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Impact of Covid-19 Pandemic on Reproductive Health in Kenya: Challenges, Lessons and Opportunities

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Abstract

Health systems and healthcare delivery around the world have been greatly affected by the COVID-19 pandemic. In Kenya, the attainment of universal health coverage (UHC) has been hampered by the pandemic, particularly in the areas of reproductive, maternal, newborn, and child health (RMNCH). This paper examines the effect of COVID-19 on RMNCH in Kisumu, Isiolo, Machakos, and Nyeri counties in Kenya. The objective of the study was to determine if there was a significant change in service delivery under reproductive, maternal, newborn, and child health in hospitals under the Universal Health Coverage Program. The target population was the patients seeking RMNCH services in these hospitals. The study arrived at a sample of 78 respondents achieving a response rate of 84%. The study used a mixed-methods approach, comprising both quantitative and qualitative data collection methods. The quantitative data were collected through a retrospective analysis of RMNCH indicators from January 2019 to June 2021, while the qualitative data were collected through in-depth interviews with healthcare workers and community members. The key finding of the study was that there was a significant decrease in the quality of RMNCH services during the COVID-19 period compared to before the pandemic. This conclusion is based on the results of a Wilcoxon Signed Ranks Test, which produced a test statistic Z of -4.321 and an Asymp. Sig. (2-tailed) value of 0. The challenges identified as hindering access to and provision of RMNCH services during the pandemic include inadequate personal protective equipment, inadequate supply of essential medicine, and reduced funding for RMNCH services. The study concluded that COVID-19 pandemic had a significant negative impact on RMNCH in the four counties. The pandemic led to disruptions in health service delivery, resulting in reduced access to essential RMNCH services. Consequently, there was an increase in maternal and child deaths. Recommendations include strengthening health systems, improving access to essential RMNCH services, and providing necessary resources and support to healthcare workers for delivering high-quality care.

Keywords: ***RMNCH, Reproductive health, COVID-19 pandemic, healthcare access***

Introduction

The condition of whole physical, mental, and social well-being with regard to the reproductive system and its functions is referred to as reproductive health. It is fundamental to one's entire health and well-being and covers a variety of topics pertaining to sexual and reproductive health (Vora et al., 2020). Reproductive health includes the ability to have safe and satisfying sexual relationships, access to reproductive healthcare services, including family planning and contraceptives, and the freedom to make informed choices about one's reproductive life.

Reproductive health is a fundamental aspect of overall health and well-being. It encompasses a wide range of issues related to human reproduction and sexual health and includes access to comprehensive reproductive healthcare services, education and support. Ensuring access to reproductive healthcare services is essential to promoting individual and public health and well-being (Liang et al, 2019). Easy access to family planning services, including diverse

contraceptive options and clear information, plays a key role in promoting individuals' control over their reproductive choices and overall reproductive health (Jain & Hardee, 2018).

Access to reproductive health services is crucial, particularly for women, who often bear the burden of unplanned pregnancies and related health complications. Adequate reproductive healthcare services, including counseling and education, can help individuals make informed decisions about their reproductive lives, and prevent unintended pregnancies, sexually transmitted infections (STIs), and other reproductive health issues (Tadele et al., 2019). Reproductive health also encompasses the physical and emotional aspects of reproduction, including fertility and infertility, pregnancy, childbirth, and postpartum care. It includes access to safe and legal abortion services, as well as support for individuals and couples facing fertility challenges (Murewanhema, 2020).

Adequate antenatal care is essential for ensuring healthy pregnancies and reducing the risk of maternal and infant mortality. Healthcare centers should provide comprehensive antenatal care services, including regular check-ups, screening for complications, and education on nutrition and lifestyle (Wu et al., 2020). Postpartum care is essential for promoting maternal and infant health and well-being. Healthcare centers should provide comprehensive postpartum care services, including counseling on breastfeeding, family planning, and screening for postpartum complications (Rasmussen & Jamieson, 2021). STIs can have significant health consequences and can also increase the risk of infertility. Healthcare centers should provide prevention and treatment services for STIs, including counseling on safe sex practices and access to testing and treatment (Sully et al., 2020).

According to Phelan et al., (2021) the COVID pandemic disrupted reproductive health services, including reduced access to contraception and abortion services and that the pandemic led to increase in stress and anxiety among women and this in turn led to negative reproductive health effects. Church et al. (2020) argued that the pandemic has exacerbated existing inequalities in reproductive health and created new challenges for women and girls in accessing essential services. They suggested several strategies that healthcare providers can adopt to address these challenges, such as telemedicine, home-based care, and community outreach programs.

On the importance of integrating sexual and reproductive health and justice into the global response to the COVID-19 pandemic, Hall et al. (2020) observed that marginalized groups, such as women and girls, were disproportionately affected by the pandemic. Furthermore, due to lockdowns, and disruptions to health services women and girls were unable to access contraceptives, safe abortions, and other essential reproductive health services. There is need to address underlying structural inequalities that affect sexual and reproductive health. They emphasize the importance of addressing social determinants of health, such as poverty, gender inequality, and racism, to ensure that all individuals have access to comprehensive sexual and reproductive health services.

Kenya has made significant strides towards achieving universal health care (UHC) in recent years. The country launched the Universal Health Coverage (UHC) program in 2018, which aims to provide access to essential health services for all Kenyans. The UHC program focuses on strengthening primary health care, improving health financing mechanisms, and expanding health coverage to the entire population. The COVID-19 pandemic has had significant effects on Kenya's progress towards achieving universal health care (UHC). The pandemic has strained the country's health system, which has resulted in delays in implementing UHC programs and slowed down progress towards achieving the UHC goals. Ouma et al. (2020) argued that the pandemic highlighted the importance of health coverage and the need for a robust health system that can respond to crises effectively. They pointed out on inadequate funding and a shortage of health workers as challenges Kenya faces in providing universal health coverage,. The authors further suggest that digital health technologies, such as

telemedicine and mobile health applications, can improve access to healthcare services and support disease surveillance and response.

In 2015, countries committed to achieving Universal Health Coverage (UHC) as one of the global targets under the Sustainable Development Goals (SDGs). In 2019, this commitment was reaffirmed at the High-Level Meeting on UHC by United Nations General Assembly. Progress towards UHC will not only lead to achieving other health-related targets but also contribute to the achievement of other goals. Good health is vital for children's education, adults' employment, poverty reduction, and long-term economic development. Kenya on 13th December 2018 launched the Universal Health Coverage (UHC), dubbed Afya Care – Wema Wa Mkenya. The goal of UHC is to ensure access to quality healthcare services without impoverishing the Kenyan citizens and leaving no one behind. The UHC was first piloted in four counties namely; Kisumu, Isiolo, Machakos and Nyeri with the hope of expanding to all other 43 counties by 2022 (GOK, 2019). Citizens in the 4 counties were registered for the UHC and given the Afya Care card after which they were to access free health services in all public health facilities. The UHC include a full range of health services covering prevention, treatment, rehabilitation, and palliative care.

The COVID-19 pandemic has had significant impacts on various aspects of life, including reproductive health. However, there is a lack of comprehensive research on the specific challenges, lessons, and opportunities related to reproductive health in Kenya during the pandemic. Understanding these impacts is crucial for policymakers, healthcare providers, and the public to develop effective strategies to mitigate the negative effects and capitalize on opportunities for improvement. This research aimed to fill the gap in knowledge and provide evidence-based recommendations to improve reproductive health services in Kenya amidst the pandemic.

Materials and Methods

The study was comparative and compared the attainment of reproductive health under UHC during the period before and after the emergence of COVID-19. Thus, it adopted the Interrupted Time Series (ITS) design. The design involves investigating multiple measures of one group, in equal time intervals, interrupted by the implementation of the intervention (Lau & Kuziemsky, 2017). In the study, data was collected from health record and information officers and selected patients during the pre-COVID-19 period (16th March 2019 to 15th March 2020) and post COVID-19 period (16th March 2020 to 15th March 2021).

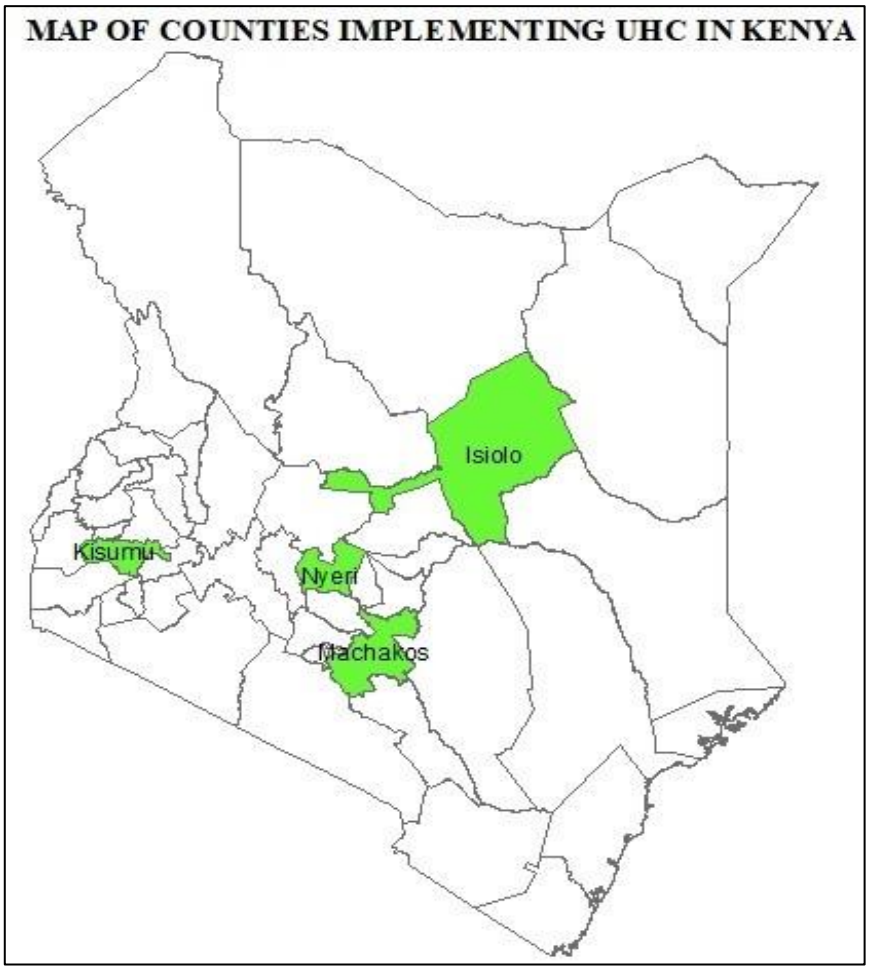
The study used two methods of data collection: (a) semi-structured interviews with the selected patients seeking frequent reproductive health services. The patients were reached during clinic visits. This method elicited information on basic accessibility to and affordability of health services such as family planning, antenatal and delivery care, full child immunization, and access to and affordability of essential medicines. (b) collection of annual health records from health records and information officers in the nine hospitals under the study. Data collected included annual statistics on family planning visits, antenatal, delivery care and child immunization visits, and availability of essential medicines. Discourse, content analysis, summary statistics methods and inferential statistics were used to analyze the data.

The study was carried out in the counties of Nyeri, Kisumu, Machakos and Isiolo. The UHC program was piloted in the four Kenyan counties. Nyeri County is situated in the central region of the country and covers an area of 2361 square kilometers, with a population of 759,164 people. Kisumu County is located in western Kenya, formerly Nyanza Province, with a land area of 2085.9 square kilometers and a population of 1,155,574. However, the county faces significant health challenges, with high infant and under-five mortality rates, as well as maternal mortality. Malaria is also a perennial issue in the region. Machakos County is located

in the Eastern region, with a population of 1,421,932 and an area of 6208.2 square kilometers, most of which is semi-arid. Finally, Isiolo County is in the former Eastern Province, covering an area of 25,336.7 square kilometers and having a population of 268,002. The county faces various developmental challenges and borders seven other counties.

Figure 1

Counties Implanting UHC in Kenya



Source: Author

Results

The study's sample consisted of patients seeking services and health care professionals in the facilities under UHC program in the 4 counties. About 70% of the patients were female and 28.7% were male patients. Majority of the health professionals (65.9%) were female and 28.7% were male. Majority of the respondents (36.6%) were between 25 to 35 years old, 17.9% were between 15 to 24 years, 17.2% were between 36 to 45 years, 13.1% were between 45 to 55 years and 12.3% were above 55 years (Table 1). Majority of the health professionals were nursing officers followed by clinical officers. Other professionals included a medical officer, a nutritionist, a pharmaceutical technologist and a community health volunteer (Table 2).

Table 1

Patients Characteristics

		Count	Percent
Gender	Male	77	28.7%
	Female	189	70.5%
Age	15-24	48	17.9%
	25-35	98	36.6%
	36-45	46	17.2%
	45-55	35	13.1%
	Above 55	33	12.3%
	Below 15	2	0.7%

Table 2

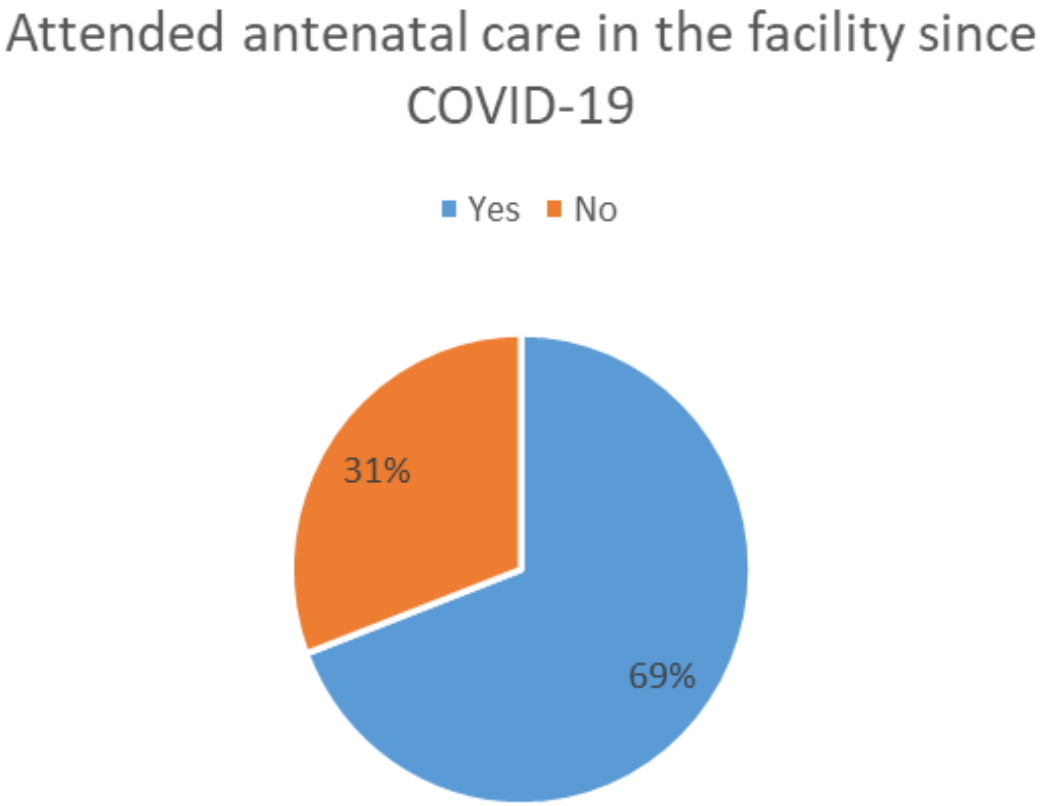
Healthcare Workers Characteristics

Gender	Frequency	Valid Percent
Female	29	65.9
Male	15	34.1
Position in facility		
Attaché	1	2.3
CHV	1	2.3
Clinical officer	7	14
Deputy nursing manager	2	4.7
Intern	1	2.3
Medical officer	1	2.3
Nurse manager	1	2.3
Nursing officer	25	55.8
Nutritionist	1	2.3
Officer in charge	1	2.3
Pharmaceutical technologist	1	2.3
TB coordinator	1	2.3

Patients seeking health services, key health workers and hospital records staff in the sampled hospitals were interviewed. The sampled patients were asked if they had attended antenatal care in the health care facilities since COVID-19 period. About 69% of the respondents stated to have attended in the facilities for antenatal care. Records from the hospitals indicated that 337,039 patients had sought MCH health services during the pre-COVID-19 period while 227,509 patients were recorded during the COVID-19 period this was a 32% decline in the patients' turn up. Recorded patients in need of antenatal services in the pre-COVID-19 period were 14,784 and 13,673 were recorded in the COVID-19 period. This was a decline by 8%. Other services such as family planning services, delivery care, post-natal care and child immunization recorded a decline in patient turn up by 17%, 10%, 6% and 5% respectively. Figure 2 presents a pie chart showing the percentage of patients that attended antenatal care since COVID-19.

Figure 2

Patients Seeking Antenatal Care



The patients were asked about the experience they had with the antenatal care services and family planning services during COVID-19 compared to pre COVID-19 period. Majority of the respondents at 32.3% stated that the ANC services were not different and 48.8% stated that family planning services were not different. About 24% stated that the services had improved. However, 17% of the respondents gave some negative sentiments suggesting that the ANC and family planning services were poor compared to the pre-COVID period at 15.1%. For instance, some of the respondents felt that the services were very slow compared to services offered during the pre-COVID-19 period (Table 3). Others stated that the number of services offered were fewer. The change of services offered during the COVID-19 period may have been caused by the introduction of COVID prevention measures therefore increasing the service time to accommodate screening. Although majority of the patients felt that the services were not different, the health care workers sampled stated that there was a reduction of the patients who sought for ANC services (Table 4). Only 18% of the health care workers stated that the attendance of ANC was not different. Some of the changes noted by the health workers in ANC services were; minimized contact and more precautions - the health workers stated that ANC services were offered with more precautions to avoid COVID-19 infection. Some of the key informants also stated that their facilities seized to offer some of the ANC services during COVID-19 period.

Table 3

Experience in Seeking Maternal Services

		Valid Percent
How was the ANC service compared to pre-COVID-19 period	Better	24.2
	COVID-19 awareness	6.5
	Different	1.6
	Fair	3.2
	Faster services	1.6
	Good	9.7
	More precautions	3.2
	No difference	32.3
	Okay	3.2
	Poor	3.2
	Reduced service	4.8
	Significant difference	1.6
	Slow	3.2
	Worse	1.6
Experience of Family planning service before COVID-19	Better	21.3
	COVID-19 awareness	1.3
	Different	1.3
	Good	6.3
	Improved	2.5
	Moderate	2.5
	More effective	1.3
	No difference	48.8
	Poor	2.5
	Reduced	2.5
	Slower	8.8
	Worse	1.3

Table 4

Experience in Providing Maternal Health Services

		Frequency	Valid Percent
How is the attendance of ANC onset COVID-19	No difference	2	18.2
	Normal through COVID-19 precautions	1	9.1
	Reduced attendance	5	45.5
	Reduced turn up	3	27.3
How are ANC services compared to Pre COVID-19	COVID-19 precautions	1	9.1
	Minimized contact	1	9.1
	More caution is taken	1	9.1
	No change	1	9.1
	No difference	2	18.2
	Normal service provision	1	9.1
	Reduced turn up	2	18.2
	Some services were stopped	2	18.2

The key informants were asked whether they followed up on immunization during COVID-19 period. All the health workers from the facilities that offered immunization services stated that they followed up on immunization. Similarly, all the workers stated that patients seek family planning services in the facilities. However, the 54.5% of the HCWs noted that some of the patients missed family planning services during the COVID-19 period (Table 5). The HCWs stated that there were changes in service delivery, number of patients seeking family planning services had reduced and more caution was being taken while delivering the services (Table 6). The workers noted that some of the reasons for reduced attendance was fear of contracting the COVID-19 virus and restriction of movement which was a measure taken by the Government of Kenya to reduce the spread of COVID-19 virus.

Table 5

Changes in Maternal Health Care

		Frequency	Valid Percent
Immunization follow up during COVID-19	Y	11	100
Do patients seek FPS	Y	11	100
Miss FPS during COVID-19	N	5	45.5
	Y	6	54.5

Table 6

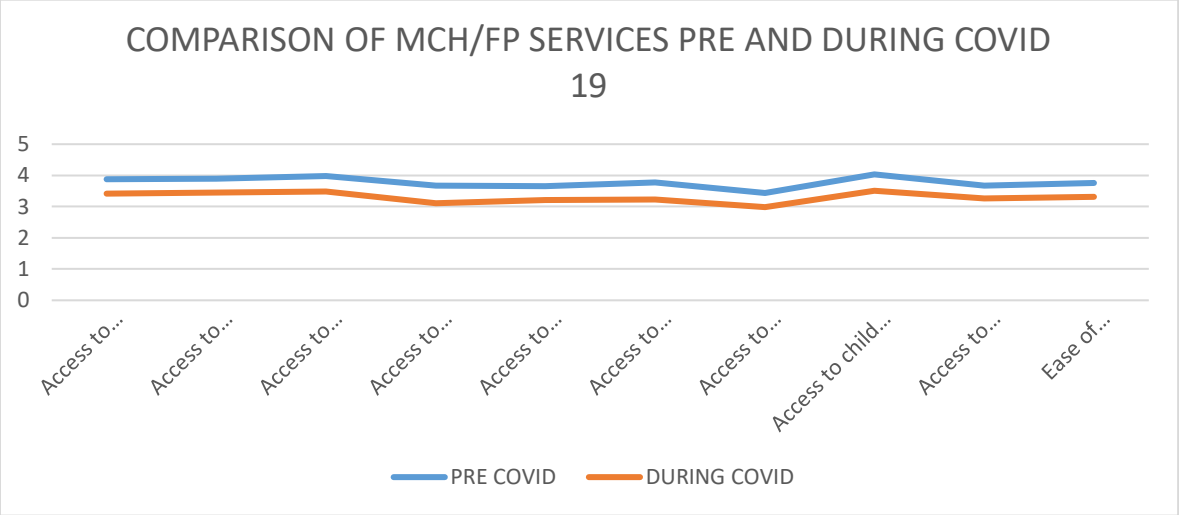
Reasons for Changes in Maternal Healthcare

		Frequency	Valid Percent
Reason for missing	COVID-19 stigma	3	42.9
	Lack of supplies	2	28.6
	Lockdown	1	14.3
	Low supply of FP equipment	1	14.3
How are FPS services compared to pre COVID-19 period	Minimized contact	1	9.1
	More caution is taken	1	9.1
	No difference	1	9.1
	Normal through COVID-19 precautions	1	9.1
	Reduced service delivery	4	36.4
	Reduced turn up	3	27.3

Lastly, to help investigate the changes in MCH/FP services during the COVID-19 period, the patients were asked to rate the ease of accessing the services with 1 being very difficult and 5 being very easy. Figure 3 presents a line graph showing the ratings given by the respondents. From the figure, accessing the services before COVID-19 was easier compared to during COVID-19 period.

Figure 3

Comparison of MCH/FP Services Pre and During COVID-19



The Wilcoxon signed-rank test (Tables 7 and 8) was used to examine the hypothesis that the quality of reproductive, maternal, newborn, and child health (RMNCH) services between the pre-COVID-19 and during-COVID-19 periods was not significantly different. This test is a non-parametric statistical test used to compare two related samples and is appropriate when the assumptions for a paired t-test are not met. In this case, the aim was to determine whether there was a significant change in the quality of RMNCH services during the COVID-19 pandemic compared to before the pandemic.

Table 7

Descriptive Statistics for Wilcoxon Signed Rank Test

Ranks				
		N	**Mean Rank**	**Sum of Ranks**
during_COVID-19 - pre_COVID-19	Negative Ranks	40 a	25.23	1009
	Positive Ranks	8b	20.88	167
	Ties	18 c		
	Total	66		
a during_COVID-19 < pre_COVID-19				
b during_COVID-19 > pre_COVID-19				
c during_COVID-19 = pre_COVID-19				

The results showed that for 40 observations, the during COVID-19 rank is lower than the pre-COVID-19 rank (negative ranks), indicating a decline during COVID-19 period compared to the pre-COVID-19 period. On the other hand, for 8 observations, during COVID-19 rank is higher than the pre-COVID-19 rank (positive ranks), indicating an improvement in during COVID-19 period compared to the pre COVID-19 period. Finally, for 18 observations, the during COVID-19 rank is equal to the pre-COVID-19 rank (ties).

Table 8

Wilcoxon signed rank test

Test Statisticsa	
	post_RMNCH - pre_RMNCH
Z	-4.321b
Asymp. Sig. (2-tailed)	0.000

a Wilcoxon Signed Ranks Test

b Based on positive ranks.

The test statistics presented were results of a Wilcoxon Signed Ranks Test, for the pre-COVID-19 and during-COVID-19 rating of the quality of RMNCH services. The test statistic Z is -4.321, indicating that the difference between the pre-COVID-19 and during COVID-19 ranks is significantly different from zero at the 0.05 level (two-tailed), as shown by the Asymp. Sig. (2-tailed) value of 0. The results suggest that there was a significant difference in the quality of RMNCH services between the pre-COVID-19 and during-COVID-19 periods. Specifically, the quality of RMNCH services decreased during the COVID-19 period compared to before the pandemic.

Discussion

The key finding of the study was that there was a significant decrease in the quality of RMNCH services during the COVID-19 period compared to before the pandemic. This conclusion is based on the results of a Wilcoxon Signed Ranks Test, which produced a test statistic Z of -4.321 and an Asymp. Sig. (2-tailed) value of 0. These results suggest that the difference between the pre-COVID-19 and during COVID-19 ranks is significantly different from zero at the 0.05 level (two-tailed), indicating a significant difference in the quality of RMNCH services between the two periods. The significant decrease in the quality of RMNCH services during the COVID-19 period compared to before the pandemic has important implications for maternal and child health. The findings suggest that the pandemic had a negative impact on the quality of healthcare services provided to women and children, which may have led to poorer health outcomes for this vulnerable population.

The results also highlight the need for interventions to improve the quality of RMNCH services during and after public health emergencies. It is important for healthcare systems to prioritize maternal and child health services during pandemics and ensure that the quality of care is not compromised. This may involve implementing telemedicine or other innovative approaches to healthcare delivery that can maintain the quality of care even during periods of social distancing or quarantine measures. Additionally, the study's findings emphasize the importance of continuity of care, as disruptions in healthcare services can have long-lasting effects on health outcomes. Policymakers and healthcare providers should prioritize the development of strategies to ensure that essential healthcare services remain available and accessible during public health emergencies.

Previous research has shown mixed results regarding the impact of pandemics on the quality of RMNCH services. Some studies have found that pandemics have a negative impact on the quality of healthcare services provided to women and children (Juan et al., 2019; Penna et al., 2023; Kassa et al., 2022), while others have found no significant difference in the quality of care before and during pandemics. Our study's findings are consistent with those that have reported a decrease in the quality of RMNCH services during pandemics. Kassa et al. (2022) conducted a study during the Ebola outbreak in West Africa and found that the quality of

maternal and child healthcare services decreased during the outbreak, leading to an increase in maternal and infant mortality rates.

However, our study's findings contrast with those of some previous studies that found no significant difference in the quality of care before and during pandemics. For instance, Shapira et al. (2021) reported that decreases in maternal health services cannot be generalized and that there is need to understand the factors determining the magnitude of pandemic disruptions in order to tailor service delivery interventions. Aranda et al. (2022) asserts that these studies have often been conducted in high-income countries with well-established healthcare systems, where the impact of pandemics may be less severe than in low and middle-income countries with weaker healthcare systems. Taken together, the findings of our study and previous research highlight the need for further investigation into the impact of pandemics on the quality of RMNCH services. It is important to consider the context in which the pandemic occurs, as well as the strength of the healthcare system, when assessing the impact of pandemics on maternal and child health.

Conclusion

This study examined the effect of the COVID-19 pandemic on Reproductive, Maternal, Newborn, and Child Health (RMNCH) services in Kisumu, Isiolo, Machakos, and Nyeri counties of Kenya. Through a mixed-methods approach, it was found that there was a significant decrease in the quality of RMNCH services during the COVID-19 period compared to before the pandemic, as evidenced by a decrease in antenatal care visits, institutional deliveries, and postnatal care services. The study identified several challenges hindering access to and provision of RMNCH services, including inadequate personal protective equipment, shortages of essential medicines and supplies, and reduced funding. These findings underscore the detrimental impact of the COVID-19 pandemic on RMNCH in the examined counties of Kenya, emphasizing the urgent need for action to mitigate such impacts in the future.

Recommendations

Based on the findings of this study regarding the adverse impact of the COVID-19 pandemic on Reproductive, Maternal, Newborn, and Child Health (RMNCH) services in Kisumu, Isiolo, Machakos, and Nyeri counties of Kenya, several recommendations can be proposed. Firstly, there is a crucial need to strengthen health systems, particularly in terms of preparedness and resilience to effectively respond to future pandemics or health crises. This includes ensuring adequate availability of personal protective equipment (PPE), essential medicines, and supplies to safeguard healthcare workers and maintain the continuity of RMNCH services. Additionally, efforts should be directed towards improving access to essential RMNCH services by implementing innovative strategies such as telemedicine and mobile health clinics, especially in remote or underserved areas. Moreover, it is imperative to prioritize funding and resource allocation towards RMNCH programs to mitigate the negative impact of budgetary constraints observed during the pandemic. Furthermore, comprehensive training programs and support systems should be established for healthcare workers to enhance their capacity in delivering high-quality RMNCH care amidst challenging circumstances. Finally, collaborative efforts between government entities, healthcare providers, and community stakeholders are essential to address the multifaceted challenges faced by RMNCH services and ensure the provision of equitable and sustainable healthcare for women, newborns, and children in Kenya.

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