J Behav Med (2022) 45:760–770
https://doi.org/10.1007/s10865-022-00332-3

Medical avoidance among marginalized groups: the impact of the COVID-19 pandemic

Amani R. Holder-Dixon[1] · Olivia R. Adams[2,3] · Tianna L. Cobb[4] · Alison J. Goldberg[5,6] · Rachel A. Fikslin[5,6] · Mora A. Reinka[7] · Amanda N. Gesselman[3] · Devon M. Price[6]

Received: 6 December 2021 / Accepted: 12 May 2022 / Published online: 10 June 2022

Abstract Medical avoidance is common among U.S. adults, and may be emphasized among members of marginalized communities due to discrimination concerns. In the current study, we investigated whether this disparity in avoidance was maintained or exacerbated during the onset of the COVID-19 pandemic. We assessed the likelihood of avoiding medical care due to general-, discrimination-, and COVID-19-related concerns in an online sample ($N = 471$). As hypothesized, marginalized groups (i.e., non-White race, Latinx/e ethnicity, non-heterosexual sexual orientation, high BMI) endorsed more general- and discrimination-related medical avoidance than majoritized groups. However, marginalized groups were equally likely to seek COVID-19 treatment as majoritized groups. Implications for reducing medical avoidance among marginalized groups are discussed.

Keywords Medical avoidance · Discrimination · COVID-19 · Race/ethnicity · Sexual orientation · BMI

The novel coronavirus (COVID-19), first detected in December 2019, progressed to the level of a global pandemic in a matter of months (Cucinotta & Vanelli, 2020). COVID-19 is unique from many common illnesses in that it is a highly infectious respiratory virus and contraction is not linked to any particularly stigmatized behavior (e.g., risky sexual behavior, substance use, or a high-caloric diet). After the initial case of COVID-19 was identified in the United States in March 2020, the virus spread rapidly to all 50 states, reaching 44,615,528 confirmed cases and resulting in over 718,000 deaths by October 2021 (Centers for Disease

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s10865-022-00332-3.

✉ Amani R. Holder-Dixon
amholder@iu.edu

Olivia R. Adams
oliadams@iu.edu

Tianna L. Cobb
tlc23cobb@gmail.com

Alison J. Goldberg
agoldberg@gradcenter.cuny.edu

Rachel A. Fikslin
rfikslin@gradcenter.cuny.edu

Mora A. Reinka
mreinka@ursinus.edu

Amanda N. Gesselman
agesselm@indiana.edu

Devon M. Price
devonprice49@gmail.com

[1] Psychological and Brain Sciences, Indiana University, Bloomington, USA

[2] Department of Gender Studies, Indiana University, Bloomington, USA

[3] The Kinsey Institute, Indiana University, Bloomington, USA

[4] Department of Communication, George Mason University, Fairfax, USA

[5] Hunter Alliance for Research and Translation, Hunter College, City University of New York, New York, USA

[6] Basic and Applied Social Psychology (BASP) PhD Program, Department of Psychology, Graduate Center of the City University of New York, New York, USA

[7] Department of Psychology, Ursinus College, Collegeville, USA

Control and Prevention, 2022). Americans were faced with images of overrun hospitals, hospital wards dedicated to ventilating patients, and freezer trucks storing an overflow of bodies (Miller, 2020). These images, and subsequent reporting on the COVID-19 virus, sent frightening messages to the public about the seriousness of a COVID-19 infection and the potential necessity of medical treatment (Miller, 2020). The threat of COVID-19 and the medical attention it often necessitated was particularly salient for members of marginalized groups (e.g., non-White race, Latinx/e ethnicity, high BMI) who were more likely to have severe cases of COVID potentially resulting in serious illness or death, and have historically been more likely to avoid medical treatment (Alcendor, 2020; Muñoz-Price et al., 2020; Shah et al., 2020).

Prior to the COVID-19 pandemic, marginalized populations historically avoided medical treatment at higher rates than majority populations (Clancy, 2011; Interian et al., 2013). For example, disparities have existed in preventative screening, with minoritized groups being less likely to engage in this type of care than their majoritized counterparts (Berry et al., 2009; Japuntich et al., 2018; Pope et al., 2021; Price et al., 2020). Recent research investigating the impacts of the COVID-19 pandemic on medical care avoidance among marginalized and majority groups has indicated that the disparity in medical care avoidance could be growing. Specifically, emergency department (ED) visits during the early part of the pandemic decreased significantly across all racial groups, insurance types, and acuteness of conditions (Misa et al., 2021; Yu et al., 2021). Importantly, Black and Hispanic adults were more likely to avoid seeking emergency healthcare during the pandemic than White adults (Czeisler et al., 2020). Persons with disabilities, underlying medical conditions, and unpaid caregivers were also more likely to avoid seeking both routine and emergency care (Czeisler et al., 2020). Life-saving, preventative screenings, such as mammograms, pap smears, and testicular cancer checks, have also significantly declined during the pandemic among the wider population (Cancino et al., 2020; Del Vecchio Blanco et al., 2020; Gupta & Lieberman, 2020; Hoehn & Zureikat, 2020; Wright et al., 2020). As services resume, recent work has documented Black and Latinx/e communities may be more reluctant to engage with this type of care during the COVID-19 pandemic than White adults (Carethers et al., 2020).

Prior experiences with inadequate care due to discrimination—by both individual healthcare providers and the healthcare system—contribute to higher medical avoidance among marginalized populations (Jaiswal & Halkitis, 2019; McGuigan & Wilkinson, 2015; Pellowski et al., 2017; Underhill et al., 2015). Experiences with systemic discrimination and individual provider bias also contribute to adverse health outcomes within these communities (Abdou & Fingerhut, 2014; Reader & Gillespie, 2013). For example, many healthcare providers endorse stereotypes regarding larger-bodied people (e.g., they are lazy, unintelligent, and/or non-compliant; Blumberg & Mellis, 1985; Greenleaf et al., 2006; Phelan et al., 2014) that can negatively impact the quality of care they provide for their patients (Phelan et al., 2014). Other marginalized communities have similar experiences and, as a result, mistrust medical professionals and avoid seeking care.

There is little information about how avoidance of medical care in general (i.e., avoidance of care despite suspected need of care), or avoidance of medical care due to discrimination-related concerns (i.e., avoidance of care related to receiving differential, poorer treatment based on one's identity) or COVID-19 concerns, may differ for marginalized groups. It may be the case that members of marginalized groups avoid medical care for COVID-19 at similar rates as they would avoid medical treatment in general. Alternatively, due to the heightened risk of severe COVID-19 outcomes, marginalized groups may be less likely to avoid medical care for COVID-19 than for general medical treatment. In line with past research, we expect that marginalized groups will report more medical care avoidance in general, and more avoidance due to discrimination concerns. Furthermore, mirroring patterns of preventative care, we expect more COVID-19 care avoidance by marginalized groups than majoritized groups.

Method

Participants

Participants were 621 adults living in the U.S. who consented to take part in a study on "health behavior in the time of COVID-19." Of those, 471 completed at least one of the variables of interest in the present study ($M_{Age} = 26.33$, $SD_{Age} = 8.46$; $M_{\mathrm{BMI}} = 27.19$; $SD_{BMI} = 6.74$). Further participant details can be found in Table 1. Degrees of freedom vary due to missing data.

Procedure

Participants were recruited via social media posts advertising the study, and via an email list from prior studies conducted by the Hunter Alliance for Research and Translation (HART) on sexual health, containing participants who had consented to be contacted again for future research purposes. Eligibility criteria were being 18 years or older, being fluent in English, and living in the United States.

The survey was conducted fully online using the RedCap platform and was self-paced. Participants could skip any items they did not wish to answer, which is reflected in

Table 1 Demographics

Characteristic	% (*N*)
Gender	
Men	45.4 (233)
Women	27.3 (140)
Non-binary	7.4 (38)
Agender	0.4 (2)
Don't know	0.8 (4)
Other ID	0.2 (1)
Transgender	8.4 (43)
Cisgender	71.5 (367)
Sexual orientation	
Heterosexual	34.9 (179)
Gay or Lesbian	15 (77)
Bisexual	13.1 (67)
Queer	8.6 (44)
Pansexual	4.9 (25)
Asexual	2.3 (12)
Not Sure	2.3 (12)
Other ID	1.6 (8)
Race	
White	55.8 (286)
Black/African American	6.4 (33)
East Asian	3.3 (17)
West Asian	0.8 (4)
Native American/Alaska Native	0.4 (2)
Multiracial	9.6 (49)
Other ID	4.5 (23)
Ethnicity	
Hispanic/Latino/x	16 (82)
Not Hispanic/Latino/x	62.4 (320)
Income	
< $10,000	1.2 (6)
$10,000–$20,000	6 (31)
$20,000–$55,000	13.5 (69)
$55,000–$75,000	8.8 (45)
$75,000–$100,000	10.1 (52)
$100,000–$250,000	12.3 (63)
$250,000 +	2.9 (15)
Education	
Some highschool	1.1 (8)
Highschool/Equivalent	5.5 (41)
Some college	16.5 (123)
College	17.5 (130)
Some post-graduate	5 (37)
Master's degree	12.4 (92)
Doctorate degree	3.6 (27)
Other	0.7 (5)
Characteristic	M (SD)
Age	26.33 (8.46)
BMI	27.19 (6.74)

fluctuating degrees of freedom in the analyses. Compensation was given in the form of 17 raffled virtual gift cards for $40 USD. Data collection occurred from April 2020-June 2020. For context, COVID-19 was declared a global pandemic in March 2020 and quarantine restrictions were in place throughout the U.S. and internationally during the data collection period (Cucinotta & Vanelli, 2020).

Measures

These data were taken from a larger survey on multi-faceted health outcomes during the COVID-19 pandemic in the United States. The purpose of the larger study was to examine individuals' risk perception and prevention behaviors, sexual health and healthcare access, and mental health during the COVID-19 pandemic. Here we only include measures relevant to the current study.

Demographics

Participants reported their gender, age, sexual orientation, race or ethnicity, height, weight, income, and education level (see Table 1). Bivariate correlations of all variables included in the analysis are presented in Supplemental Table 1.

Medical avoidance and trust items

Included in the survey were several measures of medical avoidance, drawn largely from the HINTS 2005 survey (National Cancer Institute, 2005). The COVID-related avoidance item was created by the research team to address the concept of COVID-care avoidance, not covered by the HINTS items. All items were measured with Likert-type scales and coded or re-coded such that higher values indicated greater avoidance. Table 2 presents the descriptive statistics of the following items:

Medical avoidance in general "Some people avoid visiting their doctor even when they suspect they should go get checked out. How true would you say this is for you?" (1 = *not true at all;* 5 = *completely true*).

Discrimination-related avoidance "I avoid seeing my doctor because I worry that I will be discriminated against in the healthcare setting" (1 = *strongly agree;* 4 = *strongly disagree;* reverse coded prior to analysis).

COVID-related avoidance "If I was infected with COVID-19, I would wait until 'the last second' to go to the hospital if my symptoms became serious" (1 = *highly unlikely;* 7 = *highly likely*).

Data analysis plan

We conducted bivariate correlations and independent samples t-tests to determine associations between the stigmatized identities of interest (race, ethnicity, sexual orientation, BMI) and each type of medical avoidance (general, discrimination, COVID-19). We conducted twelve separate linear regression models to determine whether marginalized status in each group predicted each type of avoidance (e.g., Model 1 tested marginalized race on general medical avoidance, Model 2 tested marginalized race on discrimination-related avoidance, etc.). Our predictor variables included race (0 = White, 1 = non-White), ethnicity (non-Latinx = 1, Latinx = 2), sexual orientation (0 = heterosexual, 1 = non-heterosexual), and BMI. Age, education, income, and gender (0 = man; 1 = any other gender identity) were included as covariates in each of the regressions.

Results

On average, participants endorsed moderate general avoidance ($M = 2.61$, $SD = 1.34$), mild discrimination-related avoidance ($M = 1.77$, $SD = 1.04$), and moderate COVID-19-related avoidance ($M = 3.74$, $SD = 2.13$). Without controlling for covariates, all three types of medical avoidance were significantly associated with stigmatized identities when computing independent samples t-tests, albeit inconsistently across groups. Race and sexual orientation were both associated with discrimination avoidance. Participants who did not identify as White, $t(458) = -2.869$, $p = 0.004$, and participants who did not identify as heterosexual,

Table 2 Medical Avoidance Items

Item	Mean (SD)
Some people avoid visiting their doctor even when they suspect they should go get checked out. How true would you say this is for you?	2.60 (1.36)
I avoid seeing the doctor because I worry that I will be discriminated against in the healthcare setting	1.77 (1.02)
If I was infected with COVID-19, I would wait until "the last second" to go to the hospital if my symptoms became serious	3.72 (2.13)

$t(456.6) = -8.025$, $p < 0.001$, reported higher discrimination-based medical avoidance. Race and sexual orientation were unrelated to general medical avoidance and COVID-19 medical avoidance in bivariate correlations. There were no differences between Latinx/e and non-Latinx/e participants on any of the avoidance measures. Participants with higher BMIs reported greater general medical avoidance, $r = 0.12$, $p = 0.033$, and greater discrimination avoidance, $r = 0.24$, $p < 0.001$, but BMI was not significantly related to COVID-19 medical avoidance.

Race

Contrary to expectations, after controlling for age, education, income, and gender, non-White participants ($M = 2.45$, $SD = 1.30$) reported significantly lower levels of general medical avoidance than White participants ($M = 2.66$, $SD = 1.36$), $\beta = -0.113$, $p = 0.016$. However, for discrimination medical avoidance, non-White participants (M = 1.98, $SD = 1.09$) reported greater avoidance than did White ($M = 1.68$, $SD = 0.98$) participants, $\beta = 0.099$, $p = 0.030$. There were no significant differences in COVID avoidance between non-White ($M = 3.66$, $SD = 2.15$) and White ($M = 3.77$, $SD = 2.13$) participants, $\beta = -0.059$, $p = 0.211$. Results are presented in Table 3.

Ethnicity

There were no significant differences in Latinx/e ($M = 2.76$, $SD = 1.41$) and non-Latinx/e ($M = 2.54$, $SD = 1.31$) participants' endorsement of general avoidance of medical care, $\beta = 0.03$, $p = 0.574$. Latinx/e participants ($M = 1.83$, $SD = 1.02$) did not differ from non-Latinx/e ($M = 1.75$, $SD = 1.04$) participants in their discrimination-based avoidance, $\beta = -0.019$, $p = 0.684$. Further, there were no significant differences in COVID avoidance between Latinx/e ($M = 2.16$, $SD = 0.22$) and non-Latinx/e ($M = 2.14$, $SD = 0.11$) participants, $\beta = -0.04$, $p = 0.401$. Results are presented in Table 4.

Sexual orientation

There were no significant differences between heterosexual ($M = 2.68$, $SD = 1.29$) and non-heterosexual ($M = 2.54$, $SD = 1.38$) participants' general avoidance of medical care, $\beta = -0.06$, $p = 0.249$. Non-heterosexual ($M = 2.03$, $SD = 1.09$) individuals endorsed more discrimination avoidance than heterosexual participants ($M = 1.35$, $SD = 0.74$), $\beta = 0.29$, $p < 0.001$. There were no significant differences in COVID avoidance between heterosexual ($M = 3.71$, $SD = 2.18$) and non-heterosexual ($M = 3.73$, $SD = 2.11$) participants, $\beta = -0.04$, $p = 0.417$. Results are presented in Table 5.

BMI

BMI positively predicted general medical avoidance ($\beta = 0.13$, $p = 0.024$). As BMI increased, so did general medical avoidance. Greater BMI was also associated with higher ratings of discrimination avoidance, $\beta = 0.23$, $p < 0.001$. BMI did not significantly predict COVID medical avoidance, $\beta = 0.05$, $p = 0.378$. Results are presented in Table 6.

Exploratory analyses

Given our unexpected results showing that racial and sexual minorities, as well as larger-bodied people, do not show any differences in COVID-related avoidance from their majoritized counterparts, we were curious if these findings were driven by reported avoidance among dominant or subjugated groups. Put another way: are thinner individuals (for example) avoiding COVID-related care more compared to their

Table 3 Linear regression coefficients for the association between medical avoidance types and participant race

	Model 1: General Avoidance					Model 2: Discrimination Avoidance					Model 3: COVID Avoidance				
	β	*SE*	95% CI		*p*	*β*	*SE*	95% CI		*p*	*β*	*SE*	95% CI		*p*
			LL	UL				LL	UL				LL	UL	
Race	−0.113 *	0.14	−0.60	−0.06	0.016	0.099 *	0.10	0.02	0.42	0.030	−0.059	0.22	−0.70	0.16	0.211
Covariates															
Age	−0.116 *	0.01	−0.03	−0.001	0.033	−0.019	0.01	−0.01	0.01	0.711	0.011	0.01	−0.02	0.03	0.842
Education	−0.086	0.05	−0.17	0.02	0.112	0.052	0.04	−0.03	0.11	0.317	−0.011	0.08	−0.17	0.14	0.842
Income	−0.038	0.03	−0.09	0.04	0.420	−0.169 ***	0.03	−0.14	−0.04	< 0.001	0.038	0.05	−0.06	0.15	0.424
Gender	0.069 *	0.13	−0.07	0.44	0.016	0.243 ***	0.10	0.31	0.69	< 0.001	0.168 **	0.21	0.31	10.13	0.001

Model 1: $R^2 = 0.05$, adjusted $R^2 = 0.04$, $F(5, 442) = 4.30$, $p = 0.001$; Model 2: $R^2 = 0.12$, adjusted $R^2 = 0.11$, $F(5, 438) = 11.81$, $p < 0.001$; Model 3: $R^2 = 0.03$, adjusted $R^2 = 0.02$, $F(5, 439) = 2.73$, $p = 0.019$; *β* Standardized regression coefficient, *SE* Standard error, *CI* Confidence interval, *LL* Lower limit, *UL* Upper limit, *p* = p-value. *$p < 0.05$, ** $p < 0.01$, *** $p \leq 0.001$

Table 4 Linear regression coefficients for the association between medical avoidance types and participant ethnicity

	Model 1: General Avoidance					Model 2: Discrimination Avoidance					Model 3: COVID Avoidance				
	β	*SE*	95% CI		*p*	*β*	*SE*	95% CI		*p*	*β*	*SE*	95% CI		*p*
			LL	UL				LL	UL				LL	UL	
Ethnicity	0.027	0.16	−0.22	0.39	0.574	−0.019	0.12	−0.28	0.18	0.684	−0.041	0.25	−0.70	0.28	0.401
Covariates															
Age	−0.081	0.01	−0.03	0.004	0.144	−0.022	0.01	−0.02	0.01	0.690	0.050	0.01	−0.02	0.04	0.371
Education	−0.112 *	0.05	−0.20	−0.002	0.045	0.046	0.04	−0.04	0.10	0.396	−0.042	0.08	−0.22	0.10	0.450
Income	−0.033	0.04	−0.09	0.05	0.499	−0.175 ***	0.03	−0.15	−0.05	<0.001	0.026	0.06	−0.08	0.14	0.590
Gender	0.096	0.13	−0.004	0.51	0.053	0.253 ***	0.10	0.33	0.72	<0.001	0.185 ***	0.21	0.37	10.21	<0.001

Model 1: $R^2 = 0.04$, adjusted $R^2 = 0.03$, $F(5, 428) = 3.78$, $p = 0.002$; Model 2: $R^2 = 0.11$, adjusted $R^2 = 0.10$, $F(5, 424) = 10.55$, $p < 0.001$; Model 3: $R^2 = 0.03$, adjusted $R^2 = 0.02$, $F(5, 425) = 2.83$, $p = 0.016$; *β* Standardized regression coefficient, *SE* Standard error, *CI* Confidence interval, *LL* Lower limit, *UL* Upper limit, *p* = p-value. *$p < 0.05$, ** $p < 0.01$, *** $p \leq 0.001$

Table 5 Linear regression coefficients for the association between medical avoidance types and participant sexual orientation

	Model 1: General Avoidance					Model 2: Discrimination Avoidance					Model 3: COVID Avoidance				
	β	*SE*	95% CI		*p*	*β*	*SE*	95% CI		*p*	*β*	*SE*	95% CI		*p*
			LL	UL				LL	UL				LL	UL	
Sexual Orientation	−0.055	0.13	−0.41	0.11	0.249	0.292 ***	0.09	0.23	0.60	<0.001	−0.039	0.21	−0.59	0.24	0.417
Covariates															
Age	−0.088	0.01	−0.03	0.003	0.110	−0.085	0.01	−0.02	0.002	0.092	0.029	0.01	−0.02	0.03	0.598
Education	−0.091	0.05	−0.17	0.01	0.094	0.079	0.03	−0.01	0.12	0.115	−0.019	0.08	−0.18	0.12	0.725
Income	−0.043	0.03	−0.10	0.04	0.359	−0.148 **	0.02	−0.13	−0.03	0.001	0.038	0.05	−0.06	0.15	0.432
Gender	0.080	0.13	−0.04	0.47	0.100	0.200 ***	0.09	0.23	0.60	<0.001	0.179 ***	0.21	0.35	10.18	<0.001

Model 1: $R^2 = 0.04$, adjusted $R^2 = 0.03$, $F(5, 446) = 3.43$, $p = 0.005$; Model 2: $R^2 = 0.19$, adjusted $R^2 = 0.18$, $F(5, 442) = 21.05$, $p < 0.001$; Model 3: $R^2 = 0.03$, adjusted $R^2 = 0.02$, $F(5, 443) = 2.73$, $p = 0.019$; *β* Standardized regression coefficient, *SE* Standard error, *CI* Confidence interval, *LL* Lower limit, *UL* Upper limit, *p* = p-value. *$p < .05$, ** $p < .01$, *** $p \leq .001$

Table 6 Linear regression coefficients for the association between medical avoidance types and participant BMI

	Model 1: General Avoidance					Model 2: Discrimination Avoidance					Model 3: COVID Avoidance				
	β	*SE*	95% CI		*p*	*β*	*SE*	95% CI		*p*	*β*	*SE*	95% CI		*p*
			LL	UL				LL	UL				LL	UL	
BMI	0.129 *	0.01	0.003	0.05	0.024	0.232 ***	0.01	0.02	0.05	<0.001	0.051	0.02	−0.20	0.05	0.378
Covariates															
Age	−0.083	0.01	−0.04	0.01	0.223	−0.037	0.01	−0.02	0.01	0.558	0.089	0.20	−0.01	0.06	0.198
Education	−0.095	0.06	−0.21	0.03	0.159	0.080	0.04	−0.03	0.13	0.198	−0.036	0.10	−0.25	0.15	0.598
Income	−0.072	0.04	−0.13	0.03	0.202	−0.245 ***	0.03	−0.18	−0.08	<0.001	0.023	0.07	−0.10	0.16	0.684
Gender	0.071	0.16	−0.11	0.50	0.215	0.256 ***	0.11	0.31	0.72	<0.001	0.195 **	0.26	0.36	10.37	0.001

Model 1: $R^2 = 0.04$, adjusted $R^2 = 0.02$, $F(5, 305) = 3.25$, $p = 0.007$; Model 2: $R^2 = 0.21$, adjusted $R^2 = .20$, $F(5, 302) = 15.91$, $p < 0.001$; Model 3: $R^2 = 0.04$, adjusted $R^2 = .03$, $F(5, 303) = 2.70$, $p = 0.021$; *BMI* Body mass index; *β* Standardized regression coefficient, *SE* Standard error, *CI* Confidence interval, *LL* = Lower limit, *UL* Upper limit, *p* = p-value. *$p < 0.05$, ** $p < 0.01$, *** $p \leq 0.001$

general avoidance, or are heavier individuals anticipating avoiding less?

To examine this, we focused on the groups for whom there was either a general or discrimination-based avoidance difference by group: race, sexual orientation, and weight. However, because these outcome variables are on different scales, we first rescaled them to the same upper and lower limits; in this case: 0–10. We also categorized BMI using CDC cutoff points to aid comparison.

Across all examined social categories, the average level of avoidance was higher when referring to receiving COVID-related care than when thinking about general avoidance or avoidance due to discrimination. However, the difference was smaller for individuals from the minoritized groups (race, sexual orientation, and weight, respectively) than majoritized individuals. On the rescaled variables, we see differences in avoidance for heavier-weight individuals when comparing their COVID-related avoidance to their general medical avoidance. So-called "healthy weight" individuals (BMI of 18.5–25) reported avoidance of general medical care at a rescaled average of 3.88 points, but their average COVID-related avoidance score was 4.79 points; a difference of 0.91. In contrast, participants with a BMI in the "obese" range only showed difference of 0.13 points ($M_{general} = 4.73$ to $M_{COVID} = 4.86$). However, a univariate ANOVA showed no significant differences by weight category, $F\ (3, 311) = 1.074$, $p = 0.360$. White individuals' endorsement of COVID-related avoidance was 2.34 points higher than their discrimination-based avoidance endorsement (from $M_{discrimination} = 2.28$ to $M_{COVID} = 4.62$), whereas non-White individuals only showed a 1.17 point difference ($M_{discrimination} = 3.26$ to $M_{COVID} = 4.43$). Similarly, heterosexual (or straight) individuals scored 3.35 points higher on COVID avoidance relative to discrimination avoidance ($M_{discrimination} = 1.17$ to $M_{COVID} = 4.52$), while non-heterosexual individuals showed only a 1.1 point difference ($M_{discrimination} = 3.45$ to $M_{COVID} = 4.55$). Independent *t*-tests examining the contrast between COVID- and discrimination-related avoidance confirmed both of these differences to be significant: racial difference, $t(456) = 2.761$, $p = 0.006$; sexual orientation difference $t(460) = 5.194$, $p < 0.001$. Across these three groups (race, sexual orientation, and weight) we see an increase in avoidance to treat COVID-related symptoms, but the change is less dramatic in minoritized individuals.

Discussion

The COVID-19 pandemic has created an array of challenges for the healthcare system and those needing healthcare services. Many people have utilized medical treatment less often due to widespread information about COVID-related barriers to care (e.g., resources averted to COVID, no vacant hospital beds; Haut et al., 2020; Moghadas et al., 2020). However, others may avoid seeking care because of their own personal tendency to avoid medical care, or because they are concerned about experiencing discrimination in the healthcare setting (Patel et al., 2020). Communities who have been historically marginalized and treated less compassionately in the medical context at large report avoiding healthcare and cite fear of discrimination as a reason for that avoidance (D'Anna et al., 2018; Mensinger et al., 2018). Further, the widespread personal and systemic stress caused by the COVID-19 pandemic may exacerbate the desire to avoid formal healthcare due to the disproportionate amount of minoritized people receiving no or low-quality care and subsequently higher mortality rates compared to majoritized people. Studies conducted during the first year of the pandemic reported that people who identified as Black race in particular were associated with a greater likelihood of contracting COVID-19, and higher risk of hospitalization (Munoz-Price et al., 2020; Rogers et al., 2020). Newer data published by the Centers for Disease Control in March 2022 show that these disparities have only persisted. Compared to non-Hispanic White people, individuals identifying as Black/African American, Hispanic/Latino, or Native American were between 2.3 and 3.1 times more likely to be hospitalized for COVID-19, and between 1.7 and 2.1 times more likely to die from COVID-related complications (CDC, 2022). The daily awareness of subpar COVID-19 healthcare and treatment for people in one's community may further internalize the desire to avoid healthcare.

In the current study, we examined COVID-19-related medical avoidance in association with race, ethnicity, sexual orientation, and BMI in a large sample of 471 adults, collected during the 2020 COVID-19 pandemic in the United States. We also provided a comparative context, examining both general medical avoidance (i.e., avoidance of care despite suspected need of care) and discrimination-based medical avoidance (i.e., avoidance of care related to receiving differential, poorer treatment based on one's identity) in these subgroups of participants. Our results showed that general medical avoidance was nuanced, with higher BMI related to more avoidance, but a non-White racial identity was related to *less* avoidance when controlling for other sociodemographic factors. However, for discrimination-based medical avoidance, participants with a higher BMI, who were not White, and/or who were not heterosexual, reported more avoidance. Latinx/e vs. non-Latinx/e identity was not associated with healthcare avoidance in general or due to discriminatory concerns.

Regarding race, these results are contrary to prior literature on medical avoidance and racial identity, which show greater avoidance among non-White patients, compared to White patients (Carethers et al., 2020; Czeisler et al., 2020).

Our results did not replicate that pattern of findings, and in fact found the opposite effect, with White participants being more generally avoidant of healthcare when controlling for gender, education, and income. However, our measure of discrimination-based medical avoidance did show racial differences, with White participants having lower avoidance scores than non-White participants. Taken together, this speaks to the need for consideration of the assessments used in future research on racial disparities in healthcare seeking and resource utilization. Although a sizeable literature documents more medical avoidance on behalf of people of color (e.g., Fiscella & Sanders, 2016), parsing discrimination-based avoidance from other psychological and structural barriers may provide a more nuanced, and ultimately more accurate, understanding of health-seeking behaviors. Additionally, these results provide further evidence for discrimination as a major contributing factor to healthcare avoidance.

Non-heterosexual, compared to heterosexual, sexual orientation was associated with greater medical avoidance due to discrimination, but not general or COVID-19 concerns. This finding aligns with extant literature that characterizes non-heterosexual adults' hesitance to disclose their sexual orientation to providers and seek care due to concerns about negative reactions, bias, prejudice, and poor treatment (Bjarnadottir et al., 2017; Ogden et al., 2020; Rossman et al., 2017). The lack of differences in general and COVID-19-related medical avoidance based on sexual orientation in our sample suggest that concerns about discrimination may drive disparities in engagement with medical services. Additionally, differences in medical avoidance based on sexual orientation for viruses where sexual orientation is relevant to risk (e.g., HIV, AIDS; Price et al., 2020) may not be generalizable to avoidance of COVID-19 treatment.

BMI was related to medical avoidance in general and medical avoidance due to discrimination concerns. That BMI was the sole identity marker that emerged as significant for both forms of medical avoidance suggests that these concerns are especially salient for larger-bodied people. Empirical literature on weight stigma has documented the vast impacts that societal views about body size can have on well-being, including increased depression and anxiety, social withdrawal, and harmful body-modifying behaviors (e.g., extreme dieting) that have long-term physical consequences (for reviews, see Pearl & Puhl, 2018; Puhl & Heuer, 2009). Weight stigma further harms well-being through providers' internalized views, which affect their prescribed treatment (Phelan et al., 2014) and, as our results show, perpetuate personal health issues by creating an aversive environment to those needing healthcare services. The finding of more general medical avoidance for people with larger BMIs is likely another downstream effect of weight stigma. The combined psychological and physical impacts of discrimination, such as anxiety and participation in health-debilitating behaviors (Hunger et al., 2015; Tomiyama, 2014), may underlie the general tendency to not want one's body examined.

Of particular note, our results showed that none of our targeted identities related to COVID-19 medical avoidance. Participants' race, ethnicity, sexual orientation, and BMI were unrelated to their likelihood of seeking healthcare for COVID-19. These results hold when controlling for the effects of participant age, gender, income, and education level. In contrast with healthcare intended for other medical issues, it appears that this novel coronavirus motivates healthcare-seeking behavior similarly among marginalized and majoritized groups. Our results appear to contrast with recent work on healthcare seeking behaviors among marginalized groups during the COVID-19 pandemic. This work suggests that Black adults and, in some cases, Hispanic adults tend to report higher rates of medical avoidance (Czeisler et al, 2020; Gonzalez et al., 2021) when compared to their White counterparts. Additionally, Gonzalez et al., (2021) found that adults with high BMI scores also tended to report delaying or avoiding care at a high rate. However, these studies focused on broader healthcare avoidance, rather than avoidance of COVID-19 healthcare.

The airborne nature and easy transmission of COVID-19 have made contracting the virus somewhat biologically indiscriminate. However, the quality of recovery and the likelihood of exposure differs by socioeconomic status and diagnosis of comorbid conditions (Hawkins et al., 2020; Jackson et al., 2021; Jaljaa et al., 2022; SeyedAlinaghi et al., 2021). Thus, the idea of the type of person who contracts or spreads COVID-19 may not be formed around any specific appearance or attribute—with some exceptions. Studies have documented COVID-19-based stigma toward people who currently are or have previously been infected (e.g., Abuhammad et al., 2021; Lohiniva et al., 2021), and especially toward healthcare personnel treating patients with COVID-19 (Bagcchi, 2020; Grover et al., 2020; Gutierrez et al., 2022; Khan et al., 2021; Ramaci et al., 2020). However, at this time, the only known demographic characteristic that produces COVID-19 stigma in the United States is Asian race (Gutierrez et al., 2022).

This pandemic serves as an unanticipated public health phenomenon that should be noted by researchers and interventionists: messaging around illnesses is critically important for motivating health promotion for all groups but especially marginalized groups. Framing messaging so that it reflects a public health issue *at-large* rather than emphasizing specific groups (e.g., as with HIV and men who have sex with men) may reduce barriers to healthcare in this particular context. Gronholms et al.'s (2021) comprehensive analysis of previous stigma-reduction interventions posed similar recommendations for COVID-19 interventions. First, campaigns and interventions should be intentional in

not attaching target identities (i.e., locations or ethnicities) to public health messages. Second, universal public health strategies, compared to targeted messages, can reduce stigma and combat blame placed on specific communities (Gronholm et al., 2021). We caution against recommending a one-size-fits-all messaging approach with any healthcare issue but put forward our results as pieces to consider in developing new approaches to public health promotion.

Limitations

While this study provides important and novel findings regarding medical avoidance and stigma in the COVID-19 context, it also has several limitations. Due to the small sample sizes of distinct racial groups, all non-White participants were analyzed in aggregate in order to achieve sufficient power for comparative analyses. This dichotomous variable approach limited the amount of nuance regarding the associations between race and medical avoidance, and future research would benefit from recruiting larger samples from non-White racial groups.

Relatedly, sample size limitations also limited the application of an intersectional framework for this study. In the present study, we took a single-axis approach to power and oppression in which we only explored race, ethnicity, sexual identity, and body size as separate predictors rather than considering their intersections. For example, no differences were found between Latinx/e and non-Latinx/e participants despite prior research that suggests differences in medical avoidance between these groups. This unexpected finding may in part be due to our decision to evaluate marginalized identities separately instead of taking an intersectional approach (e.g., Latinx/e and non-Latinx/e participants with higher BMIs) based on limitations in sample size and statistical power to detect effects. These limitations stress the importance of recruiting sufficiently large sample sizes of groups with intersecting facets of their marginalized identities. Additionally, in the present analysis we did not examine the role of socioeconomic status, immigration status, gender identity, age, ability, or chronic illness as other potential sources of health care avoidance that should be examined further in future studies.

Conclusion

This study supports and extends some of the existing literature regarding differences in medical avoidance behaviors among people with multiple marginalized identities. Our findings also contribute to literatures on medical avoidance in general, and discrimination-based medical avoidance more specifically, among people facing stigma in healthcare settings. These findings point to the need for interventions in both healthcare messaging and provider-patient communication to reduce stigmas surrounding race, ethnicity, and weight to enable more people to seek care without fear of discrimination. In addition, this study presents notable findings regarding medical avoidance and the effect that COVID-19 may have regarding the observed difference in medical avoidance disparities between traditionally marginalized and non-marginalized groups. While marginalized people may be just as likely to seek healthcare when they are facing potentially fatal illness, it is crucial to continue efforts to make healthcare environments safer for marginalized individuals to seek all types of care, including prevention and treatment.

Author contributions Study conceptualization: Fikslin, Goldberg, Price, Reinka; Study development: Price; Data analysis: Reinka; Data Interpretation: Fikslin, Goldberg, Holder-Dixon, Reinka; Manuscript writing: Adams, Cobb, Holder-Dixon, Gesselman, Price, Reinka; Manuscript editing: All Authors; Charts and Tables: Holder-Dixon.

Funding We would like to acknowledge and thank Dr. Sarit A. Golub for funding this project with her Hunter College faculty funds, and her support and guidance on this project.

Availability of data and material Data available in the openICPSR public repository (https://www.openicpsr.org/openicpsr/project/156341/version/V1/view).

Code availability Not applicable.

Declarations

Conflict of interest The authors declare they have no financial or non-financial interests related to the content of this manuscript.

Human and animal rights This study involving human participants adhered to the tenets of the Declaration of Helsinki and was approved by the Internal Review Board at The City University of New York (Protocol #2020-0317).

Informed consent All participants in this study provided informed consent.

Consent for publication All participants provided informed consent to the publication of their data.

References

Abdou, C. M., & Fingerhut, A. W. (2014). Stereotype threat among Black and White women in health care settings. *Cultural Diversity and Ethnic Minority Psychology, 20*, 316–323. https://doi.org/10.1037/a0036946

Abuhammad, S., Alzoubi, K. H., & Khabour, O. (2021). Fear of COVID-19 and stigmatization towards infected people among

Jordanian people. *The International Journal of Clinical Practice, 75*, e13899. https://doi.org/10.1111/ijcp.13899

Alcendor, D. J. (2020). Racial disparities-associated COVID-19 mortality among minority populations in the US. *Journal of Clinical Medicine, 9*, 2442. https://doi.org/10.3390/jcm9082442

Bagcchi, S. (2020). Stigma during the COVID-19 pandemic. *The Lancet Infectious Diseases, 20*(7), 782. https://doi.org/10.1016/S1473-3099(20)30498-9

Berry, J., Bumpers, K., Ogunlade, V., Glover, R., Davis, S., Counts-Spriggs, M., Kauh, J., & Flowers, C. (2009). Examining racial disparities in colorectal cancer care. *Journal of Psychosocial Oncology, 27*, 59–83. https://doi.org/10.1080/07347330802614842

Bjarnadottir, R. I., Bockting, W., & Dowding, D. W. (2017). Patient perspectives on answering questions about sexual orientation and gender identity: An integrative review. *Journal of Clinical Nursing, 26*, 1814–1833. https://doi.org/10.1111/jocn.13612

Blumberg, P., & Mellis, L. P. (1985). Medical students' attitudes toward the obese and the morbidly obese. *International Journal of Eating Disorders, 4*, 169–175. https://doi.org/10.1002/1098-108X(198505)4:2%3c169::AID-EAT2260040204%3e3.0.CO;2-F

Cancino, R. S., Su, Z., Mesa, R., Tomlinson, G. E., & Wang, J. (2020). The impact of COVID-19 on cancer screening: Challenges and opportunities. *JMIR Cancer, 6*, e21697. https://doi.org/10.2196/21697

Carethers, J. M., Sengupta, R., Blakey, R., Ribas, A., & D'Souza, G. (2020). Disparities in cancer prevention in the COVID-19 era. *Cancer Prevention Research, 13*, 893–896. https://doi.org/10.1158/1940-6207.CAPR-20-0447

Centers for Disease Control and Prevention. (2022). *Risk for COVID-19 infection, hospitalization, and death by Race/Ethnicity*. Risk for COVID-19 Infection, Hospitalization, and Death by Race/Ethnicity. Retrieved 4 Apr 2022, from https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html.

Clancy, C. M. (2011). Patient engagement in health care. *Health Services Research, 46*, 389. https://doi.org/10.1111/j.1475-6773.2011.01254.x

Cucinotta, D., & Vanelli, M. (2020). WHO declares COVID-19 a pandemic. *Acta Bio-Medica: Atenei Parmensis, 91*, 157–160. https://doi.org/10.23750/abm.v91i1.9397

Czeisler, M. É., Marynak, K., Clarke, K. E., Salah, Z., Shakya, I., Thierry, J. M., Ali, N., McMillan, H., Wiley, J. F., Weaver, M. D., & Czeisler, C. A. (2020). Delay or avoidance of medical care because of COVID-19–related concerns—United States. *Morbidity and Mortality Weekly Report, 69*, 1250. https://doi.org/10.15585/mmwr.mm6936a4

D'Anna, L. H., Hansen, M., Mull, B., Canjura, C., Lee, E., & Sumstine, S. (2018). Social discrimination and health care: A multidimensional framework of experiences among a low-income multiethnic sample. *Social Work in Public Health, 33*, 187–201. https://doi.org/10.1080/19371918.2018.1434584

Del Vecchio Blanco, G., Calabrese, E., Biancone, L., Monteleone, G., & Paoluzi, O. A. (2020). The impact of COVID-19 pandemic in the colorectal cancer prevention. *International Journal of Colorectal Disease, 35*, 1951–1954. https://doi.org/10.1007/s00384-020-03635-6

Fiscella, K., & Sanders, M. R. (2016). Racial and ethnic disparities in the quality of health care. *Annual Review of Public Health, 37*, 375–394. https://doi.org/10.1146/annurev-publhealth-032315-021439

Gonzalez, D., Karpman, M., Kenney, G. M., & Zuckerman, S. (2021). Delayed and Forgone Health Care for Nonelderly Adults during the COVID-19 Pandemic Findings from the September 11–28 Coronavirus Tracking Survey.

Greenleaf, C., Chambliss, H., Rhea, D. J., Martin, S. B., & Morrow, J. R., Jr. (2006). Weight stereotypes and behavioral intentions toward thin and fat peers among White and Hispanic adolescents. *Journal of Adolescent Health, 39*, 546–552. https://doi.org/10.1016/j.jadohealth.2006.01.013

Gronholm, P. C., Nosé, M., Van Brakel, W. H., Eaton, J., Ebenso, B., Fiekert, K., Hanna, F., Milenova, M., Sunkel, C., Barbui, C., & Thornicroft, G. (2021). Reducing stigma and discrimination associated with COVID-19: early stage pandemic rapid review and practical recommendations. *Epidemiology and Psychiatric Sciences*. https://doi.org/10.1016/j.bbi.2020.07.033

Grover, S., Singh, P., Sahoo, S., & Mehra, A. (2020). Stigma related to COVID-19 infection: Are the Health Care Workers stigmatizing their own colleagues? *Asian Journal of Psychiatry, 53*, 102381. https://doi.org/10.1016/j.ajp.2020.102381

Gupta, S., & Lieberman, D. (2020). Screening and surveillance colonoscopy and COVID-19: Avoiding more casualties. *Gastroenterology, 159*, 1205–1208. https://doi.org/10.1053/j.gastro.2020.06.091

Gutierrez, A. M., Schneider, S. C., Islam, R., Robinson, J. O., Hsu, R. L., Canfield, I., & Guerrini, C. J. (2022). Experiences of stigma in the United States during the COVID-19 pandemic. *Stigma and Health*. https://doi.org/10.1037/sah0000354

Haut, E. R., Leeds, I. L., & Livingston, D. H. (2020). The effect on trauma care secondary to the COVID-19 pandemic: Collateral damage from diversion of resources. *Annals of Surgery, 272*, e204. https://doi.org/10.1097/SLA.0000000000004105

Hawkins, R. B., Charles, E. J., & Mehaffey, J. H. (2020). Socio-economic status an COVID-19-related cases and fatalities. *Public Health, 189*, 129–134. https://doi.org/10.1016/j.puhe.2020.09.016

Hoehn, R. S., & Zureikat, A. H. (2020). Cancer disparities in the COVID-19 era. *Journal of Surgical Oncology, 122*, 371–372. https://doi.org/10.1002/jso.26043

Hunger, J. M., Major, B., Blodorn, A., & Miller, C. T. (2015). Weighed down by stigma: How weight-based identity threat contributes to weight gain and poor health. *Social and Personality Psychology Compass, 9*, 255–268. https://doi.org/10.1111/spc3.12172

Interian, A., Lewis-Fernández, R., & Dixon, L. B. (2013). Improving treatment engagement of underserved US racial-ethnic groups: A review of recent interventions. *Psychiatric Services, 64*, 212–222. https://doi.org/10.1176/appi.ps.201100136

Jackson, S. L., Derakhshan, S., Blackwood, L., Lee, L., Huang, Q., Habets, M., & Cutter, S. L. (2021). Spatial disparities of COVID-19 cases and fatalities in United States counties. *International Journal of Environmental Research and Public Health, 18*, 8259. https://doi.org/10.3390/ijerph18168259

Jaiswal, J., & Halkitis, P. N. (2019). Towards a more inclusive and dynamic understanding of medical mistrust informed by science. *Behavioral Medicine, 45*, 79–85. https://doi.org/10.1080/08964289.2019.1619511

Jaljaa, A., Caminada, S., Tosti, M. E., D'Angelo, F., Angelozzi, A., Isonne, C., Marchetti, G., Mazzalai, E., Giannini, D., Turatto, F., & De Marchi, C. (2022). Risk of SARS-CoV-2 infection in migrants and ethnic minorities compared with the general population in the European WHO region during the first year of the pandemic: A systematic review. *BMC Public Health*. https://doi.org/10.1186/s12889-021-12466-1

Japuntich, S. J., Krieger, N. H., Salvas, A. L., & Carey, M. P. (2018). Racial disparities in lung cancer screening: An exploratory investigation. *Journal of the National Medical Association, 110*, 424–427. https://doi.org/10.1016/j.jnma.2017.09.003

Khan, S., Akter, S., Khan, T., Shariar, G., & Awal Miah, M. A. (2021). Psychological distress among Bangladeshi physicians: Roles of perceived stigma, fear of infection and resilience in the context of

COVID-19 pandemic. *Journal of Social Distress and Homelessness*. https://doi.org/10.1080/10530789.2021.1892932

Lohiniva, A. L., Dub, T., Hagberg, L., & Nohynek, H. (2021). Learning about COVID-19-related stigma, quarantine, and isolation experiences in Finland. *PLoS ONE, 16*, e0247962. https://doi.org/10.1371/journal.pone.0247962

McGuigan, R. D., & Wilkinson, J. M. (2015). Obesity and healthcare avoidance: A systematic review. *AIMS Public Health, 2*, 56. https://doi.org/10.3934/publichealth.2015.1.56

Mensinger, J. L., Tylka, T. L., & Calamari, M. E. (2018). Mechanisms underlying weight status and healthcare avoidance in women: A study of weight stigma, body-related shame and guilt, and healthcare stress. *Body Image, 25*, 139–147. https://doi.org/10.1016/j.bodyim.2018.03.001

Miller, E. D. (2020). The COVID-19 pandemic crisis: The loss and trauma event of our time. *Journal of Loss and Trauma, 25*, 560–572. https://doi.org/10.1080/15325024.2020.1759217

Misa, N.-Y., Perez, B., Basham, K., Fisher-Hobson, E., Butler, B., King, K., White, D. A., & Anderson, E. S. (2021). Racial/ethnic disparities in COVID-19 disease burden & mortality among emergency department patients in a safety net health system. *The American Journal of Emergency Medicine, 45*, 451–457. https://doi.org/10.1016/j.ajem.2020.09.053

Moghadas, S. M., Shoukat, A., Fitzpatrick, M. C., Wells, C. R., Sah, P., Pandey, A., Sachs, J. D., Wang, Z., Meyers, L. A., Singer, B. H., & Galvani, A. P. (2020). Projecting hospital utilization during the COVID-19 outbreaks in the United States. *Proceedings of the National Academy of Sciences, 117*, 9122–9126. https://doi.org/10.1073/pnas.2004064117

Muñoz-Price, L. S., Nattinger, A. B., Rivera, F., Hanson, R., Gmehlin, C. G., Perez, A., Singh, S., Buchan, B. W., Ledeboer, N. A., & Pezzin, L. E. (2020). Racial disparities in incidence and outcomes among patients with COVID-19. *JAMA Network Open, 3*, e2021892–e2021892. https://doi.org/10.1001/jamanetworkopen.2020.21892

National Cancer Institute. (2005). *Health Information National Trends Survey 2005 (HINTS 2005) Main Study Interview Instrument - English*. Retrieved from https://hints.cancer.gov/docs/Instruments/HINTS_2005_Instrument-English.pdf

Ogden, S. N., Scheffey, K. L., Blosnich, J. R., & Dichter, M. E. (2020). "Do I feel safe revealing this information to you?": Patient perspectives on disclosing sexual orientation and gender identity in healthcare. *Journal of American College Health, 68*, 617–623. https://doi.org/10.1080/07448481.2019.1583663

Patel, S., Lorenzi, N., Smith, T., Carlson, B. R., & Sternberg, P., Jr. (2020). Critical insights from patients during the Covid-19 pandemic. *NEJM Catalyst Innovations in Care Delivery*. https://doi.org/10.1056/CAT.20.0299

Pearl, R. L., & Puhl, R. M. (2018). Weight bias internalization and health: A systematic review. *Obesity Reviews, 19*, 1141–1163. https://doi.org/10.1111/obr.12701

Pellowski, J. A., Price, D. M., Allen, A. M., Eaton, L. A., & Kalichman, S. C. (2017). The differences between medical trust and mistrust and their respective influences on medication beliefs and ART adherence among African-Americans living with HIV. *Psychology & Health, 32*, 1127–1139. https://doi.org/10.1080/08870446.2017.1324969

Phelan, S. M., Dovidio, J. F., Puhl, R. M., Burgess, D. J., Nelson, D. B., Yeazel, M. W., Hardeman, R., Perry, S., & Van Ryn, M. (2014). Implicit and explicit weight bias in a national sample of 4,732 medical students: The medical student CHANGES study. *Obesity, 22*, 1201–1208. https://doi.org/10.1002/oby.20687

Pope, J., Banaag, A., Madsen, C., Hanson, T., Khan, M., & Koehlmoos, T. P. (2021). The mitigation of racial disparities in cervical cancer screening among US active duty service women. *Military Medicine, 186*, e373–e378. https://doi.org/10.1093/milmed/usaa427

Price, D. M., Fikslin, R. A., Goldberg, A. J., Gesselman, A. N., Loubriel, J. C., & Brooks, J. (2020). Sexual orientation and differences in HIV cognitions. *Personality and Individual Differences, 152*, 109531. https://doi.org/10.1016/j.paid.2019.109531

Puhl, R. M., & Heuer, C. A. (2009). The stigma of obesity: A review and update. *Obesity, 17*, 941. https://doi.org/10.1038/oby.2008.636

Ramaci, T., Barattucci, M., Ledda, C., & Rapisarda, V. (2020). Social stigma during COVID-19 and its impact on HCWs outcomes. *Sustainability, 12*, 3834. https://doi.org/10.3390/su12093834

Reader, T. W., & Gillespie, A. (2013). Patient neglect in healthcare institutions: A systematic review and conceptual model. *BMC Health Services Research, 13*, 1–15. https://doi.org/10.1186/1472-6963-13-156

Rogers, T. N., Rogers, C. R., VanSant-Webb, E., Gu, L. Y., & Quedan, F. (2020). Racial disparities in COVID-19 mortality among essential workers in the United States. *World Medical Health Policy, 12*, 311–327. https://doi.org/10.1002/wmh3.358

Rossman, K., Salamanca, P., & Macapagal, K. (2017). A qualitative study examining young adults' experiences of disclosure and nondisclosure of LGBTQ identity to health care providers. *Journal of Homosexuality, 64*, 1390–1410. https://doi.org/10.1080/00918369.2017.1321379

SeyedAlinaghi, S., Abbasian, L., Solduzian, M., Ayoobi Yazdi, N., Jafari, F., Adibimehr, A., Farahani, A., Salami Khaneshan, A., Ebrahimi Alavijeh, P., Jahani, Z., & Karimian, E. (2021). Predictors of the prolonged recovery period in COVID-19 patients: A cross-sectional study. *European Journal of Medical Research*. https://doi.org/10.1186/s40001-021-00513-x

Shah, M., Sachdeva, M., & Dodiuk-Gad, R. P. (2020). COVID-19 and racial disparities. *Journal of the American Academy of Dermatology, 83*, e35. https://doi.org/10.1016/j.jaad.2020.04.046

Tomiyama, A. J. (2014). Weight stigma is stressful. A review of evidence for the Cyclic Obesity/Weight-Based Stigma model. *Appetite, 82*, 8–15. https://doi.org/10.1016/j.appet.2014.06.108

Underhill, K., Morrow, K. M., Colleran, C., Holcomb, R., Calabrese, S. K., Operario, D., Galárraga, O., & Mayer, K. H. (2015). A qualitative study of medical mistrust, perceived discrimination, and risk behavior disclosure to clinicians by US male sex workers and other men who have sex with men: Implications for biomedical HIV prevention. *Journal of Urban Health, 92*, 667–686. https://doi.org/10.1007/s11524-015-9961-4

Wright, A., Salazar, A., Mirica, M., Volk, L. A., & Schiff, G. D. (2020). The invisible epidemic: Neglected chronic disease management during COVID-19. *Journal of General Internal Medicine, 35*, 2816–2817. https://doi.org/10.1007/s11606-020-06025-4

Yu, J., Hammond, G., Waken, R., Fox, D., & Joynt Maddox, K. E. (2021). Changes in non-COVID-19 emergency department visits by acuity and insurance status during the covid-19 pandemic: Study examines non-COVID-19 emergency department use. *Health Affairs, 40*, 896–903. https://doi.org/10.1377/hlthaff.2020.02464