COVID-19 health information trust and prejudicial attitudes predict healthcare disruptions in the first year of COVID-19 among people living with HIV

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Abstract

Cross-sectional studies have reported that people living with HIV experienced disruptions to social relationships and healthcare during the first year of the COVID-19 pandemic. Furthermore, individuals with less trust in public health sources of COVID-19 information as well as those who held greater COVID-19 prejudicial attitudes experienced greater healthcare disruptions in the early months of COVID-19. To examine changes in trust and prejudicial attitudes in relation to healthcare disruptions during the first year of COVID-19, we followed a closed cohort of 115 men and 26 women ages 18 to 36 living with HIV over the first year of the COVID-19 pandemic. Findings confirmed that a majority of individuals continued to experience disruptions to their social relationships and healthcare over the course of the first year of COVID-19. In addition, trust in COVID-19 information from the CDC and state health department diminished over the year as did COVID-19 prejudicial attitudes. Regression models showed that lower trust in the CDC and health department and greater prejudicial attitudes toward COVID-19 early in the pandemic predicted greater healthcare disruptions over the year. In addition, greater trust in the CDC and health department early in COVID-19 predicted better antiretroviral therapy adherence later in the year. Results support an urgent need to regain and sustain trust in public health authorities among vulnerable populations.

Keywords Trust in health information · COVID-19 · HIV · Prejudice · Health Disruptions

Introduction

The global impacts of COVID-19 rapidly evolved into the most devasting pandemic in over a century, with the greatest morbidity and mortality occurring among the elderly and individuals with underlying chronic health conditions, including people living with HIV infection (Adepoju, 2020; Blanco et al., 2020; Jiang, Zhou, & Tang, 2020). Prior to the availability of safe and effective vaccines, COVID-19 mitigation responses relied on reducing physically close social contacts. For people living with HIV, vulnerabilities to COVID-19 were also reduced by the protective effects of antiretroviral therapy (ART) to improve HIV viral suppression (Del Amo et al., 2020; Laurence, 2020). However, COVID-19 made sustaining HIV treatment difficult for some patients, especially those relying on public transportation and utilizing an already strained public health system. Early in the COVID-19 pandemic, HIV clinical settings reported interruptions to essential HIV care services (Ridgway, 2020) and there were widespread reports of impeded access to medications as well as cancellations of healthcare and social services (Kalichman et al., 2020; Shiau, Krause, Valera, Swaminathan, & Halkitis, 2020).

Initial public health messaging about COVID-19, including messages from governmental agencies, public health services and informal social networks, created considerable confusion in pandemic response with the potential to undermine trust in public health communications. Trust itself is a complex emotional construct that is considered essential to public health messaging (Jackson et al., 2019; Peterson, Chou, Kelley, & Hesse, 2019). Trust is particularly

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important in responding to governmental communications, such as information coming from the Centers for Disease Control and Prevention (CDC) and state health departments, especially during health crises (Freimuth et al., 2014; Meredith, Eisenman, Rhodes, Ryan, & Long, 2007). Countries with greater trust in their government as well as interpersonal trust among citizens demonstrated lower COVID-19 infection rates during the first 21 months of the pandemic and subsequently greater vaccination rates (s,COVID-19 National Preparedness Collaborators 2022). In the first months of COVID-19 in the US, however, trust in the CDC and state health departments was eroded by conflicting information from government officials, the CDC leadership, and state health departments (Yamey & Gonsalves, 2020). In a study of 459 people living with HIV, disruptions to social relationships were related to how concerned individuals were about their risks for COVID-19, whereas disruptions to healthcare were associated with trust placed in the CDC for COVID-19 information; having less trust in the CDC was related to experiencing greater healthcare disruptions (Kalichman et al., 2021). These findings were consistent with research showing that lack of government trust undermines public health information (Whetten et al., 2006) and that the politicized messaging in the early months of COVID-19 was particularly damaging to trust in public health services (Dyer, 2020a; Ahmed, Vidal-Alaball, Downing, & Lopez Segui, 2020). In addition to governmental communications, social media outlets are also significant sources for COVID-19 information and are a primary source of misinformation (Gottlieb & Dyer, 2020). Given the history of governmental response and media reporting early in the HIV pandemic (Darrow, 2023), people living with HIV may have been particularly mistrusting of the CDC in response to the new COVID-19 pandemic. Indeed, diminished trust in public health services may have provided fertile ground for the spread of COVID-19 misinformation across social media platforms among people living with HIV (Fridman et al., 2020).

Intertwined with early COVID-19 messages from the US government were efforts to place blame for the pandemic on foreign entities, again fueled by misinformation about the origins of COVID-19 (Dyer, 2020b; Mahase, 2020). Specifically, persons of Asian descent have experienced, and continue to experience, COVID-19 scapegoating and prejudice (Adja et al., 2020; Rzymski & Nowicki, 2020a, b). COVID-19 prejudice arose out of the perceived threats posed by the disease itself and were promoted by political rhetoric that attributed blame for COVID-19 to China (Budhwani & Sun, 2020; Dyer, 2020a), leading to COVID-19 xenophobia (Habibi et al., 2020; Rzymski & Nowicki, 2020b). Because prejudice is defined by generally negative attitudes toward targeted groups (Cottrell & Neuberg, 2005)

and is theorized to serve as a social mechanism to prompt responses to perceived threats (Cottrell & Neuberg, 2005), prejudicial attitudes can motivate behavior toward mitigating perceived threats (Pirlott & Cook, 2018). Concern about contracting COVID-19 has been associated with COVID-19 related social disruptions and this association is in part explained by COVID-19 prejudicial attitudes (Kalichman et al., 2021). The endorsement of COVID-19 prejudicial attitudes early in the COVID-19 pandemic suggests that despite the enduring oppressive effects of HIV stigmas, people living with HIV adopted stigmatizing attitudes toward others (Berman et al., 2020). Because prejudicial attitudes are often addressed through an educational process, distrust in governmental sources of COVID-19 educational messages may have been impeded among people living with HIV. Thus, distrust in health information sources and COVID-19 prejudicial attitudes may have synergized to adversely impact social relations and healthcare in the initial response to COVID-19. However, to our knowledge the effects of distrust in information sources and COVID-19 prejudicial attitudes observed in the early months of COVID-19 have not been reported at later points in the pandemic.

The purpose of the current study was to examine trust in COVID-19 information sources and COVID-19 prejudicial attitudes as predictors of social responses, healthcare disruptions, and HIV treatment adherence among people living with HIV during the first year of COVID-19. We tested models of trust in sources of COVID-19 information and COVID-19 prejudicial attitudes as predictors of social and healthcare disruptions throughout the first year of COVID-19. We also examined trust in information sources and prejudicial attitudes in the first months of COVID-19 as predictors of antiretroviral therapy (ART) adherence in the final months of the first year of COVID-19. We hypothesized that the effects of health information trust and prejudicial attitudes observed in the early months of COVID-19 would be sustained over the first year of the COVID-19 pandemic.

Methods

Participants

Participants were men and women living with HIV in the southeastern United States recruited for an HIV treatment adherence study. All participants received counseling to assist in their medication adherence. Recruitment occurred through social media outlets and snowball chain referrals. Participants were recruited to take part in a one month run-in study, offering enrollment a 15-month cohort study to those meeting the following eligibility criteria: HIV positive, between the ages of 18 and 36 and any one of the following

risks for poor health outcomes: (a) not engaged in HIV care, or (b) < 85% adherent to ART, or (c) not HIV viral suppressed, or (d) positive urine screening for substance use. The only exclusion criteria were not meeting inclusion criteria. All participants in this cohort were enrolled between August, 2018 and December, 2019.

Procedures

Following a phone conducted screening interview and providing informed consent, participants were contacted to complete a phone-interview which included a full accounting of their ART, collection of a dried blood specimen for viral load testing, and were asked to complete a self-administered computerized survey. Participants were followed with15-months with monthly phone interviews that included unannounced pill counts to monitor ART adherence. Starting in March, 2020 measures of COVID-19 awareness, responses, trust and prejudice were added to the monthly phone assessments. All COVID-19 items were initially developed and IRB approved in February, 2020 when the World Health Organization designated the disease caused by SARS-coV-2 as the 'novel coronavirus'. Our measures therefore defined the terms used in the items by referring to the 'new coronavirus' or 'new virus'. The total sample size for the parent study was 425, with 284 participants having completed the study prior to the onset of COVID-19. The COVID-19 measures were therefore collected from the 141 participants remaining in the cohort at that time. Participants completed monthly measures of COVID-19 social and healthcare disruptions, trust in information sources, and prejudicial attitudes as well as ART adherence assessed by pill counts, with the onset of COVID-19 occurring for some participants near the start of their cohort participation and others nearer to the end of their participation. For each assessment, we calculated the number of months since the start of the COVID-19 response in Atlanta, specifically March 1, 2020. Study retention was over 80% at each time point. Participants were monetarily compensated for reach study activity completed and the University Institutional Review Board approved all study procedures.

Measures

Demographic and health characteristics. Participants reported basic demographic information, including gender, age, race, and education. We also asked participants whether they had been tested for COVID-19 and whether they had received a positive COVID-19 test result. To assess current substance use, participants completed the 3-item consumption sub-scale of the Alcohol Use Disorders Identification Test (AUDIT-C), Cronbach's alpha = 0.72 (Maisto et al.,

2000; Saunders, Aasland, Babor, DeLaFuente, & Grant, 1993). To determine HIV RNA concentrations (viral load) participants provided 80 µL of fingerstick blood for dried blood spots (DBS) collected in Hemaspot HF™ devices returned to the research site by courier. HIV-1 viral load testing was conducted using the Abbott RealTi*me* HIV-1 assay, a reverse transcription-PCR (RT-PCR) assay performed on the automated Abbott *m*2000 platform (Abbott Molecular Inc., Des Plaines, IL).

Predictor variables: Trust in government response, trust in COVID-19 information sources, and prejudicial attitudes. Participants were asked how much they trust the government is doing all it can regarding COVID-19. The items were rationally developed with face validity. Responses were made on a 4-point scale, 0 = 'Not at all trust' to 3 = 'Completely trust'. Participants were also asked how much they trust three sources for COVID-19 information: trust in information from the CDC, the state department of public health and social media.

The COVID-19 prejudicial attitudes were assessed with eight items derived from media accounts of COVID-19 acts of prejudice, discrimination and xenophobia in the first weeks of the COVID-19 pandemic (Dyer, 2020a; Rzymski & Nowicki, 2020a, b). Item construction was conceptually informed by the bases for prejudicial attitudes directed toward people living with HIV (Earnshaw & Chaudoir, 2009). Consistent with previous research, prejudicial attitudes refer to negative emotions such as anger and fear that people who are not diagnosed with a communicable disease may hold against those who have been diagnosed with the disease (Earnshaw & Chaudoir, 2009). Example items include: "People who test positive for the new virus should be required to wear identification tags", and "People who test positive for the new virus should be quarantined or separated by force from others". Items were responded to on 6-point scales, from 0 = 'Strongly disagree' to 5 = 'Strongly agree'. Mean scores ranged from 0 to 5 and the measure was internally consistent, Cronbach's alpha = 0.87.

Outcome variables: COVID-19 social and healthcare disruptions and ART adherence. Participants reported whether they had experienced four disruptions to social relationships and five disruptions to healthcare as a result of COVID-19. Social relationship disruptions focused on canceling plans to be with others, not going to work or school, and avoiding public transportation. Healthcare disruptions reflected being unable to go to the pharmacy, and being unable to access medications and healthcare providers. The disruptions were grounded in early reports of COVID-19 impacts and were responded to using three options to indicate whether each disruption had been experienced: 0 = 'No', 1 = 'Yes, a little', and 2 = 'Yes, a lot'. We formed two separate indexes of COVID-19 disruptions by summing responses to the four

social disruptions items and the five healthcare disruption items.

We assessed ART adherence using phone-based unannounced pill counts. Unannounced pill counts are reliable and valid in assessing medication adherence when conducted in homes (Bangsberg et al., 2001) and on the phone (Kalichman et al., 2007, 2008). Following an office-based training session that included a full accounting of all prescription medications, participants were called at unscheduled times over 25–30 day periods to calculate adherence (Bangsberg & Deeks, 2002; Parienti et al., 2013).

Control variables. To control for potential confounding of perceived COVID-19 severity, we assessed participant concern that they may contract COVID-19 using a 100-point rating scale in response to the question: "From 0 to 100, how concerned are you about catching COVID-19", with 0 = 'Not at all concerned' and 100 = 'Extremely concerned'. Responses used a slide-bar tool where participants tapped on a continuum anchored on the above responses. For medical trust, participants completed an adapted version of the Medical Mistrust Index (LaVeist et al., 2009). The items reflect a sense of dishonesty and deception in the medical system. This scale contained 8-items selected on the basis of non-redundant content, including "Healthcare providers have sometimes done harmful things to patients without their knowledge" and "Patients have sometimes been deceived or misled by healthcare providers". We reverse scored medical trust for directional consistency with the measures of trust in government and information sources by reverse coding responses on the 6-point scale, as 5 = 'Strongly disagree' to 0 = 'Strongly agree' (Cronbach's alpha = 0.68).

Data analyses

We conducted descriptive analyses by grouping participants who had not (n = 71) and who had (n = 70) experienced COVID-19 healthcare disruptions. We performed descriptive analyses using contingency table X^2 tests for categorical variables and independent *t*-tests for continuous variables. All other analyses examined COVID-19 social and healthcare disruptions across the first year of COVID-19. As noted above, the start of COVID-19 was defined as March, 2020, with all participants already enrolled in the study and at various points along their cohort participation. Variations in sample size across the time periods are due to staggered participant completion in the cohort and attrition, which was less than 20% across the entire study. We examined predictors of COVID-19 social and healthcare disruptions in the second and third months of the pandemic and then across the rest of the first year. Data were aggregated into quarterly (3-month) periods; months 1–3, 4–6, 7–9, and 10–12 during

the first year of COVID-19. Therefore, occurrences of social and healthcare disruptions as well as responses to the trust and prejudicial attitudes items were coded within respective time periods to examine early, mid-year, and later year responses. Similarly, we calculated the average ART adherence as well as COVID-19 concern and medical trust within the same time periods.

To test the main study hypotheses that COVID-19 trust in government and information sources and COVID-19 prejudicial attitudes would predict social and healthcare disruptions as well as ART adherence over the first year of COVID-19, we performed a series of bivariate and multivariable regression analyses. The regression models were set up to control social disruptions when modeling healthcare disruptions and to control for both social and healthcare disruptions when modeling ART adherence. For the first two analyses, the outcome variables were the number of social disruptions and the number of healthcare disruptions reported across the entire first year of COVID-19. These tests used Poisson regression models because the outcomes were counts. For the third analysis, we used linear regression to test predictors of ART adherence during the final three months (months 10–12) of the first year of COVID-19. We first conducted unadjusted bivariate analyses, followed by multivariable models that included all variables that were significantly related to the outcome. The multivariable models adjusted for all variables as well as controlling for concerns about contracting COVID-19 and general medical trust. Model effects are reported as odds ratios and for the multivariable models we also report Likelihood ratio X^2 tests. All statistical tests defined significance as $p < .05$.

Results

Participants were 115 men and 26 women living with HIV. Table 1 shows the demographic and baseline health characteristics of the sample partitioned by having experienced healthcare disruptions during the first year of COVID-19. There were no differences between participants who did not and who did experience healthcare disruptions during the first year of COVID-19 on any of the baseline characteristics.

Disruptions to social relationships and healthcare during the first year of COVID-19

COVID-19 social and healthcare disruptions over the first year of the pandemic are shown in Table 2. Results indicated that a majority of participants experienced social disruptions throughout the first year of COVID-19. Between 60% and 80% of participants reported cancelling plans with others, asking others to stay away, and avoiding

Table 1 Demographic and health characteristics of people living with HIV who did not and did experience healthcare disruptions during the first year of CIVID-19.

	Did not Experience COVID healthcare disruptions N = 71		Experienced COVID healthcare disruptions N = 70			
	N	%	N	%	X^2	t
Men	57	80	58	84	0.3	
Women	15	20	11	16		
Identify as transgender	13	9	13	9	0.1	
African American	66	93	64	91	3.0	
Currently unemployed	51	73	58	83	2.0	
HIV viral load - Detectable	25	34	20	30	1.6	
HIV viral load - Undetectable	46	66	49	70		
Has been tested for COVID-19	40	56	47	67	1.7	
Received a positive COVID-19 test result	11	15	13	18	0.2	
	Mean	SD	Mean	SD		
Age (years)	29.5	3.8	28.6	3.8		1.4
Years of education	13.4	1.4	13.3	1.5		0.9
Years since testing HIV positive	6.5	6.5	5.8	5.5		0.6
Pre-COVID % ART adherence	66.4	28.4	63.2	24.9		0.6
AUDIT-C score	2.7	2.3	3.0	2.4		0.7

Table 2 Social and healthcare disruptions and ART adherence during the first year of COVID-19

	Month 2 N = 141		Month 3 N = 137		Months 4–6 N = 136		Months 7–9 N = 135		Months 10–12 N = 94	
Social Disruptions	n	%	n	%	n	%	n	%	n	%
Canceled plans in order to avoid COVID-19.	106	76	98	71	112	83	100	74	68	72
Asked others to stay away to protect from getting COVID-19.	96	68	86	62	102	75	90	66	60	63
Avoided public transportation because of COVID-19.	97	68	92	67	103	76	100	74	69	73
Healthcare Disruptions										
Canceled clinic to avoid COVID-19.	27	19	34	24	38	28	31	23	10	10
Unable to get the pharmacy because of COVID-19.	26	18	36	26	32	24	32	23	18	19
Unable to get ART because of COVID-19.	22	15	21	15	31	23	38	28	16	17
	M	SD	M	SD	M	SD	M	SD	M	SD
ART Adherence	64.8[a]	26.1	66.0[b]	26.8	68.5*	24.9	63.6*	28.3	64.1*	29.0

Note: [a] Pre-COVID-19 ATR adherence; [b] ART adherence in months 2–3 of COVID-19; * significantly different from initial assessment, $p < .01$

public transportation in the second month of the pandemic and these practices persisted throughout the year. Overall, 97% of participants reported at least one social disruption throughout the year. In addition, more than one in five participants reported being unable to get to the pharmacy or unable to otherwise collect their ART in each time period of the first year of COVID-19. In terms of ART adherence, overall adherence remained under 70% of medications taken throughout the year and there were significant declines in adherence in the second half of the year.

Trust in government and other sources of COVID-19 information and prejudicial attitudes

Results showed that the CDC and state health department were trusted more for COVID-19 information compared to trust in information from social media. In addition, the CDC and state health department were trusted more for COVID-19 information than was trust in the government response to COVID-19 (see Table 3). However, for both information from the CDC and state health department, trust significantly declined throughout the first year of COVID-19. Trust in the government doing all it could about COVID-19 also declined during the second quarter of the first year, but was not different at later points than it was in the early months. Finally, trust in social media for COVID-19 information remained consistently low throughout the first year of COVID-19.

Table 3 shows the average COVID-19 prejudicial attitudes over the first year of the pandemic. Results indicated that prejudicial attitudes declined in the later months relative to the earlier months. Overall, the prejudicial attitudes

Table 3 Trust in government, sources of COVID-19 information, COVID-19 prejudicial attitudes during the first year of the COVID-19 pandemic

	Month 1–3 N = 137		Months 4–6 N = 136		Months 7–9 N = 135		Months 10–12 N = 94	
Source of Trust	M	SD	M	SD	M	SD	M	SD
Trust government response	1.09	0.80	0.93*	0.81	1.02	0.80	1.23	0.85
COVID-19 information sources								
CDC	1.77	0.88	1.62*	0.94	1.60*	0.93	1.56*	0.87
State Health Department	1.67	0.90	1.50*	0.90	1.45*	0.88	1.47	0.88
Social Media	1.11	0.75	1.02	0.73	0.94	0.75	0.96	0.72
COVID-19 prejudice score	2.59	0.78	2.49*	0.80	2.52*	0.81	2.43*	0.79

Note: * significantly different from initial assessment, p < .01

Table 4 Regression models predicting social and healthcare disruptions during the first year and ART adherence during months 10 to 12 of the first year from initial assessments of COVID-19 concern, sources of trust and COVID-19 prejudices

	Social Disruptions During First Year of COVID-19		Healthcare Disruptions During First Year of COVID-19		ART Adherence During Months 10–12 of the First Year of COVID-19	
	Unadjusted OR	Adjusted OR	Unadjusted OR	Adjusted OR	Unadjusted	Adjusted
Variables						
COVID-19 Concern	1.005**	1.004**	1.004*	1.000	1.001	
Medical Trust	0.993		1.324**	1.353**	0.969	
Government Trust	1.077**	1.103**	0.954		1.068	
CDC Trust	1.040*	1.076**	0.896*	0.811**	1.083**	1.013*
Health Dept. Trust	0.989		1.005		1.102**	1.092*
Social Media Trust	0.992		1.122*	1.143*	1.059	
COVID-19 Prejudice	1.096**	1.102**	1.445**	1.340**	0.989	
Social Disruptions			1.034**	1.035**	1.001	
Healthcare Disruptions					0.991*	0.991*
Multivariable Model	Likelihood ratio X^2 = 117.54**		Likelihood ratio X^2 = 59.50**		Likelihood ratio X^2 = 14.97**	

Note: * p < .05, ** p < .01

were endorsed by a majority of participants throughout the first year of COVID-19.

Predictors of COVID-19 disruptions to social relationships, healthcare, and ART adherence

Results of the unadjusted and adjusted regression models predicting social disruptions, healthcare disruptions and ART adherence are shown in Table 4. Unadjusted bivariate models indicated that greater concern about COVID-19, and greater trust in the government response, trust in the CDC and prejudicial attitudes in the early months of COVID-19 were associated with higher rates of social disruptions throughout the first year of COVID-19. The multivariable model found that all of these factors remained significant. With respect to COVID-19 healthcare disruptions in the first year, greater early concerns about COVID-19, greater medical trust, trust in social media for COVID-information, prejudicial attitudes, greater social disruptions and less trust in the CDC were all associated with more healthcare disruptions during the first year of COVID-19. The multivariable model was significant and adjusted results indicated that

greater medical trust, greater trust in social media, greater prejudicial attitudes, greater social disruptions and less trust in the CDC remained associated with greater healthcare disruptions.

The regression model for ART adherence in the final three months of the first year of COVID-19 indicated that greater trust in the CDC and health department for COVID-19 information as well as fewer healthcare disruptions predicted greater ART adherence. The multivariable model was significant, with only greater early trust in the state health department and fewer healthcare disruptions predicting greater ART adherence.

Discussion

We found nearly universal disruptions to social relationships and that half of the people living with HIV in our cohort experienced at least one disruption to their healthcare during the first year of the COVID-19 pandemic. Clinic cancellations, challenges getting to the pharmacy and being unable to access ART all persisted over the first year, as

did disruptions to social relationships. In addition, while there was a slight improvement in ART adherence in the early months of the pandemic, the trend was reversed with declines in adherence to baseline levels in the later months. As previously reported in the early months of COVID-19 (Fridman et al., 2020; Kretchy, Asiedu-Danso, & Kretchy, 2021; Wagner et al., 2021), adherence may have improved in response to the new health threat, but these changes were transient in our cohort.

We also observed sustained declines in the degree of trust participants had in COVID-19 information sources over the first year of the pandemic. While trust in the government response showed some improvement in the later months, trust in COVID-19 information from the CDC and state health department diminished. In addition, while social media outlets were the least trusted information sources in the early months of COVID-19, the amount of trust they held did not change over the course of the year. We also observed a slight decrease in prejudicial attitudes that remained on average near or above the scale mid-points. These results, therefore, suggest that even as public health authorities made efforts to reduce prejudice and xenophobia toward people with COVID-19, particularly those of Asian descent, the lack of trust in their messaging may have limited their impact (Dhanani & Franz, 2021). Overall, more than half of participants endorsed prejudicial attitudes in the early and late months of the pandemic, expressing fear of people from China and endorsing forced testing and travel bans on people visiting China as well as forced quarantine for people who test positive for COVID-19. These findings therefore support research showing that COVID-19 related stigmas were prevalent among people living with HIV, who themselves are a highly stigmatized group (Berman et al., 2020; Logie & Turan, 2020).

Findings confirmed our primary hypothesis that the effects of health information trust and prejudicial attitudes reported in the first months of COVID-19 would be sustained over the first year of the pandemic. We found that greater trust in the government's COVID-19 response, greater trust in the CDC as a source of COVID-19 information, and greater prejudicial attitudes in the early months of COVID-19 predicted a greater number of social disruptions over the year. With respect to healthcare disruptions, less trust in the CDC and greater trust in social media for COVID-19 information predicted greater healthcare disruptions over the year, after controlling for medical trust and COVID-19 social disruptions. Finally, we found that early trust in the CDC and state health department for COVID-19 information predicted greater ART adherence in the final months of the first year. These findings suggest that participants with greater trust in public health authorities experienced fewer healthcare disruption and better ART adherence, whereas greater trust in

social media for COVID-19 information as well as greater prejudicial attitudes were associated with more healthcare disruptions, though they were not related to ART adherence.

The current study findings should be interpreted in light of their methodological limitations. The sample was one of convenience and cannot be considered representative of people living with HIV. In addition, the sample was largely male and African-American and therefore limited in its generalizability. The eligibility criteria identified individuals at high-risk for poor medical outcomes and therefore more vulnerable to COVID-19 impacts, potentially biasing results. The cohort was closed to new enrollments during our observation period. Because the sample had been accrued through rolling recruitment, participants completed the study at various times during the first year of COVID-19. While loss to follow-up remained stable over the course of the study, the sample size diminished over the first year of COVID-19 due to staggered cohort completion. Analyses conducted during the final months of the year therefore had less statistical power than analyses in the early months. In addition, although we conducted analyses prospectively, our results are correlational and cannot be interpreted as causal associations. With these limitations in mind, our findings have implications for managing HIV infection during pandemics and other unforeseen social crises.

Efforts to inform and instruct the public in response to a health crisis plays critical roles in mobilizing public health services. The erosion of trust in public health authorities as previously reported (Collaborators, 2022; Mansoor, 2021; Maykrantz, Gong, Petrolino, Nobiling, & Houghton, 2021), was apparent in the current study with participant trust in COVID-19 information from the CDC and health department declining over the first year of COVID-19. Participants who trusted public health authorities for COVID-19 information demonstrated fewer disruptions to healthcare and greater ART adherence over the course of the year. These findings support the urgent need to regain and sustain trust in public health communications among vulnerable populations.

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Declarations

Ethics approval and consent to participate This study was approved by the ethical review committee of the University of Connecticut. All procedures were in accordance with the ethical standards of the re-

sponsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. Written informed consent was provided to all participants included in this study.

Consent for publication Not Applicable. There are no elements requiring consent to publish.

Competing interests The authors declare no competing interests.

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