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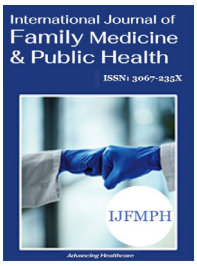

Effects of Covid-19 Pandemic On Family Medicine Practice in A Nigerian Teaching Hospital

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A B S T R A C T

The COVID-19 pandemic posed a significant and unprecedented threat to all aspects of human activity, with the healthcare sector experiencing profound disruption. Health professionals were particularly affected, not only through increased clinical demands and occupational risks but also through substantial interruptions to their training and professional development. Infection prevention measures such as physical distancing, restrictions on gatherings, and periodic lockdowns altered conventional modes of medical education, especially postgraduate residency training that relies heavily on face-to-face clinical interactions. This study examined the experiences of resident doctors undergoing postgraduate training in Family Medicine within a residency programme in South-West Nigeria during the COVID-19 pandemic.

A qualitative descriptive approach was employed to explore the perspectives of residents and trainers regarding the impact of the pandemic on training and service delivery. Data were obtained through interviews and group discussions and analysed thematically. The findings were organised into six major categories. These included the effects on hospital practice, such as service reorganisation, altered duty rosters, and increased workload; the effects on patients, including reduced clinic attendance, delayed presentations, and challenges in continuity of care; and the effects on training activities and knowledge acquisition, notably disruptions to academic sessions, reduced clinical exposure, and delays in assessments. Additional themes related to the rapid adoption of technology and telemedicine for patient care and teaching, the influence of government policies on health service delivery and training structures, and international push–pull factors that intensified residents' intentions to migrate for perceived better working and training conditions.

The study underscores the far-reaching impact of the COVID-19 pandemic on family medicine residency training and highlights the need for resilient training models, strengthened digital infrastructure, and supportive policies to safeguard postgraduate medical education during future public health emergencies.

Introduction

Coronavirus disease 2019 (COVID-19), as defined by the World Health Organization (WHO), is a novel infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (1). Since its emergence in late 2019, COVID-19 has evolved from a localized outbreak into a prolonged global health challenge, with repeated waves driven by emerging variants. Although global mortality and hospitalization rates have declined compared with the early stages of the pandemic, SARS-CoV-2 continues to circulate widely, with new infections reported across all regions of the world. WHO surveillance reports indicate that COVID-19 remains endemic in many countries, including Nigeria, with periodic surges placing sustained pressure on health systems [2].

Transmission of SARS-CoV-2 occurs primarily through respiratory droplets and aerosols, particularly in crowded or poorly ventilated environments. Clinically, the disease presents with a broad spectrum of manifestations. Most infected individuals develop mild to moderate illness characterized by fever, cough, sore throat, fatigue, headache, myalgia, and shortness of breath. However, a significant minority progress to severe or critical disease, including pneumonia, acute respiratory distress syndrome, thromboembolic complications, and multi-organ failure, particularly among older adults and those with underlying medical conditions [2].

Diagnosis of COVID-19 relies on laboratory confirmation, with reverse transcription polymerase chain reaction (RT-PCR) testing regarded as

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the gold standard for detecting viral RNA. Rapid antigen tests are widely used for screening and early detection, especially in resource-constrained settings, while serological tests assist in epidemiological surveillance. Treatment strategies have evolved substantially over time. Management remains largely supportive, with oxygen therapy, corticosteroids for severe disease, anticoagulation when indicated, and the use of approved antiviral and immunomodulatory therapies in selected patients, in line with WHO recommendations [3].

Beyond its clinical impact, COVID-19 has profoundly disrupted health systems and medical practice worldwide. While some innovations emerged such as the rapid expansion of telemedicine and digital health platforms the pandemic also resulted in widespread service interruptions, health worker burnout, and preventable loss of life. Weak health systems, such as those found in many low- and middle-income countries including Nigeria, were particularly exposed, revealing deficiencies in infrastructure, workforce capacity, supply chains, and emergency preparedness. Even well-resourced health systems in high-income countries struggled to contain transmission and sustain routine services, underscoring the global vulnerability to large-scale public health emergencies [2,3].

A major but less frequently examined consequence of the pandemic was its impact on the training and professional development of healthcare workers. Residency programmes, which depend heavily on face-to-face clinical exposure, mentorship, and structured academic activities, were significantly disrupted by infection control measures, redeployment of staff, and reduced patient attendance [1]. These disruptions raised concerns about skill acquisition, knowledge gaps, and workforce sustainability, particularly in family medicine, which plays a critical role in primary care delivery. This paper therefore presents observations from the COVID-19 pandemic on the practices and experiences of healthcare workers in the Family Medicine Department of a tertiary health institution in Nigeria.

Methodology

This study adopted a descriptive qualitative design to explore the perceived effects of the COVID-19 pandemic on healthcare practice and training within the Family Medicine Department of a tertiary healthcare institution in Nigeria. The study was conducted during the COVID-19 pandemic period and focused on capturing firsthand experiences of healthcare workers directly involved in clinical care and training. All senior clinical staff members in the department were identified and purposively selected to participate in the study. This included medical doctors (consultants and resident doctors), nurses, and pharmacy staff, as they represent the core professional groups involved in patient care, service delivery, and postgraduate training within the department. A total of twenty [20] participants were included: five nurses, four consultant family physicians, eight resident doctors, and three pharmacy staff. Participation was voluntary, and verbal consent was obtained from all participants prior to data collection.

Data were collected through one-on-one verbal interviews conducted by the authors. The interviews were informal and conversational in nature, allowing participants to freely express their experiences and observations regarding the impact of the COVID-19 pandemic on their professional practice, patients, and training activities. To enhance accuracy and credibility, participants were subsequently provided with a sheet of paper on which they were asked to write down the key points they had verbally communicated during the interview. This written documentation served to confirm, clarify, and complement the verbal responses. Following data collection, the authors reviewed all responses and conducted a thematic aggregation of the findings. Similar responses were merged to avoid duplication and to identify recurring patterns. Through this process, a total of thirty-three distinct effects of the COVID-19 pandemic were identified and recorded. These effects were then systematically grouped into six thematic categories to improve clarity and facilitate analysis: effects on hospital practice, effects on patients, effects on training and knowledge acquisition, effects on technology and telemedicine, effects of government policies, and effects related to international push–pull factors influencing healthcare workers.

To contextualize the findings and assess their global relevance, a narrative literature search was subsequently conducted. This aimed to determine whether similar effects of the COVID-19 pandemic on healthcare practice and training had been reported in other settings worldwide. The literature findings were used to support discussion and interpretation of the observed themes.

Results

Analysis of the interview data revealed six major thematic categories describing the effects of the COVID-19 pandemic on healthcare practice, patients, training, technology, government policy, and workforce migration within the Family Medicine Department. A total of thirty-three distinct effects were identified and are presented below under the respective subthemes.

Effects on Routine Hospital Practice

Participants consistently reported that routine hospital practice underwent significant reorganization during the pandemic. One of the most prominent changes was the segregation and triaging of patients, particularly distinguishing those with respiratory symptoms such as cough from those without. Screening measures became routine, including the use of infrared thermometers and mandatory face mask use for staff and patients. Clinic environments were redesigned to comply with physical distancing requirements, resulting in reduced patient capacity for routine outpatient visits.

Respondents noted a marked reduction in the number of patients seen during clinic sessions due to COVID-19–approved protocols. Elective surgeries were frequently postponed, leading to prolonged waiting times and backlog of cases. To minimize infection risk, consultation time was significantly shortened, often resulting in hurried interactions. Many clinicians reported minimal or no physical examination during routine visits as a precaution against transmission. Increased emphasis was placed on infection prevention practices, with heightened training and awareness regarding the use of personal protective equipment, handwashing, and personal hygiene. However, some participants expressed reluctance to attend to patients suspected of having COVID-19, particularly in situations where personal protective equipment was scarce.

Effects on Patients

Interviews revealed that patients' health-seeking behaviors were substantially affected by the pandemic. Many patients were reportedly reluctant to visit healthcare facilities due to fear of contracting COVID-19 during hospital visits. Fear of stigmatization associated with being diagnosed with or suspected of having COVID-19 further discouraged hospital attendance. Traditional family medicine practices such as home visits and home-based physician care were either discontinued or significantly modified due to social distancing directives.

Participants also observed an increase in patient self-monitoring of basic health parameters, such as blood pressure and blood glucose levels, at home in order to reduce the frequency and duration of clinic visits. Additionally, there was a reported rise in self-medication, with patients using unproven treatments for suspected COVID-19 infections based on information obtained from social media and other informal sources.

Effects on Training Activities and Knowledge

The pandemic had a profound impact on postgraduate training activities. Respondents described a significant reduction in interpersonal contact, communication, and professional interaction among trainees and trainers. Reduced patient attendance limited clinical exposure, which adversely affected skill acquisition and data collection for research. This resulted in prolonged duration of dissertation research for Part II Fellowship candidates and extended training periods for Part I residents due to inadequate patient exposure during rotations.

Social distancing protocols further restricted opportunities for informal knowledge sharing and mentorship within the department. Core family medicine practices such as home visits, family counseling, and family conferencing were largely suspended. Participants reported instances of inappropriate prescribing practices driven by inadequate knowledge and uncertainty, including the overuse of unproven medications for COVID-19. There was also a tendency among some practitioners to over-interpret common upper respiratory tract symptoms as COVID-19. Reduced staffing due to infection and deaths among healthcare workers further strained training capacity. Despite these challenges, participants noted that the pandemic created opportunities for research into a new disease and its socio-biomedical effects. Vaccine hesitancy among both health workers and the general population was also identified, largely attributed to insufficient knowledge.

Effects on Technology and Telemedicine

A major positive outcome highlighted by participants was the increased

use of information and communication technology in clinical practice. Telemedicine was increasingly deployed for routine consultations, while platforms such as Zoom were used for clinical meetings and academic activities. Both health workers and the general public became more reliant on the internet and social media for information on the evolving pandemic. Respondents also noted the rapid development and deployment of new technologies for screening and diagnosis, as well as unprecedented advances in vaccine development and therapeutic options.

Effects on Government Policy

Participants described significant impacts arising from government policies implemented during the pandemic. Lockdown measures and COVID-19 guidelines were associated with widespread economic hardship. Irregular payment of salaries by some state governments negatively affected health worker morale. The establishment of COVID-19 screening centers, often outside conventional laboratory settings, was associated with delays in test results and increased anxiety among patients. Respondents also reported large-scale migration of healthcare workers, which increased workload and stress for those who remained.

Effects on International Pull–Push Factors for Resident Doctors

Interviews revealed that the pandemic intensified existing international migration trends among healthcare workers. Participants described increased emigration from resource-poor to resource-rich countries, driven by job insecurity, worsening economic conditions, and perceived better working environments abroad. Internal migration within Nigeria, from less resourced regions or institutions to better-paying centers, was also reported. These dynamics further exacerbated workforce shortages and placed additional strain on training programmes and service delivery.

Discussion

The findings of this study demonstrate that the effects of the COVID-19 pandemic on healthcare delivery and residency training observed in South-Western Nigeria were not unique to this setting but mirrored experiences reported globally. Across different health systems, the pandemic necessitated rapid restructuring of healthcare services and medical education, driven largely by concerns for the safety of both patients and healthcare workers. Reduced clinic attendance, reorganization of outpatient services, triaging systems, and modifications to routine hospital practices were widely reported during the pandemic period, reflecting a global shift in care delivery models in response to infection risk and resource constraints [4-6].

Fear of stigmatization associated with COVID-19 infection was a recurrent theme both locally and internationally. Patients' reluctance to present to healthcare facilities, often due to fear of being labeled or isolated, contributed to delayed presentations and increased reliance on self-care practices. Similar reports from other settings indicate that many individuals resorted to unproven therapies for prevention or treatment of COVID-19, often influenced by misinformation and uncertainty surrounding the disease. Consequently, home-based self-monitoring of health parameters and alterations to routine clinic appointment schedules became more prevalent worldwide [7-10].

Medical education and residency training experienced substantial disruption globally. In response, many training institutions adopted innovative approaches, including virtual teaching using electronic and social media platforms, to sustain educational activities. However, the deaths of healthcare workers reported in several countries further compounded training challenges by reducing the number of available trainers and increasing workloads for remaining staff. These losses had a negative impact on resident education and morale across multiple regions [10-15]. Despite these challenges, the pandemic also created unprecedented opportunities for research into a novel disease, notably resulting in the fastest vaccine development timeline in medical history. Advances in telemedicine platforms, diagnostic technologies, and therapeutic drug development were widely reported during this period [12-19].

Government responses to the pandemic, particularly lockdown policies, had profound socio-economic consequences. In Nigeria and many other countries, restrictions on movement and economic activity led to loss of income, irregular salary payments, and increased financial hardship among citizens and healthcare workers alike. Although various mitigation measures were introduced, these were often insufficient to fully offset the negative economic impact of prolonged lockdowns [20-25]. These pressures contributed to increased dissatisfaction among health workers and intensified migration trends. Indeed, the pandemic significantly amplified international and internal migration of healthcare workers, particularly from low-income to high-income countries. This phenomenon prompted the World Health Organization to issue guidance on health workforce migration, acknowledging its implications for already fragile health systems [26,27]. Similar migration pressures were observed within countries, with movement from under-resourced institutions to better-paying or more stable centers.

Reports from the United States align closely with the findings of this study. In the US, COVID-19 was associated with reduced clinical activities and a marked increase in telehealth utilization. Family Medicine residents experienced reassignment to non-routine duties, reduced in-person educational activities, and increased reliance on distance learning. While many residents reported feeling adequately protected due to improved access to personal protective equipment and training, high levels of stress and burnout were also widely reported. Innovative responses, such as the creation of COVID-19 camps to support vulnerable populations, emerged alongside increased concerns about vaccine hesitancy, mental exhaustion, and the long-term sustainability of telemedicine services [28-32]. European experiences further corroborate these findings. Concerns were raised regarding the quality and effectiveness of virtual medical education, particularly in assessing learner engagement and competence. The scarcity of published data from Family Medicine settings during the pandemic was identified as a gap, presenting an opportunity for further research. Clinicians across Europe faced the dual challenge of maintaining care quality while ensuring patient safety. Although telemedicine served as a critical alternative, its limitations—such as inability to perform physical examinations—were widely acknowledged. The pandemic also brought issues of healthcare worker safety, stress, and well-being to the forefront [33]. Similar effects were reported in Asia, including Jordan, where hospital attendance declined significantly. Complete lockdowns disrupted access to routine medications, sometimes resulting in adverse outcomes, including loss of life. Medical education suffered setbacks, prompting widespread adoption of virtual learning and teleconsultations. Delayed consultations contributed to worsening health outcomes among patients with chronic conditions, underscoring the unintended consequences of prolonged movement restrictions [34].

Conclusion

Covid -19, a hitherto, unknown variant of SARS corona virus, has inflicted the world with many novel changes and challenges manifesting as its effects. Some of this have positive effects on the way we live our lives while some have been deleterious. Among the positive ones are increased consciousness of infection prevention and control practices, increasing use of telemedicine as an alternate platform of consultation, use of virtual platforms for holding meetings and conferences and provision of novel equipment for patient management in some hospitals e.g. respiratory machines, novel serological testing methods for Covid-19 and development of new drugs in the battle against viral diseases. This may well open the way for other drugs and better understanding for the conquest of viral diseases that has so far remain somewhat elusive. On the economic front, new thinking to revive various distressed economy may lead to a new economic system not dependent on the American dollar. On the negative side, covid – 19 has brought grave suffering on mankind with loss of many lives, collapse of businesses, a world economy struggling to be revived after lockdown, emigration of skilled work force from low-income countries to higher paying countries thereby leading to a distressed health system in those countries and increase in preventable deaths. Sadly, there has been loss of lives of many health care workers, including doctors, whose heroic role in saving mankind may forever never be recognized or remembered [35].

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