

Physical Activity implementation for Cancer Care and Prevention in Sub-Saharan Africa: A call to Action

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Cancer is an escalating global health crisis, and Africa remains deeply vulnerable [1]. Research finds that the majority of new cancer cases worldwide occur in low-income countries, mostly in African region, due to poverty, lack of awareness, prevention strategies, lifestyle change, and industrialization [1,2]. While current global public health strategy involves promoting physical activity (PA) as a medicine [3], there is a discourse recognising exercise as a supplementary means of prevention and management of oncological conditions. According to the World Health Organisation (WHO), “all adults should undertake 150–300 min of moderate-intensity, or 75–150 min of vigorous-intensity physical activity, or some equivalent combination of moderate-intensity and vigorous-intensity aerobic physical activity, per week among children and adolescents, an average of 60 min/day of moderate-to-vigorous intensity aerobic physical activity across the week provides health benefits with regular muscle-strengthening activity for all age groups”[4] . Evidence from Africa, although limited, supports the beneficial role of physical activity (PA) in cancer outcomes. A retrospective cohort study conducted in South Africa reported that individuals with stage I cancers who engaged in low levels of PA had a 16% lower risk of cancer progression or death while those with moderate to high PA showed a 27% reduction. such data remain scarce for most African populations beyond South Africa, these findings suggest that the magnitude of PA’s protective effect is both clinically meaningful and broadly consistent across cancer types, highlighting the urgent need for region-specific research to confirm and adapt PA prescriptions in African cancer care guidelines [1,4]. Structured PA programs show considerable contribution into risk mitigation and disease management (including cancer survival). While other regions are taking measures to integrate PA into patient care [5,6] (when considering the patients physical condition, surgical intervention, treatment received, cardiac and other metabolic risk), PA remains absent from cancer control policies, treatment protocols, and public health communications in many Sub-Saharan African countries [1]. PA would be an appropriate strategy priority for low- and middle-income countries (LMICs) where growing cancer-related morbidity and mortality is observed [7].

The Lancet Oncology’s commission on the burden of cancer in Africa highlighted that knowledge of cancer in Africa needed diversity to tackle the disease and called for regional and national cancer control plans to integrate local resources, screening, improved therapies, and culturally adapted strategies [1]. This would improve Africa’s response to cancer, with PA as an effective adjunctive and integral measure. The World Health Organization (WHO) suggests that PA prescription and implementation should consist of a preventive and management arm for non-communicable diseases (NCDs), including cancer [8]. Unfortunately, there is few

robust prevalence and incidence studies that provide data to contextualise the impact of physical activity on the African continent, with these studies also informing the need for improvement of reporting structures and the like [9-12]. This evidence should motivate African stakeholders and governments to embrace PA by providing sufficient resources to implement adequate, contextualized regional and national policies in all phases of cancer care (from diagnosis to post-treatment) and prevention.

The implementation and dissemination of PA for health promotion by cancer prevention strategies worldwide could be addressed by including PA in medical and allied healthcare training. It is unclear if most African Countries medical training programs prepare clinicians to counsel, effectively prescribe PA or refer appropriately for Cancer patients. The active involvement of the World Cancer Research Fund (WCRF) provides a vital opportunity for Africa to address inequities in exercise and cancer research, as WCRF emphasizes the importance of reducing global disparities in cancer prevention and is committed to supporting researchers in low- and middle-income countries (LMICs) through targeted grant funding. This global good-for-purpose donor organisation repeatedly highlights to reduce the unfair differences between countries when it comes to cancer prevention and is committed to support research on cancer through grants aimed at researchers from disadvantaged and LMICs. Africa's current trend of transition with the burdens of communicable and NCDs, threatens an overstretched health system that remains fragile, fragmented, under-resourced, and limited in terms of infrastructure. Thus, NCDs with particular regard to cancer in Sub-Saharan Africa, highlighted shortcomings in the health systems both at a social and welfare level. Therefore, it is urgent and essential that healthcare systems in African countries improve and evolve to meet the long-term needs of cancer prevention by expanding and implementing a cost-effective tool such as PA.

To the best of our knowledge, there is a lack of accurate cancer and management regionally or country-wide data in Africa, and no consistent cancer registries are available for consultation and scrutinizing. Therefore, stakeholders remain unaware of the most prevalent and burdensome cancers in order to identify priority areas [1,9]. This data gap makes it difficult to adapt PA interventions to the real needs of the population. However, cancer mapping by establishing regional and national cancer registries to collect and analyse epidemiological data is imperative to address the situation.

Many communities in Africa have a misperception of NCDs conditions (e.g., weight-loss is associated with infectious disease such as HIV/AIDS). Likewise, cancer is also perceived as a death sentence. Therefore, people are not engaged in PA for fear of losing weight and being stigmatized as having AIDS or cancer [3].

Research emanating from sub-Saharan Africa on PA interventions for cancer outcome and prevention, remains disproportionately low, despite recent growth in global cancer research [3,4]. This is probably due to the following substantial but not limited to factors [13] highlighted below:

- insufficient research funding and opportunities,
- paucity of research facilities,
- social inadequacy aspects such as lack of electricity,
- unreliable internet access and lack of wearable technology to track PA adherence objectively,
- lack of basic amenities including low access to computers,
- outdated or poor handbook libraries,
- lack of electronic libraries and research tools in universities and institutions,
- lack of local and regional journals/conferences in PA for cancer prevention,
- High publication fees and paywalls restrict visibility and dissemination of findings,
- Climate extremes such as heat waves or floods disrupt intervention delivery,
- Weak or incomplete cancer registries make it difficult to track outcomes and build evidence,
- Few validated tools exist to measure physical activity in local languages and contexts,
- and lack of practitioner understanding as to the role of PA in the oncology patient,
- Limited availability of an exercise prescribing and implementing workforce [14],
- Regional stigma related to cancer diagnosis.

To address all these above mentioned problems and reduce inequalities in cancer care and improve survival outcomes in Sub-Saharan Africa and the rest of the continent, we suggest the following key points for governments, healthcare leaders/stakeholders to consider and act upon as early as possible (**Table 1**).

Table1: Actionable steps for Physical Activity integration and expansion to tackle cancer in Africa

Actions		Descriptions
1.	Enhancing education/training on Physical Activity (PA)	Training clinicians on PA counselling—prescription that should be personalized and contextualized for cancer management (in all phases of cancer at different patient ages) and prevention.
2.	Strengthening Health System strategy approaches on policy and communication	<ul style="list-style-type: none"> • A comprehensive and effective PA policy must be designed to address country-specific cancers. • Promoting strong media communication widely about: (1) Cancer to dispel ignorance, avoid prejudice and stigmatization; (2) PA benefits for cancer care and prevention. • Implementing national and regional awareness campaign with leaders/stakeholders and cancer survivors on PA interventions for cancers. • Surveillances, monitoring and evaluation of systems is essential.
3.	Establish research funding opportunities	<ul style="list-style-type: none"> • Provide sufficient funding for the strengthening of PA research to produce sound scientific and practical evidence for cancer care and prevention. • Engagement with national, international and leading funders to support and guide these strategies
4.	Assigned adequate financial resources to support PA interventions for cancer	<ul style="list-style-type: none"> • Reframe and Promote participation in daily cultural activities that expend energy. • Provide accessible infrastructures, facilities and safe spaces for PA.
5.	Develop cancer mapping	<ul style="list-style-type: none"> • Establish national and regional cancer registries for the epidemiological data collection in order to understand which adapted PA is tailored to the needs of patients. • Collaborate with hospitals and oncology centers to ensure systematic cancer cases reporting. • Engage with private medical aid funders to supply their data to the registry
6.	Improving multi-sectorial collaboration is needed	<ul style="list-style-type: none"> • Setting up a strong continental and national taskforce to tackle cancer-related burden by PA implementation and dissemination. • Interaction between ministries such as Higher Education, Public Health, Research and Innovation, Sports and Physical Education is crucial for PA implementation against cancer. • Multidisciplinary input and capabilities of service provision
7.	Build-up national and international partnerships and frameworks for PA development (3)	<ul style="list-style-type: none"> • It is useful to build strong partnerships with others who have experience in implementing and approaching PA interventions for cancers in different contexts worldwide. • Engage with experts on the continent

Take home messages

We are on the edge of a precipice with cancer in Africa. A million Africans a year may die from cancer by 2030 [1]. Time is of essence to step up and fight the growing burden of this disease. However, we find ourselves stumbling over challenges in a resource strained environments such as (1) the lack of trained healthcare professionals in PA, (2) poverty, lack of a conducive environment to support PA intervention, (3) ignorance amongst the public and healthcare professionals as to the benefits of PA in oncology management, (4) lack of cancer mapping at regional and national level, and (5) low funding priority for research and opportunity. These among other factors, hinder the cancer response in Sub-Saharan Africa. As a drug-free and cost-effective adjunct for cancer outcome and prevention, PA implementation and dissemination in Sub-Saharan Africa and the rest of the continent is urgent in these resource strained environments. Stakeholders and clinicians need to effectively play a role to define policies better and to evolve to provide high-quality healthcare implementation for all stages cancer reduction. This advancement must include PA as a therapeutic adjunct at all stages of cancer. Global support is imperative for these actionables to be achievable and Africa must not be left behind in advancing exercise-based prevention and management strategies.

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