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REGULAR ARTICLE

Social Distancing to Mitigate COVID-19 Risks Is Associated With COVID-19 Discriminatory Attitudes Among People Living with HIV

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Abstract

Background Severe acute respiratory syndrome coronavirus-2, the virus that causes COVID-19, is an emerging pandemic with heightened concerns for people with compromised immune systems, including people living with HIV.

Purpose In the absence of a vaccine, public health messaging to mitigate risks for COVID-19 primarily focuses on social distancing. Because people living with HIV commonly experience mistreatment associated with HIV, their response to social distancing may be complicated by psychosocial attitudes associated with COVID-19.

Methods To evaluate these relationships, we conducted a rapid-response, cross-sectional survey with people living with HIV ($N = 149$) to assess social distancing practices, COVID-19 discriminatory attitudes, COVID-19 xenophobic attitudes, HIV microaggressions, and concern over contracting COVID-19. Data were collected from participants enrolled in a larger ongoing study between March 30, 2020 and April 17, 2020.

Results Results indicated that choosing to socially distance to reduce COVID-19 exposure was associated with COVID-19 discriminatory attitudes, concerns of contracting COVID-19, and identifying as transgender. Likewise, social distancing imposed by others (e.g., cancelations and restrictions) was associated with concerns of contracting COVID-19.

Conclusions Findings demonstrate that social distancing measures are related to concerns of contracting the virus and discriminatory attitudes toward those who are presumed to be living with COVID-19. These potentially negative psychosocial attitudes toward people perceived to have COVID-19 echo the discriminatory actions and attitudes that we continue to observe in HIV social sciences research.

Keywords: COVID-19 · Discriminatory attitudes · Xenophobic attitudes · HIV

Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) poses an urgent threat to global health. Within the initial months of this new pandemic, the USA emerged as the global leader in total infections and deaths [1]. The disease course of SARS-CoV-2 is referred to as COVID-19 and includes a broad spectrum of symptoms that range from asymptomatic infection to a myriad of acute symptoms, including severe respiratory distress [2]. To decrease the spread of SARS-CoV-2, federal and state officials have urged or directly mandated individuals to practice social distancing measures, including staying home, avoiding groups of people, and remaining at least 6 ft away from others [3–5]. Although public health recommendations and mandates exist to prevent SARS-CoV-2, little is known about how these prevention measures are perceived by populations at risk for potential SARS-CoV-2 infection.

Highly infectious respiratory diseases, such as COVID-19, are likely to become stigmatized among those who are living with or perceived to be living with the disease and may lead to acts of discrimination [6, 7]. Previous

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research shows that individuals who are members of groups who are perceived to be living with respiratory infections, including H1N1 and tuberculosis, experience elevated levels of marginalization and stigmatization regardless of disease status [8, 9]. For example, with China being the presumed origin of COVID-19, people of Asian descent living in the USA have experienced verbal degradations and physical violence as a result of COVID-19 stigmatization [10]. The emergence of COVID-19-related rejection and discrimination is partly due to a confluence of factors, including fear of contracting the virus, politicians enforcing xenophobic attitudes, and a general lack of understanding of COVID-19 [10]. Due to the novelty of COVID-19, it is, however, unknown to what extent people will experience or engage in mistreatment related to this new infectious disease.

It is clear that COVID-19 impacts vulnerable populations more so than populations with greater access to resources [11]. Likewise, in social/behavioral HIV literature, we have observed long-standing health inequities among Black sexual minority men living with HIV. This work has shed light on the relationships between multiple minority identity statuses and barriers to accessing adequate health care. Although research in this area is in its infancy, it is likely that individuals living with HIV, in particular race/ethnic and gender minorities, will experience additional challenges when navigating COVID-19 prevention and treatment. For example, people living with HIV often experience elevated rates of mistreatment, which may mirror COVID-19-related experiences. Both COVID-19 and HIV share common discriminatory factors, including "othering" and mistreatment of individuals living with or presumed to be living with either disease [12, 13]. The extent to which discriminatory attitudes are related to responses to COVID-19 has not yet been reported and is, therefore, currently unknown. People living with HIV, however, are an important and unique group to prioritize in COVID-19-related research as they are likely at higher risk for severe COVID-19 complications and their prior experiences with HIV-related discrimination may affect their perceptions of COVID-19 [14, 15].

Previous research has documented that multiple social/emotional and logistical barriers impact health care among people living with HIV [16]. Researchers continue to observe suboptimal levels of health care engagement among individuals living with HIV. This observation is noted when evaluating health care linkage, engagement, and retention [16]. Furthermore, biological measures of health care engagement, including medication adherence and viral load, are also suboptimal [17]. The broader landscape of COVID-19 adds an additional layer of challenges for people to navigate who are already more likely to experience social marginalization [18]. How our most vulnerable populations experience the impact of COVID-19 should be prioritized as a failure to recognize the needs of these individuals could exacerbate both negative HIV outcomes and negative COVID-19 outcomes [19].

Research on discriminatory attitudes and xenophobic attitudes in the context of an emerging infectious disease is limited. Furthermore, prior work that assessed these specific attitudes tends to be limited to studies including the general population [20] or health care workers [21]. Rarely is this research focused on discriminatory and xenophobic attitudes from the perspective of marginalized populations with intersecting minority identities (e.g., race/ethnicity, gender, sexual orientation, and HIV status [although HIV status is not typically considered an identity, some individuals may perceive it as such [22]]). Typically, this research focuses on *experiences of* discrimination among marginalized populations [23, 24]. The onset of COVID-19 provides an opportunity to assess attitudes toward people living with an emerging infectious disease from the perspective of individuals who have lived through these potentially similar experiences themselves, a novel approach to assessing a burgeoning area of COVID-19-related research.

In addition to understanding how people living with HIV perceive COVID-19, it is also critical to understand the pathways through which these perceptions unfold. Negative attitudes toward people living with disease impact preventive behaviors [25] and the likelihood of internalizing negative beliefs if one were to test positive themselves [26]. It is known from the HIV literature that a priori perceptions of HIV tend to be stable [27] and have the potential for long-term impacts on HIV disease-preventive and treatment behaviors [28]. This area of research is, however, unknown in the context of COVID-19 but may act in similar pathways.

In regards to COVID-19 prevention, a critical factor that has emerged is the need to engage in social distancing practices. Yet, we do not know the extent to which perceptions of COVID-19-related discrimination may be related to engagement in these practices. One unique component of social distancing is the degree to which behaviors related to this prevention approach are chosen by individuals versus imposed on individuals. Even though governmental policies mandate social distancing practices, it is largely up to individuals to make choices that do or do not follow these practices [29–31]. In addition to individual social distancing decisions, social distancing can be imposed by others, such as canceled plans, closed businesses, and other restrictions. What drives decisions to follow social distancing practices and how people respond to social distancing practices that are chosen versus imposed is unclear, but these decisions may, in part, be related to discriminatory attitudes.

For the current paper, the authors sought to explore associations related to COVID-19 discriminatory attitudes and COVID-19 xenophobic attitudes among a sample of predominately Black sexual minority men living with HIV. In addition to the aforementioned constructs, we also included a focus on HIV microaggressions in order to assess participants' experiences with subtle forms of discrimination [14]—an important control variable given the topic of focus. As such, the current study examined social distancing as a result of COVID-19, both chosen social distancing and imposed social distancing. Because social distancing is central to containing outbreaks of respiratory infections, its association with discrimination may complicate public health messaging around COVID-19 and is, therefore, critical to better understand. Given that social factors related to COVID-19 are a novel area of research, hypotheses were exploratory in nature and included the following: HIV microaggressions, COVID-19 discriminatory attitudes, COVID-19 xenophobic attitudes, and concerns regarding contracting COVID-19 were hypothesized to be positively related to social distancing practices. We also explored differences in response to COVID-19 among a subgroup of participants who experience multiple intersecting marginalized identities, including with individuals who identify as transgender.

Methods

Participants and Settings

Participants in this study included young adults (aged 20–37; M = 30, standard deviation [SD] = 3.7) living with HIV in the Atlanta metro area, with most (89%) individuals identifying as Black/African American. Data collection for the current study began on March 30, 2020 and continued through April 17, 2020. Within the state of Georgia, as of 2020, more than 50,000 people are currently living with HIV (77% identify as male) [32].

Prior to data collection, Georgia's governor declared COVID-19 a public health emergency and stated that beginning March 16, 2020, all schools and universities were to be closed until April 24, 2020. On March 23, 2020, Georgia began a state-wide shelter-in-place provision for individuals who were at increased risk of COVID-19 and banned gatherings of 10 or more people, including closing restaurants and bars. As of April 2, 2020, all of Georgia's population was ordered to shelter-in-place regardless of medical status. In addition to the state-wide mandate, the mayor of Atlanta declared that gatherings of 250 people or more were banned as of March 15, 2020 and all businesses were to close on March 20, 2020. Additionally, the mayor issued a 14-day stay at home order on March 23, 2020. On April 3, 2020, Georgia's governor reopened beaches but continued the state-wide shelter-in-place order through April 30, 2020 [32].

At the beginning of data collection, there were officially 2,397 reported COVID-19 cases and 12 deaths; by the end of data collection, there were 20,058 officially reported cases and 749 deaths [32] in the state of Georgia. Among COVID-19 cases in Georgia, Atlanta experienced the greatest morbidity and mortality—with approximately 40% of cases and 40% of deaths occurring in the Atlanta metro area [32].

Procedures

People who were living with HIV were recruited through social media websites (e.g., Facebook, Reddit, and Instagram), targeted online ads, and word-of-mouth participant-driven techniques (participant referrals). Recruitment included information regarding a study for people living with HIV. All participants were enrolled in an 18 month longitudinal, behavioral, HIV treatment engagement and adherence study. Data from the current study, however, are limited to one cross-sectional wave of data collection. At the onset of the COVID-19 crisis, we received rapid institutional review board approval to add measures to our ongoing data collection specifically designed to assess responses to COVID-19 psychosocial-related variables and social distancing practices.

Measures

Sociodemographic characteristics

Participants reported their age, gender identity, race, ethnicity, education, income, and employment.

Social distancing

Participants were asked if they engaged in five chosen social distancing experiences and seven imposed social distancing experiences (see Results for all items). Items included, for example, "You cancelled a clinic or doctor's appointment," "A clinic or doctor closed or cancelled your appointment because of the new coronavirus," and "A service provider of any type closed or cancelled your appointment because of the new coronavirus." For response set, all questions were dichotomized to "No" = 0, "Yes" = 1, and a sum score was created for the two item sets. The chosen experiences were summed to form a composite score with a potential range from 0 to 5, and the imposed experiences were summed to form a composite score with a potential range from 0 to 7.

HIV microaggressions

Participants responded to a 14-item scale regarding their experiences with stigma in the form of microaggressions [14]. Questions included, "Someone assumed you do not or shouldn't have sex because of your HIV status" and "Someone assumed you must be depressed because of your HIV status." Responses included *Never* = 0, *Rarely* = 1, *Sometimes* = 2, and *Often* = 3. Higher scores indicated more frequent HIV microaggression experiences. Internal consistency was high (Cronbach's α = .91) and items were transformed into a mean score.

COVID-19 discriminatory attitudes

Participants were asked four questions about their endorsement of COVID-19-related discrimination. Items were adapted from previous research focused on HIV discrimination and "othering" [33–35]. COVID-19 discriminatory attitudes included, "It should be a crime for people who know they have the virus but do not take steps to prevent from spreading it" and "People who test positive for the new virus should be required to wear identification tags" (Cronbach's α = .70). Responses ranged from *Strongly disagree* = 1 to *Strongly agree* = 4.

COVID-19 xenophobic attitudes

Participants were asked four questions about their endorsement of COVID-19-related xenophobia. Xenophobic attitude items included, "People who have been to China should be forced to be tested for this new virus" and "People from countries with more of the new virus should not be allowed in the US" (Cronbach's α = .74). Responses ranged from *Strongly disagree* = 1 to *Strongly agree* = 4.

COVID-19 testing and concern

Participants reported if they had heard of COVID-19, if they had been tested for COVID-19, and if they had been diagnosed with COVID-19. Participants were asked to rate on a scale from 0 to 100 how concerned they were with contracting COVID-19, 0 = "not at all concerned" to 100 = "extremely concerned."

Data Analyses

Bivariate correlation analyses were conducted to determine significant relationships between all included variables. Preliminary data analyses demonstrated an association with social distancing and identifying as transgender but not other sociodemographics (i.e., income and education) and, therefore, were included in regression models. Hierarchical regression models were conducted to determine associations of the extent of chosen and imposed social distancing experiences. The regression models were hierarchically ordered a priori to include (a) identifying as transgender, (b) rating of concern for contracting COVID-19, and (c) HIV-related microaggressions, COVID-19 discriminatory attitudes, and COVID-19 xenophobic attitudes variable scores entered simultaneously. All statistical tests defined significance as $p \leq .05$.

Results

A total of 163 participants living with HIV completed the interview. Of those participants, 149 (91%) answered all social distancing questions. Participants who did not answer all social distancing questions were excluded from this analysis to avoid artificially suppressing summed scores. All participants had heard about COVID-19. Five percent (n = 8) reported being tested for COVID-19, and one participant tested positive for COVID-19. Participants' concerns for getting COVID-19 ranged from 0 to 100 (M = 52.14; SD = 38.8). Most participants had completed more than high school (72%; n = 107) and made less than $20,000 (68%; n = 101; Table 1). Significant, positive correlations were found between COVID-19 discriminatory attitudes and concern over contracting COVID-19, xenophobic attitudes, and chosen social distancing. Furthermore, COVID-19 xenophobic attitudes were significantly, positively correlated with chosen social distancing and imposed social distancing (see Table 2). These patterns of association support our planned hierarchical regression models.

HIV Microaggressions

Participants endorsed an average of 6.0 HIV microaggressions (SD = 4.9). The number of experienced HIV microaggressions ranged from 0 to 14. Most frequently endorsed microaggressions included "In an online dating profile, someone wrote 'drug/disease free, UB2' or 'neg for neg only', etc." (60%), "You heard someone say, 'I'm HIV negative, I'm clean'." (58%), and "Someone seemed surprised to learn that people living with HIV would want to have children" (50%).

Chosen and Imposed Social Distancing

Participants had chosen to practice an average of 2.8 (SD = 1.4, range 0–5) social distancing behaviors. Most frequently chosen practices included "Staying indoors and away from public places" (87%) and "Canceled plans that involved other people" (68%). For imposed social distancing, participants reported an average of

Table 1. Participant characteristics among individuals living with HIV in the Atlanta and surrounding metro area ($N = 149$)

	n	%
Age	$M = 29.92$	$SD = 3.8$
Gender identity		
Male	101	68
Female	26	17
Transmale/transman	2	1
Transfemale/transwoman	16	11
Gender queer/nonconforming	4	3
Self-identify as transgender		
Yes	30	20
No	119	80
Race		
African American or Black	132	89
White	9	6
Ethnicity		
Latinx	7	5
Not Latinx	142	95
Education		
≤High school	42	28
>High school	107	72
Income		
$0–$10,000	71	48
$11,000–$20,000	30	20
$21,000–$30,000	30	20
$31,000–$40,000	9	6
$41,000–$50,000	7	5
$51,000–$60,000	1	1
Employment		
Unemployed	55	37
Working	70	47
Disability	23	15
Student	26	17
Other	6	4

SD standard deviation.

2.6 ($SD = 1.7$, range 0–7) experiences, most frequently reported "Was told not to come to work or school because of the coronavirus" (64%), "You have been asked by others to stay away to protect you from getting the coronavirus" (44%), and "A clinic or doctor closed or cancelled your appointment because of the coronavirus" (44%; see Table 3).

COVID-19 Discriminatory Attitudes and COVID-19 Xenophobic Attitudes

Table 4 shows the rates of responses to the measures of COVID-19 discriminatory attitudes and COVID-19 xenophobic attitudes. Results show that most participants endorsed discrimination toward people with COVID-19. For example, 71% agreed with both the following items: "It should be a crime for people who know they have the virus but do not take steps to prevent from spreading it" and "People who test positive for the new virus should be quarantined or separated by force from others." Xenophobic attitudes were also frequently endorsed, with 82% of participants agreeing that "People who have been to China should be forced to be tested for this new virus" and 69% agreeing that "People from countries with more of the new virus should not be allowed in the US."

Variables Associated With Social Distancing

To test the main study hypothesis that COVID-19 discriminatory attitudes and COVID-19 xenophobic attitudes would be associated with social distancing, we performed two hierarchically ordered regression models for chosen and imposed social distancing. For chosen social distancing, the first model showed that transgender identity was significantly associated with choosing more social distancing measures and remained significant throughout all three models. For the second model, participants' responses to concern

Table 2. Correlation matrix of social distancing and COVID-19 beliefs among individuals living with HIV in the Atlanta and surrounding metro area ($N = 149$)

Variables	1	2	3	4	5
1. Concern over contracting COVID-19	–				
2. HIV microaggressions	.188*	–			
3. COVID-19 discriminatory attitudes	.228**	.092	–		
4. COVID-19 xenophobic attitudes	.133	.089	.577**	–	
5. Chosen social distancing	.443**	.203*	.295**	.206*	–
6. Imposed social distancing	.350**	.135	.188***	.234**	.403**

*$p < .05$, **$p < .01$, ***$p = .02$.

Table 3. Chosen and imposed social distancing frequencies among individuals living with HIV in the Atlanta and surrounding metro area (N = 149)

	n	%
Chosen social distancing frequencies		
Staying indoors and away from public places	129	86.6
Canceled plans that involved other people	101	67.8
You cancelled a clinic or doctor appointment	29	19.5
You asked others to stay away to avoid getting the coronavirus	81	54.4
Avoided the MARTA/public transportation because of coronavirus	81	54.4
Imposed social distancing frequencies		
Been unable to get the food you need because of coronavirus	58	38.9
Been unable to get to a pharmacy because of coronavirus	22	14.8
Been unable to get the medicine you need because of the new virus	20	13.4
A clinic or doctor closed or cancelled your appointment because of the coronavirus	66	44.3
A service provider of any type closed or cancelled your appointment because of the coronavirus	60	40.3
You have been asked by others to stay away to protect you from getting the coronavirus	66	44.3
Was told not to come to work or school because of the coronavirus	96	64.4

Table 4. COVID-19 discriminatory attitudes and COVID-19 xenophobic attitudes among individuals living with HIV in the Atlanta and surrounding metro area (N = 149)

	Strongly disagree *n* (%)	Somewhat disagree *n* (%)	Somewhat agree *n* (%)	Strongly agree *n* (%)
COVID-19 discriminatory attitudes				
It should be a crime for people who know they have the virus but do not take steps to prevent from spreading it.	21 (14.1)	19 (12.8)	33 (22.1)	73 (49.0)
People who test positive for the new virus should be required to wear identification tags.	65 (43.6)	29 (19.5)	20 (13.4)	31 (20.8)
People who test positive for the new virus should be quarantined or separated by force from others.	28 (18.8)	13 (8.7)	39 (26.2)	67 (45.0)
I am afraid of people who have this new virus.	54 (36.2)	24 (16.1)	31 (20.8)	40 (26.8)
COVID-19 xenophobic attitudes				
People who have been to China in the past year should not be allowed into the USA.	57 (38.3)	26 (17.4)	27 (18.1)	35 (23.5)
Areas in the city that are heavily populated by people from China should be closed off.	64 (43.0)	19 (12.8)	35 (23.5)	28 (18.8)
People who have been to China should be forced to be tested for this new virus.	18 (12.1)	9 (6.0)	27 (18.1)	95 (63.8)
People from countries with more of the new virus should not be allowed in the USA.	27 (18.1)	19 (12.8)	29 (19.5)	73 (49.0)

for contracting COVID-19 was significantly associated with increased chosen social distancing measures and remained so throughout all models. In the third model, transgender identity, concern for contracting COVID-19, and COVID-19 discriminatory attitudes were all significantly associated with increased chosen social distancing, with HIV microaggressions and xenophobic attitudes not significant. Furthermore, the third model was significantly associated with increased chosen social distancing, $F(5,143) = 10.612$, $p < .001$, adjusted $R^2 = .25$ (see Table 5).

For imposed social distancing, transgender identity was not significantly associated with the first model or any of the following models. Concern over contracting COVID-19 was significant in the second and third models. However, in the third model, neither COVID-19 discriminatory attitudes nor COVID-19 xenophobic attitudes significantly added to the explained variance

Table 5. Regression models evaluating the relationships between chosen social distancing and imposed social distancing among individuals living with HIV in the Atlanta and surrounding metro area (N = 149)

	Model 1			Model 2			Model 3		
	B	*SE*	*t*	*B*	*SE*	*t*	*B*	*SE*	*t*
Chosen social distancing									
Transgender	0.594	0.292	2.032*	0.595	0.262	2.27*	0.533	0.261	2.04*
Concern over contracting COVID-19				0.017	0.003	6.07**	0.014	0.003	5.09**
HIV microaggressions							0.226	0.145	1.56
COVID-19 discriminatory attitudes							0.302	0.153	1.97*
COVID-19 xenophobic attitudes							0.030	0.146	0.203
Imposed social distancing									
Transgender	0.412	0.344	1.20	0.413	0.323	1.28	0.286	0.326	0.878
Concern over contracting COVID-19				0.015	0.003	4.55**	0.014	0.003	3.96**
HIV microaggressions							0.138	0.180	0.767
COVID-19 discriminatory attitudes							0.013	0.191	0.067
COVID-19 xenophobic attitudes							0.328	0.182	1.80

SE standard error.

*$p \le .05$, **$p \le .01$.

of imposed social distancing. The third model was significantly associated with increased imposed social distancing, $F(5, 143) = 5.702$, $p < .001$, adjusted $R^2 = .137$ (see Table 5).

Discussion

This study provides important insight into the early social impacts of COVID-19 among a group at potentially greater risk of negative health outcomes from this disease. Five percent of participants had received a COVID-19 test, a surprising finding, as COVID-19 tests at the time of data collection were not routinely provided to individuals who did not display serious COVID-19 symptoms [36]. It is possible, however, that those living with HIV received priority for testing due to the potential for complications with COVID-19 given their HIV status. Our hypothesis that COVID-19 discriminatory attitudes and xenophobic attitudes would be associated with social distancing was not fully supported and yielded an unexpected pattern of results. Findings indicated that experiences of HIV microaggressions, which are a subtle form of discrimination, were significantly correlated in bivariate analyses with choosing to socially distance. This finding is novel as participants may be relating their experiences with contracting HIV to what they believe they might experience if they were to contract COVID-19. In the 1980s and 1990s, experiences of HIV discrimination were rampant as medical professionals and researchers sought to learn more about the virus, similar to current COVID-19 discrimination [37]. While the circumstances of transmission of each virus are different, the restrictive policy responses early in the HIV crisis contributed to the mistreatment of individuals and several of those responses are being enacted now with COVID-19 [38]. One potential explanation for this finding is that people living with HIV may generalize their HIV discriminatory experiences and fear that they will have similar negative experiences if they were to also contract COVID-19, as has been experienced with other infectious respiratory illnesses [39]. Further research delineating these relationships is warranted as the COVID-19 pandemic continues.

Increased concern of contracting SARS-CoV-2 was significantly associated with engagement in chosen and imposed social distancing activities. Increased fear of contracting the virus may indicate increased awareness of risks posed by COVID-19 to persons with compromised immune systems [40]. Because people living with HIV are likely more susceptible to severe COVID-19 outcomes, participants may be more likely to relate their HIV status to potentially increased negative outcomes if they were to contract COVID-19 [41]. Additionally, increased concern of contracting COVID-19 was significantly associated with increased imposed social distancing. This relationship may exist due to those with higher concern for contracting COVID-19 as interpreting increased imposed social distancing measures as a result of COVID-19 fear. While some concern is important, more information is needed regarding the quality of information participants are receiving.

COVID-19 discriminatory attitudes, but not xenophobic attitudes against those perceived to have

COVID-19, were associated with increased chosen social distancing measures. Participants frequently agreed that people with coronavirus who do not separate from others should be forced to, that it should be considered a crime if people test positive and do not take steps to prevent spreading the virus, and that they are afraid of people with the virus. These negative perceptions of managing COVID-19 mirror HIV mistreatment observed at the beginning of the HIV epidemic, which included increased fear of HIV, of people living with HIV, and a desire to separate people living with HIV from the general public [42]. HIV-related mistreatment was codified within governmental and social policies during the height of the crisis as organizations sought to respond to the pandemic. These punitive and stigmatizing policies (e.g., compulsory testing, status disclosure, detention, and employment prohibitions) had lasting ramifications [38]. These beliefs may be related to the internalization of HIV discrimination or when people who are living with HIV believe negative stereotypes about people who are HIV positive and associate it with themselves [43]. Increased information regarding HIV discrimination as it relates to COVID-19 is needed, in particular, how experiences of HIV-related mistreatment may impact beliefs about others with COVID-19 and COVID-19-related health behaviors.

More frequently endorsed xenophobic attitudes included a desire to force people who have been to China to be tested for COVID-19 and that people from countries with high cases of COVID-19 should not be allowed into the USA. Xenophobic attitudes are common when people who are considered "outsiders" are presumed to be carriers of a specific disease or virus [44]. Similar findings have been found among other illnesses, including the Ebola virus [45] and H1N1 [46]. Although the need to impose limitations on global movement is likely critical to slowing the spread of disease, caution is needed to ensure that groups are not targeted and that policies are based on sound public health approaches. Literature on the intersection of human rights and public health provide guidance on approaches to managing public health policy while acknowledging the impact of doing so on individuals and groups [47]. Attention must also be given to how public health approaches may conflict with beliefs of nationalism that seek to divide global efforts that support public health goals. Public health efforts, community organizations, and governmental strategies are needed to address this issue as it relates to COVID-19.

Transgender identity was significantly associated with increased chosen social distancing measures but not imposed social distancing. Due to heightened discrimination experienced by individuals who identify as Black, as living with HIV, and as transgender, choosing to socially distance may be a result of increased concern regarding exposure to COVID-19 and potential health concerns associated with a dual COVID-19/HIV diagnosis [48]. Identifying as transgender in and of itself is often stigmatized and HIV prevalence is higher among individuals who identify as Black and transgender when compared with the general population [49]. With these considerations in mind, experiences and fears may be carried over to an additional concern of being associated with COVID-19 or needing to seek medical care due to COVID-19 exposure after experiences of health care discrimination [15]. Additionally, Black transgender individuals living with HIV may have a heightened sense of concern regarding the potential for negative health outcomes if they were to contract COVID-19, thereby increasing recommended health and safety measures, such as choosing to socially distance. More information regarding gender identity, COVID-19 safety precautions, and how COVID-19 health information is relayed to individuals who identify as transgender is needed.

The study findings should be interpreted in light of their limitations. COVID-19 is a new, understudied illness that medical professionals are working to understand and, therefore, foundational information on the behavioral/social components of this disease are still emerging. The current study has a relatively small sample size and has specific inclusion criteria of people residing in and around the Atlanta, GA, area, which precludes generalizing findings to the broader population. In addition, all of the results in this study are conducted with cross-sectional data. Thus, we can draw no causal or directional conclusions from these results. Some items from the xenophobic attitudes measure could be interpreted as important behaviors to engage in, which would not necessarily on their own constitute discriminatory or xenophobic attitudes and, therefore, this factor should be considered when interpreting findings related to this scale. Further investigation and evaluation of these constructs is warranted. With these limitations in mind, the current study results offer new information regarding an emerging pandemic, which may be useful in future public health messaging for social distancing and COVID-19, particularly, in mitigating discrimination while encouraging social distancing to prevent further spread of COVID-19. Additionally, this study provides information from a particularly vulnerable population; findings may be unique as they include information from a socially marginalized group of individuals.

Findings from the current study warrant additional research to assess the unique impact of social distancing for populations with multiple stigmatized identities (e.g., race/ethnic, sexual, and gender minority individuals [11, 16]). Given that

individuals with multiple minority identities oftentimes experience stigma and "othering" based on these intersecting minority identities, it is challenging to disentangle the root causes of perceived and actual exclusion and discrimination. Thus, the impact and efficacy of imposed social distancing among populations already stigmatized must continue to consider the intersectionality of multiple social identities. The perception that vulnerable populations are more likely to be affected by COVID-19 may also contribute to discriminatory practices against individuals with multiple minority identities. Future research in social/behavioral aspects of COVID-19 must include a strong focus on how vulnerable populations are treated with regard to inclusiveness in COVID-19-prevention-focused initiatives.

Our finding that COVID-19 discriminatory attitudes was associated with chosen social distancing suggests that people with HIV may engage in a process of "othering" COVID-19 in the same way others view people living with HIV as different from themselves. However, unlike HIV, social distancing is functional for mitigating the spread of respiratory infections, such as COVID-19. One possible explanation for this finding is that chosen social distancing may contribute to a sense of anger or resentment that is attributed to individuals who are perceived to be living with an infectious disease. It is, therefore, important that enforcing social distancing measures direct attention toward the health motivation for such actions and directly negate discriminatory sentiments. With this in mind, future research should consider the impact of social distancing as it relates to discrimination with COVID-19, how to mitigate COVID-19 related discrimination, and encourage increased awareness on the negative impacts of discrimination on disease mitigation.

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Compliance with Ethical Standards

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Authors' Contributions M.B. wrote, edited, and analyzed data; L.A.E. and R.J.W. wrote and edited throughout; J.L.A. assisted in first draft writing; S.K. assisted with content and analysis development. L.A.E. and S.K. conceptualized and oversaw the study.

Ethical Approval This research involved human subjects and was conducted with the approval of the University of Connecticut Institutional Review Board and research was conducted in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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