

PERSPECTIVE: SOCIAL DETERMINANTS OF HEALTH AND IMPLEMENTATION RESEARCH: LESSONS FROM THE COVID-19 PANDEMIC

William T. Riley, PhD¹;
George A. Mensah, MD²

During the past three decades, the world has experienced many clinical and public health challenges that require implementation of practices and policies informed by an understanding of social determinants of health and health inequities, but perhaps none as global and pervasive as the current COVID-19 pandemic. In the context of this special themed issue on Social Determinants of Health and Implementation Research: Three Decades of Progress and a Need for Convergence, we highlight the application of social determinants of health and implementation research on various aspects of the COVID-19 pandemic. *Ethn Dis.* 2021;31(1):5-8; doi:10.18865/ed.31.1.5

Keywords: COVID-19; SARS-CoV-2; Social Determinants of Health; Implementation Science

¹ Office of Behavioral and Social Science Research, National Institutes of Health, Bethesda, MD

² National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD

Address correspondence to William T. Riley, PhD; National Institutes of Health, 31 Center Dr.; Bethesda, MD 20892; wiriley@mail.nih.gov

INTRODUCTION

This themed issue of *Ethnicity & Disease* seeks to advance our understanding of social determinants of health and how this understanding should inform clinical and public health practice and policy development and implementation to advance health equity. While there have been many clinical and public health challenges during the past three decades that require practice and policy implementation informed by an understanding of social determinants of health and health inequities, none has been as global and pervasive as the current COVID-19 pandemic.

HIGHER RATES OF COVID-19 HOSPITALIZATIONS AMONG RACIAL AND ETHNIC MINORITIES

Early in the pandemic, data from the United States began showing higher rates of hospitalizations and deaths from COVID-19 among racial and ethnic minorities than non-Hispanic Whites. CDC's report of hospitalizations

in March 2020 found that, among patients with race/ethnicity data, 33.1% were non-Hispanic Blacks.¹ Among New York City's five boroughs, the Bronx, with the lowest levels of educational attainment and the highest proportions of racial/ethnic minorities and those living in poverty, had the highest rates of COVID-19 hospitalizations and deaths.² At that time in March 2020, 28 states reported COVID-19 mortality by race and ethnicity and showed that relative risk of death was 3.57 greater for Blacks than Whites (95% CI: 2.84-4.48) with Hispanics showing a smaller but significant greater relative risk than Whites.³ Given the incomplete race and ethnicity data available at the time, researchers studied the distribution of diagnosis and death from COVID-19 by county; in one such study, the 22% of US counties that are disproportionately Black were found to comprise more than half of the COVID-19 diagnoses and deaths nationwide.⁴

Initially, these racial/ethnic disparities in COVID-19 illness and death were considered as reflecting the health disparities for the various chronic illness comorbidities (eg, diabetes, hypertension) that in-

crease the risk of serious illness and death from COVID-19,⁵ but it rapidly became clear that many social determinants of health contributed to these disparities. Hooper and colleagues have noted that the underlying causes of these disparities in mortality are complex and multifaceted, and that the racial/ethnic disparities observed with COVID-19

Among the many social determinants of health contributing to the health disparities in COVID-19 is socioeconomic status (SES), negatively exacerbated for some by the very public health mitigation efforts implemented to reduce virus transmission.

have not been observed with other respiratory infections such as influenza, pneumonia, and tuberculosis.⁶

The racial/ethnic disparities in COVID-19 extend beyond mortality to include infection rates as well. Although infection rates have been difficult to estimate with limited

testing capabilities, county-level data indicate that the infection rate is 3 times higher in predominantly Black counties than in predominantly White counties.⁷ Differences in population density have been hypothesized to impact these differential infection rates, but as noted in the NYC boroughs study,² while infection rates may be affected by population density, the borough of Manhattan had the highest population density among the boroughs, but the lowest rates of hospitalizations and deaths from COVID-19.

SOCIAL DETERMINANTS OF HEALTH CONTRIBUTING TO COVID-19 DISPARITIES

Among the many social determinants of health contributing to the health disparities in COVID-19 is socioeconomic status (SES), negatively exacerbated for some by the very public health mitigation efforts implemented to reduce virus transmission. Fear of infection, physical distancing, and businesses closures ordered by states have had a rapid and severe impact on the economy. Job losses occurred disproportionately among those unable to telework, particularly service workers. This has resulted in job losses occurring disproportionately in lower SES and racial minority groups,⁸ producing multiple potential impacts on health.

Job loss is also associated with loss of health insurance and reduced health care access.⁹ During the pandemic, health care resources have also been diverted to address

COVID-19, and “elective” services have been postponed. Patients with existing conditions, potentially exacerbated by the pandemic and its mitigation impacts, have found it difficult to obtain needed services, have had to postpone services for existing conditions requiring care, and have experienced curtailed preventive health services.

Considerable research has shown a relationship of economic downturns and unemployment on specific health conditions, including substance use disorder,¹⁰ mental health conditions,¹¹ and suicide,¹² but, in some cases, overall health and mortality have been shown to improve during economic downturns, depending on how confounds are controlled.¹³ This economic downturn also differs from prior ones in that this downturn has been rapid, not the result of underlying economic weakness, and potentially short-lived; thus, the generalizability of findings from previous economic downturns may be limited. Although more research is needed, it is reasonable to hypothesize that the economic downturn has negatively impacted the health of at least some, and disproportionately negatively impacted those with lower SES, especially those who have lost their jobs as a result of mitigation policies.

Even those who have not lost their jobs have been negatively and disproportionately impacted by the pandemic. Racial and ethnic minorities and those with lower SES are more likely to work in jobs that require them to continue work during the pandemic and expose themselves to others potentially infected.¹⁴ Paid

sick leave has been shown in prior epidemics to reduce transmission rates¹⁵ but until the US government provided paid sick leave benefits in response to the pandemic, those working during the pandemic, many in lower income service positions, did not have this benefit to encourage them to stay home when sick.

THOUGHTFUL MITIGATION STRATEGIES NEEDED

Delays in implementation of effective mitigation strategies such as paid sick leave may contribute to the differential success of countries in mitigating transmission and reducing hospitalizations and mortality. Dissemination of findings from the mitigation of prior epidemics needs to be improved, but as described recently by Hirschhorn and colleagues,¹⁶ differences between South Korea and United Kingdom in the speed and contextual tailoring of implementing mitigation strategies may have contributed to the differences in transmission rates, and highlights the importance of implementation science in responding to the pandemic.

CONCLUSION

The COVID-19 pandemic is a vivid illustration of existing health inequities; the pandemic and the public health response to it has illustrated how these inequities can be exacerbated, even with the best intentions of the public health response to reduce infections and

This public health crisis [COVID-19] has underscored the value of understanding social determinants of health and their influence on health disparities in the implementation of public health efforts.

mortality. Given the urgency of the pandemic, these mitigation strategies were implemented rapidly and without the luxury of time to evaluate their benefits and costs.

This public health crisis has underscored the value of understanding social determinants of health and their influence on health disparities in the implementation of public health efforts. Research on the confluence of implementation, social determinants, and health equities, including the many examples in this special themed issue, provides a better understanding of the health disparities evidenced during this pandemic and offers a foundation for addressing these disparities, both specific to this pandemic and more generally.

REFERENCES

1. Garg S, Kim L, Whitaker M, et al. Hospitalization rates and characteristics of patients hospitalized with laboratory-confirmed coronavirus disease 2019 - COVID-

- NET, 14 states, March 1-30, 2020. *MMWR Morb Mortal Wkly Rep.* 2020;69(15):458-464. <https://doi.org/10.15585/mmwr.mm6915e3> PMID:32298251
2. Wadhwa RK, Wadhwa P, Gaba P, et al. Variation in COVID-19 hospitalizations and deaths across new york city boroughs. *JAMA.* 2020;323(21):2192-2195. <https://doi.org/10.1001/jama.2020.7197> PMID:32347898
3. Gross CP, Essien UR, Pasha S, Gross JR, Wang S, Nunez-Smith M. Racial and ethnic disparities in population level Covid-19 mortality. *J Gen Intern Med.* 2020;35:3097-3099. <https://doi.org/10.1007/s11606-020-06081-w>
4. Millett GA, Jones AT, Benkeser D, et al. Assessing differential impacts of COVID-19 on black communities. [published online ahead of print, 2020 May 14]. *Ann Epidemiol.* 2020;47:37-44. <https://doi.org/10.1016/j.annepidem.2020.05.003> PMID:32419766
5. Laurencin CT, McClinton A. The COVID-19 Pandemic: A call to action to identify and address racial and ethnic disparities. *J Racial Ethn Health Disparities.* 2020;7(3):398-402. <https://doi.org/10.1007/s40615-020-00756-0> PMID:32306369
6. Webb Hooper MW, Napoles AM, Perez-Stable EJ. COVID-19 and racial/ethnic disparities. *JAMA.* 2020;323(24):2466. <https://doi.org/10.1001/jama.2020.8598>
7. Thebault R, Tran AB, Williams V. The coronavirus is infecting and killing black Americans at an alarming high rate. *Washington Post.* April 7, 2020. Last accessed October 22, 2020 from <https://www.washingtonpost.com/nation/2020/04/07/coronavirus-is-infecting-killing-black-americans-an-alarmingly-high-rate-post-analysis-shows/>.
8. Brown S. How COVID-19 is affecting black and Latino families' employment and financial well-being. Urban Institute. May 6, 2020. Last accessed October 22, 2020 from <https://www.urban.org/urban-wire/how-covid-19-affecting-black-and-latino-families-employment-and-financial-well-being>.
9. Schaller J, Stevens AH. Short-run effects of job loss on health conditions, health insurance, and health care utilization. *J Health Econ.* 2015;43:190-203. <https://doi.org/10.1016/j.jhealeco.2015.07.003> PMID:26250651
10. Compton WM, Gfroerer J, Conway KP, Finger MS. Unemployment and substance outcomes in the United States 2002-2010. *Drug Alcohol Depend.* 2014;142:350-353. <https://doi.org/10.1016/j.drugalcdep.2014.06.012> PMID:25042761

COVID-19 Lessons - Riley and Mensah

11. Zivin K, Paczkowski M, Galea S. Economic downturns and population mental health: research findings, gaps, challenges and priorities. *Psychol Med.* 2011;41(7):1343-1348. <https://doi.org/10.1017/S003329171000173X> PMID:20836907
12. Harper S, Charters TJ, Strumpf EC, Galea S, Nandi A. Economic downturns and suicide mortality in the USA, 1980-2010: observational study. *Int J Epidemiol.* 2015;44(3):956-966. <https://doi.org/10.1093/ije/dyv009> PMID:26082407
13. Ruhm CJ. Macroeconomic conditions, health, and mortality. *NBER Working Paper No. 11007*. December 2004. Cambridge, MA: National Bureau of Economic Research. Last accessed October 22, 2020 from <https://doi.org/10.3386/w11007>
14. Yancy CW. COVID-19 and African Americans. *JAMA.* 2020;323(19):1891-1892. <https://doi.org/10.1001/jama.2020.6548> PMID:32293639
15. Piper K, Youk A, James AE 3rd, Kumar S. Paid sick days and stay-at-home behavior for influenza. *PLoS One.* 2017;12(2):e0170698. <https://doi.org/10.1371/journal.pone.0170698>.
16. Hirschhorn L, Smith JD, Frisch MF, Binagwaho A. Integrating implementation science into the covid-19 response and recovery. *BMJ.* 2020;369:m1888. <https://doi.org/10.1136/bmj.m1888>