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# HIV and COVID: Navigating Challenges in Dual Care

N.E.Ata Alla Rahma[1],M. Khalid[1], M. Abdelrahman[2] ,H. Abdalmahid[2],M. Eltahir[2], D. Belall[2]

[1]University of Bahri , College of Medicine , Khartoum, Sudan

[2]Omdurman AIDS care unit, Omdurman, Sudan

*Correspondence: E-mail: nourelgabo@gmail.com

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**ABSTRACT**

**Background:** The COVID-19 pandemic has disrupted essential health services, including HIV testing, follow-up, and treatment, jeopardizing progress toward the Joint United Nations Programme on HIV/AIDS 90-90-90 global target. Limited studies have explored the impact of the pandemic on people living with HIV in Africa, with none, to our knowledge, in Sudan.

**Objectives:** The objectives of this study are to assess the challenges of HIV and COVID dual care in Sudan

**Methods:** This cross-sectional study involved 100 pediatrics living with HIV interviewed at Omdurman AIDS Care Unit in Sudan in 2021.

**Results:** Contrary to expectations, data collected does not indicate a higher susceptibility of the HIV population to COVID-19 despite prevalent co-morbidities.

**Conclusions:** The threat to the HIV epidemic lies not in direct COVID-19 infection but in its indirect consequences through lockdown measures. While the incidence of COVID-19 infection wasn't higher than the general population, the focus on COVID-19 prevention diverted resources from HIV prevention and treatment.

## 1. INTRODUCTION

The convergence of HIV and COVID-19 has presented significant challenges for healthcare systems worldwide. Individuals living with HIV are particularly vulnerable to severe COVID-19 infection due to underlying immune compromise (MacNeill et al., 2022; Qiao et al., 2021). This necessitates a comprehensive approach to care that addresses the unique needs of this population. The COVID-19 pandemic had a significant global impact, especially among disadvantaged populations, exacerbating underlying health inequities (Larcombe et al., 2023). COVID-19 and HIV are dangerous illnesses that result in more significant death and morbidity rates than other viral infections (Nemery et al., 2023). HIV prevalence is around 0.2% per the 2019 estimates and projections, while the fatality rate of CPOVID-19 is 7.7%, which is higher than in other countries (Xie et al., 2024; Nemery et al., 2023). The COVID-19 pandemic has

had a potent impact on health services, including HIV testing, follow-up, and treatment, significantly affecting the progress toward the Joint United Nations Program on HIV/AIDS 90-90-90 global target (Dadashi et al., 2022; UNAIDS, 2014). Limited studies have explored the impact of the pandemic on people living with HIV in Africa, with none, to our knowledge, in Sudan. This study aims to assess the repercussions of the COVID-19 pandemic on individuals receiving HIV care at Omdurman AIDS Care Unit Tropical Hospital in Omdurman, Sudan

## 2. MATERIALS AND METHODS

### *2.1. Study protocol*

This cross-sectional study involved 100 pediatric living with HIV, ages 18 years old and younger, at Omdurman AIDS Care Unit in Sudan during 2021. Google form was used to collect the data. The subject name was coded for confidentiality, and a standard COVID-19 suspected tool was used to identify suspicious cases to be tested and considered by PCR. The ethical approval was obtained from the research ethics committee and a verbal consent was obtained from the patient's guardians.

### *2.2. Statistical analysis*

Data was then analyzed through the statistical package for social sciences (SPSS 29). Descriptive statistics were carried out, and data was presented as graphs.

## 3. RESULTS

Contrary to expectations, data collected does not indicate a higher susceptibility of the HIV population to COVID-19 despite the co-morbidities. The male-to-female distribution was consistent. Fifty percent were between the ages of 10 and 18 years (Figure 1).

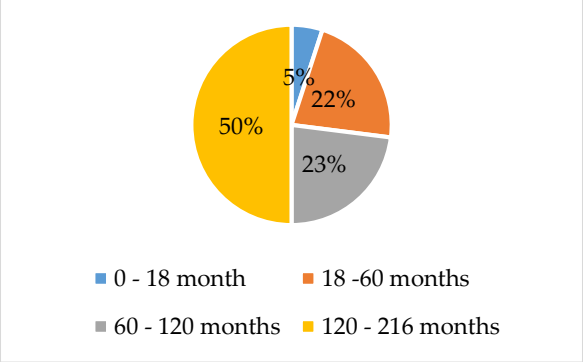


Figure 1. Patient population age category

Of the 100 cases interviewed, only 7% showed high clinical suspicion, 62 % did not present with any COVID-19-related symptoms during the study period, and only 3% were confirmed to have COVID-19 by PCR. A mortality rate was detected at just 1% of the study group (Figure 2).

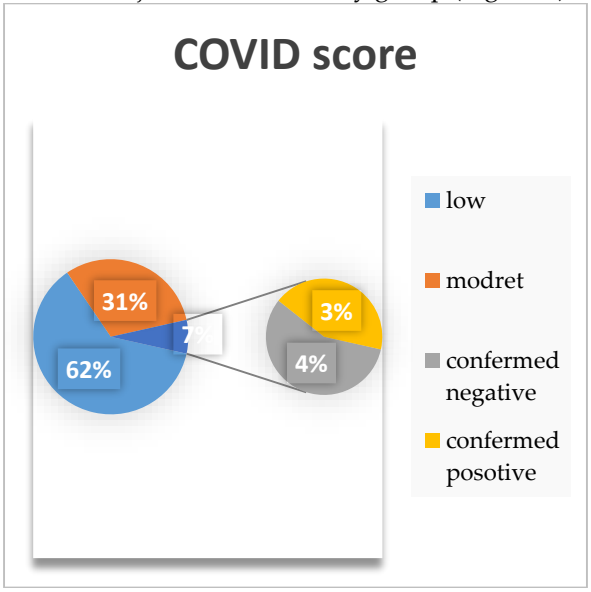


Figure 2. COVID 19- score

Of the 100 Pediatric 94 that had started antiretroviral therapy, 82.3% were adhered to antiretroviral therapy during the time, which may be the reason for the low incidence dispute (Figure 3 & 4). 73% of our study subjects are at stage 3. A South African study reported higher COVID-19-related mortality and Co-morbidities associated with COVID-19 significantly impact the HIV population (Jassat et al., 2021). There is no literature in Sudan to support it, and it doesn't correlate with our study as our results report the opposite with a very low incidence of COVID 19 related symptoms.

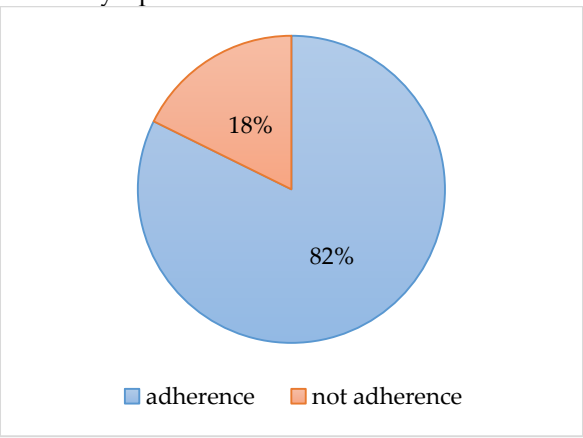


Figure 3. Patient adherence status to antiretroviral therapy.

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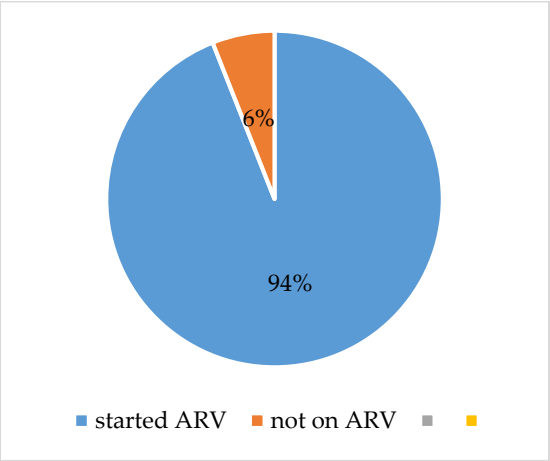


Figure 4. Antiretroviral therapy (ART) status.

Concerns during the pandemic included decreased preventive measures, HIV testing, follow-up, and limited access to antiretroviral therapy during lockdowns. The threat to the HIV epidemic lies not in direct COVID-19 infection but in its indirect consequences through lockdown measures.

## 4. DISCUSSION

The findings of this study provide valuable insights into the impact of the COVID-19 pandemic on individuals living with HIV in Sudan, especially the Paediatric population, a region where limited research has been conducted on this topic. The study investigates the incidence of COVID-19 infection among the pediatric population living with HIV (aged 18 years and younger), focusing on the interplay between HIV and COVID-19 susceptibility and severity. Additionally, it explores the impact of the COVID-19 epidemic on adherence to HIV treatment.

Contrary to expectations, the data collected does not indicate a higher susceptibility of the HIV population to COVID-19 despite prevalent co-morbidities. This is in contrast to a South African study that reported higher COVID-19-related mortality among the people living with HIV. The differences in findings may be attributed to various factors, such as the specific characteristics of the study population, access to healthcare, and the overall COVID-19 situation in the respective regions.

The study also highlights the indirect consequences of the COVID-19 pandemic on the HIV epidemic, with concerns raised about decreased preventive measures, HIV testing, follow-up, and limited access to antiretroviral therapy during lockdowns. These findings highlight the need for a comprehensive approach to address the challenges faced by individuals living with HIV during the pandemic, ensuring the continuity of essential HIV services and minimizing the indirect impact of COVID-19 on the HIV epidemic. The challenges in dual healthcare include increased Vulnerability because individuals with HIV often have compromised immune systems, making them more susceptible to severe COVID-19 infections. Therefore, vigilant monitoring and proactive care are necessary to improve the treatment outcome. In addition to that, administration of both HIV and COVID-19 medications can be complex and demanding. Adherence to treatment regimens is crucial for both conditions, but challenges may arise due to medication interactions, side effects, and cognitive difficulties.

Furthermore, individuals living with HIV already face stigma, and the added burden of COVID-19 can exacerbate these issues. Discrimination can hinder access to care, support services, and social integration. The dual diagnosis of HIV and COVID-19 can have a profound impact on mental health, leading to anxiety, depression, and other psychological challenges. Finally, the simultaneous management of HIV and COVID-19 places significant strain on healthcare systems, requiring additional resources, specialized training, and coordinated care.

To overcome these challenges, implementing integrated care models that address HIV and COVID-19 can improve patient outcomes. This involves collaboration between HIV and COVID-19 care providers to ensure seamless care coordination.

By addressing these challenges and implementing effective strategies, healthcare providers can improve the lives of individuals living with both HIV and COVID-19.

## 5. CONCLUSION

The threat to the HIV epidemic lies not in direct COVID-19 infection but in its indirect consequences through lockdown measures. While the incidence of COVID-19 infection wasn't higher than the general population, the focus on COVID-19 prevention diverted resources from

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HIV prevention and treatment. The aftermath of the lockdown warrants further investigation, especially concerning HIV acquisition and viral load dynamics.

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All authors contributed equally to this work or provide details as follows

H.O. designed and performed the experiments, Conceptualization, H.O., H.T. and E.A.; methodology, H.O.; validation, H.T. and E.A investigation, H.O..; data presentation, H.O.; scientific writing and manuscript preparation, H.T. and E.A.; manuscript revision and editing, H.T. and E.A.; proof reading, H.O.; supervision, project administration. All authors reviewed and approved the manuscript.

**CONFLICTS OF INTEREST:**

The authors declare no conflicts of interest.

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