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Globalization and Public Health in Rural Zones: Lessons from Sub-Saharan Africa

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Abstract

Distant rural regions of Sub-Sahara Africa are often coveted by foreign investing companies for their natural resources. However, the rural populations do not always take advantage of the economic benefits resulting from those investing activities. These increasing activities do not leave without harming the health of rural communities as they rely on community-based traditional and ancestral practices such as fishing and hunting, traditional medicine, spiritual ceremonies, among others, to survive. We aimed to analyze selected indicators of public health in rural zones highly impacted by globalization factors using existing database and literature research. Given the complexity of the situation, efforts and strategies to mitigate the negative effect of globalization on the health of rural communities must include not only urgent and binding commitment of all stakeholders but also a multi-sectorial long-term approach to increase the health of rural Sub-Saharan African populations while taking advantages of local know-how.

Keywords: Sub-Saharan Africa, globalization, public health, pandemic, emergency preparedness

Introduction

Over the last decades, substantial changes have been observed in the lifestyle of Sub-Saharan African populations; these changes are directly and indirectly linked to various practices diffused across borders and will only increase with growing globalization and growing population. The presence of multinational companies taking advantage of natural resources in rural areas and increased trades with western and developed countries do not always help achieve a better life for those populations; to the contrary, several public health issues are worsened or provoked by these globalization factors. Given their specific historical and ancestral heritage, Sub-Saharan African countries have developed some specific life and public health practices that are not depicted in conventional consideration of globalization even though they are directly related and subsequent to it. Rural exodus, immigration rate, the use of African traditional medicine, mobile money transfer, among others, are unsuspected factors that can help measure and assess the effect of globalization, especially in rural regions of Sub-Saharan Africa. With the preexisting burden of chronic and infectious diseases such as Malaria and Ebola, the public health issues

are exacerbated with influences of the globalized world. Nevertheless, there are significant advantages of exchanging and trading with other developed countries as they can provide medical assistance and financial help to improve medical infrastructure. The dilemma for those populations remains to take advantage of exported habits while preserving the gains of ancestral heritage and the advantages of proven specific life tips developed locally.

What does Globalization Mean for Sub-Saharan Africa?

Given that the word "globalization" has been used with different meanings by different authors, the definition by Gilpin (2003) outlining signs of increasing interdependence of national economies in trade, finance… seems to be the most considered in the literature (Cyr, 2001). Among several indicators of globalization described in the literature, major ones are usually related to economic aspects: Capital movements (capital flow), Foreign Direct Investments (FDIs), International Trade (Export volume /Gross trade, relative to production), Economic activity of multinational firms and Internalization of Technology (Sutcliffe, 1999). A quick assessment of import volume between Sub-Saharan Africa and other regions of the world between 1998 and 2018 indicates an increasing role of China replacing Europe as the privileged economic partner. This change in partnership deeply affects and reshapes the social tissue, life conditions, and life habits in Sub-Saharan Africa.

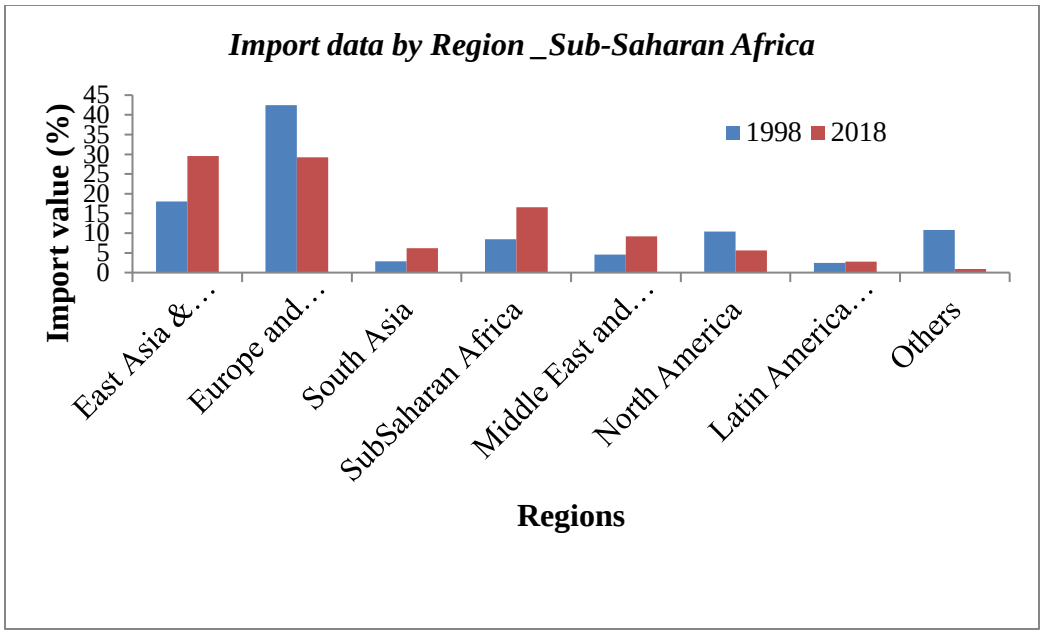

Figure 1. Import data between Sub-Saharan Africa and other regions of the world from 1998 to 2018

Source: The data adapted from https://data.worldbank.org/country. Copyright 2021 by The World Bank. Selected and analyzed by the author.

With a fast-growing population (as exemplified by Nigeria), Sub-Saharan Africa is an attractive region where international economic forces confront and compete with each other, as presented in Figure 1. Those factors, however, cannot represent specificities and unsuspected particularities of Sub-Saharan African regions, given their geopolitical position and historical heritage. Our findings demonstrate that some factors specific to those regions directly affect all aspects of globalization and are considered by local populations as its direct indicator.

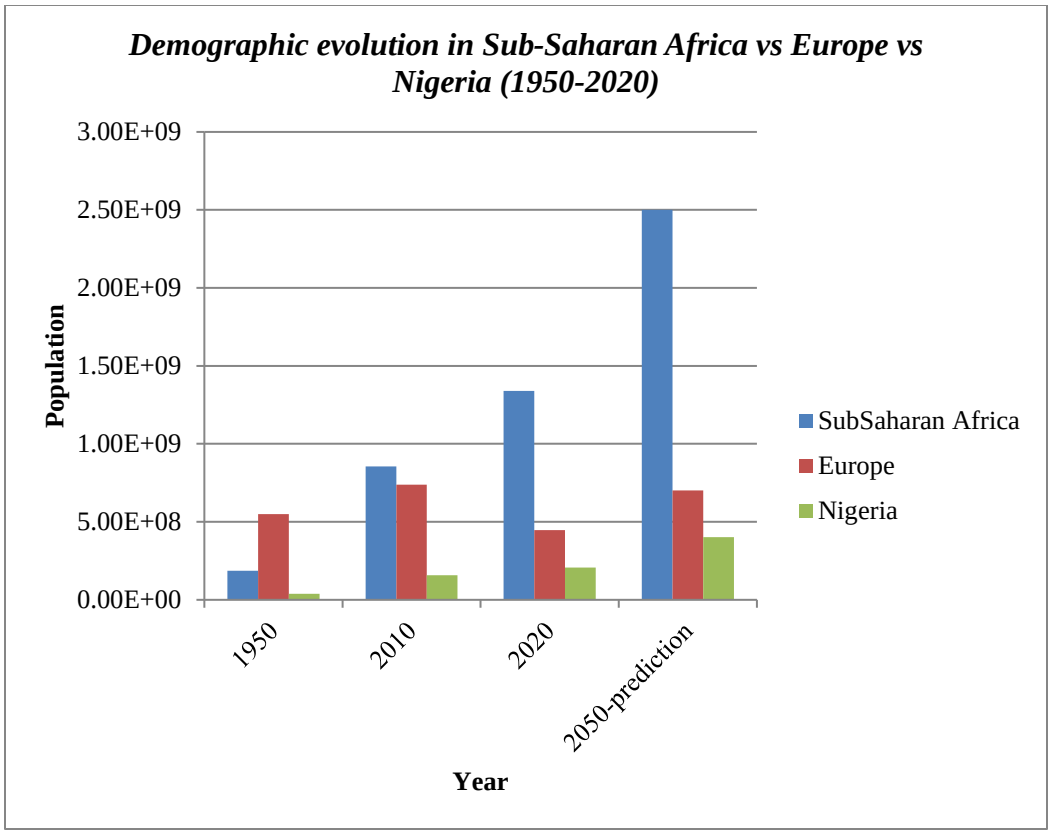

Figure 2. Demographic evolution in Sub-Saharan Africa compared to Europe and Nigeria

Source: The figure shows data extracted and combined to illustrate the situation described. The data for Sub-Saharan Africa and Nigeria are from https://data.worldbank.org/country. Copyright 2021 by The World Bank. The data for Europe are from https://ec.europa.eu/eurostat/data/statistics-a-z/abc. Copyright 2021 by Eurostat.

Those specificities are rural exodus, Immigration, the Role of the Diaspora, Self-medication linked to Traditional medicine, and the Exploitation of natural resources emphasized by political instability.

Public Health Considerations in Sub-Saharan Africa

The global situation of Public Health global in Sub-Saharan Africa is mainly shaped by the growing burden of mortality and morbidity caused by Non-Communicable diseases (NCDs) and infectious diseases.

According to Sitas et al. (2006), the significance and the weight of chronic diseases on the health system increases as the pattern of disease vary with time.

Mudie et al. (2019) reported that most studies collecting health data on hypertension, obesity, diabetes, cancer, and respiratory diseases in Sub-Saharan Africa had established correlations between health and changes in lifestyle. This is also illustrated in Table 1. A report by the World Bank demonstrated that high fasting plasma glucose and high body mass index were responsible for significant health loss, especially among upper-middle-income countries of the Sub-Saharan region such as South Africa or Gabon. The report observed that childhood underweight was the primary risk factor driving large health problems in the Central African Republic and other lower-income countries (Marquez & Farrington, 2013). The catastrophic situation of non-chronic diseases in Sub-Saharan Africa is caused by several factors, such as changes in lifestyle inherited at least partially from globalization. Unplanned or unsustainable urbanization, alcohol use, high blood pressure, and smoking are also among increasing risk factors for non-chronic disease. Moreover, Bygbjerg (2012) reports that some major infectious diseases such as tuberculosis and HIV have been shown to be risk factors not only for early life malnutrition but also for diabetes and cardiovascular diseases. In addition to known environmental factors, the novel factors influencing the occurrence of chronic diseases in Sub-Saharan Africa are disease burden of specific rural populations, diversity (geographic and social), and genetic heterogeneity; these aspects are also included in the STEPwise Approach to Non-Chronic Disease (NCD) Risk Factor Surveillance (STEPS) promoted by the World Health Organization (WHO), (Bonita et al., 2003; Holmes et al., 2010; Mayosi et al., 2009). According to Boutayeb (2010), some diseases, so-called “neglected African diseases” such as leishmaniasis, lymphatic filariasis, sleeping sickness, have been reported to cause loss of productivity and various disabilities especially in rural regions of sub-Saharan countries. These diseases, including others such as dengue, Ruruli, Chagas disease, have been reported to cause serious health

conditions such as mental retardation, impaired childhood growth, blindness, and amputation, among others.

Conventional indicators of public health used in the literature are communicable disease, prevention, and health promotion, maternal-child health, access to care, and Environmental public health. However, when questioned, local Sub-Saharan populations consider Malaria and HIV, among others, as their main health concerns, shown in Figure 3.

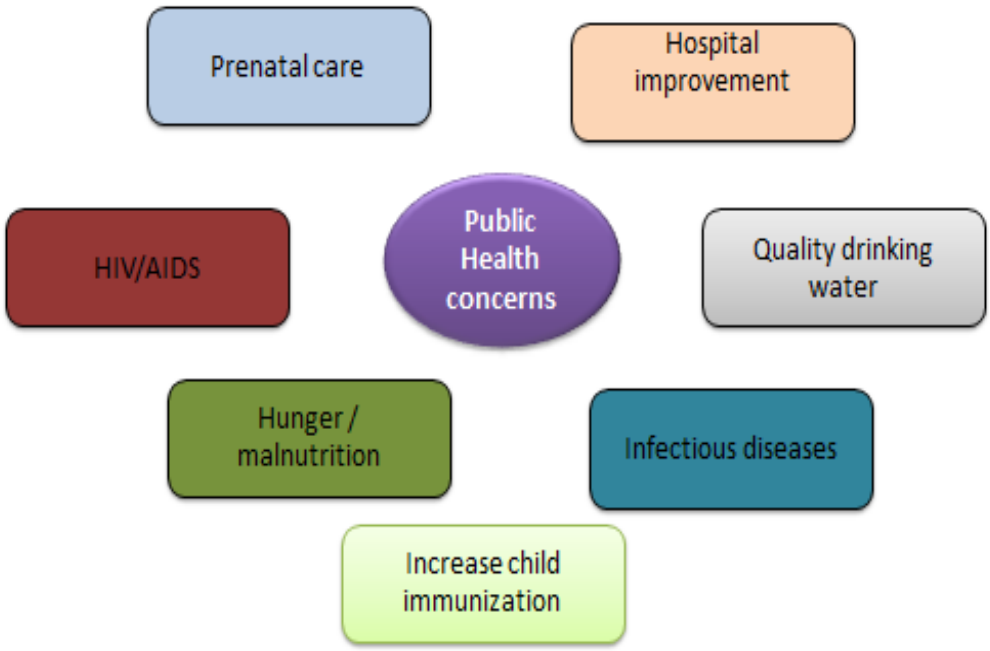

Figure 3. Public health concerns as seen by local populations

According to Kindhauser and World Health Organization (2003), emerging and re-emerging infectious diseases represent the major cause of mortality in Africa. Despite multiple vaccination campaigns against various childhood diseases and polio, high occurrence of infectious diseases, including acute respiratory infections and diarrheal disease, still contribute to the increased mortality rates in Sub-Saharan Africa (Boutayeb, 2010; Buor & Bream, 2004). Because they affect all life sectors and are increased with more cross-region movement of populations, infectious

diseases might reverse the gains made in economic and development sectors such as the human development shown to improve in the last decades. Infectious diseases such as Malaria are no longer just a health problem as it is considered to cause poverty and be caused by it. A report by Coulibaly (2005) of the International Labor Office indicated that HIV/AIDS considerably reshaped the workforce of Sub-Saharan regions by reducing the rate of growth of the labor force, reducing average school enrolment, and altering the age distribution of the local

labor force. The report also concluded that HIV/AIDS reduces the average age of workers (thereby compromising the required average years of experience), modifies sex distribution of the labor force, especially in highly affected countries such as South Africa.

In Liberia, Ebola Virus disease has been shown to disrupt groups of labor, reducing worker mobilization for agricultural activities and decreasing product yields as less area and fewer workers are involved in the production (De La Fuente et al., 2020).

Unsuspected Effects of Globalization Factors on Public Health

Given their specific socio-political situations, Sub-Saharan regions rely on some unusual social practices to impact health quality. For example, Rutmanis (2005) suggests that the contribution of Sub-Saharan Africans abroad in improving new medical infrastructures and improving existing ones is becoming of paramount importance, especially in countries with a low-income level. Those populations living mainly in western countries (Europe and North America) also support their siblings with financial help, replacing social insurances and other basic services abandoned by the authorities (Mercer et al., 2013). Therefore, urban families with siblings abroad are more likely to afford better medical care as “having a sibling abroad " is used as a guarantee for payments presented to medical personnel. Richer families send their sick siblings abroad (Europe and North America vs. India and South Africa) for medical emergencies that cannot be handled in poorly equipped hospitals. The same phenomenon is observed internally where patients in rural areas (villages) are poorly taken care of and must be sent to urban cities for medical care.

Immigration and rural exodus are thus two factors of globalization that directly impact the health system and public health in Sub-Saharan countries. Countries with significant trades with South Africa are at higher risk of HIV/AIDS. On the

one hand, the increased presence of western medicine and education is a lifter factor for traditional African medical and pedagogical practices. On the other hand, the young generation in rural zone is attracted by better education and health care proposed in urban cities, leading to increased rural exodus. Trained and experienced local medical personnel are also tempted to leave for urban cities or western countries, worsening the ratio of medical personnel per habitant.

Health expenditure of rural is significantly low as they rely on traditional medicine and sporadic free interventions organized by visiting medical personnel. These rapid intervention teams are usually constituted of volunteers, students, and members of international NGOs (Courtright, 2012).

Table 1

Health consequences linked to globalization-related influences

Influences from globalization	**Consequences (health conditions)**
Smoking , alcohol use	Height and weight, waist circumference, BP, fasting/random blood glucose
Sexual behavior, breastfeeding, age at menarche	Birthweight, body composition, oral glucose tolerance test, HbA1c, genetics
Physical activity, diet	Hip-circumference, lipids profile, urinalysis, infections (HIV, tuberculosis), anemia
Exploitation of natural resources/mining activities	Black lung caused by inhalation of coal dust Legionella contamination or high concentrations of other heterotrophic microorganisms Malaria and dengue fever is substantial at some remote mining locations.

Source: The data adapted, combined and modified are from "Non-communicable diseases in Sub-Saharan Africa: a scoping review of large cohort studies" by K. Mudie, M. M. Jin, L.K. Tan, J.Addo, I. dos-Santos-Silva, J. Quint, L. Smeeth

With increasing exchange with neighboring regions and neighboring countries, some ancestral health-related traditions are questioned and reviewed by both urban and rural populations (for example: as reported by Warria (2018) scarification procedures, the "Hyena" sexual cleansing in Malawi, excision, and others).

Garve et al. (2017) report that in Northern Ghana, scarification (also called cicatrization) is used by some groups such as the Dagomba in order to treat pneumonia, convulsions, stomach pains, and measles. During scarification, the skin is cut by a traditional healer, and medical powder or healing potion is applied directly into the wound. With the aseptic paradigm brought by western medicine and "foreign" education, scarification is less and less attractive, especially for younger generations even though no modern alternatives are easily available in rural zones; this growing mistrust is encouraged by several health problems caused by scarification (Kew et al., 1973; Alabi et al., 1989).

The influence of western culture is not without harm: many health conditions found in Sub-Saharan cities (especially urban areas) are directly or indirectly related to new habits from the West. It is, however, not clear if those habitudes, seen in Table 1, are exclusively and clearly imported to Sub-Saharan culture from other World regions.

Globalization and Colonization of Sub-Saharan Africa: Surprising Effects on Public Health

The current situation of public health in African countries is intrinsically related to their historical and political heritage. Using the Kingdom of Kongo as an example, the following analysis demonstrates how colonization and exchange with

foreigners have shaped the current situation in central Africa (DR Congo, Angola, Gabon, and Congo). Kongo is considered in many ways as the first truly globalized kingdom of Atlantic's Africa. The kingdom was well organized and developed well before the arrival of Europeans. “Their brocades, both high and low, were far more valuable than the Italian,” said Professor De Graft-Johnson. The Kongo kingdom was well-known as very open to globalization; its ruling king, King Alfonso, had a permanent bodyguard made up of mostly foreign soldiers and Portuguese advisors. Medical care was in charge of “nganga-kisi," freely translated as medical priest as opposed to "nganga-nzambe" translatable as spiritual priests. With the arrival of European colonizers, the activity and know-how of those priests were demonized and almost completely vanished while cultural artifacts were stolen and stored in European museums. The Sarr Savoy report outlined that “more than 90% of stolen African art is housed in major western art institutions such as the British Museum, the Metropolitan Museum of Art in New York, and the Art Institute of Chicago." Although ancient populations of African kingdoms had enormous richness and medical know-how successfully managed and transmitted from generation to generation by the priests, the current poorness of ancestral medical practice demonstrates how nefarious was the influence of aggressive colonization on the health care and medical traditions in Sub-Saharan Africa. Medicinal plants prescribed by traditional healers are not only the easiest therapy but also the most accessible and affordable health resource to which Sub-Saharan African populations in rural areas have direct access. When compared, countries with heavy colonization heritage seems to have lost more of their traditional medical practices: 90% of the population in Ethiopia still use herbal as primary healthcare, while only a growing portion of western (Canada and Germany, for example) have tried the so-called complementary or alternative medicine (CAM) at least once (Tabuti et al.,2014). Therefore, it is acceptable to consider colonization as one of the factors that have negatively affected the Sub-Saharan public health structure.

Conclusions and Perspectives

Sub-Saharan Africa is a fast-growing region with significant natural resources, which attract foreign investors from all over the world. Most of the countries have to deal with serious public health issues such as chronic and infectious diseases. The management of these diseases is directly affected by rural exodus, immigration, poverty, and other ongoing local issues. These issues and their consequences combined with changes observed during the last decades can help measure and

assess the effect of globalization, especially in rural regions of Sub-Saharan Africa. Given the dilemma for those populations to accommodate their ancestral and local practices with exported medical expertise, decision-makers and foreign partners should privilege approaches, which take advantage of local knowledge while improving the existing health care system with an external contribution.

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