

(REVIEW ARTICLE)



Systemic racism in academic medicine: A systematic review of interventions

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Abstract

Purpose: The purpose of this systematic review is to identify and evaluate systemic racism interventions in academic medicine.

Methods: Studies were identified through the use of the PubMed database, using the keywords ‘systemic racism’ and ‘academic medicine’. Of the 18 publications generated, 6 highlighted systemic racism interventions.

Results: Ultimately, 6 studies were selected in this review including multiple interventions: virtual training modules, a department wide cultural competency curriculum, a hospital-wide breastfeeding initiative, and a fellowship program for underrepresented minorities interested in surgery.

Conclusion: The findings of this systematic review indicate a dearth of systemic racism interventions. While the data is limited, there is some evidence that department/hospital-wide commitments, virtual curricula, and programming/mentorship directed at underrepresented minorities (URM) in medicine may be effective tools in combating systemic racism.

Keywords: Systemic racism; Academic medicine; Underrepresented minorities

1. Introduction

Systemic racism remains a pressing and loaded topic, now recognized as having multiple manifestations in various settings. Racism, defined as a “system of structures, policies, practices, and norms that construct opportunities and assigns values based on one’s phenotype,” is now largely recognized as a driver of disparities [1]. Systemic racism theory emphasizes 5 major dimensions of U.S. racism: “dominant racial hierarchy, comprehensive white racial framing, individual and collective discrimination, social reproduction of racial-material inequalities, and racist institutions integral to white domination of Americans of color” [2]. Such dimensions are often reinforced in both academia and medicine. Unfortunately, systemic racism often manifests in academic medicine. Black faculty and medical students continue to be under-represented in both spaces [3,4]. Such issues with representation have led to responses from both the Liaison Committee on Medical Education and the Accreditation Council for Graduate Medical Education, who have both mandated that training programs increase their efforts to recruit and retain minority applicants [5,6]. These efforts

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explicitly target underrepresented minority (URM) applicants, which include “Native Americans/Alaska Natives/Native Hawaiians; Blacks or African Americans; Latin individuals of Puerto Rican or Mexican descent” and “underrepresented subcategories of groups that are well-represented based on the field” [6]. Experiences of discrimination have been reported by underrepresented in medicine minority faculty within a nationally representative sample of 26 U.S. medical schools, with 22% reporting experiences of racial/ethnic discrimination. Relative to their non-minority counterparts, these same faculty reported lower perceptions of inclusion and gave lower scores regarding their institution’s equity and diversity efforts [7].

Systemic racism also has multiple clinical manifestations. A recent systematic review on the perspectives of patients and health professionals on racism in healthcare concluded that “Implicit racial bias is pervasive,” ultimately “exacerbating health disparities in minorities” [8]. A nationally representative cross-sectional study of 2,137 U.S. adults found that 21% reported experiencing discrimination in healthcare settings, with racial/ethnic discrimination being the most frequent type experienced [9]. Such circumstances, when considered in light of COVID-19’s disproportionate impact on African American, Latino, American Indian, Alaska Native, and Pacific Islander communities, underscore the urgent need for successful systemic racism interventions [10].

The manifestations of systemic racism in academic medicine create a need for reproducible, sustainable interventions. All involved in these spheres may benefit from an analysis of current interventions, in order to amplify their respective institutional efforts to combat systemic racism. The purpose of this systematic review is to identify and evaluate the impact of such measures in order to answer two questions:

- What systemic racism interventions have been employed and evaluated?
- What is the impact of these aforementioned interventions?

2. Methods

2.1. Search Strategy

A systematic literature search was conducted on articles in the PubMed database using the following keywords: ‘systemic racism’ and ‘academic medicine’ and following the inclusion and exclusion criteria detailed below. Additional studies were added from the reference lists of identified research studies and reviews. The search method is displayed in a flow diagram in Figure 1.

2.2. Search Results

The search strategy identified 18 articles. After elimination of articles that did not include interventions, 6 remaining articles met the selection criteria.

2.3. Data Extraction and Yield

Key findings were derived from the text and table of the selected studies. The study designs and results were detailed in Table 1.

3. Results

3.1. What systemic racism interventions have been employed and evaluated?

The studies employed involved multiple types of interventions. These included virtual modules, cultural competency training, a hospital-wide breastfeeding initiative, and exposure/mentorship to procedural disciplines. The University of Wisconsin School of Medicine and Public Health Division of Hospital Medicine implemented virtual “microlearning” modules, having converted their format in light of COVID-19. These modules focused on racial health outcome disparities, implicit bias, intersectionality, and the history of racism in American healthcare [11]. Stanford University’s surgical department implemented a department-wide cultural competency curriculum. This 9-week training involved formal presentations from relevant experts, role play/simulations, and small group discussion [12]. A retrospective cohort study from the southeastern U.S. addressed breastfeeding disparities via the Baby Friendly Hospital Initiative, “an evidence-based program to increase breastfeeding through standardized protocols.” This study focused on the disparities between Black mothers and their non-Black counterparts, focusing on differences in breastfeeding initiation and sustained breastfeeding 24-hours before discharge [13]. The Leadership Exposure for the Advancement of Gender and Underrepresented Minority Equity in Surgery (LEAGUES) fellowship program utilized exposure/mentorship [14]

along with the Nth Dimensions Summer Internship Program [15]. Finally, a northern California intervention used cultural competency training in an attempt to improve Patient-Reported Physician Cultural Competence Scores. The curriculum focused on knowledge of patients (including an understanding of cultural/mainstream health beliefs), communication skills, and cultural brokering [16].

3.2. What is the impact of systemic racism interventions?

The University of Wisconsin School of Medicine and Public Health Division of Hospital Medicine’s virtual modules only assessed participants at baseline. The survey found that while providers were supportive of antiracism education and believed in the existence of health disparities, many lacked confidence in their ability to address racism [11]. Stanford University’s surgical department appeared interested and receptive to the cultural competency curriculum, with 71% independently exploring related topics and 73% desiring continued discussion [12]. The Baby Friendly Hospital Initiative appeared to decrease the racial gap in breastfeeding initiation, but did not eliminate the disparity seen in sustained in-hospital breastfeeding [13]. The LEAGUES fellowship program culminated in participants leaving with positive perspectives on academic surgical culture, increased confidence in applying surgical techniques, a deeper sense of community, and an eagerness to share knowledge with their colleagues [14]. The Nth Dimensions intervention participants largely went on to apply and match into procedural specialties [15]. The northern California intervention was ultimately unsuccessful, with the cultural competency training not translating into any significant change in Patient-Reported Physician Cultural Competence scores [16].

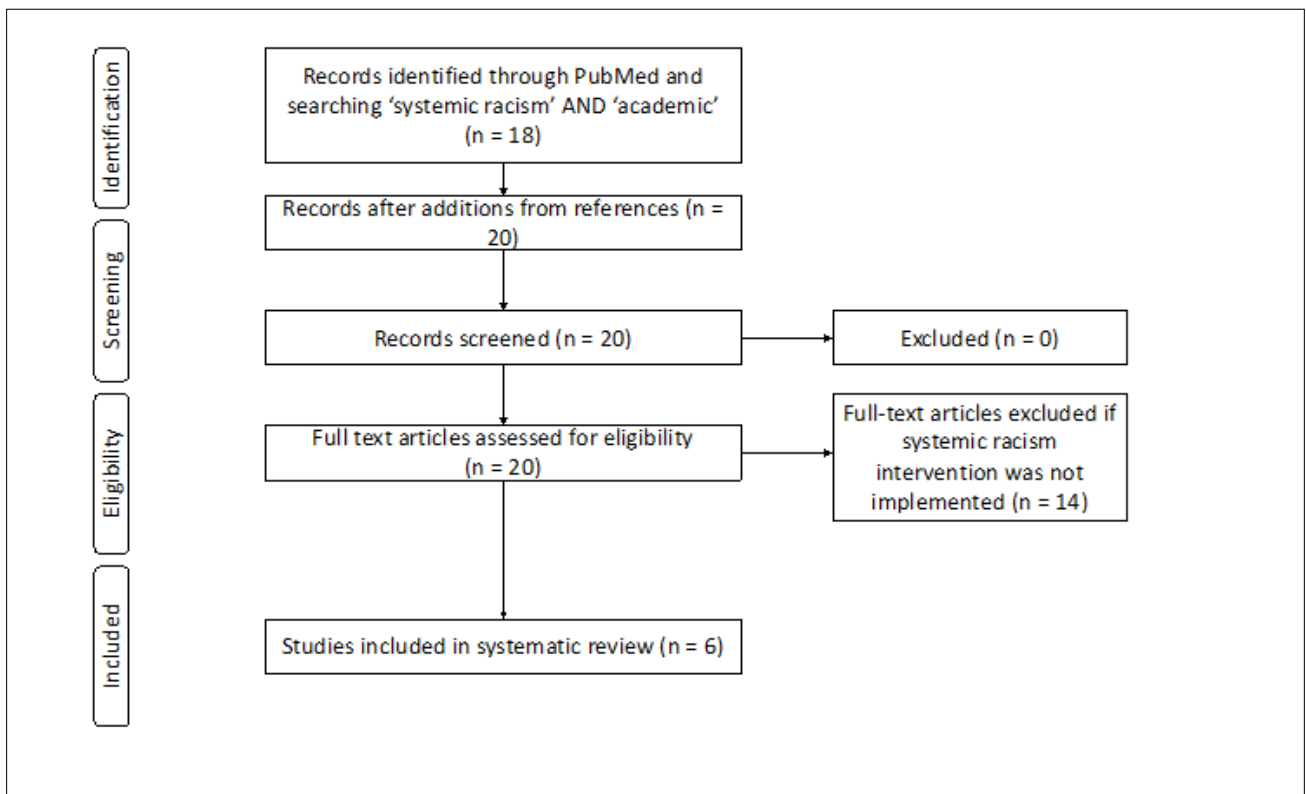


Figure 1 Initial identification of 18 records, ultimately reduced to 6 studies that met the inclusion criteria

Table 1 The results are organized based on author/year/location, population and setting, sample size, type of intervention, intervention and comparator groups, duration of treatment/follow up, instrument used, outcome of interest, and statistical significance

Author, Year, Location	Population and Setting	Sample Size	Type of Intervention	Intervention/Study Group 1	Comparator/Study Group 2	Duration of Treatment/Follow Up	Instrument Used	Outcome of Interest	Statistical Significance	Notes
Maupin, 2021, University of Wisconsin School of Medicine and Public Health Division of Hospital Medicine	Physicians and advanced practice providers	21/58 responded	Virtual "microlearning" modules	Modules were designed to increase employee support/involvement in DEI initiatives and later converted to a virtual format in response to COVID-19. 1 to 3 modules were embedded within monthly emails over a 10- to 12-month period. Subjects covered included: racial health outcome disparities, intersectionality, implicit bias, and history of racism in American health care. Time for discussion was set aside at monthly division meetings. A secure messaging platform was also available.	N/A	10-12 month period	9 question survey given at baseline. 5 questions had Yes/No/Maybe responses. 4 free text replies.	Baseline: Majority of respondents believed that racial health disparities existed and should be discussed through employer sponsored training. Overall, lacked confidence in their abilities to address racism.	N/A	
Korndorfer, 2021, Stanford University	Academic Surgical Dept (faculty, staff, residents), Aftermath of George Floyd's murder	148/93 responded	Dept wide cultural competency curriculum. Curriculum consisted of six, 1 hour long sessions over a 9 week period.	6 department wide sessions over a 9-week period. Beyond the first 9week period, it was determined that one cultural morbidity and mortality case	N/A	9 weeks	Survey	Attitudes regarding cultural competency training Curriculum prompted independent study with 71%	N/A	

			Effectiveness assessed via baseline and follow-up survey	would be discussed at the monthly department wide morbidity and mortality conference. The selected cases were based in part on cultural complications cases from University of Maryland and University of Michigan, but were from real events involving Stanford faculty, staff, and trainees.				exploring related topics. These topics included implicit and explicit bias, effective allyship, bias and its effect on trainee recruitment, and social determinants of health. 73% desired continued discussion		
Hemingway, 2021, Southern US	Study subjects were all women who delivered an infant or infants who were admitted directly to the well-newborn service and remained on this service throughout hospitalization. To be admitted to the well-newborn service, an infant must be ≥ 35 0/7 weeks' postmenstrual age and able to eat without gavage or IV fluid	The number of mothers who delivered newborns admitted to the newborn service was 3079 between 2010 and 2011 and 3606 between 2014 and 2015.	Retrospective cohort study Baby-Friendly Hospital Initiative	January 2014 through December 2015 as "post-BFHI."	January 2010 through December 2011 was defined as "pre-BFHI"	N/A	chi-square and Fisher exact tests with relative risk calculation at a 95% confidence interval. Logistic regression model was used to adjust for potential confounders to breastfeeding.	Breastfeeding initiation and sustained breastfeeding	Mothers were overall 1.17 (95% confidence interval: 1.13–1.19) times more likely to initiate breastfeeding. For Black mothers, breastfeeding initiation increased significantly from 52% to 66%, but they were significantly less likely to sustain in-hospital	

<p>requirements. January 2010 through December 2011 was defined as “pre-BFHI” and January 2014 through December 2015 as “post-BFHI.” The specific dates were chosen because the institution-initiated work to achieve Baby-Friendly Hospital Designation (Baby-Friendly USA) in 2012 with designation achieved September 2013. Breastfeeding initiation was defined as any breastfeeding during infant born at hospitalization. Sustained breastfeeding was defined as any breastfeeding and breastfeeding in the 24 hours before maternal</p>												<p>breastfeeding compared to non-Black mothers (69.4% versus 84.6%, $p < 0.0001$). Racial disparity persisted.</p>		
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	hospital discharge.									
Santos-Parker, 2021, Department of Surgery, Michigan Medicine, Ann Arbor, Michigan.	3 rising Latinx MS2s within the Leadership Exposure for the Advancement of Gender and Underrepresented Minority Equity in Surgery (LEAGUES) fellowship program	N=3	Exposure/Mentorship	Of 17 applications, 3 were selected to participate in the program. Program consisted of: Daily videoconference seminars featuring faculty, residents, and senior medical students covering leadership, advocacy, academic development, application strategies, research, and Faculty research mentor pairings, with the relationship culminating in an Surgical suturing and knot tying materials, with one-on-one coaching and "Virtual social hours" featuring URM student groups, surgical residents,	N/A	~4 weeks	Baseline interview assessing experience with mentorship, surgery, career interest, research, working with underserved populations, and perceived barriers to success in academic surgery. Post program interviews to evaluate the impact of the fellowship.	All fellows gave final research presentations, with 2 fellows submitting abstracts to national conferences. All participants continued working with research faculty. Fellows described a positive perspective on academic surgical culture, increased interest and confidence in research, hope for improving health disparities within surgical careers, a greater sense of community, confidence in honing surgical skills, and eagerness to share resources and knowledge with their counterparts. Participants expressed high satisfaction	NA	

								n with the program and suggested future iterations be in-person.		
Mason, 2016, United States	Medical students who were awarded a position in the Nth Dimensions Summer Internship program between 2005 and 2012.	n= 118	Retrospective cohort study evaluating	Triphasic process that emphasized early exposure/hands-on experience, clinical/research experience, and mentorship/professional development. Phase 1 focuses on familiarity with surgical instruments and technique. Phase 2 involves 8 weeks of exposure to clinical care via shadowing surgeons, learning about anatomy/surgical technique, scrubbing into procedures, and seeing patients in the outpatient setting. Each student is then required to complete a research project in a procedural based specialty along with their preceptor. Students then present a poster at a national meeting.	N/A	8 weeks	Descriptive statistics were obtained for each variable. Stata 13.1 (College Station, TX) was used to establish rates of retention and match acceptance for all 8 cohorts. Statistical analyses were performed using Stata 13.1 with a two-sided significance level set at $p < 0.05$.	Primary outcome: Number of women and underrepresented minority students who were recruited through the program and went into procedure-based specialties. Secondary outcomes: Retention (measured via application in procedural field) and overall match rate 84 NDSI scholars applied and 81 matched into procedure-based specialties. Overall retention rate was 75% and the overall match rate across all 8 cohorts was 72.3%.	$p < 0.05$	National match data stratified by gender, race, and ethnicity is not publicly available
Thomet al, 2006, United States	4 primary care practice sites in	n= 53 (primary care)	Cultural competency training	Baseline measures were obtained from 4 practice sites	Feedback only	Modules could be completed in a single half day	Patient-Reported Physician	Primary outcome: Change in Patient-Reported	p= nonsignificant for all	

	Northern California	providers) n=429 (patients)		Physicians at all sites received feedback on cultural competency behaviors reported by their patients. Two practice sites (sites 1 and 3) were randomly assigned to also receive the training intervention. Training consisted of 3 modules Expanding Knowledge of Ethnic Patients Enhancing Communication Skills for Cultural Competency Use of Interpreters and Cultural Broking		training session or as 3 separate sessions lasting 1 to 1.5 hours each. Follow up time was not provided.	Cultural Competence Score	Physician Cultural Competence (PRPCC) score Secondary outcomes: Changes in patient trust, satisfaction, weight, systolic BP, and glycosylated hemoglobin Changes in all outcomes were similar in the "Training + Feedback" group compared to the "Feedback Only" Group	outcomes	
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4. Discussion

This systematic review focuses exclusively on systemic racism interventions. To our knowledge, it is the only review of its kind, focusing on the handful of systemic racism interventions that have been implemented and published.

Ultimately, there is a lack of standardized systemic racism interventions, making it difficult to evaluate the collective effectiveness of our efforts. Based on the studies reviewed, it appears that cultural competency curricula bear mixed results. This may be due to heterogeneity across studies. Despite this, providers appear to be generally receptive to antiracism education. Standardized protocols may be an effective way to reduce racial/ethnic disparities in hospital settings. Intentional recruitment of minority groups also appears to be effective.

Strengths and Limitations

Strengths of this review include the diversity of interventions. This review also specifically evaluates interventions that directly address systemic racism. A variety of frequently discussed initiatives: ranging from standardized protocols to one-on-one mentorship, are included. Multiple regions of the country are also represented.

Limitations of this review include the use of a single database. The cultural competency and antiracism curricula are not standardized, complicating the review. Multiple effective interventions, particularly those surrounding exposure and mentorship, were limited by small sample sizes. Ultimately, there is a lack of studies focusing on systemic racism interventions. Despite this, it appears that intentional recruitment of minorities, standardized protocols, and cultural competency curricula may prove to be promising starting points.

5. Conclusion

The findings of this systematic review indicate that multiple approaches may prove effective in addressing systemic racism.

Moving forward, institutions should make a firm commitment to implementing and publicly evaluating systemic racism interventions. As these efforts continue to develop and improve, interventions focusing on specific URM groups within academic medicine (Black, Latinx, etc.) should be prioritized. Such efforts are imperative for the collective health of care providers and the patients they serve.

Compliance with ethical standards

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Disclosure of conflict of interest

There are no conflicts of interest to disclose.

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