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Authors

Brown, Cortlyn
Daniel, Rosny
Addo, Newton
et al.

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ORIGINAL CONTRIBUTION

The experiences of medical students, residents, fellows, and attendings in the emergency department: Implicit bias to microaggressions

Cortlyn Brown MD[1] | Rosny Daniel MD[2] | Newton Addo[2] | Starr Knight MD[3]

[1]Department of Emergency Medicine, Atrium Health Carolinas, Charlotte, North Carolina, USA

[2]Department of Emergency Medicine, University of California at San Francisco, San Francisco, California, USA

[3]Division of General Internal Medicine, Department of Medicine, Zuckerberg San Francisco General Hospital, University of California at San Francisco, San Francisco, California, USA

Correspondence
Cortlyn Brown, MD, Vice Director of Diversity, Equity, and Inclusion, Department of Emergency Medicine, Atrium Health Carolinas, Charlotte, NC 28203, USA.
Email: cortlyn.brown@atriumhealth.org

Abstract

Objectives: Microaggressions and implicit bias occur frequently in medicine. No previous study, however, has examined the implicit bias and microaggressions that emergency medicine (EM) providers experience. Our primary objective was to understand how often EM providers experience implicit bias and microaggressions. Our secondary objective was to evaluate the types of microaggressions they experience and whether their own identifying characteristics are risk factors.

Methods: A questionnaire was administered to EM providers across the United States. Outcome measures of experiencing or witnessing a microaggression, overt discrimination, or implicit bias were described using frequencies, proportions, and logistic regressions. Where a univariate association between outcome measures and demographic characteristics was found, multivariate regression to estimate odds ratios (ORs) and 95% confidence intervals (95% CIs) was performed. Proportional odds logistic regression models were used to evaluate the specific type of microaggressions experienced and if there was an association with demographic variables.

Results: A total of 277 medical providers (48% trainees—medical students, residents, and fellows—and 52% attending physicians) completed the survey. A total of 181 (65%) respondents reported experiencing a microaggression. Female (OR = 5.9 [95% CI = 3.1 to 11.2]) and non-White respondents (OR = 2.4 [95% CI = 1.2 to 4.5]) were more likely to report experiencing any microaggression. Misidentification, the most common form of microaggression, was more common with trainees compared to attending physicians (proportional OR [POR] = 2.6 [95% CI = 1.7 to 4.0]) and non-White, compared to White, respondents (POR = 2.2 [95% CI = 1.3 to 3.6]). Misidentification as nonclinician staff was associated with gender (POR = 53 [95% CI = 24 to 116]) and 52% of female respondents reported being mistaken for nonclinician staff almost daily. Seventy-six percent of respondents reported being called a vulgar term by a patient and 21% by a staff member.

Conclusions: EM providers, particularly women and non-Whites, who responded to our survey experienced and witnessed bias and microaggressions, most commonly misidentification, in the ED.

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KEYWORDS
implicit bias, microaggressions, misidentification

INTRODUCTION

Diverse representation of race, ethnicity, and gender among medical providers is important when it comes to patient care and health outcomes. Patient–physician race concordance, for example, is associated with decreased delays in seeking care and increased timeliness of receiving appropriate prescription medications.[1,2] In addition, for patients of all gender identities, receiving medical care from a female provider is associated with decreased in hospital mortality and readmission rates, improved diabetes management and testing, and increased referral to specialists.[1–3]

Despite the clear benefit of a diverse workforce, only 9.9% of emergency medicine (EM) physicians identify as an underrepresented minority (URM; 4.5% Black, 4.8% Hispanic/Latino, and 0.6% American Indian/Alaska Native) and only 25% of emergency physicians are female despite 50% of current medical students identifying as female.[4] Furthermore, there are gender and racial disparities in the promotion of faculty rank and the selection of leadership positions, such as chairperson or program director.[5–7]

Previous studies have shown that physicians of color across various specialties experience discrimination from fellow physicians, colleagues, and patients.[8–12] However, there is less research specific to the field of EM.[13] In 2016, the American College of Emergency Physicians (ACEP) conducted a council poll, which found that EM physicians who responded to the survey experienced unequal treatment based on gender (30%), ethnicity (13%), and sexual orientation (9%).[14] Additionally, EM physicians felt their that professional opportunities were limited by gender (27%), ethnicity (4%), and sexual orientation (9%). They also observed coworkers treating others inappropriately based on their gender (32%), ethnicity (16%), and sexual orientation (26%). Of note, these results are limited by the small sample size, particularly of those from underrepresented ethnic and gender backgrounds.

Discrimination contributes to career dissatisfaction and high job turnover rates for URM physicians.[15] This subsequently contributes to the disparities in faculty rank promotion for URM physicians compared to White male counterparts of equal productivity.[13,16–18] One form of discrimination is microaggression, brief daily exchanges that send denigrating messages to a target group.[19] The use of the term "micro" refers only to the pervasive and ongoing nature of these exchanges and is not a measure of the impact. Microaggressions are often based on implicit bias, which is the tendency to automatically associate people with stereotypical characteristics of the identity group to which they belong.

To our knowledge, there are no studies that examine the implicit bias and microaggressions that EM providers experience from both patients and colleagues. In this study, we aimed to understand how often EM providers experience implicit bias and microaggressions. Secondarily, we sought to evaluate what types of microaggression they experience and whether specific aspects of personal identity were risk factors for being targeted by microaggression.

METHODS

Study design and setting

We administered a questionnaire to medical students rotating in the emergency department (ED), EM residents, EM fellows, and EM attendings across the country from 2018 to 2019. We asked all participants to only evaluate their experiences while working in the ED. The study was deemed exempt by the University of California Institutional Review Board and was designed to comply with quality standards for survey reporting in medical literature. Instrument design, development, and testing are described below.

Selection of participants

Inability to speak English was the only exclusion criterion. We oversampled for URM providers by distributing the survey through the Black Emergency Medicine GroupMe. The questionnaire was also distributed to program directors, via the Council of Residency Directors in Emergency Medicine (CORD) listserv, who were then asked to forward it to the medical students, residents, fellows, and attendings in their department. The original email and GroupMe message were followed by two reminders. Consent was obtained electronically.

Methods and measurements

No previous questionnaires existed that addressed the study question, so we designed a questionnaire that was then reviewed by a survey methodologist and piloted through electronic distribution to our intended audience. Our pilot survey had 25 responses, and several improvements were made through this process including adding skip patterns and breaks to decrease response burden. The final questionnaire consisted of 13 questions grouped into (1) demographics; (2) frequency (never, at least monthly, at least weekly) of which providers experience specific examples of overt discrimination (e.g., a staff member blatantly calls me a vulgar term referring to my race, ethnicity, sexual orientation, or gender) and subtle microaggressions (e.g., people are surprised with how well I speak English) from patients, ED staff, and providers; (3) yes/no questions on if the respondent has experienced or witnessed microaggressions directed at somebody else; and (4) If they have experienced implicit bias at work. Respondents who had experienced or witnessed microaggressions

were then prompted to elaborate on the situation and provide recommendations for how best it should be handled. An optional comments section was available at the end. Participants generally completed the questionnaire within 5 min. The questionnaire did not include any identifying information. There are no funding organizations.

Data analysis

Our primary endpoint was self-reported experience of a microaggression. Secondary endpoints were experiencing implicit bias and witnessing microaggression. These outcomes and their association with the respondent demographic variables were described using frequencies, proportions, and logistic regression. Variables that displayed some level of association ($p < 0.2$) with the primary endpoint were further explored with multivariate regression to estimate odds ratios (ORs) and 95% confidence intervals (CIs). Exploratory analyses of the experience of specific types of microaggressions were also assessed with proportional odds logistic regression models to describe where these outcomes were associated with any of the demographic variables. All analyses were performed using SAS version 9.4 or R version 3.5, and p-values <0.05 were considered statistically significant.

RESULTS

We had 277 completed responses (Table 1). Of the 277 respondents, 132 (47.7%) were trainees (medical students, residents, and fellows), while 145 (52.3%) were attending physicians. Seventy-five percent of respondents were from academic institutions. Fifty-one percent of respondents identified as White. Respondents represented every region in the country. Of the total respondents, 85.9% identified as heterosexual, 12.6% identified as LQBTQ, and 4.1% identified as other or unknown. In addition, 40% of respondents identified as cisgender females, while 33.6% of respondents identified as cisgender males. Nonbinary respondents represented 4% of total respondents, while 22% of respondents identified as other or unknown gender identities. Our calculated Cronbach alpha was 0.8.

Among our survey respondents, experience with microaggressions was common. A total of 181 (65%) respondents reported that they personally experienced microaggressions and 216 (78%) had witnessed a microaggression in the ED. Respondents who self-identified as female (OR = 5.9 [95% CI = 3.1 to 11.2]) or non-White (OR = 2.4 [95% CI = 1.2 to 4.5]) were more likely to report experiencing any microaggression even after adjustment for career level (trainee vs. attending; Table 2). Respondents who self-identified as LGBTQ were not more likely to report experiencing microaggression (OR = 1.0 [95% CI = 0.5 to 2.2]).

Narrative experiences of implicit bias were also described by 207 (74%) respondents. The proportion of respondents who experienced specific microaggressions and overt discrimination weekly, monthly, or ever are described in Table 3 and Figure 1.

> Ignored at a meeting, only to have a person of the other sex say the same thing and have it be accepted.

> Often, I'm treated very differently as a female. Male colleagues are more likely to question my medical decision, give me less autonomy, or feel the need to explain something to me that I know, in comparison to their male colleagues.

Misidentification, being mistaken for someone else and/or not being identified as a clinician, was the most common form of microaggression. Fifty-five (19.9%) respondents reported being mistaken for another person at least once a month. This was more likely to be reported with trainees compared to attending physicians (proportional OR [POR] = 2.6 [95% CI = 1.7 to 4.0]; Figure 2) and with non-White, compared to White, respondents (POR = 2.2 [95% CI = 1.3 to 3.6]). Furthermore, 172 (62%) respondents reported that they were mistaken for nonclinician ED staff at least once a month. This type of misidentification was strongly associated with female gender (POR = 53 [95% CI = 24 to 116]). Fifty-two percent of females reported being mistaken for other nonclinician ED staff almost daily and only 3.5% stated they had never experienced this (Figure 3). Only 1% of male respondents, however, reported almost daily misidentification and 43% reported they had never experienced this.

> Mistaken for medical student, nurse, janitor after introducing myself. It happens so often there's no way to ignore it. Unfortunately, it is so pervasive that it sometimes feel futile to educate people on the matter.

Misidentification as somebody who shares an aspect of your identity was also common and 218 (78.7%) of total respondents reported experiencing this; 54.5% and 27.4% of respondents reported experiencing this at least monthly and at least weekly, respectively.

> Often asked if I speak Spanish or can translate even though I don't speak Spanish. I am Hispanic and first-generation American (on one side). I am very often mistaken for other Hispanic females who bear little resemblance other than dark hair and tan skin—what's most surprising is how often the person making the mistake wants to argue with you—to try and convince you that they're right!

> I witnessed an attending calling a resident with a Hispanic surname by the name of another resident with a Hispanic surname. When corrected they stated that they would just call both of them by a combined (made up mix of both names) name so they didn't have to remember.

Overt discrimination from patients toward staff were also common occurrences. A total of 211 (76%) respondents stated they had been

TABLE 1 Respondent demographic characteristics and experience with microaggressions and implicit bias

	All respondents ($n = 277$)	Experienced a microaggression ($n = 181$)	Witnessed a microaggression ($n = 216$)	Experienced implicit bias ($n = 207$)
Classification				
Trainee	132 (47.7)	94 (71.2)	99 (75.0)	96 (72.7)
Attending	145 (52.3)	87 (60.0)	117 (80.7)	111 (76.6)
Department affiliation				
Academic institution	208 (75.1)	136 (65.4)	160 (76.9)	155 (74.5)
Nonacademic	69 (24.9)	45 (65.2)	56 (81.2)	52 (75.4)
Race/ethnicity				
Mixed	14 (5.0)	7 (50.0)	7 (50.0)	9 (64.3)
Asian	30 (10.8)	24 (80.0)	25 (83.3)	20 (66.7)
Black	21 (4.6)	19 (90.5)	13 (61.9)	16 (76.2)
Hispanic/Latino	11 (4.0)	9 (81.8)	10 (90.9)	9 (81.8)
White	143 (51.6)	85 (59.4)	115 (80.4)	108 (75.5)
Other/unknown	58 (20.9)	37 (63.8)	46 (79.3)	45 (77.6)
Gender				
Cisgender female	111 (40.1)	92 (82.9)	90 (81.1)	87 (78.4)
Cisgender male	93 (33.6)	42 (45.2)	70 (75.3)	64 (68.8)
Nonbinary	11 (4.0)	6 (54.5)	6 (54.5)	8 (72.7)
Other/unknown	62 (22.4)	41 (66.1)	50 (80.6)	48 (77.4)
Sexual orientation				
Heterosexual	238 (85.9)	155 (65.1)	191 (80.3)	180 (75.6)
LGBTQ	35 (12.6)	23 (65.7)	24 (68.6)	24 (68.6)
Other/unknown	4 (1.4)	3 (75.0)	1 (25.0)	3 (75.0)
Location (U.S. region)				
West	105 (37.9)	62 (59.0)	90 (85.7)	87 (82.9)
South	48 (17.3)	33 (68.8)	32 (66.7)	31 (64.6)
Midwest	39 (14.1)	30 (76.9)	35 (89.7)	34 (87.2)
Northeast	85 (30.7)	56 (65.9)	59 (69.4)	55 (64.7)

Note: Data are reported as *n* (%).

called a vulgar term based on their own identity characteristics by a patient and 11% and 26% of the total respondents said this was a weekly and monthly occurrence, respectively.

> People make disparaging comments about LGBT patients in the ER (both patients and staff) knowing that I am also LGBT. Usually I attempt to make a correction in person. Otherwise, I ignore it.

These types of comments were less likely to occur between staff ($p < 0.001$) with only 61 (21%) respondents describing ever being called a vulgar term by another staff member and 1% of total respondents saying this was a weekly occurrence.

> There have been derogatory statements about trans people made while I am around but not directed at me.

Ninety-seven respondents (35%) reported that they have felt the need to conceal a certain part of their identity to be treated fairly. Sixteen percent of total respondents reported experiencing this at least once a month and 10% reported experiencing this at least weekly. Respondent region was not associated with experience of a microaggression but being in the Midwest was associated with both witnessing a microaggression and experiencing implicit bias ($p < 0.01$).

DISCUSSION

Discrimination and microaggressions have negative impacts on patients and medical providers alike.[20–22] However, the frequency of overt discrimination, microaggressions, and implicit bias experienced by EM providers had not been reported in the peer-reviewed literature to date. We found that, among respondents

TABLE 2 Respondent characteristics associated with a personal experience of a microaggression

	OR (95% CI)	*p*-value	AOR (95% CI)	*p*-value
Classification				
Trainee	1.6 (1.0–2.7)	0.05	1.3 (0.7–2.5)	0.4
Attending	Ref		Ref	
Race/ethnicity				
Non-White	2.4 (1.2–4.5)	<0.001	2.4 (1.2–4.5)	<0.001
White	Ref		Ref	
Gender				
Cisgender female	5.9 (3.1–11.2)	<0.001	6.4 (3.3 –12.6)	<0.001
Not identifying as cis	2.2 (1.2–4.1)		2.5 (0.8–8.1)	
Cisgender male	Ref		Ref	

Abbreviation: AOR, adjusted odds ratio.

Adjustment variables are classification, race/ethnicity, and gender.

TABLE 3 Frequency of specific microaggressions

	Never	Ever	At least monthly	At least weekly
People mistake me for someone who shares an aspect of my identity	59	218 (78.7)	151 (54.5)	76 (27.4)
People are surprised with how well I speak English	217	60 (21.7)	13 (4.7)	6 (2.2)
I am mistaken for ED staff (nurse, custodian, interpreter, technician, etc.)	52	225 (81.2)	172 (62.1)	123 (44.4)
People ask me to interpret for patients/family with whom I am not involved in treating	173	104 (37.5)	57 (20.6)	21 (7.6)
Attendings/nurses specifically ask me to see a patient who shares an aspect of my identity	128	149 (53.8)	55 (19.9)	18 (6.5)
A patient refuses to receive care from me	77	200 (72.2)	21 (7.6)	7 (2.5)
A patient specifically asks for a provider who is of another ethnicity, gender, or sexual orientation	81	196 (70.8)	33 (11.9)	6 (2.2)
A patient blatantly calls me a vulgar term referring to my race/ethnicity/sexual orientation/gender	66	211 (76.2)	71 (25.6)	30 (10.8)
A staff member blatantly calls me a vulgar term referring to my race/ethnicity/sexual orientation/gender	220	57 (20.6)	7 (2.5)	3 (1.1)
A staff member comments on my accent or lack there of	216	61 (22)	20 (7.2)	5 (1.8)
I have felt the need to conceal an aspect of my identity to be treated fairly	180	97 (35)	44 (15.9)	27 (9.7)

Note: Data are reported as *n* (%).

to our survey, microaggressions and implicit bias were a common experience in the ED. Despite this, some respondents relayed skepticism.

> I do not accept the idea of microaggressions as a real thing. Your survey is studying a thing that does not exist. I hope you do not perceuve (perceive) my comment as an aggression.

> Micro and Macro agressions (aggressions) are so faddish right now. Too bad you couldn't think of something actually useful to study.

Female and non-White respondents experienced microaggressions at a higher rate than their White male counterparts (Table 2). The most common microaggression for both women and non-Whites was misidentification. There are many potential explanations for this

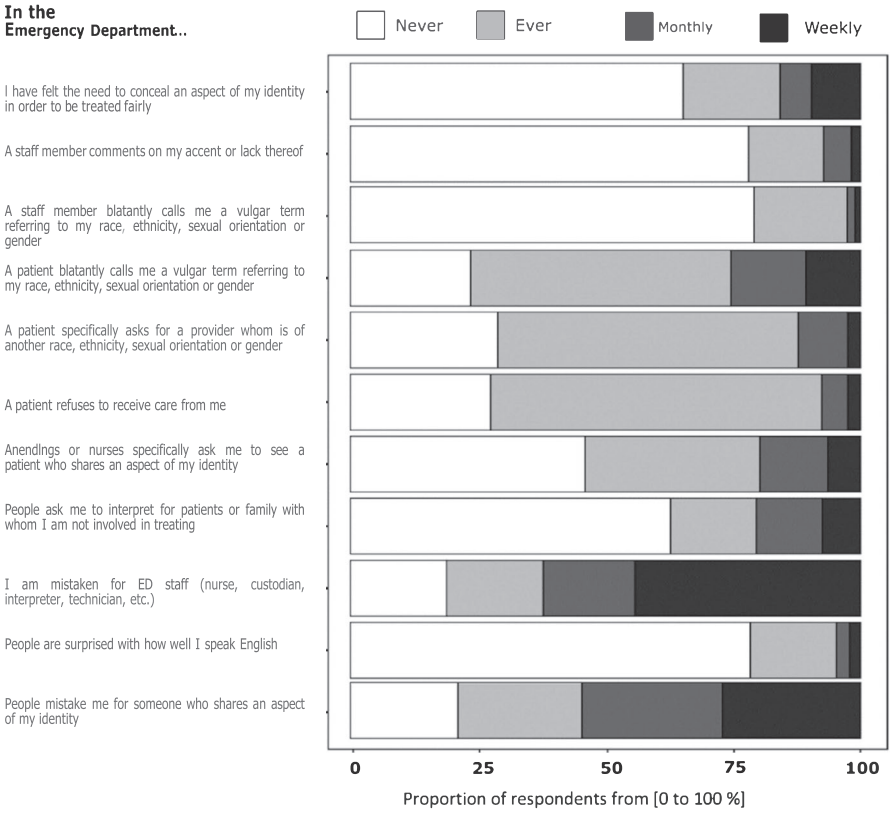

FIGURE 1 Proportion of respondents who experienced specific microaggressions and overt discrimination and the frequency at which they occurred

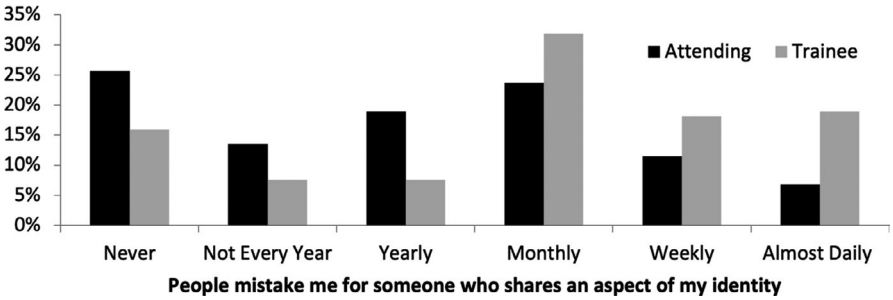

FIGURE 2 Proportion of respondents (from 0% to 100%) who experienced misidentification by career status

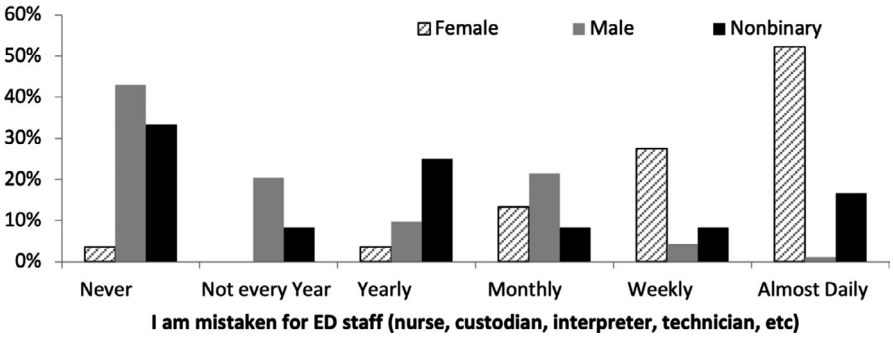

FIGURE 3 Proportion of respondents (from 0% to 100%) who experienced misidentification by gender

finding; the most apparent is the lack of gender and ethnic diversity within our provider workforce. If physician colleagues, staff, and patients are not accustomed to seeing female and non-White physicians, it may be more difficult for them to automatically and unconsciously identify them as doctors.

We also found that our respondents' gender, race, and ethnic identities were associated with targeted microaggressions, despite their level of training. This is to say that being an attending physician was not fully protective against the disproportionate burden of microaggressions faced by our survey respondents who identify as women or non-White.

Previous studies have suggested that LGBTQ trainees have been the targets of or witnessed homophobic rhetoric and often fear revealing their own sexual identity.[23] We were surprised to find that

there was no significant difference in experience of microaggressions and bias in respondents identifying as LGBTQ particularly as we have witnessed our LGBTQ colleagues experience microaggressions and bias in the ED.

Microaggressions may add to the already significant extraneous cognitive load emergency providers manage on a daily basis while working in a high-acuity and high-stress clinical environment and have the potential to greatly impact one's self-identity, feelings of self-worth, and anxiety.[24,25] If women and non-Whites have these unpleasant experiences at work at a higher rate than their White male counterparts, as our findings suggest, then they are facing added undue stress while performing their jobs. This additional burden may contribute to imposter phenomenon and career dissatisfaction.[26] The indirect effects of microaggressions (anxiety, imposter phenomenon, career dissatisfaction, etc.) may negatively affect performance, which is related to the attainment of leadership positions and promotions.[6,7,13,16–18] In addition, direct effects of microaggressions, such as gender and racial disparities in resident evaluations and milestone achievement, can also affect career progression.[27]

These missteps can create a dangerous cycle. Prejudgment and stereotyping lead to implicit bias, which leads to acts of microaggressions such as misidentification and inequitable assessments. This can contribute to job dissatisfaction, causing higher turnover rates and disparities in academic advancement. Overall, this contributes to a lack of diversity within the physician workforce, therein contributing to less equity, more stereotyping, and the continuation of the cycle (Figure 4).

To prevent and mitigate bias and microaggressions we must acknowledge that they exist. We must then address the frequency and impact of microaggressions. Residency training programs and departments should provide education about implicit bias and microaggressions as well as how to avoid, interrupt, and respond to bias and microaggressions when they occur. Developing a culture of awareness, equity, and inclusion is a major step in creating a more diverse workplace.

LIMITATIONS

Our study was limited by self-selection of respondents. Those who completed the survey, therefore, may have had some introduction to the concepts of microaggressions and bias and could potentially be more aware of these issues. To obtain the greatest number of responses and, therefore, the greatest representation of the country, we elected to distribute our survey via multiple methods including listservs. Subsequently, we are unable to calculate a true response rate. We ensured, however, that we had respondents from every region of the country and both academic and community sites. Further studies of the potential relationships between these experiences and gender, sexual, and racial identities should be conducted in a larger sample size.

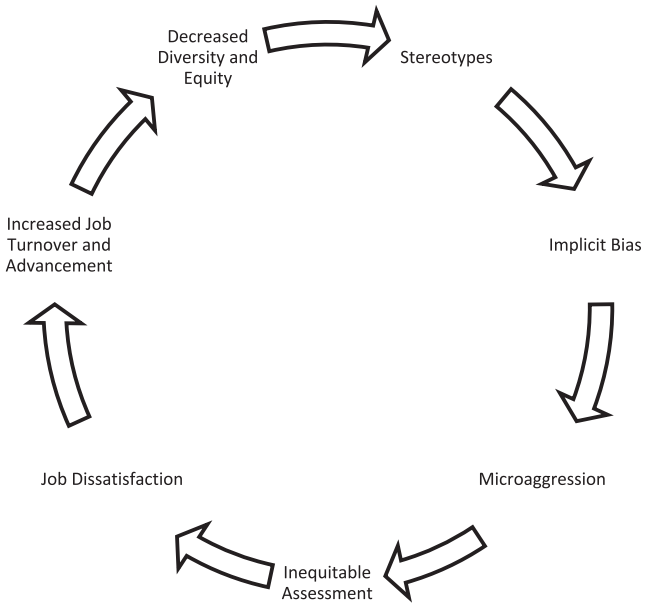

FIGURE 4 Diagram of potential cycle connecting stereotyping to decreased diversity and equity

CONCLUSIONS

Emergency medicine providers who responded to our survey witnessed bias and microaggressions in the ED. Women and non-Whites experienced microaggressions and bias at a higher rate.

ORCID

Cortlyn Brown https://orcid.org/0000-0002-1844-0624

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