



Global Health, Cancer Challenges and Control in African Settings

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Abstract

The problem of cancer in Africa is so dire that international institutions are predicting “ a new scourge on a huge scale, one which, both directly and through its enomic impact, will increase poverty, misery and the death rate”. A comprehensive policy response is therefore urgently needed and it’s a duty to unravel the assertion that these pathologies are restricted to high income nations. A global and coherent health program must be built and implemented at the national, regional and continental levels. To address this epidemiologic challenge, one the first steps will be the international cooperation and coordination based on resolute actions and programmes.

Keywords: Cancer, Africa, developing countries, Non Communicable Diseases, Global health

Introduction

Even in developing countries such as African countries non communicable diseases (NCDs) are among leading causes of death. It’s a duty to unravel the assertion that these pathologies are restricted to high income nations. Admittedly, Human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS), Malaria, Tuberculosis, *Ebola* virus disease (EVD) and other endemic tropical sicknesses have had the priority in health’s political agenda. Nevertheless, it will be an unrecoverable error to underestimate the seriousness of this scourge [1-3].

Abbreviations: HIV/AIDS: Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome; NCDs: Non Communicable Diseases; EVD: Ebola Virus Disease; IARC: International Agency for Research on Cancer; WHO: World Health Organization; UN: United Nations; AU: African Union; NTD: Neglected Tropical Diseases; SCCA: Stop Cervical, Breast and Prostate Cancer in Africa; MDGs: Millennium Development Goals; SDGs: Sustainable Development Goal; SSA: Sub-Saharan Africa; GDP: Gross Domestic Products

Cancer Statistics

Instead of the lack of reliable cancer registries in many African regions, the International Agency for Research on Cancer (IARC) latest statistics on cancer trends worldwide exhibit a pessimistic and critical outlook: 8 million of new cancer cases (57%), 5.3 million of the cancer deaths (65 %) and 15.6 million (48%) of the 5-year prevalent cancer cases occurred in developing countries [4,5]. In Africa, the cancer incidence has been estimated to 847.000 new cancer cases and 591.000 patients died from cancer. In women, the three most common cancers are breast, cervical and liver malignant tumours. In men, prostate, liver cancers and Kaposi sarcoma are the three most frequent malignancies [4,5]. Cancer causes worries, suffering and millions of deaths across the globe and is a great concern to modern society: “There were 14.1 million new cancer cases, 8.2 million cancer deaths and 32.6 million people living with cancer (within 5 years of diagnosis) in 2012 worldwide” [4]. For reasons that are both complex and multi factorial, ranging from chronic infections, the change in lifestyles and living conditions to environmental pollutions and from structural changes in the population (demography and aging) to heredity, cancer has grown in every continent [1,4,5] (Table 1) (Figure 1).

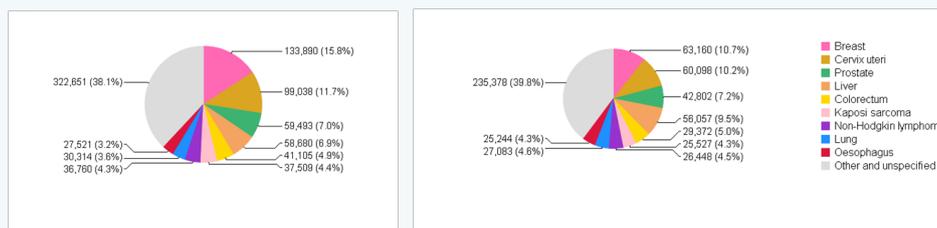


Figure 1a*: Incidence by type (both sexes).

*GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide: IARC Cancer Base No. 11. Lyon, France: International Agency for Research on Cancer.

Figure 1b*: Mortality by type (both sexes).

Figure 1: Incidence and mortality of cancer in Africa (all cancer exclusion of melanoma skin cancers).

Table 1: Cancer statistics in Africa (2012)*

Africa	Male	Female	Both sexes
Population (thousands)	536179	536226	1072406
Number of new cancer cases (thousands)	362.0	484.9	847.0
Age-standardised rate (W)	115.6	132.4	123.4
Risk of getting cancer before age 75 (%)	12.3	13.4	12.8
Number of cancer deaths (thousands)	277.8	313.3	591.2
Age-standardised rate (W)	92.9	88.7	89.8
Risk of dying from cancer before age 75 (%)	9.5	9.4	9.4
5-year prevalent cases, adult population (thousands)	631.7	1148.4	1780.1
Proportion (per 100,000)	198.3	354.6	277.1
5 most frequent cancers (ranking defined by total number of cases)	Prostate	Breast	Breast
	Liver	Cervix uteri	Cervix uteri
	Kaposi sarcoma	Liver	Prostate
	Lung	Colorectum	Liver
	Colorectum	Ovary	Colorectum

Risk factors, NCDs and tropical sicknesses

The prevalence and characteristics of cancers vary, particularly in terms of social and economic development of a given country. Thus, developed and developing nations have their own specificities. In northern countries, exposure to the sun, smoking, eating habits, lack of physical activity, excessive consumption of alcohol and, to a lesser degree, heredity and viral infections, are the principal causes of cancer. Furthermore, urban development and frenetic industrialization are responsible for the increase in cancer risks. Indeed, physical carcinogens (radioactivity) or chemical ones (asbestos, hydrocarbons,

nitrites) and phytosanitary products are deleterious environmental pollutants resulting from anthropogenic activities whose breadth of impact on human health has not yet been measured. Besides these risk factors, in Africa, there are strong demonstrated links between cancers and tropical diseases contributing to lower the life expectancy of populations.

Then, African populations are suffering from both types of illnesses: communicable and non communicable diseases. Health matters are going from bad to worse. When superimposed on parasitic and communicable diseases which chronically affect millions of individuals, the tremendous health pressure contributes to reducing quality of life and life expectancy, which could decrease by 20 years in some countries according to World Health Organization (WHO) [1,4,5]. *Schistosomiasis*, malaria, viral hepatitis (B and C) and other tropical diseases are objective allies of cancer, feeding a vicious circle which reduces to nothing all of the tireless efforts and attempts to establish better public health for the benefit of social and economic development. These parasitoses and viral infections spread endemically in this part of the world and interact with other factors to lay the ground for the emergence or promotion of certain types of cancer such as Burkitt's lymphoma, bladder tumors, malignant hepatomas, and cervical cancer. Stomach cancer is associated with a bacterial infection due to *helicobacter pylori* and a mycotoxin (Aflatoxin B1), secreted by a filamentous fungus, *Aspergillus flavus* is involved in the oncogenesis of hepatic cancers affecting Africans. These demonstrated and admitted scientific facts are against some arguments that malignancies are not a health priority in African Sub-Saharan countries [1,3-5].

Global health and sustainable development goals

This paper also wanted to debunk this argument or myth that is always put forward. The fundamental roots and the crucial determinants of the cancer burden in Africa and less developed countries have to be attacked.

As said the Assistant Director-General of Non Communicable Diseases and Mental Health at World Health Organization "in the developed western countries the situation remains under

control, as things stand, but for the poor, less developed countries it might turn into a new scourge on a huge scale, one which, both directly and through its economic impact, will increase poverty, misery and the death rate." [6]. To address this epidemiologic challenge, one the first steps will be the international cooperation and coordination based on resolute actions and programmes. To achieve these goals, the international political will, determination and implication is undoubtedly required. At the international level, encouraging efforts and decisions began with the Moscow Declaration on NCDs, endorsed by Ministers of Health in May 2011 and the United Nations (UN) Political Declaration on NCDs endorsed by Heads of State and Government in September 2011. In order to respect these engagements, the World Health Assembly endorsed the WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020 in May 2013 [7].

At the African level, the African Union (AU) reaffirmed its political will and commitments to fight the spread of cancers and other NDCs by taking several resolutions as at the Sixth Conference of AU Ministers of Health held in Addis Ababa in Ethiopia from 22nd to 26nd April 2013 with the following theme "The Impact of Non-Communicable Diseases (NCDs) and Neglected Tropical Diseases (NTD) on Development in Africa" or more recently at The 10th Stop Cervical, Breast and Prostate Cancer in Africa (SCCA) Conference [8]. Globally, health issues have been taken into consideration in the eight Millennium Development Goals (MDGs). Four out of eight items were child mortality and maternal health, hunger, malaria and HIV/ AIDS [9]. However, the MDGs of the last decade didn't pay any attention to cancers and other non communicable diseases. In the post-2015 Sustainable Development Goal (SDGs), it's recognized that health is an important pillar of sustainable development as are climate change and food security. In each country, a wide range of 17 goals must be implemented and achieved in fourteen years (2016-2030) [10].

Even so, the achievability of these goals in low and middle income countries has to be questioned. We have to keep in mind that most countries in sub-Saharan Africa (SSA) have not achieved or partially achieved the millennium development goals. The main reasons of such failures are poverty, political instability, mismanagement, corruption, illiteracy, analphabetism [10,11]. For instance, in 2002, in the Abuja declaration, African governments have committed to spending 15% of their gross domestic products (GDP) or their national budgets on health. Since then, the vast majority of the African Union members have not fulfilled their commitment [12]. In addition, the weakness of health systems (human resources, drug availability, technical platform, health inequities, social insurance, and health funds) is an enormous impediment to the route for better health outcomes from cancer and NCDs. A successful completion of such goals for sustainable development remains, obviously, a high priority especially in social and health fields.

Cancer economics

If the social impact and the morbidity of cancer are clear-cut, the economics of this pathology are also alarming. In 2010, the overall annual financial statement of cancer was estimated to 1.16 trillion USD [4,13]. The cost of the 13.3 millions new cancer cases, in 2010, was evaluated to 290 billion US Dollars. The medical cost was estimated to 154 billion and the non medical costs accounting are assessed to 67 billion US Dollars. As regards the income losses, it has reached 69 billion US Dollars. In the near future, according to the WHO, by year 2030, the global cost will rise by 458 billion US Dollars given the population aging trends worldwide [13]. Once again, the burden of cancer is significantly supported by poor and emerging countries: 47 % of the incidence and 55% of the mortality are occurring in these countries that are facing a huge challenge to fight this scourge [14]. In the meanwhile, the basic package of cost effective strategies to target and to notably reduce the common cancer risk factors in those nations should require a financial effort as small as 2 billion US Dollars per year [15]. Nevertheless, up to now, surprisingly and strangely, only 3% of the aid for health development from developed nations is spent in cancer and other NCDs control [14].

Integrated actions with other NCDs and transversal programs

In short, cancer has a tremendous negative impact in the social and economic situations of emerging and developing countries. As a matter of fact, a comprehensive and coherent health program must be built and implemented at the national, regional and continental levels. Since NCDs (cancers, cardiovascular diseases, chronic respiratory diseases diabetes) share many common risk factors (obesity, harmful use of alcohol, tobacco consumption, physical inactivity, malnutrition) an integrated program would be the appropriate and relevant approach to combat cancer in African countries [6,16]. Furthermore, cancer determinants are behavioral, cultural, social, cultural, environmental and political. The health policies and strategies wouldn't be only technical although improving access to essential medicines, radiotherapy, vaccines, biomedical and imaging technologies are vital. As a result, some tentative responses have to be local and specific, adapted to the continent realities and must include as much as possible local human resources [16-20]. Vertical programs designed to tackle a specific disease with a specific risk factor are nowadays obsolete or irrelevant to uproot the cancer and NCDs outbreak and expansion [17-20]. The Epidemiologic transition is factual in the African landscape and certainty leaves no room for doubt.

Conclusion

Despite many and various internal obstacles, there's a growing associational network (local voluntary sector, civil society, non-governmental organizations (NGOs), patients and

their families ,community leaders, health professionals, African diasporas) involved in the fight against cancer throughout the continent which is striving to be a great part of the solutions [1,16,18,19,21,22]. Hope lies there too. As said the German philosopher and poet *Friedrich Hölderlin* (1770- 1843), “Where increases the danger grows also what saves” [23]. In any case, with the existing knowledge (public awareness, early diagnosis and treatment, drug affordability, capacity building, scientific and technical infrastructures improvements) it’s utterly possible to drastically, technically and humanely scale down the cancer disaster in African developing countries and save thousands of human lives.

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