

# Essential Health Services at Onset of the COVID-19 Pandemic: Chronicles from a South-West Nigeria Town

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**Abstract:** Introduction: The Corona Virus Disease (COVID-19) triggered an unprecedented disruption in social, economic, political and healthcare delivery mechanisms worldwide. Reports have documented the effects of the COVID-19 pandemic on healthcare services in many countries and its impact on the delivery of these services. Few studies in Nigeria have given exact details of the extent of disruptions of these essential services. The objectives of our study were to identify essential services offered during the pandemic response, elicit opinions of healthcare workers about the services accessed by clients during the lockdown and since pandemic onset, and assess the distribution and trends of health services and hospital attendance, before and during this period in a Comprehensive Health Centre in South-West Nigeria. Methods: We conducted a desk review of hospital records and interviews with health workers respectively, across units offering essential services in the Out-Patient Department of the Urban Comprehensive Health Centre (UCHC), Ile-Ife using descriptive data analysis. Information retrieved from the facility's registers for a one-year period from June 2019 to June 2020 was reviewed to compare trends before the pandemic. Key Informant Interviews with twelve service providers in the facility were conducted to identify related issues the frontline health workers experienced working during this period. Results: Using the mean attendance per service unit prior to the pandemic onset as a reference, essential services in the General Outpatient department reduced by 74% in April and 65% in May 2020; by 86% in the Laboratory in April and 55% in May, by 83% in the Family Planning clinic in April 2020 and by 53% in June 2020. Essential services in the Immunization Clinics reduced by 54% in April and improved by 21% in May 2020. No services were offered in the Nutrition Clinic, in the Antenatal Clinic and the Labor Ward. The five themes that emerged from thematic analysis of the qualitative component were; knowledge of COVID-19 prevention measures, challenges encountered at the onset of COVID-19 lockdown, perception and opinions on the disruption the COVID-19 pandemic caused health workers, barriers to effective health care delivery at the time of pandemic and coping with disruptions in services. Conclusion: This study highlights important insights on the need to support Nigeria and other countries in sub-Saharan Africa during the response to COVID-19 or other outbreaks and how to build better health systems that will be able to withstand further pandemics without disruptions of essential health services.

**Keywords:** Coronavirus, Corona Virus Disease, Community Health, Essential Services, Pandemic, Primary Care, Primary Health Care, Nigeria

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# 1. Introduction

## 1.1. Background

The Corona Virus Disease (COVID-19) triggered an unprecedented global disruption in the social, economic, political and healthcare delivery mechanisms worldwide [1, 2]. First reported in Wuhan City, Hubei Province, China with a cluster of respiratory symptoms discovered to be a pneumonia-like illness caused by a novel coronavirus subsequently named the severe acute respiratory syndrome (SARS-CoV-2), the COVID-19 outbreak has spread to over 200 countries and territories worldwide. As at 22<sup>nd</sup> August 2022, there were 602 million cases and over six million deaths globally [2]. In Africa, the number of cases has been exponentially rising with close to nine million cases, an estimated 174,000 deaths and cases reported in 47 countries [3].

## 1.2. Government and Health Sector

- 1) The major disruptions in health services were most observed during the month of April, which coincided with the “total lockdown” enforced by the Nigerian government to contain the spread of the coronavirus. On the 30<sup>th</sup> of March 2020, The Federal Government of Nigeria imposed a total lockdown on the most affected states in the country, which included Lagos, Ogun, Osun and the Federal capital territory, Abuja to stay in place for at least two weeks in the first instance.
- 2) The Lockdown period in Nigeria which was a complete “stay-at-home order” from the Federal Government through the Public Health institutions and the Presidential Task Force on COVID-19 was in operation for close to eight weeks from April to June 2020 with timed and phased ease of lockdown over a one-year period [4]. This lockdown order which took effect from the 1<sup>st</sup> of April 2020, was to ensure that all citizens stayed in their homes, with all businesses and offices remaining fully closed, alongside postponement of travel to and from other states. However, hospitals and stores selling essential items such as groceries and medicines were exempted.
- 3) In Nigeria, the Federal Ministry of Health, the Nigeria Centre for Disease Control (NCDC) and the Presidential Task Force on COVID-19 coordinated the COVID-19 Outbreak response. As at 1<sup>st</sup> August 2022 there were a documented 260,977 cases, more than 253,000 cases have recovered and have been discharged with an estimated a case fatality rate of 1.2% [4, 5].
- 4) Reports have documented the effects of the COVID-19 pandemic on healthcare services in many countries and its impact on the delivery of these essential services [6, 7]. The World Health Organization (WHO) has recognized these challenges in healthcare delivery services and has given guidelines for overcoming these challenges [8].
- 5) Few studies in Nigeria have given exact details of the

extent of disruptions of essential services. The objectives of this study were to identify essential services offered during the pandemic response, elicit opinions of healthcare workers about the services accessed by clients during the pandemic, assess the distribution and trends of health services and hospital attendance, before and during this period in a Comprehensive Health Centre in South-West Nigeria.

- 6) The research questions this study intends to answer are: What were the priority essential services accessed at the facility during the lockdown? What is the trend of health care services utilization before and during the lockdown? What are the opinions of healthcare workers about the services offered to clients during the lockdown and since the pandemic?

# 2. Methods

## 2.1. Study Setting

The study setting is the Urban Comprehensive Health Centre, Eleyele, Ile-Ife in Osun State Nigeria. The facility is one of the five units of the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC) and is one of the two urban centres of the Community Health Department of the teaching hospital, which offers primary healthcare services within the OAUTHC network, and is located in Eleyele area in Ife Central Local Government Area (LGA), Ile-Ife. Ile-Ife is an ancient town in Osun State; believed to be the “source” of the Yoruba race and its “cradle of civilization”, with an estimated 509, 813 inhabitants. The town is northeast of Lagos State, east of Ibadan in Oyo State, south west of Osogbo the state capital and northeast of Ondo town, in Ondo State.

The facility is managed by the Physician-in-Charge who doubles as the Head of Department of Community Health and reports to the Chief Medical Director of the teaching hospital through the Chairman Medical Advisory Council (CMAC). The facility provides essential services and runs a 24 hour in-patient and outpatient service for all age groups. The centre provides healthcare services to settlements, communities and towns in Ife axis across four Local Government Areas (LGAs) - Ife East, Ife North, Ife Central and Ife South LGAs, other parts of Osun State and other states in South West and North Central Nigeria.

## 2.2. Study Design

Two methods were adopted for this descriptive study. First, a desk review of hospital records from June 2019 to June 2020 which reviewed hospital attendance and service provision data across the units where essential services are provided in the Out-Patient Department of the Urban Comprehensive Health Centre (UCHC), Ile-Ife. Information gathered from the facilities registers were from the General Outpatient department, Laboratory, School Health Services, Nutrition Clinic, Antenatal Clinic, Labour Ward, Family Planning and Immunization Clinics. Secondly, Key

Informant Interviews with service providers in the facility. were conducted to identify related issues the frontline health workers experienced working during the lockdown period from April to May 2020. Respondents (health workers who participated in the Key Informant Interviews) were randomly selected by balloting and they had the choice to voluntarily participate or refuse to do so, as they were able to choose to exit the interview at any time. Thus, there was no form of coercion or inducement.

**2.3. Data Collection Procedure**

An electronic proforma was used for data collection was divided into three sections.

Section I included Socio-demographics of attendees, Distribution and Trend of Cases and Diagnoses before the COVID-19 pandemic, II: Distribution and trend of Cases during the Lockdown period and Section III: Distribution and trend of Cases after the Lockdown period.

Information was collected from the following registers:

General Outpatient Attendance Register, Laboratory register, Antenatal Clinic Register, Family Planning register and Immunization register. A Key Informant Interview guide was used to structure the interviews with the health workers.

**2.4. Data Management and Analysis**

Summary statistics were used to summarize quantitative variables and frequencies. The Qualitative study component was conducted via key informant interviews (KII) using a KII guide (these interviews were done observing all COVID-19 precautionary measures) and content analysis of the interview transcripts was done. The five themes that emerged from thematic analysis of qualitative aspect of the study were, knowledge of COVID-19 prevention measures, challenges encountered at the onset of COVID-19 lockdown, perception and opinions of the disruption the COVID-19 pandemic caused to health workers, barriers to effective health care delivery at the time of pandemic and coping with disruptions in services.

**3. Results**

**3.1. Quantitative Data Analysis**

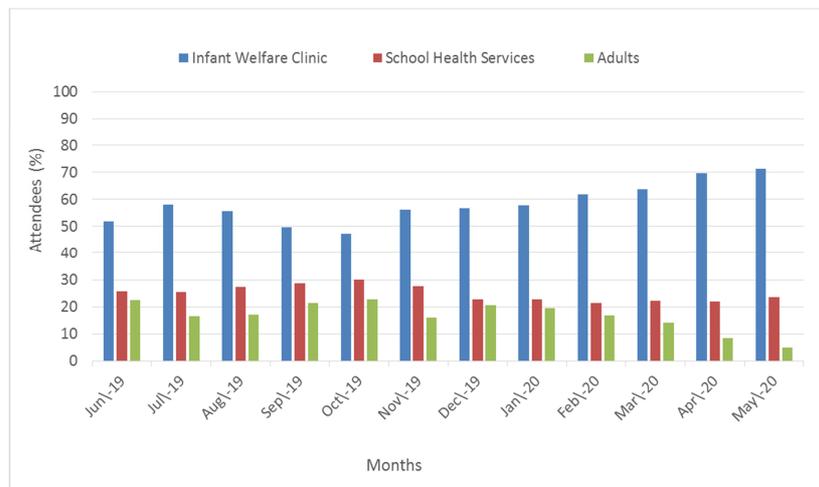


Figure 1. Distribution of attendance in General Outpatient Clinic of the UCHC, Eleyele, OAUTHC, Ile Ife, June 2019-May 2020.

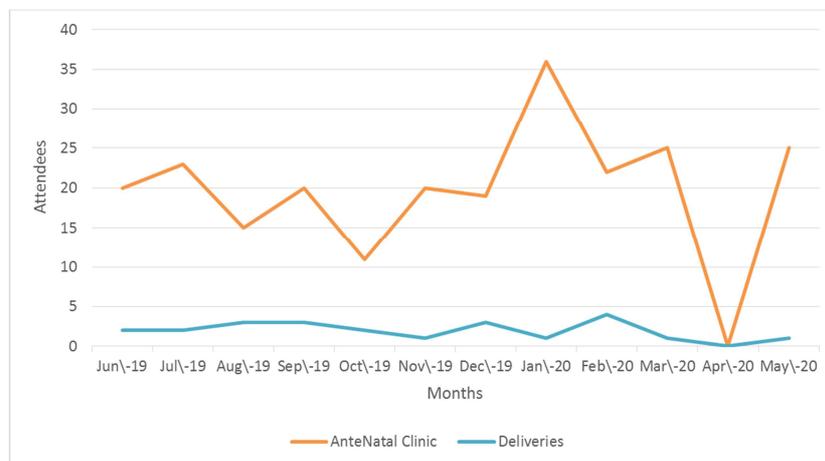


Figure 2. Distribution of attendance in the Antenatal Clinic and Delivery Ward of the UCHC, Eleyele, OAUTHC, Ile-Ife June 2019 – May 2020.

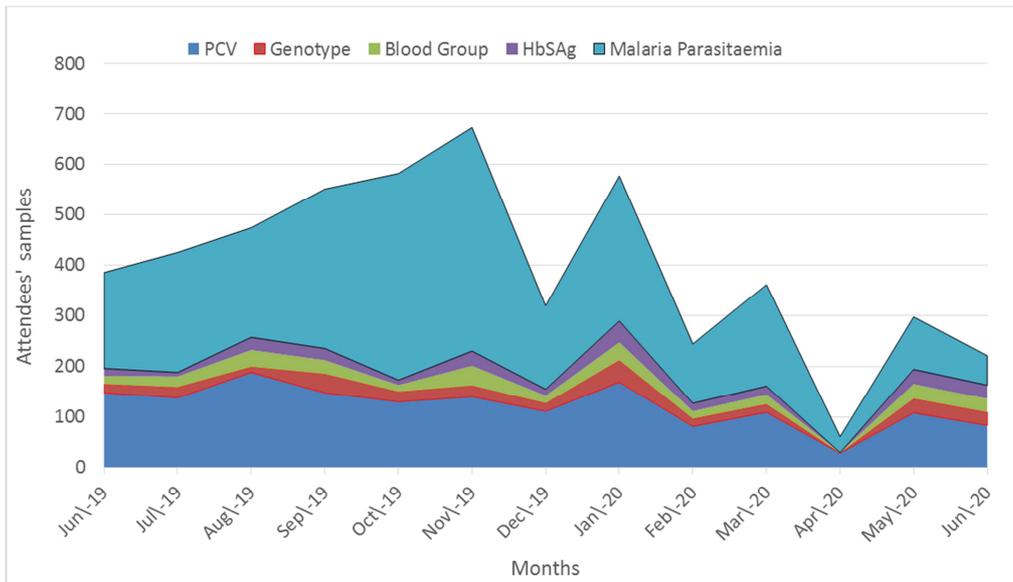


Figure 3. Distribution of sample collection in the laboratory of the UCHC, Eleyele, OAUTHC, Ile-Ife June 2019 – May 2020.

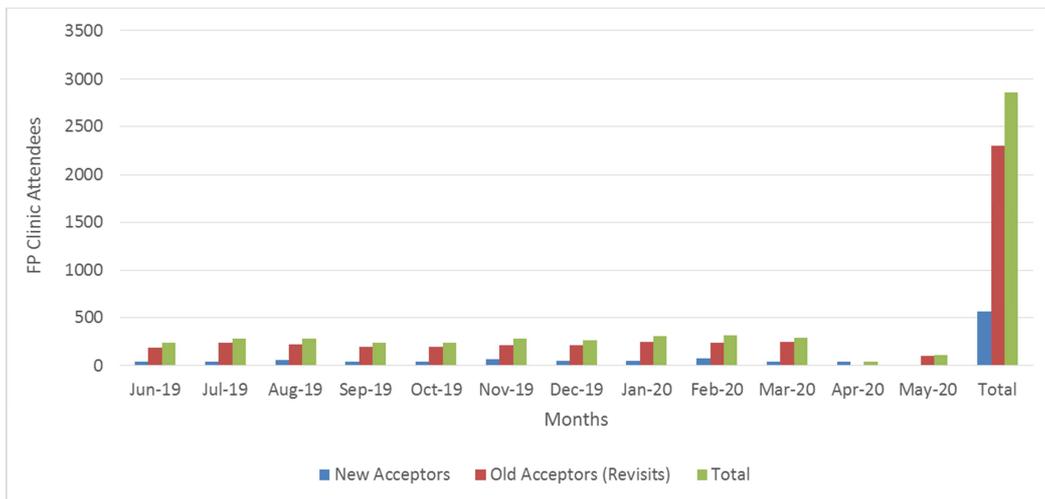


Figure 4. Distribution and Trends of Uptake of Family Planning Methods (new acceptors and old acceptors) among attendees of the Urban Comprehensive Health Centre, Eleyele, Ile-Ife, June 2019 - May 2020.

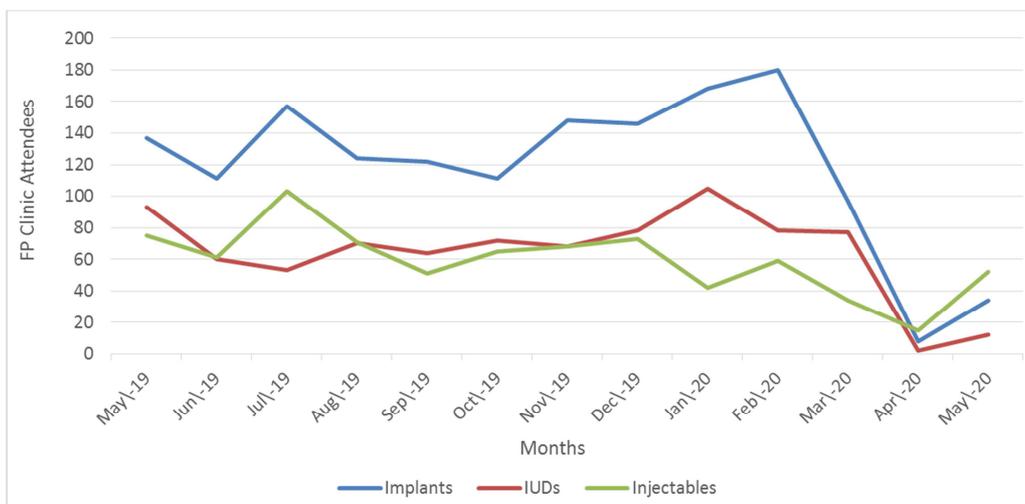


Figure 5. Distribution and Trends of utilization of family Planning Methods by attendees of the Urban Comprehensive Health Centre, Eleyele Ile-Ife, June 2019 - May 2020.

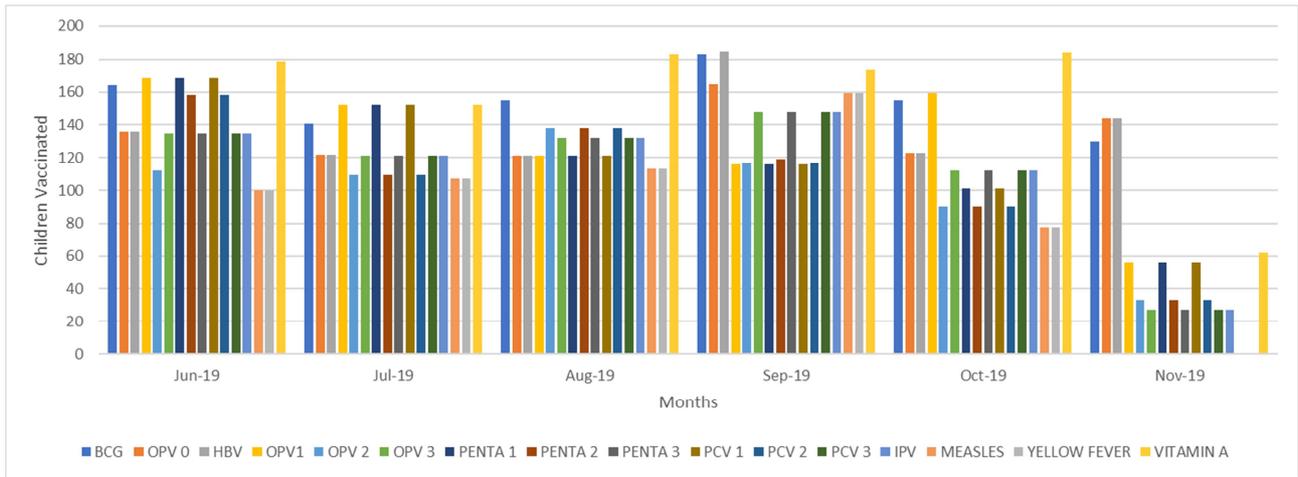


Figure 6. Distribution of Immunization Services in UCHC Eleyele, from June 2019- November 2019.

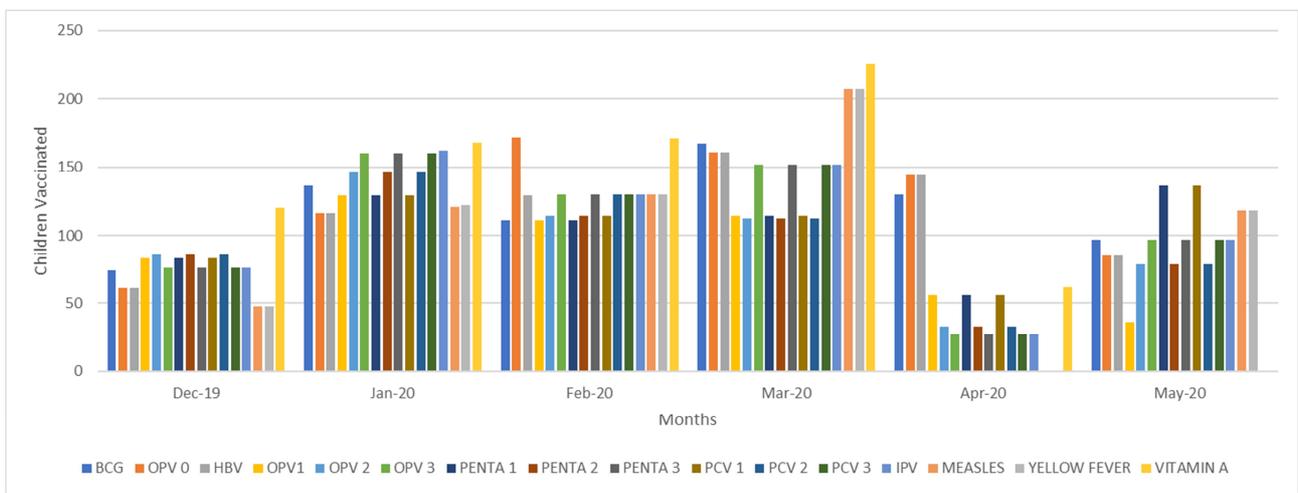


Figure 7. Distribution of Immunization Services in UCHC Eleyele, from December 2019- May 2020.

This study focuses on the trend of healthcare services before and during the pandemic, especially during lockdown, and the results shows that the total number of hospital attendees during the period under consideration was a total 32,504 with 18,420 in the Infant Welfare Clinic (IWC), 8,225 in the School Health Services (SHS clinic), and 5,859 Adults from the General Outpatient Clinic with a total of 32,504 patients attended the GOPD during that period. Mean number of attendees was 2708. In April and May 2020, there was a major decline in number of patients that accessed care in the facility with 486 (69.6%) IWC, 153 (21.9%) SHS and 59 (5%) Adults in April 2020, which was about 2% of the usual total attendance and 25.8% of regular mean attendance. In May, the hospital attendance slightly increased with ease of lockdown to 35.3% of the average facility attendance (Figure 1). This depicted that the lockdown had a negative effect on hospital attendance generally while the ease of lockdown had a positive effect.

Total attendance for the Ante Natal Care (ANC) for the one-year period under review was 236 with 23 deliveries taken in the period. There was no ANC service throughout April 2020 and only one delivery was taken in the facility in April 2020 (Figure 2). This gave a reflection that virtually all

the deliveries and Ante-Natal attendance took place outside the lockdown period. The pregnant women apparently defaulted on their ANC and those that were due to deliver gave birth either at home or sought other means.

Over a one-year period 1,581 Packed Cell Volume (PCV) samples, 290 blood group, 272 genotypes, 254 Hepatitis B Surface Antigen (HbsAg) and 2773 malaria parasitaemia tests were collected and processed during this period (Figure 3). In April 2020, at the peak of the pandemic, the lowest number of samples' collection was recorded. Thirty-two malaria parasitaemia tests, 28 PCV tests and one blood group sample were collected and processed, no genotype and HbsAg tests were done (Figure 3). The laboratory services were at their peak outside the lockdown period. Blood film for malaria parasite and PCV were the major tests opted for routinely but they both suffered a serious decline during the pandemic and lockdown. This can be accounted for by the low patient turnout as well. (Figure 3).

The total number of FP acceptors as seen from May 2019 to May 2020 was 2,858, out of which 558 (19.5%) were new acceptors and mean number of clients was 238 persons. For April only 41 clients accessed family planning service, which was 1.4% of total attendance and 17.2% of mean attendance

for June 2019 to May 2020. Only two old acceptors accessed FP service in April 2020, however clients increased up to thrice (2.7) the attendance of April in May, with ease of lockdown (Figure 4). This showed that the lockdown incapacitated clients from seeking and getting access to reproductive health services. This in turn may have exposed a lot of women to unplanned pregnancies. Uptake for FP was also lowest for all methods especially during the lock down (Figure 5).

A total 22,162 doses of vaccines were given to over 1,200 infants within the period. Mean vaccination was 1,846. The lowest vaccination rates were recorded in April 2020, no infant received measles and yellow fever vaccines in the month of April (Figures 6 and 7).

In the period under review, using the mean attendance per service unit, and the number of attendees for April and May 2020, essential services in the General Outpatient department reduced by 74% in April and 65% May, by 86% in April and 55% in May in the Laboratory, in the Nutrition Clinic, Antenatal Clinic and. Labour Ward by 100%. Family

Planning services dropped by 83% in April and 53% in June, Essential services in the Immunization Clinics reduced by 54% in April and improved to 21% in May 2020.

### 3.2. Qualitative Component

We interviewed a total of 12 respondents based on their willingness to participate in the study using an interview guide and individually conducted face-to-face in-depth interviews with 12 HCWs; two Doctors, two Nurses, two Health Assistants, two pharmacists, two Drivers, one Records Officer and one Cashier. The interviewers transcribed the respondents' comments to communicate the perspectives of the respondents. Respondents' age, marital status, years of work experience, department were documented. Age range was between 33 and 47 years with a mean age of 39.2 years  $\pm$  Standard Deviation 3.7 years (Table 1). We adapted the in-depth interview method for greater privacy, confidentiality for exploring individual views, and to obtain their perspectives about essential services during a pandemic (Table 2).

**Table 1.** Socio-Demographic Distribution of healthcare workers (Key Informants) in the Urban Comprehensive Health Centre, Ile-Ife, Nigeria.

Categories of Health Workers	Age (years)	Sex	Marital Status	Work Experience (Years)	Unit Worked at	Code
Medical Officer	38	Male	Married	6	Comprehensive Health Centre	MO
Nursing Officer	33	Female	Married	5	Comprehensive Health Centre	NO
Senior Nursing Officer	40	Male	Married	10	Comprehensive Health Centre	SNO
Junior Driver	40	Male	Married	7	Comprehensive Health Centre	JD1
Pharmacist	38	Female	Married	12	Comprehensive Health Centre	PHARM1
Records Officer	47	Female	Married	17	Comprehensive Health Centre	MRO
Junior Driver	41	Male	Married	6	Comprehensive Health Centre	JD2
Health Assistant	40	Female	Married	8	Comprehensive Health Centre	HA
Senior Registrar	35	Female	Married	7	Comprehensive Health Centre	SR
Cashier	42	Male	Married	8	Comprehensive Health Centre	CAS
Pharmacist	38	Male	Married	12	Comprehensive Health Centre	PHARM2
Health Assistant	38	Female	Married	10	Comprehensive Health Centre	HA2

**Table 2.** Theme categories and sub-themes.

Theme definition	Sub-themes
1 Knowledge and Practice of COVID-19 prevention measures	Access to Information on COVID-19 and COVID-19 Preventive measures Participation in basic or specialized IPC trainings
2 Challenges encountered at the onset of COVID-19 lockdown	Experiences during the lockdown Experiences about getting supplies of PPE
3 Psychological impact of the disruption the COVID-19 outbreak caused on health workers	Experiences working during a pandemic and respondents' state of mind following disruptions in service following the lockdown Occupational safety and risk perception in the context of a pandemic
4 Barriers to effective health care delivery at the time of pandemic	The barriers to effective healthcare delivery Experience of disruptions in service performance
5 Coping with disruptions in services	Actions to improve the disruption in services Recommendations to management

#### 3.2.1. Knowledge of COVID-19 Prevention Measures

"We normally wash our hands with soap and then, 24/7, there is sanitizer with us that will sanitize our hands immediately we attend to the patients. And then secondly, we have our nose mask, we always use it as preventive measure." (Male Cashier).

"Patients were triaged as they entered the facility, the use of face masks was enforced to be used by patients, accompanying relatives and care givers were limited to none

or one. I was also maintaining social distance from patients while consulting, use of face masks and washing of hands after every consultation." Medical Officer).

"At the time of the lockdown I ensured I wore my masks. I also ensured that the patients wore theirs and also there was social distance between myself and my patients" (SR).

"Being the leader of the team, I protected myself and others by first triaging patients, people with symptoms of fever were detected at the entrance by using an infra-red thermometer; wearing of face mask was enforced, social

distancing was maintained as patients wait to be attended to.” (SNO) “I protected myself by wearing face masks, hand gloves, gown and caps.” (NO).

“We used hand gloves and face masks while transferring patients in the ambulance, however there was no specific protection for patients while we interact with them during this period.” (JD2).

Sub theme: *What special IPC trainings did you participate in during the lockdown?*

“No official training at this time, I relied on jingles on radio and information from the NCDC.” (MO).

“We had comprehensive infection prevention and control training for COVID-19, first safety of ourselves then others.” (SNO).

“No training was done for us.” (JD 1), “No training only got a step-down training, from our Head of Department.” (MRO).

“Erm, during the lockdown, we went for COVID-19 pandemic training, training seminar at OAUTHC/IHU. They give us, they train us how we can protect ourselves, how to triage too. Then how we can identify people that have COVID-19”. (HA 2).

### 3.2.2. Challenges Encountered at the Onset of COVID-19 Lockdown

“PPEs were Out of stock several times; this was a major challenge also I encountered some stubborn patients that refused to adhere to laid down protocols.” (MO).

“Personal protective equipment was in limited supply such that we had to be re-using some of them like face masks. Training was also inadequate” (NO).

“During the lock down period initially there were enough supply of PPEs, however, later on, Supplies were being exhausted and staff had to start re-using and buying the PPEs themselves.” (SNO).

“Only face masks were occasionally provided, no full PPEs was provided at any time and the few masks initially provided were soon exhausted, we had to start buying with our money in order to protect ourselves” (JD 2).

“The challenges, the only challenge that I felt we have, because I had a kind of the experience I had at the complex, our people they won’t tell you the real data about themselves (hmmhmm). There were certain instances when that patient did not tell us what, erm, his past whatever, at the end of the day the test shows that it is positive” (CAS).

### 3.2.3. Psychological Impact of the Disruption the COVID-19 Outbreak Caused on Health Workers

“I was emotional and psychologically balanced I am used to working as an essential service provider” (MRO), (PHARM 1).

“No, I was felt so disturbed most time when I interact with patients as the thought that patients that are not safe are a source of danger to your own safety. The relatives were a major concern, with your children rushing to give you a hug, it was quiet challenging, I felt they were most at risk”. (MO).

“I always had it at the back of my mind that I was not well protected and thus, at risk of contracting the virus.” (NO).

“Initially when we had enough supplies, the confidence to face the virus was there, however, at the time there was short supply of PPEs the fear of contracting the virus increased.” (SNO).

“It really affected my state of mind, in that I was not too sure I will contract the virus.” (JD 1), I felt unsafe at first but I had to continue to do my work (SR).

“Well then, it was like we just handed ourself unto God anyway, you can say that, every-day when we are leaving home, just, after doing our part by protecting ourselves, we just leave the rest to God, that God will just protect us, you know, that’s just it” (JD1).

### 3.2.4. Barriers to Effective Health Care Delivery at the Time of Pandemic

“Okay well, that’s another challenge, the process of coming to the office. You know, there was no bike, no nothing. There was provision for those people that are, some people are in the hospital anyway, but it’s for those people that their house are direct. But what of us that are living in the interior, we face the challenges of getting to the office” (CAS).

“Yes, there was a huge, there were huge challenges because during the lockdown there was no vehicular movement, so there were times we need to trek, there were times we need to trek a long distance, before you leave your house earlier than necessary so that you can meet up with duty and taking over”. (PHARM 2).

“Problem with reaching my place of work due to lack of transportation especially for the lower cadre support staff, there was also challenge in getting foodstuffs as most markets were shut down at some point. Police harassment at road blocks while going to work.” (MO).

“One of the barriers in pharmacy profession that was most affected was counselling. We needed to, we resulted to window dispensing again which is not pharmaceutical care. Pharmaceutical care means responsible provision of healthcare need of pharmacy service in which case you get close to your patient, you advise them, you hear from them, then you get feedback. But during the pandemic, we had to shelve all that. We just passed the medicine to them through the window with little or no advice. (PHARM 2).

“We experienced a lot of things, you know some people, we are, as a staff in the hospital so people will be saying don’t talk to me o, you are working in the hospital. Those are part of the challenges. When you get to work too, some people when you talk to them, they will not listen, move back, they will not listen, go and use face-mask, they will not listen. Shey (do) you understand, those things can, you can be afraid of it, that you can contact that COVID-19, am I correct? (chuckles) (HA 2), “part of the challenges I felt was avoidance by people because I work in a hospital” (HA 2).

People behaving like there’s no COVID-19, they don’t keep a distance unless you tell them, they don’t wear a mask unless you tell them to (MRO), Many people were saying COVID-19 was a scam (HA 2).

### 3.2.5. Coping with Disruptions in Services

“I felt more secured with the lockdown because we were

*attending to fewer patients, triaging was also easier the barriers to effective health care delivery were the shortage and lack of PPEs, patients' non-compliance with COVID-19 preventive measures, essential services especially immunization, emergency services and Nutrition clinics were the most affected" (SNO).*

*"I noticed that the emergency services were most affected because the rate at which we used to transfer patients with the ambulance to the referral centre was reduced." (JD1).*

*"Yes, services were disrupted in our clinic. Cases attended to were limited to children and emergencies. There was problem with transportation. Lockdown affected patronage." (MO).*

*"Services were disrupted in all units, as time went on, we had a meeting to address the issue and discussed the recommencement of essential services especially immunization. We also requested emergency services for children was fully implemented back." (SNO).*

*"Services were disrupted in my unit, transporting nurses to the main hospital to immunize new born children were cancelled." (JD1).*

*"I recommend Regular cleaning and disinfection of the ambulance, provision of oxygen and PPEs, all staff should be treated the same in terms of allowances and motivation" (JD 2).*

*"Provision of PPE and staff motivation" (MRO).*

*"We need to talk to patients about how to protect themselves and to not stigmatize health workers". (HA2).*

#### 4. Discussion

This study provides detailed information on the effect of the COVID-19 pandemic on the essential health services of a comprehensive health centre in a South West Nigerian town.

Information from the clinic registers revealed considerable disruption of health services that appeared to be consistent across all clinics with the general out-patient clinic, family planning and immunization clinics being most affected. This was similar to the findings from a survey, which included responses from over one hundred countries between the months of May and July 2020. Almost every country (90%) experienced a disruption to some extent, with greater disruptions being reported in low-and middle-income [9] compared to high-income countries where routine immunization services (70%), reproductive health services-family planning (68%), antenatal care (56%) and cancer diagnosis and treatment were the most affected essential health services recorded [10].

The findings from the General Out-patient registers reviewed, showed that during the period preceding the pandemic, from June 2019 to February 2020, an average of 3,000 attendees were recorded each month. In March 2020, there was a decline in the number of attendees with a further and marked decline during the month of April 2020. The month of April recorded only a third of the total number of attendees usually seen each month in the period preceding the pandemic. The adult clinic recorded the lowest number of attendees compared with the Infant welfare and school Health clinics of the General Out-patient Clinics probably due to

restriction of movement and the fear of coming to the hospital. This total lockdown resulted in the unavailability of transportation services for many of the inhabitants of the state in reaching health care facilities to access the health care services they needed [11] and psychological responses such as fear. This fear was probably due to reports of health workers getting infected with Corona Virus [12], the stay-at-home order, and the intention to avoid crowds as such most persons in the community did not want to access care in high-risk settings to observance of the lockdown which involved restriction of movement [13]. This disruption of essential health services was particularly problematic for these group of patients (adults and the elderly) who require regular care [14].

The turnout at the Antenatal clinic was low even in the months preceding the pandemic with an average of 21 attendees recorded each month. During the month of April, no attendance was recorded except for a delivery towards the end of the month. This further reflects the effect of the total lockdown. By the month of May activities seemed to have returned to normalcy with the usual average number of 25 attendees seen in the clinics each month. These findings were similar to a report by the Global Financing Facility for Women, children and adolescents, which substantiates disruptions in out-patient clinics for young children in most countries surveyed as well as disruption in care for pregnant women and new mothers [3]. These disruptions could have contributed to home deliveries and unskilled birth attendance causing intrapartum or post-partum complications increasing infant and maternal morbidity or mortality [7].

The impact of non-availability and non-access to Nutrition Rehabilitation Services, was a major gap identified in our study. Children on treatment for malnutrition did not have full access to primary providers, this may have contributed to further loss of calories gained and reversal of gains from nutritional rehabilitation. Children with parents who could not access nutritious meals due to loss of work from the pandemic, and lockdown, were further pushed into the consequences of food insecurity and infant morbidity [26].

All these occurred without provision for a social safety net or nutritional palliatives, however In India, where there was disruption of essential services also, the Indian government took several measures including home visits to ensure continued delivery of essential services with provision and utilization of key nutrition intervention services during the pandemic [9].

The role of the laboratory in surveillance and primary health care in early detection, management and outbreak prevention cannot be under-estimated [15]. In the facility's laboratory, the findings were not different from those earlier observed as the number of attendees coming to the hospital for various blood tests such as packed cell volume, genotype, hepatitis screening test, blood group and blood film for malaria parasites were noticed to have significantly dropped while some of the tests such as genotype and hepatitis screenings were not conducted at all during the month of April. Africa accounts for 94% and Nigeria 30% of the global malaria burden [16], evidence shows that COVID-19 could

impact the fight against malaria and other infectious diseases, as COVID-19 put pressure on national and local resources available for health.

With the disruptions in malaria diagnosis, this inability to test and then treat for malaria is a major a draw-back of the gains of concerted efforts towards malaria control. Sub-Saharan Africa is heavily burdened with malaria, other infectious diseases and poor health systems. The emergence of other diseases with limitations in laboratory diagnosis and support could further cause other infectious diseases' transmission and spread, which is at high risk in these circumstances of a lockdown in a pandemic [16]. Other areas of healthcare such as dental care and rehabilitation were said have been deliberately suspended in line with the management protocols of health facilities [10].

In the family planning clinics, different methods, which include implants, IUCDs and injectables, were commonly requested with implants being the commonest. There was a significant reduction in the total number of attendees in the month of April as compared to the rest of the preceding months. However, new acceptors significantly decreased in the month of May while old acceptors coming for revisits significantly reduced in the month of April. This may be as a result of unavailability of the contraceptive commodities at the clinics for new acceptors during the month of May, due to challenges with the supply chain for FP commodities in that period, this is corroborated by reports which showed that commodities availability and access to reproductive health services were compromised during the lockdown [6].

Immunization services were also compromised especially during the months of April and May 2020. However, a similar decline was observed in November and December 2019, which may be due to the low turnout usually observed during the festive periods in the facility. All immunization services were affected especially for BCG, measles, yellow fever and OPV vaccinations. A large number of children might have missed vital vaccines. Many children did not receive BCG vaccine, which provide protection from Tuberculosis a contagious respiratory disease that Nigeria is still struggling to eliminate due to its relationship with HIV. Disruption in OPV vaccination also stirs a lot of concern at a time Nigeria is being certified polio-free. Evidence from previous outbreaks shows that health systems are overwhelmed, mortality from vaccine-preventable and other treatable conditions also can dramatically increase [8].

Underlying causes of existing disruptions according to a WHO survey, included disruptions in transport, insufficient PPE, insufficient staff, stock out of essential medicine with low and lower-middle income countries most impacted. Reductions in outpatient care attendance owing to lower demand were reported by 76% of countries, with other factors such as lockdown (48%) and financial difficulties (33%) also mentioned. The most commonly reported factor on the supply side was cancellation of elective services (66%). Other factors reported by countries included staff redeployment to provide COVID-19 relief (49%), insufficient personal protective equipment available for health care providers (44%),

unavailability of services owing to closures of services or health facilities (33-41%), and interruptions in the supply of medical equipment and health products (30%) [17].

The qualitative aspect of our study showed that health care workers are crucial to any health care system. At any point in time health care workers are at risk of becoming infected during an infectious diseases outbreak. As the COVID-19 pandemic continues to sweep the globe, infecting millions of people and counting hundreds of thousands of deaths and massive economic disruption, health care workers are at a substantially increased risk of becoming infected with SARS-COV-2 [18, 19].

Health care workers are put in an unprecedented situation, having to make difficult decisions, while working under extreme pressure [20, 21]. Peculiarly, the Nigerian health care sector has been plagued with inadequacies for decades in terms of dilapidated infrastructure, lack of adequate equipment, lack of adequate manpower as well as lack of adequately skilled personnel where appropriate. All this have contributed to the enormous challenges faced by health care workers during the COVID-19 pandemic [22].

From this study, we observed that during the pandemic health care workers courageously managed patients adequately despite stigma, the fear of getting infected and infecting their loved ones, they remained dedicated to caring out their duties.

The Challenges encountered by health care workers at the onset of COVID-19 lockdown included those encountered on their way to work. Many health care workers experienced transportation challenges including difficulty in getting to their work place while being harassed by security operatives mounting road blocks to enforce the lockdown along the way. Challenges encountered at work included shortage of personal protective equipment for COVID-19 risk reduction, this caused a sense of insecurity and anxiety, however, for most of them this did not affect the capacity to carry out their duties appropriately [22]. Training and re-training of health care workers, which is an important component of the WHO guideline in combating COVID-19 was not available for all cadre of health care workers. Trainings were organized for the senior cadre but the junior cadre health workers which included the drivers did not have any formal training in infection prevention and control.

Also, it was observed that most of the health care workers coped well with the situation on ground as well as the challenges they faced. Some health workers encountered psychological issues such as feeling unsafe, fear of being infected and experience of stigma. All these challenges, resulted in lack of motivation leading to other emotional and psychological responses such as worry, fear and concern as expressed by the health workers interviewed in the study and similarly documented in other studies [12].

Health workers encountered some barriers to effective health care delivery at the time of the pandemic. These barriers include reduction in hospital attendance, which resulted in missed opportunity for some patients especially, children who are to receive immunization. Provision of

wrong and false information concerning the non-existence of COVID-19 by patients also caused a major barrier in delivery health care services as many of the patients refused to follow the laid down guidelines in the health facilities [23, 24].

From the thematic analysis of qualitative studies, the themes were identified from data analysis, which are Knowledge of COVID-19 prevention measures, highlighted infection control measures such as Handwashing, Use of facemasks and, Social distancing; Challenges encountered at the onset of COVID-19 lockdown by health workers which included difficulty in getting to work and inadequate availability of Personal Protective Equipment; the Psychological impact of COVID-19 on health workers at the time of lockdown, with attention to occupational safety and lack of motivation were emphasized and barriers to effective health care delivery at the time of pandemic which itemized reduced hospital attendance, misinformation amongst patients and fear of exposure to the COVID-19 infection [25].

In Coping with all these changes, health workers recommended staff motivation, staff welfare, health education and ensuring supply of PPEs, as interventions for improving coping with these disruptions.

## 5. Conclusion

The impact of the COVID-19 pandemic on essential health services is a source of great concern as studies have shown that Primary Health Centres and effective epidemic response relies on Community-Oriented Primary Health Care. Major health gains achieved over the last two decades can be wiped out in a short period of time. Researchers are of the opinion that non-COVID-19 deaths have also increased in some places partly due to the disruption in health services.

The World Health Organization affirms that it was reasonable to anticipate that even a modest disruption in essential health services could lead to an increase in morbidity and mortality from causes other than COVID-19 in short to medium and long terms. Clear strategies to support and appropriately manage exposed and infected healthcare workers are essential to ensure effective staff management and to engender trust in the work place.

Policy makers need to support health care facilities in interpreting guidance during a pandemic that will help to mitigate the impact of this pandemic on their work force. Overall, this study provides quality knowledge and insights on the lived experiences and challenges encountered by health care workers involved in the COVID-19 response in Nigeria and highlights important insights on the need to support Nigeria and other countries in sub-Saharan Africa during the response to COVID-19 and how to build a better health system that will be able to withstand further pandemics without disruptions of essential health services.

## 6. Recommendations

As part of policy implementation, a number of countries

were implementing some of the WHO recommended strategies to mitigate service disruption, such as triaging to identify priorities, shifting to on-line consultations, changes to prescription practices as well as removal of user fees to offset potential financial difficulties for patients [17].

The suggestions also elaborated appointment of an “Essential Health Services Coordinator” by countries’ COVID-19 task forces, messages to communities and citizens on the importance of continuity of essential health services in their routine centres alongside public updates on the status of COVID-19 and operationalization of country specific guidance in the context of LMICs by policy formulating agencies to guide and for governments to provide advisory for protecting non-COVID-19 patients, all health workers, including community health workers, with personal protective equipment (PPE) to enable them to keep providing services while also protecting themselves and their families [25].

Recommendations from this study is for the Nigeria outbreak response agencies to improve essential healthcare delivery services in terms of coordination, communication, community and culturally-sensitive country specific contexts.

## Limitations

The findings from this study could have been limited by being carried out in a health facility which operates at the primary healthcare level. Findings may have been different in a health facility operating at a different level of care.

## Declarations

### *Author Contributions*

Conceptualization, M.Y.I. and O.T.O.; methodology, M.Y.I. and I.K.T.; software, O.T.O.; validation, M.Y.I, F.A.O, O.O.O and O.T.O.; formal analysis, O.F.O, O.O.O AND O.T.O.; investigation, M.Y.I.; resources, O.T.O.; data curation, F.A.O and O.O.O.; writing—original draft preparation, O.T.O.; writing—review and editing, M.Y.I, F.A.O, O.O.O and O.T.O.; visualization, M.Y.I, F.A.O, O.O.O and O.T.O.; supervision, M.Y.I and I.K.T; project administration, M.Y.I and I.K.T. All authors have read and agreed to the published version of the manuscript.

### *Ethical Approval*

For this study, we did not require ethical approval for the study. This was an Intradepartmental assessment (an internal audit so to speak) and all members of the research team and respondents are staff of the community health department. Also, data reviewed was departmental service data. We however, got permission and clearance from all unit heads to access the registers for each service unit and the records department of the Urban Comprehensive Health Centre, Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC), Ile-Ife.

### Data Availability Statement

- 1) Data sharing not applicable: No new data were created or analyzed in this study. Data sharing is not applicable to this article.
- 2) Data confidentiality: Hospital attendees' confidentiality was assured as no identifying information was used in the analysis. All data collected from registers were treated as confidential. Only serial numbers were used to identify participants; and only the researchers have access to the data.
- 3) The potential benefits of this study are the interventions which would follow based on the findings with regards to subsequent measures to ensuring essential services provision, during an outbreak or a pandemic. There was no invasive procedure which could cause harm or injury to any of the respondents, only desk reviews were and Key Informant interviews were conducted and it was done observing all precautionary measures.

### Conflict of Interest Statement

The authors declare that they have no competing interests.

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