health conditions. The Survey was carried out and all the data related to the lifestyle diseases were well studied, including the diagnosis, symptoms, treatment and lifestyle

modifications to tackle the problem. Hypertension and diabetes were found most common in the people. In the survey the results were found as following, 55% population were Females, 93% population was suffering from non-communicable diseases, Most commonly the people were suffering from Cardiovascular and Metabolic Disorders, 23% of the population was having Hypertension, 20% of the population was found diabetic (Diabetes Mellitus), 11% of the population is suffering from Hypothyroidism, 5% of the population was having Hyperlipidemia, 5% of population had Jaundice, 3% of the population was having inflammatory disorders, 2% was found with Poly Cystic Ovarian Syndrome (PCOS). In the end, it was concluded that an unhealthy way of living is the main cause of all these problems. In order to remove all these diseases and disorders, one must consume healthy diet, proper sleep, regular exercise, stay hydrated, regular check-ups. All these factors are needed to be kept in mind if you want to live a healthy life.

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