

Review Article

Implicit Racial Bias Education and Healthcare Students: A Review of Current Practices

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Abstract

Purpose: Racial disparities in health are well-documented, underscoring the need for health equity education for future healthcare professionals. The goal of this literature review was to examine and describe the interventions, strategies, and an overview of the current evidence-based strategies for implicit bias education of future medical providers.

Method: Guided by the exploratory question of discovering the ways Physician Assistant and Medical students are being taught about implicit racial (IR) bias, a search was conducted in PubMed, CINAHL, ERIC, and Google Scholar. Search terms reflected keywords about IR bias education strategies with an intervention and outcome, and PA or medical students within the last 10 years.

Results: Of the dozens of peer-reviewed articles on this topic, 12 were chosen for inclusion. Despite heterogeneity in the study designs in this review, there is evidence that healthcare professional student's exhibit implicit racial or ethnic bias. In both quantitative and qualitative measures, students and faculty consistently and overwhelmingly recognize the importance of education on this topic.

Conclusions: There are different types of successful strategies implemented for IR bias education. There is limited and inconclusive research evidence about the impact of IR bias on clinical decision-making due to difficulty in measuring this.

Keywords: Race; Healthcare; Bias education; Physician assistant student; Medical student; Implicit racial bias

Introduction

In response to the deep health inequities further exposed by the Covid-19 pandemic and the ongoing racial injustice including the murders of unarmed Black people in the US, there is renewed attention to racism and racial equity in our society in the past year. Racism and bias exist historically and presently, systemically and institutionally, throughout our culture and in healthcare and medicine. Aspects of racism in healthcare have been studied extensively from different perspectives including the landmark 1985 Heckler report which objectively identified significant disparities in outcomes and access to care for US minority populations [1].

Background

One aspect of the perpetuation of racist healthcare practices is implicit racial (IR) bias by clinicians and providers. There is an ever-expanding body of literature confirming the existence of clinician racial and ethnic bias. Several recent systematic reviews address this issue specifically, including one studying physicians using the implicit association test (IAT) and a measurement of clinical decision making.² This systematic review, while focused on Emergency Department care, found that physicians across all disciplines have implicit preference for whites [2]. Yet there was not a clear association between the implicit bias identified and differences in clinical decision making [2]. Others examined a broader range of implicit biases in their systematic review (including bias against gender, weight, mental illness) and found that healthcare providers have rates of implicit bias that are

similar to the general population. Patients' negative experiences and provider bias are related, and some evidence of implicit bias affecting clinical judgment [3].

Evidence of racial bias in healthcare has led to the examination of this issue in healthcare training programs [4,5]. Several scholars in medical, physician assistant (PA), and nursing education have written on this topic, often in the context of healthcare education shifting its model from cultural 'competency' to cultural humility [6]. The concept of 'competency' has been criticized in its reductionist model, often reinforcing stereotype and stigma [6]. Many healthcare educators embrace a broader curriculum of cultural issues [7] as well as teaching to increase awareness of implicit bias [8]. Buchs and Mulitalo discuss the importance of implicit bias training and offer ideas and strategies for including this type of curriculum in PA education, such as increasing awareness by developing specific perspective-taking techniques to modify behavior [8]. This emphasis is echoed in medical education as well. The Icahn School of Medicine at Mt. Sinai, for example, created an ongoing iterative change process to address "American medicine's fatal flaw" of racism in order to achieve substantive structural changes in their educational process [9]. In addition to suggesting changes in awareness and skills, others stress the need for informal curriculum that creates a culture of inclusiveness in these healthcare learning environments [5]. Stone and Moskowitz explore this concept further still, adding the importance of teaching about the psychological basis for implicit bias, as a framework to awareness, skills, and strategies to control the activation of bias [10].

It is unclear and not consistently documented whether some of

these suggestions by scholars, when applied in education, would alter implicit bias-driven behavior by students as they become clinicians. The following is reviews of peer-reviewed research investigating educational interventions (and their outcomes) which aim to decrease IR bias in healthcare students. As this area of research is a growing field, this review offers an overview of ideas, interventions, and outcomes, as well as evidence of an overwhelming positive participant response to teaching this topic in healthcare education.

Search Methods

The search strategy centered on the following exploratory question: In what ways are PA and medical students being taught about IR bias, and what are the outcomes in this area of education? The search was conducted in PubMed, CINAHL, ERIC, and Google Scholar, and search terms used reflected keywords about implicit racial bias, and PA or medical students. The search was limited to articles in English in the past 10 years, and chosen for review with additional criteria: conducted in medical education or training and had a research structure with an intervention and outcome. Resulting articles were prioritized for relevance and quality of evidence. Twelve articles met criteria and were chosen for inclusion in this review.

Results

Varied strategies

Healthcare provider educators are measuring, teaching, evaluating, or assessing the topic of racial and ethnic bias within both didactic and clinical education. The multitude of ways this topic has been taught and investigated is reflected in this review. Studies identified interventions such as: a topic in cultural humility curriculum; specific bias-focused training sessions; assigning case-based vignettes; and using the IAT as an educational intervention. Several of the studies used the IAT as an outcome measurement, as well as others providing qualitative or observational data. Due to the dearth of PA-specific research in this area, the population in these studies is medical students or physician trainees.

Intervention: Curriculum

A team led by Motzkus et al. used as an intervention eight hours of medical student course content (three of which was dedicated to bias) and student experience taking the IAT [11]. Reflection essays were written after bias-focused curriculum in response to a prompt about taking the IAT, or about a new insight as a result of the class [11]. These essays were then analyzed for qualitative themes using a grounded theory methodology [11]. The resulting themes reflect the importance of adding this curriculum content, increased knowledge and awareness of IR bias manifesting in healthcare, and a call to change systems which perpetuate bias.¹¹ The authors also noted an interesting theme of students noting the personal responsibility to recognize and address bias in self, in medicine, and in our society [11]. One notable comment pointed out the level of detail taught about rare diseases compared to the focus on bias and racism which will be seen “every day for the rest of our careers” [11].

In 2014, researchers in a medical school serving a diverse population investigated more closely their bias curriculum in a

health disparities course [4]. The course sessions included small-group discussions after a prompt on the topics of bias, healthcare, and personal experiences [4]. Subsequent reflections were also required and students took the IAT as part of this course [4]. The IAT data was collected, as well as a survey characterizing students into groups who either accept or deny the influence of implicit bias.⁴ Not surprisingly, this study found overwhelmingly that those who accept the concept of implicit bias witnessed more racially motivated differences in care, whereas deniers perceived fairness to prevail [4]. Several years later, this same author conducted focus groups with 56 medical students to further evaluate their existing bias curriculum as described above [12]. The study revealed major themes which have implications for implementing or expanding this area of curriculum. The themes include: resistance and shame in recognizing one’s own implicit bias; negative feelings from students observing implicit bias in faculty or attendings; and structural barriers at a societal or institutional level [12].

At another institution, in a course on Health Equity and Social Justice (HESJ), educators developed a specific session on understanding bias and racism in clinical encounters [13]. The HESJ curriculum incorporated related topics in cultural humility, social determinants of health, and trauma-informed care, and students took the IAT prior to the bias session [13]. The bias session included a lecture introducing two frameworks for considering bias and subsequent small-group, peer-led case discussions developed by students and faculty [13]. One framework addressed bias in oneself and how to recognize unconscious activation and the second described how a student or trainee may react when they are the target of bias or micro aggressions [13]. Data collection for evaluation of this curriculum included short-answer quiz content, course evaluations, and focus groups at the end of HESJ [13]. The evaluation data was positive for meeting course objectives and improving knowledge and skills about implicit bias [13]. Themes from the qualitative data include: the benefit of small group work with peers; increasing awareness of the presence of bias, and the importance of addressing it in medical education [13].

Small group interventions

Sherman et al. produced two training sessions including the IAT for medical residents, deployed a satisfaction survey directly afterwards, and followed up with focus group participation six months later [14]. The format of the first training sessions included interactive content on race, racism, society’s normative whiteness, and reflection essays [14]. The second interactive, group-based session focused on barriers to eliminating implicit bias and tools to do so [14]. The study reported high satisfaction on survey results rating the training and also identified several qualitative themes in the three-person focus group data [14]. Participants demonstrated recognition of instances of bias in themselves and others, representing an increased awareness [14]. They also reported themes of an overall increased awareness, confidence in addressing bias going forward, and commitment to continued examination of bias personally and structurally [14]. Interestingly, participants report feeling safety and openness in the discussions, which is markedly different from the medical student data mentioned earlier [12,14].

Vignettes and decision-making

Several studies were found to have comparable use of clinical

vignettes and the IAT as a method of exploring the correlation between IR bias and decision making. Haider et al. enrolled 202 medical students and surveyed them about explicit bias in addition to collecting IAT data [15]. The clinical decision vignettes involved randomly alternating patient race (Black/White) and covered four areas of patient care: assessment of pain, consenting for a procedure, patient reliability, and patient trust [16]. In the findings, there was a measurable pro-White bias detected without congruent explicit bias, and participants' race IAT score was not significantly associated with differences in vignette outcomes by patient race [17].

A study of 302 New Zealand (NZ) medical students posited a similar comparison of racial bias (IAT) score and vignette outcomes [16]. The NZ students also demonstrated a pro-NZ European (White) bias over indigenous Maori, yet showed no significant difference in cardiovascular disease (CVD) vignette outcome based on patient race [16]. Students did show a difference in mental health (MH) treatment choice by race, but it was not established that either choice was actually inferior [16]. Both of these vignette-based studies discussed that there was not a significant difference in clinical decision outcomes on the vignette patients which could be predicted by race IAT scores [15,16].

Another team, using the same NZ medical student data, focused on questions of clinician beliefs and expectations related to the CVD and mental health vignettes as well as IAT data [17]. In these analyses, the authors found that students who had pro-NZ European bias were more likely to consider NZ-European vignette patients more compliant than indigenous Maori vignette patients [17]. While not a direct clinical decision, these perceptions might demonstrate a lack of understanding about certain barriers and impact crucial aspects of patient care or provider-patient relationships.

Using the IAT

Building on research about social cognition and stereotype activation, three scientists developed the IAT and Project Implicit in the late 1990s. The IAT measures associations between images and words with the premise being: the faster an association is made, the stronger the association [18]. The IAT has been used millions of times around the world and demonstrates the presence of IR bias in all cultures and all races of people. Over many years, as with any measurement tool, the test itself has also been studied and demonstrated psychometric validity and reliability, as well as critiqued for weaker associations of predicting behavior [19,20].

In using the IAT as an intervention, a study of medical students included the IAT as part of their bias training in faculty-led sessions and collected additional data with attitudinal surveys to evaluate students' awareness of their own bias [4]. This study reported overall implicit bias, including racial bias as well as biases for age, religion, and skin tone, with most participants opting for the race IAT [4]. The results showed that students whose attitudinal results represented 'denial' of bias affecting them were more likely to demonstrate views that patients are all treated the same, and the US healthcare system is fair [4].

Stone et al., used the White vs Hispanic IAT as the outcome measure to assess the effect of active learning workshops about implicit bias [21]. This research included 257 medical student volunteers who took pre- and post-workshop IATs, and completed

the interactive workshop curriculum which emphasized intergroup bias, downstream effects of unchecked stereotyping, and control of implicit bias activation [21]. They reported significant decreases in implicit bias post-workshop scores, as measured by the IAT [21].

In a robust prospective observational study, a team looked at changes in racial bias (also as measured by the IAT) of participants over the four years of medical schooling, given the existing curriculum addressing race from 3547 medical students at 49 participating medical schools [22]. The research focused on differentiating which factors were associated with a decrease in IR bias and were categorized as follows: formal curricula such as courses or trainings (some of which included use of the Black-White IAT); informal curricula such as hidden curricula or racial climate; and interracial contact during their schooling [22]. Elements of each category or domain were associated with a decrease in IR bias. Interestingly, the IAT was used in this study as the measure of decrease in bias (scores reported in year 1 vs. year 4), but was also included in the formal curricula domain as one element of intervention [22]. The results demonstrated for this population that taking the IAT as part of curriculum was a predictor of a decrease in IR bias [22].

Discussion

The challenging nature of teaching and evaluating something as subjective, nebulous, and internalized as implicit bias is demonstrated in the variety of interventions, curricula, and outcomes represented here. Using the IAT as an outcome measure may provide more generalizable data for use in making comparisons. Attitudinal measures with other standardized tools give another dimension to the evaluation of implicit bias and its complexity [16,17,23]. Additionally the qualitative studies, while only transferable to similar contexts, provide in-depth and exploratory data that may not be captured in quantitative approaches [11,12,14].

There are features of different trainings and interventions that are appealing and seem feasible to deploy, yet some are more rigorous and time-intensive. The least challenging 'intervention' is examining and bolstering existing curriculum. Vignettes can be a straightforward way to present a clinical challenge in a controlled manner, changing only the desired variables such as race or ethnicity, however it may be easier for a student to feel 'removed' from an actual patient encounter in an online vignette. Active learning workshops or focused/targeted trainings are time- and person-intensive but can be valuable experiential learning opportunities.

In the broader picture of healthcare research there is consistent data supporting the presence of IR bias in healthcare students and practitioners, but inconsistent results in recreating a scenario where the impact of this bias can be adequately measured. In the healthcare training literature as well, several studies used online clinical vignettes to ascertain whether the existence of IR bias correlated with biased clinical choices [15,16,24]. And though all three studies document the presence of IR bias, none of the results showed a valid association between this bias and clinical judgement. One explanation for the lack of association is that the stress and pressure of a real patient interaction is not well represented in vignettes, as patients are hypothetical in these

scenarios [16]. Another explanation that has been suggested is the presence of social desirability bias in some of the academic evaluations of racial bias.

There are studies that used the IAT in different ways – as an intervention and/or an outcome. This variation, while making direct comparisons challenging, strengthens the idea that there are many ways to present, evaluate, and educate about IR bias, hopefully making the topic more accessible to some educators. Additionally, the qualitative themes demonstrated students felt the importance and responsibility to learn and recognize IR bias, and were supportive of bias education interventions even if the process evokes negative feelings [12].

The primary limitation of reporting on the literature on implicit bias training in healthcare was the variety of outcome measures used in studying this concept. Some research examined an attitudinal aspect, though there were different ways to evaluate or measure bias. Even with the similarity of a bias focus, there were differences in how to measure and evaluate findings. Several of the studies looked at behavior (clinical decision making) as the outcome, rather than the measure of bias or attitude. The behavior of future clinicians is the eventual target for change, so this is an important (yet complex) variable for analysis.

A solution to address the limitation of various outcomes might be to broaden the population of eligible health professions students and use a replicable training intervention or curriculum. A larger, broader population with a consistent intervention might reveal successes about how to raise bias awareness in healthcare students. However, there is a varying level of clinical decision making and associated responsibility in patient care. Physicians have the greatest level of this responsibility, and PAs and Nurse Practitioners have a similarly high level as well. The limits of generalizability for this idea would warrant attention in examination of “successful” findings.

Another possibility for healthcare to improve in the area of IR bias in clinical decisions would be to learn from a different industry with similar roles of authority and decision-making and learn what successes they have identified. Much like Gawande studied the aviation industry as inspiration for developing checklists to reduce medical errors over a decade ago, strategies from another industry could be applied to reducing bias in healthcare [25]. Implementing such a strategy in healthcare education can raise awareness of IR bias and racial inequity in the next generations of clinicians.

This review of peer-reviewed published research on IR bias education for future medical providers includes information about a variety of educational strategies that can inform curriculum development. Racial disparities in health are well-documented which underscores the need for more in-depth health equity education for future clinical professionals. Healthcare provider education requires preparation in this domain to meet competencies for graduation and clinical practice that promotes health equity. Consider what your program and institution currently offers for education about healthcare and racism or IR bias, and use this review as the beginning to explore, expand, and reinforce.

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