A 10-Year Social Media Analysis Exploring Hospital Online Support of Black Lives Matter and the Black Community

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Abstract

IMPORTANCE  Tensions around COVID-19 and systemic racism have raised the question: are hospitals advocating for equity for their Black patients? It is imperative for hospitals to be supportive of the Black community and acknowledge themselves as safe spaces, run by clinicians and staff who care about social justice issues that impact the health of the Black community; without the expression of support, Black patients may perceive hospitals as uncaring and unsafe, potentially delaying or avoiding treatment, which can result in serious complications and death for those with COVID-19.

OBJECTIVE  To explore how hospitals showed public-facing support for the Black community as measured through tweets about social equity or the Black Lives Matter (BLM) movement.

DESIGN, SETTING, AND PARTICIPANTS  Using a retrospective longitudinal cohort study design, tweets from the top 100 ranked hospitals were collected, starting with the most recent over a 10-year span, from May 3, 2009, to June 26, 2020. The date of the George Floyd killing, May 25, 2020, was investigated as a point of interest. Data were analyzed from June 11 to December 4, 2020.

MAIN OUTCOMES AND MEASURES  Tweets were manually identified based on 4 categories: BLM, associated with the BLM movement; Black support, expressed support for Black population within the hospital’s community; Black health, pertained to health concerns specific to and the creation of health care for the Black community; or social justice, associated with general social justice terms that were too general to label as Black. If a tweet did not contain any hashtags from these categories, it remained unlabeled.

RESULTS  A total of 281,850 tweets from 90 unique social media accounts were collected. Each handle returned at least 1279 tweets, with 85 handles (94.4%) returning at least 3000 tweets. Tweet publication dates ranged from 2009 to 2020. A total of 274 tweets (0.097%) from 67 handles (74.4%) used a hashtag to support the BLM movement. Among the tweets labeled BLM, the first tweet was published in 2018 and only 4 tweets (1.5%) predated the killing of George Floyd. A similar trend of low signal observed was detected for the other categories (Black support: 244 tweets [0.086%] from 42 handles [46.7%] starting in 2013; Black health: 28 tweets [0.0099%] from 15 handles [16.7%] starting in 2018; social justice: 40 tweets [0.014%] from 21 handles [23.3%] starting in 2015).

CONCLUSIONS AND RELEVANCE  These findings reflect the low signal of tweets regarding the Black community and social justice in a generalized way across approximately 10 years of tweets for all the hospital handles within the data set. From 2009 to 2020, hospitals rarely engaged in issues pertaining to the Black community and if so, only within the last half of this time period. These later entrances into these discussions indicate that these discussions are relatively recent.
Introduction

Research has shown that patients who perceive their health care practitioners as concerned and compassionate experience better health outcomes.\textsuperscript{1,3} To that end, hospitals have increasingly leveraged social media to promote themselves as safe spaces for marginalized populations, such as Black individuals, to receive nondiscriminatory care.\textsuperscript{5-8} Our study seeks to examine whether hospitals express support for the Black population in relation to social justice issues on the social media platform Twitter.

This approach reflects the dominance of social media in addressing social justice issues online within the United States. In the US, a greater proportion of Black individuals use Twitter relative to White individuals, with the extensive conversations and communities of Black users and Black followers often referred to as Black Twitter.\textsuperscript{8,9} The hashtag synonymous with Black social justice issues, #BlackLivesMatter, and its diminutive #BLM, first appeared in 2012,\textsuperscript{10} and by 2016, it was the third most used social cause hashtag on the platform,\textsuperscript{11} appearing a mean of 17,002 times per day between 2013 and 2018.\textsuperscript{12} Although often used following fatal encounters with law enforcement, #BlackLivesMatter also became an important tool to raise awareness around health inequities in Black communities, such as HIV, adequate access to analgesia, and cancer screening.\textsuperscript{13,14}

In 2020, #BlackLivesMatter took on new urgency owing to the convergence of several public health crises that disproportionately impacted Black communities, including the COVID-19 pandemic and several high-profile cases of police violence against Black men and women. The Centers for Disease Control and Prevention estimates that cases of COVID-19 are 2.6-fold higher among the Black population than the White population,\textsuperscript{15} and that Black people with COVID-19 are 4.7-fold more likely to be hospitalized and 2.1-fold more likely to die than White people.\textsuperscript{16,17} Risk of death from COVID-19 is exacerbated in areas with larger populations of racial and ethnic minorities, such as Black individuals.\textsuperscript{18} This disparity reflects underlying social determinants of health: Black people are more likely to live in poverty, have limited access to health care,\textsuperscript{19,20} and work in essential, public-facing positions with limited social distancing and access to personal protective equipment.\textsuperscript{21} The ongoing incidents of police violence have resulted in demonstrations and discussions about the social and health impacts of systemic racism in America. While these events raised awareness, they also appeared to have heightened historic distrust of the medical community among underserved Black communities who expressed concerns about being exploited by researchers testing COVID-19 treatments and vaccines.\textsuperscript{22-24}

It is imperative for hospitals to acknowledge themselves as safe spaces, run by clinicians and staff who care about social justice issues impacting the health of the Black community. Without the promotion of activism for the Black Lives Matter (BLM) movement, Black patients may perceive hospitals as uncaring and unsafe, possibly delaying or avoiding treatment,\textsuperscript{25,26} potentially resulting in serious complications and death for those with COVID-19.\textsuperscript{27} We explored how hospitals showed public-facing support for the Black community as measured through tweets about social equity and/or the BLM movement.

Methods

This cohort study was approved by the Boston Children's Hospital internal review board. Informed consent was waived because this study did not include any human participants.

Using the Newsweek world's best hospitals 2020 list,\textsuperscript{28} we accessed each of the top 100 ranked hospitals' official websites to retrieve their official account name on the social media platform. Since each account was obtained via hospital websites, it is reasonable to conclude that these hospital handles are run in an official capacity. The media relations department traditionally handles all outgoing communication for hospitals.

We pulled the most recent tweets from each handle starting from June 26, 2020, using the platform's application programming interface until the interface would no longer return tweets for
the handle. A total of 90 unique handles were collected from the top 100 hospitals. For hospitals that were part of the same health care system, the same handle represented several hospitals. One hospital did not have a handle linked to their website and was excluded from analysis.

To identify discussions related to the Black population, we reviewed the returned data to collect all hashtags used (including hashtags in retweeted or quoted tweets), conducting a keyword search for Black, AfricanAmerican, and race. Additionally, we conducted searches for specific hashtags related to BLM but not captured by the previous search (eg, BLM and justice to capture hashtags such as racialjustice or justiceforGeorgeFloyd).

Two of us (D.T.H. and Y.H.) manually reviewed all hashtags to remove any unrelated to the Black population (for example blackbeans would have been identified by our search because it has black in the hashtag but not included for our analysis). After a hashtag review, we pulled all tweets that included the identified hashtags to label if the tweet was BLM-related. To identify themes of analytic interest, data were coded by 2 of us (D.T.H. and Y.H.), and themes were built from codes.29-31 Four themes emerged through this thematic analysis31,32: (1) BLM, associated with the BLM movement; (2) Black support, expressed support for the Black population within the hospital's community; (3) Black health, pertained to health concerns specific to and the creation of health care for the Black community; and (4) social justice, associated with general social justice terms that were too general to label as Black-focused (eg, "racism," peopleofcolor, and healthjustice).

Both original tweets and retweets were extracted based on these groupings. We pulled all of the hashtags used in the identified tweets of interest, and based on these themes that emerged, we separated hashtags and manually categorized each tweet accordingly. Tweets that contained hashtags from more than 1 category were assigned to multiple categories. The 4 categories and tweet categorization were confirmed by all authors. We again manually reviewed a sample from each hashtag grouping to select the examples of tweets within each category that are provided in Table 1.

Data Analysis
For each category, we explored 4 types of descriptive data. First, how many tweets contained the hashtags that defined the category? Second, how many handles were represented? Third, what were the tweet publication dates? And fourth, what were the most common hashtags?

Analyses were conducted in Python version 2.7.6 (Python Software Foundation). Data were analyzed from June 11 to December 4, 2020.

Results
We collected a total of 281 850 tweets for 90 unique handles for the top 100 hospitals. Each hospital account returned at least 1279 tweets, with 85 handles (94.4%) returning at least 3000 tweets, and 74 handles (82.2%) returning at least 3200 tweets. The earliest tweet collected was published on May 3, 2009, and the latest was on June 26, 2020.

Category Results
BLM
A total of 274 tweets (0.097%) used a hashtag to support the BLM movement, and a total of 67 handles (74.4%) had tweets in the BLM category. Of those 67 handles, 26 (38.8%) had only 1 tweet in this category. The first tweet was published on April 13, 2018 (5 years after the BLM movement and organization was founded). The date of the George Floyd killing, May 25, 2020, was investigated as a point of interest, and we observed that only 4 tweets that were labeled as BLM predated his killing. The median date of all tweets labeled within the BLM category was June 5, 2020 (IQR, 3 days). The most common hashtags used among these tweets included #GeorgeFloyd and 4 variations of #BlackLivesMatter, including 2 variations of #whitecoatsforBlacklives.
Black Support
We found 244 tweets (0.086%) with hashtags expressing acknowledgment or support of the Black community, and a total of 42 handles (46.7%) published tweets contained in the Black support category, 10 of which (23.8%) had only 1 tweet in this category. The first tweet was published on February 21, 2013, and the median tweet date was August 19, 2019 (IQR, 375 days). Popular hashtags recognized Black History Month and Black men and women in medicine.

Black Health
There were only 28 tweets (0.0099%), generated by 15 handles (16.7%), that used hashtags supporting Black community health concerns. Of these 15 handles, 13 (86.7%) had 1 tweet. The first tweet was published on February 12, 2018, and the median tweet date was December 17, 2019 (IQR, 475 days). Popular hashtags referenced African Americans, Black health, and Black lives.

Social Justice
We found 40 tweets (0.014%), produced by 21 handles (23.3%), containing hashtags in the social justice category. Of those 21 handles, 13 handles (61.9%) had 1 social justice tweet. The first tweet was published on April 10, 2015, and the median tweet date for the category was November 28, 2019 (IQR, 453 days). Popular hashtags referred to race and racism in general.

Table 1. Example of Tweets Labeled Within Each Category

| Category         | Examples of tweets                                                                                                                                                                                                                                                                                                                                 |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Black Lives Matter | At 1 pm, faculty, staff and students will take a knee for 8 min and 46 s as part of the national WhiteCoatsForBlackLives movement. [link]                                                                                                                                                                                                                                                                 |
|                  | To demonstrate solidarity against racism, inequity and oppression, [institution] residents along with the larger [institution] community joined the WhiteCoatsforBlackLives today to honor George Floyd and the other victims who have been killed as a result of police brutality. [link]                                                                                                                                       |
|                  | We condemn the underlying culture of racism and violence in our country that has led us to where we are today. We’re so proud of all our people who participated in WhiteCoatsForBlackLives, and we stand in solidarity with those who call for justice and reconciliation. [link]                                                                                                                |
| Black support    | At 17, [person] interviewed for the [institute] 6 y bachelor’s to MD program, declaring to then-dean [name], “if you give me the chance, I won’t let you down.” [name], the only African American & female in the class of 1935, graduated in the top 15. #BlackHistoryMonth [link]                                                                                                             |
|                  | In 1944, Drs. Blalock & Taussig earned international acclaim for their new surgery, while Thomas went unnoticed. However, the success of the procedure could not have been accomplished without his research and operating room expertise. #BlackHistoryMonth [link]                                                                                              |
|                  | These black #physicians and #scientists are challenging, changing and writing history at [institution]. #BlackHistoryMonth [link]                                                                                                                                                                                                                       |
| Black health     | Physicians & staff joined in a moment of silence [institution] as a commitment to improve the health & safety of people of color; show support for patients, colleagues, family, friends & their communities. HealthCareForBlackLives [institution hashtags] [link]                                                                                                      |
|                  | Our new study on #dementia may help to explain the higher incidence of dementia among #Hispanics and #AfricanAmericans [institution] [institution researcher] [link]                                                                                                                                                                                  |
|                  | Son of a slave and an indentured servant. Escaped to Canada on the #UndergroundRailroad. Graduated from the [institution] #medschool. Founded a medical school for #AfricanAmericans. Learn more about [physician name]: [link]                                                                                                                                              |
| Social justice   | Today, we joined #healthcare workers in [city] to raise awareness of #racialjustice and to show support for the Black Lives Matter movement. #doctorsforjustice [link]                                                                                                                                                                                                  |
|                  | A new op-ed published via @NYDailyNews, by CMO Dr [name] and vice chair of the Department of Medicine and gastroenterologist Dr [name], addresses how to ask better questions when having conversations about #race and #racism. [link]                                                                                                                                                                         |
|                  | A recent statement from the @AmerAcadPeds says pediatricians are “deeply concerned about the effects of #racism on children.” So, how can you begin talking with children about #racialbias and injustice issues? [link]                                                                                                                                                                                                 |
| Uncategorized     | A patient with confirmed COVID19 is an inpatient at the [institution]. The patient is in stable condition. We are confident that we are using proper precautions with this patient. Learn more:[link]                                                                                                                                                                                   |
|                  | The coronavirus rapidly hijacks healthy cells in the respiratory tract and lungs. This can lead to pneumonia and acute respiratory distress syndrome (ARDS). See how coronavirus takes over the lungs.                                                                                                                                                                                                 |
|                  | Learn more about COVID-19: [link] [link]                                                                                                                                                                                                                                                                                                           |

Abbreviation: CMO, chief medical officer.
Uncategorized Tweets
Most tweets did not pertain to any of the categories listed (281 283 tweets [99.8%]). All hospital handles were represented in this group. The first tweet was published on May 3, 2009, and the median tweet date was December 18, 2018 (IQR, 812 days).

Summary Results
Results for each category of tweets are summarized in Table 2. Figure 1 shows the number of tweets for each hospital handle for each category. For added context, we plotted each handle’s total number of uncategorized tweets on each category’s plot. The labeled tweets per hospital ranged from 0 to 46 tweets, and the median date for each category was in 2019, within 1 year of when the data was collected. The uncategorized tweets per hospital ranged from 1279 to 3250 tweets, and the median date was in 2018. Figure 2 shows the cumulative number of tweets across time from May 3, 2009, to June 26, 2020. Again, we added uncategorized tweets to each category’s plot for added context.

Discussion
The findings of this cohort study reflect the low signal of tweets regarding the Black community and generalized social justice from hospitals in the US. It is evident from the lack of signal for labeled tweets relative to uncategorized tweets. This lack of discussion surrounding the Black community is a trend across approximately 10 years of tweets across all hospitals within our data set. Of the small percentage of tweets that had Black community or social justice labels, the earliest tweets are at least 6 years later than the earliest tweet published in the data set. This, along with the median dates within a year of collection, indicate that these discussions are relatively recent.

Most hospitals and hospital systems focus their tweets on somatic health. While some hospitals framed COVID-19 as a public health crisis and noted its disparate impact in Black communities, the signal was low. Hospitals tended to separate messages about Black health and COVID-19. Although

| Category          | Tweets | Hospital handles, No. (%) | Date of first tweet | Median date (IQR, d) | 5 Most common hashtags used (No. times used) |
|-------------------|--------|---------------------------|---------------------|----------------------|----------------------------------------------|
| Black Lives Matter| 274    | 67 (74.4)                 | 4/13/18             | 6/5/20 (3)           | #whitecoatsforblacklives (242) #blacklivesmatter (125) #whitecoats4blacklives (21) #blm (16) #georgefloyd (16) |
| Black Support     | 244    | 42 (46.7)                 | 2/21/13             | 08/19/19 (175)       | #blackhistorymonth (179) #blackmeninmedicine (70) #aninstitutionhashtag (31) #diversity (16) #blackwomeninmedicine (14) |
| Black Health      | 28     | 15 (16.7)                 | 2/12/18             | 12/17/19 (475)       | #africanamerican or #africanamericans (15) #healthcareforblacklives (10) #blackhealth (3) #massachusetts (2) |
| Social Justice    | 40     | 21 (23.3)                 | 4/10/15             | 11/28/2019 (453)     | #racism (24) #race (9) #publichealth (4) #cov19 (4) #whitecoatsforblacklives (4) |
| Uncategorized      | 281 283| 90 (100)                  | 5/3/09              | 12/18/18 (812)       | #cov19 (11 660) #cancer (4404) #coronavirus (3072) #breastcancer (2251) #health (1896) |
we cannot determine the intention with these tweets, the hospitals’ separation of BLM and COVID-19 effectively elides the disparate impact of COVID-19 in Black communities.

Only 4 tweets involving BLM occurred prior to the killing of George Floyd on May 25, 2020, while 270 tweets occurred after. Hospital participation in the national response to his killing is evidenced by the most popular hashtag in the group (#GeorgeFloyd). It is not possible to determine whether the increases in tweets related to BLM will continue at these hospitals or reflect a response to a specific event. Institutions may consider ongoing use of social justice hashtags to be outside their scope or overly political, but hospitals can powerfully leverage social justice to demonstrate concern for the health and well-being of the Black members of the communities they serve. Whether intentional or not, these top hospitals are not communicating nor demonstrating outwardly that they care about issues and concerns specific to the Black community. Because of this, Black communities may not feel represented at top hospitals. Erasure from public discourse has been shown to be negatively associated with the quality of care delivered to marginalized populations and with the uptake of care by these populations.

A 2021 study by Kiang and Tsai examined the public

Figure 1. Tweets Per Hospital Per Category

Total amount of tweets per hospital (log10) in each category (orange dots) and uncategorized tweets (blue dots). The uncategorized hospitals are ordered in the assigned Newsweek ranking from left to right. Hospitals without an orange dot did not publish any tweets labeled within that category.
communication statements of 56 leading US medical schools after the George Floyd killing. Kiang and Tsai found that most medical schools failed to make reference to the killing of George Floyd by the police and historical racism against Black people.36

Social justice has been shown to be a powerful tool in addressing health inequities in Black communities, motivating changes in policy to improve public health outcomes37-39 related to access to care,40,41 quality of care delivery,42 and overall health care outcomes.43 In addition, hospitals that leverage social justice messaging and hashtags may be able to further the reach of their tweets and better engage communities. Indeed, some studies, such as a 2018 study by Edrington,44 have suggested that tweets that contain calls to action related to social and health policy are more likely to be engaged and retweeted.

We recognize that our analysis is based only on hashtags and not on text, creating conservative grouping. However, a critical consideration is that general social media etiquette includes hashtags, especially when a user wants to ensure that their message is clearly stated and grouped with messages like it for increased visibility. Hospitals tend to employ professional communications teams versed in social media norms and likely are well versed in labeling messages for public consumption. While conservative, we believe these tweets capture the social justice messages that hospitals wanted amplified via signal boosting through hashtags.

To our knowledge, this is the first study that has looked at hospital advocacy of Black social justice issues and BLM in particular. Additionally, this study illustrates a baseline of how hospitals are tweeting. While there were few communications about BLM in this set of tweets, our study could provide guidance for further work concerning how online BLM advocacy may be associated with trust or improved health outcomes in the Black population a hospital serves. By providing hypotheses for future studies, our work may advance research to define the importance of trust and how it relates to promotion of Black community and social justice issues. It also may encourage hospitals to expand their social justice advocacy of historically underserved populations in an effort to increase community trust and improve the health outcomes of affected populations.

Further analysis needs to be conducted to find other potential signals and avenues that communicate effective engagement (eg, examining other social media sites or community-based outreach). We hope that our work inspires future research on how a hospital's advocacy and

Figure 2. Cumulative Number of Tweets Across Time
outward-facing discussion centered on health disparities and social injustices could help to advocate for and support the Black population in terms of trust and safety. We hope that future analyses contextualize our findings further by exploring whether community- or minority-based hospitals are more likely to engage in social justice, whether there are differences in levels of hospital engagement by minority group, and sentiment and linguistic properties that extend beyond hashtags. Eventually, it is our aim that this analysis will be expanded to include more US hospitals varying in conventional ranking and community demographics served.

Limitations
This study has some limitations. It is possible that we would have seen more hospitals engaged in these topics if we had expanded our method to have less conservative grouping. We also may not have included all hashtags associated with BLM (eg, #protest, #policebrutality). Again, we argue that if a hospital wanted to publicly engage in these topics, they would have used hashtags central to movements to take advantage of signal boosting.45,46

We also recognize that we have included only the top 100 ranked hospitals according to Newsweek; thus, our results may not be generalizable to all hospitals in the US. We did not include community- or minority-based hospitals as a comparison to explore if these hospitals that do not rank high in conventional US hospital rankings would rank high in terms of advocacy.

Conclusions
The findings of this cohort study help to shed light on how hospitals use social media and hashtags to address social justice issues impacting the Black communities they serve. It is important for health organizations to realize how they engage with their communities via social media. These brief engagements can communicate an institution’s dedication to the health and well-being of the populations they serve. Such engagements are particularly important among underserved and marginalized groups, which historically have not trusted mainstream health organizations and are, in general, heavy users of communications platforms. Health organizations that thoughtfully address social justice issues online may be able to build trust and bolster uptake of their services among these groups and help to improve their health outcomes overall.
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REFERENCES

1. Pace TWW, Dodds SE, Sikorskii A, et al. Cognitively-based compassion training versus cancer health education to improve health-related quality of life in survivors of solid tumor cancers and their informal caregivers: study protocol for a randomized controlled pilot trial. Trials. 2019;20(1):247. doi:10.1186/s13063-019-3320-9

2. Hswen Y, Hawkins JB, Sewalk K, et al. Racial and ethnic disparities in patient experiences in the United States: 4-year content analysis of Twitter. J Med Internet Res. 2020;22(8):e17048. doi:10.2196/17048

3. Hswen Y, Zhang A, Sewalk KC, Tuli G, Brownstein JS, Hawkins JB. Investigation of geographic and macrolevel variations in LGBTQ patient experiences: longitudinal social media analysis. J Med Internet Res. 2020;22(7):e17087. doi:10.2196/17087

4. Hswn Y, Sewalk KC, Alsentzer E, Tuli G, Brownstein JS, Hawkins JB. Investigating inequities in hospital care among lesbian, gay, bisexual, and transgender (LGBT) individuals using social media. Soc Sci Med. 2018;215:92-97. doi:10.1016/j.socscimed.2018.08.031

5. Richter JP, Muhlestein DB, Wilks CE. Social media: how hospitals use it, and opportunities for future use. J Healthc Manag. 2014;59(6):447-460. doi:10.1097/00115514-201411000-00011

6. Griffith HM, Kilaru AS, Werner RM, et al. Use of social media across US hospitals: descriptive analysis of adoption and utilization. J Med Internet Res. 2014;16(11):e264. doi:10.2196/jmir.3758

7. Wong CA, Merchant RM, Moreno MA. Using social media to engage adolescents and young adults with their health. Healthc (Amst). 2014;2(4):220-224. doi:10.1016/j.hjdsi.2014.10.005

8. Ince, J., F. Rojas, and C.A. Davis, The social media response to Black Lives Matter: how Twitter users interact with Black Lives Matter through hashtag use. Ethn Racial Stud. 2017;40(11):1814-1830. doi:10.1080/01419870.2017.1334931

9. Wortham, J. Black tweets matter. Smithsonian Magazine. September 2016. Accessed August 23, 2021. https://www.smithsonianmag.com/arts-culture/black-tweets-matter-180960117/

10. Freelon D, McIlwain CD, Clark MD. Beyond the hashtags: #Ferguson, #BlackLivesMatter, and the online struggle for offline justice. Center for Media & Social Impact. February 29, 2016. Accessed August 23, 2021. https://cnsimimpact.org/resource/beyond-hashtags-ferguson-blacklivesmatter-online-struggle-offline-justice/

11. Anderson M. The hashtag #BlackLivesMatter emerges: Social activism on Twitter. Pew Research Center. August 15, 2016. Accessed August 23, 2021. https://www.pewresearch.org/internet/2016/08/15/the-hashtag-blacklivesmatter-emerges-social-activism-on-twitter/

12. Anderson M, Toor S, Rainie L, Smith A. An analysis of #BlackLivesMatter and other Twitter hashtags related to political or social issues. July 11, 2018. Pew Research Center. Accessed August 23, 2021. https://www.pewresearch.org/internet/2018/07/11/an-analysis-of-blacklivesmatter-and-other-twitter-hashtags-related-to-political-or-social-issues/

13. Eichelberger KY, Doll K, Ekpo GE, Zerden ML. Black Lives Matter: claiming a space for evidence-based outrage in obstetrics and gynecology. Am J Public Health. 2016;106(10):1771-1772. doi:10.2105/AJPH.2016.303313

14. Bonilla, T. and A.B. Tillery, Which identity frames boost support for and mobilization in the #BlackLivesMatter movement: an experimental test. Am Poli Sci Rev. 2020;114(4):947-962. doi:10.1017/S0003055420000544

15. Centers for Disease Control and Prevention. Risk for COVID-19 infection, hospitalization, and death by race/ethnicity. Updated September 2021. Accessed August 6, 2021. https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html

16. Centers for Disease Control and Prevention. COVID Data Tracker weekly review. Accessed August 6, 2020. https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html

17. Centers for Disease Control and Prevention. Daily updates of totals by week and state: provisional death counts for coronavirus disease 2019 (COVID-19). Accessed August 6, 2020. https://www.cdc.gov/nchs/nvss/vsrr/COVID19/index.htm

18. Cheng KJG, Sun Y, Monnat SM. COVID-19 death rates are higher in rural counties with larger shares of Blacks and Hispanics. J Rural Health. 2020;36(4):602-608. doi:10.1111/jrh.12511
19. Income, poverty, and health insurance coverage in the United States. 2019. News release. US Census Bureau. September 15, 2020. Accessed August 23, 2021. https://www.census.gov/newsroom/press-releases/2020/income-poverty.html

20. Bateelaan K. 'When Whites catch a cold, Black folks get pneumonia': a look at racialized poverty, space and HIV/AIDS. Soc Identities. 2021;27(2):262-282. doi:10.1080/13504630.2020.1823827

21. Storer A, Schneider D, Harknett K. What explains race/ethnic inequality in job quality in the service sector? Washington Center for Equitable Growth. October 16, 2019. Accessed August 23, 2021. https://equitablegrowth.org/working-papers/what-explains-race-ethnic-inequality-in-job-quality-in-the-service-sector/

22. Louis-Jean J, Cenat K, Njoku CV, Angelo JS, Sanon D. Coronavirus (COVID-19) and racial disparities: a perspective analysis. J Racial Ethn Health Disparities. 2020;7(6):1039-1045. doi:10.1007/s40615-020-00879-4

23. Webb Hooper M, Nápoles AM, Pérez-Stable EJ. COVID-19 and racial/ethnic disparities. JAMA. 2020;323(24):2466-2467. doi:10.1001/jama.2020.8598

24. Fisher KA, Bloomstone SJ, Walder J, Crawford S, Fouayzi H, Mazor KM. Attitudes toward a potential SARS-CoV-2 vaccine: a survey of U.S. adults. Ann Intern Med. 2020;173(12):964-973. doi:10.7326/M20-3569

25. Dovidio JF, Penner LA, Albrecht TL, Norton WE, Gaertner SL, Shelton JN. Disparities and distrust: the implications of psychological processes for understanding racial disparities in health and health care. Soc Sci Med. 2008;67(3):478-486. doi:10.1016/j.socscimed.2008.03.019

26. Obek C, Doganca T, Argun OB, Kural AR. Management of prostate cancer patients during COVID-19 pandemic. Prostate Cancer Prostatic Dis. 2020;23(3):398-406. doi:10.1038/s41391-020-0258-7

27. Tai DBG, Shah A, Doubeni CA, Sia IG, Wieland ML. The disproportionate impact of COVID-19 on racial and ethnic minorities in the United States. Clin Infect Dis. 2021;72(4):703-706. doi:10.1093/cid/ciaa815

28. Newsweek. The world’s best hospitals 2020. Accessed June 22, 2020. https://www.newsweek.com/best-hospitals-2020/united-states

29. Namey EE, Guest G, MacQueen KM. Applied Thematic Analysis. Sage Publications; 2012. doi:10.4135/9781483384436

30. Boyatzis R. Transforming Qualitative Information: Thematic Analysis and Code Development. Sage Publications; 1998.

31. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77-101. doi:10.1191/147808706qp063oa

32. Bernard RH, Ryan AM. 2009. doi:10.1007/978-981-10-5251-4_103

33. MacDonald F, Dobrowolsky A, eds. Turbulent Times, Transformational Possibilities: Gender and Politics Today and Tomorrow. University of Toronto Press; 2020.

34. Ahlberg BM, Hamed S, Thapar-Björkert S, Bradby H. Invisibility of racism in the global neoliberal era: implications for researching racism in healthcare. Front Soc. 2019;4:61. doi:10.3389/fsoc.2019.00061

35. Bauer GR, Hammond R, Travers R, Kaay M, Hohenadel KM, Boyce M. “I don’t think this is theoretical; this is our lives”: how erasure impacts health care for transgender people. J Assoc Nurses AIDS Care. 2009;20(5):348-361. doi:10.1016/j.jana.2009.07.004

36. Kiang MV, Tsai AC. Failure of leadership in U.S. academic medicine after George Floyd’s killing by police and amidst subsequent unrest. Ann Epidemiol. Published online May 21, 2021. doi:10.1016/j.annepidem.2021.04.018

37. Marmot M. Social justice, epidemiology and health inequalities. Eur J Epidemiol. 2017;32(7):537-546. doi:10.1007/s10654-017-0286-3

38. Fortuna LR, Tolou-Shams M, Robles-Ramamurthy B, Porche MV. Inequity and the disproportionate impact of COVID-19 on communities of color in the United States: the need for a trauma-informed social justice response. Psychol Trauma. 2020;12(5):443-445. doi:10.1037/traa0000889

39. Bhugra D. Social discrimination and social justice. Int Rev Psychiatry. 2016;28(4):336-341. doi:10.1080/09540261.2016.1210359

40. Noonan AS, Velasco-Mondragon HE, Wagner FA. Improving the health of African Americans in the USA: an overdue opportunity for social justice. Public Health Rev. 2016;37 (12). doi:10.1186/s40985-016-0025-4

41. Bhatt J, Bathija P. Ensuring access to quality health care in vulnerable communities. Acad Med. 2018;93(9):1271-1275. doi:10.1097/ACM.00000000000002254

42. Katz A, Chateau D, Enns JE, et al. Association of the social determinants of health with quality of primary care. Ann Fam Med. 2018;16(3):217-224. doi:10.1370/afm.2236
43. Dukhanin V, Searle A, Zwerling A, Dowdy DW, Taylor HA, Merritt MW. Integrating social justice concerns into economic evaluation for healthcare and public health: a systematic review. *Soc Sci Med.* 2018;198:27-35. doi:10.1016/j.socscimed.2017.12.012

44. Edrington CL. Tweeting a social movement: Black Lives Matter and its use of Twitter to share information, build community, and promote action. *J Pub Interest Comm.* 2018;2(2):289. doi:10.32473/jpic.v2.i2.p289

45. Johnson A. Throwing our bodies against the White background of academia. *Area.* 2020;52(1):89-96. doi:10.1111/area.12568

46. Blankenship M, Reeves RV. From the George Floyd moment to Black Lives Matter Movement, in tweets. *Brookings.* July 10, 2020. Accessed August 23, 2021. https://www.brookings.edu/blog/up-front/2020/07/10/from-the-george-floyd-moment-to-a-black-lives-matter-movement-in-tweets/