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Factors Contributing and Mitigation Methods Used to Prevent and Control Heart Diseases Among Elderly Patients Visiting King Faisal Hospital, Kigali, Rwanda

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Abstract

Antimicrobial Heart Diseases among elderly people globally, regionally, and locally in Rwanda continues to be big challenges as indicated by various researchers and scholars. Heart diseases is the leading cause of death among elderly Americans, with about 20% of individuals aged 65 and older diagnosed with coronary heart diseases while in King Faisal Hospital. In Rwanda, high heart diseases are found in smokers, alcoholic drinkers as well as people who don't practice sports at 23%. Even if, numerous researches were conducted globally, regionally and locally but in King Faisal hospital it remains undocumented. The objective of the study was to assess the determinants and mitigation methods used to prevent and control heart diseases among elderly patients visiting King Faisal Hospital. Particular, to determine biomedical factors influencing increased heart diseases in elderly patients visiting King Faisal Hospital. The study employed mixed research approaches survey (quantitative, descriptive, cross sectional and Cohort sampling design was purposive, census on heart disease patients, data management was done with SPSS Version 27.0, Data was analyzed by cross-tabulation of descriptive and inferential statistics, data was presented using Pie chart, bar as well as tables. Furthermore, biomedical factors influencing increased heart diseases in elderly patients visiting King Faisal Hospital, Kigali Rwanda, the findings indicated that 85.5% affirmed that taking medication as prescribed by a doctor reduced the risk of heart disease among elderly individuals. The study concluded that increase in heart diseases among elderly patients is driven by interconnected biomedical, socio-cultural, economic, and behavioral factors, in recommendation, King Faisal Hospital should implement structured exercise programs specifically for elderly patients.

Keywords: *Determinants, mitigation methods, heart diseases, elderly patients, King Faisal Hospital.*

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1.0 Background of the Study

Heart Diseases among elderly people globally, regionally, and locally in Rwanda continues to be big challenges as indicated by various researchers and scholars. Heart diseases is the leading cause of death among elderly Americans, with about 20% of individuals aged 65 and older diagnosed with coronary heart diseases. Muthuri et al. (2018) in Kenya indicated that the prevalence of hypertension, a major risk factor for heart diseases, was around 24% among adults aged 50-69. The rate was higher among the elderly.

The Rwanda Non-Communicable Diseases (NCD) Risk Factors Report (2015) highlighted that about 15% of adults aged 25-64 were hypertensive, with a significant proportion being elderly. Additionally, ischemic heart diseases and stroke were prevalent among the elderly. Umuhoza et al. (2018) reported a 20% prevalence of hypertension among Rwandan adults aged 50 and above, with a notable impact on heart diseases incidence. Promotion of balanced diets rich in fruits, vegetables, and low in salt and Trans fats. Community health programs often emphasize the importance of reducing salt intake to manage hypertension. Furthermore, encouraging regular physical activity through community-based fitness programs tailored for the elderly. For example, the "Healthy Heart Africa" initiative has been active in promoting physical activities among older adults in several East African countries.

Peck (2023) said that in order to reduce heart diseases government need to provide training as well as deploying community health workers to provide basic care and education. Increasing awareness about heart diseases and its risk factors through community-based interventions was recommended by researchers as mitigation measure for heart diseases for elderly patients in developing countries. Fred and Boneventure (2021) showed that lifestyle interventions, such as dietary changes and physical activity, reduced hypertension rates among the elderly by 10-15%. Another study was conducted in Ethiopia affirmed that regular screening and early detection programs led to a 20% reduction in undiagnosed hypertension cases among the elderly. King Faisal Hospital in Kigali is one of the leading healthcare institutions in Rwanda, providing specialized care for various health conditions, including cardiovascular diseases. According to a study by Habimana et al. (2017), the prevalence of hypertension among elderly patients at King Faisal Hospital was approximately 30%.

1.1 Objective of the Study

To determine factors and mitigation methods used to prevent and control heart diseases among elderly patients visiting King Faisal Hospital, Kigali Rwanda.

1.1.1 Specific Objectives

i. To determine Prevalence and mitigation methods used to prevent increased heart diseases in elderly patients visiting King Faisal Hospital, Kigali Rwanda
ii. To Evaluate biomedical factors influencing increased heart diseases in elderly patients visiting King Faisal Hospital, Kigali Rwanda.
iii. To determine social-economic factors influencing heart diseases in elderly patients visiting King Faisal Hospital, Kigali Rwanda.
iv. To evaluate knowledge, attitude, and practice influence the increase of heart diseases among elderly patients visiting King Faisal Hospital, Kigali Rwanda

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1.2 Research Questions

i. What is the prevalence and mitigation methods used to prevent increased heart diseases in elderly patients visiting King Faisal Hospital, Kigali Rwanda?
ii. How biomedical factors contributes to increased heart diseases in elderly patients visiting King Faisal Hospital, Kigali Rwanda?
iii. What are the main social economic factors contributing to the heart diseases in elderly patients visiting King Faisal Hospital, Kigali Rwanda?
iv. How do knowledge, attitude and practice contribute to increase of heart diseases among elderly patients visiting King Faisal Hospital, Kigali Rwanda?

2.0 Literature Review

This section details the specific objectives based on various researchers and scholars' writings about To determine Prevalence and mitigation methods used to prevent increased heart diseases in elderly patients visiting King Faisal Hospital, Kigali Rwanda, to Evaluate biomedical factors influencing increased heart diseases in elderly patients visiting King Faisal Hospital, Kigali Rwanda, to determine social-economic factors influencing heart diseases in elderly patients visiting King Faisal Hospital, Kigali Rwanda and to evaluate knowledge, attitude, and practice influence the increase of heart diseases among elderly patients visiting King Faisal Hospital, Kigali Rwanda.

2.1 Biomedical Factors Influencing Increased Heart Diseases in Elderly Patients

Benjamin, Levy and Vasan (2017) examined Biomedical Factors Influencing Cardiovascular Diseases in the Elderly using insights from the Framingham Heart Study. The longitudinal cohort study analyzed data from the Framingham Heart Study, which has followed participants for several decades. The study involved regular physical exams, blood tests, and lifestyle questionnaires. The results indicated that major biomedical factors identified include hypertension, dyslipidemia (abnormal cholesterol levels), diabetes, obesity, and reduced kidney function. These factors significantly increase the risk of developing cardiovascular diseases (CVD) in the elderly.

Hoffman, van Duijn, Franco (2023) investigated influence of Biomedical Determinants of Cardiovascular Health in the Elderly. The methodology used was prospective cohort study where data from the Rotterdam Study was used, which included detailed assessments of biomedical risk factors, such as blood pressure, cholesterol levels, and glucose metabolism, in elderly participants. High blood pressure, elevated LDL cholesterol, impaired glucose tolerance, and obesity were identified as key determinants of cardiovascular health. The study concluded that high blood pressure, elevated LDL cholesterol, impaired glucose tolerance, and obesity were strongly associated with increased incidence of myocardial infarction and stroke. The study recommended that implementing community-based screening programs for early detection and management of high blood pressure, cholesterol, and glucose levels. Encourage healthy dietary and physical activity habits among the elderly.

Steyn, Sliwa and Hawken (2019) evaluated the impact of Biomedical Risk Factors and Cardiovascular Disease in the Elderly Population of South Africa. The Prospective Urban Rural Epidemiology (PURE) study was used to collect data from elderly participants in urban and rural areas of South Africa. It included medical histories, physical examinations, and laboratory tests to identify biomedical risk factors. The results showed that hypertension, diabetes, obesity, and

dyslipidemia were prevalent and significantly associated with CVD. The results showed that high rates of undiagnosed and poorly managed hypertension and diabetes were noted as the source of heart disease. The study recommended that strengthening healthcare systems is needed to improve screening and management of hypertension and diabetes. Promote public health campaigns focusing on the importance of regular health check-ups and healthy lifestyles.

Bahendeka, Wesonga and Mutungi (2019) assessed the effect of cardiovascular Risk Factors in the Elderly Population of Burundi: The cross-sectional study involved elderly participants from urban and rural areas of Uganda. Data were collected through interviews, physical exams, and laboratory tests to identify key biomedical risk factors for CVD. The findings revealed that high prevalence of hypertension, diabetes, and obesity among elderly participants has significant association between these risk factors and increased CVD events, with rural areas showing higher levels of undiagnosed conditions. The study recommended that there is need of improvement on healthcare infrastructure to provide better access to diagnostic and treatment services. Promote community health education programs to raise awareness about CVD risk factors.

Gitau and Kiage (2021) evaluated impact of Biomedical Determinants of Cardiovascular Diseases in Elderly Kenyans a case study was Nairobi and Rural Areas. This study included elderly participants from both urban (Nairobi) and rural areas. Data on biomedical risk factors such as hypertension, diabetes, and lipid levels were collected through medical examinations and laboratory tests. The results revealed that high prevalence of hypertension, diabetes, and dyslipidemia, with notable urban-rural disparities in management and prevent. The study concluded that urban elderly had better access to healthcare but higher levels of stress, while rural elderly had limited access to healthcare services. The study recommended that strengthen healthcare systems to provide equitable access to diagnostic and treatment services across urban and rural areas.

Promote regular health screenings and community-based health education. Heart diseases in elderly patients are influenced by a variety of biomedical factors that encompass genetic predispositions, age-related physiological changes, and other medical conditions. With aging, arteries tend to stiffen, leading to higher blood pressure and increased workload on the heart. Deng, Lu, Li (2023) explained heart diseases can be raised due to heart muscle (myocardium) once become thicker (hypertrophy) and less efficient at pumping blood. Reduced sensitivity of baroreceptors, which help regulate blood pressure lead to hypertension. A family history of heart disease increases the likelihood of developing heart conditions. Muthiah, Wong, Ong (2022) elaborated various factors influencing heart diseases in elderly such as conditions like familial hypercholesterolemia leads to high cholesterol levels and early-onset heart disease. Additional, hypertension is common in the elderly and is a major risk factor for heart disease which causes damage to blood vessels, leading to atherosclerosis and increasing the risk of heart attacks and strokes.

Some non-communicable diseases contribute to the heart disease, the study done by about impact of diabetes on heart diseases indicated that diabetes cause damage to blood vessels and nerves that prevent the heart (Frishman, 2018). Diabetic patients have a higher risk of developing coronary artery disease and other cardiovascular conditions. Excess fat, particularly visceral fat, is associated with increased cardiovascular risk due to its impact on blood pressure, cholesterol levels, and insulin resistance. A cluster of conditions (high blood pressure, high blood sugar,

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excess body fat around the waist, and abnormal cholesterol levels) that occur together, increasing heart disease risk.

Chronic Kidney Disease (CKD) leads to hypertension and cardiovascular disease due to fluid overload, electrolyte imbalances, and increased arterial stiffness. Anemia influences increased cardiac output and left ventricular hypertrophy, raising the risk of heart failure and other cardiovascular conditions. Altered calcium metabolism and vascular calcification are common in osteoporosis, potentially leading to increased cardiovascular risk. Both hyperthyroidism and hypothyroidism can lead to heart disease. Hyperthyroidism increases heart rate and can cause atrial fibrillation, while hypothyroidism is associated with atherosclerosis.

2.2 Biomedical factors influencing increased heart diseases in elderly patients

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2.3 Social Economic Factors Influencing Heart Diseases in Elderly Patients

Social-economic factors influence heart diseases in elderly patients through various factors. The study done by Roth, Johnson, and Murray, (2018) revealed that lower income is associated with higher stress levels, poor diet, and limited access to healthcare, all of which contribute to heart disease. On the other hand, lower socioeconomic status is strongly associated with increased risk of cardiovascular diseases. Basing on the findings of Twagirumukiza and De Bacquer (2024) indicated that high education levels are linked to better health literacy, healthier lifestyles, and more regular medical check-ups while lower educational attainment is associated with higher prevalence of cardiovascular risk factors such as smoking, obesity, and physical inactivity. Jobs with high physical or psychological stress increase the risk of heart disease. High job strain is associated with a modest but consistent increased risk of coronary heart disease (Murray, 2020).

Social isolation and lack of support lead to increased stress and poor health behaviors, contributing to heart disease. Strong social relationships are associated with a 50% increased likelihood of

survival, indicating the significant impact of social support on health (Solomon, 2016). Limited access to healthcare services delay diagnosis and treatment of heart conditions. Differences in healthcare access and quality contribute to variations in cardiovascular disease outcomes. Living in disadvantaged neighborhoods with poor access to healthy foods and safe exercise spaces increase heart disease risk. Neighborhood socioeconomic characteristics are associated with cardiovascular risk factors and outcomes (Fuster, 2019). Poor dietary habits, often associated with lower socioeconomic status, contribute to obesity, hypertension, and heart disease. On the other hand, low-cost, energy-dense foods contribute to poor dietary quality and increased cardiovascular risk in lower socioeconomic groups.

Smoking, alcohol consumption, and physical inactivity are more prevalent in lower socioeconomic groups. Lower socioeconomic position is associated with higher prevalence of adverse health behaviors, contributing to increased cardiovascular mortality. Lack of health insurance or inadequate coverage limit access to preventive care and timely treatment for heart disease (Stewart, Manmathan, 2021). Gaining health insurance coverage significantly improves access to preventive services and management of chronic conditions like heart disease. Cultural attitudes towards health and disease, as well as behavioral norms, influence lifestyle choices and healthcare utilization. Social and cultural factors significantly influence health behaviors and outcomes, contributing to disparities in cardiovascular disease.

Lantz, House, Mero (2018) investigated the influence of socioeconomic Status and Cardiovascular Health in Older Adults in Asia. Longitudinal study using data from the Health and Retirement Study (HRS), which includes surveys, physical exams, and biomarker data from a nationally representative sample of older adults. Analyzed relationships between socioeconomic status (SES) and cardiovascular health. The findings revealed that lower SES indicated by lower income and educational levels was associated with higher prevalence of cardiovascular diseases. Furthermore, limited access to healthcare, poor health behaviors, and higher levels of stress were significant contributors. The research recommended that there is need of implementing policies to reduce SES disparities, improve access to healthcare, and promote healthy behaviors through community programs and education.

Huisman (2022) investigated the influence of Socioeconomic Determinants of Cardiovascular Disease in the Elderly in Nigeria. Cross-sectional study conducted in Cape Town involving elderly participants aged 60 and above. Data were collected through interviews, physical exams, and health records to assess socioeconomic status and cardiovascular risk. The results revealed that low socioeconomic status, characterized by low income, poor education, and inadequate housing, was linked to higher rates of hypertension and heart disease. Furthermore, limited access to healthcare services and healthy food options were significant contributors. The research suggested implementing community-based interventions to improve access to healthcare and healthy food, and promote education about cardiovascular health.

Tumwesigye, Kasasa and Baingana (2023) said that Socioeconomic Disparities and Cardiovascular Health in Tanzania. Analysis of data from the Tanzania National Household Survey, focusing on elderly participants. Included interviews, physical examinations, and analysis of health records to explore the impact of socioeconomic factors on cardiovascular health. The study revealed the socioeconomic factors contribute to the cardiovascular such as low income, poor education, and inadequate access to healthcare were major socioeconomic factors linked to increased cardiovascular diseases. The results affirmed that emphasized there is need for policies

to improve socioeconomic conditions and access to healthcare. The study recommended that develop targeted policies to reduce socioeconomic disparities, improve healthcare access, and promote education on cardiovascular health.

2.4 The Knowledge, Attitude and Practice Influence Increase of Heart Diseases among Elderly Patients

Miller, Edupuganti and Yanek (2018) assessed the influence of Knowledge, Attitudes, and Practices Related to Cardiovascular Disease Prevention among Older Adults in the United States. This cross-sectional study analyzed data from the Behavioral Risk Factor Surveillance System (BRFSS). The survey included questions about awareness of risk factors, attitudes towards lifestyle changes, and adherence to preventive practices. The sample consisted of older adults across various states. The findings affirmed that majority of older adults were aware of major cardiovascular risk factors. Generally positive attitudes towards lifestyle changes were observed. Regular physical activity and healthy eating were not consistently followed. Barriers included lack of motivation and access to resources. The study recommended increase public health campaigns focused on the elderly, improve access to resources for healthy living, and create supportive community programs to enhance motivation.

Salen and Martin (2022) assessed the impact of Knowledge, Attitudes, and Practices on Cardiovascular Health in the Elderly in Europe. EPIC study included elderly participants from several European countries. Data were collected through detailed questionnaires on dietary habits, physical activity, smoking, medical history, and assessments of knowledge and attitudes towards cardiovascular health. The research concluded that higher levels of knowledge about cardiovascular risk factors. Healthier attitudes and practices were associated with better dietary choices and regular physical activity. Socioeconomic factors influenced the ability to adopt these practices. Misconceptions about certain behaviors' impact on heart health were noted. The advised that enhance education programs focusing on cardiovascular health, address socioeconomic barriers, and dispel misconceptions through targeted communication strategies.

Kavishe and Biraro (2023) investigated influence of Knowledge, Attitudes, and Practices Regarding Cardiovascular Disease among Elderly Ugandans. The cross-sectional study in Kampala involved interviews with elderly participants to assess their knowledge of cardiovascular risk factors, attitudes towards preventive measures, and health practices. The study concluded that low knowledge about cardiovascular disease and major risk factors. Mixed attitudes, with some fatalistic views about aging and heart disease. Regular physical activity and healthy eating were not widely adopted due to economic and social barriers. The recommended that developing targeted health education programs, address economic and social barriers, and promote community support systems.

Ngugi, Muthoni and Kamau (2023). Assessing Knowledge, Attitudes, and Practices Related to Cardiovascular Diseases in the Elderly Population of Nairobi and Rural Kenya. The study involved surveys and interviews with elderly participants from both urban (Nairobi) and rural areas in Kenya. It assessed their knowledge of cardiovascular disease, attitudes towards preventive measures, and health practices. The results affirmed that higher knowledge about cardiovascular disease in urban areas compared to rural areas. Actual practices hindered by economic challenges and lack of access to healthcare services. The research suggested that enhancement of health

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education, improve healthcare access in rural areas, and provide economic support to promote healthy lifestyles.

2.5 Theoretical framework

2.5.1 Lifestyle and Behavioral Risk Theory

Dr. Ancel Keys, Dr. Jerry Morris (1980) developed theory of lifestyle and behavioral. Theory stated that heart disease prevalence is significantly influenced by individual lifestyle choices and behaviors, such as diet, physical activity, smoking, and alcohol consumption. According to this theory, an unhealthy diet high in saturated fats, refined sugars, and excessive sodium contributes to the buildup of plaque in the arteries, leading to atherosclerosis and increased cardiovascular risks (Smith & Johnson, 2020). Additionally, a sedentary lifestyle weakens the heart muscles and increases the likelihood of obesity, diabetes, and hypertension, all of which are major risk factors for heart disease.

To mitigate heart disease risks, this theory emphasizes lifestyle modifications as a primary preventive strategy. Encouraging individuals to adopt a balanced diet rich in fruits, vegetables, whole grains, and healthy fats significantly lowers cholesterol levels and maintains optimal blood pressure (Brown et al., 2021). Regular physical activity, such as aerobic exercises, enhances cardiovascular endurance and reduces obesity-related risks. Moreover, cessation of smoking and limiting alcohol intake are crucial steps toward reducing oxidative stress and preventing vascular damage.

Public health campaigns and community-based programs play a vital role in promoting heart-healthy behaviors. Schools, workplaces, and healthcare institutions can implement structured wellness programs that educate individuals about the benefits of maintaining a healthy lifestyle. Governments and health organizations can also reinforce this approach by enforcing stricter food regulations, improving access to healthier food options, and providing incentives for fitness engagement (Williams & Carter, 2019). This theory suggests that sustained lifestyle changes at both individual and societal levels are key to reducing the incidence of heart disease.

2.5.2 Psychosocial Stress and Heart Disease Theory, Genetic and Hereditary Risk Theory, Lifestyle and Behavioral Risk Theory

Dr. Robert, Dr. Redford and Dr. Karasek created theory of Psychosocial Stress and Heart Disease in 1990. Theory argues that chronic stress, depression, and social determinants of health significantly contribute to the development of cardiovascular diseases. Stress triggers the release of cortisol and adrenaline, which increase heart rate, blood pressure, and inflammation, leading to long-term damage to the arteries (Anderson & White, 2020). Additionally, individuals experiencing financial difficulties, workplace stress, or social isolation are more likely to engage in unhealthy coping mechanisms such as overeating, smoking, or excessive alcohol consumption, further exacerbating heart disease risk.

Effective mitigation strategies include stress management interventions and mental health support systems. Techniques such as meditation, yoga, and cognitive-behavioral therapy (CBT) have been shown to reduce stress-induced cardiovascular risks (Garcia et al., 2021). Employers can also implement workplace wellness programs that promote work-life balance and offer mental health resources. Additionally, improving social support networks through community engagement, support groups, and counseling services can significantly lower stress-related heart disease risks.

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Policy interventions play a crucial role in addressing the psychosocial factors linked to heart disease. Governments and health organizations can invest in mental health awareness campaigns, improve access to affordable healthcare, and introduce policies that reduce financial stressors, such as universal health coverage and employee wellness benefits (Henderson & Lee, 2022). Addressing the root causes of psychosocial stress not only improves cardiovascular health but also enhances overall well-being.

2.5.3 Genetic and Hereditary Risk Theory

Dr. Michael and Dr. Joseph created the theory of Genetic and Hereditary Risk; the Genetic and Hereditary Risk Theory posits that heart disease risk is partly determined by genetic predisposition and inherited traits. Research has shown that individuals with a family history of cardiovascular diseases have a higher likelihood of developing similar conditions due to shared genetic markers that influence cholesterol metabolism, blood pressure regulation, and inflammatory responses (Miller & Davis, 2022). Certain genetic mutations, such as those affecting the LDL receptor gene, contribute to increased cholesterol levels, which accelerate the development of arterial plaque and cardiovascular complications.

Mitigation strategies under this theory focus on early detection and personalized medicine. Genetic screening and family history assessments help identify individuals at higher risk, allowing for early interventions before symptoms manifest (Thompson et al., 2023). Physicians can tailor preventive strategies, such as prescribing cholesterol-lowering medications.

2.6 Conceptual Framework

Though many studies have shown biomedical factors influence heart diseases in elderly patients, how social economic factor influence increased heart disease among elderly patients visiting KFH. There is need to show how KAP influence increased heart diseases among elderly patients as demonstrated in the conceptual frame works in figure 2.1 below.

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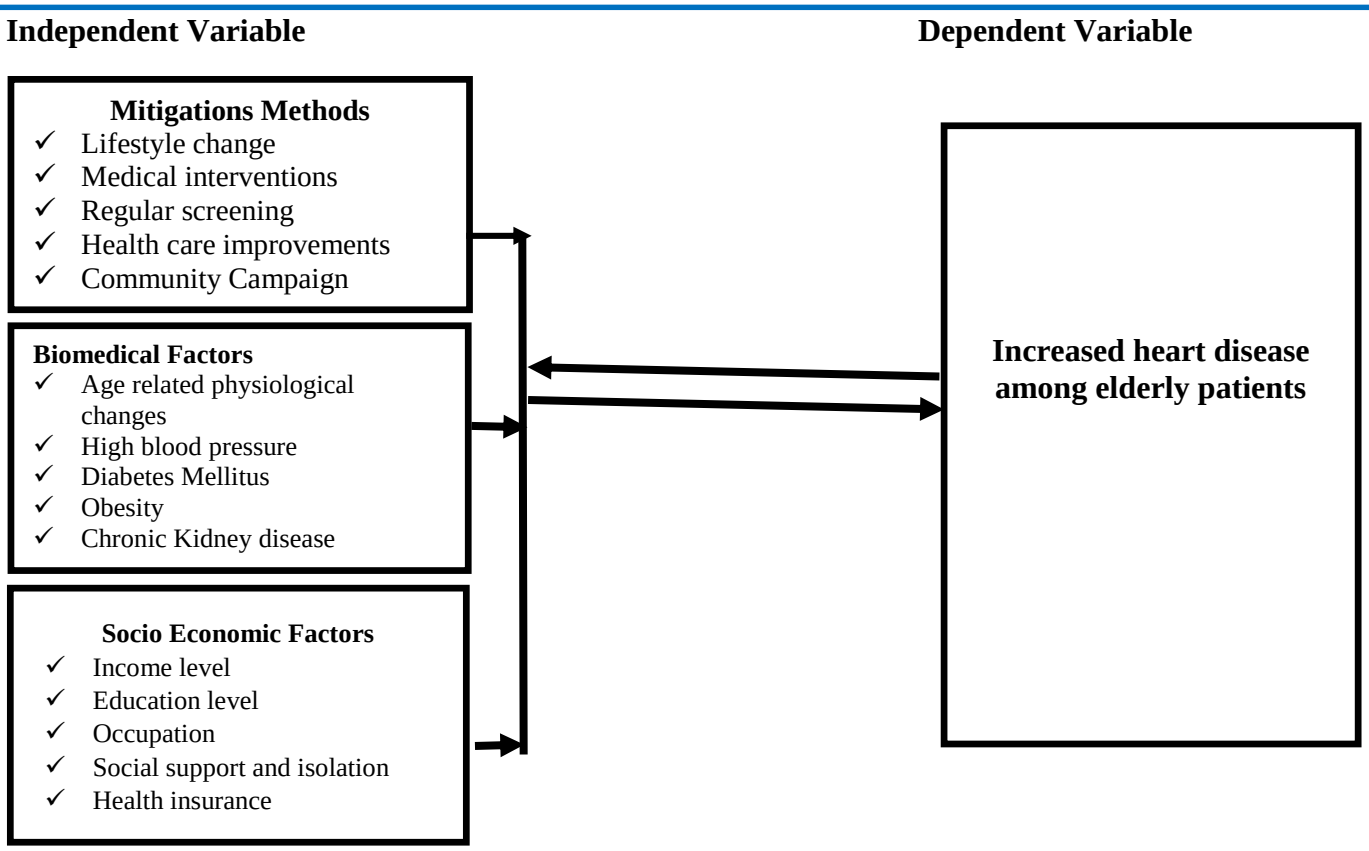

Figure 1: Conceptual Framework

3.0 Methodology

The study design was quantitative and qualitative research. A descriptive survey methodology combining quantitative and qualitative methodologies was utilized to investigate the factors and mitigation methods used to prevent heart diseases among elderly patients visiting King Faisal Hospital. The target population comprises by heart diseases elderly patients whose number 244 from 50 years and above, while pharmacists were 9, nurses were 14 while Doctors and Cardiologists was 13, and hence total population was 280 participants.

A semi-structured data collection tool is an effective method that combines the flexibility of open-ended inquiries with the consistency of structured questions. It is widely used in qualitative and mixed-methods research due to its ability to capture detailed insights while maintaining a level of comparability across responses (Creswell, Creswell, 2018). For survey, semi structured questionnaire was used in collecting quantitative data while interview was used for gathering qualitative data, Key Informant Interview (KII) and Focus Group Discussion (FDGs) was applied in this research. Data was managed with the SPSS 27.0 version and analyzed using cross-tabulation of descriptive and inferential statistics.

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4.0 Findings and Discussion

The data were analyzed based on research objective,

Biomedical Factors Contributing Increased Heart Diseases in Elderly Patients Visiting

4.1 Increased Blood Pressure Contributes to Heart Disease Heart Disease in Elderly People

The results showed that the majority of respondents 150 (90.9%) , had high blood pressure as the biomedical factor contributing factor to the heart disease among elderly people, while 9.1% did not agree. This indicated a strong understanding among participants of the link between hypertension and cardiovascular complications. Elevated blood pressure was also contributed by uptake of high cholesterol foods, as a major risk factor that could damage arteries and strain the heart over time.

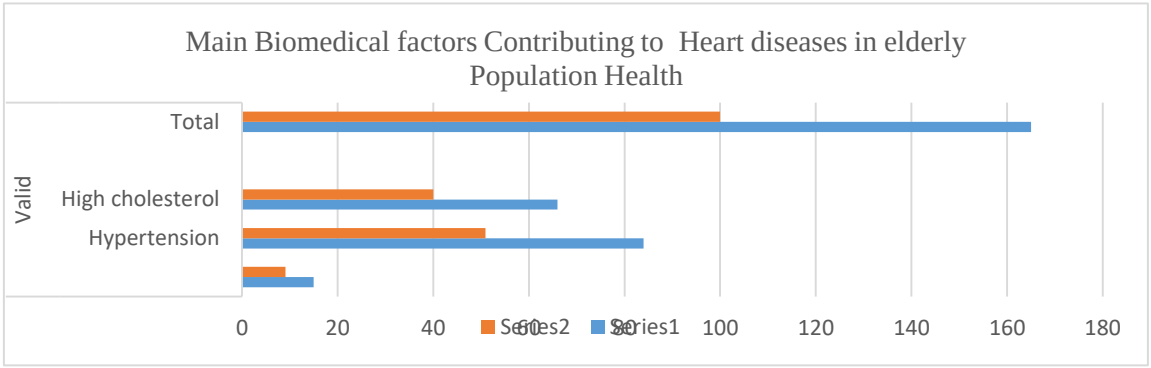

Figure 4.1 Main Biomedical factors contributing to Heart diseases in elderly Population H

4.2 Obesity and overweight Contribute to the Increase of Heart Disease in Elderly People

The Results revealed that most respondents with high blood pressure had obesity and overweight, as the biomedical contributing factors on the rise of heart disease among elderly people. Other commonly mentioned contributing factors included diabetes, chronic kidney disease, cancer, and vascular complications. Participants also noted that obesity and related conditions strain the heart and blood vessels, leading to restricted blood flow and a higher likelihood of heart attacks or failure.

The results revealed that the majority of respondents, 149 (89.7%) agreed that high cholesterol levels increased the risk of heart disease among the elderly, with a significant P value of 0.034. This indicated that most participants understood the role of cholesterol in contributing to cardiovascular problems. Elevated cholesterol was recognized as a key factor that leads to the buildup of fatty deposits in blood vessels, which can restrict blood flow and strain the heart. Overall, the findings demonstrated a strong awareness among respondents that managing cholesterol levels was essential in preventing heart disease among elderly patients at King Faisal Hospital. This was also discussed in KII.

"*Most elderly people coming here have agreed that high cholesterol contributed significantly to heart disease among elderly people through various physiological effects. High cholesterol contributes to the narrowing of blood vessels, atherosclerosis, and reduced blood flow to the heart,*

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which together increase the risk of chest pain, high blood pressure, and heart attacks. Others mentioned that plaque buildup and rupture in the arteries could block coronary vessels, further straining the heart's function. These findings supported the view that elevated cholesterol levels play a central role in cardiovascular complications among the elderly, emphasizing the need for effective cholesterol management to prevent atherosclerosis and related heart conditions." KII held 28/11/2025.

4.3 Social-Economic Factors Contributing to Heart Diseases in Elderly Patients

The results showed that socioeconomic factors had a significantly contributed on heart disease among the elderly age where by 53 (31.5%) , with p value of 0.023. lack of health insurance coverage limited access to timely medical care, with a contribution frequency of 50 (29.7%), on the disease burden at various households. " *In our catchment area if don't have CBHI and no cash money in the pocket to one will give drugs in Rwanda*" focused group discussion Held on 23/12 /2024

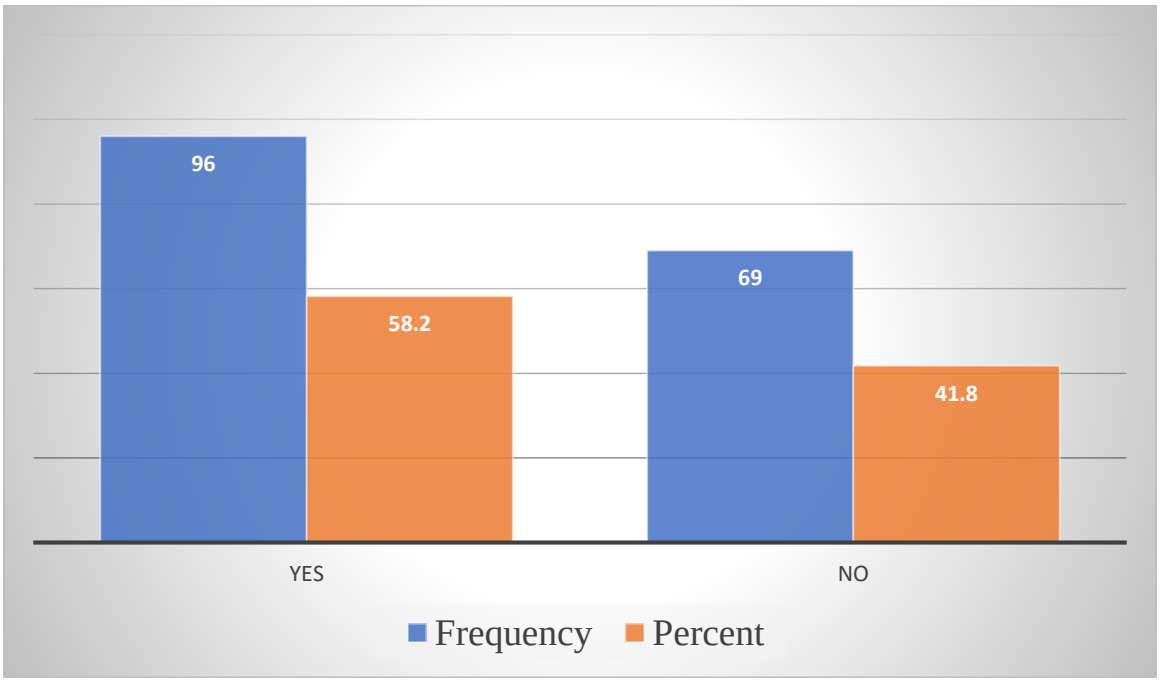

Figure4. 2: Income Level Contributes to the Increase of Heart Disease

The results showed that 58.2% (96), of respondents agreed that income level contributed to the increase of heart disease. Low income was associated with limited access to quality healthcare, healthy diets, and regular medical checkups, which could increase vulnerability to cardiovascular diseases. Conversely, respondents who disagreed might have viewed lifestyle factors such as poor diet or lack of exercise as more influential than income level in causing heart disease.

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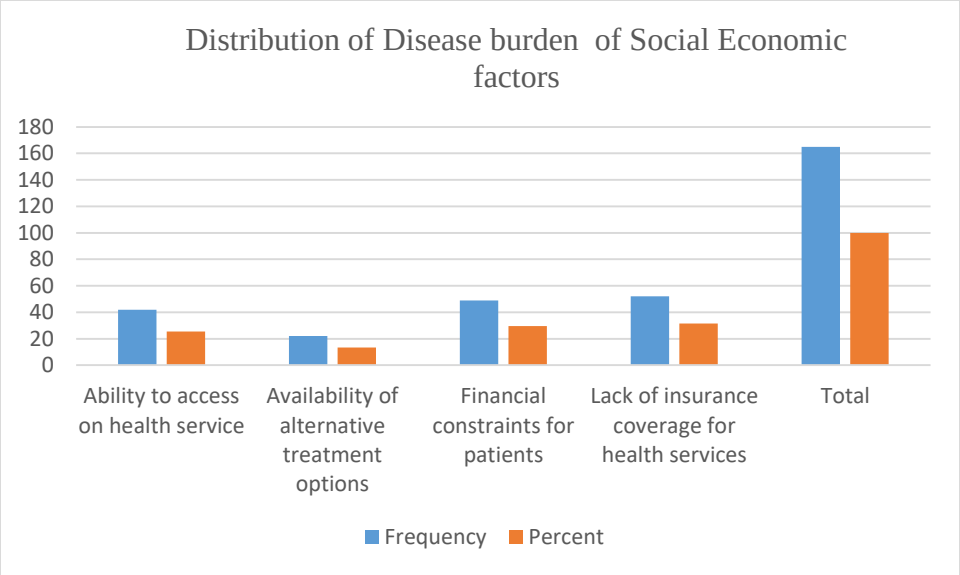

Figure 4.3 Distribution of Disease Burden of Social and Economic Factors

5.0 Conclusions

The study concluded that physical activity, avoiding smoking, consuming fruits and vegetables, and following medical advice were recognized as essential practices for maintaining heart health. Biomedical factors, including hypertension, diabetes, obesity, high cholesterol, and chronic kidney disease, were found to significantly influence heart disease risk, emphasizing the importance of early detection, continuous monitoring, and proper medical management.

6.0 Recommendations

Based on the findings obtained, the following recommendations can be made to prevent and control heart diseases among elderly patients visiting King Faisal Hospital, Kigali, Rwanda: Given that 98.2% of respondents agreed that regular moderate exercise decreases heart disease, King Faisal Hospital should implement structured exercise programs specifically for elderly patients. Community-based exercise initiatives, including walking clubs, aerobics, and supervised rehabilitation sessions, can improve cardiovascular health and reduce the prevalence of heart disease. The study found that financial constraints and lack of insurance coverage significantly influenced heart disease prevention. Expanding health insurance schemes, providing financial support for low-income elderly patients, and improving access to affordable healthcare services are essential to reduce the burden of cardiovascular diseases. Since many respondents occasionally or rarely conducted heart disease tests, King Faisal Hospital should prioritize regular screening programs for hypertension, cholesterol, and diabetes among the elderly

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