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The implications of Covid-19 vaccine rejection on public health and socio-economic activities in Benue State

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Abstract

This study examines the potential implication of vaccine refusal on public health and socio-economic activities in Benue state. The objective of the study was to establish the extent to whichCOVID-19vaccine refusal and hesitancy would affect public health, economic recovery, businesses, jobs and education in Benue State. The study employed a qualitative research method to gather andanalyze the data collected through primary and secondary sources. Primary data for the study was collected from each of the three senatorial districts of Benue State through oral interview. The study found that COVID-19vaccine rejection is a reality amongst the majority of the populace in Benue State and this development is linked to a number of factors ranging from misinformation, cultural practices and belief systems as well as government's inability to fully engage the people by a way of orientation and education about the realities of COVID-19 disease and its vaccines. This has led to higher levels of vaccine rejection and hesitancy amongst the people of the State. The study showed that vaccine rejection could impact negatively on public health systems defeating containment efforts and increasing the cost of managing the virus. Vaccine rejection could also affect socio-economic activities and life of Benue people as it delays economic recovery processes. It has also being established that if 'herd immunity' cannot be achieved, there is potential risk not only for continued infections, but also for development of new strains of the virus that would evade vaccines and precipitate further health and economic crises in the state. The study thus recommended that, were if 'herd immunity' must be achieved to allow a free economy and a functional social system, the Benue state government in partnership with the Federal government and key stakeholders must urgently employ house to house campaign approach to educate the people especially in the hinterland communities on the dangers of COVID- 19 and the benefits of taking vaccines or the cost of ignoring them in times of health emergencies like the corona virus.

Keywords: COVID-19, vaccine rejection, implication, economy

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Introduction

The outbreak of COVID-19 affected health care, economy, education, social gathering and other fields in different industries across the World, negatively impacting not only economic activity but virtually every life's endeavor requiring human interaction. In this sense, vaccination in the words of Greenwood[1] has been considered as the most effective human intervention in the control of infectious diseases such as COVID-19.This is because the prevention protocols such as physical distancing and other hygienic practices against infectious diseases are not practicable under some conditions and are rarely observed by humans. Greenwood observed that the development of vaccines against infectious diseases has made the greatest contribution to global health than any other human intervention. Vaccination as Rodrigues & Plotkin noted has proven to be successful in curtailing the mortality rates of deaths from smallpox, measles, and other infectious diseases in the past.[2]

The introduction of safe and effective vaccines that protect against the COVID-19 virus was said to have the potential to bring the pandemic under control and build herd immunity amongst the populace and allow for gradual recovery of the economy and other activities. Unfortunately, a substantial majority of people in Sub-Saharan Africa have refused or shown hesitancy to be vaccinated under any circumstances[3].According to the World Health Organization, vaccine hesitancy is the delay in acceptance, reluctance, or refusal of vaccination despite the availability of the vaccination services. Vaccine hesitancy is complex and context-specific, varying across time, place, and vaccines. The issue of vaccine hesitancy and refusal is so important that the Organization for Economic Co-operation and Development (OECD) issued the following warning in February 2022:

> Many countries are observing increasing levels of distrust in government capacity to handle the crisis and implement coherent policies. This has resulted in declining compliance with public health-related rules, and increasing skepticism about long-term economic recovery. More broadly, the pandemic has triggered widespread disinformation that has undermined both understanding and acceptance of science and public policy, and this extends to the issue of vaccine

[1]Greenwood, B. "The contribution of vaccination to global health: past, present and future"Royal Society Publishing, doi:10.1098/rstb.2013.0433,(2014), Philos Trans R Soc Lond B Biol Sci. 2014 Jun 19; 369(1645), Pdf.
[2]C.m Rodrigues and S.A Plotkin, Impact of Vaccines: Health, economic and Social perspectives, Journal of Infectious Agents and Diseases,vol,11,Pubmed Central,July,2020,p11.
[3]Sydney M., "COVID-19 Vaccine Hesitancy and Implications for Economic Recovery: Evidence from Nelson Mandela Bay Municipality in South Africa" PMC PubMed Central, doi: 10.3390/vaccines11081339, 2023 Aug; 11(8): 1339. Published online 2023 Aug 7, Web.

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> acceptance. Despite widespread recognition that COVID-19 is a critical issue to people all around the globe, many remain unwilling to be vaccinated. (OECD, 20)[4].

In Nigeria, vaccine rejection was linked to a number of factors: economic, cultural, misinformation, political and religious etc. This Vaccine hesitancy and refusal threatens the ability to establish community (also called "herd") immunity and therefore poses a significant risk on public health and economic recovery process of the country.

In Benue State, the Action Committee on COVID-19 reported that only 4800 persons had received the first dosage of vaccine against COVID-19 out of the 73000 doses allocated to the state as of July 2022[5].Subsequent dosages sent to the state were also rejected as only an insignificant number has received the vaccine as of July 2023 according tothe Benue State Primary Health Care Board (BPHCB) update. This figure represents only 15% out of the World Health Organization (WHO) 60 percent projection per state. This is a clear indication of vaccine hesitancy or rejection among the population in Benue State[6].

This study is therefore conducted to unearth the implications of COVID-19 vaccine rejection or hesitancy on public health and socio-economic activities in Benue State. The discussion in the study is focused on analyzing the potential implication of COVID-19 vaccine hesitancy on the health sector, banking and finance, educational development, reopening and performance of markets and businesses in the state.

Implications of COVID-19 vaccine rejection on Public Health in Benue state

Vaccines are among the most cost-effective health technologies of all time in human health history. Immunization of a proportion of a population above a critical threshold level protects individuals and a community by preventing disease outbreaks and public spread[7]. Similarly, Scobie and Johnson[8] argued

[4]The Organization for Economic Co-operation and Development (OECD)"The impact of the COVID-19 crisis across different socio-economic groups and the role of job retention schemes - The case of Switzerland" https://www.oecd-ilibrary.org/social-issues-migration-health/the-impact-of-the-covid-19-crisis-across-different-socio-economic-groups-and-the-role-of-job-retention-schemes-the-case-of-switzerland_38fc6bad-en Accessed online October 2023, Web.

[5]Oryina, J.A, "The Impact of COVID-19 Pandemic on Businesses in Gboko Town, Benue State, Nigeria", International Journal of Academic Management Science Research (IJAMSR) ISSN: 2643-900X Vol. 6 issue (4) - 2022, Department of Public Administration, Akawe Torkula Polytechnic, Makurdi, Benue State, Nigeria Print

[6] Benue State Primary Health Care Board; Update on COVID19 VACCINE UPTAKE,October,2021

[7] A Wagner etal, Vaccine Hesitancy and Concerns about vaccine Safety and Effectiveness in Shanghai, China, PUBMED Central; National Library of Medicine,2023,p1.

[8]Scobie HM and Johnson AG,"Parental perspectives on immunizations: Impact of the COVID-19 pandemic on childhood vaccine hesitancy". Journal of Community Health. 2022;47(1):39-52. DOI: 10.1007/s10900-021-01017-9, Pdf.

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that the target that population-level health effects of COVID-19 infection can be controlled is dependent on a number of underlying assumptions: that such vaccines are effective and that members of the community abide by public health measures such that a sufficient proportion of the population are vaccinated to allow development of herd immunity that will lead to suppression of new variants that could evade vaccine control. Modeling of different public health measures suggests that, of all approaches, high vaccination levels are crucial to ending the COVID-19 pandemic.

However, as late as July 2021, the WHO expressed concerns that "vaccine rejection was on the rise especially in sub-Saharan Africa. This development is said to have a negative implication on public health and a profound negative impact on socio-economic recovery. The Organization for Economic Co-operation and Development(OECD) has cautioned in August 2021 thatVaccine hesitancy and refusal may undermine all other efforts to control the pandemic and, for this reason, could have major effects both on the economy and public health.

Increasing vaccine uptake was thus considered an important pathway for achieving herd immunity for public safety. According to Chevalier et. al[9] the proportion of the population that needs to take vaccines in order to reach herd immunity ranges from 75 to 90% depending on factors such as the basic reproduction number, vaccine-induced immunity duration, and whether the vaccines prevent community transmission. Sydney[10] argued however that COVID-19 vaccine hesitancy and refusal on the other hand threatens the ability to establish community immunity and pose a significant risk to the public health care system. Although vaccine hesitancy has existed for centuries, its negative effects on public health have become more pronounced during the COVID-19 pandemic, and it is regarded as one of the most serious threats to global health and the economy in recent times.

Similarly, in Benue State, respondents have argued that vaccine hesitancy has prevented full immunization against corona virus infectious disease which has also affectedthe recovery process[11].This argument is based on the Benue State Primary Health Care Board's data regarding the level of acceptability of the COVID19 Vaccines released in the first quarter of 2022.The State health agency in its quarterly report released a disheartening data in respect to the COVID-19 vaccination programme of the state indicating that less than 25 percent of the state population has completed full dosage of vaccination. Although participants

[9]Chevalier et al, "SARS-CoV-2 Infections and Hospitalizations Among Persons Aged ≥16 Years, by Vaccination Status - Los Angeles County, California, May 1-July 25, 2021" [Internet]. MMWR Morb Mortal Wkly Rep. 2021. Aug;70(34):1170–6. 10.15585/mmwr.mm7034e5 [PMC free article] [PubMed] [CrossRef] [Google Scholar] retrieved Octboer,2023

[10]Sydney M.,Ankkpo P.O, "COVID-19 Vaccine Hesitancy and Implications for Economic Recovery: Evidence from Nelson Mandela Bay Municipality in South Africa" PMC PubMed Central, doi: 10.3390/vaccines11081339, 2023 Aug; 11(8): 1339. Published online 2023 Aug 7, Web

[11]Onah Solomon, Oral interview, Myom Hospital, Gboko, health practioner,2023

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in this study have cited socio-cultural, economic, religiousand other reasons for their decisions to reject the COVID-19 vaccines, such decisions have become a threat to the government's effort to control the impact of the virus on public health. Recent literature by WHO has also reported that COVID-19 vaccine hesitancy in Sub-Saharan Africa was a significant public health challenge stalling the concerted efforts made to curb the virus[12]. The phenomenon of vaccine hesitancy is thus a growing threat to public health system with far-reaching implications affecting all nations of the World. Sydney Meshic and Anakpo[13] in a study stated that the widening gap between the vaccinated and the proportion of people needed for herd immunity raises two critical questions that are of interest to health practitioners, researchers, and policymakers: What determines one's decision to be vaccinated on the one hand and the implication of COVID-19 vaccine hesitancy on public health in Nigeria on the other hand. They argued that vaccine rejection has the capacity to increase cost of managing the outbreak as daily reported cases of new infections and hospitalization increases government expenditure on public health. This is true considering public funds expenditure in the management and containment of the virus in the heir days of the pandemic. It has been well-established that those unvaccinated against COVID-19 are significantly more likely to risk hospitalization and death compared to those who are vaccinated, with research estimating that unvaccinated individuals are between 10-15 times more likely to be hospitalized compared to those who are vaccinate.

Similarly, WHO reported in an update in July 2023 in respect toCOVID-19vaccine rejection that, globally, nearly 1.5 million new COVID-19 cases and over 2500 deaths were reported in the United States of America as of the time vaccine was already in circulation. This development was due to increasing hesitancy levels and refusal attitude of the targeted population for the state vaccination drive. The health agency also reported that between July 10 to 6 August 2023, an increase of 80% new infections and a decrease of 57% death were recorded in the European Union territories and US Arespectively. This was especially during the heydays that massive vaccine dosages of different brands were approved and distributed worldwide for vaccination. While five WHO regions have reported decreases in the number of both cases and deaths, the Western Pacific Region has reported an increase in cases and a decrease in deaths. As of 6 August 2023, over 769 million confirmed cases and over 6.9 million deaths have been reported globally. The WHO reported again that as of 2023, daily reported cases do not accurately represent infection rates due to the reduction in daily testing and reporting globally[14].

[12]WHO update on COVID19 Vaccination in Africa
[13]Sydney M., Ankkpo P.O, "COVID-19 Vaccine Hesitancy and Implications for Economic Recovery: Evidence from Nelson Mandela Bay Municipality in South Africa" PMC PubMed Central, doi: 10.3390/vaccines11081339, 2023 Aug; 11(8): 1339. Published online 2023 Aug 7, Web.

[14] WHO update on the rise of Cases and Level of COVID19 Vaccine Acceptability, 2022.

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In Nigeria, data from the Nigeria Centre for Disease Control (NCDC)[15] has shown for instance that to date, 266,675 cases have been confirmed, 259,953 cases have been discharged and 3,155 deaths have been recorded in 36 states including Benue state and the Federal Capital Territory. Research published by the Kaiser Family Foundation found that between June and November 2021, there were 692,000 preventable COVID-19 hospitalizations among unvaccinated adults. These hospitalizations all required the expenditure of medical resources and healthcare personnel, taxing a healthcare system that was already over-burdened and impacting resource access[16].This shows that the cost of ignoring vaccines is graver on public health expenditure than the cost of eradicating the virus through vaccine administration. The burden of the unvaccinated is placed on the economy as a whole, including taxpayers, rather than the individuals incurring those costs as government is compelled to bankroll the cost of isolation and treatment, argued (MishiAyev[17].

In the first comprehensive report estimating the financial burden of the unvaccinated, the Kaiser Family Foundation published that preventable hospitalizations among the unvaccinated had cost the USA government over $13.8 billion between June and November 2021(KFF, 2).Frank argued in corroboration that scarce healthcare resources would be utilized by a population that made the conscious decision to refuse the COVID-19 vaccine, yet seeks treatment when they fall victim to this same disease. Despite the morbid irony however, the issue does not lie in the fact that the unvaccinated were only provided treatment; it lies in the fact that their treatment was often at the expense of government and those around them as noted by Frank Kave[18].The COVID-19 pandemic caused an unprecedented strain on nations' healthcare systems, with the soaring number of COVID-19 hospitalizations affecting supply and demand issues in the medical sector.

In the US for instance countless stories have emerged on how providing treatment to the unvaccinated was often to the detriment of other patients. Scobie H.M and Johnson A. G stated in a study conducted in Arizona, USA that hospitals were being overburdened to the point where patients arriving for non-COVID-19 related issues had to be transferred to hospitals in other states. The authors maintained further that:

> Patients in need of immediate operations have had to wait days to be seen by a doctor. Hospitals have had to turn away cancer patients because there were no more hospital beds available in the facilities. One hospital was forced to dismiss a brain cancer patient because the hospital had reached

[15] Nigerian centre for Disease Control; Level of Corona Virus Infection and Hospital Discharges on Daily basis
[16]MacDonald N.E., Eskola J., Liang X., Chaudhuri M., Dube E., Gellin B., Goldstein S., Larson H., Manzo M.L., Reingold A., et al. "Vaccine hesitancy: Definition, scope and determinants". *Vaccine.* 2015; 33:4161–4164.
doi: 10.1016/j.vaccine.2015.04.036. [PubMed] [CrossRef] [Google Scholar
[17]MishiAyev, Oral interview, Lab Scientist, NKST Health Clinic Ikpa,,45 years,7/9/2023.
[18] Frank Kaave,oral interview,Medical practitioner,Zaki-Biam,30 years,12/9/2023

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> maximum capacity, with 90% of beds having been taken by unvaccinated patients sick with COVID-19. Another hospital had to turn down a man experiencing a cardiac emergency, with doctors contacting 43 hospitals across three states in search of a facility that had the ability to take an extra patient. Not one of those hospitals had the capacity to treat him. The man died waiting for care (Scobie H.M and Johnson A.G[19].

This is a touching reality that reflects the attitude of vaccine rejection and the cost on human life.COVID-19's infectious nature is exacerbated by the unvaccinated whose higher levels of disease transmissibility cannot be compared to vaccinated populations.

COVID-19 transmissibility in Benue State is especially problematic given that the State is robust in Nigeria's trade and tourism ecosystem. This is premised on the fact that Benue state is located in the centre of the country connecting the north and southern regions. The state is also the largest producer of food in Nigeria making it stand tall in the committee of states with high level of inter-relationship amongst ethnic nationalities in the country. In this sense, Dr Mnyam[20] noted that the state faces risks of contacting or spreading the virus more than other states and vaccine rejection would add to the level of spread and cost of managing the virus.I frequently ask, do people know the health cost of rejecting COVID-19 vaccines?; the unvaccinated individuals have caused an extensive burden on our healthcare system, cost the economy billions of naira, and pose a significant risk to public health as noted by Dr Amu Clement[21]

Implications ofCOVID-19 vaccine rejection on banking and finance in Benue State

One of the immediate effects of this health emergency on the global economy is the increased credit risk of corporate and retail clients of banking systems across the world.In the days of the COVID-19 lockdown, banks were left with a difficult choice and responsibility to sustain essential services, while also protecting the health and wellbeing of their staff and customers[22]. In order to continue financing the real economy and support its recovery, banks were called to distinguish between purely temporary phenomena destined to be re-absorbed in a short time, and longer lasting impacts which would require actions of management and reclassification. However with the introduction of vaccines, restrictive measures were gradually eased and banking services re-opened. This development was centred on the belief that people would take the vaccine and develop the required 'herd immunity' to crucially curtail the spread

[19]Scobie HM and Johnson AG,"Parental perspectives on immunizations: Impact of the COVID-19 pandemic on childhood vaccine hesitancy". Journal of Community Health. 2022;47(1):39-52. DOI: 10.1007/s10900-021-01017-9, Pdf
[20]Dr Mnyam Linus,oral interview, Medical practitioner, Gboko,49 years, 12/9/2023
[21]Dr Amu Clement, oral interview, Medical practitioner,Tyoado,43 years, 15/10/2023
[22]Aondoakura, Ioramo,Oral interview, Marketer with Unity Bank, Makurdi,33, 18/10/2023

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and health impact of COVID-19.This assumption did not come to fruition as many people rejected the vaccine in the state.

Available data from the Benue State Primary Health Care Board has shown that there is high level of COVID-19vaccine rejection in the State. This is linked to a number of factors such as widespread misinformation, cultural and religious practices, economic and political factors[23]. The implication of this rejection poses a tendency of COVID-19 cases rising again and preventive measures being reintroduced to curtail the spread of the virus. Already there has been rising cases of COVID-19 in other parts of the world such as China, Sweden and other states in the USAas a result of vaccine hesitancy. In Spain and Sweden for instance, authorities have reported in the second quarter of 2023 that the omicron variant was making a shocking wave and death tolls and cases were rising on daily basis with government considering another phase of lockdown. Banking and education sectors were adjusting their mode of operations as reported by Al-Jazeera online version in October 2023[24]
In Nigeria and Benue State in particular Zaamo[25](oral interview) argued that vaccine rejection can affect banks in different ways. The spread of the virus would for instance force the government to initiate same preventive measures, such as social distancing, lockdowns, and business shutdowns. These activities can in turn lead to adverse economic impacts on firms and households. As a result, firms will have to experience significant declines in revenue and increased cost, and households would also experience job losses and income declines (2). In this sense, Kahinde of United Bank for Africa (UBA) Makurdi maintained that firms and households who constitute a network of bank customers may not be able to service their bank debts, increasing the probability of default and fall of banks' revenue[26].These development may also results in lost revenue and a surge in non-performing loans, negatively affecting banks' profits, capital base, and solvency. Furthermore, lower demand for bank services may also result in lower non-interest income, lowering bank profitability and performance as noted by RaphaelIornyagh during oral interview at Sterling bank Makurdi[27].Additionally, Acharya and Steffen (5)revealed that the increased pace of reducing credit growth particularly by riskier companies due to lockdown could damage bank balance sheets and lessen their capital adequacy ratios. Ioramo of Unity Bank Makurdi emphasized that this possesses the capacity to threaten the stability of banks and create obstacles to upcoming intermediation by possible spillovers to the economy[28].

Implications of vaccine rejection on educational development in Benue State

The Corona virus pandemic had a great impact on all levels of the educational system in Nigeria as Nicolas noted. Educational institutions throughout the

[23] Benue State Primary health care Board quarterly update on COVI19 Vaccination in Benue State,2021.
[24]Al-jazeera online version; https://www.aljazeera.com accessed: October, 2023.

[25]Zaamo Nancy, oral interview, LGA Civil Servant, Vandeikya LGA,47years, 19/10/2023
[26] Kehinde Lawal,Oral Interview,UBA,Makurdi,52, 19/10/2023
[27] Raphael Iornyagh, oral interview, Sterling Bank,Makurdi,36 years, 19/10/2023
[28]Aondoakura,Ioramo,Oral interview, Marketer with Unity Bank, Makurdi,33, 18/10/2023

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country were either briefly shutdown or implemented localized closures impacting millions of students negatively. Many primary and secondary schools in Nigeria either postponed or canceled all school activities to minimize gatherings and as well decrease the transmission of the virus. Consequently, these measures led to higher economic, medical and social implications on students[29].

As earlier noted in this study, the Benue State Primary Health Care Board has reported high level of unwillingness of people in the State to receive the COVID-19 vaccines and about 85 percent of participants in this study have also expressed disbelief in the existence or reality of COVID-19 as well as the efficiency of the vaccines. Only an insignificant number have taken the vaccines and many are not willing to take it no matter what[30]. This by implication will affect the recovery plan and reopening of schools in the event of another phase of COVID-19 infections. As Nguuma[31] noted, in the event of another outbreak of the virus, government will be compelled to declare for lockdown measuresand the school calendar and programmes will be affected(oral interview).The emerging thought amongst the majority of vaccine hesitant and importantly those who casts doubt about the reality of COVID-19 is the fact that any measure that would warrant lockdown will be resisted by the people. Tertsea David the principal of Best Brains Academy Ikpa, maintained that:

> We certainly do not wish for another wave that would warrant lockdown and closure of schools''. People's refusal to take vaccine was caused by the same government because people were not properly informed and educated; "how can I take the vaccine when am hearing so many things about the disease and the vaccine itself. So for me I don't see the co-relation between vaccine refusal and operation of schools, and I don't think anybody in Benue State will accept any lockdown now (oral interview)[32].

The principal N.T schools Wannune, Jeremial Kwaghve[33] however expressed fear in the course of another lockdown while also narrating the ordeal of his school and others in the COVID-19 era. The COVID-19 affected schools in diverse ways as the lockdown cut shot the academic calendar which led to what may be described as ''educational deformity'' (oral interview).According Kwaghve, students missed studies for a whole term which led to a failure to acquire requisite knowledge and most importantly schools were forced to promote students to the next level of education based on their past academic performances and not necessarily on the attainment of the requirements. Even when lockdown was relaxed, some schools didn't afford the requirements for prompt resumption which forced them to prolong home stay.

[29] Nicolas quoted UNESCO update 2022.
[30] BPHCB quarterly Update, 2022.
[31] Tondo Nguuma, oral interview,Teacher,Akpagher-Mbatiav,43 years, 21/10/2023
[32]Tertsea David, oral interview, school principal, Ikpa Mbatierev,46, 21/10/23
[33] Jeremiah Kwaghve,oralinterview,School Teacher,Wannune,41, 22/10/2023

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The majority of Private schools never afforded paying their staff salaries during the period of lockdown which paralyzed the economy and brutally affected their conditions of living. The COVID-19 lockdown also affected the registration of the West Africa Examination Council (WAEC) and the National Examination Council (NECO) examinations as Chiangi Tyonenge[34] noted .In the same vein, Nyitse Saasongo[35] of GSS Ikpa-Mbateirev also believed that COVID-19 lockdown affected the calendar of schools where external examinations were not conducted in their usual time frame. Students 'performances were also affected as a result of prolonged stay at home.

Other participants for this study also expressed fear that if government should deploy another lockdown measures as result of low vaccination and resurfacing cases of the COVID-19virus, they may certainly go back to the same situation of academic doldrums described above. In this sense, Saasongo underscored the importance of vaccinating against the COVID-19 virus so as to prevent are occurrence and possible lockdown measures butemphasized the role of government in community education and orientation as the only effective panacea towards vaccine rejection in Benue state.

Corroborating the above views, Tion Tarvershima[36], a teacher with Notre Dame Secondary Mkar told the researcher that the negative impact of COVID-19 cannot be over-emphasized and what no school administrator or a lover of knowledge can wish to see again especially that during the period, academic activities were disrupted and a whole term (third term) was completely lost and schools were compelled to promote students to the next grade based their second term results. "What was supposed to be learnt was also not taught due to stay at home measures to enforce physical distancing since our school here operates only an in-person classroom system. As regards vaccine rejection, "I personally did not take it because the whole thing to me was and is still not clear and some of our parents also instructed their wards not to take any vaccine in the school''.

Terngu Awajir of GSS Ikpa(oral interview) however expressed confident that the low level of vaccination has no implication on the operation of schools as compared to the lockdown which nobody wants to see again. It was in this same mode of counting their ordeals and loses that the Head Teacher of LGA Aki asked rhetorically that,

> Is that kind of experience one would wish to go back to? Certainly no, so you people in research should help us and tell the government, 'we are not ready for any lockdown again if that is the meaning and intension of government on vaccine refusal, nobody is ready for that'' Terungwa Titus[37].

Participants in this study advised the government to rather engage in the work of educating the people to take the vaccine than contemplating lockdowns. The

[34]ChinagiTyonenge, Oral interview,farmer,35 years, Ikpa-Mbatierev, 22/10/2023
[35]SaasongoNyitse, oral interview, School Teacher, GSS Ikpa-Mbatierev, 22/10/2023
[36] Tion Tavershima, Oral Interview, School Teacher,Gboko,35, 22/10/2023
[37]TernguAwajir,oralinterview,Teaacher,GSS Ikpa-Mbatierev,34, 22/10/2023

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majority of schools visited for this study were private schools and managers and proprietors also expressed fear and worry about any possible shutdowns to the economy in the event of another wave of corona virus emergency.

Ina study conducted in Ogun State to assess the implication of COVID-19 on schools, participants expressed the belief that the COVID-19 era has gone and wish Nigeria would not undergo the pressure and stress of any health emergency of that magnitude that poses a great threat to schools, being a measure convergence of human populations[38].

The fears and worries of these school administrators and participants in this study could be genuine especially if premised on the fact that for almost three years, there has been staggering growth in educational development as other variants of the COVID-19 virus mutated coupled with the uncooperative attitude and unwillingness of most people to take a vaccine. This has increased the fear and tension for school managers in Benue State on the possibility of a second lockdown of the academic institutions (Ngbede Mike oral interview)[39]. The conditions of the first lockdown of schools that lasted for over six months has quadrupled the retrogressive situations of Nigeria's education, as the high rate of teachers' attrition and school dropout percentages have risen dramatically as some students do not fancy going to schools to avoid the unknown outcome of the virus and its mutational potency in affecting their lives.

As of today, some administrators of private schools in Benue State particularly are finding it difficult to get their teachers and students back to school to continue teaching and learning as a result of long-term school closure in 2020.These issues occurred as a result of lack of implementation of alternative means to engage students for educational activities during the lockdown period and the declining financial conditions of parents and guardians due to the ravaging effect of the COVID-19 lockdown. Moses Avalumun, the Principal of Dyegeh Memorial Afternoon School told the researcher that the school has lost about 20 percent of its student population as a result of the long period of COVID-19 lockdown. Some students got married while some relocated to the villages during the lockdown and could not return. In this sense, Cooper-ioelu, & Jacobs, (34) maintained that vaccine rejection posed the tendency of continued lockdown as result of delayed recovery process with greater consequences on education. The lockdown would again affect the economic status of parents to an extent that' school fees payment will be another post-COVID-19 pandemic for schools[40].

[38]Gondwe, G. "Assessing the impact of COVID-19 on Africa's economic development", United Nations Conference on Trade and Development. UNCTAD/ALDC/MISC/2020/3. Retrieved fromhttps://unctad.org/system/files/officialdocument/aldcmisc2020d3_en.pdf.October, 2023.

[39]Ngbede Mike, oral interview, Lecturer, FCE, Apa, Benue state,34 years, 25/10/2023

[40]Coorper S., van Rooyen H., Wiysonge C.S. "COVID-19 vaccine hesitancy in South Africa: How can we maximize uptake of COVID-19 vaccines"? *Expert Rev. Vaccines.* 2021; 20:921–

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Terhemba Abur[41] argued that education as a bed rock of any society would always be at the receiving end of peoples' attitude to reject vaccine administration due to resurgence of COVID-19 and this will have a negative impact on recovery, growth and development of education in Benue State. Abur (oral interview) expressed the belief that anything that affects education, affects development as it will affect technology. In a related view, Kanyi Joshua[42]of Messiah International College, Zaki-Biam stated that, "my school was closed down and even when it was time to reopen, parents were reluctant in sending their wards back immediately". On the part of management, the inability of the school to meet the prescribe conditions for reopening such as implementing social distancing, the use of face masks and sanitizers for washing of hands also delayed normal pick up of academic activities so my school is still struggling to come back to full life."To Kanyi, acceptance or rejection of the COVID-19 vaccine has no implication on the operation of schools as he alongside other participants discredits the reality of COVID-19virus, 'how can what does not exist have implications on what exists he asked? (Kanyi, oral interview)As a matter of fact, many participants interviewed for this study disputed the reality of COVID-19, a thought that has affected vaccine administration and recovery in Benue State.

It is noteworthy to highlight that studies have shown that vaccine refusal will affect recovery process and may lead to another wave of the COVID-19 virus. A study conducted in the USA by WHO has shown that the number of weekly COVID-19 hospitalization from new infections was gradually rising in the third quarter of 2023 and authorities were beginning to show concerns(WHO,5)[43]. Notwithstanding this reality, the principal of Makurdi Academy North Bank, Amos Orgem[44](oral interview) while acknowledging the position of the State's primary Health Care Board on low vaccination rate, noted that the implication of such attitude on schools and the economy is that the people will continue to suffer the flu as recovery efforts are already being frustrated(oral interview).Another implication of vaccine rejection in the words of Uham[45](oral interview,) is that sinceCOVID-19 is a deadly disease and communicable in nature, if people especially students and teachers refuse to take the vaccine, the pandemic will continue to wreck its negative trend on lives of students and teachers. Ityondzughul[46] (oral interview),noted that vaccine hesitancy in the state will continue to truncate learning style and schooling system for a longer time and recovery efforts may be delayed, as the fight against COVID-19 gets worse requiring stronger attitudinal discipline amongst students and parents.

933.doi: 10.1080/14760584.2021.1949291. [PubMed] [CrossRef] [Google Scholar] retrieved October, 2023

[41]AburTerhemba, oral interview,Teacher,Gboko,37 years, 22/10/2023

[42]Kanyi Joshua, Oral Interview, Class teacher,Zaki-Biam,38, 18/10/2023

[43] WHO update 2022?

[44]Amos Orgem, oral interview, Principal, Makurdi International School North,Bank,41 years, 23/10/2023

[45]Uham Msugh, oral interview,Student,28 years, Gbajimba, 23/10/2023

[46]Tyondughul Teddy, oral interview,Lecturer,Makurdi,41, 22/10/2023

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Data from Benue State primary Health Care Board and Ministry of Heath have revealed that government was overstressed fighting to contain the spread of the virus and fighting at the same time to contain spread of misinformation and vaccine hesitancy in the state(BPHCB, 3)[47].The continuation of the pandemic will also affect income of parents and their ability to pay school fees will be frustrated(Alice Ogahoral interview)[48]. As Ngbede[49] noted, with continued lockdown, many students and parents will forget about school which will in the long run affect their own development and that of the society(oral interview).This claim speaks volumes given the reported rise of a third wave of the virus in other parts of the world. The Time Magazine has for instance posted on it tweeter (now called X) handle early in July2023 that COVID-19 cases were rising in specifically China and other states in the USA while emphasizing that:

> with summer travel in full swing, and vaccine hesitant on a high side, masks a distant memory, it is not surprising that COVID19 cases are creeping upward again in China and Sweden. Does not now make sense to get a booster?;(Times magazine,2023).Along with the increase, some states in the US are also recoding upticks in the COVID19 hospitalization especially amongst older people. According to the US Centre for Disease Control and Prevention(CDC), weekly hospitalizations have been rising slightly since the middle of June 2023 from around 6300 to more than 8000 for the week ending September. The CDC advised that more people should receive a booster targeting the viral variants omicron BA.4/5.It was in this sense that a Professor of Medicine in the institute of Global Health and Infectious Disease at the University of North Carolina Dr David Wohl advised that people who are older and maybe traveling without taken the vaccine find themselves in greater risks. For such people, ''getting a booster now may make sense, especially if their last shot was more than three months (Time Magazine,6)[50]

This is a reflection of the already staggering situation as vaccine hesitancy continued to dominate government efforts in the fight against this monster virus worldwide. If government decides to enforce no vaccine no travel or no social gathering, it will definitely affect the operations of schools with high number of unvaccinated teachers and learners. Apart from dearth of teachers and learners, academic calendars would be affected for a longer period of time.

Implications of COVID-19 rejection on small/medium scale businesses in Benue State

[47]BPHCB Quarterly update, 2022.
[48] Alice Ogah, oral interview, School Teacher, Obi, 27 years, 25/10/2023
[49]Ngbede Mike, oral interview
[50]The Times Magazine, "Alarming Data Show a Third Wave of COVID-19 Is About to Hit the U.S." https://time.com/5893916/covid-19-coronavirus-third-wave/ Accessed online October, 2023, Web.

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Operating a smooth business in Benue State has been one of the challenges entrepreneurs face in the state particularly the small scale businesses. The problem is felt more by entrepreneurs and enterprises seeking help or aid to either start up a business or expand an existing one. Most businesses in Benue State do not succeed or struggle to operate because of lack of capital base and the requisite support from authorities[51]. This problem was made worse by the COVID-19 pandemic outbreak which brought a more difficult dimension to small scale businesses in the state due to long period of lockdown. The outbreak of the COVID-19 pandemic in this sense took owners of business in Benue State by surprise and further exposed small and medium businesses to hitherto unforeseen vulnerabilities.

State of Business and market operations in Benue State before COVID-19 Pandemic

Benue State is a major food and agriculture business hub of the entire Nigeria and beyond. Small and large scale food and agribusinesses especially thrive in the state particularly in township areas like Gboko, Otukpo,Makurdi,Adikpo,and Vandeikya and other areas of the State. The main markets and businesses in these towns operates on daily basis, attracting businessmen/women within and outside the State(Faajir,13).In Makurdi, Gboko and Otukpo for instance, traders from markets in other local government areas like Vandeikya, Ushongo, Konshisha, Kwande, Katsina-Ala,Guma, Tarka, Gwer, Oju among others usually buy goods from these towns to resale in their places. This is because there is usually surplus in the supply of goods and services and they come at cheap rates in the bigger towns of Gboko and Makurdi, Otukpo etc. It therefore means that, there is usually high turn-over, making businessmen/women to ensure that there is availability of goods and services at all times for their customers. In the words of Tivkaa, one of the customers interviewed in Gboko:

> I am a trader in Vandeikya but I buy my goods here in Gboko. Once I am short of stock, I immediately rush down here to buy anything I need for my customers. I love coming here because there is actually no time I don't get goods here, and also at cheaper rates (oral interview)[52].

A sales personnel Miss Dooeren in Gboko also narrated that:

> in the warehouse where I sale, goods are always coming-in and going-out. We usually receive goods on Tuesdays and Wednesdays but customers buy on daily basis. We usually

[51]Oryina, J.A, "The Impact of COVID-19 Pandemic on Businesses in Gboko Town, Benue State, Nigeria", International Journal of Academic Management Science Research (IJAMSR) ISSN: 2643-900X Vol. 6 issue (4) - 2022, Department of Public Administration, AkaweTorkula Polytechnic, Makurdi, Benue State, Nigeria Print.

[52]Tivkaa, Patience, oral interview,Trader,Gboko,24 years, 22/10/2023

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> take inventory of customers' needs at every giving time and make sure to communicate to the suppliers, who deliver them in good time (oral interview)[53].

The above enunciated scenarios underscore the fundamental fact that businesses were doing well in Benue towns before the COVID-19 pandemic outbreak and lockdown and the effects of the virus' outbreak and subsequent lockdown on small and medium scale businesses may not be fully comprehended in the here and now.

Impact of COVID-19 Pandemic on Businesses during the Lockdown in Benue State

While analyzing the effect of COVID-19 lockdown on the economy of South Africa, Stephen Robson et. al., used the '3Ps' framework: population, participation and productivity. This framework is commonly used to explain economic growth to pin-point to public knowledge, the ravaging impact of the COVID-19 lockdown on the economy. It also enables economic growth to be decomposed into the changes in the potential workforce, the share of that workforce that is employed, and how much they are generating from their work[54]. The pandemic has affected population participation in the economy in that with lockdowns much of the services sector (more than 80 per cent of economy) was effectively shut down. And so, the pandemic has in this manner also affected productivity especially with regard to the amount of output per hour worked.

At the start of the lockdown in Benue State, businesses were all shutdown as warehouses and shops stopped collecting and selling goods respectively. The supply chain was put on hold with customers restricted from going to the markets. This situation created a negative impact on businesses across the state. Oryina argued that the businesses that were most hit were those marketing perishable goods, as they incurred losses because of the damages to their goods because of the inability to sale off. Goods such as vegetables, fruits, and other fresh foods among others spoiled because of long stay without sales[55]. In an interview with Ngunana fruit seller in Wurukum, the researcher learnt that:

> I am a fruit seller, I sale oranges, mangos, water melon and guavas. A day before the lockdown was announced; I brought ten bags of oranges which I bought from a village in

[53]DooerenFaasema, oral interview,Trader,Gboko,27 years,22/10/2023
[54]Soyannwo T., Osinubi MO, et. al., "A Comparative Study of COVID-19 Vaccine Acceptability and its Determinants among Urban and Rural Community Residents in Ogun State",Journal of Community Medicine and Primary Health Care, 34 (2) 128-151,*https://dx.doi.org/10.4314/jcmphc.v34i2.9 Pdf.*
[55]Oryina, J.A, "The Impact of COVID-19 Pandemic on Businesses in Gboko Town, Benue State, Nigeria", International Journal of Academic Management Science Research (IJAMSR) ISSN: 2643-900X Vol. 6 issue (4) - 2022, Department of Public Administration, AkaweTorkula Polytechnic, Makurdi, Benue State, Nigeria Print

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> Ushongo Local Government Area. I only sale two and a half bags and had to take the rest to the house. I also manage to sale two bags more while at home but the rest got spoiled after staying for too long. That happened to many other fruit sellers as well. A friend of mine who sales mango fruits also lamented that she lose two bags of mangos to COVID-19 lockdown. Though it was a good decision by the authorities to curtail the spread of the virus, the decision however dealt with many of us who are petty traders (Ngunan, oral interview)[56]

Some marketers in the pharmaceutical business in Makurdi and Otukpo also narrated that the lockdown caused their companies damages emanating from the expiration of many drugs. They wished not to see any other health emergency of this magnitude. Uchenna explained that the expiration date of some drugs were very near but he had no opportunity of selling them out during the lockdown, and after the lockdown, he realized that over ₦450,000 worth of drugs was lost to COVID-19 lockdown in his store;

> We usually select drugs that have less than five months to expire and sale them out. We do this to make sure that the company does not incur unnecessary losses emanating from drugs expiration. But this was not possible during the lockdown as no one was allowed into the market and as we resumed work after the lockdown, we screened out expired drugs worth over ₦450,000 (oral interview)[57]

This was also the story of many other shop owners and business operators in the towns across Benue State. More so, businesses that started with or were operating with borrowed capital were made to incur huge loan repayment interests occasioned by the so-called non-remittance of their due loan repayments schedules. This affected many small scale business owners in the State. It also resulted to pushing others to sale out their entire businesses to repay the loans and save themselves the problem of being locked up in police cells[58]. From the foregoing, one can see that businesses in Benue State incurred losses that ran into hundreds of millions, with ventures even folding up because of huge accumulation of loans caused by the closure of businesses during the COVID-19 lockdown.

Kumawuese Tyoakosu a fish business marketer in Zaki-Biam, who is not contemplating another lockdown told the researcher she received the first jab because she believed the government and the way the lockdown affected her business, she was ever willing to take the vaccine if that was the only way for her business to function again. "The lockdown affected my business to a point that we ate food with the money I collected from our local Bam for that purpose''.

[56]NgunanMnaychie, oral interview, Trader, Genyi-Gboko,31 years, 25/10/2023
[57]Uchenna Okoro, oral interview,Trader,Makurdi,34, 25/10/2023
[58]TyokaseKumawuese, Oral interview, Trader, Zaki-Biam, 30 years, 22/10/2023

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Participants for this study who are business owners like Kumawuese lost control of customers and connections because like Stanley Nwabuaze[59] who deals with Phone accessories which supplies are mainly from the Lagos and Onitsha markets, the lockdown inflicted a devastating blow to him and his colleagues at the Makurdi phones' market near Tito gate. Inflation was another reason I do not want to talk about another lockdown because businesses will crash finally again. "There were some phones I received in supply at higher prices but during lockdown, it was as if the world was coming to an end so I was forced by circumstances to sell off at any prices to make ends meet." "Some dealers exhausted their stocks but could not restock due to the lockdown"(oral interview).As Okafor[60] added, "the COVID-19 lockdown was an experience no one in retail business here at Tito gate wishes to experience again. So even if people have not taken the vaccine, you should help us tell the government we will not obey any lockdown again, after allCOVID-19 has never been a reality" (oral interview).Another participant, Theresa Shirsha, stated that,"we are yet to fully recover from the ravages of lockdown, so even if people did not take the vaccine as expected,it was as a result of many surrounding circumstances and so government should explore other ways of managing the diseases than thinking of another lockdown on grounds of poor vaccination when people are still struggling to recover from the first lockdown''[61].

The first lockdown had a serious negative impact on businesses because there was a sharp drop in sales which translated to dwindling revenues and individual incomes with greater consequences on household living standards. Many business owners lost their businesses in Benue State such as Tyokaa Simon who summarized his ordeal thus:

> as you see me here (Tse-Agberagba),I was not here at home, because before the pandemic hit, I was an owner of a block molding industry close to the river bank in Wadata, Makurdi, it was COVID-19 lockdown that pushed me out of that business. You know as they declared lockdown, construction work was not ongoing and I had borrowed money previously to buy materials and expand the business but that was how that money went and I am still owning debt in that Makurdi that is why I resorted to farming, see my cassava farm down there[62]

It is obvious therefore that, the impact of COVID-19 pandemic on businesses in Benue state is immense to say the least. In the words of Nongo[63] (oral interview), "most small scale businesses in Benue State now either fails or operates below average or has collapsed completely due to financial and dwindling capital. Business owners are always crying for help in terms of finance recapitalization which will enable owners achieve business goals and

[59]Stanley Nwabueze,oralInterview,Trader,High Level, Makurdi, 22/10/2023
[60] Okafor Nkechi, oral interview,Trader,Makurdi,27 years, 22/10/2023
[61] Theresa Shirsha, oral interview, Hairdresser, Makurdi,28 yrs, 23/10/2023
[62]Simon Tyokaa, oral interview, Farmer, Tseagberagba, 23/10/2023
[63]Nongo Faith, oral interview,Trader,Makurdi,25 years, 25/10/2023

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objectives." Thus, the outbreak of COVID-19 pandemic meant that more of these problems became more exacerbated, making businesses in the state to face tougher problems than faced ever before.

The pressure small and medium scale business in Benue State underwent in the COVID-19 period corroborates the position of NationalBureau of Statistics(NBS) which in a statement in 2022 highlighted the position of SMEs in Nigeria's ecosystem. In pre-COVID-19era, SMEs wereestimatedtobeworth41.4 millionin Nigeria providingjobs for over 70% of theworkingpopulation in the country (ILO, 2017). But in theCOVID-19era,SMEsdeclineddrasticallyto 21.5 million[64]. This shows that huge number of persons engaged either directly or indirectly in SMEs lost their jobs on a progressive swing. Ngbede[65]argued in this sense that any negative economic shocks reverberated by COVID-19 pandemic on these enterprises make over 70% of the Nigerian working population vulnerable to the novel virus. It caused reduction in operations, disruption in supply chain and financial crisis of the majority of the selected SMEs as regards sales performance of some business owners across Benue state.

It is however worrisome as the researcher gathers that about 80 percent of these business owners have also rejected the vaccine pointing out the earlier mentioned factors of religion, distrust of government officials and cultural or belief systems. This is an indication that in the event of another wave of the corona virus or any other health emergency that would lead authorities to declare for another phase of lockdown, these businesses would definitely bear another brunt of decisions not to take vaccines.

If vaccine hesitancy, which this study confirms exists negatively affects businesses, recovery is going to take longer than projected with repercussions on household income and overall wellbeing, especially in families and businesses with low-income where poverty and inequality are already deeply rooted. Tine argued that an individual's decision to remain hesitant about COVID-19 vaccination has implications for businesses and the economy by limiting movement and trade, increasing unemployment, and causing a resurgence of new variants[66].

Additionally, economic recovery may also be affected by the unemployment of the unvaccinated by employers of labour and organizations. During the surging days of COVID-19 for instance, some companies had made vaccination a mandatory exercise for all employees as part of preventive measures. Consequently, employees who failed to take the vaccine were given automatic exit from the company, which led to unemployment, low productivity, and a low economic recovery. In the same vein, vaccination rejection may negatively affect

[64]Oryina, J.A, "The Impact of COVID-19 Pandemic on Businesses in Gboko Town, Benue State, Nigeria", International Journal of Academic Management Science Research (IJAMSR) ISSN: 2643-900X Vol. 6 issue (4) - 2022, Department of Public Administration, AkaweTorkula Polytechnic, Makurdi, Benue State, Nigeria Print.
[65]Ngbede Mike, oral interview, Lecturer
[66]Tine Ngenger, oral interview, Humanitarian aid worker, Gboko, 23/10/2023

economic recovery through trade constraints and travel ban, fall in SMEs revenue as well as unemployment, (Patience Ajo, oral interview)[67]. Reconnecting with the COVID-19 lockdown era, Surnih maintained that the outbreak of the COVID-19 pandemic has defined and shaped travel laws, rules and policy in two phases; the first was the complete closure of borders and inter-state transport routes in the country following the outbreak of the pandemic, thus disrupting business activities, livelihoods. Timothy argued that SMEs constitutes the larger bulk of business sector affected mostly by the COVID-19 Lockdown. The lockdown measure adopted by the federal government and Benue State government in particular had adverse effect on socio-economic wellbeing of people and organizations in the state leading to hunger and starvation. To manage this development, government was compelled to roll out additional expenditure on food palliatives to provide relief to such families[68].

The development of small and medium scale enterprises has been a focal point of the various governments of the world, because SMEs have flexible configurations and immensely contribute to nation building respectively[69].In the view of Anjov Dooshima, such businesses as the name implies they are businesses with little capital base and their survival depends on the ability to revolve capital. This is however subject to frequent operations and daily patronage through which sales and restocking are created [70], oral interview).These businesses are however going down arising from the challenges and issues associated with COVID-19 disease. The United Nations Development Programme (UNDP) reported in 2021 that businesses in Sub-Saharan Africa were facing extinction as a result of prolong lockdown UNDP2022[71]. In a study conducted in December, 2021,Sigro and Brinz argued in the same way that, an individual's decision to remain hesitant about COVID-19 vaccination has implications for businesses and the economy by limiting movement and trade, increasing unemployment, and causing a resurgence of new variants[72].

Speaking at the virtual launch of a groundbreaking study on vaccine hesitancy across six countries in the West African sub-region, Mr. Trebucq,the country representative of the IMF noted that, *"If we are to find our way out of this pandemic, vaccination is the best answer. If we don't get the pandemic under control, we may well be looking at a lost decade of development" as the functionality of SMSEs which are the fulcrum of socio-economic development in*

[67]Ajo Patience, oral interview, Prohetess, Lessel, 32, 23/10/2023
[68]Soyannwo T., Osinubi MO, et. al., "A Comparative Study of COVID-19 Vaccine Acceptability and its Determinants among Urban and Rural Community Residents in Ogun State",Journal of Community Medicine and Primary Health Care, 34 (2) 128-151,*https://dx.doi.org/10.4314/jcmphc.v34i2.9 Pdf*
[69]NationalBureau of Statistics(NBS), Impact of COVID-19 on the economy." https://www.nigerianstat.gov.ng Accessed, October 2023.
[70]DooshimaAnjov Oral interview, Civil servant, Makurdi, 35 years,23/10/2023
[71]United Nations Development Programme (UNDP), *"2022 Update on COVID-19 in Sub-Saharan Africa update on COVID-19 in sub-Saharan Africa."* https://www.undp.org/africa/covid-19-pandemic, Accessed 2023, Web.
[72]International Monetary Funds (IMF); 2022 covid-19 update in West Africa, https://www.imf.org/en/Topics/imf-and-covid19/COVID-Lending-Tracker Accessed online October, *2023*

this region is dependent on the acceptability of covid-19 vaccines'[73]*'. (IMF, 2021).* He expressed the belief that vaccination uptake has implications for business, so the economy can fully open without repercussions, allowing people to freely move and conduct their daily activities. Vaccine acceptability was considered by the agency as being critical for business recovery and economic growthin West Africa (IMF, 2021)[74].

Continued vaccine rejection for the COVID-19 health emergency also poses greater implication on the recovery of the Benue state economy so far as operators of small scale businesses which the IMF and World Bank have consistently acknowledged as being the fulcrum and major drivers of socio-economic growth and development in developing countries are affected.IfCOVID-19 infections continue at a rising scale, new and more virulent variants will increase, with the potential to cause surges that threaten further economic disruption[75].

Before the availability of effective vaccines, reliance was placed on social measures such as lockdowns, masking, hand hygiene, and social distancing to control the pandemic. As Moore et. al., (1) pointed out, though, while these measures proved "effective in reducing the healthcare burden compared to an uncontrolled outbreak, this is achieved to the detriment of the economy, education and many other societal productive ventures." An effective vaccination program is therefore the only possible way of controlling the pandemic, minimizing the health costs, and opening the economy. Zwawu and Kor[76] describes vaccination programmes as "a textbook example of a positive externality," with government interventions required to reduce free riding. Yet achieving population-level immunity against COVID-19 is an enormous economic challenge, as it is complex to determine the level of community-wide vaccination required to allow opening of the economy.

The consensus amongst vaccine experts is that community vaccination would have major benefits on the health and economy, without which new variants would arise and immunity would wane over time, leaving communities to "battle the threat and deal with future surges. It was in this scenario that the Organization for Economic Co-operation and Development (OECD) stated that the key to ending the COVID-19 pandemic is an effective vaccination program that is coordinated and equitable among and within countries; warning that failing to achieve this will threaten the global economic recovery effort so far as

[73]International Monetary Funds (IMF); 2022 covid-19 update in West Africa, https://www.imf.org/en/Topics/imf-and-covid19/COVID-Lending-Tracker Accessed online October, *2023*

[74]International Monetary Funds (IMF); 2022 covid-19 update in West Africa, https://www.imf.org/en/Topics/imf-and-covid19/COVID-Lending-Tracker Accessed online October, *2023*

[75]OrfegaZwawua, Emmanuel Kor**, "**Factors Associated with COVID-19 Vaccine Hesitancy among a Rural Sample in Benue State, Nigeria", Nigerian Journal of Health Promotion ISSN: 0995-3895 Vol 15, 2022 Print

[76]OrfegaZwawua, Emmanuel Kor**, "**Factors Associated with COVID-19 Vaccine Hesitancy among a Rural Sample in Benue State, Nigeria", Nigerian Journal of Health Promotion ISSN: 0995-3895 Vol 15, 2022 Print.

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countries enforce lockdown measures at the detriment of businesses and travels.

Recommendations

In this study, we have tried to capture the implications of low vaccination and hesitancy on the economy of Benue State focusing on the impacts on education, health small and medium scale businesses. We note that only an effective vaccination programme will prevent an emergence of new variants of this deadly virus to effectively leave businesses open for human activity and survival. The researchers therefore recommends the followings strategies:

i. That the Benue State Government should do all within its possibilities to reach out to the people with concrete information so as to educate the populace on the nature of COVID-19 disease and the effectiveness of the vaccines to curb a reoccurrence of the virus. The need for vaccination is chiefly responsible for the inability of the state to achieve the 60 percent World Health Organization and Nigeria Centre for Disease Control's bench mark of COVID-19 vaccination. To this end, the State government and other key stakeholders need vaccination strategy that begins with mobilizing the population and creating the desired awareness needed to convince all concerned about what to do and not to do. The target attention must shift from urban to rural areas given that the bulk of the State's population still dwells in those areas.

ii. Religion and its values are still a major hold on the majority of the population. The research indicated that many refused the vaccines on religious grounds. It will be good therefore to employ the medium of religion to reach out to the vast numbers who hold onto the faith. Vaccination against the virus does not stand in contrast to faith and adequate orientation about COVID-19 vaccines as regards safety and morality will aid people to make informed decisions about it.Religious campaigns should be organized targeting each community and should be done in local languages highlighting the challenges this disease presents and the benefits vaccination has brought. This will enable people to reach an informed decision for uptake of the vaccines based on their understanding.

iii. That the attempts by the government to cajole people to accept to vaccinate against the virus created doubts in the people who questioned the reality of COVID-19 and the efficiency of its vaccines. The state authorities should thus provide scientific information about the virus and its vaccines and involve the people in the decision-making process. They should avoid making the people feel forced to agree with government decision to vaccinate them. This will guarantee the people's fundamental human right and enable them to reach informed decisions as regards the COVID-19 vaccine. When these recommendations are reached, the guarantee of increase uptake of the vaccines will provid for "herd immunity" in the State, forestalling, a reoccurrence of another COVID-19 outbreak warranting lockdowns and closure of businesses or schools.

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Conclusion

While vaccine hesitancy has been a long time human behavior, the phenomena has emerged predominantly in the COVID-19 pandemic era. This development has posed a greater consequence on the fight against the virus, public health and on economic recovery. In Nigeria, the Government has been over stressed given the simultaneous fight to contain the monster corona virus and at the same time the struggle to contain wide spread vaccine hesitancy and rejection. This paper has examined the economics of COVID-19vaccine administration and the potential implications of vaccine hesitancy and refusal on public health and socio-economic activities in Benue state. The study established that COVID-19 vaccine rejection is a reality that exists amongst the people of Benue state and this has the tendency to negatively influence socio-economic activities and life balance of the state. It delays recovery process and increases the cost of managing the virus. The study also found that reluctance to accept vaccination against COVID-19virus poses a significant public health risk and is known to have a multi-determined phenomenon effect on the economy of Benue state. If herd immunity cannot be achieved, there is a potential risk not only for ongoing surges in infection, but also for development of new strains of the virus that would evade vaccines and precipitate further health and economic crises. The study therefore recommends that, if herd immunity must be achieved to allow a free economy and social system, Benue state government in alliance with Federal government and other relevant stakeholders must urgently employ campaign approaches that will properly educate the people on the benefits of taking vaccines or of ignoring them in times of health emergencies such as the COVID-19

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APPENDIX

Oral interview list

S/N	Name	Occupation	Place	age	Date
1	Onah Simon	Medical practitioner	Gboko	47	21/8/2023
2	MishiAyev	Lab scientist	NKST health clinic Ikpa	45	7/9/2023
3	Frank Kave	Medical	Zaki-Biam	32	12/9/2023

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		practitioner			
4	Dr Mnyam Linus	Medical practitioner	Gboko	49	12/9/2023
5	Dr Amu Clement	Medical practitioner	Tyo-Ado,Gboko	43	15/10/2023
6	AkuraIoramo	Marketer Unity Bank	Makurdi	33	18/10/2023
7	Zaamo Nancy	LG Civil servant	Vandeikya	47	19/10/2023
8	Kehinde Lawal	Banker	UBA,Makurdi	52	19/10/2023
9	Raphael Iornyagh	Banker	Sterling Makurdi	36	19/10/2023
10	Tondo Nguuma	Teacher	Akpagher,Mbatiav	43	21/10/2023
11	Tertsea David	Teacher	Ikpa-Mbatierev	46	21/10/23
12	JeremiahKwaghve	Teacher	Wannune,Tarka	42	22/10/2023
13	TyonengeChiangi	Farmer	Ikpa-Mbatierev	35	22/10/2023
14	NyityseSaasongo	Teacher	Ikpa-Mbierev	30	22/10/2023
15	TionTarvershima	Teacher	Mkar	36	22/10/2023
16	TernguAwajir	Teacher	Ikpa-Mbatierev	34	22/10/2023
17	Terungwa Titus	Teacher	Wannune	45	23/10/2023
18	Adulugba Samuel	Pastor	Otukpo	56	19/10/2023
19	Moses Terhemba	Teacher	Makurdi	32	21/10/2023
20	AburTerhemba	Teacher	Gboko	37	22/10/2023
21	Kanyi Joshua	Teacher	Zaki-Biam	38	18/10/2023
22	Amos Orgem	Teacher	North Bank	41	23/10/2023
23	Uham Simon	Student	Gbajimba,Guma	39	23/10/2023
24	Tyondughul Teddy	Lecturer	Makurdi	41	22/10/2023
25	Alice Ogah	Teacher	Obi	27	25/10/2023
26	Ngbede Mike	Lecturer	FCE,Apa	44	25/10/2023
26	AnjovDooshima	Civil servant	Makurdi	35	25/10/2023
27	Tivkaa, Patience	Trader	Gboko	24	22/10/2023
28	DooerenFaasema	Trader	Gboko	27	22/10/2023
29	NgunanMnyamchie	Trader	Genyi	31	25/10/2023
30	Uchenna Okoro	Trader	Makurdi	34	25/10/2023
31	KumawueseTyokase	Trader	Zaki-Biam	30	22/10/2023
32	Stanley Nwabueze	Chairman Igbo untd traders	Makurdi	34	22/10/2023
33	Okafor Nkechi	Trader	Makurdi	27	22/10/2023
34	Shirsa Theresa	Hairdresser	Makurdi	28	23/10/2023
35	Simon Tyokaa	Farmer	Tse-Agberagba	31	23/10/2023
36	Nongo Faith	Trader	Gboko	25	25/10/2023
37	Nenge Peter	Trader	Lessel	38	21/10/2023
38	Tine Ngenger	Humanitarian worker	Gboko	43	23/10/2023
39	Ajo Patience	Pastor	Lessel	32	23/10/2023

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