


Utilization of Postnatal Care During the COVID-19 Pandemic: Perception and Intents of Postpartum Women at Tertiary Health Facility in Southwest, Nigeria

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Abstract

Coronavirus disease (COVID-19) pandemic took the world unawares and disrupted maternal health care services. This study assessed postnatal care (PNC) utilization, perception, and intent of postpartum women to use PNC. This was a descriptive cross-sectional study conducted during the COVID-19 pandemic over a 2-months period. Inclusion criteria—consenting women, aged ≥ 18 years, and delivery at the study site; 115 women were selected by simple random sampling technique. The information included sociodemographic, obstetric characteristics, perceived effects of COVID-19 on maternal health-care, and willingness to return for PNC using pre-tested interviewer-administered questionnaires. The maternal healthcare register was also reviewed for the proportion of women accessing services before and during the pandemic. Data were analyzed using IBM Statistical Package and Service Solutions (SPSS) Version 23. The total No. of deliveries and PNC attendance/month was reduced. Respondents were multiparous women (61.7%), with no pregnancy complication (73.9%). About 93% were counseled on PNC; while only 47.8% of the respondents had good knowledge of PNC. The pandemic affected antenatal care in 25.2%, 7.8% perceived it would affect PNC, 62.6% perceived themselves at risk of COVID-19; 13.9% had fears of coming for PNC. Despite this, more than 75% were willing to come for PNC. COVID-19 affected the use of maternal healthcare. Counseling on the role and benefits of PNC can improve its use.

Keywords

COVID-19 and maternal health, COVID-19 and postnatal care, COVID-19 delivery care, COVID-19 postpartum care

Introduction

The novel coronavirus (2019-nCov also known as SARS-CoV-2) infection causing the coronavirus disease (COVID-19) started in Wuhan, China in 2019 and soon became a global pandemic of the highest magnitude in modern history (1,2). The emergence of COVID-19 disease took the world unawares and caused a disruption in the health, social, and economic lives of people with more than one-third of the global population placed on lockdown (3.) The lockdown affected the quality of life of individuals, society and led to the collapse of many economies and health-care systems worldwide including the maternal healthcare services. This disruption was associated with interruptions in maternal, newborn, and child healthcare services (4–6).

As of November 26, 2021, there have been a total of 259,502,031 confirmed cases of COVID-19 with 5,183,003

deaths worldwide (7,8). In Nigeria, there were 213,883 confirmed cases of COVID-19 and 2,975 deaths (89). The burden of COVID-19 disease and deaths caused a strain on the health system and diversion of manpower, funds, and healthcare resources to the control and treatment of the disease. The pandemic led to collateral effects on health-care systems; resulting in significant disruption of access and delivery of healthcare services generally and even more

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significantly maternal, newborn, and child healthcare services. The lockdown as one of the emergency responses to the outbreak disrupted the normal daily life of individuals (5,10); resulting in healthcare, psychosocial, and emotional disturbance for many prenatal and postpartum women. Previous studies reported the effect of COVID-19 on the mental health status of women in the postnatal period, with an increase in the rates of postnatal anxiety and depression (11–14).

In Nigeria, maternal and newborn healthcare utilization has been suboptimal. According to the Nigerian Demographic Health Survey, about 67% of pregnant women used antenatal care services and only 43% of deliveries were supervised by skilled birth attendants. Postnatal care (PNC) coverage or utilization is even lower, with only 42% of women using the service (15). These poor health indices were further threatened by the COVID-19 pandemic and lockdown. In the face of the pandemic lockdown, pregnant and postpartum women experienced significant disruption in prenatal and PNC services received such as reduced contact with the maternal healthcare providers, missed prenatal care visits and quality of care, psychological stress, and emotional trauma (16,17).

With regards to the PNC services, women who delivered during the COVID-19 pandemic were less likely to access or receive preventive services such as screening for postpartum depression, family planning counseling, and initiation of long-acting reversible contraceptive use (18). The pandemic was also associated with a reduction in the utilization of maternal healthcare service and concomitant increase in maternal morbidity and mortality (19).

It is imperative to assess the PNC utilization in order to take active steps to encourage women to access appropriate

and highly needed care for mother and baby. It is also important to enhance the availability and pattern of PNC delivery and policy change that will forestall disruption of services during the pandemic or other events. This study assessed the PNC utilization and perception of postpartum women on the PNC service at a tertiary healthcare facility.

Materials and Methods

This was a quantitative study—a descriptive cross-sectional study, conducted at the obstetric unit of the University College Hospital (UCH), Ibadan, Nigeria over 2 months—December 2020 to January 2021. The health facility is a 950-bedded tertiary hospital with specialty and sub-specialty units offering various services including maternal and newborn healthcare. The annual delivery rate is about 2500/year. It is the main referral hospital for maternal and child healthcare; and also a referral center for screening and treatment of COVID-19 disease patients.

The study population included postpartum women who experienced antenatal and delivery care at the UCH during the COVID-19 pandemic. The criteria for eligibility include consenting women at a minimum age of 18 years, delivered at the study site. Non-consenting women were excluded. The sample size of 115 participants—postpartum women delivered at the birthing unit of UCH—was calculated using a prevalence rate of PNC utilization of 42% and 20% attrition rate. The postpartum women were selected using a simple random sampling technique and a written informed consent was obtained.

A study tool-questionnaire was developed and the information included were sociodemographic and obstetric characteristics, antenatal events, postpartum status, and

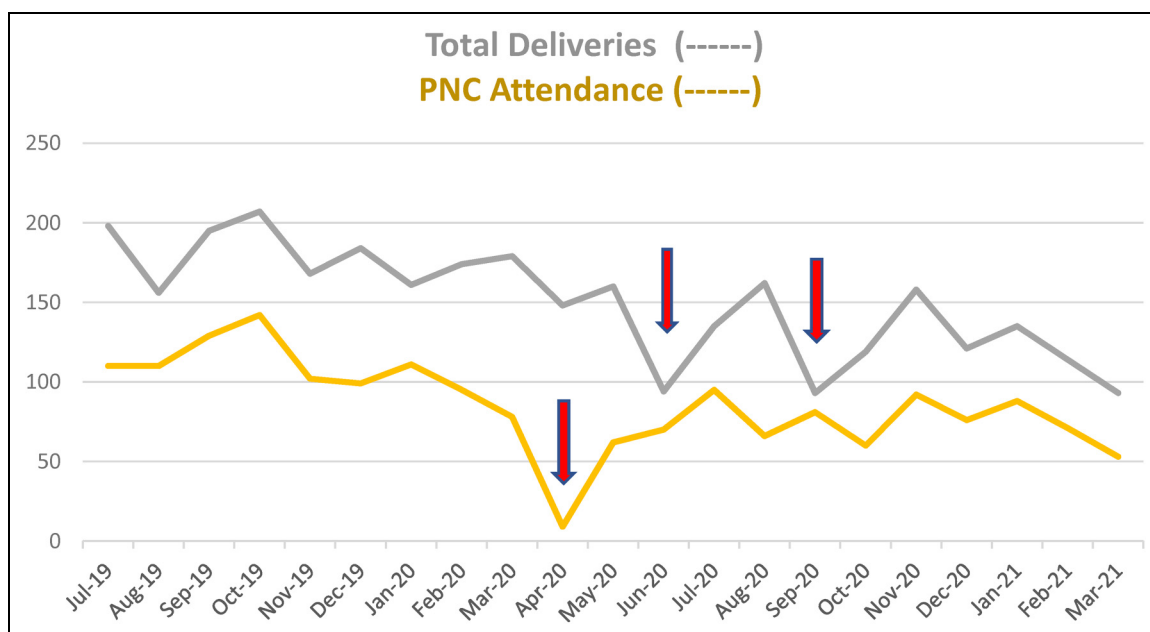


Figure 1. Total No. of deliveries per month as well as the No. of postnatal clinic attendance.

perceived effects of COVID-19 on PNC. Participants were interviewed and data was collected using a pre-tested interviewer-administered questionnaire. A pilot study was conducted to test the questionnaire. The information obtained included sociodemographic and obstetric characteristics, antenatal events, postpartum status, and perceived effects of COVID-19 on PNC.

The maternal care and delivery records were also reviewed and the proportion of women accessing the services before and during the pandemic was extracted using a data collection form. The period from July 2019 to March 2021 was reviewed. The data collected was entered and analyzed using IBM Statistical Package and Service Solutions (SPSS) Version 23. Descriptive statistics and bivariate analysis were carried out. The level of significance was set at $P < 0.05$.

Results

The study assessed the effects of COVID-19 pandemic on the uptake and utilization of maternal care especially for delivery and PNC; and the perception of postpartum women about PNC. Figure 1 shows the total number of deliveries per month and the No. of postnatal clinic attendance. The period of April to July 2020 marked the peak of impact of COVID-19 with nationwide lockdown and it was associated

with a significant reduction in the number of deliveries within the hospital as well as the postnatal clinic attendance.

A total of 115 respondents completed the questionnaire. Table 1 shows the sociodemographic characteristics of respondents. Participants were mostly aged 26 to 35 years, married (98.3%), had tertiary level of education (87.0%), Christians (67.0%), and of the Yoruba tribe (76.5%). The majority—72.7% were booked for antenatal care, mostly (69.9%) in the second trimester of pregnancy, 61.7% were multiparous and 73.9% of the women had no complications during the pregnancy. The mode of delivery was similarly distributed across the vaginal (48.7%) and cesarean section (51.3%).

Table 2 shows the maternal and fetal outcomes. Postpartum complications were recorded in 15.7% of the delivered mothers; about 16.5% and 1.7%, respectively, complained of poor lactation and breast engorgement. The knowledge of PNC is summarized in Table 3. The majority (93%) of the respondents reported that they were counseled on PNC services, but only 47.8% had good knowledge of PNC. Among the participants, the women had poor knowledge of newborn care/assessment (50.4%), perineal/personal hygiene (69.6%) as components of PNC, while the majority knew about family planning (87.8%), pap smear (64.3%),

Table 1. Sociodemographic and Economic Characteristics of the Respondents.

Variables	Frequency (N = 115)	Percentage (%)
Age (years)		
20 to 25	8	7.0
26 to 30	38	33.0
31 to 35	52	45.2
>35	17	14.8
Marital status		
Married	113	98.3
Single	2	1.7
Religion		
Christianity	77	67.0
Islamic	38	33.0
Tribe		
Yoruba	88	76.5
Igbo	9	7.8
Others	18	15.7
Level of education		
Secondary and below	15	13.0
Tertiary	100	87.0
Husband's level of education		
Secondary and below	12	10.4
Tertiary	103	89.6
Family income^a		
<50,000	68	59.1
50,000 to 100,000	16	13.9
>100,000	31	27.0

^aNaira.##

Table 2. Fetal and Maternal Outcome of the Respondents.

Variables	Frequency (N = 115)	Percentage (%)
Baby's status		
Alive	113	98.3
IUFD	2	1.7
Birth weight		
Low birth weight (<2.5 kg)	21	18.3
Normal (2.5-3.9 kg)	89	77.4
Macrosomia (≥ 4.0 kg)	5	4.3
Number of fetuses		
Singleton	112	97.4
Multiple	3	2.6
Neonatal complications		
Yes	9	7.8
No	106	92.2
SCBU admission		
Yes	7	77.8
No	2	22.2
PCV at discharge		
Anemia	16	13.6
No anemia	99	86.1
Postpartum complications		
Complications	18	15.7
No complications	97	84.3
Poor lactation		
Yes	19	16.5
No	96	83.5
Breast engorgement		
Yes	2	1.7
No	113	98.3

Table 3. Knowledge of Postnatal Care (PNC) and Perception of Respondents on Effects of COVID-19 on Antenatal/PNC.

Variables	Frequency	Percentage
COVID-19 pandemic affected pregnancy care		
Yes	29	25.2
No	86	74.8
Postnatal care counseling^a		
Yes	106	93
No	9	7
Knowledge on postnatal care services		
Poor knowledge	15	13.1
Fair knowledge	45	39.1
Good knowledge	55	47.8
COVID-19 will affect post-natal care		
Yes	9	7.8
No	106	92.2
Fear of postnatal clinic attendance		
Yes	16	13.9
No	97	86.1
Willingness to come for RH services^{b,c}		
Postnatal clinic	110	95.7
Family planning clinic	87	75.7
Pap smear test	87	75.7
Perceived risk of COVID-19?		
Yes	72	62.6
No	43	37.4
Common mental health disorders		
Anxiety	1	0.9
Depression	0	0
Co-morbid anxiety and depression	0	0

^aCounseling in pregnancy or post-delivery.

^bWillingness to come for RH services during the COVID-19 pandemic.

^cMultiple response variable.

Abbreviation: RH, reproductive health services.

breastfeeding (91.3%) and infant immunization (94.8%) (Figure 2).

Table 3 shows the effect of COVID-19 pandemic on maternal healthcare. Among the respondents, 25.2% stated that COVID-19 affected their antenatal care, while only 7.8% believed their PNC would be affected by the pandemic. About 31.3% faced challenges occasioned by COVID-19 during pregnancy and they were mainly economic constraints. Some of the respondents perceived they were at risk of contracting COVID-19 (62.6%), and 13.9% had fears of coming to the hospital for the postnatal clinic. Despite the pandemic, 75.7%, 95.7%, and 75.7% were still willing to come for the Papanicolaou test, postnatal, and family planning clinics respectively.

Willingness to return to the hospital for PNC was not associated with the level of education, occupation, family income, pregnancy risk, pregnancy complication, mode of delivery, postpartum complications, risk of COVID-19, and fear of coming to the hospital.

Discussion

This study evaluated the proportion of women that used the delivery and postnatal services during the COVID-19 pandemic lockdown, the perception, and the willingness of postpartum women to come for PNC visits at the UCH, Ibadan during the COVID-19 pandemic. The emergence of COVID-19 disease caused a disruption in the health, social and economic lives of people with more than one-third of the global population placed on lockdown (3). This was associated with a significant interruption in maternal, newborn, and child health service delivery (4,–6). The majority of the respondents received antenatal and delivery care at the same healthcare facility.

The main finding of the study was that the proportion of women that received delivery and PNC during the COVID-19 pandemic lockdown decreased according to the clinic records. However, majority of the respondents stated that their antenatal and delivery care was not affected by the lockdown. Less than one-tenth believed it was going to affect their PNC, about 1 in 10 women had fears of coming to the hospital, and two-thirds perceived they were at risk of contracting the infection. Despite these concerns, more than three-quarters of the postpartum women were willing to return for PNC and other reproductive health services.

Respondents were married, aged 26 to 35 years, most women and their spouses had a tertiary level of education. More than half of these respondents lived on a monthly income of less than 50,000 Naira (approximately \$100 USD). This depicts women of the reproductive age bracket with a tertiary level of education but low monthly income. Low income may impact their attitude, practices, and health-seeking behavior with negative consequences on maternal healthcare including PNC utilization despite their level of education. The level of income may have been a sudden but recent drop in income due to the pandemic for some of the respondents, or it may predate the COVID-19 pandemic in some, with further strain on the resources during the pandemic lockdown. Wealth status is a well-documented determinant of the health-seeking behavior of individuals (20,–21). In Nigeria, women in the Southwest zone have the highest level of education; women with secondary level of education and above have a higher wealth quintile (15).

About two-thirds of respondents were multipara, three-quarters booked for antenatal care in the index pregnancy, and only about one-quarter had some complications during the pregnancy. The women with complications of pregnancy were mostly unbooked and referred to the study site due to the obstetric complications. Postpartum women who received antenatal care at the study site had no complications which may be explained by proper preventive measures; this finding is similar to the report of Ekwempu et al. (22) A quarter of the respondents reported that the antenatal care services received were affected by challenges related to the COVID-19 pandemic and this was mostly economic. This may be due to the effects of the pandemic lockdown on the family income and funds

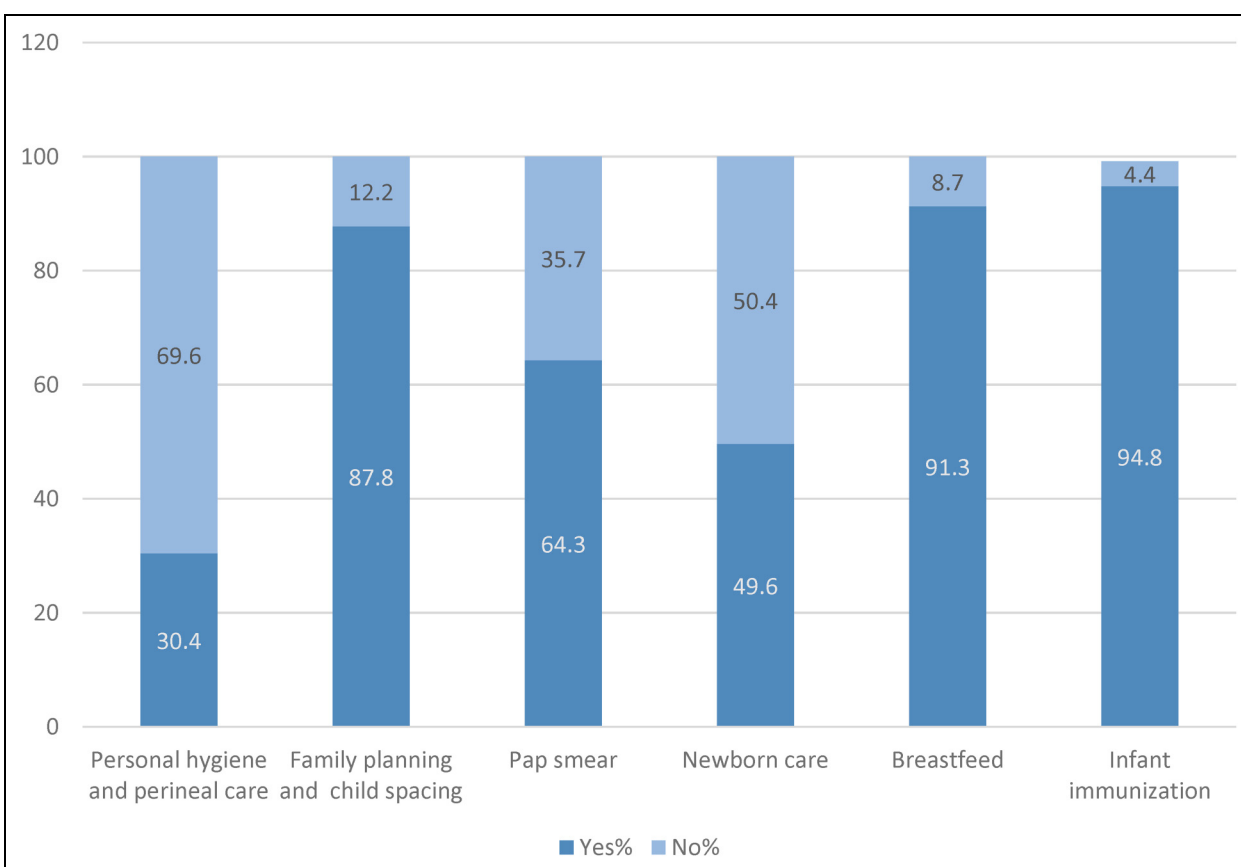


Figure 2. Distribution knowledge of postnatal care (PNC) services.

available to the respondents. Neonatal complications were few, less than 1 in 10 of the babies of the respondents had complications and the commonest form was neonatal jaundice. Neonatal jaundice is a common neonatal complication and it was seen in only a few of the babies.

Nine in 10 respondents reported being counseled about PNC during antenatal and delivery care services, however, more than half of the respondents had poor to fair in-depth knowledge of PNC. The majority knew about infant feeding, immunization, and family planning. Women were aware of PNC but had below optimal knowledge of the components of PNC. Knowledge and positive expectations are drivers of positive attitudes toward care and outcomes of care (23).

Similar to a previous report (19), at the peak of the pandemic there was a significant reduction in the number of patients receiving maternity services as well as the quality of care being received. In this study, the majority of the respondents feared they would contract the disease. This concern was entertained by many and may be explained by the fact that the study site is a referral tertiary hospital for various conditions including COVID-19 disease, and it has an isolation center and intensive care unit for the care of complicated COVID-19 disease. Several factors have been reported as being responsible for the poor health-seeking behavior and the most important of these was the fear of the pandemic and it is similar to the findings of Jardine

et al. and Arisukwu et al (6,24). In this study, some postpartum women received the PNC services despite the lockdown; although there was a drop in the number of patients seen as demonstrated by a nadir in April 2020 with only 9 patients attending the postnatal clinic in that month which was the first month of Nationwide lockdown. During the lockdown, the healthcare facility also experienced a reduction in the number of deliveries as some pregnant women sought delivery care in the smaller district or private hospitals due to the fear of contracting COVID-19 infection in the teaching hospital, disruption of movement, and constraints posed by economic incapacitation resulting from the lockdown. Although, almost two-thirds of the respondents reported fear of contracting coronavirus infection and fear of coming to the hospital; these were not significant factors affecting postnatal clinic.

COVID-19 pandemic poses a lot of challenges to postpartum women that may limit their access to PNC services (4). The respondents in this study were interviewed at the postnatal ward and the majority still expressed willingness to present for PNC despite the perceived challenges. This may reflect good health-seeking behavior or knowledge about post-natal care.

In this study, less than one percent of the respondents had common mental health disorders; no respondent had features of postpartum depression and less than 1% had features of

anxiety using the standardized Hospital-Anxiety-Depression scale. This may suggest that majority of the respondents were not adversely affected or were well-adapted to the COVID-19-related lifestyle changes. Although previous studies reported a high prevalence of postpartum anxiety and depression during the pandemic, this difference may be due to differences in characteristics of the women, location or maybe due to the psychosocial pressures of newborn care which may have been exacerbated by the disruption of normal life occasioned by the pandemic (11,–14). The occurrence of common mental health disorders among postpartum women may negatively affect the willingness and intention to return for a PNC visit amidst the pandemic lockdown. Furthermore, the postnatal check is an opportunity to screen postpartum women for psychosocial vulnerabilities—puerperal blues, postpartum depression, and psychosis; pap smear screening; family planning counseling and initiation; optimal newborn care, breastfeeding support, and infant immunization.

Postpartum women should be educated and counseled on the need and benefits of PNC in addressing challenges in the postpartum period while ensuring optimal health status for the mother and baby. It is important to maintain uninterrupted maternal health services even in the face of the COVID-19 pandemic and future health burdens. The pandemic met the world unprepared. In this study, women affirmed that their care was affected by the pandemic lockdown. In a previous study, some of the COVID-19 pandemic lockdown-related changes in the maternal healthcare services and restrictions were unplanned and untested causing unintended negative consequences such as women missing essential clinical care, confusion, distress, emotional trauma, women feeling that the antenatal and PNC were inadequate. In the postnatal period, postpartum women also felt isolated, sad, and frustrated due to lack of access to healthcare providers who can help (16). A resilient healthcare system is key to maintaining the optimal delivery of maternal health services and universal health coverage. The World Health Organization recommends building and rebuilding health systems that are resilient toward universal health coverage and health security during the COVID-19 pandemic and beyond (25). Various strategies have been employed or implemented in different parts of the world to ensure the continued provision of maternal and child health services during the lockdown. Such strategies include virtual perinatal home visiting offering health education and support for pregnant women and families with infants (26). Another effective strategy is the physical home visit by community midwives, especially for the postpartum women with psychosocial health issues, operative delivery, or having babies with premature, low-birth weight, and neonatal complications (27).

The limitation of this study is that the study was conducted in a single study site. A larger multicenter study or survey across various locations, geopolitical zones, and levels of healthcare can be conducted to explore the perception of postpartum women on the utilization of PNC services

during the COVID-19 pandemic lockdown. This will provide more information across various socioeconomic groups, cultural diversities, and levels of healthcare service delivery.

Conclusion

There was a reduction in the number of deliveries conducted and postnatal clinic attendance at the study site reaching a nadir during the lockdown. The postpartum women feared and experienced significant challenges with access to maternal health care caused by the COVID-19 pandemic such as economic burden, lack of funds to pay for care, fear of COVID-19 disease, and fear of coming to the hospital. The pandemic affected care in a few of the women. However, the majority of the postpartum women were willing to return for PNC despite their fears. It is important to reinforce health education and counseling on the benefits of maternal health care; and to encourage women to access maternal healthcare services even in the face of challenges.

Author's contributions

Abdus-Salam RA (RAA): Design, planning, conduct, data analysis, and manuscript writing; Idowu OC (IOC): Design, Conduct, data analysis, and manuscript writing; Sanusi AT (SAT): Design, planning, conduct, data collection, and manuscript writing.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Ethical Approval

This study was approved by the University of Ibadan/University College Hospital, Ibadan (UI/UCH Ethics committee – UI/EC/20/0264).

Statement of Human and Animal Rights

All procedures in this study were conducted in accordance with the approval of UI/UCH Ethics committee.

Statement of Informed Consent

All participants in this study gave voluntary written informed consent.

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