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Sero-epidemiological Impact of SARS-Cov2 on Socio-Demographic Status of African Populace

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Abstract: Increasing number of SARS-CoV2 infected cases in Africa continues to decimate and delineate the socio-economic, public health systems and political leadership. Higher daily incidence rate SARS-CoV2 IgG antibodies recorded in West African sub-region sero-survey remains elusive and inconclusive due to unavailable and imprecise diagnosis as defined by the WHO due to limited antigenic RT-PCR detection assay. This further depreciate socio-economic, enhance co-infection of communicable diseases, while undisclosed, untested and undefined asymptomatic subjects put larger population at risk of SARS-CoV2 infectivity. Preventive strategies and adequate disease containment and capacity building are urgently needed to reduce devastating impact of SARS-CoV2 in Africa.
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1.0 Introduction: Since the identification of the novel coronavirus strain SARS-CoV2 (named COVID-19) [1], in the Chinese city of Wuhan in late 2019, there has been a spontaneous increase in the number of infected cases to more than 6,000,000 cases with continuous community spread as at May 10, 2020 [2]. The Continent of Africa is a developing economy with a high poor population density in need of medical care and monetary support, but vulnerable to SARS-CoV2 infectivity [3]. The increasing spread of this viral agent continues to decimate and delineate the socio-economic status of many Africans whose livelihood solely depends on daily wages [4]. In several developing economies in Africa, public health systems face the nightmare of high fatality due to the spread and potential outbreaks of COVID-19 amidst other prevalent infections while sero-prevalence of SARS-CoV2 remain high among asymptomatic subjects thereby increasing infectivity rate. High incidence rate was constantly recorded in West African sub-region with SARS-

CoV2 IgG antibodies serosurvey remains inconclusive as a result of the unavailable and unprecise diagnostic tool as recommended by the WHO, while limited antigenic RT-PCR detection assay stem increases asymptomatic rate [5]. Depreciating population immunity and co-infection of communicable diseases in developing countries put the general populace at risk of SARS-CoV2 infectivity [6]. Poor nutrition, inadequate healthcare, poor hygiene and irrational use of drugs are considerable factors that enhance undefined and compromised immunological status, given rise to dwindling threshold in serological IgG and IgM immunoglobulin tires [6].The sporadic and continuous outbreak of SARS-CoV2, consequentially spread through untested and undefined asymptomatic subjects with an undetectable antibody, yet constantly mingle with larger society predisposing the populace to the infection. Inclusion of serial serological testing algorithms could only present positive cases for molecular confirmatory assay which has proven to increase specificity for seropositive subjects that were eventually isolated and quarantined for further clinical management [7]. Unfortunately, the genetic similarity of nucleotide substitution shown in mutated beta-corona virus strain indicates major structural protein differences; particularly spike surface glycoprotein, matrix and nucleocapsid proteins [8] that could induce antibody cross-reactivity leading to inconclusive serological assay. Unconfirmed serology tends to lure many to use of local medicinal herbs, thereby shunning isolation and declaring false recent travel history making SARS-CoV2 serological surveillance remain unachievable. Scarce test kit, poor collation of seropositive cases and staggered records of asymptomatic subjects that refuse testing aid the spread. Furthermore, conformational changes in antigenic epitopes caused by mutational variability in spike surface glycoprotein are poorly documented in Africa strains, which could probably lead to stemming SARS-CoV2 sero-epidemic which should be considered for molecular diagnosis. Severe impacts of SARS-CoV2 on social-demographic and environmental conditions since the wake of pandemic grossly mediate depreciation in population GDP enhancing risk for new infections [9]. Social interactions, trade and economic investments were severely affected in the past few months of pandemic in many cities across Africa. However, lockdown and reduce international flights, force businesses to an unprecedented halt, loss of job, insecurity and more debilities. Majority of low-income earners are more likely to die from the contraction of SARS-CoV2 infection due to closed down businesses or loss of jobs, poor healthcare facility and hunger [10]. Larger proportions of low-income earners or unemployed usually with large families without health insurance are more vulnerable to the infection [11]. African economy may suffer huge retrogression in the face of the SARS-CoV2 pandemic as most countries largely depend on importation from Europe and Asia who are also grabbling with COVID-19 fatality. Economic downturn associated with the SARS-CoV2 pandemic would severely affect financial markets including oil and gas, stock markets, with continuous fall in the global oil price reducing;

revenue and loss of over US$220 billion [12].

2.0 Impact: Devastating impact of the pandemic force closure, postponement or cancellation of festivals, conferences, sporting activities, film industry and market stalls leading to massive loss of income. In several afflicted regions, capital expenditure slows down service delivery, industrial productivity; causing declining demographic status [10]. Lockdown in Nigeria, South Africa, Ghana, left millions of unemployed local artisans experience psychosocial depression as pandemic increases starvation and poor health [13].

Possible long-term impacts on socio-economic would further jeopardize international trade and economic recession [10]. Globally, coronavirus pandemic severely affected the educational system causing widespread closures of institutions forcing millions of students to stay at home idle. Poor implementation and unavailability of online education further hamper studies and awareness [9]. Moreover, cancellation of religious services and closure of worship centres (churches, synagogues, mosques, and temples), festivals and pilgrimages were also affected. Obviously, national development significantly dropped steadily retarding human capital, social security and fiscal policies [14]. Increase demand for medical supplies accelerate shortages in face masks, alcohol-based sanitizers, given way for flooded adulterated products that impair health condition. Moreover, SARS-CoV2 pandemicity in African continents has slow down economic growth by more than 25.8% [13], reduce GDP to less than 2.5% and increase the poverty rate by 32.1% [14]. This outbreak also raises panic buying leading to scarcity of domestic commodity and products hoarding while stimulus relief package distribution was enshrouded in secrecy and corruption. Fund misappropriation, poor response, false statistics, misguided information, infrastructural decadence and eroded integrity of political and economic sovereignty are issues that aid continuous spread, high morbidity and fatality.

3.0 Conclusion: Most African countries must urgently step up their preventive strategies in combating the rising upsurge of SARS-CoV2 fatality and infected cases. Most importantly, improving social security, implementation of sustainable economic and fiscal policies, targeting the poverty ravaged populace and provision of well-equipped public health system adequate for detection, containment, management and capacity building towards reducing the spread of SARS-CoV2 in Africa.

4.0 References

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