Addressing Racial Disparities in Medical Education and Science: The Role of the Civil Rights Movement*

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In the United States, African Americans face shorter life expectancies compared to whites (70.8 vs 76.4 years), higher rates of chronic conditions (e.g. diabetes and heart disease) and greater chances of misdiagnosis. One potential cause of these persistent racial disparities may be a lack of representation in medicine due to historical exclusion from medical education and limited research on conditions affecting African Americans. Despite African Americans comprising 13% of the U.S. population, they make up only 5% of the physician workforce (Ly, 2022). Historically, African Americans have faced significant and systemic barriers to entering medical education and training. The exclusion of Black individuals from medical science not only limited the number of Black doctors but also reduced diversity within the field. This lack of representation has been associated with insufficient research on health conditions predominantly affecting African Americans, thereby amplifying health disparities (Konkel, 2015).

The passage of the landmark Civil Rights Act of 1964 marked a potentially significant shift in this landscape. Title VI of the Act banned any program receiving federal funding from discriminating on the basis of race, color, or national origin. In doing so, it potentially laid the foundation to reduce the racial gap in the medical profession, given the reliance of medical schools on federal support in the 1960s (Helgerman, 2025). This, in theory, could increase the number of Black physicians, enhancing representation within the profession, diversifying areas of research focus, and ultimately leading to better health outcomes for the African American community.[1] However, the impact of the Civil Rights Act on medical education and science remains an open empirical question, likely the result of a lack of availability of comprehensive data. Aggregate statistics on the racial composition of medical students are first available consistently from the Association of American Medical Colleges in 1968, four years *after* passage of the Civil Rights Act.[2]

What is the effect of the Civil Rights Act of 1964 on the representation of African Americans in the medical education, physician supply, and how did this change impact medical research focus on racial minorities? To answer these research questions, we build a novel dataset that merges together (i) historical student records from medical universities, (ii) historical physician directories, (iii) scientific publications, and (iv) federal funding. A key novelty of our research is the collection of all available yearbook records of medical students attending programs that were operating in the year of passage of the Civil Rights Act between 1955 and 1980. This data allow us to impute race based on yearbook photographs using the FairFace computer vision model to infer the race of each

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[1]Title VI also required the integration of hospitals receiving federal funding (Almond et al., 2006). The resulting drop in demand for Black physicians (by segregated hospitals) could lower overall representation, offsetting this effect.

[2]The *Journal of the National Medical Association* does report the number of Black students enrolled at U.S. medical schools in a handful of years before 1968.

student (Kärkkäinen and Joo, 2021) and to link students to long-term career outcomes available in historical physician directories.

Following Rim (2021) and Helgerman (2025), we utilize a continuous difference-in-differences strategy to identify the impact of Title VI of the Civil Rights Act on medical science. This policy made the receipt of federal funding contingent on non-discrimination on the basis of race. Our underlying assumption is that medical schools with more at stake—that is, receiving greater amounts of federal funding—should respond more strongly to this policy.

We find that a one standard-deviation increase in our dose variable is associated with an increase in the Black share of graduates of 0.71 percentage points, or one Black graduate in level terms. In the 1961-62 academic year, the most recent year before passage of the Civil Rights Act in which administrative data on enrollment are reported, there were 46 Black American students enrolled at predominantly white institutions in their 4th year of study (National Medical Fellowships, Inc., 1962), comprising 0.6% of graduating students (JAMA, 1963). Our results imply that the Civil Rights Act effectively doubled the Black graduation share, albeit from a very low base.

Having found a strong first stage, we turn to our primary task of understanding if increased racial diversity of the student body altered the direction of scientific research, hypothesizing that this would bring more attention to diseases that afflict proportionately more Black patients, specifically. We link our sample to a comprehensive scientific publications database, SciSciNet, made available by Lin et al. (2023), identifying all publications associated with an institution housing a medical school. The core of this database is the Microsoft Academic Graph (MAG) dataset with detailed information on over 207 million publications (Sinha et al., 2015). We identify race-related research based on whether the publication has been indexed by the NLM Medical Subject Headings (MeSH) as "African American" or "sickle cell, anemia," or uses race-related words in the titles or abstracts located via keyword search, following Advani et al. (2021).

Race-related research is exceedingly rare during our sample period: almost all institutions published either zero or one race-related paper per year. Accordingly, our outcome of interest is an indicator for publishing any race-related research in that year, measuring the extensive margin response. Using the same continuous difference-in-differences strategy within a linear probability model, we find that a one standard-deviation increase in the log of federal research funding is associated with a 1.9 percentage point increase in the likelihood of producing race-related research, a 20% increase over the baseline rate of 9.1 percentage points. Our coefficient estimate does not changes if we control for the total number of papers published, suggesting that this reflects a shift in the topic of faculty interest, not an increase in the number of papers produced. These results are also robust to the inclusion of field-by-year and Census Region-by-year fixed effects.

This paper contributes to the literature on the relationship between diversity and scientific knowledge production (Cook, 2019; Koning et al., 2019; Truffa and Wong, 2025). While existing research has examined how diversity affects scientific productivity and innovation, little is known about how the racial composition of academic institutions shapes the direction of scientific research. By linking historical medical school records to scientific publications, we investigate whether increased Black representation in medical education leads to greater attention to race-related research, distinguishing between the contributions of newly admitted Black researchers and the effects of exposure to racial diversity on the research agendas of existing scientists.

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