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CARDIOVASCULAR DISEASES IN TRANSITION: INTERPLAY OF LIFESTYLE, ENVIRONMENT, AND GENETICS

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ABSTRACT

Cardiovascular diseases (CVDs has been main cause of death which includes stroke, heart disease, etc. Over the years, the number of people affected by CVDs has been increasing. This review looks at the main reasons behind this rise. Factors such as unhealthy lifestyles, poor diets, more stress, and chronic use of some drugs, more alcohol consumption and less physical activity are key contributors. The review also discusses how changes in society, like more people living in cities and an aging population, are adding to the problem. Other important reasons include genetic factors, unequal access to healthcare, and poor public health systems. Although medical advances have helped detect CVDs earlier, they may also be partly responsible for the increase in reported cases. The review helps for better public health policies, more focus on healthier living, and changes in lifestyle to reduce the growing number of CVD cases. This also includes an overview of the cardiovascular disease like hypertension, heart failure, arrhythmia, angina, myocardial infraction, etc. which are leading to more risk prevalence.

Key words:
Cardiovascular disease, unhealthy lifestyle, stress, heart disease, hypertension, unequal access to healthcare, heart failure, prevention, etc.

INTRODUCTION

Human body consist of number of different organ systems which includes, respiratory, skeletal, nervous, immune, digestive and cardiovascular system, etc. All these systems have their specific role in bodies' regulatory mechanism. [1]

Cardiovascular system a largest and an essential system in human body which consist of, blood, blood vessels, heart. Main role of cardiovascular system is providing blood supply to body and there by distributing oxygen to overall body parts. Blood vessels and the heart function to provide continue blood flow along with essential nutrients and oxygen. Cardiovascular system can be regulated by myriads of stimuli, including change in blood volume, hormonal imbalance, electrolyte concentration, medication, adrenal gland, kidney function, etc. Parasympathetic and Sympathetic nervous system have a significant function in heart functioning and thereby in regulation of cardiovascular system. [2]

Cardiovascular system is associated various disease or disorders that includes, Hypertension, Angina pectoris, Chronic heart failure (CHF), Arrhythmia, Cardiac arrest, Myocardial infraction, Heart wall complications, Peripheral artery disease, etc.

A variety of risk factor are associated with cardiac cycle diseases, including genetics, obesity, alcohol consumption, smoking, fatty diet, etc.

Various preventive measures are used for treatment and prevention of the cardiovascular diseases. Which includes both pharmacological and non-pharmacological management. Among them pharmacological method includes medication that helps to treat CVS disorders. And nob pharmacological method includes change in life style, healthy diet, exercise, etc.

✧ **Prevalence study :**

The prevalence rate of angina pectoris and myocardial infraction was found to be 13% and 15% respectively among the men of age 65-69, 17% & 18% in men of age 80-84. While 8% and 4% among the women aged 65-69, and the women aged 80-84 having 13% & 3% prevalence rate respectively. [3]

Total cardiovascular disease affects about 32.5%of T2DM patients**.** Cardiovascular disease was the cause of death in 10.01 % of T2DM patients. [4] By studying the data of2010 of China the following prevalence has been found: Stroke: 0.5%; myocardial infarction (MI): 0.6%; abnormal cholesterol: 45.01%. Obesity \ excess weight: 32.4 %; hypertension: 31.7%; diabetes: 9.1%; smoking: 2.7%. 13.3% of Chinese women had associated risk factors, compared to 30.9% who had none. [6]

CARDIOVASCULAR SYSTEM DISORDERS

Since cardiovascular system is an essential organ system in human body. Most of the diseases are associated with this system are as follows,

- Hypertension
- Heart failure
- Angina Pectoris
- Arrhythmia
- Cardiac Arrest
- Myocardial Infraction

➢ **Hypertension:**

One of the main causes of occurrence and final cause of mortality for cardiovascular disease is high blood pressure. It promotes hypertension, which damages the heart, kidney, blood vessels, and brains, resulting in stroke, renal failure, and ischaemic heart failure.

Hypertension is characterized by persistent increase in blood pressure in arteries or it also considered as high blood pressure. Blood pressure is written in two divisions, one is systolic blood pressure (120mm Hg) i.e. pressure exerted on wall of arteries during contraction, while second factor is diastolic blood pressure (80mm Hg) i.e. pressure exerted on wall of arteries during diastole or relaxation.

The prevalence of hypertension is rising from last two decades in higher rate. In last two decades high income countries facing more problem of hypertension because of change in lifestyle i.e. unhealthy food consumption, absence of exercise, etc. [8, 1]

Category Of Hypertension	Systolic Blood Pressure (mm Hg)	Diastolic Blood Pressure (mm Hg)
Normal	<120	<80
Elevated	120 to 129	Less than 80
Stage-1 Hypertension	130 to 139	80 to 89
Stage-2 Hypertension	140 to 160	90 to 100
Hypertensive Crisis	>180	>120

Risk Factors Associated with Hypertension:

- High sodium consumption
- Low potassium consumption
- High alcohol consumption
- Less physical activity
- Obesity
- Unhealthy diet
- Cigarette Smoking
- stress
- Sleep disorder
- Air pollution
- Age
- Genetics

Sign and Symptoms of Hypertension:

- Severe headache
- Breathing difficulties
- Anxiety
- Confusion
- Blurred vision or other vision changes
- Abnormal heartbeat
- Nosebleeds
- Chest pain
- Dizziness

Management of Hypertension:

There are two different ways to manage the hypertension first is nan-pharmacological management and another one is pharmacological management i.e. using medicinal agents.

- **Nonpharmacological management:**
  It can be done by change in lifestyle and without involvement of any pharmaceutical drug or medicine. By this method only early-stage hypertension can be manage, it is quite useful in critical situation.
  Nonpharmacological approach includes-
  - Low salt diet
  - Maintaining healthy weight
  - Improving physical exercise
  - Healthy diet
  - Reduce alcohol consumption and tobacco chewing.
- **Pharmacological management**
  It involves the use of various pharmaceutical drugs which are helpful to reduce increased blood pressure in cases of hypertension. And the medication which used for treatment of hypertension are known as antihypertensive agents. These includes following class of drug….
  - ACE Inhibitors- enalapril, captopril, etc.

- Angiotensin-2 receptor blocker- losartan, telmisartan, etc.
- Calcium channel blocker- verapamil, diltiazem, etc.
- Vasodilators- minoxidil, hydralazine, etc.
- Beta-blockers- atenolol, metoprolol, bisoprolol, etc.
- Alpha-blocker- prazosin, doxazosin, etc.
- Diuretics- mannitol, chlorothiazide, furosemide, spironolactone, etc.[1, 2]

Complications of uncontrolled hypertension:

Uncontrolled hypertension results in high blood pressure, which can harm the heart by hardening the arteries, decreasing blood flow, and lowering oxygen delivery to the heart. Angina (chest pain), heart attacks, heart failure, and irregular heartbeats can all result in death due to elevated blood pressure and reduced blood flow. [16]

- **Heart Failure:**

Chronic heart failure may be characterized as reduce the capacity of the heart to circulate blood that leads to fatigue, dyspnoea and exercise intolerance. Patients with CHF often have reduce functional ability and decrease quality of life.

Simply the heart failure is a disease in which the heart unable to send required blood to fulfil the metabolic requirements of the body tissue and also unable to receive it because every time after a systole, some residual blood remains in its ventricles. In recent time this term is known as congestive heart failure oedematous state produce by fluid retention leading to pulmonary as well as peripheral congestion.

Heart failure is a syndrome with multiple causes i.e. MI, HI, Angina, Ventricular tachycardia, Diabetic mellitus, Hyperthyroidism, Anaemia, etc. There Depending on the heart's output, there are two types of heart failure:

- ✓ Cardiac failure with low output
- ✓ Cardiac failure with high output

Among them cardiac failure with low output having low cardiac output which pumps insufficient blood to meat bodies metabolic need, it most common heart failure which affects either left ventricle, right ventricle or both. While high-output cardiac failure is rare. [1, 2, 9]

Symptoms and signs of Heart Failure:

Heart failure is a life threating disease. People with heart failure having following symptoms which are develop slowly.

- Shortness of breath with activity and when laying down**.**
- Fatigue or weakness.
- Swelling in legs, ankle and feet.
- Rapid or irregular heartbeat.
- Very rapid weight gain from fluid build-up.
- Decrease alertness.
- Chest pain.
- Nausea and lack of appetite.
- Hypoxia.
- Hepatomegaly due to hepatic congestion.
- Decrease urine formation due to renal congestion.

Risk Factor Associated with Heart Failure:

- Coronary artery disease.
- Heart attack.
- High blood pressure.
- Irregular heartbeat.
- Diabetes.
- Sleep disorders.
- Heart valve problem.

Management of Heart Failure:

Heart failure can be managed by two ways i.e. pharmacological and nonpharmacological way. Nonpharmacological management includes healthy diet, weight loss, exercise, low salt intake, low sugar intake, etc. Pharmacological management includes use of drugs. Drugs used to treat heart failure are... [10]

- Cardiac glycosides-digoxin, digoxin, etc.
- Phosphodiesterase inhibitors-enoximone, milrinone, etc.
- Beta-adrenergic agonist-dobutamine, dopexamine, etc.
- Diuretics- furosemide, hydrochlorothiazide, etc.
- ACE inhibitors- enalapril, lisinopril, etc.
- Vasodilators- isosorbide dinitrate, hydralazine, etc.
- Vasopressin receptor antagonist- tolvaptan and conivaptan.

- **Angina Pectoris:**

Angere = to strangulate
Pectus = chest

Angina is a clinical manifestation of reversible myocardial memia and is most commonly experienced as an underground pain that chokes on the chest and on the heart during excretion that shines after the left arm, neck or jaw. Angina pain occurs due to an imbalance between oxygen requirements and oxygen supply in the myocardium's ischemic region. This imbalance is caused by the coronary blood flow inability, a metabolic requirement for the myocardium, resulting in vasospasm, but angina pectoris can also fail with a low workload.

Co-morbidities such as anaemia, hypoxia, hypertension, and hyperthyroidism increase blood-induced heart workload and oxygen supply, preventing myocard's metabolic needs to be maintained.[2]

Angina have been characterized into three class:

- Classical or Stable Angina – This constitutes about 90% of total anginal case. Ischemia caused by fixed atherosclerotic stenosis of larger coronary arteries leads to the accumulation of acidic metabolites that stimulate pest-borne myocardial pain.[1]
- Unstable Angina(crescendo) – It is characterized by progressive atherosclerosis of coronary vessels or platelet aggregation due to platelet aggregation with broken plaque along with vasospasm, even minimal effort or recurring peaceful angina attack.[1]
- Prinzmetalangina- In this condition, you will experience pain while you are idle or sleep, usually not related to training. This is due to a recurrence of local vasospasm of the heart that results in decrease blood flow. [1]

Causes of Angina Pectoris:

- Gastroesophageal reflux disease
- Lung disease.
- Anxiety or panic attack
- Tobacco smoking
- High blood pressure
- Obesity
- Age
- Genetics

Symptoms of Angina Pectoris:

Following are the symptoms of angina**:**

- Chest pain and discomfort, chest pain includes sensation of burning, pressure and squeezing.
- Sometimes you may feel the pain in your hands, neck, chin, shoulders or back.
- Dizziness.
- Fatigue.
- Nausea.
- Short breathing.
- Sweating.

Management of Angina Pectoris:

Like other cardiac disease angina pectoris is also managed by two ways i.e. pharmacological and nonpharmacological approach. Nonpharmacological approach involves change in lifestyle and thereby improving overall health. While pharmacological approach involves the application of pharmaceutical drugs, drug used in the management of angina pectoris are known as antianginal agents. [11, 12, 15]

Anti-anginal agents:

- Organic nitrates- nitro-glycerine, isosorbide dinitrate, etc.
- Calcium channel blocker- verapamil, diltiazem, nifedipine, etc.
- Bata-blockers- propranolol, atenolol, etc.
- Potassium channel opener- nicorandil.
- Cytoprotective agents- ranolazine.
- Antiplatelet agents- aspirin, ticlopidine, clopidogrel, etc.

➢ **Arrythmia:**

Cardiac Arrhythmias includes abnormalities in Pulse formation (e.g. heart rate, rhythm or impulse origin) and violation in impulse condition (Violation of the normal sequence of arterial or ventricular deposition). In this situation the cardiac rhythm may be too slow or too rapid.

An abnormal heart rhythm and its implementation of high quality pulses could lead to this - Brady arrhythmias or tachyarrhythmia.

- Brady arrhythmia's results from impulse generation failures at SA nodes or transmission failure from AV node. It includes different types of heart block like AV blockage. In this heart rate is shifted below 60 beats per min.
- Tachyarrhythmia is defined as an abnormal rhythm with a heart rate of 100 bits per min. It can be classified into two types based on the origin of arrhythmia and ventricular tachycardia.

  Supraventricular tachycardia: initiating from above the AV node.
  - Arterial fibrillation
  - Arterial premature complex
  - Arterial tachycardia
  - AV junction extra systole

Ventricular tachycardia: initiating below the AV node.

- Ventricular tachycardia
- Ventricular fibrillation
- Ventricular premature beats

Causes of Cardiac Arrhythmias:

Heart arrhythmia leads to abnormal impulse generation, launching activities or abnormal impulsive evangelism for any reason.

Heart attack: damage from heart attack can disrupt the hearts electrical signals

- Coronary artery disease: blocked arteries in the heart
- Heart valve disease
- Cardiomyopathy: where heart muscles stiff
- Genetics (long QT syndrome)
- Smoking
- High alcohol consumption
- Drug use like cocaine, amphetamine, etc.
- Stress and anxiety.
- Lack of sleep

- High blood pressure: high BP can damage blood vessels
- Electrolyte imbalance
- Age
- Infection (covid-19)

Sign and Symptoms of Arrhythmias:

- Racing filling in chest
- Fast heartbeat or slow heartbeat
- Chest pain
- Shortness of breath
- Anxiety
- Fatigue
- Light-headedness or dizziness
- Sweating
- Fainting [1, 2, 7]

Diagnosis and treatment of arrhythmia:

Diagnostic tests:

Diagnostic test for arrhythmia includes,

- Electrocardiogram- To measure the electrical activity of heart.
- Holter monitor- Wearing the portable electrocardiogram device for a day or longer allows it to detect electrical activity in the heart.
- Event recorder- portable device is worn for30 days.

Treatment of arrhythmia:

Various non-pharmacological approaches can be used for prevention of the chances of cardiac arrhythmia like maintain healthy weight, healthy diet, physical exercise, etc.

Treatment of arrhythmia depends on the heartbeat i.e. the heartbeat fast or slow. Sometimes it does not require drug treatment as longer, usually the treatment is only needed in the case of irregular heartbeat causes significant symptoms.

- **THERAPIES**

1. Vagal maneuvers: these is simple therapy that can slow down the heart rate. These can be work by affecting vagus nerve which is responsible for controlling heartbeat. Vagal maneuvers can be recommended in case of tachycardia i.e. very high heartrate.
2. Cardioversion: in this technique paddles and patches are used on the chest to give an electric shock to the heart and helps to reset the heart rhythm. This technique is used only when medicines and vagal maneuvers are failed to recover heart rhythm.[14]

Treatment of arrhythmia also involves surgery and procedure are as follows:

- ✧ Catheter ablation
- ✧ Implanted cardioverter-defibrillator
- ✧ Pacemaker
- ✧ Coronary bypass graft surgery
- ✧ Maze procedure

- MEDICATION TREATMENT:

Drugs used in the treatment of arrhythmia are known as anti-arrhythmic agents.

Class Ia: fast sodium channels cause moderate blocking.

Class Ib: Slow blockage of sodium channels

Class Ic: Sodium blockage and no effect on QT interval

Class II: Beta adrenoceptor-blockers are employed to regulate heart rate in patients suffering from atrial flutter and paroxysmal, persistent, or permanent AF.

Class III: Blocks Potassium channel that decrease the potassium removal from the cell and prolong the QTc interval.

Class IV: calcium channel blockers, decrease conduction rate and slow conduction through the AV node [14]

DIAGNOSTIC TECHNIQUES

There are various diagnostic techniques are used to diagnose the cardiovascular disorders like hypertension, cardiac arrest, heart failure, angina pectoris, etc. diagnostic tests are used to diagnose the disease in patient that helps in the treatment of that disease as the stage of disease can be diagnose.

Cardiovascular disease is any disease that affects heart and blood capillaries e.g., arrhythmia and arterial blockage. There are many tests that a doctor may use to diagnose heart condition.[17]

Complete cholesterol test/ blood test (physical analysis):

- ✓ Total cholesterol
- ✓ Low-density lipoprotein /LDL cholesterolHigh-density lipoprotein /HDL cholesterol
- ✓ C-reactive protein tests are used to look for indications of inflammation in your body.

After completion of physical examination some Non-invasive heart disease tests. Because the tests are non-invasive, they cannot use instruments that physically enter the body or insert into the skin. This test includes.

- A brief test called an electrocardiogram (EKG) tracks electrical activity in the heart. These record this activity on a paper strip.
- An echocardiogram is an ultrasound of patient's heart. It builds a picture of the patient's heart using sound waves.
- Stress test: To identify cardiac issues.
- Carotid ultrasound: Using sound waves, a carotid duplex scan produces images of the carotid arteries on both sides of your neck.
- Holter monitor: This tiny device functions similarly to an ongoing EKG.

- Chest X-ray: Using a very little amount of radiation, a chest X-ray generates pictures of the chest including the heart.
- CT scan: A CT scan generates a cross-sectional image of the heart by merging multiple X-ray images.
- MRI of heart.

Non-invasive examinations can occasionally yield insufficient information for diagnosis of cardiac disorders, so invasive tests are used for diagnosis…invasive process having tools that physically enter the body, such as a needle, tube, or scope. [18]

- Cardiac catheterization and Coronary angiography
- The study of electrophysiology

RISK FACTORS

CVD can arise directly from a variety of pathogenesis, including embolism in patients with atrial fibrillation that causes ischemic heart stroke, but Rheumatoid arthritis causes heart valve disease. This is associated with the onset of atherosclerosis. The demand for sedentary workplaces current consumerism and technologically driven cultures are associated with reduced free time for long working hours, long commutes and leisure activities, explaining the steady and significance increase in CVD rates in the previous several decades. In particular, physical inactivity, high calorie diet absorption, fats, and sugar are present the emergence of metabolic diseases, including atherosclerosis such as diabetes, hypertension, and metabolic syndrome that have grown in some population in cardiovascular disease countries. High, middle-income countries, low-income nations, 9 modified risk variables account for increase 90% of the risk MI: tobacco smoking, dyslipidaemia. [23, 24]

Cardiovascular diseases (CVDs) have indeed become a global health crisis, with rising rates in both developed and developing nations. As you've mentioned, the rapid economic development, along with the adoption of westernized lifestyles, has significantly impacted health outcomes, especially in countries like India. [5]

The lifestyle changes associated with urbanization such as poor dietary habits (higher intake of processed foods, sweets, and fats), physical inactivity, stress, and smoking have contributed to the growing burden of CVDs. In India, these factors are compounded by genetics and a lack of sufficient healthcare infrastructure in certain regions, which makes prevention and early intervention more challenging. [5]

Several studies highlight that the incidence of CVDs in India is not only increasing in the urban population but also in rural areas, where lifestyle changes are now starting to be seen. This trend calls for urgent interventions aimed at improving public health policies, raising awareness about the risks of CVDs, and promoting lifestyle modifications (e.g., regular exercise, healthy eating, smoking cessation).[5]

Large cohort studies, such as the Framingham Heart Study and the third survey of health and nutritional testing (NHANES III), have also discovered powerful associations and predictive values of dyslipidaemia, hypertension, glucose intolerance, and smoking. 60-90% of KHK Events happened to participants who had at least one risk factor. [25]

Cardiovascular diseases around the world have increased their role as a largest cause of morbidity and death. Between 1990 -2020, the global rate of cardiovascular disease-caused deaths is expected to range from 28.9% to 36.3%. The increasing prediction of the importance of cardiovascular disease worldwide is primarily related to two trends in developing countries. Malnutrition and infectious disease extinction as the main causes of death that allow population age, and in tobacco smoking.[26]

- Overweight and Obesity
- Hypertension
- Diabetes Mellitus
- Dyslipidaemia
- Diet
- Smoking
- Physical Activity
- Tobacco use
- Alcohol consumption
- Fruit and vegetable consumption

Chronic use of various drugs leads to increase cardiovascular disease risk

With diverse actions on serotonergic, dopaminergic, and adrenergic receptors, the hallucinogens psilocybin and lysergic acid have intricate modes of action and ultimately affect the cardiovascular system. Morphine and heparin boost parasympathetic action by acting centrally and induce bradycardia and hypotension by lowering sympathetic activity. Cocaine and amphetamine impair the heart rhythm. Cannabis results tachycardia and an elevating cardiac output via raising sympathetic activity and reducing parasympathetic activity. [34]

COMPLICATIONS

Women who experience certain pregnancy complications are indeed more susceptible to developing cardiovascular diseases in future. Research has shown that conditions such as preeclampsia, gestational diabetes, and complications like premature birth or having a kid with a low birth weight can raise the long-term danger of CVD in women. [27]

Cardiovascular system disease is indeed a general comorbidity in individuals with type 2 diabetes (T2DM). This relationship between CVD and T2DM is driven by several variables, for example, chronic inflammation, high blood pressure, insulin resistance, dyslipidaemia (abnormal lipid levels), and endothelial dysfunction. Over time, these factors raise the chance of getting heart disease and other heart problems in people having diabetes.

The frequency of CVD in T2DM affected persons has been rising due to a combination of factors:

1. Increased prevalence of diabetes: As the global events of non-insulin dependent diabetes continues grow, especially with rising obesity rates, the number of people suffer from both conditions (diabetes /cardiovascular disease) is also increasing.
2. Aging population: Older peoples are more susceptible to T2DM, are also on a higher danger of cardiovascular problems, leading to higher rates of CVD in this population.
3. Uncontrolled blood sugar and other causes: Many patient having T2DM struggle to manage their blood glucose levels effectively. This, combined with other risk variable e.g. hypertension, overweight, and high cholesterol, exacerbates the risk of cardiovascular system disease.

4. Chronic inflammation: Both T2DM and CVD share common inflammatory pathways, it could be a variable in the progression of cardiac disease in diabetic patients. [27, 28, 29]

Obesity raises the risk of cardiovascular illnesses considerably, particularly obesity in the abdomen is a key component of metabolic syndrome (Mets). Mets is a group of diseases that increases the risk of type 2 diabetes, cardiac disease, and stroke. These disorders include abnormal cholesterol levels, extra body fat around the waist, excessive blood pressure, and elevated sugar level in blood. [32]

Patients with COVID-19 who have comorbidities like, diabetes, hypertension, chronic renal disease, congestive heart failure, cardiovascular disease and cancer are indeed at a significantly increasing the chances of death. These conditions can weaken the capacity of the body to fight off the virus and may lead to complications, making it harder to recover from the infection. Here's how each of these conditions impacts the risk:

1. **Cardiovascular Disease**: People with heart disease have a compromised cardiovascular system, which can worsen with the added stress from COVID-19, potentially leading to heart failure or complications such as arrhythmias or myocardial infarction (heart attack).
2. **Hypertension:** Damage to the blood vessels and organs can result from high blood pressure. Over time, which may worsen the effects of COVID-19. Additionally, the virus can further increase blood pressure, this makes heart failure and stroke more likely.
3. **Diabetes**: Diabetes, especially when poorly controlled, can impair the immune response, making things more difficult for the body to combat diseases such as COVID-19. It also increases the risk of other complications like kidney damage, which can contribute to a worse prognosis.
4. **Congestive Heart Failure (CHF)**: The heart's inability to pump blood effectively is caused by CHF. Which can make it harder for the body to respond to the stress of COVID-19. The virus can exacerbate fluid build-up, leading to worsened respiratory issues or organ failure.
5. **Chronic Kidney Disease (CKD)**: CKD can impair the body's ability to filter toxins and maintain fluid balance. COVID-19 can damage the kidneys further, potentially leading to acute kidney injury, which significantly increases the risk of mortality.
6. **Cancer**: Cancer and its treatments (like chemotherapy or immunotherapy) can impair immunity, making the fight against illnesses like COVID-19 more difficult. People with cancer also may have pre-existing complications that affect other organs, increasing the likelihood of severe illness or death.[33]

PREVENTIVE MEASURES TO AVOID CARDIOVASCULAR RISK

Preventing cardiovascular disease (CVD) includes controlling risk variable and leading a healthy way of lifestyle. These are a few important preventive measures:

- **Healthy Diet:**

Limit saturated and Tran's fats: Chances of heart disease can be increased by lipids since they can boost cholesterol levels.
Increase fibre intake: Foods high in fibre, like vegetables, whole grains, legumes and fruits, can help lower cholesterol and reduce the chance of heart disease.
Eat heart-healthy fats: Focus on Unsaturated fat sources, such as nuts, seeds, olive oil and fatty fishlike salmon.
Reduce salt consumption: Elevated blood pressure, a leading cause for heart disease, can result from eating too much salt.
Control sizes of portions: Gaining weight can result from overeating. Which increases the risk of CVD.

- **Exercise Regularly:**

Every week, try to get in at least 2.30 hr of moderate-intensity exercises, such as walking, or 80 minutes of spirited-intensity exercises, such as jogging.
Strength training exercises at least 2 times in a week can also improve overall heart health.

- **Maintaining Balanced Weight:**

Obesity /overweight raise the risk of type 2 diabetes, high cholesterol, high blood pressure, all of which are risk factors for cardiovascular disease.
Regularity in physical exercise and balanced diet is essential for maintaining healthy and balanced weight.

- **Quit Smoking:**

Blood vessels damage due to heavy smoking and smoking also reduce oxygen level in the blood, which increases the possibilities of heart disease. Reducing smoking is one of the largest step in reducing cardiovascular risk.

- **Reduced alcohol intake:**

Alcohol consumption in large quantity lead to high blood pressure, heart failure, and various cardiovascular issues. Stick to recommended limits (maximum one drink for women and two for men per day).

- **Manage Stress:**

Long term stress can negatively impact heart health. Engage in relaxing techniques such as meditation, deep breathing, yoga or spending time outside.

- **Monitor and Maintain Blood Pressure:**

Raised blood pressure (hypertension) is a significant risk variable for CVD. Regular monitoring and lifestyle changes, including reducing salt intake and maintaining balanced weight, helps to keep blood pressure in check.

- **Control Cholesterol Levels:**

Elevated cholesterol levels raise the events of heart disease by causing plaque to accumulate in the arteries. Consuming a low cholesterol diet, exercising, and often taking prescribed medications can help control cholesterol levels.

- **Manage Diabetes:**

If you suffer from diabetes, it's crucial to keep your sugar levels in blood well-controlled. Risk of heart disease and damage of blood vessels is increase because of uncontrolled diabetes.

- **Get Regular Check-Ups:**

Regular visits to the doctor helps to identify major causes like raised blood pressure, increased cholesterol, and diabetes, for timely intervention can allow.
[35]

CONCLUSION

The increasing rate of cardiovascular disorders (CVDs) is a growing public health challenge worldwide. This rise is attributed to different factors, like lifestyle changes, poor dietary habits, physical inactivity, increased stress levels, and the growing factors of risk such diabetes, increased blood pressure, and obesity are common. Additionally, socio-economic disparities and aging populations exacerbate the burden of these diseases.

It is imperative that healthcare systems, governments, and individuals focus onto prevent, detect, and manage the significant risk factors. Public health campaigns promoting healthier lifestyles, better access to healthcare, and more education about the importance of cardiovascular health are essential. Advances in medical research and treatments continue to improve outcomes for those affected by CVDs, but a concerted global effort to reduce risk factors and promote heart health is crucial to reversing this troubling trend. Addressing cardiovascular disorders requires a multifaceted approach involving both individual behaviour changes and broader systemic interventions.

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