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## Covid-19: Its impact on people living with HIV

**Mohammad Kamrul Islam and Tahaani Al Hoque Chowdhury**

### Abstract

It is still unclear if having HIV increases the chance of getting COVID-19 and subsequently raises the rate of mortality among people living with HIV (PLHIV). However, the COVID-19 pandemic has been negatively impacting the already vulnerable group of people who have HIV infection. Some of these impacts were the results of the strict restrictions imposed on people's daily lives due to COVID-19; while some others have already existed, COVID-19 just made them visible. This article will investigate what these impacts mean to PLHIV from a personal, social, and global perspective. It will also explore some solutions that might mitigate this complex situation.

**Keywords:** HIV, AIDS, COVID-19, PLHIV, pandemic

### Introduction

At the end of 2019, a novel coronavirus emerged in the Wuhan province of China. Within a few months, it spread globally and WHO announced it a pandemic, the COVID-19 pandemic. So far, 187 million people have been infected globally, and more than 4 million have died <sup>[1]</sup>. Although many countries started to vaccinate their population, the spread of the disease is not seemingly declining. It was a sudden and unique blow to global public health, which affected billions of people, devastated the worldwide economy and broken-down health systems even in the developed world.

On the other hand, there is another pandemic that has been with us for many years. Since the first case detected in the 1980s, HIV has become and, still, now, a global threat. 38 million people are living with HIV and 690 thousand people died due to HIV/AIDS in 2020, and a total of 77 million people have been infected with HIV from the beginning <sup>[2]</sup>. This pandemic has not stopped its journey while fighting with the emerging COVID-19, which deteriorated the HIV/AIDS situation around the world.

People living with HIV (PLHIV) are impacted terribly during this COVID-19 pandemic. The reasons are not only their immune status but also a multifactorial web of risks, which are unique to PLHIV exposed to a pandemic like COVID-19. In this article, these multifaceted issues will be discussed, considering existing evidence. They will look for any way out of these problems faced by the already vulnerable group of HIV infected people.

### HIV and SARS-CoV-2, an unique combination

HIV is a well-known retrovirus that has been infecting the human population for decades. Without treatment, PLHIV goes on to develop Acquired Immunodeficiency disorder (AIDS). Despite global efforts, from 38 million PLHIV, around 12.6 million cannot get HIV treatments still now <sup>[3]</sup>. In COVID-19 caused by SARS-CoV-2, most of the risk factors are comorbidities like hypertension, diabetes, chronic kidney disease, obesity and older age <sup>[4]</sup>. Although not many studies have been able to show conclusively that PLHIV is at higher risk of an adverse outcome or more infectability from COVID-19, there is enough evidence showing low CD4 count and HIV infected people not taking ART are at the highest risk of contracting COVID-19 <sup>[5]</sup>. Other studies showed that people who do not have HIV but have the comorbidities have a higher median age of COVID-19 infection than PLHIV, possibly because biological ageing is faster in PLHIV. 6 <sup>[7]</sup>

The pathogenic process of COVID-19 in PLHIV is not fully understood. However, there are contrasting hypotheses on this topic. One group of scientists argues that immunosuppression due to HIV makes PLHIV more susceptible to COVID-19 infection. Still, their lack of lymphocytes in the circulation might prevent them from getting severe manifestation of the disease. Another group concluded from the past studies on HIV-1 infection that there is a constant chronic elevated inflammatory state in HIV infection. Therefore, cytokine storm, a

classical feature of severe COVID-19, might be deadly for those individuals [8]. The second hypothesis has been illustrated in some case series. One of them done by Vizcarra *et al.*, showed that among critically ill people with HIV and COVID-19, those who have low CD4 cell count (less than 200/microL) have worse outcome [6]. Another study conducted in New York found that those who die having both COVID-19 and HIV-1, had low lymphocyte and higher inflammatory markers than their surviving counterparts [9]. A recent meta-analysis published in 'Nature' concluded that HIV is a 'significant' risk factor for acquiring COVID-19 and increased mortality [5]. In sharp contrast, a study conducted in London found that PLHIV with COVID-19 were discharged quickly than those who did not have HIV infection [10].

Although most of the studies implicate a negative relation between COVID-19 and PLHIV, further studies are needed to conclude.

### **Risks for HIV infected individuals during COVID-19**

PLHIV have a higher prevalence of alcohol and other drug abuse. Due to COVID-19, countries around the globe imposed strict restrictions on movement and gathering to stop the spread. But this action put certain groups of people in a vulnerable position. PLHIV are one of the most vulnerable groups to become depressed or anxious due to the physical distancing rules. This, in turn, leads to more alcohol or substance abuse [11]. Although there is no direct tracing of which group is using more alcohol or illicit drugs, a recent study shows a stunning 234% rise in online alcohol sales [12]. Alcohol and substance abuse increase the risk of contracting COVID-19 due to non-compliance with physical distancing rules, thus increasing the chance of getting infected with the disease. This also raises risky behaviour, which might spread HIV.

### **Impact on the treatment of HIV**

Antiretroviral therapy (ART) is the most essential treatment option for PLHIV. Different countries have different protocols for distributing ART. However, most countries need the patient to go for a regular follow-up visit in a defined time interval. Due to the restrictions implied by the pandemic, PLHIV is finding it difficult to get their life-saving medications which sharply drops the adherence to ART.

This inaccessibility to ART is prevalent in both developed and developing countries during COVID-19. A study conducted in China showed that more than 30% of PLHIV were at risk of stopping ART, while around 50% did not know where to get their medication during the lockdown period [13]. The situation in Sub Saharan Africa is more frustrating. Given that people need to travel long distances to get to specialized HIV care centres for their medication, they can't get the ART in time during a lockdown [14, 15]. African countries are one of the worst-hit regions by the HIV pandemic. Their social structure, lack of education, poor health infrastructure, and stigma make it difficult for PLHIV to get ART even in standard time. COVID-19 just made it more problematic.

### **Impacts due to inequity:**

The lifestyle of the human population around the globe has changed since the beginning of COVID-19. Millions of people got infected, millions died. It put on a state of fear

and anxiety among the people who have lost their loved ones and among others who are staying at home for more than a year.

The measures taken by the health authorities around the globe have impacted the vulnerable group of people like PLHIV. In low-income countries, many lost their jobs due to economic instability. Many countries show a price rise in everyday products. The PLHIV in African countries and poor communities in other countries have been facing food insecurity, homelessness, and health service disparities. We have seen people in long lines in developed and developing countries collecting foods from charities where maintaining social distance is not an option [16, 17, 18].

We have repeatedly heard from health authorities and politicians the slogan 'stay home, stay safe' during this pandemic. Having a house is a crucial defence against COVID-19. However, politician tends to forget, even in many developed countries homelessness is a huge problem. This group of people is also at more risk of getting HIV infection due to their lifestyle.

A recent study in New Haven of the USA by Justice, Housing and Health Study (JustHouHS), depicts a terrible picture of homelessness among marginalized people. Their study had a particular focus on PLHIV. One of the findings was that many African-Americans without a home or a stable residence had to live with their relative's houses where social distancing is impossible [19].

Race inequality has been demonstrated by hospital admission and death rate by several studies. COVID-19 has disproportionately impacted people of colour, poor people and ethnic minorities.<sup>21</sup> Previous studies by many organizations, including JustHouS, homelessness, involvement in criminal justice, low income, and medical disparity based on financial and social status are all risk factors of HIV. This astonishing overlapping of determinant factors puts PLHIV at higher risk of contracting and hospitalization, and death [19].

### **The mental health of PLHIV during COVID-19**

For people living with chronic conditions, mental support plays a vital role in their wellbeing. No matter how much medication support the health system provides, a person's physical health depends mainly on his mental health. The COVID-19 pandemic is probably the most significant stressor for any person for more than a year now. It has drastically changed people's lives living with chronic conditions, especially those who need community support for their wellbeing. PLHIV are again the biggest victim of the COVID-19 pandemic as it tore down the social fabric of community based mental health support due to physical distancing rules. A community-based support system to provide ART in low-income countries was one of the cornerstones of the UNAIDS 90-90-90 target [22]. To keep PLHIV adherent to ART in poorer countries, treatment supporters who provided psychological support and monitored adherence to treatment have played a vital role. But, now this is not possible, as it puts both the treatment supporter and the patient at risk of either contracting or spreading COVID-19 [23, 24].

Studies showed that older PLHIV is at higher risk of social isolation, thus long term depression and anxiety [25]. Despite all these, health provider is trying their best to provide mental health support for the most vulnerable groups, including PLHIV. The health system had to adopt modern

technologies like consultation via telehealth or video calling. At first, it seems a good solution. But the disparities rise due to economic inequalities. Many people around the world do not have a digital communication device, let alone the necessary components of a session, including having a private space, fast internet and a structured health care system that does not discriminate based on social and economic status. 26<sup>[27]</sup> These disparities are not limited to the developing countries, even in the world most prosperous nation like the USA, PLHIV with unstable housing and income were not able to attend the online counselling session compared to their counterparts who have a steady income and a place to live<sup>[28]</sup>.

### How do we solve this?

The problem of dealing with two overlapping pandemics is never an easy one. This is more evident in the case of COVID-19 and HIV. In a complex situation like this, UNAIDS published their recommendations. They emphasized that PLHIV must get HIV services, including preventative measures like providing the high-risk population with "sterile needle, condoms, opioid substitution, pre-exposure prophylaxis and HIV testing".

PLHIV who are under ART should get at least three months of supply irrespective of their financial situation and geographic location<sup>[29]</sup>. UNAIDS also encourage PLHIV to take the COVID-19 vaccination.

On a national level, every government should acknowledge that PLHIV is at higher risk due to multiple overlapping reasons and should help them financially and through a structured health system. Volunteer groups worldwide are doing excellent work during this COVID-19 pandemic, especially in supplying foods to vulnerable groups and educating through social media. For example, a group of young Jamaicans started HIV education through digital media. Their study found that only 33% of young people know how HIV is transmitted from human to human<sup>[30]</sup>.

### Conclusion

Since the end of 2019, the world has changed drastically in all possible aspects. The COVID-19 pandemic has snatched millions of lives, and hundreds of millions are still suffering and fighting this devastating pandemic. Amid this chaos, we should be careful not to forget about the HIV pandemic that we been fighting for so long. The disproportionate impact of COVID-19 on PLHIV should be given importance. Governments and organizations should come forward to help these vulnerable people so that they can win the fight against COVID-19.

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