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PREVALENCE OF CARDIOVASCULAR DISEASE AMONG THE ELDERLY IN THE AKWA IBOM STATE: THE CAUSES, EFFECT AND REMEDIES

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ABSTRACT

The Cardiovascular disease (CVD) is a leading cause of morbidity and mortality among the elderly worldwide, and its prevalence is steadily rising in Akwa Ibom State, Nigeria. This study examines the causes, effects, and possible remedies for CVD among elderly individuals in the region. The major contributing factors include unhealthy lifestyles, poor dietary habits, physical inactivity, limited access to quality healthcare, and financial constraints. The effects of CVD extend beyond individual health deterioration, leading to increased dependency, high medical costs, and emotional distress among affected individuals and their families. Effective remedies include public health education, improved healthcare infrastructure, early screening programs, subsidized treatment options, and policies that promote heart-healthy behaviors. The study concluded that by prioritizing preventive and curative measures, stakeholders can improve the quality of life for the elderly and reduce the overall burden of cardiovascular disease in the state. Collaborative efforts among the government, healthcare providers, and communities are essential in combating this health crisis effectively. The study also recommends Government and health organizations should implement widespread awareness campaigns on cardiovascular disease, emphasizing risk factors, symptoms, and preventive measures among the elderly population.

KEYWORDS: Cardiovascular Disease, Elderly and Akwa Ibom State

INTRODUCTION

Cardiovascular disease (CVD) is a leading cause of death and disability worldwide, particularly among the elderly. In Nigeria, the burden of CVD has been rising steadily due to demographic changes, lifestyle modifications, and urbanization. Akwa Ibom State, located in the South-South region of Nigeria, is experiencing a growing prevalence of heart-related ailments among its aging population. According to Effiong et al. (2024), hypertension, a major risk factor for CVD, affects nearly one in three adults in urban areas of the state, highlighting the urgent need for intervention (Effiong et al., 2024). Understanding the causes, effects, and potential remedies for CVD among the elderly in Akwa Ibom is crucial for improving healthcare outcomes and reducing mortality rates.

The primary causes of CVD in the elderly population of Akwa Ibom are linked to a combination of genetic predisposition, lifestyle habits, and environmental factors. Poor dietary

practices, high consumption of processed and fatty foods, sedentary lifestyles, and increased tobacco use have been identified as key contributors to heart disease. Additionally, economic constraints limit access to quality healthcare, leading to late diagnosis and poor disease management. Research by Ekanem et al. (2024) emphasizes that obesity and diabetes, which are prevalent among older adults in Akwa Ibom, further elevate the risk of developing cardiovascular complications (Ekanem et al., 2024). These underlying factors, coupled with inadequate awareness about cardiovascular health, exacerbate the prevalence of CVD in the state.

The effects of CVD among the elderly are profound, affecting both individual health and societal well-being. Elderly patients with heart conditions often suffer from reduced mobility, chronic fatigue, and frequent hospitalizations, placing a significant financial strain on families and healthcare facilities. Furthermore, the loss of independence due to disability leads to emotional distress and mental health issues among affected individuals. Studies suggest that many elderly individuals in Akwa Ibom lack access to specialized cardiovascular care, making disease management difficult and leading to a higher risk of complications such as stroke and heart failure (Effiong et al., 2024). The socio-economic impact of CVD also extends to the broader community, as families and caregivers struggle with the financial and emotional burdens of l ong-term care.

Addressing the high prevalence of CVD among the elderly in Akwa Ibom requires a multi-pronged approach that includes preventive, medical, and policy-driven interventions. Public health campaigns should focus on promoting heart-healthy behaviors such as regular exercise, reduced salt intake, and early medical screenings. Improved healthcare infrastructure, particularly in rural areas, will enhance early diagnosis and effective disease management. Additionally, government policies should support subsidized medical care for the elderly and increase funding for cardiovascular research and treatment programs. By prioritizing these measures, stakeholders can significantly reduce the burden of CVD, improve the quality of life for elderly residents, and strengthen the overall healthcare system in Akwa Ibom State.

CONCEPT OF CARDIOVASCULAR

The term cardiovascular refers to anything related to the heart (cardio-) and blood vessels (vascular). This concept encompasses the structure, function, and health of the circulatory system, which is responsible for transporting blood, oxygen, and nutrients throughout the body. Cardiovascular health is crucial for maintaining overall well-being, as disruptions in this system can lead to life-threatening conditions such as heart disease, stroke, and hypertension (Roth et al., 2020). The cardiovascular system consists of the heart and a vast network of blood vessels that work together to sustain life. The system is responsible for pumping and circulating blood, ensuring that oxygen and essential nutrients reach all body tissues while removing metabolic waste products (Benjamin et al., 2019).

The heart is a muscular organ located in the chest cavity, slightly left of the midline. It functions as a pump, contracting rhythmically to push blood through the circulatory system. Structurally, the heart consists of four chambers: Right Atrium (Receives deoxygenated blood from the body), Right Ventricle (Pumps blood to the lungs for oxygenation), Left Atrium (Receives oxygenated blood from the lungs) and the Left Ventricle (Pumps oxygen-rich blood to the rest of the body). The heart's contractions are regulated by an electrical conduction system that includes the sinoatrial (SA) node, often referred to as the body's natural pacemaker (Joseph et al., 2022). However, the Blood Vessels form an extensive network that ensures

efficient blood flow. They are classified into three main types: Arteries (Carry oxygenated blood away from the heart to various tissues and the aorta is the largest artery in the body), Veins (Transport deoxygenated blood back to the heart and the vena cava is the largest vein in the body) and Capillaries (Tiny vessels that facilitate the exchange of oxygen, carbon dioxide, and nutrients between blood and tissues). Blood vessels are lined with endothelial cells, which play a key role in maintaining vascular health and regulating blood pressure (Giorgini et al., 2020).

The cardiovascular system supports two major circulations that is the pulmonary circulation where blood travels from the heart to the lungs for oxygenation and back to the heart and the systematic circulation where oxygenated blood is distributed from the heart to the entire body and returns deoxygenated blood back to the heart. This dual circulation ensures that the body receives a constant supply of oxygen and nutrients while efficiently removing waste products like carbon dioxide (Messerli et al., 2018). Furthermore, maintaining cardiovascular health is essential for overall well-being. A well-functioning cardiovascular system ensures efficient oxygen delivery, metabolic waste removal, and blood pressure regulation. Poor cardiovascular health can lead to conditions such as hypertension, atherosclerosis, and heart failure, all of which significantly increase the risk of morbidity and mortality (Townsend et al., 2019).

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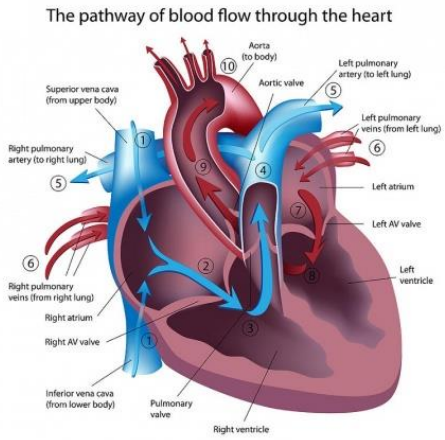


Picture of the Cardiovascular System
Source: https://www.physio-pedia.com

CONCEPT OF CARDIOVASCULAR DISEASES

Cardiovascular disease (CVD) is a collective term that refers to a range of disorders affecting the heart and blood vessels. It is the leading cause of mortality globally, accounting for approximately 32% of all deaths, with ischemic heart disease and stroke being the predominant contributors (Roth et al., 2020). This category of disease encompasses conditions such as coronary artery disease, hypertension, heart failure, and peripheral artery disease, among others. The development of CVD is influenced by genetic predispositions, environmental exposures, and lifestyle choices, with modifiable factors playing a significant role in determining

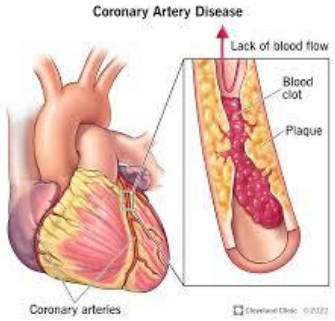
individual risk levels (Joseph et al., 2022). One of the most prevalent forms of cardiovascular disease is coronary artery disease (CAD), which arises when the coronary arteries supplying blood to the heart become narrowed or blocked due to the accumulation of plaque. This process, known as atherosclerosis, reduces oxygen supply to the cardiac muscle, leading to complications such as angina and myocardial infarction (Benjamin et al., 2019). The restriction of blood flow not only weakens the heart over time but also increases the risk of sudden cardiac events. Similarly, hypertension, characterized by persistently elevated blood pressure, exerts excessive strain on the cardiovascular system. Chronic hypertension contributes to the thickening and stiffening of arterial walls, predisposing individuals to conditions such as stroke, kidney disease, and heart failure (Unger et al., 2020).

Heart failure represents another major aspect of cardiovascular disease, occurring when the heart is unable to pump blood efficiently to meet the body's demands. This condition is often the end result of untreated hypertension, coronary artery disease, or other structural abnormalities within the heart. Depending on the nature of impairment, heart failure is classified based on whether the heart's pumping capacity is reduced or preserved, each with distinct clinical implications (Bohm et al., 2021). Stroke, another critical consequence of CVD, occurs when blood supply to the brain is obstructed, leading to neurological damage. The disruption may arise from a clot blocking a cerebral artery, known as ischemic stroke, or from a rupture of a blood vessel, leading to hemorrhagic stroke. Regardless of the mechanism, strokes can result in lasting disabilities or even death if immediate intervention is not administered (Feigin et al., 2022). The burden of cardiovascular disease is heavily influenced by lifestyle and behavioral factors. Poor dietary habits, particularly those high in saturated fats, refined sugars, and excess sodium, significantly increase the risk of conditions such as obesity, diabetes, and high cholesterol, all of which contribute to CVD (Dunbar et al., 2019).

Physical inactivity further compounds these risks, as a sedentary lifestyle promotes insulin resistance, weight gain, and vascular dysfunction (Lee et al., 2020). Smoking and excessive alcohol consumption are also key contributors, with tobacco use directly damaging blood vessels and promoting atherosclerotic plaque formation, while alcohol abuse raises blood pressure and weakens cardiac function over time. Although lifestyle choices play a dominant role in the development of cardiovascular disease, certain risk factors remain beyond individual control. Genetic predisposition and family history can significantly influence susceptibility, with specific gene variants linked to increased risk of hypertension, dyslipidemia, and heart failure (Marston et al., 2022). Additionally, age serves as a major determinant, as cardiovascular risk escalates with aging due to the progressive decline in vascular elasticity and cardiac function. Men are generally at higher risk for cardiovascular events at an earlier age compared to women, although postmenopausal women experience a sharp rise in risk due to hormonal changes affecting lipid metabolism and vascular integrity (Benjamin et al., 2019).

Preventing and managing cardiovascular disease requires a multifaceted approach that incorporates both lifestyle modifications and medical interventions. Adopting a heart-healthy diet rich in fruits, vegetables, whole grains, and lean proteins is essential in reducing risk factors such as high cholesterol and hypertension. Regular physical activity strengthens the cardiovascular system, improves circulation, and aids in maintaining a healthy weight, all of which lower the likelihood of developing CVD (Lee et al., 2020). Avoiding tobacco use and limiting alcohol intake further contribute to cardiovascular health, reducing exposure to harmful substances that can accelerate disease progression. For individuals at high risk or those already diagnosed with cardiovascular disease, medical management plays a crucial role in improving outcomes. Pharmacological treatments such as antihypertensive medications,

cholesterol-lowering statins, and antiplatelet agents help in controlling risk factors and preventing complications (Arnett et al., 2019). In more severe cases, surgical interventions such as coronary angioplasty, bypass grafting, or valve replacement procedures may be necessary to restore proper cardiac function (Virani et al., 2020). Advances in cardiovascular research have also led to the development of personalized treatment strategies, where genetic risk profiling and biomarker assessments enable targeted therapeutic approaches.



Picture of a coronary Artery Disease
Source: https://my.clevelandclinic.org

CONCEPT OF ELDERLY

The term elderly generally refers to individuals in the later stages of life, typically aged 60 or 65 and above, depending on social, economic, and healthcare definitions (United Nations, 2020). Aging is a natural biological process that involves physiological, psychological, and social changes, often leading to a decline in functional capacity, increased vulnerability to diseases, and shifts in societal roles. As global life expectancy continues to rise due to advancements in medicine, technology, and improved living conditions, the elderly population has significantly increased, making aging a critical subject in public health, economics, and social policies (Beard et al., 2019).

From the biological perspective, aging is characterized by progressive cellular and molecular damage, leading to gradual deterioration in the body's ability to maintain homeostasis (Lopez-Otin et al., 2023). Key aging-related processes include mitochondrial dysfunction, genomic instability, telomere shortening, and chronic inflammation, all of which contribute to age-associated diseases such as cardiovascular conditions, neurodegenerative disorders, and metabolic syndromes (Hou et al., 2019). Frailty, which results from the cumulative decline of multiple physiological systems, is a common characteristic of the elderly and is associated with reduced resilience to stressors such as infections, surgery, and environmental changes (Fried et al., 2020).

However, from the psychosocial standpoint, aging involves cognitive and emotional changes that influence mental health and social interactions. While many elderly individuals maintain sharp cognitive abilities, some experience cognitive decline, with conditions such as mild cognitive impairment (MCI) and dementia becoming prevalent with increasing age (Livingston et al., 2020). Social isolation and loneliness are also significant concerns, particularly among those who live alone or have limited social networks, contributing to depression and reduced quality of life (Holt-Lunstad et al., 2020). However, active engagement

in meaningful activities, social connections, and lifelong learning have been shown to enhance cognitive function and overall well-being in older adults (Rowe & Kahn, 2019).

The economic and societal impact of aging is profound, affecting healthcare systems, labor markets, and social welfare policies. As the elderly population grows, there is an increasing demand for healthcare services, long-term care, and age-friendly infrastructure (World Health Organization, 2021). Aging populations also present challenges in workforce sustainability, as older adults retire and fewer younger workers are available to replace them. In response, some governments and organizations are promoting policies that encourage longer workforce participation, flexible retirement options, and lifelong skill development (OECD, 2020).

In gerontology and elderly care, strategies for promoting healthy aging emphasize preventive healthcare, lifestyle modifications, and social support systems. Regular physical activity, balanced nutrition, cognitive stimulation, and preventive screenings are critical for maintaining health and independence in older age (Franco et al., 2022). Additionally, age-friendly communities that provide accessible housing, transportation, and healthcare services are essential in ensuring that older individuals can live with dignity and security (Beard & Bloom, 2018).

TYPES OF CARDIOVASCULAR DISEASES

Cardiovascular diseases (CVDs) represent a broad category of disorders that affect the heart and blood vessels. These diseases include a range of conditions that are often linked to atherosclerosis (the buildup of plaque in the arteries) and other risk factors such as hypertension, diabetes, and lifestyle choices. CVDs remain the leading cause of death worldwide, and the global burden of cardiovascular conditions has been a major public health challenge in recent years.

- **Coronary Artery Disease (Cad)**

Coronary artery disease, also known as coronary heart disease (CHD), is one of the most common forms of cardiovascular disease. It is caused by the narrowing or blockage of the coronary arteries, typically due to the accumulation of fatty deposits known as plaque. Over time, the buildup of plaque can limit blood flow to the heart muscle, leading to angina (chest pain), heart attacks, and even heart failure if left untreated.
Pathophysiology: CAD results from atherosclerosis, which begins with endothelial injury to the blood vessel lining. This injury attracts inflammatory cells, leading to the accumulation of lipids, calcium, and other substances. As the plaque grows, it may rupture, leading to blood clots that further obstruct blood flow.
Risk Factors: Major risk factors include hypertension, high cholesterol, smoking, physical inactivity, diabetes, and an unhealthy diet.
Treatment: The management of CAD includes lifestyle modification, medications like statins and aspirin, and interventions such as angioplasty or coronary artery bypass grafting (CABG).

- **Hypertension (High Blood Pressure)**

Hypertension is a condition where the force of blood against the artery walls is too high, which can lead to severe complications, including heart disease, stroke, and kidney damage. It is often referred to as the "silent killer" because it may not show noticeable symptoms until significant damage occurs.

Pathophysiology: Chronic hypertension increases the workload on the heart, leading to hypertrophy (thickening) of the heart muscle. This can eventually result in heart failure. Additionally, high blood pressure damages the blood vessels, promoting atherosclerosis.
Risk Factors: Family history, obesity, smoking, excessive alcohol consumption, and a sedentary lifestyle increase the likelihood of developing hypertension.
Treatment: Lifestyle changes such as weight loss, reduced salt intake, and increased physical activity are crucial. Medications like ACE inhibitors, calcium channel blockers, and diuretics are commonly prescribed to manage blood pressure.

- **Heart Failure**

Heart failure occurs when the heart is unable to pump blood effectively to meet the body's needs. It can result from chronic conditions like CAD, hypertension, or heart valve diseases, and can present in two forms: left-sided heart failure (affecting the left side of the heart) and right-sided heart failure (affecting the right side of the heart).
Pathophysiology: In heart failure, the heart muscle is weakened and cannot contract with sufficient force. This leads to reduced cardiac output and inadequate perfusion of organs and tissues.
Risk Factors: The risk factors for heart failure overlap with those for CAD, such as hypertension, diabetes, and obesity. Lifestyle factors like smoking and excessive alcohol consumption can also contribute.
Treatment: Heart failure treatment involves controlling underlying conditions, such as using ACE inhibitors, beta-blockers, and diuretics. In some cases, devices like pacemakers or implantable cardioverter-defibrillators (ICDs) may be required, and advanced cases may necessitate heart transplantation.

- **Stroke**

A stroke occurs when the blood supply to part of the brain is disrupted, leading to brain cell death. Strokes can be categorized into two main types: ischemic stroke (due to a blockage of blood vessels) and haemorrhagic stroke (due to bleeding in or around the brain).
Pathophysiology: In ischemic stroke, a clot or embolus blocks a cerebral artery, leading to a loss of blood flow and oxygen to brain tissue. In hemorrhagic stroke, blood vessels in the brain rupture, causing bleeding and subsequent damage to brain cells.
Risk Factors: Hypertension, smoking, diabetes, high cholesterol, and atrial fibrillation are major contributors to stroke risk.

- **Peripheral Artery Disease (Pad)**

Peripheral artery disease is a condition in which the arteries supplying blood to the limbs become narrowed or blocked, typically due to atherosclerosis. This results in reduced blood flow to the legs, leading to symptoms such as pain, cramping, and, in severe cases, tissue death.
Pathophysiology: Like CAD, PAD involves the accumulation of plaque in the peripheral arteries. The reduced blood flow can result in ischemia and muscle damage.
Risk Factors: Smoking, diabetes, high cholesterol, and hypertension are significant risk factors for PAD.
Treatment: PAD can be managed with lifestyle changes, medications to control cholesterol and blood pressure, and interventions such as angioplasty or surgery to improve blood flow.
Treatment: Treatment depends on the type of stroke. For ischemic strokes, thrombolytic therapy (such as tissue plasminogen activator) may be used to dissolve the clot. Hemorrhagic strokes may require surgery to remove blood clots or repair blood vessels.

- Arrhythmias

Arrhythmias are abnormal heart rhythms, which can be either too fast (tachycardia), too slow (bradycardia), or irregular. Common types include atrial fibrillation (AF), ventricular tachycardia, and atrial flutter.
Pathophysiology: Arrhythmias occur due to disturbances in the electrical conduction system of the heart. For example, in atrial fibrillation, disorganized electrical activity in the atria leads to an irregular heartbeat.
Risk Factors: Hypertension, CAD, heart failure, and electrolyte imbalances are known contributors to arrhythmias.
Treatment: The management of arrhythmias depends on the type and severity. Treatment options may include medications, catheter ablation, and the implantation of devices like pacemakers or defibrillators.

- Valvular Heart Disease

Valvular heart disease involves damage or dysfunction of one or more of the heart valves, which can lead to inefficient blood flow. Common conditions include aortic stenosis (narrowing of the aortic valve) and mitral regurgitation (leakage of the mitral valve).
Pathophysiology: Valve dysfunction can result from congenital defects, degenerative changes, or infection. This can cause the heart to work harder, leading to heart failure over time.
Risk Factors: Age, previous heart infections (such as rheumatic fever), and certain genetic conditions increase the risk of valvular diseases.
Treatment: Treatment options include valve repair or replacement surgeries, as well as medications to manage symptoms like fluid build-up.

- Congenital Heart Defects

Congenital heart defects are structural abnormalities in the heart present at birth. These defects can range from minor issues that require no treatment to more severe conditions requiring surgery.
Pathophysiology: The causes of congenital heart defects are often unknown but can involve genetic factors or environmental influences during pregnancy.
Risk Factors: Maternal diabetes, infections during pregnancy, and genetic syndromes increase the likelihood of congenital heart defects.

Treatment: Many congenital heart defects can be treated surgically or with catheter-based interventions.

- Aortic Aneurysms And Dissections

An aortic aneurysm is a bulging or dilation of the aorta, which can rupture and lead to life-threatening internal bleeding. Aortic dissection refers to a tear in the aorta's inner layer, which can also be fatal if not treated quickly.
Pathophysiology: Aneurysms often develop in areas where the aorta has weakened over time due to high blood pressure or genetic factors. Dissections occur when there is a tear in the aortic wall, causing blood to flow between the layers of the artery.
Risk Factors: Hypertension, genetic disorders (e.g., Marfan syndrome), smoking, and atherosclerosis are common risk factors.
Treatment: Management includes controlling blood pressure, and surgical intervention is often required to repair an aneurysm or treat a dissection.

THE PREVALENCE OF CARDIOVASCULAR DISEASES AMONG THE ELDERLY

Cardiovascular diseases (CVDs) remain the leading cause of morbidity and mortality among the elderly, with prevalence rates increasing due to aging-related physiological changes, lifestyle factors, and comorbidities. Studies indicate that conditions such as hypertension, coronary artery disease, and heart failure are highly prevalent among individuals aged 60 and above. Research by Cederqvist et al. (2025) found that impaired microcirculation and subclinical atherosclerosis significantly contribute to CVD risk in aging populations, particularly in individuals with metabolic disorders like diabetes. This highlights the urgent need for preventive strategies tailored to older adults (Cederqvist et al., 2025).

Lifestyle factors, including diet and physical activity, play a crucial role in the prevalence of cardiovascular diseases among the elderly. Niu et al. (2025) found that elderly individuals who engaged in regular household activities experienced a lower incidence of neurocognitive decline associated with CVD, underscoring the benefits of maintaining an active lifestyle (Niu et al., 2025). Furthermore, dietary patterns have been linked to cardiovascular health, with Tang et al. (2025) reporting that adherence to a balanced diet significantly reduces the risk of developing CVDs (Tang et al., 2025). These findings emphasize the importance of lifestyle modifications in reducing the burden of cardiovascular diseases in older populations.

High cholesterol levels and metabolic disorders are also key contributors to CVD prevalence in the elderly. A study by Riis et al. (2025) identified high remnant cholesterol as a major risk factor for atherosclerotic cardiovascular disease (ASCVD) in individuals aged 70–100, reinforcing the importance of lipid management in this demographic (Riis et al., 2025). The impact of behavioral lifestyle factors was also examined, such as smoking and alcohol consumption, on cardiovascular health and found that these habits significantly increase CVD risk among older adults. Addressing these risk factors through public health initiatives and medical interventions could substantially lower the prevalence of CVDs among the elderly.

Complications arising from CVDs in the elderly contribute to high mortality rates and reduced quality of life. Liu et al. (2025) found that poor sleep quality is associated with an increased risk of hypertension, diabetes, and coronary artery disease, highlighting the interconnectedness of sleep disorders and cardiovascular health (Liu et al., 2025). Furthermore, environmental factors such as air pollution have been linked to peripheral artery disease, as evidenced by a study by Mayntz and Rosenbech (2025), which demonstrated stronger disease associations among males and individuals aged 55 and older (Mayntz & Rosenbech, 2025). These findings underscore the necessity of a multidisciplinary approach to managing CVDs in the elderly, incorporating both medical and environmental health strategies.

THE CAUSES OF CARDIOVASCULAR DISEASES AMONG THE ELDERLY

Cardiovascular diseases (CVDs) are a leading cause of morbidity and mortality among the elderly. Various factors contribute to the increased risk of CVD in aging individuals. Below are some of the primary causes, each discussed in details.

- **Hypertension (High Blood Pressure)**

Hypertension is one of the most significant risk factors for cardiovascular diseases in the elderly. Aging leads to arterial stiffening, increasing systolic blood pressure and placing strain on the heart. Over time, this can result in conditions such as left ventricular hypertrophy, heart

failure, and stroke. Elderly individuals often experience "isolated systolic hypertension," where only the systolic pressure rises due to decreased arterial compliance (Ishida, 2025). Chronic hypertension accelerates the development of atherosclerosis, increasing the likelihood of myocardial infarction and stroke.

- **Atherosclerosis (Arterial Hardening and Plaque Buildup)**

Aging leads to increased lipid accumulation in arteries, forming plaques that narrow the blood vessels, a condition known as atherosclerosis. This process restricts blood flow, increasing the risk of coronary artery disease (CAD), stroke, and peripheral artery disease (PAD). Xie et al. (2025) explained that factors such as high cholesterol, inflammation, and oxidative stress further exacerbate atherosclerosis. The reduced elasticity of blood vessels in elderly individuals makes them more vulnerable to ischemic heart diseases.

- **Diabetes Mellitus and Insulin Resistance**

Diabetes, particularly type 2 diabetes, significantly contributes to cardiovascular disease in the elderly. High blood glucose levels cause endothelial dysfunction, increasing arterial stiffness and promoting inflammation. Insulin resistance is also associated with dyslipidemia, where abnormal lipid levels contribute to plaque buildup in arteries. Diabetic cardiomyopathy, a condition where diabetes weakens the heart muscle, further increases the risk of heart failure in aging individuals.

- **Sedentary Lifestyle and Physical Inactivity**

A lack of physical activity accelerates cardiovascular aging by reducing heart efficiency and promoting weight gain. According to Bonanni et al. (2025), elderly individuals who do not engage in regular exercise tend to have weaker heart muscles, poor circulation, and increased arterial stiffness. Physical inactivity is closely linked to conditions like obesity, hypertension, and dyslipidemia, which contribute to cardiovascular complications.

- **Oxidative Stress and Inflammation**

Oxidative stress plays a key role in cardiovascular aging. Reactive oxygen species (ROS) damage endothelial cells, leading to arterial stiffness and inflammation. Chronic low-grade inflammation, often seen in elderly individuals, contributes to conditions like atherosclerosis and heart failure. Studies suggest that oxidative stress markers correlate with cardiovascular mortality in aging populations (Lim et al., 2025).

- **Dyslipidemia (High Cholesterol Levels)**

Elevated levels of low-density lipoprotein (LDL) cholesterol and reduced levels of high-density lipoprotein (HDL) cholesterol contribute to the buildup of arterial plaque, increasing the risk of heart attacks and strokes. As individuals age, lipid metabolism changes, making it harder to regulate cholesterol levels. Statin therapy is commonly prescribed for elderly patients to mitigate this risk.

- Genetic and Hereditary Factors

A family history of cardiovascular disease increases the risk of CVD in elderly individuals. Genetic predisposition can lead to inherited conditions such as hypertrophic cardiomyopathy, congenital heart defects, and familial hypercholesterolemia. Advances in genetic research have identified various gene mutations that contribute to increased cardiovascular risk in aging individuals.

THE EFFECT OF CARDIOVASCULAR DISEASES AMONG THE ELDERLY

Cardiovascular diseases (CVDs) have a profound impact on elderly individuals, affecting their physical health, mental well-being, and overall quality of life. Below are some of the major effects of CVDs in older adults.

- Increased Risk of Frailty and Reduced Physical Function

Elderly individuals with cardiovascular diseases are at a higher risk of frailty, characterized by muscle weakness, slow mobility, and reduced endurance. CVDs impair circulation, leading to poor oxygen supply to muscles, which exacerbates physical decline. This condition increases dependence on caregivers, raises fall risks, and reduces overall longevity.

- Cognitive Decline and Dementia

CVDs significantly contribute to cognitive impairment and dementia in aging populations. Conditions like hypertension and atherosclerosis reduce cerebral blood flow, increasing the risk of vascular dementia and Alzheimer's disease (Butris et al, 2025). Poor circulation leads to brain tissue damage, impairing memory and executive function.

- Higher Mortality and Reduced Life Expectancy

Cardiovascular diseases remain the leading cause of death among older adults worldwide. Heart failure, stroke, and coronary artery disease significantly reduce life expectancy, particularly when coupled with comorbid conditions like diabetes and chronic kidney disease.

- Increased Hospitalization and Healthcare Costs

Elderly individuals with CVDs frequently require emergency care, prolonged hospital stays, and long-term medication use. This results in increased financial burdens on both patients and healthcare systems. Huemer el al. (2025) ascertained that recurrent hospitalizations due to complications like heart failure or arrhythmias further strain medical resources.

- Poor Sleep Quality and Fatigue

Elderly patients with heart disease often experience sleep disturbances due to conditions like obstructive sleep apnea (OSA), nocturnal dyspnea, and restless leg syndrome. Poor sleep further exacerbates fatigue, leading to a diminished quality of life and increased risks of falls and accidents.

- Increased Risk of Depression and Anxiety

Chronic illnesses, including cardiovascular diseases, contribute to psychological distress in older adults. Depression and anxiety are prevalent among patients with heart failure, as they struggle with physical limitations and fear of mortality. Emotional stress further exacerbates heart conditions by increasing blood pressure and inflammation (Mari, 2025).

REMEDIES OF CARDIOVASCULAR DISEASES AMONG THE ELDERLY

Cardiovascular diseases (CVD) remain a leading cause of morbidity and mortality among the elderly, significantly impacting their quality of life. As aging increases the risk of heart disease due to arterial stiffness, hypertension, and metabolic changes, effective remedies are essential. These remedies include:

- Lifestyle Modifications

Lifestyle changes such as a heart-healthy diet, regular physical activity, and smoking cessation significantly reduce the risk of cardiovascular disease among the elderly. Diets rich in omega-3 fatty acids, fiber, and antioxidants help lower inflammation and cholesterol, while physical exercise enhances cardiovascular function and reduces arterial stiffness. Smoking cessation is critical in preventing further cardiac complications, as it improves oxygenation and reduces oxidative stress on the heart. These lifestyle changes contribute to better overall cardiovascular health and longevity.

- Pharmacological Treatments

As explained by Laghlam et al. (2025), medications such as statins, beta-blockers, anticoagulants, and antihypertensive drugs play a crucial role in managing CVD in elderly patients. Statins lower cholesterol and reduce the risk of atherosclerosis, while beta-blockers regulate heart rhythm and reduce the workload on the heart. Anticoagulants help prevent blood clots, significantly lowering the risk of strokes and heart attacks. Proper medication adherence is vital for preventing complications and improving long-term survival rates in elderly patients.

- Surgical Interventions

Surgical procedures such as angioplasty, coronary artery bypass grafting (CABG), and valve replacement are critical for elderly patients with advanced CVD. According to Del Castillo et al. (2025), minimally invasive cardiac surgeries have shown lower mortality rates and improved post-operative recovery compared to traditional open-heart surgeries. These procedures help restore blood flow, improve heart function, and enhance overall patient survival. With advancements in surgical techniques, elderly patients now have better outcomes and reduced hospitalization time.

- Nutraceuticals and Functional Foods

Ginkgo biloba, polyphenols, omega-3 fatty acids, and coenzyme Q10 have demonstrated cardioprotective effects in elderly populations. These compounds improve lipid metabolism, reduce inflammation, and support endothelial function, which is essential in preventing heart disease progression. Regular intake of functional foods rich in these nutrients can help maintain

heart health and delay cardiovascular aging, making them an effective complementary therapy for elderly patients.

- **AI-Based Risk Prediction Models**

Artificial intelligence is transforming early detection and risk assessment of CVD in elderly patients. Machine learning algorithms analyze electrocardiogram (ECG) data, blood biomarkers, and lifestyle factors to predict frailty and cardiac risks. These models allow physicians to tailor treatment plans and intervene early, ultimately reducing hospitalizations and improving patient outcomes.

- **Cardiac Rehabilitation Programs**

Supervised cardiac rehabilitation programs, which include structured exercise, dietary counseling, and psychological support, significantly improve functional capacity, mental health, and adherence to medications among elderly heart patients. These programs have been shown to reduce hospital readmission rates and improve overall cardiovascular function, making them an essential component of elderly CVD management.

- **Psychological and Motivational Interventions**

Psychological stress can worsen cardiovascular conditions in elderly patients. Thal et al. (2025) found that cognitive behavioral therapy (CBT) and motivational interviewing techniques improve adherence to lifestyle changes and medical treatment. Addressing stress, anxiety, and depression through psychological interventions can help reduce stress-induced cardiovascular complications and improve overall well-being.

CONCLUSION

The prevalence of cardiovascular disease among the elderly in Akwa Ibom State is a growing public health concern driven by lifestyle factors, economic limitations, and inadequate healthcare access. The impact of CVD extends beyond individual health to economic and social burdens on families and the healthcare system. Addressing these challenges requires a comprehensive approach, including lifestyle modifications, improved healthcare services, and government-supported interventions. Early diagnosis, regular medical checkups, and awareness campaigns can significantly reduce mortality and morbidity rates. Additionally, investment in healthcare infrastructure and affordable treatment options will enhance disease management. By prioritizing preventive and curative measures, stakeholders can improve the quality of life for the elderly and reduce the overall burden of cardiovascular disease in the state. Collaborative efforts among the government, healthcare providers, and communities are essential in combating this health crisis effectively.

RECOMMENDATIONS

- Government and health organizations should implement widespread awareness campaigns on cardiovascular disease, emphasizing risk factors, symptoms, and preventive measures among the elderly population.
- It encourages people should be advised to eat nutritious food, exercise regularly, quit smoking, and reduce alcohol intake to keep their hearts strong.
- Older people should be encouraged to go for regular health check-ups so that heart problems can be detected early and treated on time.

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