

## COVID-19 AND HUMAN CAPITAL DEVELOPMENT IN SOKOTO STATE, NIGERIA: A DESCRIPTIVE ASSESSMENT OF HEALTH SECTOR

Muhammad Buhari Nuhu<sup>1</sup>, \*Adamu Hassan<sup>2</sup>, Fatima Muhammad Lawal<sup>3</sup> and Murtala Marafa<sup>4</sup>

<sup>1</sup>Department of Sociology Sokoto State University, Nigeria

<sup>2&3</sup>Department of Economics, Sokoto State University, Nigeria

<sup>4</sup>Department of History, Sokoto State University, Nigeria

### ABSTRACT

*This study examines the influence of covid-19 on human capital development with special emphasis on health sector in Sokoto State using a survey dataset for a sample of four hundred and fourteen (414) respondents. In the estimation, the study used descriptive statistical techniques such as simple percentage, bar chart and pie chart. The results show that covid-19 has led to decline access to healthcare services; decreases outpatient mental health services; diversion of resources from the treatment of illness such as malaria, HIV, tuberculosis among others to covid-19 treatment and disruption in the services of common diseases such as HIV, malaria, tuberculosis etcetera. The study also indicated that the pandemic lead to shortages of personnel protective equipment; create mortality and morbidity; impulse fear of bringing the virus to family members and high rate of infection and uncertainty. Finally, the study revealed that covid-19 has not led to excessive financial hardship to the health workers in Sokoto State. Based on the findings, this study suggests the need for the government to create emergency fund in every annual budget with view to handle any future occurrence of the unexpected pandemic. Government at all levels should strengthens their effort beyond national boundaries by increasing the capabilities and capacities of public health systems to detect and quickly responds to all disease outbreaks in the future so as to avoid the disruption of services of common illness. Finally, the use of technology and digital solutions in the enlightenment of causes, symptoms and preventions of future pandemic should be encouraged in response to any epidemic.*

**Keywords:** covid-19, human capital, health sector, percentage, Sokoto.

## 1. INTRODUCTION

The coronavirus (COVID-19) disease has been the greatest health challenge faced by humanity since the Second World War. Since its emergence in Asia in 2019, the virus has spread to most countries of the world. However, the pandemic is much more than a health crisis. In one way or the other, it has stressed every country, it has the potential to create disturbing social, economic and political effects that will leave deep and long-lasting shocks (UNDP, 2020). Over the previous decade, several countries including Nigeria have made significant development in improving human capital. However, the emergence of covid-19 threatens to reverse many of those improvements. For instance, the pandemic has led to diversion of resources from other health effort that however remain critical such as HIV, tuberculosis, malaria, polio among others to covid-19 treatment. In addition, Hogan et al. (2020) suggest that many patients suffering from other illnesses will be unable to go for routine checkups, due to restricted movement to avoid covid-19 infection. Hence, the disruption in such services is expected to lead to numerous deaths that are avoidable.

Prior to covid-19, Nigeria's Human Development Index (HDI) was 0.539 placing the country number 161 among the 189 countries with comparative data (UNDP, 2020). The HDI provides a composite measure of three dimensions of human capital development in terms of health (living a long and healthy life as measured by life expectancy), education (measured by adult literacy and enrolment at primary, secondary and tertiary levels), and income (having a decent standard of living measured by purchasing power parity and income). However, the weak human development index is associated with low government spending on social services such as healthcare and education that are critical to human capital development. For instance, the average national budgetary allocation to health as percentage of total budget for the period 2018 to 2020 was 4.72%.

Amid the covid-19 pandemic, the country's allocation to health sector for the 2021 fiscal year increased by only 0.34% from 4.16% in 2020 to 4.5%. This is far less than the 15% commitment in the Abuja Declaration (Devex Partnership, 2021). Consequently, a survey conducted by Africa Health Agenda International Conference- AHAIC (2021) reveals that, Nigeria ranked 14th in poor health system out of 18 African countries, with South Africa ranking first with 63 scores. In addition, the country ranked last in maternal mortality, infant vaccination, and in neonatal mortality. The country also came 17th on births attended by skilled health staff and access to effective treatment for tuberculosis (Vanguard, 2021).

However, in the study area (Sokoto state), National Bureau of Statistic-NBS (2020) asserted that the state is the poorest state in Nigeria with poverty headcount rate of 87.73%. Hence, the foregoing indicated that the state lagged behind in terms of human capital development. This is reflected to the fact that, in making the analysis NBS takes into cognizance the condition of health and other infrastructural development, economic base, literacy level, security and governance of the state (NBS, 2020) which are inadequate in Sokoto State.

From the foregoing, it is clear that Sokoto state lagged behind in terms of human capital development and is prone to experience negative shocks in terms of access to healthcare services and quality of life due to covid-19 pandemic. However, the empirical studies related to the topic conducted in Nigeria focuses on covid-19 and education system (see Agbele & Oyelade, 2020; UKaid, 2020 & Eze, et al., 2021), covid-19 and food system (see GAIN, 2021), human capital development and economic growth (see, Akinsokeji & Akinlo, 2019) covid-19 and health sector (see, Olufemi, et al. 2020; Babatunde, Aborode & Agboola, 2020). To the best knowledge of this study, there is no empirical study conducted on the impact of covid-19 on human capital development in Sokoto State with special emphasis on health sector. Thus, it on the basis of the above, that this study fills in the research gap by conducting a descriptive assessment on the topic in Sokoto State.

To achieve the objective, this study is divided into five sections including this introduction, section two deals with theoretical frameworks and literature review, section three comprises data and methodology, section four and five contains results and discussions, and conclusion and recommendations respectively.

## **2. LITERATURE REVIEW**

Theoretically, this study is guided by the Susceptible-Infective-Susceptible (SIS) theory of Anderson and May (1992) who examined the long run impact of infectious diseases on the economy. The authors found that, infectious diseases co-move with increasing health cost of households, hinder the accumulation human capital, reduce labour time and ultimately have negative impact on the economy in the long run. Accordingly, through the mediating effect of labour supply, the impact of covid-19 pandemic will affect accumulation of health capital and efficiency of labour in health sector.

Empirically, Studies conducted reveals that COVID-19 has negative effect on the components of human capital development such as health, education and means of survival. For instance, Hogan et al., (2020) examined the Potential impact of the

COVID-19 pandemic on HIV, tuberculosis, and malaria in low-income and middle-income countries. Their results suggest that the disruptions to the services for HIV, tuberculosis, and malaria resulting from the COVID-19 pandemic and its response could lead to a substantial number of additional deaths and years of life lost, especially when considering the years of life lost after the pandemic. They further suggest that, maintaining the most critical services, specifically treatment for HIV and tuberculosis including new and current patients, and provision of both long-lasting insecticide-treated nets (LLINs) and prophylactic treatment for malaria, is a priority for reducing the overall impact of the COVID-19 pandemic.

World Health Organization-WHO (2020) asserted that the vaccination programs in about 68 economies have been interrupted due to the pandemic and almost 80 million children under the age of one year will go unvaccinated in low-and middle-income countries. World, Bank (2020) added that, children and pregnant mothers are not the only ones who will be affected from weakened service delivery capacities and curtailed access to services. Thus, most people are more reluctant to seek medical care during pandemic. Babatunde, Aborode and Agboola (2020) in their study titled “Implications of covid-19 on the healthcare infrastructural development in Nigeria” reveals that the covid-19 pandemic impulse Nigeria’s healthcare system into collapse due to inadequate infrastructures.

A study conducted by Olufemi et al., (2020) on effect of covid-19 on mental health of frontline health workers in Lagos state, Nigeria, show that at least one out of 10 frontline Healthcare Workers (HCWs) self-reported at least mild anxiety and depressive symptoms during the covid-19 pandemic. This is higher than self-reported rates of 3.5% anxiety and 5.5% depressive symptoms reported in the local general population before the pandemic. This finding further indicated that, the rate of mental ill-health among HCWs more likely increased during the covid-19 pandemic. Their result finally, reported that frontline HCWs’ anxiety and depression negatively correlate with self-efficacy and resilience and can impair disaster preparedness.

Xiao et al., (2021) analyzed the impact of the covid-19 pandemic on health services utilization in China. Their study shows that outpatient and inpatient volume in healthcare facilities at all levels significantly reduced due to SARS-COV-2 outbreak, and most utilization measures have not returned to their pre-outbreak levels, despite the effective measures put in place in China to rapidly and effectively control the pandemic. Razu et al., (2021) in their study on the challenges faced by healthcare professionals in the period of covid-19 pandemic in Bangladesh. They revealed that

the health workers recorded higher workload, psychological distress, shortage of quality personal protective equipment (PPE) and social exclusion/stigmatization. Other challenges experienced by the workers are lack of incentives, absence of coordination, and proper management during their service.

### **3. METHODOLOGY**

This study adopted descriptive survey research design and used primary data in the analysis. The data was sourced directly from the field of study using structured questionnaire. This is due to the fact that research in examining the effect of covid-19 on human capital development is best being conducted using survey questionnaire. This is in accordance with the study of Eze et al., (2020), GAIN (2021), UNDP (2020) among others.

The population of this study is the entire people in Sokoto State. According to National Population Commission-NPC (2016) the estimated population of Sokoto State is 4,998,090. Based on the population of this study, the sample size of this study is 427. Furthermore, the sample was computed with margin error of 5% and confidence level of 95% using sample size calculator published by Review Applications in 2018. Moreover, simple random sampling technique was used to identify the respondents.

Furthermore, this study collected data from three senatorial zones of the state. In Sokoto Central, a total number of one hundred and forty-three (143) questionnaire were administered due to the nature of the population in the zone. While in Sokoto East and Sokoto West senatorial zones, a total number one hundred and forty-two (142) survey instrument were administered each. In the process of data collection, survey instrument was developed and employed to collect data for the study. The instrument is titled “COVID-19 Impact on Human Capital Development Questionnaire (CIHCDQ)”. The instrument was used to obtain data directly from the sampled respondents. CIHCDQ was designed to capture information on covid-19 impact on human capital in health sector. The questionnaire measured the respondents view using Likert scales in form of strongly agree, agree, disagree and strongly disagree. Finally, the data collected for this study was analyzed using descriptive analysis in form of percentages, tables, and charts.

### **4. RESULTS AND DISCUSSIONS**

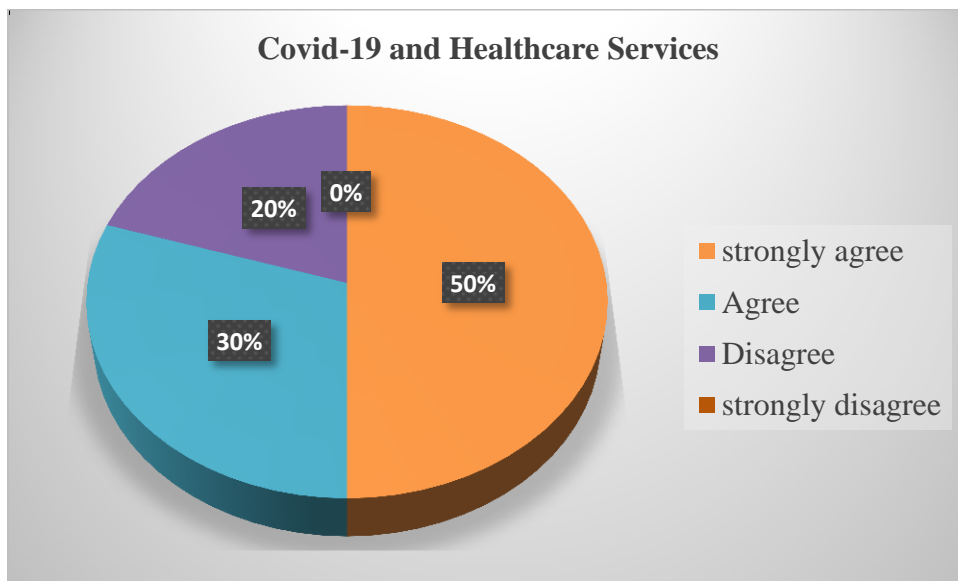
This section analyzed and interpreted the survey data collected. In the conduct of this study, a total number of four hundred and twenty-seven (427) questionnaires

were administered in the study area. However, four hundred and fourteen (414) questionnaires were retrieved from the respondents while thirteen (13) were missing. This represents 3.05% of the total questionnaires. This also implies that there was about 96.95% response rate from the respondents and is adequate for making general inferences for this study. In the quest of interpretation, this study begins with statement “covid-19 pandemic led to declined access to healthcare services”. Hence, the result is summarized and reported Tables 4.1.

**Table 1: covid-19 and access to healthcare services**

Responses	Frequency	Percentage (%)
Strongly Agree	207	50
Agree	124	30
Disagree	83	20
Strongly Disagree	0	0.
Total	414	100.0

*Source: Field Survey, 2022.*



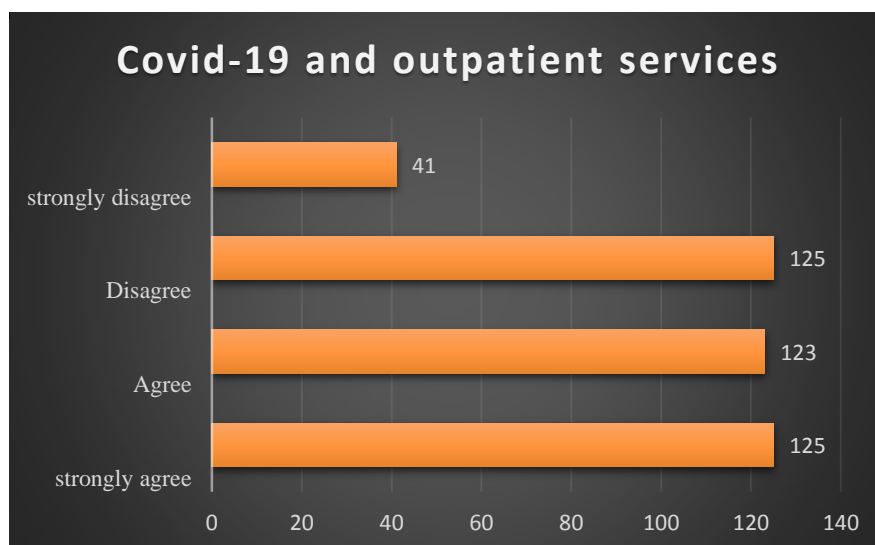
**Figure 1: Covid-19 and Healthcare Services.**

Table 1 and Figure 1 provide information on how the covid-19 affect healthcare services in Sokoto State. From results, it is discovered that 207 (50%) of the respondent strongly agreed that covid-19 decline access to healthcare service. 124 (30%) of the respondents agree, 83 (20%) disagree and none of the respondents strongly disagree. Going by the results, the majority of the respondents agreed that covid-19 significantly reduced access to healthcare services in Sokoto State and is in line with findings of Razu et al., (2021). Furthermore, this study also sought to know how covid-19 pandemic affect outpatient mental health services in the state. Thus, the result is presented in Table 2 and Figure 2.

**Table 2: covid-19 and outpatient mental health services**

Responses	Frequency	Percentage (%)
Strongly Agree	125	30.2
Agree	123	29.2
Disagree	125	30.2
Strongly Disagree	41	9.9
Total	414	100.0

*Source: Field Survey, 2022.*



**Figure 2: covid-19 and outpatient services.**

Table 4.2 and Figure 4.2 show how the covid-19 affect outpatient mental health service across the state. Results revealed that out of the 414 (100%) sample survey, 125 (30.2%) of the respondents strongly agree that covid-19 decrease outpatient mental health services, 123 (29.7%) of them agree, 125 (30.2%) of them disagreed and 41 (9.9%) of them strongly disagree that covid-19 decrease the outpatient mental health services. Hence, majority of the respondents agreed that covid-19 disrupted the outpatient mental health services in Sokoto State and it is in accordance with results of Xiao et al., (2021) and Olufemi et al., (2020). However, this study sought the view of the respondents on whether the pandemic lead to diversion of resources from other illness such as HIV, malaria, tuberculosis among others to covid-19 treatment. Thus, the result is summarized and presented in Table 3 and Figure 3.

**Table 4.3: covid-19 and resources diversion**

Responses	Frequency	Percentage (%)
Strongly Agree	164	39.6
Agree	166	40.1
Disagree	42	10.1
Strongly Disagree	42	10.1
Total	414	100.0

*Source: Field Survey, 2022.*



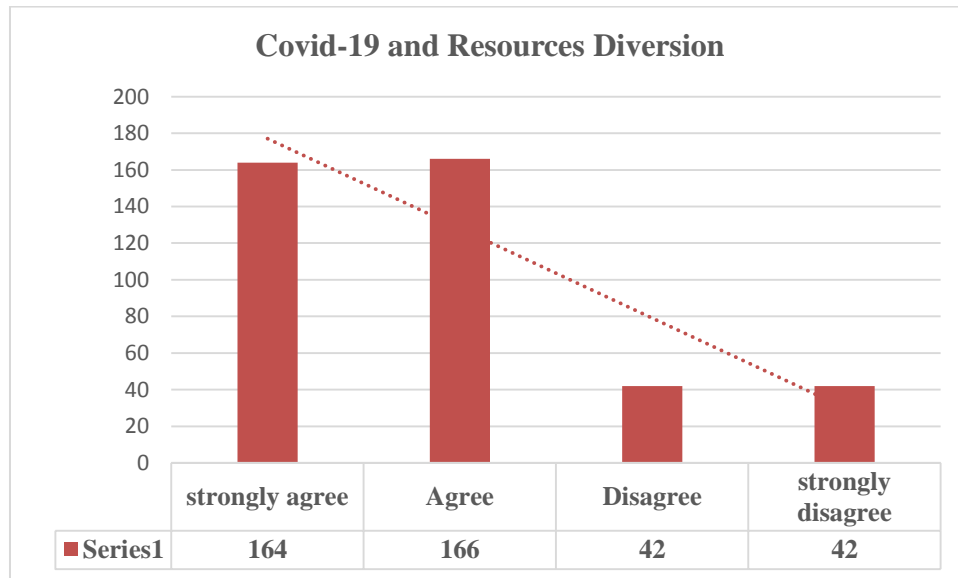


Figure 3: Covid-19 and Resources Diversion.

Table 4.3 and Figure 4.3 shows whether covid-19 lead to diversion of resources or not across the state. 164 (39.6%) of the respondents strongly agree that covid-19 lead to diversion of available public resources from treatment of common illness to covid-19 treatment, 166 (40.2%) of them agree, 42 (10.1%) of them disagree while 10.1% of them strongly disagree. Therefore, it is clearly observed that most of the respondents agreed that covid-19 lead to diversion of resources from the treatment of other illness to covid-19 treatment and is in agreement with work of Hogan et al., (2020). In addition, this study wanted to find out how covid-19 pandemic disrupted the services of illness such as HIV, tuberculosis, malaria and others. The results are presented in Table 4 and Figure 4:

Table 4: covid-19 and services of common illness

Responses	Frequency	Percentage (%)
Strongly Agree	123	29.7
Agree	207	50.0
Disagree	84	20.3
Strongly Disagree	0	0.00
Total	414	100.0

Source: Field Survey, 2022.

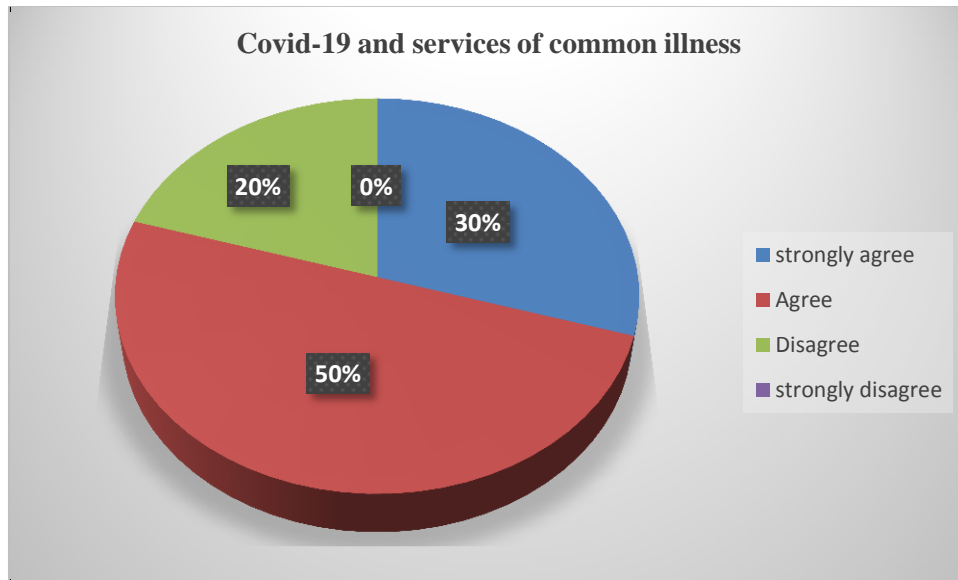


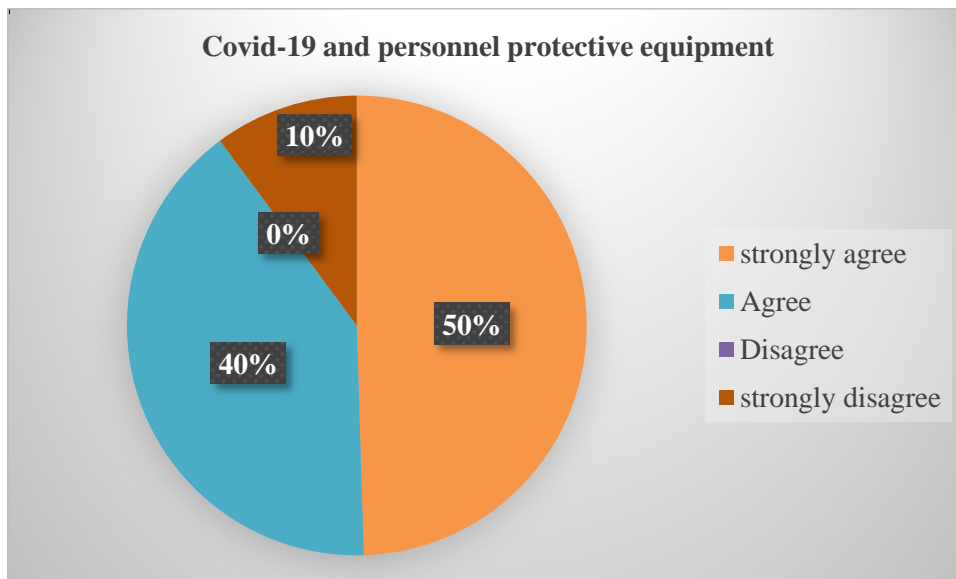
Figure 4: Covid-19 and Services of Common Illness.

Table 4 and Figure 4 shows how covid-19 pandemic affect the services such as HIV, malaria, tuberculosis and so on. Results evident that out of the 414 (100%) sample survey, 123 (30%) of the sampled respondents strongly agree that covid-19 has disrupted the services of such illness in the study area, 207 (50%) of them agree that the pandemic disrupted the services of the common illness, 84 (20%) of them disagree that covid-19 disrupted the services of such illness. Thus, majority of the respondents agreed that the pandemic adversely affected the services of these illness in study area. The findings confirm the works of WHO (2020) and Hogan et al., (2020). Moreover, this study examined how pandemic creates shortages of personnel protective equipment. Hence, the results of the forgoing are presented in Table 5 and Figure 5.

**Table 5: csovid-19 and personnel protective equipment**

Responses	Frequency	Percentage (%)
Strongly Agree	205	50.0
Agree	167	40.0
Disagree	0	0.00
Strongly Disagree	42	10.0
Total	414	100.0

*Source: Field Survey, 2022.*



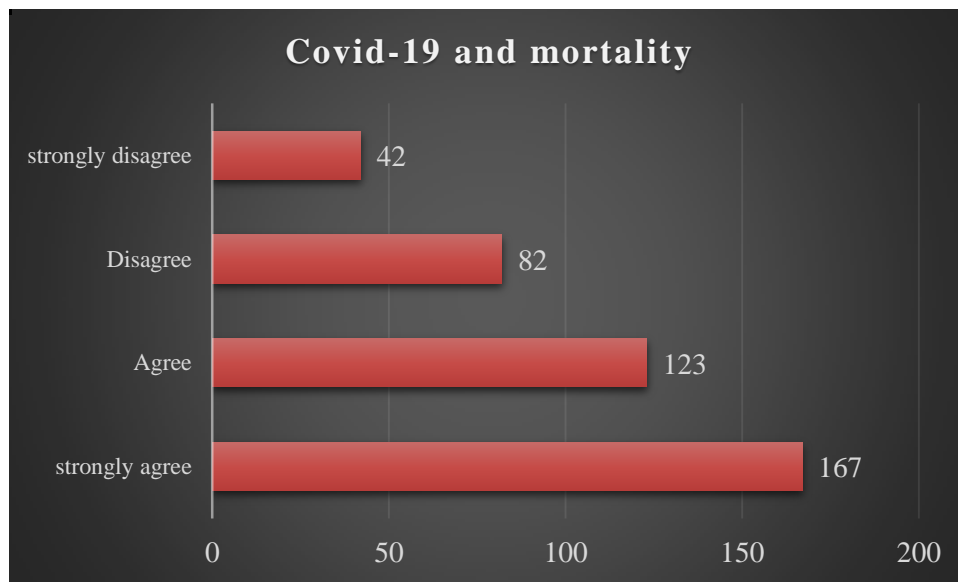
**Figure 5: Covid-19 and Personnel Protective Equipment.**

From the results presented in Table 5 and Figure 5, 50% of the respondents strongly accepted that covid-19 lead to shortages of personnel protective equipment, 40% agree with question and 10% strongly disagree that covid-19 lead to shortages of protective equipment such as facemasks and others. Based on the forgoing, majority of the respondents accepted that the pandemic lead to shortages of protective equipment in the sampled area and is in accordance with findings of Razu et al., (2020). Additionally, this study questioned the respondents on whether covid-19 create the incidence of mortality and morbidity in the study area. Consequently, the responses to the foregoing are reported in Table 6 and Figure 6.

**Table 6: covid-19 and mortality and morbidity**

Responses	Frequency	Percentage (%)
Strongly Agree	167	40.0
Agree	123	30.0
Disagree	82	20.0
Strongly Disagree	42	10.0
Total	414	100.0

*Source: Field Survey, 2022.*



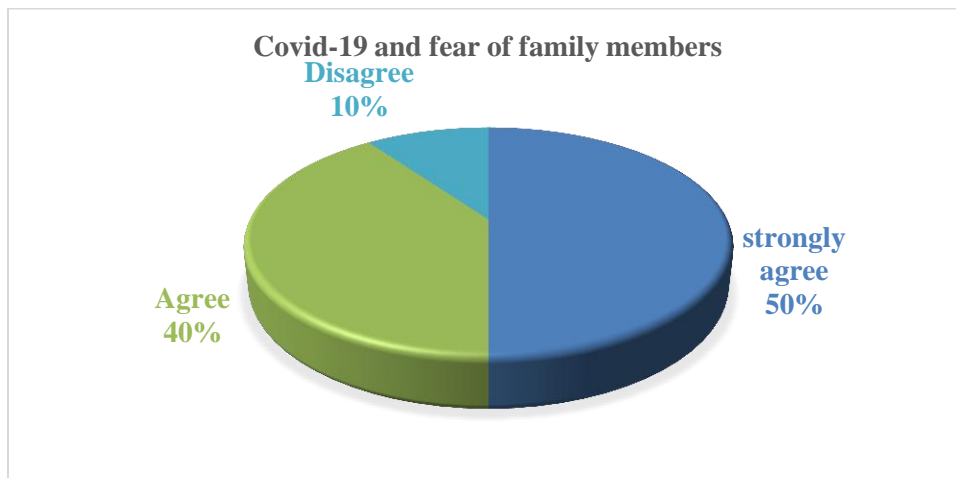
**Figure 6: Covid-19 and Mortality and Morbidity.**

Table 6 and Figure 6 reported that 40% of the respondents strongly agree that covid-19 causes mortality and morbidity in the sampled area, 30% of the agree on the question, 20% disagree while 10% of them strongly disagree. This implies that majority of the respondents accepted that covid-19 pandemic led to mortality and morbidity. The study also asked whether pandemic creates fear among the health workers to bring the virus into their family members. The results of the question are presented in Table 7 and Figure 7.

**Table 7: covid-19 and fear of family members**

Responses	Frequency	Percentage (%)
Strongly Agree	207	50.0
Agree	166	40.0
Disagree	41	10.0
Strongly Disagree	0	00.0
Total	414	100.0

*Source: Field Survey, 2022.*



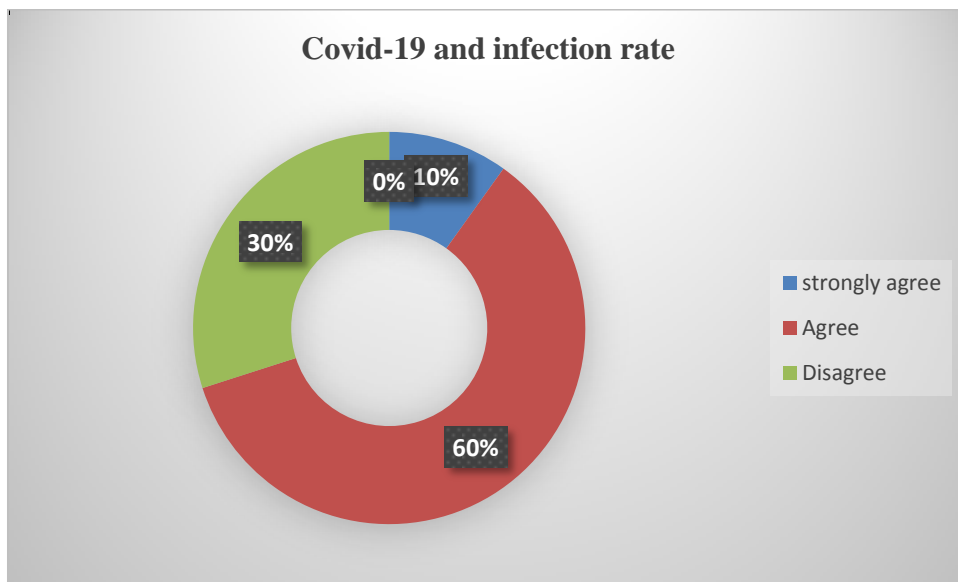
**Figure 7: Covid-19 and Fear of Family Members.**

From the results presented in Table 7 and Figure 7, 50% of the respondents strongly believed that covid-19 lead to fear of bringing the virus to family members, 40% of them agree, while 10% of the respondents disagree that covid-19 lead to fear of bringing the virus to the family members. Based on the results, it is inferring that, majority of the respondents agreed that the pandemic creates fear of bringing the virus to the family members. This corroborates the work of Olufemi et al., (2020). Furthermore, this study asked the question whether the pandemic create high rate of infection and uncertainty in the study area. Hence, the results are presented in Table 8 and Figure 8.

**Table 8: covid-19 and infection rate**

Responses	Frequency	Percentage (%)
Strongly Agree	41	10.0
Agree	249	50.0
Disagree	124	40.0
Strongly Disagree	0	00.0
Total	414	100.0

*Source: Field Survey, 2022.*



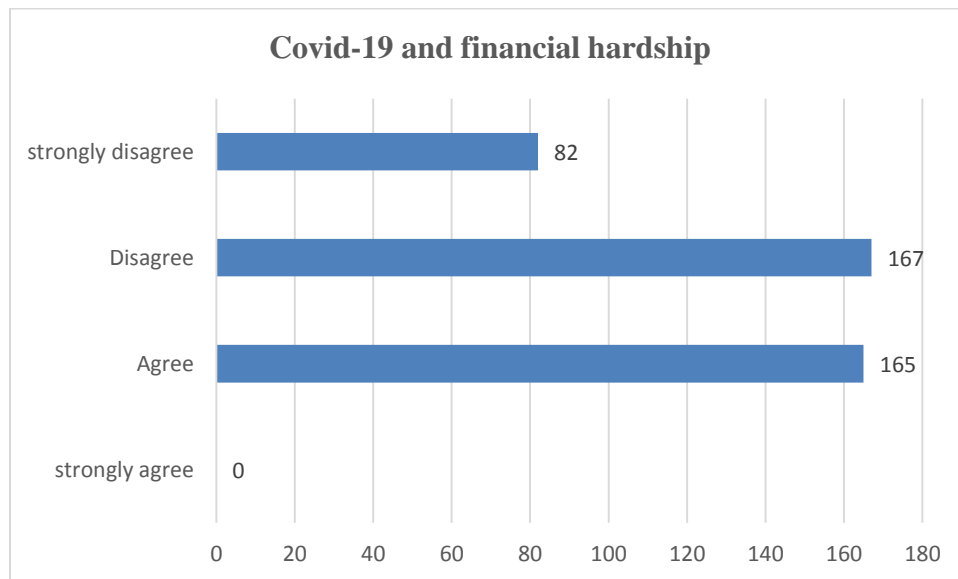
**Figure 8: Covid-19 and Infection Rate.**

From Table 8 and Figure 8, the results attest that covid-19 pandemic causes high rate of infection and uncertainty in the study area. This is reflected to the fact that about 70% of the respondents agreed that the pandemic causes high rate of infection and uncertainty among people in Sokoto State. This confirms the work of Olufemi et al., (2020). Finally, the study collected the respondents’ opinions on whether covid-19 created excessive financial hardship to healthworkers. The results are presented in Table 9 and Figure 9.

**Table 9: covid-19 and financial hardship**

Responses	Frequency	Percentage (%)
Strongly Agree	0	00.0
Agree	165	39.9
Disagree	167	40.3
Strongly Disagree	82	19.8
Total	414	100.0

*Source: Field Survey, 2022.*



**Figure 9: Covid-19 and Financial Hardship**

From Table 9 and Figure 9 show that covid-19 did not cause financial hardship to the health workers in the study area. This is due to the fact that about 60% of the respondents disagreed that covid-19 has led to excessive financial hardship to the health workers.

## 5. CONCLUSION AND RECOMMENDATIONS

From the results, this study concludes that covid-19 has led to: decline access to healthcare services; decreases outpatient mental health services; diversion of resources from the treatment of illness such as malaria, HIV, tuberculosis among others to covid-19 treatment and disruption in the services of common diseases such as HIV, malaria, tuberculosis etcetera. In addition, the study concludes that the pandemic lead to shortages of personnel protective equipment; create mortality and morbidity; impulse fear of bringing the virus to family members and high rate of infection and uncertainty. Finally, the study conclude that covid-19 has not led to excessive financial hardship to the health workers in Sokoto State. Based on the results, this study recommends the followings: first, there is needs for the government to create emergency fund in every annual budget with view to handle any future occurrence of the unexpected pandemic. Second, government is requiring to strengthens their effort beyond national boundaries by increasing the capabilities and capacities of public health systems to detect and quickly responds to all disease outbreaks in the future so as to avoid the disruption of services of common illness. Finally, the use of technology and digital solutions in the enlightenment of causes, symptoms and preventions of future pandemic should be encouraged in the response to anyepidemic. This will reduce rate of infections, mortality, morbidity, uncertainty and fear of transmitting the virus to family members.

## REFERENCES

- Agbele, A.T. & Oyelade, E.A. (2020). Impact of COVID-19 on the Nigerian educational system: strengths and challenges of online/virtual education. *Asian Journal of Education and Social Studies*, 13(1), 26-35.
- Akinsokeji, R.A. & Akinlo, T. (2019). (2019). Human capital and economic growth in Nigeria. *Nigerian Studies in Economics and Management Sciences*, 2(1), 01-08.
- Anderson, R. M. & May, R. M. (1991). *Infectious Diseases of Humans*. Oxford University Press, Oxford, UK.
- Babatunde, O.A., Aborode, A.T., &Agboola, p. (2020). Implications of COVID-19 on the healthcare infrastructural development in Nigeria. *Jundishapur J Health Sci.*, 12(4), e112934.



- Devex partnerships. (2021). *2 decades on Nigerian falls short of landmark health pledge*. Retrieved from <http://pages.devex.com>.
- Eze, U.N., Sefotho, M.M., Onyishi, C.N., & Eseadi, C. (2021). Impact of COVID-19 pandemic on education in Nigeria: implications for policy and practice of elearning . *Library Philosophy and Practice (e-Journal)*, Paper No. 5651.
- GAIN, (2021). Impact of COVID-19 on Nigeria's Food System: A Situation Report-Edition 3, June 2021.
- Hogan, et al. (2020). Potential impact of COVID-19 on HIV, tuberculosis and malaria in low-income and middle-income countries: a modelling studies. *Elsvier*, 8, e1132-e1141.
- National Bureau of Statistic. (2020). 2019 Poverty and inequality in Nigeria: Executive Summary, May 2020.
- Olufemi E., Olusola A., Azeez F & Bolanle, O. (2020). Effect of COVID-19 on mental health of frontline health workers in Nigeria: A preliminary cross-sectional study. *Journal of Psychosomatic Research* 139 (2020) 110288.
- Razu S.R., Yasmin T., Arif, T.B., Islam, M.S., Islam, S.M.S., Gesesew, H.A. & Ward, P. (2021). Challenges faced by healthcare professionals during the COVID-19 pandemic:a qualitative inquiry from Bangladesh. *Frontier in Public Health*, 9 (647315), 1-8.
- Relief Application. (2018). Retrieved from <http://www.nss.gov.av/nss/home.NSF/pages>
- UKaid. (2020). The effect of COVID-19 on education in Africa and its implications for the use of technology. doi:10.5281/zenodo.4018774
- UNDP. (2020). *COVID-19 and human development: assessing the crisis, envisioning the recovery*. Retrieved from <http://hdr.undp.org>.
- Vanguard. (2021, March 9). *Nigeria ranks 14th of 18 countries with poor health system; trails Rwanda and South Africa tops*. Retrieved from <http://www.vanguardngr.com>.
- WHO. (2020). *WHO and UNICEF warns of a decline in vaccinations during COVID-19. A news release on 15 July, 2020* .

World Bank. (2020). *The human capital index 2020 update: human capital in the time of COVID-19*. Retrieved from [www.worldbank.org](http://www.worldbank.org).

Xiao, H., Dai, X., Wagenaar, B.H., Fang L., Orvalho, A., Yan, G. & Joseph, M.U. (2021). The impact of the COVID-19 pandemic on health services utilization in China: Time-series analyses for 2016–2020. *The Lancet Regional Health - Western Pacific*, 9, 1-10.

## Appendix

### PART A: BIODATA

1. Age of the respondent
  - a. 25-34
  - b. 35-44
  - c. 45-54
  - d. 55 and above
2. Gender
  - a. Male
  - b. Female
3. Level of Education
  - a. SSCE
  - b. ND/NCE
  - c. B.Sc./HND
  - d. M.Sc./ PhD
4. occupation
  - a. Civil Servant
  - b. Business
  - c. Farming

### PART B: Covid-19 and Human Capital Development

**Instructions:** For each of the following statements, circle the option of the 4-point scale (SD = Strongly Disagree, D = Disagree, A= Agree and SA = Strongly Agree).

S/N	Statements	SD	D	A	SA
<b>COVID-19 AND HEALTH: covid-19 has led to:</b>					
1.	Decline access to healthcare services				
2.	Decrease outpatient mental health services				
3.	Diversion of resources from the treatment of illness such as malaria, HIV, tuberculosis among others				

4.	Disruption in the services of HIV, tuberculosis, malaria, polio etc.				
5.	Shortages of personnel protective equipment				
6.	Mortality and morbidity				
7.	Fear of bringing the virus to family members				
8.	High rate of infection and uncertainty				
9.	Excessive financial hardship to health workers				