



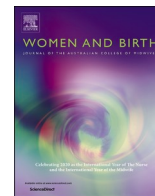
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Postnatal care services availability and utilization during the COVID-19 era in sub-Saharan Africa: A rapid review

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ABSTRACT

Background: Considerable progress has been made globally in improving maternal and newborn babies' health. The COVID-19 pandemic has posed considerable challenges for countries to maintain the provision of high-quality, essential maternal and newborn healthcare services.

Methods: A rapid review was carried out on 20 March 2022 on postnatal care (PNC) services availability and utilization during the COVID-19 era in sub-Saharan Africa. PubMed, Google Scholar, and Africa Journals Online (AJOL) databases were searched for relevant studies. Studies included in the review utilized both primary data and secondary data.

Findings: Nineteen studies met the inclusion criteria. The review revealed that there were significant declines in the availability and utilization of PNC services during and after the COVID-19 lockdown. Several reasons were found to contribute to the decline.

Discussion: New, innovative strategies are therefore required to ensure that mothers and their newborn babies receive essential PNC to reduce maternal and neonatal morbidity and mortality in sub-Saharan Africa. Some of the strategies that can be used include home-based PNC visits, the use of telemedicine, phone-based referral networks, social media, and community radios.

Statement of Significance (SOS)

Problem or Issue

The COVID-19 pandemic has posed considerable challenges for countries to maintain the provision of high-quality, essential maternal and newborn healthcare services.

What is Already Known

COVID-19 responses in most countries saw a diversion of significant resources, including midwives, from regular service delivery to the COVID-19 response efforts. Transport disruptions, lockdown measures, and the reluctance of mothers to go to healthcare facilities for fear of infection might have reduced access of mothers and newborn babies to postnatal care services

What this Paper Adds

This paper provides a concise review of evidence from sub-Saharan Africa to provide insights into the extent of these disruptions and their impact on postnatal care service delivery.

1. Introduction

Considerable progress has been made globally in improving maternal and newborn babies' health [1]. Skilled birth attendance (SBA) and postnatal check-ups are important for the well-being of both the mother and the newborn. Limited access to skilled birth attendance may cause the mother's and/or the newborn's mortality or long-lasting morbidity [2,3]. Around the world, SBA increased from 64 % during the period 2000–2006, to 83 % during the period 2014–2020 [1]. Global maternal mortality reduced from 342 in 2000–211 per 100 000 live births in 2017 [4]. The global neonatal mortality rate (NMR) decreased from 37 deaths in 1990–17 deaths per 1000 live births in 2020 [5]. Despite this decline in maternal mortality and NMR globally, there are marked differences that exist across regions and countries [4,5]. In sub-Saharan Africa (SSA), SBA increased from 41 % during the period 2000–2006–69 % during the period 2014–2020 [1]. Maternal mortality reduced from 780

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in 2000–384 per 100 000 live births in 2017 in SSA [4]. Sub-Saharan Africa had 27 neonatal deaths per 1000 live births in 2020 [5]. It is therefore important that skilled birth attendance coverage and postnatal care (PNC) utilization are improved to reduce maternal and newborn morbidity and mortality [2].

The postnatal period is the time following delivery until six weeks after birth. The WHO recommends four PNC visits by a skilled healthcare provider within the first six weeks after delivery. The first PNC visit should be within 24 h after delivery, the second on day 3, the third between day 7 and day 14, and the last at 6 weeks after delivery. The first PNC visit should be provided within the first 24 h after delivery to all mothers and newborns regardless of where the birth occurred [6]. Ideally, a full clinical examination of the baby should be done around one hour after birth when the baby has had his/her first breastfeeding. Babies should be checked again before they are discharged. For home deliveries, the first PNC visit should be done as early as possible within 24 h of birth, and where possible, an extra contact at 24–48 h is desirable. For newborns delivered at home in settings with a high neonatal mortality rate, it is recommended that chlorhexidine be applied daily to the umbilical cord stump during the first week of life [7]. Discharge from a healthcare facility is only acceptable where a mother's bleeding is under control, the mother and baby do not have signs of infection or other diseases, and the baby is breastfeeding well [6]. At each of the PNC visits, newborns should be assessed for key clinical signs of severe illness and referred when there is a need. The PNC visits should also be used to promote exclusive breastfeeding since it reduces the risk of morbidity and mortality in the first month of life, improves post-neonatal outcomes, and encourages improved child spacing by delaying the return to fecundity [7]. Postnatal care for mothers includes counseling on family planning, maternal mental health, nutrition and hygiene, and gender-based violence [6]. Factors influencing the utilization of PNC services vary from place to place. These factors include individual and community-level characteristics. Some of the factors are the age of the mother, her level of education, the employment status of the woman and the spouse, household economic status, place of delivery, residence, and the number of children the woman has [8,9]. Globally, 63 % of mothers and only 48 % of newborns received a postnatal check-up within the recommended time between 2015 and 2020. Postnatal care service utilization in SSA was reported to be 52.5 % between 2006 and 2018, with the lowest utilization in the Eastern region at 31.7 % [10].

The COVID-19 pandemic has posed considerable challenges for countries to maintain the provision of high-quality, essential maternal and newborn healthcare services. This is because countries had to divert significant resources, including midwives, from regular service delivery to COVID-19 response efforts. Other factors such as transport disruptions, lockdown measures, and the reluctance of mothers to go to healthcare facilities for fear of infection, might have reduced access of mothers and newborn babies to postnatal care services [11]. This review was therefore aimed at determining the availability and utilization of PNC services in sub-Saharan Africa during the COVID-19 era. In this review, the term “postnatal” refers to all issues concerning the mother and the baby after birth up to 6 weeks (42 days). This review included studies even if they only reported: “postpartum” (referring to issues concerning the mother) or “postnatal” (referring to those concerning the baby).

2. Methods

2.1. Information sources and literature search strategy

We searched PubMed, Google Scholar, and Africa Journals Online (AJOL) databases for relevant studies. The key search terms included “Maternal Health Services”, “Child Health Services”, “post-natal care”, “post-partum care”, “Accessibility”, “Availability”, and “Utilization”. All database searches were conducted from 1 to 15 March 2022. The reference lists of all full-text articles screened were searched for relevant

studies.

2.2. Participants

We included studies conducted at any level, primary healthcare, sub-national, and population-level on availability, accessibility, and utilization of postnatal care services during the COVID-19 pandemic in sub-Saharan Africa. Studies that included primary data collection and secondary data analysis/ record reviews were included.

2.3. Study selection and inclusion criteria

Papers were from primary research of any design and methodology, conducted in any of the countries in SSA, and covering a study period after December 2019, when COVID-19 started. Systematic reviews, case reports, review articles, editorials, and letters to the editor were excluded.

2.4. Screening and data abstraction process

We developed a screening criterion *a priori* for each of the three stages: title, abstract, and full text. Two reviewers (information removed to allow for blind peer review) conducted data extraction from the identified studies. A data extraction form was developed *a priori*. The following study characteristics were documented from each of the selected articles: author(s) and country, year of publication, study setting, study design, study period, sample size, key findings on availability/accessibility of postnatal care services, and key findings on utilization of postnatal care services. (information removed to allow for blind peer review) provided overall guidance on the extraction process.

2.5. Data synthesis

Both quantitative and non-quantitative outcomes were collected and tabulated for each study. Thereafter, collating, summarizing, and reporting the findings were done. The findings of the study were reported in a narrative synthesis.

3. Results

The initial search retrieved 1020 articles. Following title screening, 47 were eligible for abstract screening. A total of 27 studies were excluded at the abstract screening stage leaving 20 studies for full-text screening (Supplementary File 1). One study [12] was excluded at full-text screening stage as it did not present original findings. A total of 19 studies were included in this review. More details are presented in Fig. 1: Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow chart.

3.1. Characteristics of included studies

Of the included studies, five were conducted in Ethiopia [11,13–16], three in Kenya [17–19], two in Nigeria [20,21], and one each in the Democratic Republic of Congo [22], Mozambique [23], Rwanda [24], South Africa [25] and Uganda [26]. Four were multi-country studies [27–30]. Two studies conducted in Kenya used a purely qualitative study design [17,18] to investigate women's perspectives on the impact of COVID-19 on access to post-natal services among refugee women [17] and in informal settlements [18]. Three studies employed mixed methods study designs [23,25,28]. Six of the included studies [18,19,23,24,27,29] were conducted during the first six months, nine during the second six months [11,14,15,17,20,21,22,25,26], one covered the first year [30], and three [13,16,28] after the first year of the pandemic.

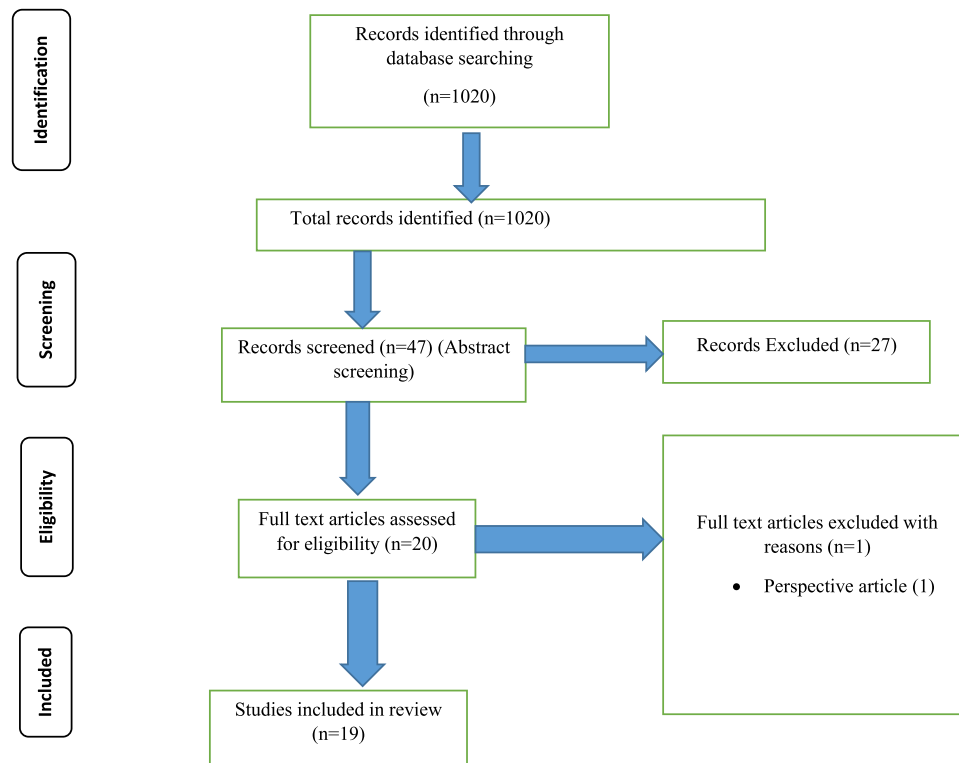


Fig. 1. PRISMA flow diagram.

3.2. Study findings

3.2.1. Availability, and accessibility of postnatal care services

Four studies that analyzed primary data revealed that there were significant declines in the availability of PNC services during and after the COVID-19 lockdown [14, 17, 20, 21]. In Nigeria, PNC was offered in 88.9 % of the primary health centers (PHCs) pre-COVID-19, the percentage decreased to 87 % during the lockdown, and further decreased to 82.7 % after the lockdown [20]. The majority (97.4 %) of the PHCs offered childhood immunization before the pandemic. There was a slight decline to 94.8 % during the lockdown and a nearly 10 % decline after the lockdown [20]. In Uganda, findings from a study that used data from a review of records did not confirm a decline in the utilization of PNC services, specifically immunization [26]. Immunization services were offered on all nine scheduled immunization days every month in 2019 and 2020 [26].

Regarding the accessibility of PNC services, a study conducted in Kenya revealed that there was limited access to facility services. Some patients reported that they did not go to the clinics due to the unavailability of healthcare staff during the COVID-19 pandemic [17]. In Nigeria, about 44 % of respondents had at least one challenge in accessing reproductive, maternal, child, and adolescent health (RMNCH) services since the COVID-19 outbreak. Close to a third could not access PNC services because they could not leave their houses during the lockdown and about 18 % could not access PNC services because there was no transportation [21]. While health worker absenteeism seems to have increased during the study period in a study conducted in Ethiopia, it was not particularly high in absolute terms since it was estimated to be 7 % [14]. Based on direct questions to facility managers, absenteeism of health worker staff was rated as an issue in the case of about 8 % of the facilities in the study. There were several reasons for absenteeism, but the most prominent was that staff were on sanctioned leave, were on COVID-19 duty elsewhere, or were unwell, including due to the virus [14].

3.2.2. Utilization of postnatal care services

Several studies which used primary data in this review revealed a decline in utilization of PNC services due to the COVID-19 pandemic [14–16, 20, 21, 24, 25, 28, 30]. PNC service utilization declines of 16–18 % [14], and 30–50 % [18] were reported in Ethiopia and Nigeria respectively. In South Africa, the COVID-19 lockdown led to mothers reporting delays in registering their babies. Only a third of the mothers saw a lactation consultant in the hospital during lockdown compared to the period before lockdown with only 14 % of mothers who delivered during the lockdown reporting accessing professional support for mental health post-delivery [25]. One study conducted in Kenya revealed no differences in the utilization of immunization services during the COVID-19 pandemic [19].

Another study conducted in Ethiopia revealed that postnatal hospital stay decreased by 30 % during COVID-19 [16]. A multi-country study revealed significant reductions in PNC visits in eight SSA countries by 10–25 % each month between March and July 2020, with a cumulative reduction of 17 % in the 5 months [27]. In Ethiopia, the overall PNC service utilization decreased by 15.9 %, from March-June 2019 to March-June 2020 [11]. The odds of maternal healthcare service utilization during the COVID-19 pandemic in mothers were affected by their level of education, distance to the health facility, fear of COVID-19 infection, and practice of prevention measures [15]. Mothers with higher education, residing closer to health facilities, and practicing COVID-19 prevention measures were more likely to utilize maternal healthcare services compared to those who did not [15].

3.2.3. Women's perspectives on accessibility and their utilization of postnatal care services

Six of the studies included in this review were able to capture women's perspectives on accessibility and their utilization of PNC services using qualitative research methods [13, 17, 18, 23, 25, 28]. In Guinea, Tanzania, Nigeria, and Uganda, women perceived lockdown restrictions, healthcare service closures, and the initial fear of infections in hospitals rather than the actual number of COVID-19 cases in a

country as associated with the decline in PNC service utilization [28]. Fear of contracting COVID-19 was also reported by women in Mozambique [23]. In South Africa, new parents reported strong feelings of social exclusion and isolation, particularly during the birthing experience which impacted their levels of stress and anxiety as new parents [25]. On the other hand, COVID-19 transmission mitigation strategies such as mandatory temperature checks and sanitization at every station were perceived to increase time spent at the facilities and deter PNC utilization [18]. The respondents attributed the long waiting time to health personnel constantly changing their protective gear [18].

3.2.4. Gaps revealed from included studies

A study conducted in Nigeria revealed a significantly low clients' utilization of PNC services despite the effort by a large proportion of Nigeria's PHCs to provide essential sexual and reproductive health and rights (SRHR) services during the COVID-19 pandemic lockdown. This was attributed to challenges related to service implementation such as stock-outs and low demand for services by clients [20]. A study by Ahmed et al. (2021) has shown that the use of lockdowns and social distancing as a universal COVID-19 response measure has the potential of undermining the inherent community socioeconomic dynamics, especially for the socially vulnerable groups [29]. These approaches have affected healthcare priorities in low to medium-income countries (LMICs) and have the potential to cause vulnerable groups to remain excluded from healthcare to further disparities in LMICs. Three of the studies [17,26,28] have attributed the reduction in PNC service utilization during the COVID-19 pandemic to restrictive measures without consideration for pregnant women which impacted their physical ability to access care. There is a need to mitigate and lower barriers that prevent women from seeking care at health facilities. A multi-country study carried out by Shapira and colleagues showed cross-country variations with the number of children who received the third dose of the pentavalent vaccine dropping for at least 1 month in all countries apart from the Democratic Republic of Congo (DRC) [27]. This variation may be attributed to differences in epidemic paths, the structure of health systems, prior experiences with epidemics, and imposed COVID-19 restrictions. A study conducted in DRC has emphasized the importance of determining if the observed changes in PNC service access and utilization during the COVID-19 pandemic were due mainly to changes in the availability or accessibility of services as opposed to the demand for health services, including any impact factors such as fear or financial access [22].

4. Discussion

This review revealed that there were significant declines in the availability and accessibility of some PNC services during the lockdown and after the lockdown in sub-Saharan African countries. This review revealed that family planning and childhood immunization reduced during the lockdown and further declined after the lockdown. There were several reasons for this decline in the availability and accessibility of PNC services. Some of the reasons were unavailability or absence of healthcare staff at the healthcare facilities, inability of patients to leave their houses due to lockdown, and unavailability of transport.

The results of this review concur with the findings of a study conducted in Uganda by Musiimenta et al. (2022), which was published after our review, which also reported delays in getting transport to healthcare facilities and delays at the healthcare facilities during the COVID-19 pandemic. The delays in getting transport to the healthcare facilities might have been caused by delays in getting travel permission from local authorities and the high cost of transport which was caused by travel restrictions. The delays at the healthcare facilities might have been due to a shortage of healthcare providers and increased time resulting from transmission mitigation strategies like sanitization, temperature checks, and the healthcare providers frequently changing their protective equipment [31]. A global online survey of maternal and

newborn health care providers concurs with our findings since it revealed that the provision of postnatal family planning was reduced during the COVID-19 pandemic. However, there was a greater reduction in low-income countries compared to high-income countries. The provision of breastfeeding support was however reduced more in high-income countries compared to low-income countries [32]. Other reductions in PNC content included mental health counseling and support to women, newborn weight monitoring, and newborn vaccination [33]. In this same survey [33], maternal and newborn health care providers reported earlier discharge after birth as the most common COVID-19 adaptation. Early discharges might have been a strategy used by healthcare institutions to reduce congestion in the wards since it might have increased the risk of contracting COVID-19. In addition, mothers might also have preferred to be discharged earlier to reduce their chances of contracting COVID-19. Even though early discharges were used as a strategy to reduce COVID-19 infections, we believe that other strategies like telemedicine or home-based PNC visits should be used to ensure that mothers and their babies receive PNC services.

This review revealed a decline in PNC services utilization due to the COVID-19 pandemic. The utilization of facilities for family planning, delivery, PNC, and immunization declined during the lockdown restrictions. Factors affecting the utilization of PNC services included the level of education of the mother, distance to the healthcare facility, fear of COVID-19 infection, the practice of prevention measures, and knowledge of postnatal maternal danger signs. These findings concur with the findings of studies conducted in Uganda [31], Ethiopia [33], and India [34], which were published after our review, which revealed that fear of contracting COVID-19 reduced the utilization of PNC services. Respondents were afraid of contracting the disease as some of the healthcare facilities were also handling COVID-19 patients, some facilities struggled to maintain social distancing due to congestion, and some facilities lacked sanitizers and water [31,33,34]. A study conducted by Semaan et al. (2022), which was not included in our review, also revealed that slightly more than a quarter of the respondents perceived a reduction in the number of women and newborns attending outpatient PNC services. Semaan et al. (2022) also reported that women's poor experiences while in the hospital were caused by a reduction in the number of visitors, banning of visitors altogether, and shortening of visiting hours [32]. Since the utilization of PNC services was reduced, to ensure that mothers and newborns receive PNC, other strategies need to be devised. Some of the strategies that can be used include home-based PNC visits, the use of telemedicine, phone-based referral networks, social media, and community radios [35].

This review has several strengths and limitations. Although the search retrieved several articles that addressed the availability, accessibility, and utilization of PNC services in SSA, only three electronic databases were searched, and this leaves room for missing out on some studies. A related limitation of the review is that it included only those articles that were published in English therefore potentially missing non-English studies. Moreover, the review did not follow all the steps of a systematic review, for example, no risk of bias or quality appraisal was carried out on the included studies. However, we believe that the results of this review produced important findings on the extent of the disruptions to PNC services in SSA. The review might also inform policy-makers on factors affecting the availability, accessibility, and utilization of PNC services during the COVID-19 pandemic. This information might help in devising strategies to counter the effects of COVID-19 on PNC services.

5. Conclusion

Considerable progress has been made globally in improving maternal and newborn babies' health. The COVID-19 pandemic has posed considerable challenges for countries to maintain the provision of high-quality, essential maternal and newborn healthcare services. Most studies used in this review revealed that there were significant declines

in the availability and accessibility of PNC services during the lockdown and after the lockdown. Furthermore, most studies also revealed a decline in the utilization of PNC services due to the COVID-19 pandemic. The decline in utilization was related to lockdown restrictions, health-care service closures, and the initial fear of infections in hospitals. New, innovative strategies are therefore required to ensure that mothers and their newborn babies receive essential PNC to reduce maternal and neonatal morbidity and mortality in sub-Saharan Africa.

Author contributions

Tafadzwa Dzinamarira - Conceptualization, Writing original draft. Enos Moyo - Writing review and editing. Gashema Pierre - Writing review and editing. Etienne Mpubuka - Writing review and editing. Morris Kahere - Writing review and editing. Nigel Tungwarara - Writing review and editing. Itai Chitungo - Writing review and editing. Grant Murewanhema - Writing review and editing. Godfrey Musuka - Writing review and editing.

Conflict of interest

None declared.

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