Diversity, Equity, Inclusion, and Justice

Defeating Unconscious Bias: The Role of a Structured, Reflective, and Interactive Workshop

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ABSTRACT

Background Unconscious or implicit biases are universal and detrimental to health care and the learning environment but can be corrected. Historical interventions used the Implicit Association Test (IAT), which may have limitations.

Objective We determined the efficacy of an implicit bias training without using the IAT.

Methods From April 2019 to June 2020, a 90-minute educational workshop was attended by students, residents, and faculty. The curriculum included an interactive unconscious biases presentation, videoclips using vignettes to demonstrate workplace impact of unconscious biases with strategies to counter, and reflective group discussions. The evaluation included pre- and postintervention surveys. Participants were shown images of 5 individuals and recorded first impressions regarding trustworthiness and presumed profession to unmask implicit bias.

Results Of approximately 273 participants, 181 were given the survey, of which 103 (57%) completed it with significant increases from pre- to postintervention assessments for perception scores (28.87 [SEM 0.585] vs 32.73 [0.576], $P < .001$) and knowledge scores (5.68 [0.191] vs 7.22 [0.157], $P < .001$). For a White male physician covered in tattoos, only 2% correctly identified him as a physician, and 60% felt he was untrustworthy. For a smiling Black female astronaut, only 13% correctly identified her as an astronaut. For a brooding White male serial killer, 50% found him trustworthy.

Conclusions An interactive unconscious bias workshop, performed without the use of an IAT, was associated with increases in perceptions and knowledge regarding implicit biases. The findings also confirmed inaccurate first impression stereotypical assumptions based on ethnicity, outward appearances, couture, and media influences.

Introduction

Unconscious or implicit biases are attitudes or stereotypes that arise from preformed mental associations, which influence our understanding, actions, and decisions in an unconscious manner.[1] Unconscious biases are universal and have adverse consequences for the workplace, health care, and the learning environment.[2–4] Studies show that clinicians' negative implicit bias correlated with poorer quality of care, inadequate clinician-patient communication, and health care disparities and inequities.[3–8] Unconscious biases adversely affect faculty recruitment and promotion, including the persistent underrepresentation of Black Americans and other minorities in medicine, further exacerbating racial health care disparities.[9,10] Unconscious bias has been shown to be malleable and correctable with training.[2,10] Consequently, strategies to mitigate unconscious bias are needed in medical education. Previously reported unconscious bias trainings have revealed that Implicit Association Tests (IAT) are ubiquitous.[10] Studies have shown that IATs may induce defensiveness triggering denial of bias and existence of health disparities.[11] Critics suggest that instead of reflecting authentic negative attitudes, IAT scores may stem from other associations such as victimization, maltreatment, and oppression.[11,12] Authors of the IATs have noted that the tool may not reflect actual biases or acts of discrimination related to identified preferences.[4] Subsequently, the objective of this study was to determine: (1) if a brief educational workshop can increase knowledge and perceptions regarding unconscious bias, and (2) show that inaccurate first impressions can be elicited without the IATs.

Methods

This was a retrospective study of an educational workshop presented from April 2019 to June 2020. The workshop was developed from the knowledge gained by the author on completing the Association of American Medical Colleges Healthcare Executive Diversity and Inclusion Certificate (provided as online

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supplementary data). Kern's 6-step approach for curriculum development was used.[12] The conceptual framework utilized was "situated learning-guided participation" in which didactic and interactive activities facilitate independent learning.[13]

The 90-minute educational workshop included an interactive presentation on unconscious bias. To briefly demonstrate implicit bias, participants were rapidly shown images of 5 individuals in succession and they recorded their first impressions of the persons regarding trustworthiness and presumed profession. This workshop also taught intersectionality, which is a theoretical framework conceptualizing that multiple social categories (eg, race, gender, sexual orientation, poverty) intersect to reflect multiple interlocking systems of privilege and oppression at the social-structural level (eg, racism, sexism, heterosexism).[14]

The workshop utilized video clips of situational vignettes to demonstrate the impact of unconscious bias. Participants reflected on experiences of unconscious bias and mitigating strategies in small groups (TABLE 1). The workshop was presented at the 2019 CREOG & APGO Annual Meeting in New Orleans. Subsequently it was presented in multiple voluntary sessions to medical students, residents, and faculty in internal medicine, family medicine, psychiatry, and obstetrics and gynecology departments at California University of Science and Medicine and Arrowhead Regional Medical Center.

A survey consisting of 9 perception and 11 knowledge questions on implicit bias was assessed for clarity and reliability by content experts and repeat testing. The survey was completed pre- and posteducational workshop to assess short-term learning (provided as online supplementary data). The survey was not offered to the incoming class of 92 medical students because of time constraints of the orientation schedule.

Statistical analysis was performed using SPSS 21.0 (IBM Corp, Armonk, NY). Student's *t* tests were performed with calculation of 95% confidence interval and odds ratio with a *P* value of .05 as significant. The first impressions data was tabulated, and percentages of correct responses reported.

The study was approved by the Institutional Review Board of California University of Science and Medicine.

Results

Of approximately 181 participants, 103 (57%) respondents completed the surveys, including 28 (36%) females, 49 (64%) males, and 26 with missing gender. Twenty-three (22%) had previously taken the IATs, while 24 (22%) had previous implicit bias training. There were 61 (59%) physician faculty, 24 (23%) residents, 4 (4%) program coordinators, and 2 (2%) students. Medical specialties included 33 (38%) obstetrics and gynecology, 33 (38%) family medicine, 9 (10%) internal medicine, and 11 (13%) psychiatry. Sixty-three (61%) participants attended workshops in San Bernardino, California, while 40 participated at the APGO conference.

The results of testing for first impressions revealed that for a White male physician community advocate covered in tattoos and dressed in jeans, 2% correctly identified him as a physician. For a smiling Black woman astronaut, 13% correctly identified her as an astronaut. Of a brooding White male serial killer, 50% found him trustworthy. For a Cameroonian attorney, many incorrectly assumed she was Maya Angelou, and thus labeled her a writer (TABLE 2).

There were significant increases from pre- to postintervention assessments for the total perception scores (28.87 [SEM 0.585] vs 32.73 [0.576], $P < .001$) and total knowledge scores (5.68 [0.191] vs 7.22 [0.157], $P < .001$). All 9 perception questions including only 4 of the 11 knowledge questions increased significantly after the intervention (TABLE 3). Significant subgroup differences are reported as online supplementary data.

Objectives
We determined if implicit bias training without using the Implicit Association Test (IAT) is feasible.

Findings
A brief interactive workshop without using IAT can increase knowledge and perceptions of implicit bias and introduce the principle of intersectionality.

Limitations
External generalizability was limited by selection and participation bias.

Bottom Line
A brief interactive implicit bias workshop intervention can be used to train residents, other learners, faculty, and coordinators in the medical education continuum.

Discussion

This study demonstrates that a 90-minute interactive workshop significantly increased perception and knowledge regarding unconscious bias. Implicit bias may contribute to health care disparities by influencing physician behavior resulting in differences in medical treatment along race, gender, or other characteristics.[1,15] Thus curricular activities allowing physicians to become aware of their biases may facilitate the provision of patient-centered care.

This intervention can be utilized for residents, other learners, faculty, and coordinators in the medical education continuum. Furthermore, a literature review

TABLE 1
Agenda for the Unconscious Bias Reflective and Interactive Workshop

Category	Activity	Time
1. Presurvey	Participants complete a short survey on unconscious biases' perception, attitude, and knowledge. This will provide awareness and baseline for the participants.	10 minutes
2. Unconscious biases presentation	Short presentation on unconscious bias, including Stroop effect, neurobiology of unconscious bias, examples of unconscious bias in recruitment, education, and health care; mitigating strategies of counter-stereotypic examples, stereotype replacement, individuation, perspective-taking; FLEX[25] principle (F, Focus within; L, Learn from others; E, Engage in dialogue; E, Expand the options); Cook Ross[26] model includes (1) get feedback; (2) recognize that you have bias; (3) practice constructive uncertainty; (4) explore awkwardness and discomfort; and (5) engage with those who are different.	30 minutes
3. First impressions	Will be shown images of 5 individuals, and participants record their first impressions of the people on trustworthiness and their likely profession.	5 minutes
3. Group activity 1: experiences	Participants discuss their perceptions and experience with unconscious bias.	10 minutes
4. Video-based intervention	Participants watch a video using realistic vignettes to demonstrate the impact of unconscious bias in the workplace and teach practical and memorable tools participants can use to counter their own unconscious biases.	15 minutes
6. Group activity 2: strategies	Participants reflect on strategies and recommendations on unconscious bias scenarios or challenges in self, work, and the community.	10 minutes
7. Postsurvey	For wrap-up, the participants complete a short survey to objectively determine any changes in perception from the video-based intervention.	10 minutes

of implicit bias training only revealed reports on medical students training with none noted on GME training.[16–24] This current study adds to the literature by reporting an educational workshop focused on all GME that detected biases in real time without a formal IAT.

In contrast to previous reports that utilized IATs, this study's participants recorded first impressions after brief exposures to images of real individuals with multiple identities that highlighted the principle of intersectionality. For example, a lesbian Black woman in African garb (4 oppressed identities) was not identified as a lawyer, while a young Black female astronaut (3 oppressed identities) was identified as an actress. A White male (2 privileged identities) serial

TABLE 2
Participants' First Impressions Regarding Trustworthiness and Likely Profession of Images of 5 Individuals Shown in Rapid Succession

True Persona	Trust	Advocate or Politician	Blue-Collar	Lawyer	Doctor	Astronaut	Professions Written in by Participants
White male in jeans and a "hipster" pose, physician advocate with tattoos	43	13	70	0	2	0	Tattoo artist, manual labor/construction worker, musician, auto mechanic
Asian female in regal stance, prime minister	72	70	2	43	32	4	Politician, advocate, diplomat
Black female in native African attire, attorney, LGBTQ advocate	74	62	0	30	30	0	Writer, politician
White male, brooding, serial killer	53	30	21	47	36	6	Professor
Black female, smiling, astronaut	81	51	0	47	47	13	Actress

Note: Results are in percentages participants who completed the first impression surveys (N = 91).

TABLE 3
Preintervention and Postintervention Scores of the Unconscious Bias Workshop[a]

Variable[b]	Preintervention Score (SE)	Postintervention Score (SE)	P Value (95% CI)
Total knowledge survey score	5.68 (0.19)	7.22 (0.16)	< .001 (5.48–2.24)
Total perception survey score	28.87 (0.59)	32.73 (0.58)	< .001 (2.04–1.06)
Perception Questions			
1. Unconscious bias toward others	2.49 (0.12)	3.12 (0.12)	< .001 (0.30–0.98)
2. Unconscious bias of leaders	3.44 (0.11)	3.77 (0.09)	.015 (0.07–0.61)
3. Unconscious bias of peers	3.46 (0.11)	3.81 (0.09)	.012 (0.08–0.64)
4. Institutional unconscious bias	2.44 (0.12)	2.89 (0.11)	.005 (0.13–0.77)
5. Confident decreasing individual bias	4.06 (0.09)	4.20 (0.08)	.026 (0.10–0.37)
6. Confident teaching individual bias	3.33 (0.10)	3.84 (0.09)	< .001 (0.24–0.77)
7. Confident decreasing institutional bias	3.29 (0.10)	3.77 (0.09)	< .001 (0.21–0.75)
8. Comfort debriefing learners' bias in classroom or patientcare	3.39 (0.11)	3.87 (0.09)	.001 (0.20–0.75)
9. Comfort debriefing peers' workplace bias	3.19 (0.11)	3.69 (0.09)	.001 (0.20–0.80)
Knowledge Questions			
10. First thoughts	0.95 (0.04)	0.96 (0.02)	NS
11. Benefits of pausing	0.97 (0.02)	0.98 (0.02)	NS
12. Affinity bias	0.19 (0.04)	0.57 (0.05)	< .001 (026–0.51)
13. Conformation bias	0.14 (0.04)	0.30 (0.05)	.006 (0.05–0.28)
14. Common ground	0.64 (0.05)	0.70 (0.05)	NS
15. Conformity bias	0.56 (0.05)	0.73 (0.05)	.015 (0.03–0.31)
16. Unconscious bias is universal	0.96 (0.02)	0.99 (0.01)	NS
17. Fear and out-group response	0.68 (0.05)	0.90 (0.03)	< .001 (0.11–0.34)
18. Implicit bias facts	0.35 (0.05)	0.47 (0.05)	NS
19. Committee decision-making	0.42 (0.05)	0.49 (0.05)	NS
20. Cook Ross model	0.16 (0.04)	0.27 (0.05)	NS

Abbreviation: NS, non-significant.
[a] 103 participants.
[b] A brief synopsis of each perception question and the theme of each knowledge question is listed. The full description of each question can be found as online supplementary data. The total knowledge score is the total of the 11 knowledge questions and the total perception score is the total of the 9 perception questions.

killer was trusted by 50% and identified as a professor, while a tattooed and informally dressed White man (2 privileged and 2 oppressed identities) was not recognized as a doctor. These findings confirmed inaccurate first impression stereotypical assumptions based on ethnicity, outward appearances, couture, and media influences. These findings confirm that biases can be detected without relying on the use of a formal IAT and its limitations.

Limitations of this study included the likelihood of participation bias since approximately 57% of the participants completed the surveys. Selection bias may have occurred since participants self-selected. Ethnic data was not collected. Barriers to implementation include time to identify and train facilitators. Institutions and departments would have to prioritize implicit bias training and provide protected time for both faculty and residents. The workshop is relatively inexpensive, acceptable, and feasible with faculty time commitment as the major cost. The organization and planning of this program would require about 4 hours, and the workshop presentation would require approximately 2 hours to implement.

Conclusions

This study has demonstrated that a brief interactive workshop without using IAT can be implemented to increase knowledge and perceptions of unconscious bias.

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