Atlas of Science
another view on science
https://atlasofscience.org

Waking a sleeping giant: How increasing Africa's research output can benefit global cardiovascular health?

Africa is home to 1.4 billion people, of whom 55 million suffer from cardiovascular disease (CVD). Despite this, Africa contributes to only 1.7% of the world's cardiovascular science. We studied 179 clinical trials led by African researchers to shed light on the current state of CVD research in the continent and draw a roadmap for a brighter future.

We show that most studies on the continent are produced in one of 3 countries: Egypt, South Africa, and Nigeria. Collectively, these countries make up 82% of the entire continent's output. In stark contrast, 37 of the continent's 54 countries had not produced any trials. These numbers highlight the challenges faced by the continent. First, many of these countries have a small number of cardiologists and researchers on CVD. Second, many countries do not spend the African Union-recommended 1% of their annual budget on research and development, and thus many African research institutions are starved of necessary financial resources. Finally, the level of collaboration between different African countries and between African and non-African nations was relatively low. This is especially problematic in the context of CVD research which often requires larger (and more expensive) trials for which collaborating and sharing resources is vital.

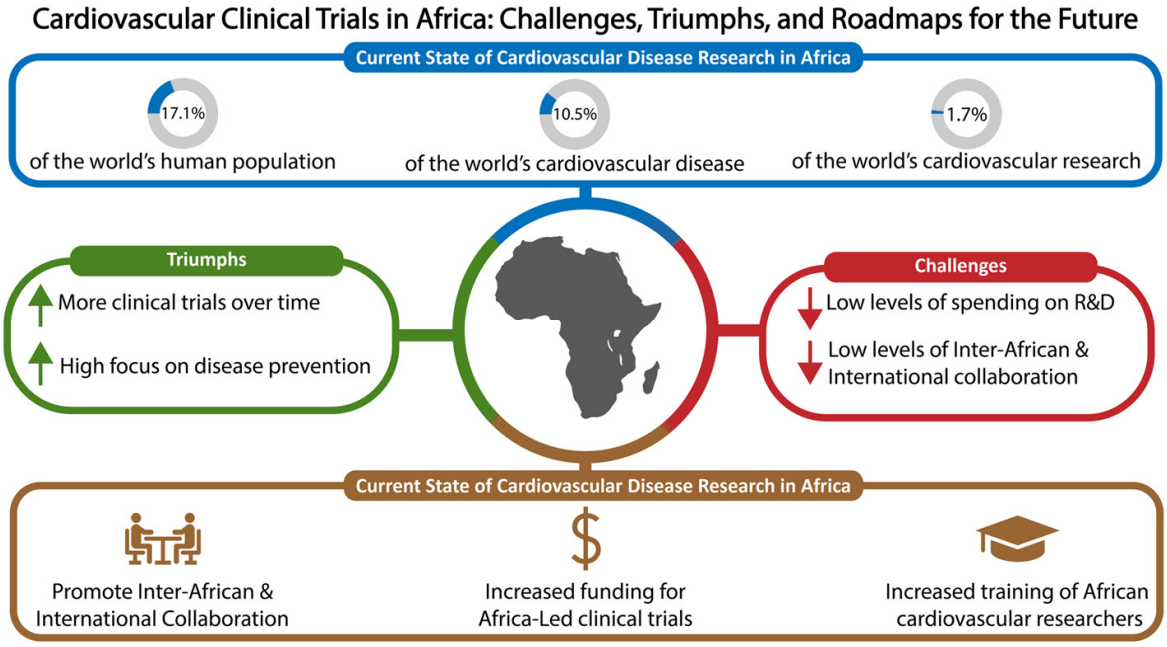

Fig. 1. Current State of Cardiovascular Disease Research in Africa

For many decades, research in Africa has mainly focused on the battle against infectious diseases due to their heavy local burden. In line with the epidemiological transition to non-communicable diseases, the transition to fighting CVD will require a difficult but necessary reallocation of resources that reflects the continent's

evolving health challenges. A successful transition will require a multi-faceted approach to tackle the different barriers faced by African researchers.

First, institutions must foster collaborations within and outside Africa. This requires an evolution of other aspects of the African healthcare systems, such as the large-scale adoption of electronic medical records that would facilitate the storing, sharing, and analysis of data. Second, governmental and non-governmental entities need to dedicate the funding necessary both to enact these pre-requisite changes and to carry out these trials. Third, it is necessary to train African researchers such that they can make the most of the aforementioned data and collaborations. This includes both training African researchers at leading research institutions across the world as well as providing training within African institutions. Doing so would provide the necessary foundations and skillsets to become active global players in CVD research.

To motivate these changes, institutions and decision-makers must appreciate Africa's role as a potentially active player whose contributions would do much good for the world. Research on CVD is often expensive and time-consuming; therefore, collaborative efforts are needed to make studies feasible to run. As the world's second most populous continent and with a growing burden of CVD, Africa's potential contribution would significantly boost and accelerate these resource-intensive efforts. Thus, fostering CVD research in Africa is not merely an investment into Africa's local fight against CVD but is an investment into the world's global fight against CVD.

In conclusion, our study shows that although currently unsatisfactory, Africa's contributions to the science of CVD continue to grow over time. Africa's own researchers have both the desire and aptitude to grow these contributions further and emerge as important players on a national, continental, and global level. Investments into the continent's research infrastructure and the training of its researchers are essential steps to transform it from an *emerging contributor* to an *established bedrock* in the world's battle against the growing tide of CVD.

Ahmed Sayed [1], ***Abdelrahman Abushouk*** [2]
[1]*Faculty of Medicine, Ain Shams University, Cairo, Egypt*
[2]*Department of Internal Medicine, Yale School of Medicine, New Haven, CT, USA*

Publication

Africa on the Global Stage: Analyzing 30 Years of African-Led Clinical Trials in Cardiovascular Medicine
Abdelrahman I. Abushouk, Ahmed Sayed, Esraa Ghanem, Ahmed Hassanin, Amgad Mentias, Ahmed Bendary, Joanna Ghobrial, Samir Kapadia
Circ Cardiovasc Qual Outcomes. 2023 Aug 9