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The influence of the COVID-19 pandemic on the physical, social, and mental health of Black and Latinx young people with HIV in the United States

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## Abstract

**Background:** Whereas national attention has been paid to the ongoing mental health crises among young people triggered by the COVID-19 pandemic, less is known about the social, physical and psychological impacts of COVID-19 on young people living with HIV, especially racial/ethnic minorities.

**Setting:** Online survey of participants across the U.S.

**Method:** A national cross-sectional survey of non-Latinx Black and Latinx young adults (18–29) living with HIV. Between April and August 2021, participants answered survey questions about several domains (e.g., stress, anxiety, relationships, work, quality of life) that were worsened, improved, or unchanged during the pandemic. We ran a logistic regression estimating the self-reported impact of the pandemic on these domains between two age groups (ages 18–24 versus 25–29).

**Results:** The sample size was 231 (186 non-Latinx Black, 45 Latinx) and mainly male (84.4%) and gay identified (62.2%). Nearly 20% of participants were 18–24 years old and 80% were ages 25–29. Participants who were 18–24 years old reported 2–3 times the odds for having worse sleep quality and mood and greater stress, anxiety, and weight gain compared to those 25–29 years old.

**Conclusion:** Our data provide a nuanced picture of the negative impacts that COVID-19 had on non-Latinx Black and Latinx young adults living with HIV in the U.S. Given that these adults represent a priority population for HIV treatment outcomes, it is critical to better understand the ongoing toll that these dual pandemics have on their lives.

**Keywords:** *HIV, COVID-19, Youth, Mental Health*

## Introduction

Poor mental health is a leading cause of disability and worse health outcomes in young adults<sup>1</sup> and young adults living with HIV. The prevalence of mental disorders (33–50%) among all adults living with HIV have remained relatively unchanged over the past 25 years.<sup>2,3</sup>

However, it was the COVID-19 pandemic that sparked a national discussion on the mental health of young adults given the rising incidence of depression, anxiety, and suicide, which in 2020 was the second leading cause of death for those 25–34 years of age.<sup>4</sup> For example, young sexual and gender minorities report higher rates of suicidal ideation compared to their heterosexual peers,<sup>5</sup> with suicide risk factors including depression, negative life events, HIV stigma, victimization and structural determinants (i.e., anti-LGBTQ policies).<sup>6,7</sup> And it is likely that COVID-19 carries a greater burden for young Black and Latinx PWH in the United States (U.S.) given they historically face greater risk factors for poor mental health than their White counterparts (e.g., victimization, racism, less care access and quality).<sup>8</sup>

In the first year of the COVID-19 pandemic, global prevalence of anxiety and depression increased by 25%.<sup>9</sup> Specifically, national surveillance reports showed that 44% of adolescents, specifically, experienced persistent feelings of sadness or hopelessness.<sup>10</sup> Both the impact of the pandemic and shelter-in-place measures may have led to isolation and disrupted the normal lives and management of HIV for young adults. While there is recent literature on the impact of COVID-19 on the mental health of older adults due to isolation concerns,<sup>11</sup> we have limited data to show impact of the COVID-19 pandemic on young adults living with HIV who are also sexual, gender, and racial/ethnic minorities.

### *Objective*

This study tested for differences in the self-reported impact of the pandemic between two age groups of young non-Latinx Black and Latinx adults living with HIV during 2021.

### **Methods**

#### Study Design

We used a cross-sectional design to deliver an online survey to 18-29 year-old adults living with HIV. The survey was designed to measure willingness to participate in and attitudes towards HIV cure research among young adults living with HIV in the U.S. Given the study was launched during the COVID-19 pandemic, we included survey items to understand the physical, social, and mental health impacts of the pandemic. Data for this analysis was restricted to individuals self-reporting non-Latinx Black/African American and Latinx race/ethnicity (85% of the overall sample) as they represent the two groups carrying high burdens of HIV in the U.S. The study and its informed consent process was approved by the University of California, San Francisco Institutional Review Board.

#### Recruitment and Participants

#### Procedures

The survey was administered from April through August 2021. We recruited participants using social media posts (e.g., Twitter), ads on dating sites (Jack'd), and through organizations serving young adults living with HIV and who were racial/ethnic minorities. Individuals were screened both online or via text message to the study mobile phone by the study coordinator. Eligible participants were: 18–29 years old, HIV positive, living in the U.S., able to complete the study in English, and willing to provide online informed consent. Participant age was verified via an uploaded photo I.D. showing their name and date of birth and HIV status was verified with a

photo of their HIV medication bottle, laboratory report or healthcare provider letter showing their name and HIV status or viral load.<sup>12</sup> This verification method has been published elsewhere.<sup>12</sup> Eligible participants were sent consent information and an individualized link to the survey. All study activities were conducted completely remotely using Qualtrics software. Participants opted to be paid \$40 via a mobile app or e-gift card.

## Measures

### *Demographics and Age*

Demographic variables such as gender identity and race and ethnicity were used to characterize the sample (See Table 1). Participants were those who self-reported race and ethnicity as Black and non-Latinx, or Latinx. Age groupings were 0 (18–24 years of age) and 1 (25–29 years of age) as the age of 25 is when young adults are transferred to adult HIV care services.<sup>13</sup>

### *COVID-19*

Participants rated how the COVID-19 pandemic affected their lives (“Since the beginning of the pandemic in March 2020, how have the following changed for you?”). Questions were developed in consultation with a methodological research core at University of California, San Francisco. The domains included general quality of life, financial situation, ability to buy food, ability to pay rent, mood, sleep quality, and physical health. Response options varied based on the question and included whether a domain (e.g., ability to pay rent) ‘improved/increased’ ‘not changed,’ ‘worsened/decreased’ or ‘don’t know/prefer not to answer’ to indicate how they had been impacted. All 30 items were coded to indicate a negative impact (1) (e.g., ability to pay rent decreased) or positive/unchanged impact (0) (e.g., ability to pay rent increased or was unchanged). Any ‘don’t know/prefer not to answer’ responses were not included in the analysis.

## Analysis Plan

We conducted a single multivariate logistic regression with Maximum Likelihood Estimation with Mplus Software (V. 1.8.7). We estimated the unadjusted odds ratios for 30 pandemic-impact response scores (1 = negative impact, 0 = positive/unchanged impact) based on two age groups (0 = 18–24, 1 = 25–29 years) and generated corresponding 95% confidence intervals. The unadjusted odds represent the likelihood of reporting worse pandemic-impact responses based on being in the younger versus slightly-older adult group.

## Results

The total sample size was 231 (186 non-Latinx Black, 45 Latinx) and mostly male (84%) and gay identified (62%). Nearly 20% of participants were between the ages of 18–24 and the remaining majority were ages 25–29. Half of the Black participants were from the Southern U.S. and over half of the Latinx participants were from the Western U.S. See **Table 1** for demographics.

INSERT TABLE 1 HERE

In the unadjusted logistic regression model, there were several notable negative impacts of the COVID-19 pandemic that were greater for 18–24 year-old participants versus the 25–29 year-old participants (See **Table 2**). For example, the younger group reported 2.68 times the odds of their quality of life as being worse during the pandemic (95% CI: 1.33-5.42,  $p = 0.004$ ) versus those 25–29 year of age. Similarly, the 18–24-year-old group reported worse sleep quality, mood and reported greater stress, anxiety, and weight gain when compared to the 25–29-year-olds (see **Table 2**). There were no statistically significant differences on other domains, such as financial situation, physical health, ability to buy food, connection to friends, family, or alcohol and drug use (**Table 2**).

INSERT TABLE 2 AND FIGURES HERE

## Discussion

We compared two groups of young non-Latinx Black and Latinx adults living with HIV on the negative impacts of COVID-19 pandemic from 2020–2021. The younger group (18–24 years of age) compared to those 25–29 years of age reported worse quality of life and mood and increased stress, anxiety, and weight gain. As noted earlier,<sup>2,3</sup> poor mental health has always been highly comorbid with HIV. However, a recent review suggests that treatment interventions for mental health disorders among young adults living with HIV is understudied, compared to older populations.<sup>14</sup> Thus, it will be critical to monitor HIV treatment outcomes among young adults in the near future to better understand the lasting impact of COVID-19 while supporting mental health treatment programs and interventions.

Unexpectedly, we did not observe other differences on domains related to ability buy food, pay rent, connection to friends and family, use of drugs or alcohol, and work impacts from COVID-19. Our findings are also consistent with other studies that suggest that social and economic stressors might be mitigated by social support, such as young adults returning to live with family and provide stable housing.<sup>15,16</sup> However, it is unclear if this type of instrumental support also mitigates against the rising mental health crises and impact of COVID-19 on young race/ethnic minority adults living HIV given clear impacts on mental health and documented need for ongoing mental health treatment and intervention research.<sup>14, 17,18</sup>

Lastly, our data showed clear quality of life impacts for the younger of two adult groups. It is well-documented that young non-Latinx Black and Latinx individuals are disproportionately affected by HIV given the negative impact of social and structural determinants of health.<sup>17,18</sup> However, importantly, the 2022-2025 National HIV/AIDS Strategy<sup>19</sup> has a new focus on quality



of life indicators (food insecurity, unemployment, and unstable housing) that constitute these determinants. Given that young people (up to 24 years of age) are in a unique development phase,<sup>13</sup> they may be particularly vulnerable to the negative health impacts these determinants have on them which were exacerbated by COVID-19. Moving forward, a better understanding of the unique determinants and their impact on HIV management among young adults living with HIV will be critical to inform interventions and programs to improve their quality of life.

Our study had limitations which included inability to examine for differences across important key sub-groups given limited numbers of individuals within these groups. These groups included sexual or gender identities such as genderqueer and trans women, and cis-gender women. Relatedly, the data were self-reported and the sample was self-selected into the study mostly from the Western U.S; all of which also impact generalizability. The study was advertised nationally just over one year into the COVID-19 pandemic, which may have been associated with more severe outcomes as compared to impact responses that would be reported in subsequent years. Lastly, the results were unadjusted estimates and did not account for confounding variables, such as whether participants had family support (e.g., returned home to live with parents) who provided a safeguard against some COVID-19-related stressors.

The lives of young adults were particularly disrupted during COVID-19, which likely exacerbated many mental health problems that are ongoing. Specifically, young adults living with HIV who are also non-Latinx Black and Latinx already had poorer HIV treatment outcomes compared to the older and White counterparts, and thus, what remains unknown and justifies future research is the ongoing toll of exposure to pandemic-related stressors and its impact on future HIV treatment outcomes. Now, more than ever, holistic HIV, medical and service support is needed for young adults living with HIV.

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TABLE 1. Demographics among Black American and non-Black Latinx participants

	Black American Participants  <i>n</i> = 186 %	Non-Black Latinx Participants  <i>n</i> = 45 %
<b>Gender Identity</b>		
Men	86.6	84.4
Women	1.6	4.4
Trans women	4.3	2.2
Gender non-binary	5.4	4.4
Trans men	1.1	--
Other gender or not reported	1	4.4
<b>Sexual Orientation</b>		
Gay	78.5	62.2
Straight	1.1	6.7
Bisexual	12.9	26.7
Other	5.4	2.2
Not reported	2.2	2.2
<b>Age Grouping</b>		
18–24	22.6	15.6
25–29	77.4	84.4
<b>Self-reported HIV viral load</b>		
Undetectable	81.6	83.7
Detectable	18.4	16.3
<b>Region of the US</b>		
South	50.5	22.2
West	12.9	53.4
East	16.1	22.2
Mid-West	20.4	2.2

TABLE 2. Comparison of pandemic-related negative impacts on young adult Black and Latinx people with HIV.

<i>Since March of 2020, were the following worse/less/greater...</i>	Adults 18–24 vs. Adults 25–29 (Referent Group)		
	Odds ratios	95% CI	p value
<b>Dependent Variables</b>			
<i>Worse during COVID-19 pandemic</i>			
1. Quality of life	<b>2.68</b>	<b>1.33 – 5.42</b>	<b>0.004</b>
2. Financial Situation	1.61	0.79 – 3.27	0.18
3. Sleep quality	<b>1.97</b>	<b>1.00 – 3.91</b>	<b>0.04</b>
4. Internet access and stability	1.32	0.59 – 2.96	0.49
5. Mood	<b>2.80</b>	<b>1.30 – 5.98</b>	<b>0.006</b>
6. Physical health	1.79	0.91 – 3.52	0.08
7. Diet	1.17	0.60 – 2.30	0.63
<i>Less during the COVID-19 pandemic</i>			
8. Ability to buy food	1.69	0.86 – 3.32	0.12
9. Ability to pay rent	1.42	0.72 – 2.79	0.30
10. Access to condoms	0.72	0.26 – 2.02	0.54
11. Use condoms	0.60	0.22 – 1.67	0.32
12. Access to STI testing	<b>2.31</b>	<b>1.00 – 5.40</b>	<b>0.049</b>
13. Access to STI treatment	1.74	0.71 – 4.29	0.21
14. Connection to family	1.47	0.74 – 2.93	0.26
15. Connection to friends	1.19	0.59 – 2.38	0.61
16. Paid work hours	1.43	0.72 – 2.85	0.30
17. Exercise	1.56	0.79 – 3.06	0.19
18. Opportunities to have sex	1.36	0.69 – 2.70	0.36
19. Use of dating apps to virtually connect	1.17	0.59 – 2.31	0.74
20. Use of dating apps to meet in person	1.69	0.86 – 3.23	0.12
<i>Greater during the COVID-19 pandemic</i>			
21. Anxiety	<b>3.22</b>	<b>1.45 – 7.14</b>	<b>0.002</b>
22. Stress	<b>2.30</b>	<b>1.04 – 5.11</b>	<b>0.03</b>
23. Alcohol use	1.23	0.61 – 2.47	0.56
24. Marijuana use	1.27	0.68 – 2.52	0.48
25. Illicit substance use	0.56	0.29 – 1.45	0.23
26. Number of sexual partners	1.53	0.74 – 3.18	0.24
<i>Other negative impacts</i>			
27. Increased weight gain	<b>1.89</b>	<b>0.96 – 3.71</b>	<b>0.05</b>
28. Loss of job	1.00	0.35 – 2.82	0.99
29. Loss of health insurance	<b>0.25</b>	<b>0.05 – 1.12</b>	<b>0.04</b>
30. Experience homelessness or moved in with friend because could not pay rent	1.57	0.47 – 5.27	0.45
<i>Note.</i> Odds ratios for dependent variables regressed on a dichotomous outcome of age group. Age group was defined as adults 25–29 (0 – referent group) being compared to adults 18–29 (1). Higher odds ratios indicate worse outcomes versus outcomes that improved or were unchanged, such that the pandemic has a negative effect on respondents.			