International Journal of Community Medicine and Public Health
Wei CR et al. Int J Community Med Public Health. 2024 Jan;11(1):566-576
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20234158

Review Article

The pandemic and Africa: a review of the psychological, social, and nutritional impact of COVID-19 in Africa

Calvin R. Wei[1], Chenyue Fan[1,2], Maria Rizwan[3], Godwin C. Lang'at[4], Malachy B. Peter[5,6]*

[1]Department of Research and Development, Shing Huei Group, Taipei, Taiwan
[2]College of Pharmacy, University of Arizona, Tuscon, Arizona, USA
[3]School of Life Sciences, Arizona State University, Tempe, AZ, USA
[4]Department of Public and Global Health, University of Nairobi, Nairobi, Kenya
[5]Department of Community and Public Health, Novena University, Ogume Delta State, Nigeria
[6]Department of Dietetics, Irrua Specialist Teaching Hospital, Irrua, Edo, Nigeria

Received: 28 October 2023
Accepted: 06 December 2023

***Correspondence:**
Dr. Malachy B. Peter,
E-mail: malachypeter18@gmail.com

ABSTRACT

COVID-19 has had a significant impact on the lives of populations across the world. Since the first reported case of the coronavirus in Wuhan, China, the world faced a situation of dealing with a novel virus. While the physical health effects of the coronavirus were the center of focus for much of the pandemic, COVID-19 was accompanied with significant social, psychological and nutritional consequences on the world populations. Governments world over moved to contain the virus through nonpharmaceutical interventions (NPIs) by implementing restrictions on social engagement, travel, curfews, and limiting school and workplace attendance. These NPIs significantly affected the vulnerable, low-income populations as they faced high levels of poverty, challenging living conditions, and already-existing inequality owing to disrupted day-to-day activities and social interactions. In this review, we aim to assess how the coronavirus pandemic has affected the African continent at large, highlighting the socio-psychological and nutritional consequences. The paper notes important social dimensions that faced the greatest disruptions and effects, with education being affected by school closures in Africa as across the world and resulting in learning losses for millions of school-going children. The workplace was also affected as reflected in the unemployment consequence where millions of adults lost their jobs due to suspended economic activity. Family and gender-based violence cases further emphasized the social consequences of the pandemic since lockdowns confined women and children to vulnerable environments and denied them access to protective services. The negative economic effects of the pandemic further worsened poverty and inequality for a population that was already in abject conditions. Moreover, there were issues related to the overburdening of a fragile healthcare system, psychological consequences associated with stress and depression and grief and loss, stigma and discrimination related to COVID-19 infection, and nutritional impacts covering food insecurity, malnutrition, and the effects on school feeding programs for children. Accordingly, through citing some examples of a few countries in Sub-Saharan Africa, the review will detail the experiences of the populations within this region which remain plagued with economic and health vulnerabilities that were further exposed by the pandemic.

Keywords: COVID-19, Social impact, Psychological impact, Nutritional impact, Healthcare, Restriction, Control

INTRODUCTION

The COVID-19 outbreak, first reported as a new viral disease in Wuhan, Hubei, China, in December 2019, was soon after declared a pandemic by the world health organization (WHO) due to its rapid spread and death tolls.[1] In Africa alone, the total cases of COVID-19 infections as of 2022, July 17 was 12 million and the

deaths stood at 256,414.[2] Governments across the African continent took several social interventions, including imposing restrictions on social engagement, travel, curfews, and limiting attendance to school and the workplace.[35] These non-pharmaceutical interventions (NPI) significantly impacted vulnerable, low-income populations disadvantaged owing to poverty factors, living conditions, as well as pre-existing inequality, ranging from discrimination to exploitative practices.[3] Considering the limited medical facilities and resources in Africa, including a shortage of health facilities, understaffed hospitals, limited sanitary items, and overcrowded healthcare facilities, the COVID-19 pandemic further aggravated these dire conditions.[36] In South Africa, the first case was reported in 2020, March 5, and merely 23 days later, the government had already introduced a national lockdown.[4] These restrictive measures that limited movement and economic activity had both significant social and psychological burdens on families, individuals, and communities.

The measures taken to control the disease spread have been witnessed in the societal unrest and drastic changes in people's day-to-day activities and social interactions.[37] From physical distancing and the suspension of social gatherings have led to various social consequences across the world.[38]

Travel restrictions also affected social relations as individuals became isolated from their peers. Social anxiety, panic, economic recession, and severe psychological stress are an undeniable reality of the pandemic era and has also played a toll in the post-COVID era with progress to transition back to normalcy.[39] The disease continues to spread and still poses a challenge to the world, as the efforts to contain the virus still lack successfully and effectively. Our aim in this review is to explore the COVID and post-COVID social and psychological effects as well as food nutrition and security, with a specific focus on the African continent (Figure 1).

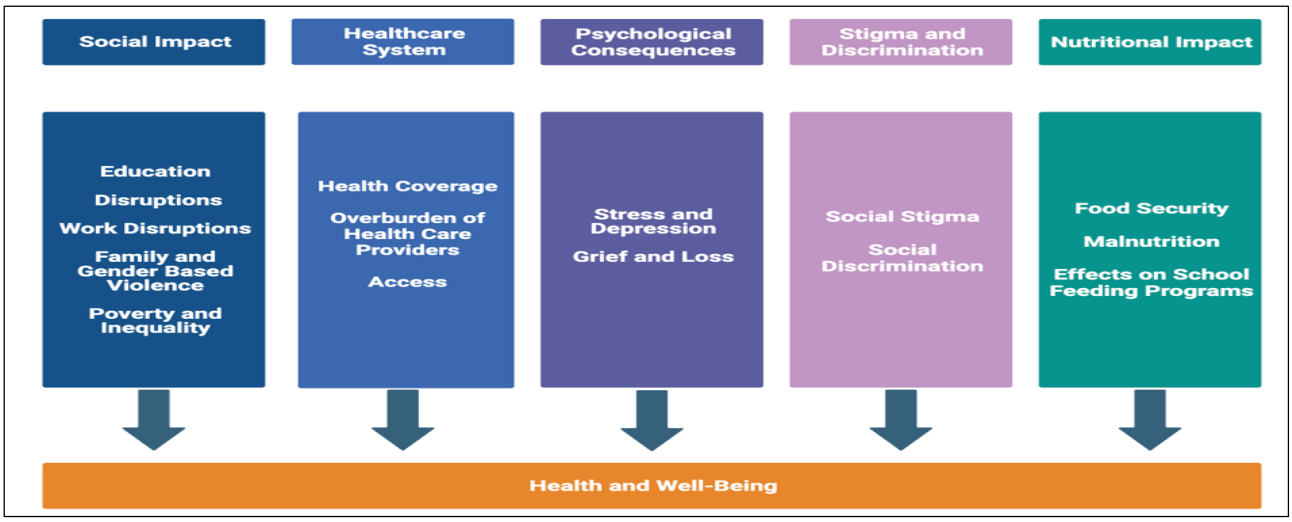

Figure 1. Overview of topics of interest.

SOCIAL IMPACT

Education disruption

African countries, like the rest of the world, responded to the COVID-19 pandemic through several measures, including school closures.

Statistics indicate that in the United Nations children's fund (UNICEF) Eastern and Southern Africa region, 127 million school-going children were affected by the shutdown of educational institutions at the end of March 2020.[5]

The impact of this closure of schools on children led to loss of learning, impacting many developing nations where education was already rife. In the sub-Saharan Africa (SSA) region, the preexisting learning crisis further aggravated, especially for children in their early years of education who experienced a shock to learning.[40]

While the rest of the world shifted to online learning, this was a difficult experience in SSA countries where it is reported that up to 216 million (representing 89%) learners cannot access a household computer, 199 million (82%) do not have a household internet, 26 million (11%) remain not covered by mobile networks, and 64% of primary and 50% of secondary teachers have minimum training without basic information and communications technology (ICT) skills.[6]

Without the ICT infrastructure and requisite training on running online learning, students were left helpless and unable to access learning, losing up to a year of learning as the schools remained closed.

These learning losses are in the form of knowledge deterioration where students forget what they have learned over time, as well as the opportunity cost losses described by the learning the students would have gained in a typical school year if closures did not happen.

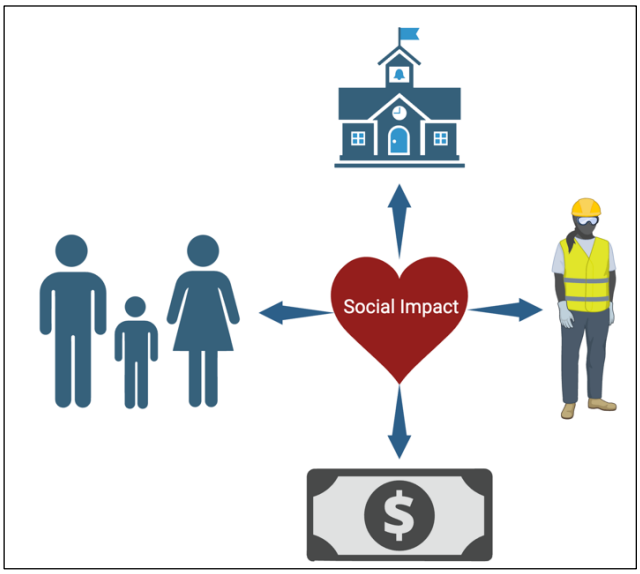

Figure 2: Social impact of COVID-19.

Uganda had the longest period of school closures worldwide during COVID-19. This sub-Saharan nation enforced a total of 83 weeks of school closure as a measure to curb the spread of the coronavirus, with statistical models recently predicting a learning deficit of 2.8 years in Uganda.[7] The significant disruptions in education have been far-reaching, with some learners worried about repeating the school year or failing their exams after a long absence from school, as was the case in Senegal and Ghana with reported high rates of grade repetition while Malawi recorded high dropout rates among older girls.[41,44] Attrition rates of returning to school were also impacted as some caregivers did not send their children back to school due to financial reasons, leading to increasing rates of school dropouts.[42] The prolonged closure of educational institutions also impacted children's social behaviors as they felt they were too old to re-enter schooling, which had a significant effect, especially on the gender gap in secondary school completion rates, with females being less likely to finish school.[43]

In South Africa, the government responded to the pandemic with school closures, with a total of 13 million learners losing up to a third of the school year from when the pandemic started to the easing of restrictions.[8] These learners fell behind in the curriculum coverage as there were losses in teaching time, and although there were attempts to bridge the gaps with online learning, internet access was not universally accessible due to socioeconomically disadvantaged communities.[45] Notably, adolescent girls and young women (AGYW) were mostly affected by educational disruption, especially those in the lowest socioeconomic status (SES) category, further aggravating gender inequality in education in Africa, as well as their access to receiving sexual and reproductive health support which is usually provided in schools.[46]

Work disruptions

The unemployment consequence of the COVID-19 pandemic significantly impacted African nations, with South Africa alone experiencing an estimated figure of between 2.2 and 2.8 million adults who lost their jobs from February to April 2020.[9] This outcome was a consequence of the government-imposed coronavirus lockdown and suspension of economic activity measures. While some individuals retained their jobs to resume when the pandemic was contained, they could not earn any income during the peak years of the pandemic due to lack of employment, with the case of Uganda indicating a 60% decline in income.[47]

The pandemic disrupted employment as the stringent government response measures led to closures of workplaces and markets while reducing mobility, as witnessed in Zimbabwe where low-income earners were mostly affected.[48] Consequently, the demand for goods and services declined as earnings dropped, which translated further into a slowdown in production and the suspension of work-related activities.[10] Reductions in working hours and labor earnings impacted informal sector workers as businesses cut salaries up to 25.7% in Ghana and cutting wages for up to 770,000 workers.[49] In Uganda, the lockdown measures were reported to reduce business activity by more than half, with the micro- and small enterprises experiencing greater drops in activity compared to medium and large enterprises, with job losses of over 30,000 between January and May 2020, and one in four workers having lost their jobs in Senegal, Mali, and Burkina Faso.[11] Those who rely on daily sales in the informal sector bore the greater brunt of the pandemic effects as their activities require contact with clients to sell to them, as reported to have happened in the informal settlements in Kenya's Nairobi City where 60-70% of Kenya's population resides.[50] With the restrictions of movements and closure of business establishments, many were forced to have early closure in their businesses while other companies laid off their staff. Restaurants, small retail shops, taxi drivers, and tourism establishments were some of the most affected as curfew and lockdown policies hindered their operations. SMEs in agriculture and manufacturing also suffered because access to markets became constrained; and often, they were unable to meet their clients' demands, as seen in Zambia where COVID disrupted market access and support for production.[51] The breakdown in the global supply chain also affected businesses leading to unemployment as the flow of goods was disrupted, with the African countries forced to find local solutions through trade agreements even in medical supplies.[52]

Family and gender-based violence

COVID-19 also exacerbated the risk factors for violence against women and children in the home because the pandemic drove many families into unusual, pressured situations during the hard lockdowns. Intimate partner

violence (IPV)m as well as child abuse, represent the points of analysis on how the pandemic contributed to domestic violence (DV), with a case of Sudan, Malawi, and Kenya demonstrating how COVID-19 stifled the voices of survivors and denied them access to services for aid.[54] With individuals not allowed to go outside of their homes for work, exercise, or other social activities, many were forced to spend more time at home in vulnerable conditions.[55] A review focusing on selected African countries including South Africa, Kenya, Egypt, Zimbabwe, Ghana, and Nigeria assessed the role of COVID-19 lockdown in worsening the existing cases of domestic violence. Because more women were facing unemployment, they became more at risk of intimate partner violence due to their increasing dependence on men, who many were succumbed to alcohol and substance dependence during the pandemic.[12] In Egypt, the COVID-19 lockdowns occasioned the suspension of court trials across the country, with the results of this move showing an increasing number of partners who perpetrated dastardly acts of DV against their spouses.[56] Hence, family conflict and violence were reported to have surged during the shutdown in Egypt with rising family relationship issues and dependence of women on their husbands, creating an imbalance in family structure.

In South Africa's Gauteng province, rising cases of women and children's experiences of domestic violence have also been evidenced the lockdown.[13] During lockdown periods, women and children were confined in the home and restricted from escaping the abusive perpetrators. Men in Egypt had growing rate of substance use during lockdown, which lead to mental health issues, unemployment, and inability to fiscally provide for their family.[57] The economic insecurity subjected women to conflict over resources and increased stress for them, which in turn exacerbated the risk of domestic violence and child maltreatment.

There were also reported spikes in sexual offenses against children in Kenya during the COVID-19 period, with a rise in sexual offenses against children reported to coincide with the lockdowns, school closures, and curfews as they became victimized by neighbors in a private residence.[14] Similar situations were reported in other low-and-middle income countries (LMICs) like South Africa whereby child abuse reports increased during COVID-19 compared to the pre-pandemic period. Nigeria also experienced higher rates of physical violence during the lockdown months as sexual and gender-based violence (SGBV) cases were increasingly reported. In Kenya, curfews imposed forced men to stay at home and increased the probability of domestic violence incidences on their partners.[53]

Poverty and inequality

Poverty and inequality were already significant challenges facing the African continent even in the pre-pandemic era. Most African economies are considered informal and lack social protection without proper replacement of income or savings when crises like COVID-19 strike. Unsurprisingly, as the pandemic started and progressed, the negative economic effects resulted in a cascade of income losses and bankruptcies that pushed many households in African countries further into poverty.[15] Most of these households experience poor living conditions making them vulnerable to health shocks related to the pandemic. There was constrained income growth in this period as businesses shut down and economies declined, resulting in loss of jobs and income. A study on Ghana indicates that COVID-19 significantly increased poverty levels in households and contributed to deteriorating living standards, which was mostly pronounced among women and rural dwellers.[16] The effect of the pandemic is also linked to its disruption of the progress towards achieving the sustainable development goals (SDGs) meant to reduce poverty in sub-Saharan Africa. The poverty effect is also associated with decreases in income, job losses, reduced per capita household consumption of food and non-food commodities, and a lack of access to basic health services.[58] The pandemic further heightened the gender gap in the labor markets as the differences in employment status for women, who mostly work in the informal sector, meant they were more susceptible to the economic disruptions occasioned by COVID-19.

The inflation, debt, and exchange rates factors were also prominent and continued to persist in Africa because of COVID-19, with statistical figures showing a 2.1% decline in economic growth in the continent.[17] Notably, there was a large exchange rate depreciation due to disruptions in external financial flows like remittances, foreign direct investments, and official development assistance. Inflation related to food prices was particularly reported as weaker currencies and pressures on food prices adversely affected many households regarding their incomes and consumption. African countries also increasingly became indebted as governments borrowed more as part of mitigating the pandemic. With declining personal incomes and a sharp fall in global commodity demand due to travel bans and restrictions, the prices of commodities also fell, thereby affecting the economic capacity of most countries in Africa. Consequently, more Africans fell into poverty as they could not access food and other services like healthcare, which expanded the already existing socioeconomic equalities in most of the African countries.

OVERBURDENING OF THE HEALTHCARE SYSTEM

Sub-Saharan Africa health systems have made great strides in recent years as African countries march towards attaining the third SDG of ensuring health for all by 2030. Despite these efforts, the emergence of COVID-19 exposed the vulnerabilities still existing in these health systems owing to the myriads of challenges associated with managing the disease. Notably, one challenge the

pandemic exposed was health service delivery, especially related to the persistent deficit in health services as witnessed with inadequate laboratories and testing kits for the influx of suspected cases of COVID-19.[18] Most of the cases tested typically took more than the recommended 2-3 days to receive the results, with the delays in testing hampering the efforts to contain the virus. It has also been established that the SSA region had a limited number of beds and other facilities like isolation centers, causing facilities to premature discharge of COVID-19 patients and encourage self-isolation at home.[59] The overburdening of healthcare systems led some countries like Ghana to set up infectious disease and treatment centers, with the government and the private sector collaborating to decongest the overcrowded hospitals required to treat other illnesses. Indeed, when COVID-19 landed in Africa, governments were forced to redirect some resources from other health needs to contain the pandemic, which put pressure on some services like child and maternal care.[34]

Staff shortages and deficits in health resources were also exposed as cumulative cases and deaths kept rising, placing a burden on the fragile healthcare systems in Africa. Compared to the Americas where there are 24.8 healthcare workers (HCWs) per 1000 population, Africa has 2.3 HCWs per 1000 population, which is significantly low even without the escalating COVID-19 pandemic.[19] As this limited number of HCWs was already strained in providing services, the coronavirus pandemic made the situation worse as the medical professionals lacked personal protective equipment (PPE) and threatened the supply of HCWs owing to the increased risk of infection and deaths. With the shortages of personnel and strained healthcare resources brought about by the COVID-19 pandemic, it was not a surprise that there was a reduced flow of patients and widespread missed scheduled appointments for other conditions in most African countries. For instance, reports revealed Tanzania had a low health facility readiness for COVID-19 prevention, while in Ethiopia, only half of the healthcare providers were not satisfied with the available medical equipment for treating COVID-19 in hospitals. Furthermore, in Kenya, there was a limited surge capacity in hospitals owing to a lack of intensive care unit (ICU) beds and ventilators.[20] All these vulnerabilities in African healthcare systems already existed and the coronavirus crisis exposed just how dire the situation is in managing emergencies.

PSYCHOLOGICAL CONSEQUENCES

Stress and depression

Emerging evidence on mental health symptoms was associated with the COVID-19 pandemic in Africa like the rest of the world. A study in Libya found that 56.3% of HCWs had depressive symptoms and there was a 21.2% prevalence of depression in Ethiopia.[22] The limited medical facilities and resources including intensive care units, understaffed and overcrowded hospitals, limited vaccinology training programs, and inefficient primary healthcare infrastructure led to an understandable rise in anxiety and worry that individuals may lack access to care in case of a COVID-19 diagnosis. In Ethiopia, people using public transportation also developed and experienced general anxiety disorder (GAD), with 420 respondents interviewed and reported 30.7% of the participants had GAD, especially daily labor workers with no proper face mask protection.[23] The study also investigated gender differences, as females frequently traveled and had the responsibility for achieving day-to-day activities outside the home, putting them at greater risk of contracting COVID-19 infection as they came into contact with other people in public transportation. The losses of income and jobs also contributed further to the depression among African populations as people could no longer afford a living.

The rates of mental health disorders were worse amongst healthcare workers, frontline providers were the forefront of treating those affected. A study done in three major hospitals in Kenya reported that out of 433 participants, 53.6% experienced depression, 44.3% anxiety, and 31.0% distress.[24] The reasons for this incidence of mental health disorders were highlighted as including the front-line workers' claims that they lacked adequate resources and PPE to care for patients infected with COVID-19. This was especially true for the healthcare personnel working in public hospitals compared to those in private institutions. In South Africa, mental health challenges were also reported in HCWs, with a health survey reporting as high as 53.6% revealed levels of psychological distress.[25] These medical workers had personal fear and professional demands under sub-optimal healthcare resource settings to treat patients, which created fear and anxiety amongst Kenyan HCWs.[60] The lack of support as well as their high demands and risk of infection, many felt they were not given the minimal tools required to control the spread of disease.

Grief and loss

COVID-19 also worsened the tragic nature of losing a loved one as governments instituted regulations regarding burial procedures, as funerals were considered "super spreader events". In South Africa, the government restricted funeral arrangements by prohibiting movement between provinces to attend funerals unless one obtained a special traveling permit from a police station, with the attendance during alert level 5-3 also limited to 50 people or less.[26] Bans on night vigils were placed, and the social distancing of at least 1.5 meters between mourners was a critical disruption to mourning at a time where physical contact might be needed to console the bereaved. A sub-group of Bugandans from Uganda felt their burial management was disintegrated and COVID-19 regulations suppressed African traditional rituals of funerals and burials.[27] The restriction of the number of mourners and wrapping bodies in plastic body bags were

common in Uganda and South Africa, as the rest of the continent. Health workers, instead of family members, were required to take charge of body preparation, while denying loved ones the chances to view the body. This greatly affected how Africans mourn and honor their dead, which is usually an honorable, communal affair; and the new guidelines caused great distress for the deceased's family and community and even affected their healing process. In the Buganda case, the wrapping of bodies with plastic, instead of the usual cultural preparation, bathing, cleaning up, dressing, and wrapping in a bark cloth was considered undignified and against their culture by family members. Those left behind, therefore, were left traumatized and worried about not paying their last respects in the socially accepted way, which was worsened by mourning in isolation instead of communally.

Another study was done in the Central Region of Ghana, focusing on health workers who were members of the COVID-19 taskforce and adult family members of persons whose deaths were officially certified as caused by the coronavirus.[28] From the analysis done, it emerged that the Ghanaians perceived an "uncultural" connotation to the burial protocols imposed by the government, especially since family members were unaware and did not understand the restrictions on burials. The people who lost their loved ones would only hear about their deceased being buried, even at times not knowing the burial location. They, therefore, felt that there was an aspect of neglect of culture, and this made families feel disrespected and that the government was imposing foreign burial processes on them. The families could not also hold elaborate mortuary rites according to their African traditions, with the mourners prevented from showy display of family wealth, dancing, singing, and feasting as is common in Ghanaian burial rituals.[30]

Stigma and discrimination

Covid stigmatization is a reality that African countries faced during the pandemic. A study carried out in the West African country of Gambia emerged that participants' involvement in research seeking to control the spread of the infection was hampered by the people's perception about the purpose of such investigations.[32] Considering Gambia's stringent measures, individuals were afraid that they would be identified by the illness and shunned publicly if it was found out they took part in research. Among the participants, some indicated that if one even took a COVID-19 test, others would discover and avoid them out of fear of infection. A study done in west Kenya examined the perceived community stigma regarding the coronavirus amongst primary and secondary school teachers, as well as adolescents living with HIV.[33] From the analysis, it emerged that COVID-19 positive patients experienced social stigma and associated discrimination within their neighborhoods. Some would even resort to keeping their COVID-19 status secret out of fear of rejection.

Save the children conducted an assessment involving more than 3,000 participants to determine the level of COVID-19 stigmatization in sub-Saharan Africa in which it found that the spread of misinformation about SARS-Cov-2 was a threat to infection reduction.[69] In this study, stigmatization was reported in the form of prejudice against those infected by COVID, including frontline health workers and diaspora communities, and resulting in avoidance of health-seeking in case of symptoms. Results from Somalia following a survey of over 3,000 people showed the 43% of the respondents felt COVID-19 was a government campaign and 27% perceived the disease generated stigma mostly affecting specific minority groups in their community and 32% said it stigmatized all foreigners. Meanwhile, in Tanzania, 86% of 121 respondents said they thought COVID-19 stigmatized particular groups. The results of the study affirmed the Africa Center for Disease Prevention and Control (CDC) findings regarding significant existence of misconception around the virus, with 55.8% believing they should avoid those who recovered from the disease to prevent the spread. The extent of stigmatization was reflected in the level of fear people who had contracted and recovered from the virus showed as they hesitated returning to their communities because they would be targeted as potential carriers of COVID.

Further, a nationwide population-based survey in Ghana involving 3,259 adults examined stigma and discrimination towards COVID-19 survivors, based on Ghanaian media cases of stigmatization founded on unsubstantiated reports.[70] The descriptive and inferential statistics indicated poor knowledge on COVID among 33.6% of the participants, with 43% having a good attitude towards survivors. Further, 45.9% exhibited stigma and discriminatory tendencies, with those showing poor COVID-related knowledge and poor attitude towards the disease more likely to stigmatize and discriminate against survivors. The prevalence of stigma and discriminatory tendencies manifested in how 12.5% respondents would not agree to stay in the same house with people who recovered from COVID, 21.8% would not work together, and 20.6% saying they would dismiss employees who recovered from the virus if they were employers. Additionally, the predictors of stigma were individuals aged between 30 and 59 years, those earning between 501 and 2000 Cedis monthly income, and those with poor attitude and poor COVID-19 related knowledge. Individuals from regions with the highest disease transmission were also more likely to stigmatize people due to fear of transmission.

NUTRITIONAL IMPACT

Food security

In an effort to stop the spread of infections, lockdowns and social distancing laws were put into place in response to the COVID-19 outbreak. Lockdowns thus made it more difficult for smallholder farmers, agricultural inputs,

and food products to move around, which upset the food supply chains in the countries of Sub-Saharan Africa.[61] People's lives in this region have been negatively impacted by COVID-19, and there have been significant indirect effects on food security, nutritional status, education, and medium- to long-term economic development.[62] Food production and supply chains were affected by the COVID-19 pandemic, and the ongoing conflict between Russia and Ukraine still impacted on the world food market and food prices. The effects of this war are already being felt in Sub-Saharan African Countries where there is a high demand for food commodities and rising prices. In addition, the governments of Sub-Saharan African nations ought to support domestic production of agricultural inputs like fertilizer and other supplies in order to prevent an excessive reliance on imports from other countries which are prone to wars and other conflicts.[63]

Malnutrition

Throughout the COVID-19 pandemic, there were persistently higher food prices and poor diet quality. Low diet quality was found to be negatively correlated with social and economic vulnerability, dependency on markets, and decreased agricultural productivity. Recovery was clearly visible, although eating a balanced diet was still not common. It is essential to make systematic efforts to change the value chains of the food system in order to address the underlying reasons of poor diet quality. Mitigation strategies such as social assistance programmes and national policies are also essential.[64] Many individuals, especially those in disadvantaged neighbourhoods, now have less access to food as a result of lockdowns and disruptions in the food supply chains. The pandemic's economic effects, including lost wages and growing food prices, have raised the danger of malnutrition, particularly in young children and expectant mothers. Prior to the COVID-19 outbreak, Sub-Saharan Africa faced numerous obstacles, and the region can only succeed with significant public spending on rural infrastructure, irrigation, health, and agricultural extension services.[65]

Malnutrition in children under five has increased in Sub-Saharan Africa since the start of the COVID-19 pandemic. During the COVID-19 era, a child's nutritional intake was influenced by a variety of factors, including the country's economic situation, the mother's level of income and nutrition education, as well as cultural norms and societal expectations. One of the main reasons sub-Saharan African countries would not be able to meet the Sustainable Development Goals in the COVID-19 period is because malnutrition in children under five was one of the leading causes of mortality in these states throughout the COVID-19 era. A child's intellectual performance and physical development are also impacted by malnutrition. The risk of malnutrition in children under five has increased due to COVID-19. The WHO and Sub-Saharan African governments are now addressing the problem of malnutrition.[66]

Effects on school feeding program

The significance of ensuring food and nutrition security for children is recognized by the African Union High-Level Panel on Emerging Technologies (APET). According to APET, the primary objectives of school nutrition programs in African nations are to improve students' ability to learn through addressing micronutrient deficiencies, encouraging regular attendance, and addressing temporary hunger.[71] Across Africa, school lunch programs function as a social safety net, enhancing children's nutrition, molding their dietary preferences, and bolstering the agri-food sector by sourcing locally.[72] The COVID-19 epidemic significantly disrupted school meal programs, which give pupils meals, snacks, or take-home rations and act as a safety net for vulnerable children around the world.[73] Students' health, education, regular attendance, and school enrollment are all negatively impacted by hunger and malnutrition.[67] School lunch programs, which are an essential source of nutrition for certain children, have been disrupted by school closures. Worldwide disruptions to nutrition and education services have resulted from the COVID-19 pandemic and related lockdown measures. The disruptions in nutritional and educational services brought on by COVID-19 have made food insecurity in homes worse. It is vital to establish short- and medium-term policy solutions, such as social protection policies and alternative programs to replace nutritional services that are impacted by the epidemic.[74] Effective post-COVID-19 recovery policies require an understanding of the general and specific effects of disrupting school meal programmes.[68]

CONCLUSION

The COVID-19 pandemic had not only physical health consequences on populations across the world but also came with psychological, social and nutritional adverse outcomes, which were especially felt in the African continent. As governments took strict measures to contain the spread of infections, such interventions as lockdowns and the closures of businesses and schools took a toll on diverse aspects of human lives. The social impact of the pandemic, as highlighted in the review, related to the disruption of education and work that led to lost incomes and employment and learning disruption, increasing rates of family and gender-based violence against women and children, and rising poverty and inequality due to declining economies due to debt and inflation. The COVID-19 crisis also majorly overburdened the healthcare systems in sub-Saharan Africa, which was an already existing vulnerability riddled by understaffing, limited resources like beds and intensive care units, as well as the inability to test for the virus in a timely fashion. As for the psychological consequences, stress, and depression, especially amongst healthcare workers positioned at the frontline of fighting the virus without the

right protective equipment and being isolated from their loved ones, was reported widely. In the general population, cases of generalized anxiety disorders were also reported as COVID-19 interfered with their social lives and led to losses of jobs and incomes to sustain their livelihoods. Grief and loss were other aspects associated with the coronavirus crisis as governments moved to change burial and funeral rites, thereby interfering with the cultural practices associated with honoring deceased family members. Stigma and discrimination were also witnessed for those who tested positive for the virus as they were shunned publicly, even others forced to hide their test results to avoid stigmatization. While the pandemic impacted every world continent, it exposed Africa's already existing poor healthcare system, and the need to fix it, as health is a human right.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Hosseinzadeh P, Zareipour M, Baljani E, Moradali MR. Social Consequences of the COVID-19 Pandemic. A Systematic Review. Investigación Educac Enfermería. 2022;40(1).
2. Assefa N, Abdullahi YY, Hemler EC, Lankoande B, Madzorera I, Wang D, et al. COVID-19 Preventive Practices, Psychological Distress, and Reported Barriers to Healthcare Access during the Pandemic among Adult Community Members in Sub-Saharan Africa: A Phone Survey. Am J Trop Med Hyg. 2022;108(1):124-36.
3. Manderson L, Chavarro D, Kaunda-Khangamwa B, Kagaha A, Zakumumpa H. Containing COVID-19 and the social costs on human rights in African countries. Humanities Social Sci Communications. 2022;9(1):1-11.
4. Swart LA, Taliep N, Ismail G, Van Niekerk A. The converging influence of social, economic and psychological factors on public responsiveness to the COVID-19 pandemic in South Africa. BMC Publ Heal. 2022;22(1):1-11.
5. Angrist N, De Barros A, Bhula R, Chakera S, Cummiskey C, DeStefano J, et al. Building back better to avert a learning catastrophe: Estimating learning loss from COVID-19 school shutdowns in Africa and facilitating short-term and long-term learning recovery. Int J Educational Develop. 2021;84:102397.
6. Nwokeocha S. Impact of COVID-19 on Teaching and Learning in Africa Assessed by the Education Unions. J Educat Learning, 2021;10(4):15-26.
7. Datzberger S, Parkes J, Bhatia A, Nagawa R, Kasidi JR, Musenze BJ, et al. Intensified inequities: Young people's experiences of Covid-19 and school closures in Uganda. Children Society. 2023;37(1):71-90.
8. Duby Z, Jonas K, Bunce B, Bergh K, Maruping K, Fowler C, et al. Navigating education in the context of COVID-19 lockdowns and school closures: challenges and resilience among adolescent girls and young women in South Africa. In Frontiers in Education. Frontiers Media SA. 2022;7.
9. Posel D, Oyenubi A, Kollamparambil U. Job loss and mental health during the COVID-19 lockdown: Evidence from South Africa. PloS one. 2021;16(3):e0249352.
10. Danquah M, Schotte S, Sen K. COVID-19 and employment: Insights from the sub-saharan african experience. Indian J Labour Economics. 2020;63:23-30.
11. Arthur S, Caleb T, Abanis T, Siraje K, Eliab Mpora B. Analysis of the effects of COVID 19 on the operations and sustainability of SMEs in South Western region, Uganda. Afr J Business Managt. 2021;15(7):174-83.
12. Uzobo E, Ayinmoro AD. Trapped between two pandemics: domestic violence cases under COVID-19 pandemic lockdown: a scoping review. Community Heal Equity Res Policy. 2023;43(3):319-28.
13. Mahlangu P, Gibbs A, Shai N, Machisa M, Nunze N, Sikweyiya Y. Impact of COVID-19 lockdown and link to women and children's experiences of violence in the home in South Africa. BMC Publ Heal. 2022;22(1):1029.
14. Stevens LM, Rockey JC, Rockowitz SR, Kanja W, Colloff MF, Flowe HD. Children's vulnerability to sexual violence during COVID-19 in Kenya: Recommendations for the future. Frontiers Global Women's Heal. 2021;2:630901.
15. Koudjom E, Tamwo S, Kpognon KD. Does poverty increase COVID-19 in Africa? A cross-country analysis. Health Economics Rev. 2022;12(1):1-14.
16. Bukari C, Essilfie G, Aning-Agyei MA, Otoo IC, Kyeremeh C, Owusu AA, et al. Impact of COVID-19 on poverty and living standards in Ghana: A micro-perspective. Cogent Economics Finance. 2021;9(1):1879716.
17. Anyanwu JC, Salami AO. The impact of COVID-19 on African economies: An introduction. Afr Development Rev. 2021;33(1):S1.
18. Amu H, Dowou RK, Saah FI, Efunwole JA, Bain LE, Tarkang EE. COVID-19 and health systems functioning in sub-Saharan Africa using the "WHO Building Blocks": the challenges and responses. Frontiers Publ Heal. 2022;10:856397.
19. Nchasi G, Okonji OC, Jena R, Ahmad S, Soomro U, Kolawole BO, et al. Challenges faced by African healthcare workers during the third wave of the pandemic. Health Sci Rep. 2022;5(6):e893.
20. Tessema GA, Kinfu Y, Dachew BA, Tesema AG, Assefa Y, Alene KA, et al. The COVID-19 pandemic and healthcare systems in Africa: a scoping review of preparedness, impact and response. BMJ Global Heal. 2021;6(12):e007179.
21. Chersich MF, Gray G, Fairlie L, Eichbaum Q, Mayhew S, Allwood B, et al. COVID-19 in Africa:

care and protection for frontline healthcare workers. Globalization Health. 2000;16:1-6.
22. Chen J, Farah N, Dong RK, Chen RZ, Xu W, Yin J, et al. Mental health during the COVID-19 crisis in Africa: a systematic review and meta-analysis. Int J Environmental Res Publ Heal. 2021;18(20):10604.
23. Kassaw C, Pandey D. COVID-19 pandemic related to anxiety disorder among communities using public transport at Addis Ababa, Ethiopia, March 2020: cross-sectional study design. Human Arenas. 2021;1-10.
24. Shah J, Monroe-Wise A, Talib Z, Nabiswa A, Said M, Abeid A, et al. Mental health disorders among healthcare workers during the COVID-19 pandemic: a cross-sectional survey from three major hospitals in Kenya. BMJ Open. 2021;11(6):e050316.
25. Chen J, Farah N, Dong RK, Chen RZ, Xu W, Yin J, et al. Mental health during the COVID-19 crisis in Africa: a systematic review and meta-analysis. Int J Environmental Res Publ Heal. 2021;18(20):10604.
26. Dawood B, Tomita A, Ramlall S. 'Unheard,''uncared for'and 'unsupported': The mental health impact of COVID-19 on healthcare workers in KwaZulu-Natal Province, South Africa. PLoS One. 2022;17(5):e0266008.
27. Kgadima PN, Leburu GE. COVID-19 Ruptures And Disruptions on Grieving And Mourning Within an African Context: Lessons For Social Work Practice. J Death Dying. 2022;00302228211070149.
28. Lubega M, Nakamya CS, Namugumya E, Najjemba J. The effect of COVID-19 public health guidelines on the funeral traditions and burial rituals among the Baganda, a tribe in Central Uganda. One Heal. 2022;7(7).
29. Takyiakwaa D, Tuoyire DA, Abraham SA, Agyare EA, Amoah JO, Owusu-Sarpong AA et al. Culture and pandemic control at cross-roads: navigating the burial guidelines for COVID-19-related deaths in a Ghanaian setting. BMC Heal Services Res. 2023;23(1):519.
30. Adom D, Adu-Mensah J, Kquofi S. COVID-19 private burial with 25 persons in the lens of the mortuary rites culture in Ghana. Afr Identities. 2021;1-16.
31. Adesoji JO, David FO, Adijat JA1. COVID-19 pandemic preventive guidelines and protocols: How does this affect the Yoruba funeral rites in Nigeria. International Journal of Modern Anthropology, 2021;2(16):570-85.
32. Diallo BA, Usuf E, Ceesay O, D'Alessandro U, Roca A, Martinez-Alvarez M. Clinical research on COVID-19: perceptions and barriers to participation in the Gambia. BMJ Global Heal. 2022;7(2):e007533.
33. Chory A, Nyandiko W, Ashimosi C, Aluoch J, Martin R, Biegon W, et al. Social stigma related to COVID-19 disease described by primary and secondary school teachers and adolescents living with HIV in Western Kenya. Frontiers in Public Heal. 2021;9:757267.
34. El Salih I, Njuguna FM, Widjajanto PH, Kaspers G, Bailey A, Mostert S. Impact of COVID-19 measures on the health and healthcare of children in East-Africa: Scoping review. Int J Heal Planning Management. 2023;38(3):579-98.
35. Quaife M, Van Zandvoort K, Gimma A, Shah K, McCreesh N, Prem K, et al. The impact of COVID-19 control measures on social contacts and transmission in Kenyan informal settlements. BMC Med. 2020;18(1):1-11.
36. Mbunge E. Effects of COVID-19 in South African health system and society: An explanatory study. Diabetes Metab Synd Clin Res Rev. 2020;14(6):1809-14.
37. De Palma A, Vosough S, Liao F. An overview of effects of COVID-19 on mobility and lifestyle: 18 months since the outbreak. Transportation Res Part A: Policy Pract. 2022;159:372-97.
38. Li L, Taeihagh A, Tan SY. A scoping review of the impacts of COVID-19 physical distancing measures on vulnerable population groups. Nature Communications 2023;14(1):599.
39. Lu X, Lin Z. COVID-19, economic impact, mental health, and coping behaviors: a conceptual framework and future research directions. Frontiers Psychol. 2021;12:759974.
40. Anaduaka US, Oladosu AO. School closures and well-being-related topic searches on Google during the COVID-19 pandemic in Sub-Saharan Africa. BMC Publ Heal. 2023;23(1):1-10.
41. Mbazzi FB, Nalugya R, Kawesa E, Nimusiima C, King R, Van Hove G, et al. The impact of COVID-19 measures on children with disabilities and their families in Uganda. Disabil Society. 2022;37(7):1173-96.
42. Okagbue EF, Ezeachikulo UP, Nchekwubemchukwu IS, Chidiebere IE, Kosiso O, Ouattaraa CAT, et al. The effects of Covid-19 pandemic on the education system in Nigeria: The role of competency-based education. Int J Educational Res Open. 2023;4:100219.
43. Ahinkorah BO, Hagan Jr JE, Ameyaw EK, Seidu AA, Schack T. COVID-19 pandemic worsening gender inequalities for women and girls in Sub-Saharan Africa. Frontiers Global Women's Heal. 2021;2:686984.
44. Kidman R, Breton E, Behrman J, Kohler HP. Returning to school after COVID-19 closures: Who is missing in Malawi? Int J Educat Develop. 2022;93:102645.
45. Landa N, Zhou S, Marongwe N. Education in emergencies: Lessons from COVID-19 in South Africa. Int Rev Educat. 2021;67(1-2):167-83.
46. Duby Z, Bunce B, Fowler C, Jonas K, Govindasamy D, Wagner C, et al. Adaptation and Resilience: Lessons Learned From Implementing a Combination Health and Education Intervention for Adolescent Girls and Young Women in South Africa During the COVID-19 Pandemic. Frontiers Heal Serv. 2022;2:903583.

47. Mahmud M, Riley E. Household response to an extreme shock: Evidence on the immediate impact of the COVID-19 lockdown on economic outcomes and well-being in rural Uganda. World Development. 2021;140:105318.
48. Toriro P, Chirisa I. Vendors on wheels! The changing terrain and manifestation of informality in Harare under COVID-19 pandemic restrictions. Cogent Social Sci. 2021;7(1):1939230.
49. Peter-Brown M. COVID-19 and Socio-Economic Inequalities among Workers in Ghana. Open J Social Sci. 2022;10(5):219-40.
50. Pinchoff J, Austrian K, Rajshekhar N, Abuya T, Kangwana B, Ochako R, et al. Gendered economic, social and health effects of the COVID-19 pandemic and mitigation policies in Kenya: evidence from a prospective cohort survey in Nairobi informal settlements. BMJ Open. 2021;11(3):e042749.
51. Manda S. Inside Zambia's 'new normal:'COVID-19 policy responses and implications for peri-urban food security and livelihoods. J Int Development. 2022;10.1002/jid.3720.
52. Kamara J, Essien U. COVID-19 in Africa: Supply chain disruptions and the role of the Africa Continental Free Trade Agreement. J Global Healt 2022;12.
53. Decker MR, Bevilacqua K, Wood SN, Ngare GW, Thiongo M, Byrne ME, et al. Gender-based violence during COVID-19 among adolescent girls and young women in Nairobi, Kenya: a mixed-methods prospective study over 18 months. BMJ Global Heal. 2022;7(2):e007807.
54. Ahmed SA, Changole J, Wangamati CK. Impact of the COVID-19 pandemic on intimate partner violence in Sudan, Malawi and Kenya. Reproduct Heal. 2021;18(1):1-7.
55. Nakyazze B. Intimate partner violence during the COVID-19 pandemic: an impending public health crisis in Africa. Anatolian J Family Med. 2020;3(2):92.
56. Magdy D, Zaki HA. After COVID-19: mitigating domestic gender-based violence in Egypt in times of emergency. Social Protection in Egypt: Mitigating the Socio-Economic Effects of the COVID-19 Pandemic on Vulnerable Employment. Cairo, Egypt, AUC Knowledge Fountain. 2021;1-35.
57. Elsaid NM, Shehata SA, Sayed HH, Mohammed HS, Abdel-Fatah ZF. Domestic violence against women during coronavirus (COVID-19) pandemic lockdown in Egypt: a cross-sectional study. J Egypt Publ Heal Asso. 2022;97(1):1-12.
58. Maredia MK, Adenikinju A, Belton B, Chapoto A, Faye NF, Liverpool-Tasie S, et al. COVID-19's impacts on incomes and food consumption in urban and rural areas are surprisingly similar: Evidence from five African countries. Global Food Security. 2022;33:100633.
59. Andia-Biraro I, Baluku JB, Olum R, Bongomin F, Kyazze AP, Ninsiima S, et al. Effect of COVID-19 pandemic on inpatient service utilization and patient outcomes in Uganda. Scientific Rep. 2023;13(1):1-10.
60. Angwenyi V, Odero SA, Mulupi S, Ssewanyana D, Shumba C, Ndirangu-Mugo E, et al. Delivering Health Services during Early Days of COVID-19 Pandemic: Perspectives of Frontline Healthcare Workers in Kenya's Urban Informal Settlements. COVID. 2023;3(2):169-82.
61. Onyeaka H, Tamasiga P, Nkoutchou H. Food insecurity and outcomes during COVID-19 pandemic in sub-Saharan Africa (SSA). Agri Food Security. 2022;11-56.
62. Madzorera I, Ismail A, Hemler EC, Korte ML, Olufemi AA, Wang D, et al. Impact of COVID-19 on Nutrition, Food Security, and Dietary Diversity and Quality in Burkina Faso, Ethiopia and Nigeria. Am J Trop Med Hygien. 2021;105(2):295-309.
63. Ouko KO, Odiwuor MO. Contributing factors to the looming food crisis in sub-Saharan Africa: Opportunities for policy insight. Cogent Social Sci. 2023;9(1):1-14.
64. Ismail A, Madzorera I, Apraku EA, Tinkasimile A, Dasmane D, Zabre P, et al. The COVID-19 pandemic and its impacts on diet quality and food prices in sub-Saharan Africa. PLoS One. 2023;18(6):e0279610.
65. José G, Jorge F, Victoria BTF. The Impact of COVID-19 in Sub-Saharan Africa Food Security and Human Development. Europ J Agriculture Food Sci. 2021;3(2):34-40.
66. Arhin B. Malnutrition among Children Under Five Years in the Era of COVID-19 Pandemic in Sub Sahara Africa: Causes and Impact. Asian J Res Nursing Heal. 2023;6(1):1-9.
67. DD, Messay GK, Fekadu MA. Effects of COVID-19 imposed school closure on school feeding program in Addis Ababa, Ethiopia. Social Sci Humanities Open. 2021;4(1):100185.
68. Kibrom AA, Mulubrhan A, Luca T, Kwaw SA. COVID-19-Induced Disruptions of School Feeding Services Exacerbate Food Insecurity in Nigeria. J Nutrit. 2021;151(8):2245-54.
69. ReliefWeb. Misinformation leads to increasing COVID-19 stigma in sub-Saharan Africa, 2020. Available at: https://reliefweb.int/report/mali/misineadincreasing-covid-19-stigmasaharanafric. Accessed on 20 October 2023.
70. Osei E, Amu H, Appiah PK, Amponsah SB, Danso E, Oppong S, et al. Stigma and discrimination tendencies towards COVID-19 survivors: Evidence from a nationwide population-based survey in Ghana. PLOS Glob Public Health. 2022;2(6):e0000307.
71. African Union Development Agency. Leaving No Child Behind: Improving School Feeding Programmes To Enhance Primary School Education Enrolment In Africa, 2023. Available at: https://www.nepad.org/blog/leavingnochildbehindimprovingschoolfeedingprogrammesenhanceprimaryschool-education. Accessed on 25 December 2023.

72. Wineman A, Ekwueme MC, Bigayimpunzi L, Martin-Daihirou A, Gois VN, Rodrigues EL, et al. School Meal Programs in Africa: Regional Results From the 2019 Global Survey of School Meal Programs. Front Public Health. 2022;10:871866.
73. Ferrero EM, Wineman A, Mitchell A. Changes in school feeding operations during the COVID-19 pandemic: evidence from 139 countries. Food Sci. 2023;15:1521-37.
74. Abay KA, Amare M, Tiberti L, Andam KS. COVID-19-Induced Disruptions of School Feeding Services Exacerbate Food Insecurity in Nigeria. J Nutr. 2021;151(8):2245-54.

Cite this article as: Wei CR, Fan C, Rizwan M, Lang'at GC, Peter MB. The pandemic and Africa: a review of the psychological, social, and nutritional impact of COVID-19 in Africa. Int J Community Med Public Health 2024;11:566-76.