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Short Communication

Underreporting of race/ethnicity in COVID-19 research

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ABSTRACT

Objectives: Although racial/ethnic disparities in healthcare have long been recognized, recent discourse around structural racism will hopefully lead to improved transparency surrounding these issues. Despite the disproportionate impact of COVID-19 on racial/ethnic minorities, the extent and reliability of race reporting in COVID research is unclear.

Methods: COVID-19 research published in three top medical journals during the first wave of the COVID-19 pandemic was reviewed and assessed for race reporting and proportional representation.

Results: Of the 95 manuscripts that were identified, 56 reporting on 252,262 patients met eligibility. Thirty-five (62.5%) did not report race distribution and 15 (26.7%) did not report ethnicity. There was no difference based on journal (P = 0.87), study sponsor (P = 0.41), whether the study was retrospective or prospective (P = 0.33), or observational vs interventional (P = 0.11). Studies with ≥250 patients were more likely to report on race (OR 4.01, 95% CI: 1.12–14.37, P = 0.027) and North American (USA and Canada) studies were more likely than European studies (OR 7.88, 95% CI: 1.73–37.68, P = 0.006) to report on race. COVID-19 research mirrored USA COVID-19 racial incidence; however, both showed higher distribution of COVID-19 infection among Blacks and a smaller proportion of Whites compared to the USA population. This suggests that research is broadly representing infection rates and that social determinants of health are impacting racial distribution of infection.

Conclusions: Despite increasing awareness of racial disparities and inequity, COVID-19 research during the first wave of the pandemic lacked appropriate racial/ethnicity reporting. However, research mirrored COVID-19 incidence in the USA, with an increased burden of infection among Black individuals.

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Background

Recent discourse against structural racism has reminded us of how far we are from what was considered “a self-evident truth, equality.” Regrettably, medicine has not been impervious to these social dynamics. While disparities in healthcare are well-described, the disparate burden of SARS-CoV-2 infection (COVID-19) on racial minorities has laid bare a system long afflicted with inequities (Killerby et al., 2020; Krishnan et al., 2020). Historically, race/ethnicity has been inadequately reported in clinical studies (Cooper et al., 2018; Loree et al., 2019). Despite efforts to improve race/ethnicity reporting, data on the extent of race/ethnicity reporting vis-à-vis COVID-19 are lacking.

Objective

Given the detrimental impact of incomplete reporting on appraisal of disparities, this study aimed to determine the status of race/ethnicity reporting in COVID-19 research.

Methods

A cross-sectional review was conducted of manuscripts examining patients with COVID-19 in The Journal of the American Medical Association, Lancet, and The New England Journal of Medicine between 01/01/2020–07/23/2020. Studies that did not include patients outside of Asia were excluded due to racial homogeneity and the fact that the pandemic started in that region. Manuscript

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characteristics and race reporting were abstracted from journal articles.

Racial representation in the USA population and incidence of COVID-19 by race were evaluated using the online portal of the COVID Tracking Project (data from 07/22/2020 used to represent first wave) and 2019 US Census Bureau statistics. Racial representation in the analyzed studies was compared to these resources (Racial Data Dashboard | The COVID Tracking Project; U. S. Census Bureau QuickFacts: United States). Ethnicity representation was not assessed as it was described in a small number of studies. People of “other” or unknown race were excluded as they were differently described in different studies. The study was exempt from institutional review board approval as data were previously published. The primary objective was to evaluate the frequency of race/ethnicity reporting. Standard descriptive statistics were used, and proportions summarized as 95% confidence intervals (95% CI). Groups were compared using $\chi^2$ or Fisher’s exact test, as appropriate. Unadjusted two-sided P-values < 0.05 were considered significant.

Findings

Of the 95 identified manuscripts, 56 reporting on 252,262 patients (median study size: 707) met eligibility (Figure 1). Baseline characteristics are shown in Table 1. Thirty-five (62.5%, 95% CI: 49.4–74.0%) did not report race distribution, and an additional 15 (26.7%) did not report ethnicity. Six (10.7%, 95% CI: 4.7–21.8%) manuscripts reported on both race and ethnicity. There was no difference based on journal (P = 0.87), study sponsor (P = 0.41), whether the study was retrospective or prospective (P = 0.33), or observational vs interventional (P = 0.11). Studies with $\geq$250 patients were more likely to report on race (OR 4.01, 95% CI: 1.12–14.37, P = 0.027) and North American (USA and Canada) studies were more likely than European studies (OR 7.88, 95% CI: 1.73–37.68, P = 0.006) to report on race.

Racial representation in research studies closely mirrored the COVID-19 infection incidence in the USA population (Figure 1). Both research and USA demographic data showed that COVID-19 disproportionately affected Black individuals relative to the USA population (P < 0.0001 for all comparisons); however, research studies had minimal representation of indigenous people relative to the population and COVID-19 incidence in the USA.

Discussion

Health, in principle, is an inalienable right of every human being and fundamental to “equality and pursuit of happiness”. Any racial bias to this right is unacceptable. Facing this global pandemic, it is more relevant than ever to understand racial disparities in COVID-19 and medicine at large. This cannot be achieved without widespread reporting. This study demonstrates that over 50% of published COVID-19 reports in leading medical journals did not describe the racial/ethnic make-up of the studied populations. While underreporting may reflect differences in racial heterogeneity in some populations, even in North American studies where significant heterogeneity exists, race was reported in 53% of cases.

Causality of racial disparities in COVID-19 is multifactorial, and rooted in both biological and socioeconomic variances. Blacks/Hispanics carry a larger burden of high-risk comorbidities, including obesity, asthma, and heart diseases, in addition to high-risk employment and household composition. Emerging evidence also shows biological underpinnings, such as higher expression of TMPRSS2 in Blacks, which is a protein that facilitates viral entry and spread (Bunyavanich et al., 2020). It could be deliberated whether it is the sociocultural phenomena or the biological variance that is more pertinent to the impact of COVID-19 according to race/ethnicity; however, the relevance of reporting on race/ethnicity cannot be argued with. A radical shift in

| Baseline characteristic | Total [N = 56] | Race/ethnicity not reported [N] | P-value |
|------------------------|---------------|---------------------------------|--------|
| Journal                |               |                                 |        |
| JAMA                   | 27 (48.2%)    | 16 (59.3%)                      | 0.87   |
| Lancet                 | 21 (37.5%)    | 14 (66.7%)                      |        |
| NEJM                   | 8 (14.3%)     | 5 (62.5%)                       |        |
| Study sponsor          |               |                                 |        |
| Academia               | 51 (91.1%)    | 31 (60.8%)                      | 0.41   |
| Industry               | 5 (8.9%)      | 4 (80.0%)                       |        |
| Study style            |               |                                 |        |
| Retrospective          | 39 (69.6%)    | 26 (66.7%)                      | 0.33   |
| Prospective            | 17 (30.4%)    | 9 (52.9%)                       |        |
| Study type             |               |                                 |        |
| Observational          | 48 (85.7%)    | 32 (66.7%)                      | 0.11   |
| Interventional         | 8 (14.3%)     | 3 (37.5%)                       |        |
| Phase 1–2              | 3 (37.5%)     | 1 (33.3%)                       |        |
| Phase 3                | 5 (62.5%)     | 2 (40.0%)                       |        |
| Study size             |               |                                 |        |
| $\leq$250              | 21 (37.5%)    | 17 (81.0%)                      | 0.027  |
| $>250                  | 35 (62.5%)    | 18 (51.4%)                      |        |
| Region                 |               |                                 |        |
| US + Canada            | 30 (53.6%)    | 14 (46.7%)                      | 0.007  |
| Europe + UK            | 20 (35.7%)    | 18 (90.0%)                      |        |
| Global$^*$             | 6 (10.7%)     | 3 (50.0%)                       |        |

Bold = statistically significant at P<0.05.

$^*$ Studies that included only Asian countries were excluded, given the lack of racial heterogeneity in many of those countries and because the pandemic started in the region, which would have biased results.
healthcare is needed, with decisive actions to address these healthcare disparities and promote health equity.

It is believed that the frameworks developed today to recognize and amend the racial gaps in COVID-19 will not only shape healthcare at large but also our future as a people. Nelson Mandela once stated, “We have not taken the final step of our journey, but the first step on a longer and even more difficult road”. While not the entire solution, reliable reporting and attentive acknowledgment of racial disparities in healthcare is that necessary first step.

Conflicts of interest

The authors declare no relevant conflicts of interest related to this work.

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Ethics approval

This study was exempt from research ethics board approval as it used previously published and publicly accessible data sets.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.ijid.2021.05.075.

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