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Original Research Article

A Review Paper on HIV Testing Among Pregnant Women Receiving Antenatal Care During the COVID-19 Pandemic

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Abstract: During the COVID-19 pandemic, antenatal care (ANC) clinics monitored pregnant women for HIV testing as part of a surveillance program for the virus, especially in the lockdown period (2020–2021) worldwide. To guide community-wide HIV interventions and prevent mother-to-child transmission, studies on the demographics of expectant mothers who test positive for HIV can be used as proxies. During the COVID-19 epidemic, we planned to examine HIV testing among pregnant women receiving antenatal. Overall, no demographic factors were discovered to be significantly linked to HIV prevalence. However, studies on demographic traits, past HIV testing, and the COVID-19 pandemic found that young, less educated, primigravida, rural, and low socioeconomic level women comprised most of those who underwent tests. During the COVID-19 pandemic, there was a correlation between age, education level, employment position, parity, and HIV testing among pregnant women.

Keywords: Antenatal Care, COVID-19, HIV testing, Pregnant women, Pandemic.

BACKGROUND

One of the main causes of mortality among antenatal women with the virus is the human immunodeficiency virus (HIV). The prevention of the spread of HIV and the prevention of mother-to-child transmission (MTCT) initiative in which HIV/AIDS screening has a very important role in preventing mortalities and is an effective method of reducing transmission. When a pregnant woman is aware of her HIV status, she can start an urgent MTCT prevention program (PPIA) to prevent HIV from being transmitted from mother to child. In UNAIDS' strategy for "getting to zero," HIV counseling and testing are the starting points [1].

In India, the number of people living with HIV/AIDS (PLHIV) is anticipated to be around 23.49 lakh in 2019, according to the government's most recent HIV estimates report (2019). Estimates show that between 2010 and 2019, the nation's annual rate of new HIV infections dropped by 37%. In India, high-risk behaviors are the main factor in HIV infection. The main high-risk behaviors for HIV infection in India are unsafe injecting drug use, unprotected sexual relations both among homosexuals and heterosexuals. During COVID-19 pandemic, due to primary focus on the pandemic, no new hospitals were created or expansion of services was done to deal with healthcare services of people suffering from HIV/AIDS. However, the National AIDS Control Programme (NACP) of the government had 570 ART centers and 1264 link ART centers as of July 2020. In addition to fewer HIV cases being found, fewer pregnant women were screened for HIV and other illnesses in 2020 [2].

Throughout the 2021 pandemic period, the program to prevent mother-to-child transmission of infectious diseases such as HIV, hepatitis B, and syphilis, targeting tests per year, has only looked at pregnant women. A survey conducted during the COVID-19 pandemic revealed the unwillingness of women for routine ANC checks Due to the fear of contracting COVID-19 disease, let alone taking an HIV test. As a result, we conducted a review to determine the prevalence of COVID-19 among HIV patients and to examine the clinical course and outcomes of HIV co-infected with COVID-19. Furthermore, we compared the clinical and laboratory characteristics and disease

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outcomes of HIV patients on highly active antiretroviral therapy (HAART) and those without. During the COVID-19 pandemic, we wanted to look at HIV testing among pregnant women receiving antenatal care [3].

METHODOLOGY

The Rapid Review Guidebook suggests following the following five steps of Dr. Dobbin's evidence-informed decision-making (EIDM) methodology: Steps for Conducting a Rapid Review served as the framework. The health EvidenceTM tool was used to:

1. Find and access pertinent research evidence.
2. Assess the evidence's methodological quality.
3. Synthesize the evidence [4].

Search Strategies

The following key search terms were established based on the quick review research questions: With the help of HIV test surveillance of pregnant women who visited the antenatal care (ANC) clinics, the percentage of women who participated in HIV testing during the COVID-19 pandemic was estimated. To develop HIV prevention and care strategies and better understand the disease profile, socio-demographic data on HIV patients was gathered. Studies on the demographics of expectant mothers who test positive for HIV can be used as a proxy to direct community-wide HIV interventions and prevent mother-to-child transmission.

The final search string is as below:
(COVID-19 in Pregnant), (COVID-19 HIV), (Testing among pregnant women), and (Attending antenatal care during COVID-19)

Four databases have been adopted to conduct a thorough search for publications: Scopus, Google Scholar, PubMed, and the Cochrane Library. Due to the absence of publications in the field of COVID-19, Google Scholar has been added to provide wider coverage of the gray literature. Scopus, PubMed, and the Cochrane Library provided excellent coverage of peer-reviewed articles.

Eligibility criteria

The literature search included all COVID-19 articles, theses, and review papers released before January 2022 that dealt with instances of HIV testing among pregnant patients receiving antenatal care.

Data extraction

Two impartial reviewers from the medical community examined the articles to guarantee the selection's impartiality. On the finalized list of articles for additional data extraction, the two reviewers have achieved an eighty percent agreement.

Results of the literature search

The preliminary screening process resulted in the reduction of 98 articles to potentially relevant articles. Non-relevant articles were eliminated due to their non-English language, title, abstract, and book chapter. Based on the inclusion criteria, 69 studies were discovered (Figure 1: Preferred Reporting Items for Reviews) (Health EvidenceTM tool). We conducted this review according to Preferred Reporting Items for Reviews (PRISMA) Figure 1.

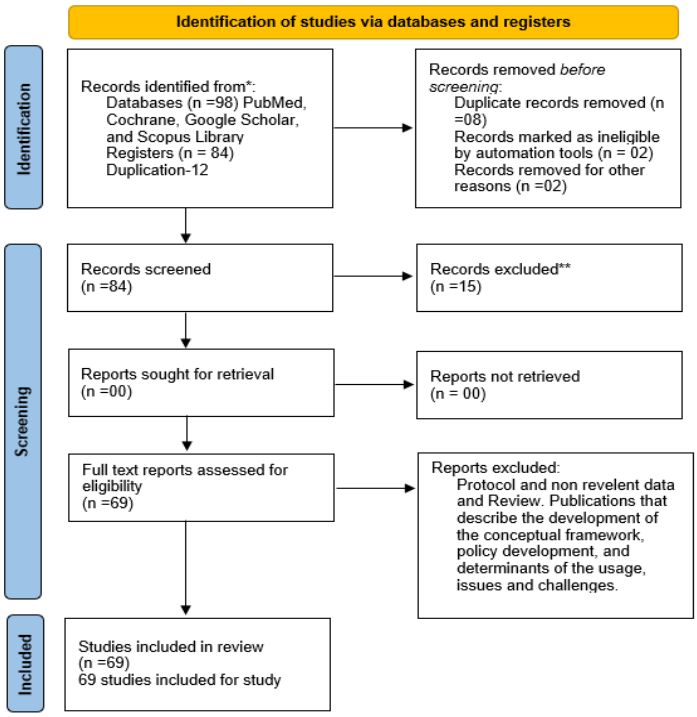

Figure 1: Preferred Reporting Items for Reviews (Health EvidenceTM tool)
(PRISMA) flow diagram of the literature screening process [5].

RESULT AND DISCUSSION

There is insufficient data published from low and middle-income countries to understand the effect of the COVID-19 lockdown on HIV services like counseling, testing, management, and patient-related outcomes. The published studies were small in scope and, in contrast to our analysis, did not consider seasonality or long-term trends, which might have impacted the outcomes. In a single-site, pre-exposure prophylaxis study of 22 of 455 pregnant women in South Africa, it was found that 34% of patients skipped their appointments before the lockdown, and this increased to 57% of patients after the lockdown (odds ratio 236, 95% CI 173–316). According to two descriptive analyses from small studies in Kenya (at two sites and three sites), it was found that there was a decrease of 15–30% in HIV tests performed in April 2020 compared to each month from January to March 2020. This discovery is consistent with ours [6].

When comparing the two months before lockdown with the first month, data from the South African national laboratories showed decreases of 33% in CD4 cell count (typically performed at HIV diagnosis or ART initiation) and 22% in viral load testing (typically conducted for ART monitoring). However, rather than reflecting changes in patient clinic attendance and ART administration, decreased HIV viral load PCR testing may result from altered laboratory system capacity brought on by increased SARS-CoV-2 PCR testing. Primary care clinics in rural KwaZulu-Natal underwent an interrupted time series analysis, and the results showed no change in the overall volume of clinic visits. However, it indicated a 20% rise in HIV-related visits shortly after the lockdown. The study did not differentiate between appointments for HIV testing, ART collection, or ART start-up. However, the authors speculate that a rush to obtain ART in anticipation of new restrictions or a shortage of medications led to an increase in the use of HIV services. Furthermore, our research showed that rural clinics were less affected by the COVID-19 lockdown than urban areas, where lockdown regulations may have been more strictly enforced [7].

Additionally, some individuals who had relocated to urban areas for employment may have done so during the lockdown. What aspects of introducing ART and HIV testing had the biggest influence? According to a qualitative study in rural Uganda and anecdotal reports from studies in Kenya, a lack of personal protective equipment, a lack of physical separation space in clinics, shorter clinic hours, and staff redeployed from HIV testing to COVID-19 response activities may be contributing factors to testing declines. It is possible that fewer people were referred to clinics for HIV testing in South Africa as a result of the 28 000 HIV community healthcare workers who were switched from HIV outreach to COVID-19 symptom screening. People were less likely to overcome the difficulties of attending clinics during the lockdown if they lacked established engagement patterns in care and regular clinic attendance to receive treatment. These include higher prices, trouble with transportation, the potential requirement to show proof

of the purpose of travel, a lack of resources, and concern over catching the SARS-CoV-2 infection at clinics [8].

According to CFLAG, a referral healthcare facility in Guatemala City. The COVID-19 pandemic has impacted HIV-positive patients' access to healthcare. HIV testing dropped at CFLAG by 54.7% (95% CI 53.8-55.4%) during COVID-19. HIV testing is a good place to start when finding and admitting HIV-positive patients. In March 2020, the month that Guatemala's first case of COVID-19 was reported, there were fewer HIV tests performed than in previous months. This conclusion is supported by the results of additional studies (Bechini et al., 2020; Lagat et al., 2020; Mhango et al., 2020). According to Lagat et al. (2020), the number of female index enrollees in an assisted partner notification program for HIV in Kenya decreased by 50%. As expected, the number of HIV tests administered to pregnant women at CFLAG decreased. The difference was less than the overall decline in HIV testing (32.5% vs. 54.7%), as the labor and delivery ward maintained essential services [9].

Worldwide, it was found that COVID-19-related restrictive measures harmed the health services provided to an estimated 2.8 million children and teenagers and 1.3 million pregnant HIV-positive women. HIV transmission from mother to child can be stopped with early testing and treatment initiation. Concerns about vertical transmission have been raised as antenatal women undergo fewer HIV tests during their early pregnancies due to the COVID-19 pandemic. A recent study found that since the COVID-19 pandemic's beginning, pregnant women's access to HIV testing and treatment has been significantly reduced in 13 important countries by 25% to 50%. Due to COVID-19-related lockdowns and restrictions, the number of antenatal visits by expectant mothers drastically decreased between April and September 2020, falling by 5% in sub-Saharan Africa and 66% in many Asian nations. As a result, pregnant women missed out on opportunities for early HIV testing and treatment, which raised the risk of mother-to-child transmission [10].

India ranks third in the number of people living with HIV/AIDS, with 23.49 lakh (2,349,000) affected. HIV-infected, immunocompromised pregnant women and children are severely impacted during this difficult COVID-19 era when most resources are devoted to managing HIV-infected COVID-19 infection. They suffer greatly from the COVID-19 pandemic, fear, anxiety, lack of access to food and medical care, and a lack of antiretroviral treatment services. According to a recent UNICEF report, the pandemic's effects on health services could undo the strenuous progress made in the fight against HIV/AIDS for children and expectant women [11].

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The effectiveness of services for preventing vertical HIV transmission (from mother to child) varies. By April 2020, fewer women were getting an HIV test at their first antenatal clinic visit, but by June 2020, the decline had been reversed. Before the COVID-19 pandemic, structural issues like poverty, gender inequality, and gender-based violence made it difficult to prioritize adolescent girls and young women in the HIV response. Due to the COVID-19 pandemic, fewer women are getting their first antenatal clinic visit HIV test, and fewer are using ART [13].

CONCLUSION

Many crucial healthcare services, including HIV prevention, testing, and treatment, was put on hold due to the COVID-19 pandemic. HIV-at-risk people, especially antenatal women, had difficulty accessing follow-up care and treatment services during the COVID-19 pandemic. Despite lockdowns, restrictions, quarantines, and disruptions in healthcare services brought on by the COVID-19 pandemic for the past two years, many global objectives—including eradicating AIDS in children by 2030—remain unmet. However, the dream is still necessary and attainable. Prioritizing care for HIV-positive pregnant women and kids should include administering antiretroviral therapy and testing newborns born to infected mothers. Children, pregnant women, and adolescent girls were the most at risk during the HIV and COVID-19 pandemics. We can only reimagine a more resilient HIV response in a world with COVID-19 infection through global collaboration and open communication among partners.

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Conflicts of interest

There are no conflicts of interest, according to the authors.

Acceptance of participation and ethical clearance:

This evaluation does not require ethical authorization because no patient data was gathered. The ethical issues this study examines include plagiarism,

confidentiality, misconduct, data falsification, double publication and submission, and duplication.

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