

# FACTORS CONTRIBUTING TO CARDIOVASCULAR DISEASES AMONG AFRICAN SOCIETIES

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## ABSTRACT

**Background:** CVDs before were thought to be diseases of high economy populations, this simply meant that cardiovascular diseases were basically affecting industrialized countries in relation to decreased human activity, overconsumption of fat foods.

**Problem statement:** Worldwide, it is estimated that 16.6 million deaths are encountered as a result of non-communicable diseases in low and middle income countries which is far higher than 5.7 million of deaths due to infectious diseases. In this review paper five research articles were reviewed, discussing factors of CVD from different parts of Africa. According to two different studies conducted in Ghana and Nigeria, aimed at “Cardiovascular diseases in Ghana within the context of globalization and Cardiovascular Disease Risk Factors among School attending adolescents in Rural Nigeria indicated that age, high blood pressure (hypertension), smoking, high blood cholesterol, diabetes, overweight or obesity, lack of exercise and family history of heart disease were leading CVD factors in respective study population, in addition to researchers recommendations also African governments and researchers to establish appropriate approaches to prevent and treat CVD in such affordable and accessible manner and further more education can be used to already existing cases, since most cardiovascular conditions are influenced by lifestyle changes. Catherine Lawrence assessing women’s perception on modifiable risk factors of CVD in Kenya, women perceived CVD risk factors as independent health conditions as there’s no link with cardiovascular disease. The additional argument was that government should establish a clear strategy of disseminating information to the population, via media enough coverage can be ensured. According to Demetrius A. Abshire in the study cardiovascular disease risk factors among emerging adults in college” abdominal obesity and dietary behaviors, environmental and lifestyle behaviors (smoking) to be significant risk factors of CVD, call all policy makers to take part in this journey, scheduling exercises, dietary talks in the colleges would help to improve situation was suggested during the review. According to the study carried out by Gabriel Uche Pascal Iloh and his colleagues with the objective of determining the frequency of cardiovascular risk factors in adult Nigerians with family history of non-communicable cardiovascular disease, we urged by saying that screening for CVD risk factors in old ages, won’t help to prevent the rising burden of CVD, rather screening in early is essential and this can to exclude non modifiable factors.

**Keywords:** Cardiovascular, disease, factors, non-communicable

## 1 INTRODUCTION

### 1.1 Background

Cardiovascular disease (CVD) is a class of diseases that involve the heart or blood vessels<sup>[2]</sup>, such as coronary heart, stroke, heart failure, hypertensive heart disease, rheumatic heart disease, cardiomyopathy, heart arrhythmia, congenital heart disease, valvular heart disease, carditis, aortic aneurysms, peripheral artery disease, thromboembolic disease, and venous thrombosis.<sup>[2][3]</sup> CVDs before were thought to be diseases of high economy populations, this simply meant that cardiovascular diseases were basically affecting industrialized countries in relation to decreased human activity, overconsumption of fat foods.<sup>7</sup> currently studies show that CVD are now common in low income and developing world as well but luckily It was estimated that 90% of CVD can be prevented.<sup>[5]</sup> Cardiovascular disease is the leading global cause of death, in 2013, there were more than 17.3 million deaths per year which was expected to grow to more than 23.6 million by 2030, and two years later in 2015 an estimated 17.7 million people died from CVDs, representing 31% of all global deaths. Of these about 75% deaths took place in low- and middle-income countries. Africa is a major contributor to the global burden of CVD<sup>7</sup>. In 2013, an estimated 1 million deaths were attributable to CVD in sub-Saharan Africa, which made up 5.5% of all global CVD-related deaths and 11.3% of all deaths in Africa<sup>6</sup>. The majorities of cardiovascular disease risk factors are controllable, treated or modified, such as high blood pressure, cholesterol, overweight/obesity, tobacco use, insufficient physical activity and diabetes. Nevertheless, there are also some most important CVD risk factors that cannot be controlled<sup>9, 10</sup>. In this review paper, factors that contribute to CVD will be discussed and in African context, culture and economy.

### 1.2 PROBLEM STATEMENT

Worldwide, it is estimated that 16.6 million deaths are encountered as a result of noncommunicable diseases in low and middle income countries which is far higher than 5.7 million of deaths due to infectious diseases<sup>(26, 27, 28)</sup>. Non communicable diseases including cardiovascular diseases have been ignored in most of African countries especially in sub-Saharan countries and this has led to a great burden to the governments. Lifestyle has been changed because of westernization of African culture mainly in cities and towns where consumption of processed food is preferably used by Africans in their daily life, hypertension and decreased physical activities (inactivity) due to urbanization has been shown to remarkably play a big role in CVD<sup>29</sup>. CVD mortality is still firm and rising in low and middle income countries with rates of up to (300–600) deaths attributed to CVD per 100,000 populations, and is predicted to increase causing preventable loss of lives<sup>30</sup>. Therefore this calls African governments to establish effective, accessible and affordable strategies to further CVD cases and treat current cases.

## 2 CRITICAL REVIEW

According to Richard Ofori-Asenso and Daureen Garcia in their perspective article titled as “Cardiovascular diseases in Ghana within the context of globalization”. They include age, high blood pressure (hypertension), smoking, high blood cholesterol, diabetes, overweight or obesity, lack of exercise and family history of heart disease. Among these factors hypertension was indicated as top most risk factor for CVD in Ghana where between 1988 and 2007, the number of reported new cases of hypertension in the country’s outpatient public health facilities augmented to more than 1,000 percent, with remarkable disparities between rural and urban areas. It was indicated that 19.3% in rural and 54.6% in urban areas had hypertension of which only 7.4% of persons with high blood pressure were aware in rural communities. the rise of hypertension was more associated with mainly dietary behaviors, lifestyle and age, as it was highlighted in different researches, shifting of African food consumption to western food (processed food) and improved transportation (inactivity) that consequently lead to high fat level in the body which in turn results into obesity thus increased risk of hypertension then CVD when nothing is done<sup>11, 12</sup>. According to Richard’s discussed approaches to combat CVDs at all levels included primary preventive strategies where screening and case detection would effectively minimize the burden, especially when it is started in early childhood, health education targeting groups at risk (old age and urban areas) where physical exercises are encouraged and nutritional advices are delivered. Mass media channel was also indicated to contribute much in the process, though most African societies don’t all have access to media services, but wherever possible radio,

newspapers, and other social media can be used to deliver specific information educating citizens to increase their awareness of CVD<sup>13</sup>. just in recent few years Africans has been more worried about outbreaks such as Ebola in west , which was definitely possible to be spread across the continent<sup>14, 15</sup> , in some African countries there isn't clear strategies to prevention of non-communicable diseases in which CVD is included , nowadays cardiovascular diseases are picking up <sup>16, 17</sup> . This would impose pressure to African governments and researchers to establish appropriate approaches to prevent and treat CVD in such affordable and accessible manner.

According to the research done by Oduniya Nse Ayooluwa during his PhD dissertation titled as "Cardiovascular Disease Risk Factors among School attending adolescents in Rural Nigeria published 2016, using composite lifestyle CVD risk factors questionnaire for adolescents showed that 7.1% adolescents were smokers, 10.2% drank excessive alcohol, 27.9% had low physical activity level, 59.8% consumed high cholesterol diet, 6.1%, consumed low vegetable 8.1% consume low fruit 65.5% had high salt intake, 33.1% had pre hypertension (systolic), 5.5% had pre hypertension (diastolic) 3.2% had hypertension (systolic) 0.8% had hypertension (diastolic).like other different studies conducted in Africa 80% of the risk factors of CVD are modifiable which mainly constitutes lifestyle factors that make individuals candidates of CVD<sup>19,18</sup> . Annual surveillance, screening, tobacco reduction programs, comprehensive health education, promotion of physical activity and counseling were suggested recommendations, all these factors may need a budget which cannot be afforded by some countries. The government should invest in comprehensive education targeting young people (adolescents) to prevent new CVD cases, through which a large coverage of population will be reached and this minimizes the costs. African societies mainly have low understanding of the cardiovascular conditions and their risk factors<sup>20</sup>; further more education can be used to already existing cases, since most cardiovascular conditions are influenced by lifestyle changes<sup>21</sup>.

According to Catherine Lawrence's master's thesis published online at Scholar Works @ UVM 2015, aimed at understand how or what women in Kenya perceive the modifiable risk factors for CVD and perceived effects of the disease on their personal lives and the lives of their families as well this, study results showed a failure of study subjects to exhibit the know of the link between CVD and its risk factors. In general few people will understand and link CVD and its risk factors apart from those in related profession and those who had a chance to be told about this or heard via media. CVD is considered a new story in African societies and this elicits a need to increase African awareness of CVD in all categories ( young and old) for this has been proved by a number of researches that all these categories can be at risk. According to the researcher's recommendations, education on the basis of what it is CVD, and then to its risk factors mainly those which are modifiable. In addition to this a strategic plan of information dissemination is needed , and doesn't need necessarily nurses only , rather a multi-dimensional approaches can help, organs like media , private and public organizations should develop a sense of responsible of this burden. Information dissemination to the population across the country it takes no much with budget and time, it only needs willing. Via radios, newspapers and community gathering where people given talks about CVD burden, voluntary checkups should also be encouraged which can reduce government's expenses on scheduled public screenings.

Research have been conducted so far show a great burden of CVD to African continent, according to Demetrius A. Abshire in his research, carried out in south Africa in college students from urban and rural areas respectively. The study was titled as "cardiovascular disease risk factors among emerging adults in college" published online by Theses and Dissertations-Nursing 2014 study results demonstrated that abdominal obesity and dietary behaviors , environmental and lifestyle behaviors( smoking) to be significant risk factors of CVD among emerging adults in the two regions. Abdominal obesity was higher among college students in rural area compared to those in urban. Study results suggested that healthcare professionals can play a significant role in promoting cardiovascular health behaviors among emerging adults in college by calling attention to immediate consequences of unhealthy behaviors and creating favorable environment in colleges to eliminate environmental barriers to health lifestyle. Data are everywhere well sounding, showing how burden it is to African population CVD, but the willing of implementers is still a barrier to at least help communities understand CVD and practice suggested measures to save their lives. Behavior change approach isn't something that takes too much budget however it takes time and commitment<sup>22</sup>.

As it was shown in this study college students were showing willingness to practice which may help their lives but not facilitated, health professionals aren't available everywhere or be reached easily in case they are needed , this simply calls all policy makers to take part in this journey , scheduling exercises, dietary talks in the colleges would help to improve situation. College students are always in such busy periods of class works, and there are no immediate consequences of dietary and or lifestyle to cardiovascular health, it's not simple for students or others to realize the connection between their lifestyle and risk for CVD.

According to Gabriel Uche Pascal Iloh, Abali Chuku and their colleagues during their study conducted in primary care clinic of a tertiary hospital in a resource-constrained environment of Eastern Nigeria titled as “Frequency of cardiovascular risk factors in adult Nigerians with family history of non-communicable cardiovascular disease in a primary care clinic of a tertiary hospital in a resource-constrained environment of eastern Nigeria with an aim of determining the frequency of cardiovascular risk factors in adult Nigerians with family history of non-communicable cardiovascular disease in study area. From the results, inactivity, hypertension and obesity were notified as high risk factors of CVD among the group with scores 81.6%, 26.4% and 18.9% respectively. Looking at the age range of subjects which 47.1% were 40-60 years old and 13.1% were between 60-76 year old, this implies that there was a significant number of individuals with advanced age in the study population, researchers didn’t differentiate the two possible instances which were, having been diagnosed with CV risk factor and being at risk due to advanced age. As it was shown in various recent studies showing the relationship between advanced age and hypertension, most of them ultimately showed a link between age and increased blood pressure<sup>24, 25, 26</sup>. Therefore screening adults wouldn’t be considered as the definite approach to handle and prevent early CVD come in late age; to be sure that all CVD candidates are secured from modifiable risk factors there is need to screen individuals in their early ages which will also help to not confuse non modifiable risk factors and modifiable risk factors among CVD persons.

### **3 RECOMMENDATIONS**

Cardiovascular diseases are becoming serious burden across the globe. Millions of people are dying every year. Africans are among the most affected race by this silent rapid growing burden, a number of measures should be taken of which are possible to almost all African societies, therefore this review suggested that:

A) Basic education – education methodology that ensures a large coverage should be practiced in all African countries irrespective of their economy differences. As it is currently done in most countries case identification is done at the clinics, this approach doesn’t promise CVD free future to Africans.

i) Early screenings- through mobilizations and health talks via radios, TVs and news papers people are encourage to voluntarily seeking specific screening services, either at public clinics or private. CVD should be publically explained to increase awareness of individuals by elaborating risks and prognosis of the disease.

ii) Modifiable risk factors which are mainly dietary and lifestyle behaviors should be clarified and facilitating modification to whoever wishes.

B) Involvement of all governmental and nongovernmental organizations, all organizations, institutions should at least try to employ a facilitated health professional as to be around for screening and giving advices.

i) Scheduling at least 1 obligatory physical exercise session (sports) in all public and private organizations, institutions, where all workers are expected to attend.

ii) Training of enough specialized health care providers and community health workers to at least be able to screen and give advices concerned with nutrition behaviors, physical exercises, which can also help people understand cardiovascular diseases


### **4 CONCLUSIONS**

Everybody especially ministries of health should be more sensitive to cardiovascular diseases burden to their respective countries. Hypertension, obesity and inactivity were highlighted in almost all researches done in Africa especially in sub-Saharan countries these are the leading risk factors of CVD in addition the relationship between CVD and its risk factors is not discovered by some Africans. Improving primary health care approach for prevention through which sensitization methodology should be reinforced to increase the coverage of information dissemination.

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