**Social-Cognitive Psychology Literature:**

1. ([Dovidio and Jones 2019](#_ENREF_24))
2. ([Fazio and Olson 2003](#_ENREF_26))
3. ([Festinger and Carlsmith 1959](#_ENREF_27))
4. ([Forscher, Lai et al. 2019](#_ENREF_31))
5. ([Azevedo, Macaluso et al. 2013](#_ENREF_4))
6. ([Kawakami, Dovidio et al. 2005](#_ENREF_60)) – *HR hiring decisions*
7. ([Singleton 2014](#_ENREF_89))
8. ([Sue, Capodilupo et al. 2007](#_ENREF_92))
9. ([Sue, Alsaidi et al. 2019](#_ENREF_91))

**Health outcome disparities data:**

1. ([Berdahl, Owens et al. 2010](#_ENREF_6))
2. ([Chan, Nichol et al. 2009](#_ENREF_16))
3. ([Goyal, Kuppermann et al. 2015](#_ENREF_39))
4. ([Goyal, Johnson et al. 2017](#_ENREF_37))
5. ([Goyal, Johnson et al. 2020](#_ENREF_38)) (commentary ([Raphael and Oyeku 2020](#_ENREF_75))
6. ([Hall, Chapman et al. 2015](#_ENREF_47))
7. ([Hambrook, Kimball et al. 2010](#_ENREF_48))
8. ([Hampton, Cavalier et al. 2015](#_ENREF_49))
9. ([Johnson, Weaver et al. 2013](#_ENREF_58))
10. ([Kim, Looser et al. 2016](#_ENREF_61)) – *gender bias*
11. ([Lane, Rubin et al. 2002](#_ENREF_63))
12. ([Naim, Griffis et al. 2019](#_ENREF_67))
13. ([Nelson 2002](#_ENREF_69))
14. ([Rand, Butz et al. 2000](#_ENREF_74))
15. ([Mossey 2011](#_ENREF_66))
16. ([Razi, Churpek et al. 2015](#_ENREF_76))
17. ([Shah, Shah et al. 2014](#_ENREF_86))
18. ([Zook, Payne et al. 2017](#_ENREF_112))
19. ([Zook, Kharbanda et al. 2016](#_ENREF_111))

**Implicit bias in Health Care Professionals:**

1. ([Acosta and Ackerman-Barger 2017](#_ENREF_1))
2. ([Avant, Weed et al. 2018](#_ENREF_3))
3. ([Betancourt 2006](#_ENREF_8))
4. ([Blair, Havranek et al. 2013](#_ENREF_9))
5. ([Blair, Steiner et al. 2014](#_ENREF_10))
6. ([Burgess, Van Ryn et al. 2007](#_ENREF_12))
7. ([Chapman, Kaatz et al. 2013](#_ENREF_17))
8. ([Cooper, Roter et al. 2003](#_ENREF_20))
9. ([Cooper, Roter et al. 2012](#_ENREF_21))
10. ([Devine, Forscher et al. 2012](#_ENREF_22))
11. ([Dovidio and Fiske 2012](#_ENREF_23))
12. ([FitzGerald and Hurst 2017](#_ENREF_28))
13. ([Gonzalez, Garba et al. 2018](#_ENREF_35))
14. ([Hagiwara, Kron et al. 2020](#_ENREF_42))
15. ([Hagiwara, Dovidio et al. 2016](#_ENREF_41))
16. ([Hausmann, Myaskovsky et al. 2015](#_ENREF_52))
17. ([Hernandez, Haidet et al. 2013](#_ENREF_53))
18. ([Iheduru-Anderson 2020](#_ENREF_55))
19. ([Johnson, Ellison et al. 2017](#_ENREF_56))
20. ([Johnson, Hickey et al. 2016](#_ENREF_57))
21. ([Johnson, Winger et al. 2017](#_ENREF_59))
22. ([Maina, Belton et al. 2018](#_ENREF_65))
23. ([Oliver, Wells et al. 2014](#_ENREF_71)) – *clinical decision making*
24. ([Sabin, Nosek et al. 2009](#_ENREF_80))
25. ([Van Ryn 2016](#_ENREF_103))
26. ([van Ryn and Saha 2011](#_ENREF_105))
27. ([Wakefield, Pantaleao et al. 2018](#_ENREF_106))
28. ([White-Means, Dong et al. 2009](#_ENREF_108))
29. ([Zestcott, Blair et al. 2016](#_ENREF_110))

**Bias Curriculum Development:**

1. ([Allen 2010](#_ENREF_2))
2. ([Burgess, Beach et al. 2017](#_ENREF_13)) – *mindfulness/meditation*
3. ([Chapman, Hall et al. 2018](#_ENREF_18))
4. ([FitzGerald, Martin et al. 2019](#_ENREF_29))
5. ([Gonzalez, Deno et al. 2019](#_ENREF_34))
6. ([Gonzalez, Deno et al. 2018](#_ENREF_33)) – *facilitators*
7. ([Gonzalez, Kim et al. 2014](#_ENREF_36))
8. ([Hagiwara, Slatcher et al. 2017](#_ENREF_43))
9. ([Hassen, Lofters et al. 2021](#_ENREF_51))
10. ([Leslie, Sawning et al. 2018](#_ENREF_64))
11. ([Nairn, Hardy et al. 2012](#_ENREF_68))
12. ([Nelson 2016](#_ENREF_70))
13. ([Roberts, Warda et al. 2014](#_ENREF_77))
14. ([Schnierle, Christian-Brathwaite et al. 2019](#_ENREF_85))
15. ([Shaha 1998](#_ENREF_87))
16. ([Shapiro, Lie et al. 2006](#_ENREF_88))
17. ([Sue, Lin et al. 2009](#_ENREF_93))
18. ([Sukhera, Milne et al. 2018](#_ENREF_94))
19. ([Sukhera, Milne et al. 2018](#_ENREF_95))
20. ([Sukhera and Watling 2018](#_ENREF_96))
21. ([Sukhera, Wodzinski et al. 2019](#_ENREF_98))
22. ([Sukhera, Watling et al. 2020](#_ENREF_97))
23. ([Teal, Gill et al. 2012](#_ENREF_99))
24. ([Thurman, Johnson et al. 2019](#_ENREF_101))
25. ([van Ryn, Hardeman et al. 2015](#_ENREF_104))
26. ([Zaidi, Verstegen et al. 2016](#_ENREF_109))

**Simulation to explore/understand implicit bias:**

1. ([Berg, Blatt et al. 2015](#_ENREF_7)) – *SP Assessment Medical Students*
2. ([Cantey, Randolph et al. 2017](#_ENREF_14)) – *Role Play Nursing Students*
3. ([Cavalier, Hampton et al. 2018](#_ENREF_15)) – *Vignette-based Nursing Students*
4. ([Conigliaro, Peterson et al. 2020](#_ENREF_19)) – *Lack of mannequin diversity*
5. ([Elliott, Alexander et al. 2016](#_ENREF_25)) – *High-fidelity simulation verbal vs non-verbal communication at EOL for Physicians*
6. ([Foronda, Prather et al. 2020](#_ENREF_30)) – *Lack of mannequin and SP diversity*
7. ([Glenn and Claman 2020](#_ENREF_32)) – *Low-fidelity sim, Bafa Bafa, Nursing Students*
8. ([Green, Carney et al. 2007](#_ENREF_40)) – *Vignette-based Physicians*
9. ([Haider, Schneider et al. 2014](#_ENREF_44)) – *Vignette-based Surgeons*
10. ([Haider, Schneider et al. 2015](#_ENREF_45)) – *Vignette-based Nurses*
11. ([Haider, Sexton et al. 2011](#_ENREF_46)) – *Vignette-based Medical Students*
12. ([Hoffman, Trawalter et al. 2016](#_ENREF_54)) -
13. ([Kramer, Wilkins et al. 2015](#_ENREF_62)) – *gender bias*
14. ([Pettit, Turner et al. 2017](#_ENREF_73)) – *mannequin sim, SES, Medical Students*
15. ([Rutledge, Barham et al. 2008](#_ENREF_79)) – *SP, virtual, and mannequin Nursing*
16. ([Sabin, Rivara et al. 2008](#_ENREF_82)) – *Vignette-based physicians*
17. ([Sabin and Greenwald 2012](#_ENREF_81)) – *Vignette based physicians*
18. ([Schaa, Roter et al. 2015](#_ENREF_84)) – *SP encounter, genetic counselors*
19. ([Stepanikova 2012](#_ENREF_90)) - *vignette-based Physicians*
20. ([Tellson, Qin et al. 2017](#_ENREF_100)) – *mannequin based, obesity, physicians*

**Virtual Reality Simulation to explore implicit bias/racism:**

1. ([Banakou, Hanumanthu et al. 2016](#_ENREF_5)) – *Black Avatar emobodiment for reduced implicit bias*
2. ([Bouchard, Bernier et al. 2013](#_ENREF_11)) – *virtual character, pain*
3. ([Hasler, Hirschberger et al. 2014](#_ENREF_50)) – *interact with virtual person from outgroup, increase empathy*
4. ([Peck, Seinfeld et al. 2013](#_ENREF_72)) – *Black Avatar emobdiment decreased bias*
5. ([Rossen, Johnsen et al. 2008](#_ENREF_78)) – *virtual patients*
6. ([Sarge, Kim et al. 2020](#_ENREF_83)) – *autism virtual patient*
7. ([Tiffany and Hoglund 2016](#_ENREF_102)) – *virtual encounters*
8. ([Ward, Mandrusiak et al. 2018](#_ENREF_107)) – *embody patient in another country*

Acosta, D. and K. Ackerman-Barger (2017). "Breaking the Silence: Time to Talk About Race and Racism." Academic Medicine **92**(3).

Recent events in the United States have catalyzed the need for all educators to begin paying attention to and discovering ways to dialogue about race. No longer can health professions (HP) educators ignore or avoid these difficult conversations. HP students are now demanding them. Cultural sensitivity and unconscious bias training are not enough. Good will and good intentions are not enough. Current faculty development paradigms are no longer sufficient to meet the educational challenges of delving into issues of race, power, privilege, identity, and social justice.

Allen, J. (2010). "Improving cross-cultural care and antiracism in nursing education: a literature review." Nurse Educ Today **30**(4): 314-320.

PURPOSE: To appraise through literature review the available research evidence to guide teaching and learning regarding cross-cultural care for nursing students. Cross-cultural education of nurses with a focus on both culture and antiracism is one way of promoting ethical and effective cross-cultural health systems for people from culturally diverse backgrounds. Although cross-cultural care has long been recognised as necessary to nursing education there is no clear consensus regarding how it is to be taught or which theoretical perspectives should underpin this teaching. FINDINGS: Current literature supports the effectiveness of cross-cultural teaching interventions in promoting cultural competence and in facilitating attitudinal and belief changes in nursing students. The literature further suggests that racism persists in some students following participation in cross-cultural education and that there is a paucity of theory, teaching interventions and evaluations addressing antiracism. CONCLUSIONS: Cross-cultural education alone is insufficient to combat racism. Cross-cultural education focused on both cultural competence and antiracism is necessary to promote effective cultural care in nursing students.

Avant, N. D., et al. (2018). "Qualitative Analysis of Student Pharmacists' Reflections of Harvard's Race Implicit Association Test." Curr Pharm Teach Learn **10**(5): 611-617.

BACKGROUND AND PURPOSE: Identify and analyze pharmacy students' perceptions about their own implicit racial biases. EDUCATIONAL ACTIVITY AND SETTING: First year pharmacy students (n=97) enrolled in a Pharmacy Practice course completed a test, Harvard Race Implicit Association Test (IAT), for homework to uncover their unconscious black-white racial bias. All students then wrote at least one paragraph reflecting on if they agreed or disagreed with their results and why. At the beginning of class, students were given a brief survey to capture their IAT results and demographic information. Retrospectively and following Institutional Review Board approval, pharmacy students' reflections were subjected to thematic analysis with the assistance of NVivo 10 and descriptive analyses were completed of their demographic info. FINDINGS: Out of the 97 students enrolled in this course, all completed the self-reflection. But only 90 completed the survey. From those that completed the survey, 54% (N =49) self-identified as women. The average age was 22.6 years old. Most of the students (77%) identified themselves as White Non-Hispanic. Six percent (N =5) identified as Black. Most students (66%) reported that their results from the Race IAT indicated some level of preference for European Americans; 13% of the students reported some level of preference for African-Americans. All students' reflections were categorized by their agreement or lack of agreement with their implicit association test results. Those that agreed with their results cited family, friends, and community contributing to their implicit biases. Students who did not agree with their results were subcategorized as denying their results, believing that their implicit association did not affect their behavior, or believing that the Race IAT was invalid. DISCUSSION/SUMMARY: Many pharmacy students were found to be unaware of their implicit biases and some do not believe that these biases will negatively affect the treatment of others. Pharmacy curricula should be developed to provide adequate self-awareness training and space in the curriculum so students can challenge these unconscious beliefs.

Azevedo, R. T., et al. (2013). "Their pain is not our pain: brain and autonomic correlates of empathic resonance with the pain of same and different race individuals." Hum Brain Mapp **34**(12): 3168-3181.

Recent advances in social neuroscience research have unveiled the neurophysiological correlates of race and intergroup processing. However, little is known about the neural mechanisms underlying intergroup empathy. Combining event-related fMRI with measurements of pupil dilation as an index of autonomic reactivity, we explored how race and group membership affect empathy-related responses. White and Black subjects were presented with video clips depicting white, black, and unfamiliar violet-skinned hands being either painfully penetrated by a syringe or being touched by a Q-tip. Both hemodynamic activity within areas known to be involved in the processing of first and third-person emotional experiences of pain, i.e., bilateral anterior insula, and autonomic reactivity were greater for the pain experienced by own-race compared to that of other-race and violet models. Interestingly, greater implicit racial bias predicted increased activity within the left anterior insula during the observation of own-race pain relative to other-race pain. Our findings highlight the close link between group-based segregation and empathic processing. Moreover, they demonstrate the relative influence of culturally acquired implicit attitudes and perceived similarity/familiarity with the target in shaping emotional responses to others' physical pain.

Banakou, D., et al. (2016). "Virtual Embodiment of White People in a Black Virtual Body Leads to a Sustained Reduction in Their Implicit Racial Bias." Front Hum Neurosci **10**(601).

Berdahl, T., et al. (2010). "Annual report on health care for children and youth in the United States: racial/ethnic and socioeconomic disparities in children's health care quality." Acad Pediatr **10**(2): 95-118.

OBJECTIVE: The aim of this study was to explore the joint effect of race/ethnicity and insurance status/expected payer or income on children's health care quality. METHODS: The analyses are based on data from a nationally representative random sample of children in the United States in 2004 and 2005 from the Medical Expenditure Panel Survey (MEPS) and pediatric hospitalizations from a nationwide sample of hospitals in 2005 from the State Inpatient Databases disparities analysis file from the Healthcare Cost and Utilization Project (HCUP). We provide estimates of differences in race/ethnicity within income and insurance/expected payer categories on key pediatric quality indicators to provide a more nuanced understanding of disparities in care for children. Our indicators of quality cover several domains from the Institute of Medicine report, including effectiveness, patient centeredness, timeliness, and patient safety. RESULTS: Across a broad set of 23 quality indicators, findings indicate that racial/ethnic disparities vary by income levels and types of insurance. Key highlights include the finding that racial/ethnic differences within income or insurance/payer groups are more pronounced for some racial/ethnic groups than others. Hispanic children followed by Asian children had worse quality than whites as measured by the majority of quality indicators. Exceptions included rates of admissions for diabetes, admissions for gastroenteritis, accidental puncture during procedures, and decubitus ulcers. Many indicators showed less than ideal quality for all subgroups of children, even whites with private insurance. CONCLUSIONS: The extensive findings in this report make clear that patterns of racial/ethnic disparity vary by income and insurance/expected payer subgroup. However, disparities in quality are not similar across all measures of quality, and strategies to address these disparities need to be designed with these nuances in mind.

Berg, K., et al. (2015). "Standardized Patient Assessment of Medical Student Empathy: Ethnicity and Gender Effects in a Multi-Institutional Study." Academic Medicine **90**(1): 105-111.

Purpose To examine, primarily, the effects of ethnicity and gender, which could introduce bias into scoring, on standardized patient (SP) assessments of medical students and, secondarily, to examine medical students’ self-reported empathy for ethnicity and gender effects so as to compare self-perception with the perceptions of SPs. Method Participants were 577 students from four medical schools in 2012: 373 (65%) were white, 79 (14%) black/African American, and 125 (22%) Asian/Pacific Islander. These students were assessed by 84 SPs: 62 (74%) were white and 22 (26%) were black/African American. SPs completed the Jefferson Scale of Patient Perceptions of Physician Empathy (JSPPPE) and the Global Ratings of Empathy tool. Students completed the Jefferson Scale of Empathy and two Interpersonal Reactivity Index subscales. The investigators used 2,882 student–SP encounters in their analyses. Results Analyses of SPs’ assessments of students’ empathy indicated significant interaction effects of gender and ethnicity. Female students, regardless of ethnicity, obtained significantly higher mean JSPPPE scores than men. Female black/African American, female white, and female Asian/Pacific Islander students scored significantly higher on the JSPPPE than their respective male counterparts. Male black/African American students obtained the lowest SP assessment scores of empathy regardless of SP ethnicity. Black/African American students obtained the highest mean scores on self-reported empathy. Conclusions The significant interaction effects of ethnicity and gender in clinical encounters, plus the inconsistencies observed between SPs’ assessments of students’ empathy and students’ self-reported empathy, raise questions about possible ethnicity and gender biases in the SPs’ assessments of medical students’ clinical skills.

Betancourt, J. R. (2006). "Eliminating Racial and Ethnic Disparities in Health Care: What Is the Role of Academic Medicine?" Academic Medicine **81**(9).

Research has shown that minority Americans have poorer health outcomes (compared to whites) from preventable and treatable conditions such as cardiovascular disease, diabetes, asthma, and cancer. In addition to racial and ethnic disparities in health, there is also evidence of racial and ethnic disparities in health care. The Institute of Medicine Report Unequal Treatment remains the preeminent study of the issue of racial and ethnic disparities in health care in the United States. Unequal Treatment provided a series of general and specific recommendations to address such disparities in health care, focusing on a broad set of stakeholders including academic medicine. Academic medicine has several important roles in society, including providing primary and specialty medical services, caring for the poor and uninsured, engaging in research, and educating health professionals. Academic medicine should also provide national leadership by identifying innovations and creating solutions to the challenges our health care system faces in its attempt to deliver high-quality care to all patients.Several of the recommendations of Unequal Treatment speak directly to the mission and roles of academic medicine. For instance, patient care can be improved by collecting and reporting data on patients’ race/ethnicity; education can minimize disparities by integrating cross-cultural education into health professions training; and research can help improve health outcomes by better identifying sources of disparities and promising interventions. These recommendations have clear and direct implications for academic medicine. Academic medicine must make the elimination of health care disparities a critical part of its mission, and provide national leadership by identifying quality improvement innovations and creating disparities solutions.

Blair, I. V., et al. (2013). "Assessment of biases against Latinos and African Americans among primary care providers and community members." Am J Public Health **103**(1): 92-98.

Blair, I. V., et al. (2014). "An investigation of associations between clinicians' ethnic or racial bias and hypertension treatment, medication adherence and blood pressure control." J Gen Intern Med **29**(7): 987-995.

BACKGROUND: Few studies have directly investigated the association of clinicians' implicit (unconscious) bias with health care disparities in clinical settings. OBJECTIVE: To determine if clinicians' implicit ethnic or racial bias is associated with processes and outcomes of treatment for hypertension among black and Latino patients, relative to white patients. RESEARCH DESIGN AND PARTICIPANTS: Primary care clinicians completed Implicit Association Tests of ethnic and racial bias. Electronic medical records were queried for a stratified, random sample of the clinicians' black, Latino and white patients to assess treatment intensification, adherence and control of hypertension. Multilevel random coefficient models assessed the associations between clinicians' implicit biases and ethnic or racial differences in hypertension care and outcomes. MAIN MEASURES: Standard measures of treatment intensification and medication adherence were calculated from pharmacy refills. Hypertension control was assessed by the percentage of time that patients met blood pressure goals recorded during primary care visits. KEY RESULTS: One hundred and thirty-eight primary care clinicians and 4,794 patients with hypertension participated. Black patients received equivalent treatment intensification, but had lower medication adherence and worse hypertension control than white patients; Latino patients received equivalent treatment intensification and had similar hypertension control, but lower medication adherence than white patients. Differences in treatment intensification, medication adherence and hypertension control were unrelated to clinician implicit bias for black patients (P = 0.85, P = 0.06 and P = 0.31, respectively) and for Latino patients (P = 0.55, P = 0.40 and P = 0.79, respectively). An increase in clinician bias from average to strong was associated with a relative change of less than 5 % in all outcomes for black and Latino patients. CONCLUSIONS: Implicit bias did not affect clinicians' provision of care to their minority patients, nor did it affect the patients' outcomes. The identification of health care contexts in which bias does not impact outcomes can assist both patients and clinicians in their efforts to build trust and partnership.

Bouchard, S., et al. (2013). "Empathy toward virtual humans depicting a known or unknown person expressing pain." Cyberpsychol Behav Soc Netw **16**(1): 61-71.

This study is about pain expressed by virtual humans and empathy in users immersed in virtual reality. It focuses on whether people feel more empathy toward the pain of a virtual human when the virtual human is a realistic representation of a known individual, as opposed to an unknown person, and if social presence is related to users' empathy toward a virtual human's pain. The 42 participants were immersed in virtual reality using a large immersive cube with images retro projected on all six faces (CAVE-Like system) where they can interact in real time with virtual characters. The first immersion (baseline/control) was with a virtual animal, followed by immersions involving discussions with a known virtual human (i.e., the avatar of a person they were familiar with) or an unknown virtual human. During the verbal exchanges in virtual reality, the virtual humans expressed acute and very strong pain. The pain reactions were identical in terms of facial expressions, and verbal and nonverbal behaviors. The Conditions by Time interactions in the repeated measures analyses of variance revealed that participants were empathic toward both virtual humans, yet more empathic toward the known virtual human. Multivariate regression analyses revealed that participants' feeling of social presence--impression that the known virtual character is really there, with them--was a significant predictor of empathy.

Burgess, D., et al. (2007). "Reducing racial bias among health care providers: Lessons from social-cognitive psychology." J Gen Intern Med **22**(6): 882-887.

Burgess, D. J., et al. (2017). "Mindfulness practice: A promising approach to reducing the effects of clinician implicit bias on patients." Patient Educ Couns **100**(2): 372-376.

Like the population at large, health care providers hold implicit racial and ethnic biases that may contribute to health care disparities. Little progress has been made in identifying and implementing effective strategies to address these normal but potentially harmful unconscious cognitive processes. We propose that meditation training designed to increase healthcare providers' mindfulness skills is a promising and potentially sustainable way to address this problem. Emerging evidence suggests that mindfulness practice can reduce the provider contribution to healthcare disparities through several mechanisms including: reducing the likelihood that implicit biases will be activated in the mind, increasing providers' awareness of and ability to control responses to implicit biases once activated, increasing self-compassion and compassion toward patients, and reducing internal sources of cognitive load (e.g., stress, burnout, and compassion fatigue). Mindfulness training may also have advantages over current approaches to addressing implicit bias because it focuses on the development of skills through practice, promotes a nonjudgmental approach, can circumvent resistance some providers feel when directly confronted with evidence of racism, and constitutes a holistic approach to promoting providers' well-being. We close with suggestions for how a mindfulness approach can be practically implemented and identify potential challenges and research gaps to be addressed.

Cantey, D. S., et al. (2017). "Student-developed simulations: Enhancing cultural awareness and understanding social determinants of health." Journal of Nursing Education **56**(4): 243-246.

Cavalier, J., Jr., et al. (2018). "The Influence of Race and Gender on Nursing Care Decisions: A Pain Management Intervention." Pain Manag Nurs **19**(3): 238-245.

BACKGROUND: Understanding whether a patient's race or gender and/or the nurse's race or gender influence how nurses form care decisions can contribute to exploration of methods that can positively affect disparate treatment. AIMS: This research examined how the variables of race and gender of both the nurse and the patient influence nurses' decision making about pain management. DESIGN: A randomized four-group post-test-only experimental design was used to examine the variables and variable interactions. SETTINGS: An investigator-developed case vignette tool hosted online was used to obtain data about nursing pain management decisions. The vignette intervention was developed to simulate four exact patient scenarios that differed only by patient race and gender. Participants/Subjects: A quota sample of 400 nurses was recruited using a self-selected face-to-face recruitment technique. METHODS: A four-way between-groups analysis of variance assessed whether the gender of the nurse, race of the nurse, gender of the patient, or race of the patient made any differences in the dose intensity of pain medications selected by the nurse sample. RESULTS: No significant interactions were noted between any combinations of the four independent variables. A significant main effect was noted in medication intensity for nurse gender (F [1,384] = 9.75, p = .002). CONCLUSIONS: Data trends suggested that gender stereotypes about how patients managed pain played a role in dose intensity decisions because female patients on average were given higher doses of pain medication than male patients were by all the nurses in the study. Further research is needed in this complex area of study.

Chan, P. S., et al. (2009). "Racial differences in survival after in-hospital cardiac arrest." Jama **302**(11): 1195-1201.

CONTEXT: Racial differences in survival have not been previously studied after in-hospital cardiac arrest, an event for which access to care is not likely to influence treatment. OBJECTIVES: To estimate racial differences in survival for patients with in-hospital cardiac arrests and examine the association of sociodemographic and clinical factors and the admitting hospital with racial differences in survival. DESIGN, SETTING, AND PATIENTS: Cohort study of 10,011 patients with cardiac arrests due to ventricular fibrillation or pulseless ventricular tachycardia enrolled between January 1, 2000, and February 29, 2008, at 274 hospitals within the National Registry of Cardiopulmonary Resuscitation. MAIN OUTCOME MEASURES: Survival to hospital discharge; successful resuscitation from initial arrest and postresuscitation survival (secondary outcome measures). RESULTS: Included were 1883 black patients (18.8%) and 8128 white patients (81.2%). Rates of survival to discharge were lower for black patients (25.2%) than for white patients (37.4%) (unadjusted relative rate [RR], 0.73; 95% confidence interval [CI], 0.67-0.79). Unadjusted racial differences narrowed after adjusting for patient characteristics (adjusted RR, 0.81 [95% CI, 0.75-0.88]; P < .001) and diminished further after additional adjustment for hospital site (adjusted RR, 0.89 [95% CI, 0.82-0.96]; P = .002). Lower rates of survival to discharge for blacks reflected lower rates of both successful resuscitation (55.8% vs 67.4% for whites; unadjusted RR, 0.84 [95% CI, 0.81-0.88]) and postresuscitation survival (45.2% vs 55.5% for whites; unadjusted RR, 0.85 [95% CI, 0.79-0.91]). Adjustment for the hospital site at which patients received care explained a substantial portion of the racial differences in successful resuscitation (adjusted RR, 0.92 [95% CI, 0.88-0.96]; P < .001) and eliminated the racial differences in postresuscitation survival (adjusted RR, 0.99 [95% CI, 0.92-1.06]; P = .68). CONCLUSIONS: Black patients with in-hospital cardiac arrest were significantly less likely to survive to discharge than white patients, with lower rates of survival during both the immediate resuscitation and postresuscitation periods. Much of the racial difference was associated with the hospital center in which black patients received care.

Chapman, E. N., et al. (2013). "Physicians and implicit bias: how doctors may unwittingly perpetuate health care disparities." J Gen Intern Med **28**(11): 1504-1510.

Although the medical profession strives for equal treatment of all patients, disparities in health care are prevalent. Cultural stereotypes may not be consciously endorsed, but their mere existence influences how information about an individual is processed and leads to unintended biases in decision-making, so called "implicit bias". All of society is susceptible to these biases, including physicians. Research suggests that implicit bias may contribute to health care disparities by shaping physician behavior and producing differences in medical treatment along the lines of race, ethnicity, gender or other characteristics. We review the origins of implicit bias, cite research documenting the existence of implicit bias among physicians, and describe studies that demonstrate implicit bias in clinical decision-making. We then present the bias-reducing strategies of consciously taking patients' perspectives and intentionally focusing on individual patients' information apart from their social group. We conclude that the contribution of implicit bias to health care disparities could decrease if all physicians acknowledged their susceptibility to it, and deliberately practiced perspective-taking and individuation when providing patient care. We further conclude that increasing the number of African American/Black physicians could reduce the impact of implicit bias on health care disparities because they exhibit significantly less implicit race bias.

Chapman, M. V., et al. (2018). "Making a difference in medical trainees' attitudes toward Latino patients: A pilot study of an intervention to modify implicit and explicit attitudes." Soc Sci Med **199**: 202-208.

Negative attitudes and discrimination against Latinos exist in the dominant U.S. culture and in healthcare systems, contributing to ongoing health disparities. This article provides findings of a pilot test of Yo Veo Salud (I See Health), an intervention designed to positively modify attitudes toward Latinos among medical trainees. The research question was: Compared to the comparison group, did the intervention group show lower levels of implicit bias against Latinos versus Whites, and higher levels of ethnocultural empathy, healthcare empathy, and patient-centeredness? We used a sequential cohort, post-test design to evaluate Yo Veo Salud with a sample of 69 medical trainees. The intervention setting was an academic medical institution in a Southeastern U.S. state with a fast-growing Latino population. The intervention was delivered, and data were collected online, between July and December of 2014. Participants in the intervention group showed greater ethnocultural empathy, healthcare empathy, and patient-centeredness, compared to the comparison group. The implicit measure assessed four attitudinal dimensions (pleasantness, responsibility, compliance, and safety). Comparisons between our intervention and comparison groups did not find any average differences in implicit anti-Latino bias between the groups. However, in a subset analysis of White participants, White participants in the intervention group demonstrated a significantly decreased level of implicit bias in terms of pleasantness. A dose response was also founded indicating that participants involved in more parts of the intervention showed more change on all measures. Our findings, while modest in size, provide proof of concept for Yo Veo Salud as a means for increasing ethno-cultural and physician empathy, and patient-centeredness among medical residents and decreasing implicit provider bias toward Latinos.

Conigliaro, R. L., et al. (2020). "Lack of Diversity in Simulation Technology: An Educational Limitation?" Simul Healthc **15**(2): 112-114.

Despite increased attention on diversity in medicine and healthcare, heterogeneity in simulation technology has been slow to follow suit. In a nonsystematic review of simulation technology available in 2018 with respect to skin tone, age and sex, we found limited diversity in these offerings, suggesting limitations to educators' abilities to represent the full array of patients, conditions, and scenarios encountered in medicine and training. We highlight these limitations and propose basic strategies by which educators can increase awareness of and incorporate diversity into the simulation arena.

Cooper, L., et al. (2003). "Patient-centered communication, ratings of care, and concordance of patient and physician race." Annals of Internal Medicine **139**(11): 907-915.

Cooper, L. A., et al. (2012). "The Associations of Clinicians’ Implicit Attitudes About Race With Medical Visit Communication and Patient Ratings of Interpersonal Care." Am J Public Health **102**(5): 979-987.

Objectives. We examined the associations of clinicians’ implicit attitudes about race with visit communication and patient ratings of care.Methods. In a cross-sectional study of 40 primary care clinicians and 269 patients in urban community-based practices, we measured clinicians’ implicit general race bias and race and compliance stereotyping with 2 implicit association tests and related them to audiotape measures of visit communication and patient ratings.Results. Among Black patients, general race bias was associated with more clinician verbal dominance, lower patient positive affect, and poorer ratings of interpersonal care; race and compliance stereotyping was associated with longer visits, slower speech, less patient centeredness, and poorer ratings of interpersonal care. Among White patients, bias was associated with more verbal dominance and better ratings of interpersonal care; race and compliance stereotyping was associated with less verbal dominance, shorter visits, faster speech, more patient centeredness, higher clinician positive affect, and lower ratings of some aspects of interpersonal care.Conclusions. Clinician implicit race bias and race and compliance stereotyping are associated with markers of poor visit communication and poor ratings of care, particularly among Black patients.

Devine, P. G., et al. (2012). "Long-term reduction in implicit race bias: A prejudice habit-breaking intervention." Journal of experimental social psychology **48**(6): 1267-1278.

We developed a multi-faceted prejudice habit-breaking intervention to produce long-term reductions in implicit race bias. The intervention is based on the premise that implicit bias is like a habit that can be broken through a combination of awareness of implicit bias, concern about the effects of that bias, and the application of strategies to reduce bias. In a 12-week longitudinal study, people who received the intervention showed dramatic reductions in implicit race bias. People who were concerned about discrimination or who reported using the strategies showed the greatest reductions. The intervention also led to increases in concern about discrimination and personal awareness of bias over the duration of the study. People in the control group showed none of the above effects. Our results raise the hope of reducing persistent and unintentional forms of discrimination that arise from implicit bias.

Dovidio, J. F. and S. T. Fiske (2012). "Under the Radar: How Unexamined Biases in Decision-Making Processes in Clinical Interactions Can Contribute to Health Care Disparities." Am J Public Health **102**(5): 945-952.

Several aspects of social psychological science shed light on how unexamined racial/ethnic biases contribute to health care disparities.Biases are complex but systematic, differing by racial/ethnic group and not limited to love–hate polarities. Group images on the universal social cognitive dimensions of competence and warmth determine the content of each group's overall stereotype, distinct emotional prejudices (pity, envy, disgust, pride), and discriminatory tendencies. These biases are often unconscious and occur despite the best intentions.Such ambivalent and automatic biases can influence medical decisions and interactions, systematically producing discrimination in health care and ultimately disparities in health. Understanding how these processes may contribute to bias in health care can help guide interventions to address racial and ethnic disparities in health.

Dovidio, J. F. and J. M. Jones (2019). "Prejudice, stereotyping, and discrimination." Advanced social psychology: the state of the science **2**.

Elliott, A. M., et al. (2016). "Differences in Physicians' Verbal and Nonverbal Communication With Black and White Patients at the End of Life." Journal of pain and symptom management **51**(1): 1-8.

Context Black patients are more likely than white patients to die in the intensive care unit with life-sustaining treatments. Differences in patient- and/or surrogate-provider communication may contribute to this phenomenon. Objectives To test whether hospital-based physicians use different verbal and/or nonverbal communication with black and white simulated patients and their surrogates. Methods We conducted a randomized factorial trial of the relationship between patient race and physician communication using high-fidelity simulation. Using a combination of probabilistic and convenience sampling, we recruited 33 hospital-based physicians in western Pennsylvania who completed two encounters with prognostically similar, critically and terminally ill black and white elders with identical treatment preferences. We then conducted detailed content analysis of audio and video recordings of the encounters, coding verbal emotion-handling and shared decision-making behaviors, and nonverbal behaviors (time interacting with the patient and/or surrogate, with open vs. closed posture, and touching the patient and physical proximity). We used a paired t-test to compare each subjects' summed verbal and nonverbal communication scores with the black patient compared to the white patient. Results Subject physicians' verbal communication scores did not differ by patient race (black vs. white: 8.4 vs. 8.4, P-value = 0.958). However, their nonverbal communication scores were significantly lower with the black patient than with the white patient (black vs. white: 2.7 vs. 2.9, P-value 0.014). Conclusion In this small regional sample, hospital-based physicians have similar verbal communication behaviors when discussing end-of-life care for otherwise similar black and white patients but exhibit significantly fewer positive, rapport-building nonverbal cues with black patients.

Fazio, R. H. and M. A. Olson (2003). "Implicit Measures in Social Cognition Research: Their Meaning and Use." Annual Review of Psychology **54**(1): 297-327.

Behavioral scientists have long sought measures of important psychological constructs that avoid response biases and other problems associated with direct reports. Recently, a large number of such indirect, or “implicit,” measures have emerged. We review research that has utilized these measures across several domains, including attitudes, self-esteem, and stereotypes, and discuss their predictive validity, their interrelations, and the mechanisms presumably underlying their operation. Special attention is devoted to various priming measures and the Implicit Association Test, largely due to their prevalence in the literature. We also attempt to clarify several unresolved theoretical and empirical issues concerning implicit measures, including the nature of the underlying constructs they purport to measure, the conditions under which they are most likely to relate to explicit measures, the kinds of behavior each measure is likely to predict, their sensitivity to context, and the construct's potential for change.

Festinger, L. and J. M. Carlsmith (1959). "Cognitive consequences of forced compliance." The journal of abnormal and social psychology **58**(2): 203-210.

FitzGerald, C. and S. Hurst (2017). "Implicit bias in healthcare professionals: a systematic review." BMC Med Ethics **18**(1): 19.

BACKGROUND: Implicit biases involve associations outside conscious awareness that lead to a negative evaluation of a person on the basis of irrelevant characteristics such as race or gender. This review examines the evidence that healthcare professionals display implicit biases towards patients. METHODS: PubMed, PsychINFO, PsychARTICLE and CINAHL were searched for peer-reviewed articles published between 1st March 2003 and 31st March 2013. Two reviewers assessed the eligibility of the identified papers based on precise content and quality criteria. The references of eligible papers were examined to identify further eligible studies. RESULTS: Forty two articles were identified as eligible. Seventeen used an implicit measure (Implicit Association Test in fifteen and subliminal priming in two), to test the biases of healthcare professionals. Twenty five articles employed a between-subjects design, using vignettes to examine the influence of patient characteristics on healthcare professionals' attitudes, diagnoses, and treatment decisions. The second method was included although it does not isolate implicit attitudes because it is recognised by psychologists who specialise in implicit cognition as a way of detecting the possible presence of implicit bias. Twenty seven studies examined racial/ethnic biases; ten other biases were investigated, including gender, age and weight. Thirty five articles found evidence of implicit bias in healthcare professionals; all the studies that investigated correlations found a significant positive relationship between level of implicit bias and lower quality of care. DISCUSSION: The evidence indicates that healthcare professionals exhibit the same levels of implicit bias as the wider population. The interactions between multiple patient characteristics and between healthcare professional and patient characteristics reveal the complexity of the phenomenon of implicit bias and its influence on clinician-patient interaction. The most convincing studies from our review are those that combine the IAT and a method measuring the quality of treatment in the actual world. Correlational evidence indicates that biases are likely to influence diagnosis and treatment decisions and levels of care in some circumstances and need to be further investigated. Our review also indicates that there may sometimes be a gap between the norm of impartiality and the extent to which it is embraced by healthcare professionals for some of the tested characteristics. CONCLUSIONS: Our findings highlight the need for the healthcare profession to address the role of implicit biases in disparities in healthcare. More research in actual care settings and a greater homogeneity in methods employed to test implicit biases in healthcare is needed.

FitzGerald, C., et al. (2019). "Interventions designed to reduce implicit prejudices and implicit stereotypes in real world contexts: a systematic review." BMC psychology **7**(1): 29.

Implicit biases are present in the general population and among professionals in various domains, where they can lead to discrimination. Many interventions are used to reduce implicit bias. However, uncertainties remain as to their effectiveness.

Foronda, C., et al. (2020). "Underrepresentation of Racial Diversity in Simulation: An International Study." Nursing education perspectives **41**(3).

AIM The purpose of this study was to: 1) examine the presence of racial diversity in simulation centers globally and 2) determine the opinion of the simulation community related to incorporation of a diversity component into international simulation standards. BACKGROUND Leading organizations in nursing education recommend improved efforts toward diversity and inclusion. Research suggests a lack of diversity in simulation-based education. METHOD This study employed a mixed-methods design. RESULTS Quantitative results demonstrated an underrepresentation of racial diversity in manikins, body parts/task trainers, standardized patients, and simulation facilitators. Two thirds of respondents indicated that international simulation standards should recommend a diversity component. Qualitative findings indicated categories of: 1) challenges of purchasing, realism, and availability; 2) importance of diversity in simulation; 3) representation of the regional population; 4) more diversity considerations needed; and 5) presence of diversity. CONCLUSION There is a continued need for diversity advocacy efforts in nursing education.

Forscher, P. S., et al. (2019). "A meta-analysis of procedures to change implicit measures." J Pers Soc Psychol **117**(3): 522-559.

Using a novel technique known as network meta-analysis, we synthesized evidence from 492 studies (87,418 participants) to investigate the effectiveness of procedures in changing implicit measures, which we define as response biases on implicit tasks. We also evaluated these procedures' effects on explicit and behavioral measures. We found that implicit measures can be changed, but effects are often relatively weak (|ds| < .30). Most studies focused on producing short-term changes with brief, single-session manipulations. Procedures that associate sets of concepts, invoke goals or motivations, or tax mental resources changed implicit measures the most, whereas procedures that induced threat, affirmation, or specific moods/emotions changed implicit measures the least. Bias tests suggested that implicit effects could be inflated relative to their true population values. Procedures changed explicit measures less consistently and to a smaller degree than implicit measures and generally produced trivial changes in behavior. Finally, changes in implicit measures did not mediate changes in explicit measures or behavior. Our findings suggest that changes in implicit measures are possible, but those changes do not necessarily translate into changes in explicit measures or behavior. (PsycINFO Database Record (c) 2019 APA, all rights reserved).

Glenn, A. D. and F. Claman (2020). "Using a Low-Fidelity Simulation to Enhance Cultural Awareness and Emotional Intelligence in Nursing Students." Nursing education perspectives **41**(1): 63-64.

Undergraduate didactic nursing leadership courses lack experiential opportunities to address working with culturally diverse populations. The authors used Bafa Bafa©, a cross-cultural low-fidelity simulation, to further develop critical thinking and emotional intelligence skills in prelicensure nursing students. This article describes the authors' experiences of integrating this innovative teaching strategy in the classroom to increase cultural awareness. The students' discovery of unexpected feelings, thoughts, and perceptions has the potential to extend beyond the simulated experience when coupled with faculty reinforcement of engaging in self-reflective practice as a professional nurse.

Gonzalez, C. M., et al. (2018). "Patient perspectives on racial and ethnic implicit bias in clinical encounters: Implications for curriculum development." Patient Educ Couns **101**(9): 1669-1675.

OBJECTIVE: Patients describe feelings of bias and prejudice in clinical encounters; however, their perspectives on restoring the encounter once bias is perceived are not known. Implicit bias has emerged as a target for curricular interventions. In order to inform the design of novel patient-centered curricular interventions, this study explores patients' perceptions of bias, and suggestions for restoring relationships if bias is perceived. METHODS: The authors conducted bilingual focus groups with purposive sampling of self-identified Black and Latino community members in the US. Data were analyzed using grounded theory. RESULTS: Ten focus groups (in English (6) and Spanish (4)) with N=74 participants occurred. Data analysis revealed multiple influences patients' perception of bias in their physician encounters. The theory emerging from the analysis suggests if bias is perceived, the outcome of the encounter can still be positive. A positive or negative outcome depends on whether the physician acknowledges this perceived bias or not, and his or her subsequent actions. CONCLUSIONS: Participant lived experience and physician behaviors influence perceptions of bias, however clinical relationships can be restored following perceived bias. PRACTICE IMPLICATIONS: Providers might benefit from skill development in the recognition and acknowledgement of perceived bias in order to restore patient-provider relationships.

Gonzalez, C. M., et al. (2019). "A Qualitative Study of New York Medical Student Views on Implicit Bias Instruction: Implications for Curriculum Development." J Gen Intern Med **34**(5): 692-698.

BACKGROUND: For at least the past two decades, medical educators have worked to improve patient communication and health care delivery to diverse patient populations; despite efforts, patients continue to report prejudice and bias during their clinical encounters. Targeted instruction in implicit bias recognition and management may promote the delivery of equitable care, but students at times resist this instruction. Little guidance exists to overcome this resistance and to engage students in implicit bias instruction; instruction over time could lead to eventual skill development that is necessary to mitigate the influence of implicit bias on clinical practice behaviors. OBJECTIVE: To explore student perceptions of challenges and opportunities when participating in implicit bias instruction. APPROACH: We conducted a qualitative study that involved 11 focus groups with medical students across each of the four class years to explore their perceptions of challenges and opportunities related to participating in such instruction. We analyzed transcripts for themes. KEY RESULTS: Our analysis suggests a range of attitudes toward implicit bias instruction and identifies contextual factors that may influence these attitudes. The themes were (1) resistance; (2) shame; (3) the negative role of the hidden curriculum; and (4) structural barriers to student engagement. Students expressed resistance to implicit bias instruction; some of these attitudes are fueled from concerns of anticipated shame within the learning environment. Participants also indicated that student engagement in implicit bias instruction was influenced by the hidden curriculum and structural barriers. CONCLUSIONS: These insights can inform future curriculum development efforts. Considerations related to instructional design and programmatic decision-making are highlighted. These considerations for implicit bias instruction may provide useful frameworks for educators looking for opportunities to minimize student resistance and maximize engagement in multi-session instruction in implicit bias recognition and management.

Gonzalez, C. M., et al. (2018). "How to Make or Break Implicit Bias Instruction: Implications for Curriculum Development." Acad Med **93**(11S Association of American Medical Colleges Learn Serve Lead: Proceedings of the 57th Annual Research in Medical Education Sessions): S74-s81.

PURPOSE: To analyze faculty experiences regarding facilitating discussions as part of the institution's curriculum on racial and ethnic implicit bias recognition and management. METHOD: Between July 2014 and September 2016, the authors conducted 21 in-depth interviews with faculty who had experience teaching in implicit bias instruction or were interested in facilitating discussions related to implicit bias and the Implicit Association Test. Grounded theory methodology was used to analyze interview transcripts. RESULTS: Participants identified challenges that affect their ability to facilitate instruction in implicit bias. Faculty described the influence of their own background and identities as well as the influence of institutional values on their ability to facilitate implicit bias discussions. They noted the impact of resistant learners and faculty during discussions and made suggestions for institutional measures including the need for implementation of formalized longitudinal implicit bias curricula and faculty development. CONCLUSIONS: Faculty facilitating sessions on implicit bias must attend faculty development sessions to be equipped to deal with some of the challenges they may face. Buy-in from institutional leadership is essential for successful implementation of implicit bias teaching, and medical educators need to consider formalized longitudinal curricula addressing the recognition and management of implicit biases.

Gonzalez, C. M., et al. (2014). "Implicit bias and its relation to health disparities: a teaching program and survey of medical students." Teach Learn Med **26**(1): 64-71.

BACKGROUND: The varying treatment of different patients by the same physician are referred to as within provider disparities. These differences can contribute to health disparities and are thought to be the result of implicit bias due to unintentional, unconscious assumptions. PURPOSES: The purpose is to describe an educational intervention addressing both health disparities and physician implicit bias and the results of a subsequent survey exploring medical students' attitudes and beliefs toward subconscious bias and health disparities. METHODS: A single session within a larger required course was devoted to health disparities and the physician's potential to contribute to health disparities through implicit bias. Following the session the students were anonymously surveyed on their Implicit Association Test (IAT) results, their attitudes and experiences regarding the fairness of the health care system, and the potential impact of their own implicit bias. The students were categorized based on whether they disagreed ("deniers") or agreed ("accepters") with the statement "Unconscious bias might affect some of my clinical decisions or behaviors." Data analysis focused specifically on factors associated with this perspective. RESULTS: The survey response rate was at least 69%. Of the responders, 22% were "deniers" and 77% were "accepters." Demographics between the two groups were not significantly different. Deniers were significantly more likely than accepters to report IAT results with implicit preferences toward self, to believe the IAT is invalid, and to believe that doctors and the health system provide equal care to all and were less likely to report having directly observed inequitable care. CONCLUSIONS: The recognition of bias cannot be taught in a single session. Our experience supports the value of teaching medical students to recognize their own implicit biases and develop skills to overcome them in each patient encounter, and in making this instruction part of the compulsory, longitudinal undergraduate medical curriculum.

Goyal, M. K., et al. (2017). "Racial and Ethnic Differences in Antibiotic Use for Viral Illness in Emergency Departments." Pediatrics **140**(4).

BACKGROUND AND OBJECTIVES: In the primary care setting, there are racial and ethnic differences in antibiotic prescribing for acute respiratory tract infections (ARTIs). Viral ARTIs are commonly diagnosed in the pediatric emergency department (PED), in which racial and ethnic differences in antibiotic prescribing have not been previously reported. We sought to investigate whether patient race and ethnicity was associated with differences in antibiotic prescribing for viral ARTIs in the PED. METHODS: This is a retrospective cohort study of encounters at 7 PEDs in 2013, in which we used electronic health data from the Pediatric Emergency Care Applied Research Network Registry. Multivariable logistic regression was used to examine the association between patient race and ethnicity and antibiotics administered or prescribed among children discharged from the hospital with viral ARTI. Children with bacterial codiagnoses, chronic disease, or who were immunocompromised were excluded. Covariates included age, sex, insurance, triage level, provider type, emergency department type, and emergency department site. RESULTS: Of 39 445 PED encounters for viral ARTIs that met inclusion criteria, 2.6% (95% confidence interval [CI] 2.4%-2.8%) received antibiotics, including 4.3% of non-Hispanic (NH) white, 1.9% of NH black, 2.6% of Hispanic, and 2.9% of other NH children. In multivariable analyses, NH black (adjusted odds ratio [aOR] 0.44; CI 0.36-0.53), Hispanic (aOR 0.65; CI 0.53-0.81), and other NH (aOR 0.68; CI 0.52-0.87) children remained less likely to receive antibiotics for viral ARTIs. CONCLUSIONS: Compared with NH white children, NH black and Hispanic children were less likely to receive antibiotics for viral ARTIs in the PED. Future research should seek to understand why racial and ethnic differences in overprescribing exist, including parental expectations, provider perceptions of parental expectations, and implicit provider bias.

Goyal, M. K., et al. (2020). "Racial and Ethnic Differences in Emergency Department Pain Management of Children With Fractures." Pediatrics **145**(5).

OBJECTIVES: To test the hypotheses that minority children with long-bone fractures are less likely to (1) receive analgesics, (2) receive opioid analgesics, and (3) achieve pain reduction. METHODS: We performed a 3-year retrospective cross-sectional study of children <18 years old with long-bone fractures using the Pediatric Emergency Care Applied Research Network Registry (7 emergency departments). We performed bivariable and multivariable logistic regression to measure the association between patient race and ethnicity and (1) any analgesic, (2) opioid analgesic, (3) ≥2-point pain score reduction, and (4) optimal pain reduction (ie, to mild or no pain). RESULTS: In 21 069 visits with moderate-to-severe pain, 86.1% received an analgesic and 45.4% received opioids. Of 8533 patients with reassessment of pain, 89.2% experienced ≥2-point reduction in pain score and 62.2% experienced optimal pain reduction. In multivariable analyses, minority children, compared with non-Hispanic (NH) white children, were more likely to receive any analgesics (NH African American: adjusted odds ratio [aOR] 1.72 [95% confidence interval 1.51-1.95]; Hispanic: 1.32 [1.16-1.51]) and achieve ≥2-point reduction in pain (NH African American: 1.42 [1.14-1.76]; Hispanic: 1.38 [1.04-1.83]) but were less likely to receive opioids (NH African American: aOR 0.86 [0.77-0.95]; Hispanic: aOR 0.86 [0.76-0.96]) or achieve optimal pain reduction (NH African American: aOR 0.78 [0.67-0.90]; Hispanic: aOR 0.80 [0.67-0.95]). CONCLUSIONS: There are differences in process and outcome measures by race and ethnicity in the emergency department management of pain among children with long-bone fractures. Although minority children are more likely to receive analgesics and achieve ≥2-point reduction in pain, they are less likely to receive opioids and achieve optimal pain reduction.

Goyal, M. K., et al. (2015). "Racial Disparities in Pain Management of Children With Appendicitis in Emergency Departments." JAMA Pediatr **169**(11): 996-1002.

IMPORTANCE: Racial disparities in use of analgesia in emergency departments have been previously documented. Further work to understand the causes of these disparities must be undertaken, which can then help inform the development of interventions to reduce and eradicate racial disparities in health care provision. OBJECTIVE: To evaluate racial differences in analgesia administration, and particularly opioid administration, among children diagnosed as having appendicitis. DESIGN, SETTING, AND PARTICIPANTS: Repeated cross-sectional study of patients aged 21 years or younger evaluated in the emergency department who had an International Classification of Diseases, Ninth Revision diagnosis of appendicitis, using the National Hospital Ambulatory Medical Care Survey from 2003 to 2010. We calculated the frequency of both opioid and nonopioid analgesia administration using complex survey weighting. We then performed multivariable logistic regression to examine racial differences in overall administration of analgesia, and specifically opioid analgesia, after adjusting for important demographic and visit covariates, including ethnicity and pain score. MAIN OUTCOMES AND MEASURES: Receipt of analgesia administration (any and opioid) by race. RESULTS: An estimated 0.94 (95% CI, 0.78-1.10) million children were diagnosed as having appendicitis. Of those, 56.8% (95% CI, 49.8%-63.9%) received analgesia of any type; 41.3% (95% CI, 33.7%-48.9%) received opioid analgesia (20.7% [95% CI, 5.3%-36.0%] of black patients vs 43.1% [95% CI, 34.6%-51.4%] of white patients). When stratified by pain score and adjusted for ethnicity, black patients with moderate pain were less likely to receive any analgesia than white patients (adjusted odds ratio = 0.1 [95% CI, 0.02-0.8]). Among those with severe pain, black patients were less likely to receive opioids than white patients (adjusted odds ratio = 0.2 [95% CI, 0.06-0.9]). In a multivariable model, there were no significant differences in the overall rate of analgesia administration by race. However, black patients received opioid analgesia significantly less frequently than white patients (12.2% [95% CI, 0.1%-35.2%] vs 33.9% [95% CI, 0.6%-74.9%], respectively; adjusted odds ratio = 0.2 [95% CI, 0.06-0.8]). CONCLUSIONS AND RELEVANCE: Appendicitis pain is undertreated in pediatrics, and racial disparities with respect to analgesia administration exist. Black children are less likely to receive any pain medication for moderate pain and less likely to receive opioids for severe pain, suggesting a different threshold for treatment.

Green, A. R., et al. (2007). "Implicit bias among physicians and its prediction of thrombolysis decisions for black and white patients." J Gen Intern Med **22**(9): 1231-1238.

CONTEXT: Studies documenting racial/ethnic disparities in health care frequently implicate physicians' unconscious biases. No study to date has measured physicians' unconscious racial bias to test whether this predicts physicians' clinical decisions. OBJECTIVE: To test whether physicians show implicit race bias and whether the magnitude of such bias predicts thrombolysis recommendations for black and white patients with acute coronary syndromes. DESIGN, SETTING, AND PARTICIPANTS: An internet-based tool comprising a clinical vignette of a patient presenting to the emergency department with an acute coronary syndrome, followed by a questionnaire and three Implicit Association Tests (IATs). Study invitations were e-mailed to all internal medicine and emergency medicine residents at four academic medical centers in Atlanta and Boston; 287 completed the study, met inclusion criteria, and were randomized to either a black or white vignette patient. MAIN OUTCOME MEASURES: IAT scores (normal continuous variable) measuring physicians' implicit race preference and perceptions of cooperativeness. Physicians' attribution of symptoms to coronary artery disease for vignette patients with randomly assigned race, and their decisions about thrombolysis. Assessment of physicians' explicit racial biases by questionnaire. RESULTS: Physicians reported no explicit preference for white versus black patients or differences in perceived cooperativeness. In contrast, IATs revealed implicit preference favoring white Americans (mean IAT score = 0.36, P < .001, one-sample t test) and implicit stereotypes of black Americans as less cooperative with medical procedures (mean IAT score 0.22, P < .001), and less cooperative generally (mean IAT score 0.30, P < .001). As physicians' prowhite implicit bias increased, so did their likelihood of treating white patients and not treating black patients with thrombolysis (P = .009). CONCLUSIONS: This study represents the first evidence of unconscious (implicit) race bias among physicians, its dissociation from conscious (explicit) bias, and its predictive validity. Results suggest that physicians' unconscious biases may contribute to racial/ethnic disparities in use of medical procedures such as thrombolysis for myocardial infarction.

Hagiwara, N., et al. (2016). "The effects of racial attitudes on affect and engagement in racially discordant medical interactions between non-Black physicians and Black patients." Group Process Intergroup Relat **19**(4): 509-527.

The association between physicians' and patients' racial attitudes and poorer patient-physician communication in racially discordant medical interactions is well-documented. However, it is unclear how physicians' and patients' racial attitudes independently and jointly affect their behaviors during these interactions. In a secondary analysis of video-recorded medical interactions between non-Black physicians and Black patients, we examined how physicians' explicit and implicit racial bias and patients' perceived past discrimination influenced their own as well as one another's affect and level of engagement. Affect and engagement were assessed with a "thin slice" method. For physicians, the major findings were significant three-way interactions: physicians' affect and engagement were influenced by their implicit and explicit racial bias (i.e., aversive racism), but only when they interacted with patients who reported any incidence of prior discrimination. In contrast, patients' affect was influenced only by perceived discrimination. Theoretical and clinical implications of current findings are discussed.

Hagiwara, N., et al. (2020). "A call for grounding implicit bias training in clinical and translational frameworks." Lancet **395**(10234): 1457-1460.

Hagiwara, N., et al. (2017). "Physician Racial Bias and Word Use during Racially Discordant Medical Interactions." Health Communication **32**(4): 401-408.

ABSTRACTPhysician racial bias can negatively affect Black patients? reactions to racially discordant medical interactions, suggesting that racial bias is manifested in physicians? communication with their Black patients. However, little is known about how physician racial bias actually influences their communication during these interactions. This study investigated how non-Black physicians? racial bias is related to their word use during medical interactions with Black patients. One hundred and seventeen video-recorded racially discordant medical interactions from a larger study were transcribed and analyzed using Linguistic Inquiry and Word Count (LIWC) software. Physicians with higher levels of implicit racial bias used first-person plural pronouns and anxiety-related words more frequently than physicians with lower levels of implicit bias. There was also a trend for physicians with higher levels of explicit racial bias to use first-person singular pronouns more frequently than physicians with lower levels of explicit bias. These findings suggest that non-Black physicians with higher levels of implicit racial bias may tend to use more words that reflect social dominance (i.e., first-person plural pronouns) and anxiety when interacting with Black patients.

Haider, A. H., et al. (2014). "Unconscious race and class bias: its association with decision making by trauma and acute care surgeons." J Trauma Acute Care Surg **77**(3): 409-416.

BACKGROUND: Recent studies have found that unconscious biases may influence physicians' clinical decision making. The objective of our study was to determine, using clinical vignettes, if unconscious race and class biases exist specifically among trauma/acute care surgeons and, if so, whether those biases impact surgeons' clinical decision making. METHODS: A prospective Web-based survey was administered to active members of the Eastern Association for the Surgery of Trauma. Participants completed nine clinical vignettes, each with three trauma/acute care surgery management questions. Race Implicit Association Test (IAT) and social class IAT assessments were completed by each participant. Multivariable, ordered logistic regression analysis was then used to determine whether implicit biases reflected on the IAT tests were associated with vignette responses. RESULTS: In total, 248 members of the Eastern Association for the Surgery of Trauma participated. Of these, 79% explicitly stated that they had no race preferences and 55% stated they had no social class preferences. However, 73.5% of the participants had IAT scores demonstrating an unconscious preference toward white persons; 90.7% demonstrated an implicit preference toward upper social class persons. Only 2 of 27 vignette-based clinical decisions were associated with patient race or social class on univariate analyses. Multivariable analyses revealed no relationship between IAT scores and vignette-based clinical assessments. CONCLUSION: Unconscious preferences for white and upper-class persons are prevalent among trauma and acute care surgeons. In this study, these biases were not statistically significantly associated with clinical decision making. Further study of the factors that may prevent implicit biases from influencing patient management is warranted. LEVEL OF EVIDENCE: Epidemiologic study, level II.

Haider, A. H., et al. (2015). "Unconscious Race and Class Biases among Registered Nurses: Vignette-Based Study Using Implicit Association Testing." J Am Coll Surg **220**(6): 1077-1086.e1073.

BACKGROUND: Implicit bias is an unconscious preference for a specific social group that can have adverse consequences for patient care. Acute care clinical vignettes were used to examine whether implicit race or class biases among registered nurses (RNs) impacted patient-management decisions. STUDY DESIGN: In a prospective study conducted among surgical RNs at the Johns Hopkins Hospital, participants were presented 8 multi-stage clinical vignettes in which patients' race or social class were randomly altered. Registered nurses were administered implicit association tests (IATs) for social class and race. Ordered logistic regression was then used to examine associations among treatment differences, race, or social class, and RN's IAT scores. Spearman's rank coefficients comparing RN's implicit (IAT) and explicit (stated) preferences were also investigated. RESULTS: Two hundred and forty-five RNs participated. The majority were female (n=217 [88.5%]) and white (n=203 [82.9%]). Most reported that they had no explicit race or class preferences (n=174 [71.0%] and n=108 [44.1%], respectively). However, only 36 nurses (14.7%) demonstrated no implicit race preference as measured by race IAT, and only 16 nurses (6.53%) displayed no implicit class preference on the class IAT. Implicit association tests scores did not statistically correlate with vignette-based clinical decision making. Spearman's rank coefficients comparing implicit (IAT) and explicit preferences also demonstrated no statistically significant correlation (r=-0.06; p=0.340 and r=-0.06; p=0.342, respectively). CONCLUSIONS: The majority of RNs displayed implicit preferences toward white race and upper social class patients on IAT assessment. However, unlike published data on physicians, implicit biases among RNs did not correlate with clinical decision making.

Haider, A. H., et al. (2011). "Association of Unconscious Race and Social Class Bias With Vignette-Based Clinical Assessments by Medical Students." Jama **306**(9): 942-951.

Studies involving physicians suggest that unconscious bias may be related to clinical decision making and may predict poor patient-physician interaction. The presence of unconscious race and social class bias and its association with clinical assessments or decision making among medical students is unknown.To estimate unconscious race and social class bias among first-year medical students and investigate its relationship with assessments made during clinical vignettes.A secure Web-based survey was administered to 211 medical students entering classes at Johns Hopkins School of Medicine, Baltimore, Maryland, in August 2009 and August 2010. The survey included the Implicit Association Test (IAT) to assess unconscious preferences, direct questions regarding students' explicit race and social class preferences, and 8 clinical assessment vignettes focused on pain assessment, informed consent, patient reliability, and patient trust. Adjusting for student demographics, multiple logistic regression was used to determine whether responses to the vignettes were associated with unconscious race or social class preferences.Association of scores on an established IAT for race and a novel IAT for social class with vignette responses.Among the 202 students who completed the survey, IAT responses were consistent with an implicit preference toward white persons among 140 students (69%, 95% CI, 61%-75%). Responses were consistent with a preference toward those in the upper class among 174 students (86%, 95% CI, 80%-90%). Assessments generally did not vary by patient race or occupation, and multivariable analyses for all vignettes found no significant relationship between implicit biases and clinical assessments. Regression coefficient for the association between pain assessment and race IAT scores was −0.49 (95% CI, −1.00 to 0.03) and for social class, the coefficient was −0.04 (95% CI, −0.50 to 0.41). Adjusted odds ratios for other vignettes ranged from 0.69 to 3.03 per unit change in IAT score, but none were statistically significant. Analysis stratified by vignette patient race or class status yielded similarly negative results. Tests for interactions between patient race or class status and student IAT D scores in predicting clinical assessments were not statistically significant.The majority of first-year medical students at a single school had IAT scores consistent with implicit preference for white persons and possibly for those in the upper class. However, overall vignette-based clinical assessments were not associated with patient race or occupation, and no association existed between implicit preferences and the assessments.

Hall, W. J., et al. (2015). "Implicit Racial/Ethnic Bias Among Health Care Professionals and Its Influence on Health Care Outcomes: A Systematic Review." Am J Public Health **105**(12): e60-e76.

Background. In the United States, people of color face disparities in access to health care, the quality of care received, and health outcomes. The attitudes and behaviors of health care providers have been identified as one of many factors that contribute to health disparities. Implicit attitudes are thoughts and feelings that often exist outside of conscious awareness, and thus are difficult to consciously acknowledge and control. These attitudes are often automatically activated and can influence human behavior without conscious volition.Objectives. We investigated the extent to which implicit racial/ethnic bias exists among health care professionals and examined the relationships between health care professionals’ implicit attitudes about racial/ethnic groups and health care outcomes.Search Methods. To identify relevant studies, we searched 10 computerized bibliographic databases and used a reference harvesting technique.Selection Criteria. We assessed eligibility using double independent screening based on a priori inclusion criteria. We included studies if they sampled existing health care providers or those in training to become health care providers, measured and reported results on implicit racial/ethnic bias, and were written in English.Data Collection and Analysis. We included a total of 15 studies for review and then subjected them to double independent data extraction. Information extracted included the citation, purpose of the study, use of theory, study design, study site and location, sampling strategy, response rate, sample size and characteristics, measurement of relevant variables, analyses performed, and results and findings. We summarized study design characteristics, and categorized and then synthesized substantive findings.Main Results. Almost all studies used cross-sectional designs, convenience sampling, US participants, and the Implicit Association Test to assess implicit bias. Low to moderate levels of implicit racial/ethnic bias were found among health care professionals in all but 1 study. These implicit bias scores are similar to those in the general population. Levels of implicit bias against Black, Hispanic/Latino/Latina, and dark-skinned people were relatively similar across these groups. Although some associations between implicit bias and health care outcomes were nonsignificant, results also showed that implicit bias was significantly related to patient–provider interactions, treatment decisions, treatment adherence, and patient health outcomes. Implicit attitudes were more often significantly related to patient–provider interactions and health outcomes than treatment processes.Conclusions. Most health care providers appear to have implicit bias in terms of positive attitudes toward Whites and negative attitudes toward people of color. Future studies need to employ more rigorous methods to examine the relationships between implicit bias and health care outcomes. Interventions targeting implicit attitudes among health care professionals are needed because implicit bias may contribute to health disparities for people of color.

Hambrook, J. T., et al. (2010). "Disparities exist in the emergency department evaluation of pediatric chest pain." Congenit Heart Dis **5**(3): 285-291.

OBJECTIVES: To identify and describe disparities in the provision of Emergency Department (ED) care in pediatric patients presenting with chest pain (CP). PATIENTS AND METHODS: Nationally representative data were drawn from the National Hospital Ambulatory Medical Care Survey (NHAMCS). All ED visits with a chief complaint of CP and age <19 years from 2002 to 2006 were analyzed. The primary outcome variable was "Anytest" performed (defined as any combination of complete blood count, electrocardiogram, and/or chest x-ray). Univariable analyses were performed with "Anytest" as the dependent variable and patient characteristics as independent variables. Multivariable analysis was performed using logistic regression with the same independent patient characteristics. RESULTS: Eight hundred eighteen pediatric CP visits representing 2 552 193 such visits nationwide were analyzed. Gender and metro/non-metro location were not associated with "Anytest." However, Caucasian patients (p = 0.01) and those with private insurance (p < 0.01) were significantly more likely to receive testing despite otherwise similar demographics and severity of illness. Multivariate analysis revealed race (p = 0.03), expected payer (p = 0.003), and triage level (p = 0.009) were significantly and independently associated with the frequency of testing performed. CONCLUSION: Disparities exist in the ED care of pediatric patients with CP. Identification of such variations is important and provides an opportunity for targeted interventions that ensure delivery of high-quality, cost-effective health care for children.

Hampton, S. B., et al. (2015). "The Influence of Race and Gender on Pain Management: A Systematic Literature Review." Pain Manag Nurs **16**(6): 968-977.

Racial and gender disparities in health are well documented in health science literature. Racial minorities and women are known to receive disproportionately poorer quality of health care when compared to non-Hispanic Whites. It is unknown why women and particular racial and ethnic minorities are more susceptible to experience disparities in patient care. Moreover, with pain being the most common complaint for those entering the healthcare system, gaps in understanding the potential relationship between the nurse provider's gender and/or race and ethnicity and pain management deserve exploration. A systematic literature review has been conducted to explore the current state of knowledge related to providers, health disparities, and pain. Much of the research to date has focused on the provider-patient relationship to health disparities in pain management. Further research is needed to examine how provider-patient interactions may influence patient outcomes, satisfaction, adherence and disparities in health.

Hasler, B. S., et al. (2014). "Virtual peacemakers: mimicry increases empathy in simulated contact with virtual outgroup members." Cyberpsychol Behav Soc Netw **17**(12): 766-771.

This research examined virtual-human interactions as a new form of simulated contact between members of groups in conflict. A virtual human representing an outgroup member (a Palestinian) interacted with 60 Jewish Israeli participants in an experimental study. We manipulated postural mimicry by the virtual interaction partner during a conversation about a sensitive conflict issue. Mimicry increased empathy toward the Palestinians, irrespective of participants' feelings toward the Palestinians prior to the experiment. Further, mimicked participants who reported a priori negative feelings toward Palestinians expressed more sympathy toward their Palestinian virtual interaction partner, rated themselves as closer to him, and perceived the interaction as more harmonious compared to participants in a counter-mimicry condition. The results underscore the impact of mimicry on intergroup interactions, especially on individuals who harbor negative feelings toward the outgroup. The use of virtual-human interactions in obtaining this effect reveals the still widely unexplored potential of technology-enhanced conflict resolution.

Hassen, N., et al. (2021). "Implementing Anti-Racism Interventions in Healthcare Settings: A Scoping Review." International Journal of Environmental Research and Public Health **18**(6): 2993.

Racism towards Black, Indigenous and people of colour continues to exist in the healthcare system. This leads to profound harm for people who use and work within these settings. This is a scoping review to identify anti-racism interventions in outpatient healthcare settings. Searching the peer-reviewed and grey literature, articles were screened for inclusion by at least two independent reviewers. Synthesizing the socio-ecological levels of interventions with inductively identifying themes, a conceptual model for implementing anti-racism interventions in healthcare settings is presented. In total, 37 peer-reviewed articles were included in the review, with 12 empirical studies and 25 theoretical or conceptual papers. Six grey literature documents were also included. Healthcare institutions need to incorporate an explicit, shared language of anti-racism. Anti-racism action should incorporate leadership buy-in and commitment with dedicated resources, support and funding; a multi-level approach beginning with policy and organizational interventions; transparent accountability mechanisms for sustainable change; long-term meaningful partnerships with Black, Indigenous, and people of colour (i.e., racialized communities); and ongoing, mandatory, tailored staff education and training. Decision-makers and staff in healthcare settings have a responsibility to take anti-racism action and may improve the success and sustainability of their efforts by incorporating the foundational principles and strategies identified in this paper.

Hausmann, L. R., et al. (2015). "Examining implicit bias of physicians who care for individuals with spinal cord injury: A pilot study and future directions." J Spinal Cord Med **38**(1): 102-110.

CONTEXT: Despite evidence that healthcare providers have implicit biases that can impact clinical interactions and decisions, implicit bias among physicians caring for individuals with spinal cord injury (SCI) has not been examined. OBJECTIVE: Conduct a pilot study to examine implicit racial bias of SCI physicians and its association with functioning and wellbeing for individuals with SCI. DESIGN: Combined data from cross-sectional surveys of individuals with SCI and their SCI physicians. SETTING: Four national SCI Model Systems sites. PARTICIPANTS: Individuals with SCI (N = 162) and their SCI physicians (N = 14). OUTCOME MEASURES: SCI physicians completed online surveys measuring implicit racial (pro-white/anti-black) bias. Individuals with SCI completed questionnaires assessing mobility, physical independence, occupational functioning, social integration, self-reported health, depression, and life satisfaction. We used multilevel regression analyses to examine the associations of physician bias and outcomes of individuals with SCI. RESULTS: Physicians had a mean bias score of 0.62 (SD = 0.35), indicating a strong pro-white/anti-black bias. Greater physician bias was associated with disability among individuals with SCI in the domain of social integration (odds ratio = 4.80, 95% confidence interval (CI) = 1.44, 16.04), as well as higher depression (B = 3.24, 95% CI = 1.06, 5.41) and lower life satisfaction (B = -4.54, 95% CI= -8.79, -0.28). CONCLUSION: This pilot study indicates that SCI providers are susceptible to implicit racial bias and provides preliminary evidence that greater implicit racial bias of physicians is associated with poorer psychosocial health outcomes for individuals with SCI. It demonstrates the feasibility of studying implicit bias among SCI providers and provides guidance for future research on physician bias and patient outcomes.

Hernandez, R. A., et al. (2013). "Fostering students' reflection about bias in healthcare: cognitive dissonance and the role of personal and normative standards." Med Teach **35**(4): e1082-1089.

BACKGROUND: To reduce cognitive dissonance about one's beliefs or behavior, individuals may compare their behavior to personal and/or normative standards. The details of this reflection process are unclear. AIMS: We examined how medical students compare their behavior or beliefs to standards in discussions about implicit bias, and explored if and how different reflective pathways (preserving vs. reconciling) are associated with each standard. METHODS: Third-year students engaged in a small-group discussion about bias. Some students and group facilitators also participated in a debriefing about the experience. Using qualitative methods, the transcripts from these 11 sessions were analyzed for evidence of student comparison to a standard and of reflection pathways. RESULTS: Of 557 text units, 75.8% could be coded with a standard and/or a path of reflection. Students referenced personal and normative standards about equally, and preserved or reconciled existing beliefs about equally. Uses of normative standards were associated with preservation-type reflection, and uses of personal standards with reconciliation-type reflection. CONCLUSIONS: Normative expectations of physicians are sometimes used to provoke students' consideration of implicit biases about patients. To encourage critical reflection and reconciliation of biased beliefs or behavior, educators should frame reflective activities as a personal exercise rather than as a requirement.

Hoffman, K. M., et al. (2016). "Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites." Proc Natl Acad Sci U S A **113**(16): 4296-4301.

Black Americans are systematically undertreated for pain relative to white Americans. We examine whether this racial bias is related to false beliefs about biological differences between blacks and whites (e.g., "black people's skin is thicker than white people's skin"). Study 1 documented these beliefs among white laypersons and revealed that participants who more strongly endorsed false beliefs about biological differences reported lower pain ratings for a black (vs. white) target. Study 2 extended these findings to the medical context and found that half of a sample of white medical students and residents endorsed these beliefs. Moreover, participants who endorsed these beliefs rated the black (vs. white) patient's pain as lower and made less accurate treatment recommendations. Participants who did not endorse these beliefs rated the black (vs. white) patient's pain as higher, but showed no bias in treatment recommendations. These findings suggest that individuals with at least some medical training hold and may use false beliefs about biological differences between blacks and whites to inform medical judgments, which may contribute to racial disparities in pain assessment and treatment.

Iheduru-Anderson, K. C. (2020). "The White/Black hierarchy institutionalizes White supremacy in nursing and nursing leadership in the United States." Journal of Professional Nursing.

Background Black/African American nurses (BAANs) in the United States (US) experience barriers to career advancement. Aim The specific aims of this study were to a) explore how the perception of racism or racial bias affects the motivation of Black/African American nurses (BAANs) in the United States (US) to seek and apply for nursing leadership and faculty positions, and b) to characterize the racism-related barriers that BAANs perceive that prevent them from moving forward with their careers in academia and nursing leadership. Method As part of a qualitative focused ethnographic study, 30 nurses who self-identified as BAAN, had a bachelor's degree or higher, and had at least five years of nursing experience were interviewed. Qualitative data underwent thematic analysis. Result Although five themes were identified, four were established in the literature, and one – Nursing Leadership Dynamics (NLD) – was novel. A complex network of NLDs that served to both prevent the success of BAANs as well as threaten their job security and health was identified. Conclusion This study identified a multi-faceted, tightly-woven system of NLDs that serves to continually institutionalize and enforce a white/black hierarchy and white supremacy in nursing at all levels in the US, including education.

Johnson, T. J., et al. (2017). "Implicit Bias in Pediatric Academic Medicine." J Natl Med Assoc **109**(3): 156-163.

OBJECTIVE: Despite known benefits of diversity, certain racial/ethnic groups remain underrepresented in academic pediatrics. Little research exists regarding unconscious racial attitudes among pediatric faculty responsible for decisions on workforce recruitment and retention in academia. This study sought to describe levels of unconscious racial bias and perceived barriers to minority recruitment and retention among academic pediatric faculty leaders. METHODS: Authors measured unconscious racial bias in a sample of pediatric faculty attending diversity workshops conducted at local and national meetings in 2015. A paper version of the validated Implicit Association Test (IAT) measured unconscious racial bias. Subjects also reported perceptions about minority recruitment and retention. RESULTS: Of 68 eligible subjects approached, 58 (85%) consented and completed the survey with IAT. Of participants, 83% had leadership roles and 93% were involved in recruitment. Participants had slight pro-white/anti-black bias on the IAT (M = 0.28, SD = 0.49). There were similar IAT scores among participants in leadership roles (M = 0.33, SD = 0.47) and involved in recruitment (M = 0.28, SD = 0.43). Results did not differ when comparing participants in local workshops to the national workshop (n = 36, M = 0.29, SD = 0.40 and n = 22, M = 0.27, SD = 0.49 respectively; p = 0.88). Perceived barriers to minority recruitment and retention included lack of minority mentors, poor recruitment efforts, and lack of qualified candidates. CONCLUSIONS: Unconscious pro-white/anti-black racial bias was identified in this sample of academic pediatric faculty and leaders. Further research is needed to examine how unconscious bias impacts decisions in academic pediatric workforce recruitment. Addressing unconscious bias and perceived barriers to minority recruitment and retention represent opportunities to improve diversity efforts.

Johnson, T. J., et al. (2016). "The Impact of Cognitive Stressors in the Emergency Department on Physician Implicit Racial Bias." Acad Emerg Med **23**(3): 297-305.

OBJECTIVES: The emergency department (ED) is characterized by stressors (e.g., fatigue, stress, time pressure, and complex decision-making) that can pose challenges to delivering high-quality, equitable care. Although it has been suggested that characteristics of the ED may exacerbate reliance on cognitive heuristics, no research has directly investigated whether stressors in the ED impact physician racial bias, a common heuristic. We seek to determine if physicians have different levels of implicit racial bias post-ED shift versus preshift and to examine associations between demographics and cognitive stressors with bias. METHODS: This repeated-measures study of resident physicians in a pediatric ED used electronic pre- and postshift assessments of implicit racial bias, demographics, and cognitive stressors. Implicit bias was measured using the Race Implicit Association Test (IAT). Linear regression models compared differences in IAT scores pre- to postshift and determined associations between participant demographics and cognitive stressors with postshift IAT and pre- to postshift difference scores. RESULTS: Participants (n = 91) displayed moderate prowhite/antiblack bias on preshift (mean +/- SD = 0.50 +/- 0.34, d = 1.48) and postshift (mean +/- SD = 0.55 +/- 0.39, d = 1.40) IAT scores. Overall, IAT scores did not differ preshift to postshift (mean increase = 0.05, 95% CI = -0.02 to 0.14, d = 0.13). Subanalyses revealed increased pre- to postshift bias among participants working when the ED was more overcrowded (mean increase = 0.09, 95% CI = 0.01 to 0.17, d = 0.24) and among those caring for >10 patients (mean increase = 0.17, 95% CI = 0.05 to 0.27, d = 0.47). Residents' demographics (including specialty), fatigue, busyness, stressfulness, and number of shifts were not associated with postshift IAT or difference scores. In multivariable models, ED overcrowding was associated with greater postshift bias (coefficient = 0.11 per 1 unit of NEDOCS score, SE = 0.05, 95% CI = 0.00 to 0.21). CONCLUSIONS: While resident implicit bias remained stable overall preshift to postshift, cognitive stressors (overcrowding and patient load) were associated with increased implicit bias. Physicians in the ED should be aware of how cognitive stressors may exacerbate implicit racial bias.

Johnson, T. J., et al. (2013). "Association of Race and Ethnicity With Management of Abdominal Pain in the Emergency Department." Pediatrics **132**(4): e851.

OBJECTIVE: To determine if race/ethnicity-based differences exist in the management of pediatric abdominal pain in emergency departments (EDs).METHODS: Secondary analysis of data from the 2006–2009 National Hospital Ambulatory Medical Care Survey regarding 2298 visits by patients ≤21 years old who presented to EDs with abdominal pain. Main outcomes were documentation of pain score and receipt of any analgesics, analgesics for severe pain (defined as ≥7 on a 10-point scale), and narcotic analgesics. Secondary outcomes included diagnostic tests obtained, length of stay (LOS), 72-hour return visits, and admission.RESULTS: Of patient visits, 70.1% were female, 52.6% were from non-Hispanic white, 23.5% were from non-Hispanic black, 20.6% were from Hispanic, and 3.3% were from “other” racial/ethnic groups; patients’ mean age was 14.5 years. Multivariate logistic regression models adjusting for confounders revealed that non-Hispanic black patients were less likely to receive any analgesic (odds ratio [OR]: 0.61; 95% confidence interval [CI]: 0.43–0.87) or a narcotic analgesic (OR: 0.38; 95% CI: 0.18–0.81) than non-Hispanic white patients (referent group). This finding was also true for non-Hispanic black and “other” race/ethnicity patients with severe pain (ORs [95% CI]: 0.43 [0.22–0.87] and 0.02 [0.00–0.19], respectively). Non-Hispanic black and Hispanic patients were more likely to have a prolonged LOS than non-Hispanic white patients (ORs [95% CI]: 1.68 [1.13–2.51] and 1.64 [1.09–2.47], respectively). No significant race/ethnicity-based disparities were identified in documentation of pain score, use of diagnostic procedures, 72-hour return visits, or hospital admissions.CONCLUSIONS: Race/ethnicity-based disparities exist in ED analgesic use and LOS for pediatric abdominal pain. Recognizing these disparities may help investigators eliminate inequalities in care.Abbreviations:CI — confidence intervalCT — computed tomographyED — emergency departmentLOS — length of stayNHAMCS — National Hospital Ambulatory Medical Care SurveyOR — odds ratio

Johnson, T. J., et al. (2017). "Comparison of Physician Implicit Racial Bias Toward Adults Versus Children." Acad Pediatr **17**(2): 120-126.

BACKGROUND AND OBJECTIVES: The general population and most physicians have implicit racial bias against black adults. Pediatricians also have implicit bias against black adults, albeit less than other specialties. There is no published research on the implicit racial attitudes of pediatricians or other physicians toward children. Our objectives were to compare implicit racial bias toward adults versus children among resident physicians working in a pediatric emergency department, and to assess whether bias varied by specialty (pediatrics, emergency medicine, or other), gender, race, age, and year of training. METHODS: We measured implicit racial bias of residents before a pediatric emergency department shift using the Adult and Child Race Implicit Association Tests (IATs). Generalized linear models compared Adult and Child IAT scores and determined the association of participant demographics with Adult and Child IAT scores. RESULTS: Among 91 residents, we found moderate pro-white/anti-black bias on both the Adult (mean = 0.49, standard deviation = 0.34) and Child Race IAT (mean = 0.55, standard deviation = 0.37). There was no significant difference between Adult and Child Race IAT scores (difference = 0.06, P = .15). Implicit bias was not associated with resident demographic characteristics, including specialty. CONCLUSIONS: This is the first study demonstrating that resident physicians have implicit racial bias against black children, similar to levels of bias against black adults. Bias in our study did not vary by resident demographic characteristics, including specialty, suggesting that pediatric residents are as susceptible as other physicians to implicit bias. Future studies are needed to explore how physicians' implicit attitudes toward parents and children may impact inequities in pediatric health care.

Kawakami, K., et al. (2005). "Kicking the habit: Effects of nonstereotypic association training and correction processes on hiring decisions." Journal of experimental social psychology **41**(1): 68-75.

The primary aim of the present research was to examine the effect of training in associating nonstereotypic traits with men and women on hiring decisions. While previous findings demonstrate that training can reduce the uncontrolled activation of stereotypes, the present results show that training by itself may not reduce the more controlled application of stereotypes. Across both no training and training conditions, participants chose male over female candidates for a leadership function. However, extensive nonstereotypic training did reduce sex discrimination when the training phase was disassociated from the choice of candidate task or when the participant's cognitive capacity was limited. These findings provide further evidence for the effectiveness of training in decreasing intergroup biases and for the potential influence of mental correction in moderating the effects of nonstereotypic training.

Kim, L. K., et al. (2016). "Sex-Based Disparities in Incidence, Treatment, and Outcomes of Cardiac Arrest in the United States, 2003-2012." J Am Heart Assoc **5**(6).

BACKGROUND: Recent studies have shown improving survival after cardiac arrest. However, data regarding sex-based disparities in treatment and outcomes after cardiac arrest are limited. METHODS AND RESULTS: We performed a retrospective analysis of all patients suffering cardiac arrest between 2003 and 2012 using the Nationwide Inpatient Sample database. Annual rates of cardiac arrest, rates of utilization of coronary angiography/percutaneous coronary interventions/targeted temperature management, and sex-based outcomes after cardiac arrest were examined. Among a total of 1 436 052 discharge records analyzed for cardiac arrest patients, 45.4% (n=651 745) were females. Women were less likely to present with ventricular tachycardia/ventricular fibrillation arrests compared with men throughout the study period. The annual rates of cardiac arrests have increased from 2003 to 2012 by 14.0% (Ptrend<0.001) and ventricular tachycardia/ventricular fibrillation arrests have increased by 25.9% (Ptrend<0.001). Women were less likely to undergo coronary angiography, percutaneous coronary interventions, or targeted temperature management in both ventricular tachycardia/ventricular fibrillation and pulseless electrical activity/asystole arrests. Over a 10-year study period, there was a significant decrease in in-hospital mortality in women (from 69.1% to 60.9%, Ptrend<0.001) and men (from 67.2% to 58.6%, Ptrend<0.001) after cardiac arrest. In-hospital mortality was significantly higher in women compared with men (64.0% versus 61.4%; adjusted odds ratio 1.02, P<0.001), particularly in the ventricular tachycardia/ventricular fibrillation arrest cohort (49.4% versus 45.6%; adjusted odds ratio 1.11, P<0.001). CONCLUSIONS: Women presenting with cardiac arrests are less likely to undergo therapeutic procedures, including coronary angiography, percutaneous coronary interventions, and targeted temperature management. Despite trends in improving survival after cardiac arrest over 10 years, women continue to have higher in-hospital mortality when compared with men.

Kramer, C. E., et al. (2015). "Does the sex of a simulated patient affect CPR?" Resuscitation **86**: 82-87.

Lane, W. G., et al. (2002). "Racial differences in the evaluation of pediatric fractures for physical abuse." Jama **288**(13): 1603-1609.

CONTEXT: Child maltreatment is a significant problem within US society, and minority children have higher rates of substantiated maltreatment than do white children. However, it is unclear whether minority children are abused more frequently than whites or whether their cases are more likely to be reported. OBJECTIVES: To determine whether there are racial differences in the evaluation and Child Protective Services (CPS) reporting of young children hospitalized for fractures. DESIGN, SETTING, AND PATIENTS: Retrospective chart review conducted at an urban US academic children's hospital among 388 children younger than 3 years hospitalized for treatment of an acute primary skull or long-bone fracture between 1994 and 2000. Children with perpetrator-admitted child abuse, metabolic bone disease, birth trauma, or injury caused by vehicular crash were excluded. MAIN OUTCOME MEASURES: Ordering of skeletal surveys and filing reports of suspected abuse. RESULTS: Reports of suspected abuse were filed for 22.5% of white and 52.9% of minority children (P<.001). Abusive injuries, as determined by expert review, were more common among minority children than among white children (27.6% vs 12.5%; P<.001). Minority children aged at least 12 months to 3 years (toddlers) were significantly more likely to have a skeletal survey performed compared with their white counterparts, even after controlling for insurance status, independent expert determination of likelihood of abuse, and appropriateness of performing a skeletal survey (adjusted odds ratio [OR], 8.75; 95% confidence interval [CI], 3.48-22.03; P<.001). This group of children was also more likely to be reported to CPS compared with white toddlers, even after controlling for insurance status and likelihood of abuse (adjusted OR, 4.32; 95% CI, 1.63-11.43; P =.003). By likelihood of abuse, differential ordering of skeletal surveys and reporting of suspected abuse were most pronounced for children at least 12 months old with accidental injuries; however, differences were also noted among toddlers with indeterminate injuries but not among infants or toddlers with abusive injuries. Minority children at least 12 months old with accidental injuries were more than 3 times more likely than their white counterparts to be reported for suspected abuse (for children with Medicaid or no insurance, relative risk [RR], 3.08; 95% CI, 1.37-4.80; for children with private insurance, RR, 3.74; 95% CI, 1.46-6.01). CONCLUSION: While minority children had higher rates of abusive fractures in our sample, they were also more likely to be evaluated and reported for suspected abuse, even after controlling for the likelihood of abusive injury. This suggests that racial differences do exist in the evaluation and reporting of pediatric fractures for child abuse, particularly in toddlers with accidental injuries.

Leslie, K. F., et al. (2018). "Changes in medical student implicit attitudes following a health equity curricular intervention." Medical Teacher **40**(4): 372-378.

<bold>Purpose:</bold> This study assessed the: (1) effect of an LGBTQI + health equity curriculum (eQuality) on implicit attitudes among first (M1) and second year (M2) medical students and (2) utility of dedicated time to explore implicit bias. <bold>Method:</bold> Implicit biases were assessed at baseline using implicit association tests (IAT) for all M2s and a random sample of first years (M1A). These students were then debriefed on strategies to mitigate bias. Following eQuality, all M1 and M2s completed post-intervention IATs. The remaining first years (M1B) were then debriefed. Paired sample <italic>t</italic>-tests assessed differences between pre<bold>/</bold>post. Independent sample <italic>t</italic>-tests assessed differences in post-IATs between M1 groups. <bold>Results:</bold> IATs indicated preferences for “Straight,” “White,” and “Thin” at both pre and post. M2s demonstrated statistically significant improvements pre to post for sexuality (<italic>p</italic> = 0.01) and race (<italic>p</italic> = 0.03). There were significant differences in post-intervention IAT scores between M1As who received the IAT and debriefing prior to eQuality and M1Bs for sexuality (<italic>p</italic> = 0.002) and race (<italic>p</italic> = 0.046). There were no significant changes for weight. <bold>Conclusion:</bold> eQuality reduced implicit preference for “Straight” and “White.” Differences in M1 post-intervention IAT scores between groups suggest dedicating time to debrief implicit attitudes enhances bias mitigation. [ABSTRACT FROM AUTHOR]

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Maina, I. W., et al. (2018). "A decade of studying implicit racial/ethnic bias in healthcare providers using the implicit association test." Soc Sci Med **199**: 219-229.

Disparities in the care and outcomes of US racial/ethnic minorities are well documented. Research suggests that provider bias plays a role in these disparities. The implicit association test enables measurement of implicit bias via tests of automatic associations between concepts. Hundreds of studies have examined implicit bias in various settings, but relatively few have been conducted in healthcare. The aim of this systematic review is to synthesize the current knowledge on the role of implicit bias in healthcare disparities. A comprehensive literature search of several databases between May 2015 and September 2016 identified 37 qualifying studies. Of these, 31 found evidence of pro-White or light-skin/anti-Black, Hispanic, American Indian or dark-skin bias among a variety of HCPs across multiple levels of training and disciplines. Fourteen studies examined the association between implicit bias and healthcare outcomes using clinical vignettes or simulated patients. Eight found no statistically significant association between implicit bias and patient care while six studies found that higher implicit bias was associated with disparities in treatment recommendations, expectations of therapeutic bonds, pain management, and empathy. All seven studies that examined the impact of implicit provider bias on real-world patient-provider interaction found that providers with stronger implicit bias demonstrated poorer patient-provider communication. Two studies examined the effect of implicit bias on real-world clinical outcomes. One found an association and the other did not. Two studies tested interventions aimed at reducing bias, but only one found a post-intervention reduction in implicit bias. This review reveals a need for more research exploring implicit bias in real-world patient care, potential modifiers and confounders of the effect of implicit bias on care, and strategies aimed at reducing implicit bias and improving patient-provider communication. Future studies have the opportunity to build on this current body of research, and in doing so will enable us to achieve equity in healthcare and outcomes.

Mossey, J. M. (2011). "Defining racial and ethnic disparities in pain management." Clin Orthop Relat Res **469**(7): 1859-1870.

BACKGROUND: Substantial pain prevalence is as high as 40% in community populations. There is consistent evidence that racial/ethnic minority individuals are overrepresented among those who experience such pain and whose pain management is inadequate. QUESTIONS/PURPOSES: The objectives of this paper are to (1) define parameters of and summarize evidence pertinent to racial/ethnic minority disparities in pain management, (2) identify factors contributing to observed disparities, and (3) identify strategies to minimize the disparities. METHODS: Scientific literature was selectively reviewed addressing pain epidemiology, differences in pain management of non-Hispanic whites versus racial/ethnic minority groups, and patient and physician factors contributing to such differences. RESULTS: Racial/ethnic minorities consistently receive less adequate treatment for acute and chronic pain than non-Hispanic whites, even after controlling for age, gender, and pain intensity. Pain intensity underreporting appears to be a major contribution of minority individuals to pain management disparities. The major contribution by physicians to such disparities appears to reflect limited awareness of their own cultural beliefs and stereotypes regarding pain, minority individuals, and use of narcotic analgesics. CONCLUSIONS: Racial/ethnic minority patients with pain need to be empowered to accurately report pain intensity levels, and physicians who treat such patients need to acknowledge their own belief systems regarding pain and develop strategies to overcome unconscious, but potentially harmful, negative stereotyping of minority patients.

Naim, M. Y., et al. (2019). "Race/Ethnicity and Neighborhood Characteristics Are Associated With Bystander Cardiopulmonary Resuscitation in Pediatric Out-of-Hospital Cardiac Arrest in the United States: A Study From CARES." J Am Heart Assoc **8**(14): e012637.

Background Whether racial and neighborhood characteristics are associated with bystander cardiopulmonary resuscitation ( BCPR ) in pediatric out-of-hospital cardiac arrest ( OHCA ) is unknown. Methods and Results An analysis was conducted of CARES (Cardiac Arrest Registry to Enhance Survival) for pediatric nontraumatic OHCA s from 2013 to 2017. An index (range, 0-4) was created for each arrest based on neighborhood characteristics associated with low BCPR (>80% black; >10% unemployment; <80% high school; median income, <$50 000). The primary outcome was BCPR . BCPR occurred in 3399 of 7086 OHCA s (48%). Compared with white children, BCPR was less likely in other races/ethnicities (black: adjusted odds ratio [ aOR ], 0.59; 95% CI , 0.52-0.68; Hispanic: aOR , 0.78; 95% CI , 0.66-0.94; and other: aOR , 0.54; 95% CI , 0.40-0.72). Compared with arrests in neighborhoods with an index score of 0, BCPR occurred less commonly for arrests with an index score of 1 ( aOR , 0.80; 95% CI , 0.70-0.91), 2 ( aOR , 0.75; 95% CI , 0.65-0.86), 3 ( aOR , 0.52; 95% CI , 0.45-0.61), and 4 ( aOR , 0.46; 95% CI , 0.36-0.59). Black children had an incrementally lower likelihood of BCPR with increasing index score while white children had an overall similar likelihood at most scores. Black children with an index of 4 were approximately half as likely to receive BCPR compared with white children with a score of 0. Conclusions Racial and neighborhood characteristics are associated with BCPR in pediatric OHCA . Targeted CPR training for nonwhite, low-education, and low-income neighborhoods may increase BCPR and improve pediatric OHCA outcomes.

Nairn, S., et al. (2012). "Diversity and ethnicity in nurse education: the perspective of nurse lecturers." Nurse Educ Today **32**(3): 203-207.

This paper is a report on a qualitative study which considered the issue of how lecturers feel about teaching and managing the topic of culture and racism within their role as nurse educators. The issue of cultural diversity and the related issue of racism within nursing and society more generally means that the problem cannot be ignored since one of the central tenets of nursing is that care should be delivered in non-discriminatory ways. We interviewed a group of lecturers within a UK university to explore their views on the topic. We produced six themes: Culture; the existence of racism within nursing; challenging racism; political correctness; strategies adopted to address issues in the classroom and the presence of cultural diversity within the curriculum. We identified that the lecturers in our study were keen to address the issue but were also very concerned about their own abilities and confidence in this area.

Nelson, A. (2002). "Unequal treatment: confronting racial and ethnic disparities in health care." J Natl Med Assoc **94**(8): 666.

Nelson, S. (2016). "Race, Racism, and Health Disparities: What Can I Do About It?" Creat Nurs **22**(3): 161-165.

Disparities based on race that target communities of color are consistently reported in the management of many diseases. Barriers to health care equity include the health care system, the patient, the community, and health care providers. This article focuses on the health care system as well as health care providers and how racism and our implicit biases affect our medical decision making. Health care providers receive little or no training on issues of race and racism. As a result, awareness of racism and its impact on health care delivery is low. I will discuss a training module that helps improve awareness around these issues. Until racial issues are honestly addressed by members of the health care team, it is unlikely that we will see significant improvements in racial health care disparities for Americans.

Oliver, M. N., et al. (2014). "Do physicians' implicit views of African Americans affect clinical decision making?" J Am Board Fam Med **27**(2): 177-188.

BACKGROUND: Total knee replacement (TKR) is a cost-effective treatment option for severe osteoarthritis (OA). While prevalence of OA is higher among blacks than whites, TKR rates are lower among blacks. Physicians' implicit preferences might explain racial differences in TKR recommendation. The objective of this study was to evaluate whether the magnitude of implicit racial bias predicts physician recommendation of TKR for black and white patients with OA and to assess the effectiveness of a web-based instrument as an intervention to decrease the effect of implicit racial bias on physician recommendation of TKR. METHODS: In this web-based study, 543 family and internal medicine physicians were given a scenario describing either a black or white patient with severe OA refractory to medical treatment. Questionnaires evaluating the likelihood of recommending TKR, perceived medical cooperativeness, and measures of implicit racial bias were administered. The main outcome measures included TKR recommendation, implicit racial preference, and medical cooperativeness stereotypes measured with implicit association tests. RESULTS: Subjects displayed a strong implicit preference for whites over blacks (P < .0001) and associated "medically cooperative" with whites over blacks (P < .0001). Physicians reported significantly greater liking for whites over blacks (P < .0001) and reported believing whites were more medically cooperative than blacks (P < .0001). Participants reported providing similar care for white and black patients (P = .10) but agreed that subconscious biases could influence their treatment decisions (P < .0001). There was no significant difference in the rate of recommendation for TKR when the patient was black (47%) versus white (38%) (P = .439), and neither implicit nor explicit racial biases predicted differential treatment recommendations by race (all P > .06). Although participants were more likely to recommend TKR when completing the implicit association test before the decision, patient race was not significant in the association (P = .960). CONCLUSIONS: Physicians possessed explicit and implicit racial biases, but those biases did not predict treatment recommendations. Clinicians' biases about the medical cooperativeness of blacks versus whites, however, may have influenced treatment decisions.

Peck, T. C., et al. (2013). "Putting yourself in the skin of a black avatar reduces implicit racial bias." Conscious Cogn **22**(3): 779-787.

Although it has been shown that immersive virtual reality (IVR) can be used to induce illusions of ownership over a virtual body (VB), information on whether this changes implicit interpersonal attitudes is meager. Here we demonstrate that embodiment of light-skinned participants in a dark-skinned VB significantly reduced implicit racial bias against dark-skinned people, in contrast to embodiment in light-skinned, purple-skinned or with no VB. 60 females participated in this between-groups experiment, with a VB substituting their own, with full-body visuomotor synchrony, reflected also in a virtual mirror. A racial Implicit Association Test (IAT) was administered at least three days prior to the experiment, and immediately after the IVR exposure. The change from pre- to post-experience IAT scores suggests that the dark-skinned embodied condition decreased implicit racial bias more than the other conditions. Thus, embodiment may change negative interpersonal attitudes and thus represent a powerful tool for exploring such fundamental psychological and societal phenomena.

Pettit, K. E., et al. (2017). "Effect of Socioeconomic Status Bias on Medical Student–Patient Interactions Using an Emergency Medicine Simulation." AEM Education and Training **1**(2): 126-131.

Abstract Objectives Implicit bias in clinical decision making has been shown to contribute to healthcare disparities and results in negative patient outcomes. Our objective was to develop a high-fidelity simulation model for assessing the effect of socioeconomic status (SES) on medical student (MS) patient care. Methods Teams of MSs were randomly assigned to participate in a high-fidelity simulation of acute coronary syndrome. Cases were identical with the exception of patient SES, which alternated between a low-SES homeless man and a high-SES executive. Students were blinded to study objectives. Cases were recorded and scored by blinded independent raters using 24 dichotomous items in the following domains: 13 communication, six information gathering, and five clinical care. In addition, quantitative data were obtained on the number of times students performed the following patient actions: acknowledged patient by name, asked about pain, generally conversed, and touching the patient. Fisher's exact test was used to test for differences between dichotomous items. For continuous measures, group differences were tested using a mixed-effects model with a random effect for case to account for multiple observations per case. Results Fifty-eight teams participated in an equal number of high- and low-SES cases. MSs asked about pain control more often (p = 0.04) in patients of high SES. MSs touched the low-SES patient more frequently (p = 0.01). There were no statistically significant differences in clinical care or information gathering measures. Conclusions This study demonstrates more attention to pain control in patients with higher SES as well as a trend toward better communication. Despite the differences in interpersonal behavior, quantifiable differences in clinical care were not seen. These results may be limited by sample size, and larger cohorts will be required to identify the factors that contribute to SES bias.

Rand, C. S., et al. (2000). "Emergency department visits by urban African American children with asthma." Journal of Allergy and Clinical Immunology **105**(1, Part 1): 83-90.

Background: Asthma morbidity among African American children has been identified as a significant national health concern. High emergency department use is one index of this morbidity and may reflect disease severity, disease management, and social factors. Objective: This study examined the prevalence and correlates of emergency department use and other indices of asthma morbidity among a sample of urban, low-income, African American children. Methods: Parents of 392 elementary school children with asthma who had consented to participate in an asthma education program were interviewed by phone according to a standardized protocol. Results: Children had a mean of 6.2 days of restricted activity (SD 8.1) and 7.9 symptomatic nights (SD 8.1). The mean number of school days missed because of asthma was 9.7 (SD 13.5). Among children with asthma symptoms in the past 12 months, 73.2% could identify a specific physician or nurse who provided asthma care. For those families without an identified asthma primary care provider, 39.3% received their usual asthma care from the emergency department. A total of 43.6% of the children had been to the emergency department for asthma care without hospitalization in the previous 6 months. Close to 80% of children reported using one or more prescribed asthma medication, and of these only 12% reported using inhaled anti-inflammatory medications. Families of children who had used the emergency department in the prior 6 months reported more asthma symptoms, lower social support, problems paying for health care, and the absence of a hypoallergenic mattress cover and that they had seen a physician for regular asthma care in the past 6 months. Conclusions: We conclude that asthma management for children in the inner city relies on episodic care and emergency care, that asthma medication management does not conform to current guidelines, and that asthma symptoms resulting in school absences and workdays lost are prevalent. (J Allergy Clin Immunol 2000;105:83-90.)

Raphael, J. L. and S. O. Oyeku (2020). "Implicit Bias in Pediatrics: An Emerging Focus in Health Equity Research." Pediatrics **145**(5): e20200512.

Abbreviation:ED — emergency departmentDespite large-scale investments in research, health policy, care delivery models, and medical school curricula, inequities along the continuum of child health care and health persist.1,2 The study “Racial and Ethnic Differences in Emergency Department Pain Management of Children with Fractures”3 in this issue of Pediatrics contributes new insights into the field of pediatric health equity research with a focus on pain in the emergency department (ED) setting. Goyal et al3 find that although racial and/or ethnic minority children were more likely to receive analgesics and achieve a ≥2-point reduction in pain, they were less likely to receive opioids and experience optimal pain reduction. This work builds on a well-established body of literature in adult care and an emerging evidence base in pediatrics demonstrating inequities in analgesic administration.4 Studies in pediatric EDs have demonstrated racial and/or ethnic disparities in analgesic management for children presenting with acute abdominal pain and appendicitis.5,6 The current study adds to the field by combining process and outcome measures in assessing analgesic management.As the authors and other researchers in the field have highlighted, there … Address correspondence to Jean L. Raphael, MD, MPH, Texas Children’s Hospital, 6701 Fannin St, Suite D.1540.00, Houston, TX 77030. E-mail: raphael{at}bcm.edu

Razi, R. R., et al. (2015). "Racial disparities in outcomes following PEA and asystole in-hospital cardiac arrests." Resuscitation **87**: 69-74.

AIM: To define the racial differences present after PEA and asystolic IHCA and explore factors that could contribute to this disparity. METHODS: We analyzed PEA and asystolic IHCA in the Get-With-The-Guidelines-Resuscitation database. Multilevel conditional fixed effects logistic regression models were used to estimate the relationship between race and survival to discharge and return of spontaneous circulation (ROSC), sequentially controlling for hospital, patient demographics, comorbidities, arrest characteristic, process measures, and interventions in place at time of arrest. RESULTS: Among the 561 hospitals, there were 76,835 patients who experienced IHCA with an initial rhythm of PEA or asystole (74.8% white, 25.2% black). Unadjusted ROSC rate was 55.1% for white patients and 54.1% for black patients (unadjusted OR: 0.94 [95% CI, 0.90-0.98], p=0.016). Survival to discharge was 12.8% for white patients and 10.4% for black patients (unadjusted OR: 0.83 [95% CI, 0.78-0.87], p<0.001). After adjusting for temporal trends, patient characteristics, hospital, and arrest characteristics, there remained a difference in survival to discharge (OR: 0.85 [95% CI, 0.79-0.92]) and rate of ROSC (OR: 0.88 [95% CI, 0.84-0.92]). Black patients had a worse mental status at discharge after survival. Rates of DNAR placed after survival from were lower in black patients with a rate of 38.3% compared to 44.5% in white patients (p<0.001). CONCLUSION: Black patients are less likely to experience ROSC and survival to discharge after PEA or asystole IHCA. Individual patient characteristics, event characteristics, and hospital characteristics don't fully explain this disparity. It is possible that disease burden and end-of-life preferences contribute to the racial disparity.

Roberts, S.-G., et al. (2014). "The Use of High-Fidelity Simulation to Teach Cultural Competence in the Nursing Curriculum." Journal of Professional Nursing **30**(3): 259-265.

The United States population is undergoing a major demographic shift, by the year 2050, it is predicted that minority populations will constitute half of the general population. This evolving population change is significant due to the overwhelming burden of disease that minorities face in the nation. Cultural competence training is currently being used to prepare practitioners to provide care to a diverse population in an effort to eliminate health disparities. With the increasing demands of the nursing curriculum and the limited time frame to prepare competent clinicians, the search continues for innovative strategies that will produce culturally competent providers. Patient simulation is a technique that replicates real-world scenarios in a controlled and nonthreatening environment. However, despite the legal and moral obligations that nurses have to provide culturally competent care, a lack of evidence exists regarding how to properly integrate simulation methods for cultural competence training into the nursing curriculum. In the nursing curriculum, patient simulation has been used mainly to teach the biomedical aspects of care with less focus on the psychological, cultural, and environmental context. The potential exists for the use of high-fidelity patient simulation as an effective teaching strategy for cultural competence training.

Rossen, B., et al. (2008). Virtual Humans Elicit Skin-Tone Bias Consistent with Real-World Skin-Tone Biases. Intelligent Virtual Agents, Berlin, Heidelberg, Springer Berlin Heidelberg.

In this paper, we present results from a study that shows that a dark skin-tone VH agent elicits user behavior consistent with real world skin-tone biases. Results from a study with medical students (n=21), show participant empathy towards a dark skin-tone VH patient was predicted by their measured bias towards African-Americans. Real world bias was measured using a validated psychological instrument called the implicit association test (IAT). Scores on the IAT were significantly correlated to coders’ ratings of participant empathy. This result indicates that VHs elicit realistic responses and could become an important component in cultural diversity training.

Rutledge, C. M., et al. (2008). "Integrative simulation: a novel approach to educating culturally competent nurses." Contemp Nurse **28**(1-2): 119-128.

Nursing education faces many challenges as a result of the population's increased cultural diversification. Of primary importance is the need to prepare culturally competent nurses to provide care in both urban and remote rural areas. This paper presents a HRSA funded program that utilises simulations to provide culturally diverse learning opportunities for both university-based and distance learning students. Cases are developed using focus groups and individual interviews. The information is used with standardised patients to develop vignettes that are loaded into a web-based virtual hospital where students conduct interviews with culturally diverse patients. The information obtained during the interview is then used to provide hands-on care to a high performance simulator (simulated mannequin). The encounters are videotaped for use in debriefing sessions with the students, for educational programs in the classroom, and for video-streaming to web-based distance students. Students in the debriefing sessions and classroom participate in a review of the videotape using the Personal Response System to respond to question. Through the culturally enhanced integrated simulation, students have an opportunity to address clinical situations and the impact of culture in a relatively safe non-threatening environment where the impact of their biases can be explored.

Sabin, J., et al. (2009). "Physicians' implicit and explicit attitudes about race by MD race, ethnicity, and gender." Journal of Health Care for the Poor and Underserved **20**(3): 896-913.

Recent reports suggest that providers' implicit attitudes about race contribute to racial and ethnic health care disparities. However, little is known about physicians' implicit racial attitudes. This study measured implicit and explicit attitudes about race using the Race Attitude Implicit Association Test (IAT) for a large sample of test takers (N=404,277), including a sub-sample of medical doctors (MDs) (n=2,535). Medical doctors, like the entire sample, showed an implicit preference for White Americans relative to Black Americans. We examined these effects among White, African American, Hispanic, and Asian MDs and by physician gender. Strength of implicit bias exceeded self-report among all test takers except African American MDs. African American MDs, on average, did not show an implicit preference for either Blacks or Whites, and women showed less implicit bias than men. Future research should explore whether, and under what conditions, MDs' implicit attitudes about race affect the quality of medical care.

Sabin, J. A. and A. G. Greenwald (2012). "The Influence of Implicit Bias on Treatment Recommendations for 4 Common Pediatric Conditions: Pain, Urinary Tract Infection, Attention Deficit Hyperactivity Disorder, and Asthma." Am J Public Health **102**(5): 988-995.

Objectives. We examined the association between pediatricians’ attitudes about race and treatment recommendations by patients’ race.Methods. We conducted an online survey of academic pediatricians (n = 86). We used 3 Implicit Association Tests to measure implicit attitudes and stereotypes about race. Dependent variables were recommendations for pain management, urinary tract infections, attention deficit hyperactivity disorder, and asthma, measured by case vignettes. We used correlational analysis to assess associations among measures and hierarchical multiple regression to measure the interactive effect of the attitude measures and patients’ race on treatment recommendations.Results. Pediatricians’ implicit (unconscious) attitudes and stereotypes were associated with treatment recommendations. The association between unconscious bias and patient’s race was statistically significant for prescribing a narcotic medication for pain following surgery. As pediatricians’ implicit pro-White bias increased, prescribing narcotic medication decreased for African American patients but not for the White patients. Self-reported attitudes about race were associated with some treatment recommendations.Conclusions. Pediatricians’ implicit attitudes about race affect pain management. There is a need to better understand the influence of physicians’ unconscious beliefs about race on pain and other areas of care.

Sabin, J. A., et al. (2008). "Physician implicit attitudes and stereotypes about race and quality of medical care." Med Care **46**(7): 678-685.

BACKGROUND: Recent reports speculate that provider implicit attitudes about race may contribute to racial/ethnic health care disparities. OBJECTIVES: We hypothesized that implicit racial bias exists among pediatricians, implicit and explicit measures would differ and implicit measures may be related to quality of care. RESEARCH DESIGN: A single-session, Web survey of academic pediatricians in an urban university measured implicit racial attitudes and stereotypes using a measure of implicit social cognition, the Implicit Association Test (IAT). Explicit (overt) attitudes were measured by self-report. Case vignettes were used to assess quality of care. RESULTS: We found an implicit preference for European Americans relative to African Americans, which was weaker than implicit measures for others in society (mean IAT score = 0.18; P = 0.01; Cohen's d = 0.41). Physicians held an implicit association between European Americans relative to African Americans and the concept of "compliant patient" (mean IAT score = 0.25; P = 0.001; Cohen's d = 0.60) and for African Americans relative to European Americans and the concept of "preferred medical care" (mean IAT score =-0.21; P = 0.001; Cohen's d = 0.64). Medical care differed by patient race in 1 of 4 case vignettes. No significant relationship was found between implicit and explicit measures, or implicit measures and treatment recommendations. CONCLUSIONS: Pediatricians held less implicit race bias compared with other MDs and others in society. Among pediatricians we found evidence of a moderate implicit "perceived patient compliance and race" stereotype. Further research is needed to explore whether physician implicit attitudes and stereotypes about race predict quality of care.

Sarge, M. A., et al. (2020). "An Auti-Sim Intervention: The Role of Perspective Taking in Combating Public Stigma with Virtual Simulations." Cyberpsychol Behav Soc Netw **23**(1): 41-51.

Public stigma associated with autism spectrum disorder (ASD) commonly stems from judgments surrounding sensory overload symptoms. As individuals try and make sense of observed disordered behaviors of those with ASD, they are quick to develop dispositional attributions instead of acknowledging situational instigators. Interventions aimed at educating the lay public that disordered actions are a result of a biological causes have been successful in lessening perceptions of responsibility, yet foster an out-group perspective allowing prejudice attitudes and discriminatory behaviors to persist. The present study examines the short-term effectiveness of engagement with a virtual simulation, Auti-Sim, to combat stigma by giving lay people a first-person experience of sensory overload. To assess Auti-Sim, a between-subject, in-laboratory experimental design was employed. A total of 123 undergraduate students were randomly assigned to 1 of 3 interventions (virtual simulation engagement, observation of simulation engagement, or reading text vignettes). Participants completed a brief pretest questionnaire, encountered the intervention, and then completed a post-test questionnaire. Engagement with the virtual simulation resulted in heightened perspective taking, which subsequently increased emotional concern, helping intentions, and willingness to volunteer compared with the observation only or text vignette intervention. Positive attitudes toward those with ASD did not differ across interventions. Fostering a different understanding of disordered action through a virtual simulation has the potential to elicit perspective taking and subsequent empathetic outcomes. Perspective taking seems to encourage perceptions of in-group belonging rather than out-group categorization and thus might be a desired outcome for stigma-reducing efforts.

Schaa, K. L., et al. (2015). "Genetic counselors’ implicit racial attitudes and their relationship to communication." Health Psychology **34**(2): 111-119.

Objective: Implicit racial attitudes are thought to shape interpersonal interactions and may contribute to health-care disparities. This study explored the relationship between genetic counselors’ implicit racial attitudes and their communication during simulated genetic counseling sessions. Method: A nationally representative sample of genetic counselors completed a web-based survey that included the Race Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998; Cooper et al., 2012). A subset of these counselors (n = 67) had participated in an earlier study in which they were video recorded counseling Black, Hispanic, and non-Hispanic White SCs about their prenatal or cancer risks. The counselors’ IAT scores were related to their session communications through robust regression modeling. Results: Genetic counselors showed a moderate to strong pro-White bias on the Race IAT (M = 0.41, SD = 0.35). Counselors with stronger pro-White bias were rated as displaying lower levels of positive affect (p < .05) and tended to use less emotionally responsive communication (p < .10) when counseling minority SCs. When counseling White SCs, pro-White bias was associated with lower levels of verbal dominance during sessions (p < .10). Stronger pro-White bias was also associated with more positive ratings of counselors’ nonverbal effectiveness by White SCs. Conclusion: Implicit racial bias is associated with negative markers of communication in minority client sessions and may contribute to racial disparities in processes of care related to genetic services. (PsycInfo Database Record (c) 2020 APA, all rights reserved)

Schnierle, J., et al. (2019). "Implicit Bias: What Every Pediatrician Should Know About the Effect of Bias on Health and Future Directions." Curr Probl Pediatr Adolesc Health Care **49**(2): 34-44.

Implicit bias has entered modern discourse as a result of our current sociopolitical climate. It is an area that has been largely explored in the social sciences, and was highlighted in the landmark 2003 IOM report, Unequal Treatment, as a contributor to racial/ethnic health disparities. Implicit bias is the process of unconscious societal attitudes affecting our individual understanding, actions and decisions, thus leading to assumptions about groups. Immigrant populations are particularly at risk in our present-day environment, and as a result experience limited healthcare access and higher levels of psychological distress. There are many measures of implicit bias, but the most highly regarded tool is the Implicit Association Test (IAT), as it is valid and reliable. Some level of pro-White/anti-Black bias has been found in most systematic reviews and studies, although there are less studies on bias towards Latinx populations. Limited evidence exists about the association between implicit bias and health outcomes. However, existing publications have demonstrated clear associations between bias and treatment recommendations, nonverbal communication, adverse birth outcomes and provider communication styles. Implicit biases can be unlearned via debiasing strategies, but these have not been examined extensively amongst health care providers. Future research must rely on more than pre- and post-IAT measurements to examine the effect of these strategies on improving patient outcomes. Additionally, healthcare system leadership must prioritize implicit bias trainings for students and medical staff and make greater tangible efforts to improve workforce diversity as a debiasing strategy.

Shah, K. S., et al. (2014). "Systematic review and meta-analysis of out-of-hospital cardiac arrest and race or ethnicity: black US populations fare worse." Eur J Prev Cardiol **21**(5): 619-638.

BACKGROUND: Several studies have reported racial/ethnic variation in out-of-hospital cardiac arrest (OOHCA) characteristics, which engendered varying conclusions. We performed a systematic review and meta-analysed the evidence for differences in OOHCA survival when considering the patient's race and/or ethnicity. METHODS: We searched Medline and EMBASE databases up to and including 1 Oct 2011 for studies investigating racial/ethnic differences in OOHCA characteristics, supplemented by manual searches of bibliographies of relevant studies. We selected studies of any relevant design that measured OOHCA characteristics and stratified them by ethnic group. Two independent reviewers extracted information on the study population, including: race and/or ethnicity, location, age and OOHCA variables as per the Utsein template. We performed a meta-analysis of the studies comparing the black and white patients. RESULTS: 1701 potentially relevant articles were identified in our systematic search. Of these, 22 articles describing original studies were reviewed after fulfilling our inclusion criteria. Although 19 studies (18 within the United States (US)) compared the black and white population, only 15 fulfilled our quality assessment criteria and were meta-analysed. Compared to white patients, black patients were less likely to receive bystander cardiopulmonary resuscitation (OR = 0.66, 95%CI = 0.55-0.78), have a witnessed arrest (OR = 0.77, 95%CI = 0.72-0.83) or have an initial ventricular fibrillation/ventricular tachycardia arrest rhythm (OR = 0.66, 95%CI = 0.58-0.76). Black patients had lower rates of survival following hospital admission (OR = 0.59, 95%CI = 0.48-0.72) and discharge (OR = 0.74, 95%CI = 0.61-0.90). CONCLUSION: Our work highlights the significant discrepancy in OOHCA characteristics and patient survival in relation to the patient's race, with the black population faring less well across all stages. Most studies compared black and white populations within the US, so research elsewhere and with other ethnic groups is needed. This review exposes an inequality that demands urgent action.

Shaha, M. (1998). "Racism and its implications in ethical-moral reasoning in nursing practice: a tentative approach to a largely unexplored topic." Nurs Ethics **5**(2): 139-146.

Nursing as a profession seems to avoid considering the problem of racism. There is, however, a need to address this topic and to evaluate its implications for nursing practice. This article attempts to establish a rationale for nursing to address racism and introduce it into academic discourse. The results of a small-scale study by the author are analysed and the implications for ethical-moral reasoning in nursing practice are discussed in relation to professional codes of conduct developed by nurses' professional organizations in the UK and elsewhere.

Shapiro, J., et al. (2006). ""That never would have occurred to me": a qualitative study of medical students' views of a cultural competence curriculum." BMC Med Educ **6**(1): 31.

The evidence is mixed regarding the efficacy of cultural competence curricula in developing learners' knowledge, attitudes and skills. More research is needed to better understand both the strengths and shortcomings of existing curricula from the perspective of learners in order to improve training.

Singleton, G. E. (2014). Courageous conversations about race: A field guide for achieving equity in schools, Corwin Press.

Stepanikova, I. (2012). "Racial-ethnic biases, time pressure, and medical decisions." J Health Soc Behav **53**(3): 329-343.

This study examined two types of potential sources of racial-ethnic disparities in medical care: implicit biases and time pressure. Eighty-one family physicians and general internists responded to a case vignette describing a patient with chest pain. Time pressure was manipulated experimentally. Under high time pressure, but not under low time pressure, implicit biases regarding blacks and Hispanics led to a less serious diagnosis. In addition, implicit biases regarding blacks led to a lower likelihood of a referral to specialist when physicians were under high time pressure. The results suggest that when physicians face stress, their implicit biases may shape medical decisions in ways that disadvantage minority patients.

Sue, D. W., et al. (2019). "Disarming racial microaggressions: Microintervention strategies for targets, White allies, and bystanders." American psychologist **74**(1): 128.

Sue, D. W., et al. (2007). "Racial microaggressions in everyday life: implications for clinical practice." Am Psychol **62**(4): 271-286.

Racial microaggressions are brief and commonplace daily verbal, behavioral, or environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative racial slights and insults toward people of color. Perpetrators of microaggressions are often unaware that they engage in such communications when they interact with racial/ethnic minorities. A taxonomy of racial microaggressions in everyday life was created through a review of the social psychological literature on aversive racism, from formulations regarding the manifestation and impact of everyday racism, and from reading numerous personal narratives of counselors (both White and those of color) on their racial/cultural awakening. Microaggressions seem to appear in three forms: microassault, microinsult, and microinvalidation. Almost all interracial encounters are prone to microaggressions; this article uses the White counselor--client of color counseling dyad to illustrate how they impair the development of a therapeutic alliance. Suggestions regarding education and training and research in the helping professions are discussed.

Sue, D. W., et al. (2009). "Racial microaggressions and difficult dialogues on race in the classroom." Cultur Divers Ethnic Minor Psychol **15**(2): 183-190.

A qualitative study supports the observation that difficult dialogues on race and racism are often triggered by racial microaggressions that make their appearance in classroom encounters or educational activities and materials. Difficult dialogues are filled with strong powerful emotions that may prove problematic to both students and teachers. When poorly handled by teachers, difficult dialogues can assail the personal integrity of students of color while reinforcing biased worldviews of White students. The success or failure of facilitating difficult dialogues on race is intimately linked to the characteristics and actions of instructors and their ability to recognize racial microaggressions. Implications regarding specific education and training recommendations are presented.

Sukhera, J., et al. (2018). "The Actual Versus Idealized Self: Exploring Responses to Feedback About Implicit Bias in Health Professionals." Acad Med **93**(4): 623-629.

PURPOSE: Implicit bias can adversely affect health disparities. The implicit association test (IAT) is a prompt to stimulate reflection; however, feedback about bias may trigger emotions that reduce the effectiveness of feedback interventions. Exploring how individuals process feedback about implicit bias may inform bias recognition and management curricula. The authors sought to explore how health professionals perceive the influence of the experience of taking the IAT and receiving their results. METHOD: Using constructivist grounded theory methodology, the authors conducted semistructured interviews with 21 pediatric physicians and nurses at the Schulich School of Medicine and Dentistry, Western University, Ontario, Canada, from September 2015 to November 2016 after they completed the mental illness IAT and received their result. Data were analyzed using constant comparative procedures to work toward axial coding and development of an explanatory theory. RESULTS: When provided feedback about their implicit attitudes, participants described tensions between acceptance and justification, and between how IAT results relate to idealized and actual personal and professional identity. Participants acknowledged desire for change while accepting that change is difficult. Most participants described the experience of taking the IAT and receiving their result as positive, neutral, or interesting. CONCLUSIONS: These findings contribute to emerging understandings of the relationship between emotions and feedback and may offer potential mediators to reconcile feedback that reveals discrepancies between an individual's actual and idealized identities. These results suggest that reflection informed by tensions between actual and aspirational aspects of professional identity may hold potential for implicit bias recognition and management curricula.

Sukhera, J., et al. (2018). "Adaptive reinventing: implicit bias and the co-construction of social change." Adv Health Sci Educ Theory Pract **23**(3): 587-599.

Emerging research on implicit bias recognition and management within health professions describes individually focused educational interventions without considering workplace influences. Workplace learning theories highlight how individual agency and workplace structures dynamically interact to produce change within individuals and learning environments. Promoting awareness of individual biases shaped by clinical learning environments may therefore represent a unique type of workplace learning. We sought to explore how individuals and the workplace learning environment interact once awareness of implicit biases are triggered within learners. In accordance with longitudinal case study methodology and informed by constructivist grounded theory, we conducted multiple longitudinal interviews with physician and nurse participants over 12 months. Our results suggest that implicit bias recognition provokes dissonance among participants leading to frustration, and critical questioning of workplace constraints. Once awareness is triggered, participants began reflecting on their biases and engaging in explicit behavioural changes that influenced the perception of structural changes within the learning environment itself. Collaboration, communication and role modeling within teams appeared to facilitate the process as individual and workplace affordances were gradually transformed. Our findings suggest a potential model for understanding how individual learners adaptively reinvent their role in response to disruptions in their learning environment.

Sukhera, J. and C. Watling (2018). "A Framework for Integrating Implicit Bias Recognition Into Health Professions Education." Acad Med **93**(1): 35-40.

Existing literature on implicit bias is fragmented and comes from a variety of fields like cognitive psychology, business ethics, and higher education, but implicit-bias-informed educational approaches have been underexplored in health professions education and are difficult to evaluate using existing tools. Despite increasing attention to implicit bias recognition and management in health professions education, many programs struggle to meaningfully integrate these topics into curricula. The authors propose a six-point actionable framework for integrating implicit bias recognition and management into health professions education that draws on the work of previous researchers and includes practical tools to guide curriculum developers. The six key features of this framework are creating a safe and nonthreatening learning context, increasing knowledge about the science of implicit bias, emphasizing how implicit bias influences behaviors and patient outcomes, increasing self-awareness of existing implicit biases, improving conscious efforts to overcome implicit bias, and enhancing awareness of how implicit bias influences others. Important considerations for designing implicit-bias-informed curricula-such as individual and contextual variables, as well as formal and informal cultural influences-are discussed. The authors also outline assessment and evaluation approaches that consider outcomes at individual, organizational, community, and societal levels. The proposed framework may facilitate future research and exploration regarding the use of implicit bias in health professions education.

Sukhera, J., et al. (2020). "Implicit Bias in Health Professions: From Recognition to Transformation." Academic Medicine **95**(5).

Implicit bias recognition and management curricula are offered as an increasingly popular solution to address health disparities and advance equity. Despite growth in the field, approaches to implicit bias instruction are varied and have mixed results. The concept of implicit bias recognition and management is relatively nascent, and discussions related to implicit bias have also evoked critique and controversy. In addition, challenges related to assessment, faculty development, and resistant learners are emerging in the literature. In this context, the authors have reframed implicit bias recognition and management curricula as unique forms of transformative learning that raise critical consciousness in both individuals and clinical learning environments. The authors have proposed transformative learning theory (TLT) as a guide for implementing educational strategies related to implicit bias in health professions. When viewed through the lens of TLT, curricula to recognize and manage implicit biases are positioned as a tool to advance social justice.

Sukhera, J., et al. (2019). "The Implicit Association Test in health professions education: A meta-narrative review." Perspect Med Educ **8**(5): 267-275.

INTRODUCTION: Implicit bias is a growing area of interest among educators. Educational strategies used to elicit awareness of implicit biases commonly include the Implicit Association Test (IAT). Although the topic of implicit bias is gaining increased attention, emerging critique of the IAT suggests the need to subject its use to greater theoretical and empirical scrutiny. METHODS: The authors employed a meta-narrative synthesis to review existing research on the use of the IAT in health professions education. Four databases were searched using key terms yielding 1151 titles. After title, abstract and full-text screening, 38 articles were chosen for inclusion. Coding and analysis of articles sought a meaningful synthesis of educational approaches relating to the IAT, and the assumptions and theoretical positions that informed these approaches. RESULTS: Distinct, yet complementary, meta-narratives were found in the literature. The dominant perspective utilizes the IAT as a metric of implicit bias to evaluate the success of an educational activity. A contrasting narrative describes the IAT as a tool to promote awareness while triggering discussion and reflection. DISCUSSION: Whether used as a tool to measure bias, raise awareness or trigger reflection, the use of the IAT provokes tension between distinct meta-narratives, posing a challenge to educators. Curriculum designers should consider the premise behind the IAT before using it, and be prepared to address potential reactions from learners such as defensiveness or criticism. Overall, findings suggest that educational approaches regarding implicit bias require critical reflexivity regarding assumptions, values and theoretical positioning related to the IAT.

Teal, C. R., et al. (2012). "Helping medical learners recognise and manage unconscious bias toward certain patient groups." Med Educ **46**(1): 80-88.

CONTEXT: For the last 30 years, developments in cognitive sciences have demonstrated that human behaviour, beliefs and attitudes are shaped by automatic and unconscious cognitive processes. Only recently has much attention been paid to how unconscious biases based on certain patient characteristics may: (i) result in behaviour that is preferential toward or against specific patients; (ii) influence treatment decisions, and (iii) adversely influence the patient-doctor relationship. Partly in response to accreditation requirements, medical educators are now exploring how they might help students and residents to develop awareness of their own potential biases and strategies to mitigate them. METHODS: In this paper, we briefly review key cognition concepts and describe the limited published literature about educational strategies for addressing unconscious bias. DISCUSSION: We propose a developmental model to illustrate how individuals might move from absolute denial of unconscious bias to the integration of strategies to mitigate its influence on their interactions with patients and offer recommendations to educators and education researchers.

Tellson, A., et al. (2017). "Efficacy of Acute Care Health Care Providers in Cardiopulmonary Resuscitation Compressions in Normal and Obese Adult Simulation Manikins." Baylor University Medical Center Proceedings **30**(4): 415-418.

Annually, over 350,000 persons require cardiopulmonary resuscitation (CPR), either in or outside of the hospital. With obesity a rising health issue in the United States, concerns exist regarding the efficacy of quality compressions for CPR in obese patients. The aims of this study were to determine if the compressions for three adult simulation manikins (normal, obese, and morbidly obese) met quality guidelines; to examine any differences in quality of chest compressions performed by health care providers between the three manikins; and to examine the effect of participant characteristics on the quality of chest compressions in obese and morbidly obese manikins. A randomized controlled design was used. Sixty-one health care providers performed chest compressions on the three simulation manikins. Results showed that performance on the normal-sized manikin was significantly better than that on both obese and morbidly obese manikins. Participant characteristics were significantly associated with quality of chest compressions. The effectiveness of compressions in obese and morbidly obese CPR recipients has yet to be determined.

Thurman, W. A., et al. (2019). "Words Matter: An Integrative Review of Institutionalized Racism in Nursing Literature." Advances in Nursing Science **42**(2).

In health care, as in society, racism operates on multiple levels and contributes greatly to health and social inequities experienced by black Americans. In addressing racism, however, health care has primarily focused on interpersonal racism rather than institutionalized forms of racism that are deeply entrenched and contribute to racial inequities in health. In order to meaningfully address health inequities, health care must extend its focus beyond the interpersonal level. The purpose of this integrative literature review is to identify how and to what extent peer-reviewed nursing literature and professional nursing organizations have explicitly addressed institutionalized racism. A systematic search of relevant nursing literature published since 2008 yielded 29 journal articles that focused on black Americans' experience of institutionalized racism in health and health care; the articles explicitly named racism as institutionalized, institutional, systemic, systematic, or structural. This review summarizes author-identified implications of institutionalized racism for nursing education, research, and practice, and offers suggestions for use by the nursing profession to dismantle racist policies, practices, and structures.

Tiffany, J. M. and B. A. Hoglund (2016). "Using Virtual Simulation to Teach Inclusivity: A Case Study." Clinical Simulation in Nursing **12**(4): 115-122.

Background The topics of inclusivity, diversity, and cultural awareness are difficult to adequately explore in a traditional classroom setting. The use of the virtual platform of Second Life® afforded a unique opportunity to use virtual role-play simulation to experience what it is like to walk in another's shoes. Method Fifteen graduate nurse educator students enrolled in a course titled “Inclusivity in Nursing Education” were randomly assigned a customized avatar, representing a marginalized person for use in a role-play simulation in the virtual world of Second Life®. Two written assignments regarding the learning experience were evaluated using a simple qualitative analysis. Results Students indicated that they increased their own capacity to understand, appreciate, and relate to people different from themselves. Conclusion Although future research is needed to determine the full extent to which virtual platforms can be used effectively in nursing education, this case study demonstrated that valuable learning regarding complex topics can take place in the virtual world.

Van Ryn, M. (2016). "Avoiding Unintended Bias: Strategies for Providing More Equitable Health Care." Minn Med **99**(2): 40-43, 46.

Research shows that unintentional bias on the part of physicians can influence the way they treat patients from certain racial and ethnic groups. Most physicians are unaware that they hold such biases, which can unknowingly contribute to inequalities in health care delivery. This article explains why a person's thoughts and behaviors may not align, and provides strategies for preventing implicit biases from interfering with patient care.

van Ryn, M., et al. (2015). "Medical School Experiences Associated with Change in Implicit Racial Bias Among 3547 Students: A Medical Student CHANGES Study Report." J Gen Intern Med **30**(12): 1748-1756.

BACKGROUND: Physician implicit (unconscious, automatic) bias has been shown to contribute to racial disparities in medical care. The impact of medical education on implicit racial bias is unknown. OBJECTIVE: To examine the association between change in student implicit racial bias towards African Americans and student reports on their experiences with 1) formal curricula related to disparities in health and health care, cultural competence, and/or minority health; 2) informal curricula including racial climate and role model behavior; and 3) the amount and favorability of interracial contact during school. DESIGN: Prospective observational study involving Web-based questionnaires administered during first (2010) and last (2014) semesters of medical school. PARTICIPANTS: A total of 3547 students from a stratified random sample of 49 U.S. medical schools. MAIN OUTCOME(S) AND MEASURE(S): Change in implicit racial attitudes as assessed by the Black-White Implicit Association Test administered during the first semester and again during the last semester of medical school. KEY RESULTS: In multivariable modeling, having completed the Black-White Implicit Association Test during medical school remained a statistically significant predictor of decreased implicit racial bias (-5.34, p </= 0.001: mixed effects regression with random intercept across schools). Students' self-assessed skills regarding providing care to African American patients had a borderline association with decreased implicit racial bias (-2.18, p = 0.056). Having heard negative comments from attending physicians or residents about African American patients (3.17, p = 0.026) and having had unfavorable vs. very favorable contact with African American physicians (18.79, p = 0.003) were statistically significant predictors of increased implicit racial bias. CONCLUSIONS: Medical school experiences in all three domains were independently associated with change in student implicit racial attitudes. These findings are notable given that even small differences in implicit racial attitudes have been shown to affect behavior and that implicit attitudes are developed over a long period of repeated exposure and are difficult to change.

van Ryn, M. and S. Saha (2011). "Exploring unconscious bias in disparities research and medical education." Jama **306**(9): 995-996.

The evidence that physician behavior and decision making may contribute to racial inequalities in health care1-5 is difficult to reconcile with the fact that most physicians are genuinely motivated to provide good care to all their patients.6 This apparent contradiction can cause considerable cognitive dissonance, the uncomfortable feeling that occurs when holding 2 conflicting ideas simultaneously. Cognitive dissonance has been shown to be so aversive that people are highly motivated to resolve it, often by discounting the evidence supporting one of the conflicting beliefs. For scientists, however, cognitive dissonance motivates inquiry into how 2 seemingly contradictory sets of facts can coexist. The study by Haider and colleagues7 in this issue of JAMA is part of a growing body of work applying concepts and methods from cognitive and social psychology to medical care and education research to understand and inform interventions to eliminate the physician contribution to racial inequalities in care.

Wakefield, E. O., et al. (2018). "Describing Perceived Racial Bias Among Youth With Sickle Cell Disease." J Pediatr Psychol **43**(7): 779-788.

Sickle cell disease (SCD) predominately affects Black Americans. This is the first study of its kind to describe the racial bias experiences of youth with SCD and their reactions to these experiences.Participants were 20 youth with SCD (ages 13–21 years) who were asked to describe any racial bias events they experienced, as recorded on the Perception of Racism in Children and Youth measure (PRaCY). Interviews were recorded, transcribed, and analyzed by two independent raters using a conventional content analysis approach.All participants reported at least one incident of racial bias. Content analysis of racial bias events (n = 104) yielded 4 categories and 12 subcategories as follows: Perpetrator (Peers, Authority Figures, and General Public), Type of Racial Bias (Explicit, Implicit), Behavioral Reaction (Approach, Avoidant), and Emotional Response (Dysphoria, Anger, Unconcerned, Inferior, Anxious).This study provides a description of racial bias experiences within community and medical settings and highlights the need for further evaluation of the impact of racial bias among youth with SCD.

Ward, A., et al. (2018). "Cultural empathy in physiotherapy students: a pre-test post-test study utilising virtual simulation." Physiotherapy **104**(4): 453-461.

OBJECTIVES: To investigate how a virtual cultural simulation experience and guided reflection influenced physiotherapy students' intrapersonal and interpersonal cultural empathy, and to explore students' satisfaction with the learning experience. DESIGN: Three research arms within a single cohort: 1) pre-test post-test investigation of intrapersonal cultural empathy; 2) quasi-experimental investigation of interpersonal cultural empathy; 3) post-test measurement of satisfaction. SETTING: An Australian university. PARTICIPANTS: Bachelor and Master physiotherapy students, response rate 98% (162/165). INTERVENTIONS: A self-directed online virtual simulation in which the student assumed the role of a patient who has been hospitalised in a developing country. Students were then guided to reflect on the experience via online questions. MAIN OUTCOME MEASURES: The primary measure was the Comprehensive State Empathy Scale (CSES) of intrapersonal cultural empathy. Secondary measures were the Theory of Planned Behaviour:Cultural Competence Questionnaire (TPB:CCQ) of interpersonal cultural empathy; and the Satisfaction with Cultural Simulation Experience Scale (SCSES). RESULTS: Intrapersonal cultural empathy improved after the virtual simulation, shown in overall CSES scores [pre-test: 95 (81-109) vs post-test: 106 (89-117); median difference 11; P=<0.001]. For the TPB:CCQ, the post-simulation ('intervention') group demonstrated greater 'Perceived Behavioural Control' interpersonal empathy compared to the presimulation ('control') group [4.41 (0.54) vs 4.59 (0.53); mean difference=0.19; 95% confidence interval=0.01 to 0.36; P=0.020]. Satisfaction with the experience was high (mean SCSES score=40/56 (71%)). CONCLUSIONS: A virtual cultural simulation experience and guided reflection led to significant increases in students' intrapersonal cultural empathy, with some influence on interpersonal cultural empathy. Students were highly satisfied with this learning experience.

White-Means, S., et al. (2009). "Cultural Competency, Race, and Skin Tone Bias Among Pharmacy, Nursing, and Medical Students:Implications for Addressing Health Disparities." Medical Care Research and Review **66**(4): 436-455.

The Institute of Medicine report, Unequal Treatment, asserts that conscious and unconscious bias of providers may affect treatments delivered and contribute to health disparities. The primary study objective is to measure, compare, and contrast objective and subjective cognitive processes among pharmacy, nursing, and medical students to discern potential implications for health disparities. Data were collected using a cultural competency questionnaire and two implicit association tests (IATs). Race and skin tone IATs measure unconscious bias. Cultural competency scores were significantly higher for non-Hispanic Blacks and Hispanics in medicine and pharmacy compared with non-Hispanic Whites. Multiracial nursing students also had significantly higher cultural competency scores than non-Hispanic Whites. The IAT results indicate that these health care preprofessionals exhibit implicit race and skin tone biases: preferences for Whites versus Blacks and light skin versus dark skin. Cultural competency curricula and disparities research will be advanced by understanding the factors contributing to cultural competence and bias.

Zaidi, Z., et al. (2016). "Cultural hegemony? Educators’ perspectives on facilitating cross-cultural dialogue." Medical education online **21**(1): 33145.

BackgroundWe live in an age when education is being internationalized. This can confront students with ?cultural hegemony? that can result from the unequal distribution of power and privilege in global society. The name that is given to awareness of social inequality is ?critical consciousness?. Cross-cultural dialogue provides an opportunity for learners to develop critical consciousness to counter cultural hegemony. The purpose of this research was to understand how learners engage with cross-cultural dialogue, so we can help them do so more effectively in the future.MethodThe setting for this research was an online discussion in an international health professions educator fellowship program. We introduced scenarios with cultural references to study the reaction of participants to cultural conversation cues. We used an inductive thematic analysis to explore power and hegemony issues.ResultsParticipants reflected that personally they were more likely to take part in cross-cultural discussions if they recognized the context discussed or had prior exposure to educational settings with cultural diversity. They identified barriers as lack of skills in facilitating cross-cultural discussions and fear of offending others. They suggested deliberately introducing cultural issues throughout the curriculum.ConclusionOur results indicate that developing critical consciousness and cross-cultural competency will require instructional design to identify longitudinal opportunities to bring up cross-cultural issues, and training facilitators to foster cross-cultural discussions by asking clarifying questions and navigating crucial/sensitive conversations.

Zestcott, C. A., et al. (2016). "Examining the Presence, Consequences, and Reduction of Implicit Bias in Health Care: A Narrative Review." Group Process Intergroup Relat **19**(4): 528-542.

Recent evidence suggests that one possible cause of disparities in health outcomes for stigmatized groups is the implicit biases held by health care providers. In response, several health care organizations have called for, and developed, new training in implicit bias for their providers. This review examines current evidence on the role that provider implicit bias may play in health disparities, and whether training in implicit bias can effectively reduce the biases that providers exhibit. Directions for future research on the presence and consequences of provider implicit bias, and best practices for training to reduce such bias, will be discussed.

Zook, H. G., et al. (2016). "Racial Differences in Pediatric Emergency Department Triage Scores." J Emerg Med **50**(5): 720-727.

BACKGROUND: Racial disparities are frequently reported in emergency department (ED) care. OBJECTIVES: To examine racial differences in triage scores of pediatric ED patients. We hypothesized that racial differences existed but could be explained after adjusting for sociodemographic and clinical factors. METHODS: We examined all visits to two urban, pediatric EDs between August 2009 and March 2010. Demographic and clinical data were electronically extracted from the medical record. We used logistic regression to analyze racial differences in triage scores, controlling for possible covariates. RESULTS: There were 54,505 ED visits during the study period, with 7216 (13.2%) resulting in hospital admission. White patients accounted for 36.4% of visits, African Americans 28.5%, Hispanics 18.0%, Asians 4.1%, and American Indians 1.8%. After adjusting for potential confounders, African American (adjusted odds ratio [aOR] 1.89, 95% confidence interval [CI] 1.69-2.12), Hispanic (aOR 1.77, 95% CI 1.55-2.02), and American Indian (aOR 2.57, 95% CI 1.80-3.66) patients received lower-acuity triage scores than Whites. In three out of four subgroup analyses based on presenting complaints (breathing difficulty, abdominal pain, fever), African Americans and Hispanics had higher odds of receiving low-acuity triage scores. No racial differences were detected for patients with presenting complaints of laceration/head injury/arm injury. However, among patients admitted to the hospital, African Americans (aOR 1.47, 95% CI 1.13-1.90) and Hispanics (aOR 1.71, CI 1.22-2.39) received lower-acuity triage scores than Whites. CONCLUSION: After adjusting for available sociodemographic and clinical covariates, African American, Hispanic, and American Indian patients received lower-acuity triage scores than Whites.

Zook, H. G., et al. (2017). "Racial/Ethnic Variation in Emergency Department Care for Children With Asthma." Pediatr Emerg Care.

OBJECTIVE: To assess the variation between racial/ethnic groups in emergency department (ED) treatment of asthma for pediatric patients. METHODS: This study was a cross-sectional analysis of pediatric (2-18 years) asthma visits among 6 EDs in the Upper Midwest between June 2011 and May 2012. We used mixed-effects logistic regression to assess the odds of receiving steroids, radiology tests, and returning to the ED within 30 days. We conducted a subanalysis of asthma visits where patients received at least 1 albuterol treatment in the ED. RESULTS: The sample included 2909 asthma visits by 1755 patients who were discharged home from the ED. After adjusting for demographics, insurance type, and triage score, African American (adjusted odds ratio [aOR], 1.78; 95% confidence interval [CI], 1.40-2.26) and Hispanic (aOR, 1.64; 95% CI, 1.22-2.22) patients had higher odds of receiving steroids compared with whites. African Americans (aOR, 0.58; 95% CI, 0.46-0.74) also had lower odds of radiological testing compared with whites. Asians had the lowest odds of 30-day ED revisits (aOR, 0.26; 95% CI, 0.08-0.84), with no other significant differences detected between racial/ethnic groups. Subgroup analyses of asthma patients who received albuterol revealed similar results, with American Indians showing lower odds of radiological testing as well (aOR, 0.47; 95% CI, 0.22-1.01). CONCLUSIONS: In this study, children from racial/ethnic minority groups had higher odds of steroid administration and lower odds of radiological testing compared with white children. The underlying reasons for these differences are likely multifactorial, including varying levels of disease severity, health literacy, and access to care.