

Cardiovascular disease is on the rise in South Africa

A new study by researchers in the human molecular biology unit in the School of Biomedical Sciences at the University of the Free State (UFS) into atherosclerosis in the South African population found that men of European descent over the age of 50 are the most vulnerable for the development of atherosclerosis.



Source: [Pexels](#)

Atherosclerosis is the most common disorder associated with cardiovascular disease (CVD). Nearly half of men in this group had visible signs of atherosclerosis in the coronary arteries of the heart.

Risk factors for cardiovascular diseases

Dr Walter Janse van Rensburg, senior lecturer in the human molecular biology unit at UFS's School of Biomedical Sciences, and principal researcher, says the study was conceptualised during 2020's Covid-19 pandemic, due to reports of excessive blood clots associated with both acute Covid-19 infection and some of the Sars-CoV2 vaccines.

However, limited data existed in our region regarding the other underlying causes for blood-clot formation, such as atherosclerotic plaque rupture. The data was collected during a couple of months in 2021. The data was collected out of more than 10,000 case files spanning 10 years. The study is still ongoing.

“Atherosclerosis remains a major risk factor for CVD, and is thus, believed to be a good indicator of the CVD profile in a

population, yet little is known on its prevalence in sub-Saharan African populations.

"We aimed to determine the prevalence of atherosclerosis in a diverse South African population as found in post-mortem investigations. A retrospective file audit was done on 10,240 forensic post-mortem reports done at a forensic pathology mortuary in South Africa, over 10 years," writes van Rensburg in the abstract of the research article.

According to him, cardiovascular diseases are reportedly the number one cause of mortality worldwide. According to the latest report from Stats SA, diseases of the circulatory system account for nearly a fifth of all deaths in South Africa.

"CVD is a multifactorial disorder, however, the presence of atherosclerosis (an inflammatory condition of artery walls) is the most common disorder associated with CVD.

"In order to assist in the prevention of the formation and progression of atherosclerosis, one can manage factors that have been associated with a higher risk for atherosclerosis, such as the use of tobacco, hypertension, elevated cholesterol, obesity, HIV infection and diabetes," says van Rensburg.

Reasons behind different population's mortality rate

It has been proposed, says van Rensburg, that socioeconomic status is possibly one of the essential roleplayers in CVD aetiology.

The socioeconomic inequality in South Africa is well known, with an economic inequality Gini coefficient (a statistical measure of the degree of variation represented in income inequality) of 0.63 (the highest in the world).

One study reported that in the Free State province, in the non-agricultural sector, the average household income for a European-descent household is roughly 4.35-times higher than the average African-descent household income.

"Therefore, it is postulated that wealthier people, in the South African context, that is historically people of European descent, have the means to afford and adopt lifestyles that contribute to the increased risk of lifestyle diseases such as obesity, hypercholesterolaemia and diabetes, which are associated with a higher risk to develop CVD.



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"We postulate that CVD-related deaths are traditionally lower among South Africans of African descent compared to the other ethnic populations due to the historical socioeconomic discrepancy between people of African descent and other population groups in higher-income countries."

The study also found that the prevalence of CVDs and the incidence of premature CVD-related deaths are steadily increasing in both rural and urban communities and across the socioeconomic spectrum.

The theory of epidemiological transition says that in populations with improved living conditions and better access to healthcare, the proportion of deaths caused by infectious diseases will decrease, and the proportion of deaths due to more chronic "man-made" lifestyle-related diseases, such as CVD, will increase.

However, our population's socioeconomic status is not the only driving force behind CVD. Therefore, we theorise there has been an upward trend in South Africa across all regions to improve access to better food and better healthcare, consequently resulting in an increase in CVD-related morbidity and mortality statistics.

“For all population groups, males are more affected than females within their demographic group. This may also be possibly attributed to the socioeconomic status and access to the healthcare gender-gap differential in the country.”

Studies are vital in raising public awareness

van Rensburg says that studies such as this are vital in raising public awareness regarding disorders associated with the lifestyle choices people make. However, a multidisciplinary approach is needed to ultimately create a lasting impact.

“We hope that our findings will assist in identifying specific groups with a possible increased risk for CVD, and that we will inspire more focused research to identify potential high-risk behaviours within these groups that may eventually result in the enhancement of public-health policies and awareness campaigns in our region.

“Recently, another article has been accepted for publication regarding the prevalence of excessive blood clots (thrombosis) as the underlying cause of death in our study cohort, further contributing to our understanding of the origins and contributory factors of CVDs in our region.”

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