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The COVID-19 pandemic and unemployment, subsistence needs and mental health among adults with HIV in the United States

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Abstract

Objective: To evaluate whether reported prevalence of unemployment, subsistence needs, and symptoms of depression and anxiety among adults with diagnosed HIV during the COVID-19 pandemic were higher than expected.

Design: The Medical Monitoring Project (MMP) is a complex sample survey of adults with diagnosed HIV in the United States.

Methods: We analyzed 2015–2019 MMP data using linear regression models to calculate expected prevalence, along with corresponding prediction intervals (PI), for unemployment, subsistence needs, depression, and anxiety for June–November 2020. We then assessed whether observed estimates fell within the expected prediction interval for each characteristic, overall and among specific groups.

Results: Overall, the observed estimate for unemployment was higher than expected (17% vs 12%) and exceeded the upper limit of the PI. Those living in households with incomes >=400% of FPL were the only group where the observed prevalence of depression and anxiety during the COVID-19 period was higher than the PIs; in this group, the prevalence of depression was 9% compared with a predicted value of 5% (75% higher) and the prevalence of anxiety was 11% compared with a predicted value 5% (137% higher). We did not see elevated levels of subsistence needs, although needs were higher among Black and Hispanic compared with White persons.

Conclusions: Efforts to deliver enhanced employment assistance to persons with HIV and provide screening and access to mental health services among higher income persons may be needed to mitigate the negative effects of the US COVID-19 pandemic.

Keywords

Human Immunodeficiency Virus; HIV; COVID-19; subsistence needs; unemployment; mental health; depression; anxiety

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Author contributions: Dr. Beer took the lead role in study conception and drafting the manuscript. Dr. Tie analyzed the data. All authors were involved in acquisition of the data, developing analytic methods, interpretation of the data, and critically revising the manuscript.

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Introduction

Societal and economic disruptions in the United States due to the COVID-19 pandemic have contributed to increases in unemployment, food insecurity, housing instability, and mental health problems [1–3]. Because U.S. people with HIV (PWH) experience higher levels of these factors relative to the total population [4–6], PWH may have been substantially affected by the pandemic. However, employment and private health insurance coverage is lower among PWH compared with the total population and a large percentage rely on Medicaid or the Ryan White HIV/AIDS Program (RWHAP) [5, 7], which provide access to essential services that can help meet subsistence and mental health needs [8]. Although some have found high unemployment and subsistence needs such as housing and food insecurity among PWH attributed to the pandemic [9, 10], others have not found increased food insecurity [11]; these studies are also limited to certain geographic areas or populations. To fill this gap, we used national HIV surveillance data from the CDC Medical Monitoring Project (MMP) to evaluate whether reported prevalence of unemployment, subsistence needs, and symptoms of depression and anxiety among PWH during the COVID-19 pandemic were higher than expected based on prior trends.

Methods

Detailed methods for MMP data collection are reported elsewhere [5, 12], but briefly, MMP used a 2-stage sampling design. During the first stage, 16 states and 1 territory were sampled from all U.S. states, the District of Columbia, and Puerto Rico. During the second stage, simple random samples of persons with diagnosed HIV aged 18 years and older were drawn for each participating state/territory from the National HIV Surveillance System (NHSS), a census of U.S. persons with diagnosed HIV. Data were collected via phone or face-to-face interviews and medical record abstractions during each cycle from June of each year to May of the following year. We included data collected from interviews during June–November of each cycle from 2015–2020. Although MMP data are traditionally analyzed using weighted data, for this analysis we analyzed unweighted data because weights for the 2020 cycle will not be available until May 2022. MMP data collection is part of routine public health surveillance and was determined to be non-research [13]. Informed consent was obtained from all interviewed participants.

We examined the prevalence of current unemployment, major or other depression symptoms during the past 2 weeks, moderate to severe generalized anxiety disorder (GAD) symptoms during the past 2 weeks, and several measures of subsistence needs (i.e., gaps in health insurance or coverage, experiences of homelessness, going without food due to lack of money, being unable to pay medical bills, and unmet need for subsistence services, which included Supplemental Nutrition Assistance Program or Special Supplemental Nutrition Program for Women, Infants, and Children services, meal or food services, transportation assistance, or shelter or housing services). We stratified all estimates by gender, age, race/ethnicity, household percentage of the Federal Poverty Limit (FPL), and receipt of any RWHAP assistance. All measures were self-reported and covered the past 12 months except

where otherwise specified. Details about the measurement of the variables are included in the file, Supplemental Digital Content 1.

Using data collected on persons interviewed during June through November for the 2015–2019 MMP data cycles, we first used linear regression models to calculate expected estimates with corresponding prediction intervals, for each selected characteristic for June–November 2020 (COVID-19 period). We then assessed whether the observed estimates for the COVID-19 period fell within the expected prediction interval for each characteristic.

Results

Overall, the observed estimate for unemployment during the COVID-19 period was higher than expected (17% vs 12%) and exceeded the upper limit of the prediction interval (Figure 1a). Observed values for unemployment during the COVID-19 period also exceeded PIs among men, persons aged 18–49 years, White persons, those living in households ≥139% of the FPL, and those who did not receive RWHAP assistance (Figure 1a). The highest observed prevalence of unemployment was among those aged 18–29 years—substantially higher than the predicted value (30% vs 16%). Although the observed prevalence of unemployment was low for those with incomes ≥400% of FPL, this group experienced the highest relative difference in observed versus predicted unemployment (9% vs 3%, 178% higher).

Regarding mental health, those living in households with incomes >=400% of FPL were the only group where the observed prevalence of depression and anxiety symptoms during the COVID-19 period was higher than the PIs; in this group, the prevalence of depression symptoms was 9% compared with a predicted value of 5% (75% higher, Figure 1b) and the prevalence of anxiety symptoms was 11% compared with a predicted value 5% (137% higher, Figure 1c).

None of the other factors examined had observed values that exceeded the PI for any examined group (Figure 2). Observed versus expected estimates were lower than the lower limit of the PI among certain groups, including homelessness among women (7% vs 8%), food insecurity among those aged 30–49 years (20% vs 23%), unmet need for subsistence services among those aged 30–49 years (23% vs. 29%) and those with household incomes 100–138% of FPL (22% vs 31%). In addition, Black and Hispanic persons had higher subsistence needs than White persons.

Discussion

To our knowledge, this is the first evaluation of the effects of the COVID-19 pandemic on unemployment, subsistence needs, and mental health among a national, geographically diverse sample of US persons with diagnosed HIV. We found unemployment was higher than expected during the COVID-19 observation period, overall and for many groups. This mirrors the experiences of the total US population, where unemployment rose from 3.5% in February 2020 to 14.8% in April 2020 [2]. Although unemployment has since decreased, as of May 2021 it was still higher than before the pandemic began (5.8%). Of note, although the measures are not directly comparable, we found much higher unemployment among

PWH compared to the total US population. Unemployment is associated with increased mortality [14] and, for PWH, is associated with negative outcomes across the HIV care continuum [15]. Targeted employment assistance programs may be needed among PWH, who experience specific barriers to employment, such as health and care-related issues and employment discrimination due to HIV stigma [15]. Several initiatives developed by the HIV, Housing and Employment Project to increase employment, such as virtual training and job clubs, are examples of such programs [16, 17].

Despite the increase in unemployment, we did not find elevated levels of subsistence needs. Although one study focused on a cohort of Black PWH in Los Angeles found high levels of subsistence needs attributed to the pandemic [9], another clinic-based study in Miami found increased unemployment but corresponding increases in receipt of food and housing assistance services and another did not find increased food insecurity among financially vulnerable PWH in Virginia during the pandemic [10, 11]. This may have been due to the enhanced local availability of services and programs designed to mitigate the negative economic effects of the pandemic, such as expanded unemployment insurance, employer-sponsored insurance continuation programs, and other programs to mitigate food insecurity such as food pantries. In addition, RWHAP-funded programs were authorized to use CARES Act funds and Emergency Financial Assistance funds to mitigate needs caused by the pandemic among PWH [18]. Local and federal eviction moratoriums and enhanced rental assistance programs may have helped ensure PWH remained housed [19].

Although we did not see elevated levels of subsistence needs among US PWH, it is important to note that racial and ethnic disparities in subsistence needs were evident, with Black and Hispanic/Latino PWH having higher needs compared with White PWH. Achieving the goals of the Ending the HIV Epidemic initiative in the United States will not be possible unless equity is prioritized in efforts to address social determinants of health as well as HIV prevention and care [20].

We found elevated levels of symptoms consistent with major or other depression and generalized anxiety disorder among PWH living in households with higher incomes. This group had the lowest predicted estimate for unemployment, and as such may have experienced increased mental health issues when confronted with unexpected lack of job stability. Due to their higher incomes, this group may have been ineligible for RWHAP and other community-based programs that could provide mental health treatment services. Enhanced screening for, and assistance with referrals to, mental health services may be needed for higher income PWH.

This analysis has several limitations. First, self-reported data may be subject to biases that may result in measurement error. Second, although we based our predicted estimates on prior trends in MMP data and evaluated change using a prediction interval rather than a less conservative confidence interval, due to the observational nature of MMP data we cannot rule out the possibility that observed changes could have been due to factors beyond COVID-19. Additionally, we lacked information about use of community services or government programs that may have mitigated needs, nor did we assess all subsistence needs, such as being unstably housed, being behind on rent, or having decreased work

hours. In addition, it is possible that with a longer observation period some needs may have become more prevalent, continuing monitoring of these outcomes may be warranted. Also, due to MMP's design we could not assess regional variation in the effect of the pandemic; participating MMP jurisdictions can conduct similar analyses to determine jurisdiction-specific trends. Further, our assessment of receipt of RWHAP services was limited in that we did not collect information on the type, frequency, or duration of services received; this may have hindered our ability to determine whether RWHAP services mitigated the negative effects of the pandemic. Additionally, we did not analyze weighted MMP data. However, we did not find substantive differences in weighted and unweighted estimates for prior MMP cycles for the variables included in this analysis. Also, during the pandemic a higher proportion of the COVID-19 period interviews took place over the telephone than during the same period in the prior year (99% vs. 78%). While we do not have reason to believe this would bias the data, we cannot rule out this possibility. Finally, because the MMP interview asks about experiences with subsistence needs during the past 12 months, those interviewed during the COVID-19 period could reported experiences that happened before the pandemic. Therefore, findings related to subsistence needs should be interpreted with caution. Because the MMP interview measures current employment status and mental health symptoms over the past 30 days, these findings are more robust.

In conclusion, during the COVID-19 pandemic we found higher than expected levels of unemployment among many groups and elevated symptoms of mental health disorders among PWH with higher incomes. Efforts to deliver enhanced employment assistance to PWH and provide screening and access to mental health services among higher income PWH may be needed to mitigate the negative effects of the COVID-19 pandemic in the United States.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Conflicts of Interest and Source of Funding:

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References

1. Center on Budget and Policy Priorities. Tracking the COVID-19 Recession's Effects on Food, Housing, and Employment Hardships. Available at: https://www.cbpp.org/research/poverty-and-inequality/tracking-the-covid-19-recessions-effects-on-food-housing-and. Accessed July 20 2021.
2. Congressional Research Service. Unemployment Rates During the COVID-19 Pandemic Available at: https://crsreports.congress.gov/product/pdf/R/R46554. Accessed July 20 2021.
3. Vahratian A, Blumberg SJ, Terlizzi EP, Schiller JS. Symptoms of Anxiety or Depressive Disorder and Use of Mental Health Care Among Adults During the COVID-19 Pandemic - United

States, August 2020-February 2021. MMWR Morb Mortal Wkly Rep 2021; 70:490–4. [PubMed: 33793459]

4. Beer L, Tie Y, Padilla M, Shouse RL. Generalized anxiety disorder symptoms among persons with diagnosed HIV in the United States. AIDS (London, England) 2019; 33:1781–7. [PubMed: 31211718]
5. Centers for Disease Control and Prevention. Behavioral and Clinical Characteristics of Persons with Diagnosed HIV Infection—Medical Monitoring Project, United States, 2018 Cycle (June 2018–May 2019). HIV Surveillance Special Report 25, 2020.
6. Do AN, Rosenberg ES, Sullivan PS, et al. Excess burden of depression among HIV-infected persons receiving medical care in the united states: data from the medical monitoring project and the behavioral risk factor surveillance system. PLoS One 2014; 9:e92842. [PubMed: 24663122]
7. Dawson L, Kates J. Insurance Coverage and Viral Suppression Among People with HIV, 2018. Available at: https://www.kff.org/hivaids/issue-brief/insurance-coverage-and-viral-suppression-among-people-with-hiv-2018/. Accessed July 26 2021.
8. Kates J, Dawson L, Horn TH, et al. Insurance coverage and financing landscape for HIV treatment and prevention in the USA. Lancet 2021; 397:1127–38. [PubMed: 33617778]
9. Bogart LM, Ojikutu BO, Tyagi K, et al. COVID-19 Related Medical Mistrust, Health Impacts, and Potential Vaccine Hesitancy Among Black Americans Living With HIV. Journal of acquired immune deficiency syndromes (1999) 2021; 86:200–7. [PubMed: 33196555]
10. Sherbuk JE, Williams B, McManus KA, Dillingham R. Financial, Food, and Housing Insecurity Due to Coronavirus Disease 2019 Among At-Risk People With Human Immunodeficiency Virus in a Nonurban Ryan White HIV/AIDS Program Clinic. Open Forum Infect Dis 2020; 7:ofaa423. [PubMed: 33299902]
11. Tamargo JA, Martin HR, Diaz-Martinez J, et al. COVID-19 Testing and the Impact of the Pandemic on the Miami Adult Studies on HIV Cohort. Journal of acquired immune deficiency syndromes (1999) 2021; 87:1016–23. [PubMed: 33675620]
12. Beer L, Johnson CH, Fagan JL, et al. A National Behavioral and Clinical Surveillance System of Adults With Diagnosed HIV (The Medical Monitoring Project): Protocol for an Annual Cross-Sectional Interview and Medical Record Abstraction Survey. JMIR Res Protoc 2019; 8:e15453. [PubMed: 31738178]
13. Centers for Disease Control and Prevention. Distinguishing Public Health Research and Public Health Nonresearch. Available at: http://www.cdc.gov/od/science/integrity/docs/cdc-policy-distinguishing-public-health-research-nonresearch.pdf. Accessed February 4, 2014.
14. Matthay EC, Duchowny KA, Riley AR, Galea S. Projected All-Cause Deaths Attributable to COVID-19-Related Unemployment in the United States. American journal of public health 2021; 111:696–9. [PubMed: 33600244]
15. Maulsby CH, Ratnayake A, Hesson D, Mugavero MJ, Latkin CA. A Scoping Review of Employment and HIV. AIDS and behavior 2020; 24:2942–55. [PubMed: 32246357]
16. TargetHIV. The HIV, Housing & Employment Project Available at: https://targethiv.org/housing-and-employment. Accessed November 10 2021.
17. TargetHIV. The HIV, Housing, & Employment Project: POWER Job Club. Available at: https://targethiv.org/sites/default/files/media/documents/2021-04/hhe-power-spotlight.pdf. Accessed November 10 2021.
18. Health Resources and Services Administration Ryan White HIV/AIDS Program. Coronavirus Disease 2019 (COVID-19) Frequently Asked Questions. Available at: https://hab.hrsa.gov/coronavirus/frequently-asked-questions. Accessed July 26 2021.
19. United States Government Accountability Office. COVID-19 Housing Projections: Moratoriums Have Helped Limit Evictions, but Further Outreach Is Needed, 2021.
20. U.S. Department of Health and Human Services. HIV National Strategic Plan for the United States: A Roadmap to End the Epidemic 2021–2025. Washington, DC, 2021.

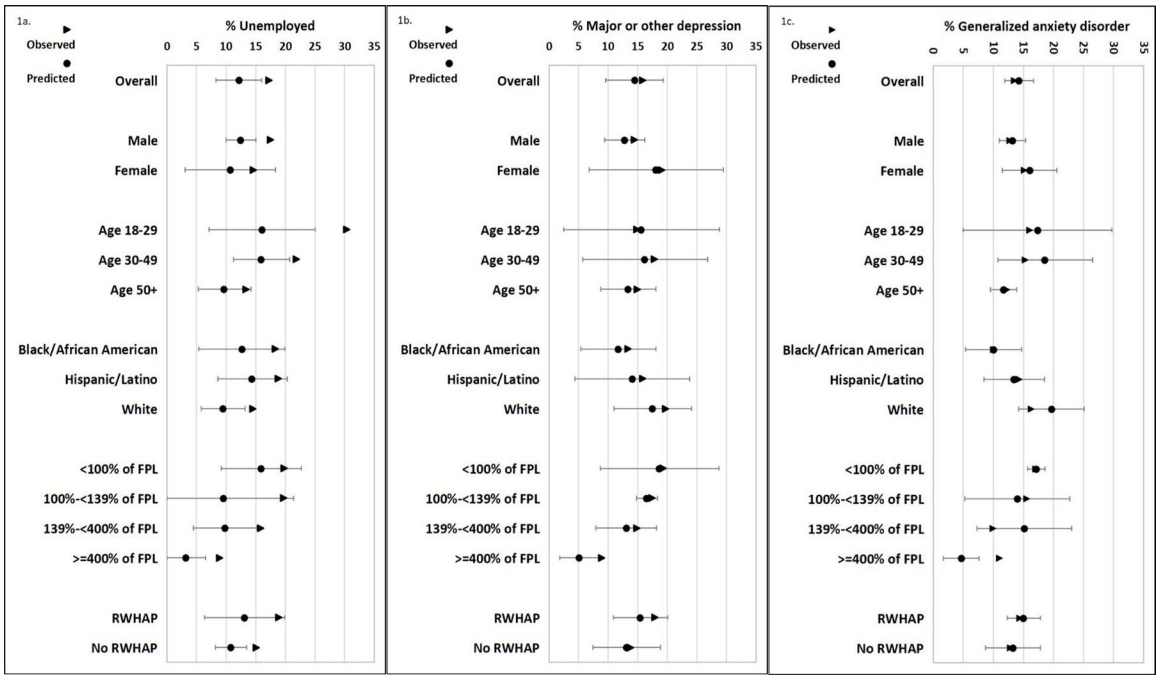

Figure 1.

Observed versus predicted estimates of unemployment, major or other depression, and generalzed anxiety disorder among adults with diagnosed HIV—United States, June-November, 2020

Note: Predicted estimates are shown with associated 95% prediction intervals.

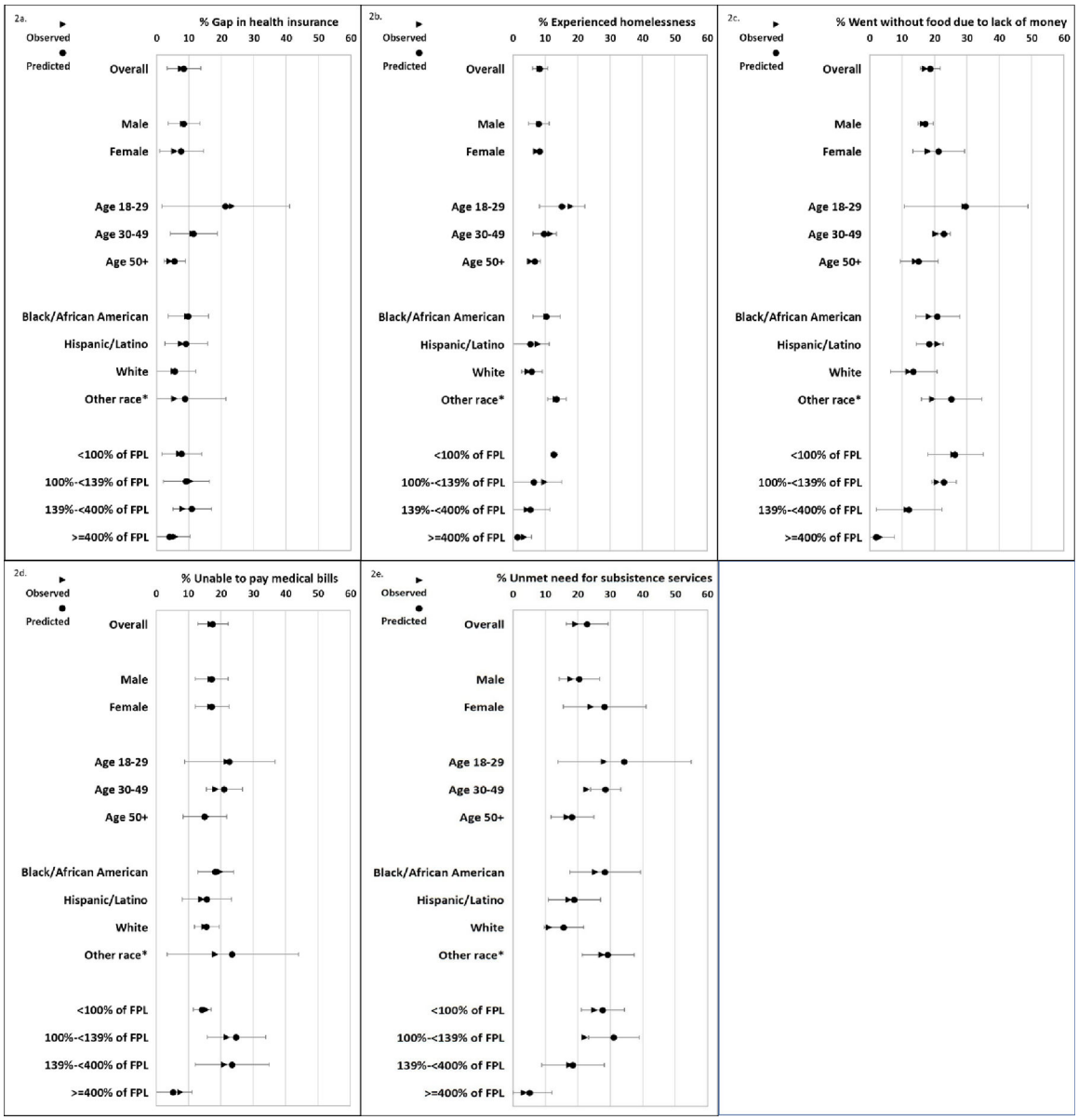

Figure 2.

Observed versus predicted estimates of selected subsistence needs among adults with diagnosed HIV—United States, June-November, 2020

Note: Predicted estimates are shown with associated 95% prediction intervals.