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5
Mitigating Implicit Bias in Reference Service and Literature Searching

INTRODUCTION

Implicit or unconscious bias is the idea that people act on attitudes and stereotypes that are unconsciously held about people and groups of people. It stands in opposition to the idea that people react to situations according to what they explicitly believe about people and groups of people and that our reactions and decisions are fully within our own control.

In recent years, medical and allied health schools have developed curricula to address implicit bias in order to provide better care for patients. Libraries, too, have created material to address personal biases. We expand upon both these bodies of literature by considering the impact of implicit bias on finding and accessing scientific literature. Health sciences librarians play a crucial role in ensuring access to health sciences literature, and as such, must recognize that addressing implicit bias in reference interviews and literature searches holds the potential to improve health sciences education and, ultimately, patient care.

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In this chapter, we provide a review of the growing body of literature on implicit bias within health sciences libraries, briefly describe a workshop on identifying and addressing implicit bias that may affect reference interviews and database searching, and offer concrete strategies for addressing implicit bias within reference and research processes. Although the research and activities described here are based in the health sciences, the approaches can be modified for non–health sciences libraries and are not all health sciences–based. While we acknowledge that implicit bias often manifests around gender, LGBTQ+, and various other statuses, we focus on race and ethnicity for this chapter.

LITERATURE REVIEW

In the 1990s a group of Harvard researchers developed the Harvard Implicit Association Test (IAT) to measure individuals' unconscious associations with black and white faces.[1] As awareness of implicit bias grew across disciplines and professions, the scope of the IAT expanded to address a range of topics, including race, age, gender, and religion. The IAT remains one method that researchers across disciplines use to measure implicit bias. Since the development of the IAT, researchers have identified implicit bias and its effects across many domains. Researchers have identified implicit bias among police officers, trial judges, and hiring managers.[2] The IAT is not the only way to measure implicit bias, and as the research in this area has expanded, a variety of ways to measure implicit bias have emerged. A 2004 article on hiring practices found that employers are 50 percent more likely to call back job candidates if they perceive their names to be white rather than black.[3] A 2011 article found statistically significant rates of discrimination between male applicants with Arab-sounding names and white-sounding names.[4]

Researchers have found similar levels of implicit bias in medical professionals and have determined that these biases could result in health disparities.[5] For example, black patients are less likely to receive screenings for pain than white patients.[6] Hispanics with traumatic brain injuries are less likely to receive referrals for posthospitalization care than white patients.[7] All people of color are underrepresented in clinical trials.[8] When people of color are inadequately represented in clinical trials, consciously or not, genotype-specific side effects can cause significant harm within live patient populations. Carbamazepine, a common seizure medication, can damage the skin and internal organs of Asians and Asian Americans. Case studies started documenting this in 1996. The U.S. Food and Drug Administration waited ten more years before recommending genetic screening for patients of Asian descent before prescribing carbamazepine.[9] Similarly, clopidogrel, a blood thinner commonly sold as Plavix, is ineffective in many people of Asian or Pacific Islander descent.[10] In 2014, the state of Hawaii sued Plavix manufacturers Bristol-Meyers Squib and Sanofi-Aventis

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for encouraging doctors to prescribe the medication despite having evidence that it was ineffective in Asian and Pacific Island populations.[11] Health disparities also occur at the intersections of race and gender. Black women in particular experience maternal and child death at higher rates than white women, even when taking into account education, class, behavior, and genetics.[12]

On an interpersonal level, bias in library systems directly affects patrons' abilities to locate materials and how they experience the library. In January 2019, Alburo (@jadelibrarian) wrote a Twitter thread that recounted a patron's experience searching within a large academic archive. When the patron could not find materials on Vietnamese or South Vietnamese subjects, the archives staff suggested that he search with a pejorative term generally used to describe East and Southeast Asians, particularly Vietnamese. The archives staff defended the decision to use a racist term because the donors, mostly American servicemen, used it in the materials. Alburo points out several important things about this choice. First, it is a choice made by people. The archives staff chose to center the experiences of American servicemen, rather than the Vietnamese people represented in the materials. This gives more authority to those voices. Second, it impeded the patron from finding the materials he needed to do his research. Third, it resulted in negative experiences for staff, researchers, and potential donors.[13]

Individual bias can also reinforce bias on a larger scale. Librarianship as a profession is almost 90 percent white.[14] Figure 5.1 details the overrepresentation of white librarians in comparison to the population of the United States.

If diversity is a core value of librarianship, why are librarians in the United States less diverse than the general population of the United States?[15] It may be that institutional and personal bias, including implicit bias, produces this difference. Parallel research on the publishing industry can help shed some light on the way that demographics can affect a profession. White professionals are overrepresented in the publishing industry, directly affecting the information resources available to libraries.[16] Roh and Inefuku describe the overrepresentation of white professionals in publishing as a cycle that reinforces a certain master narrative and deprives people of access to information by and for people of color due to ingroup bias, a tendency to favor a group that an individual identifies with over others. Ingroup bias is a natural cognitive bias, but if unchecked, leads to a cycle in which white professionals continue to hire other white professionals who also tend to favor white authors and white characters. This values some stories over others. Without conscious intervention, ingroup bias rewards authors who center on white characters, further reinforcing the master narrative.

The effects of implicit bias can be less clear when talking about systems. Without an understanding of how bias operates in the systems in which we work, our individual efforts can be overwhelmed by the many ways in which bias acts on librarians and library patrons. For example, numerous authors

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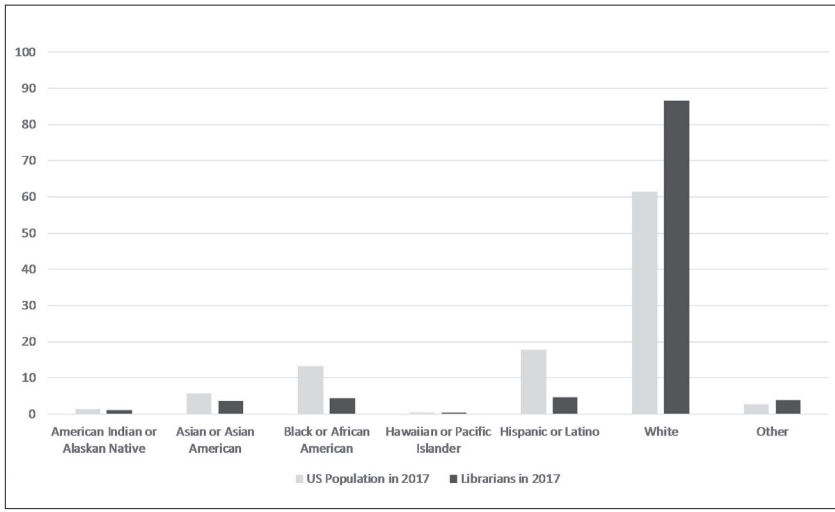

FIGURE 5.1
Racial Demographics of librarians and the US general population, 2017

have criticized the Dewey Decimal System for reinforcing bias through its structure, its treatment of queer subjects, and its treatment of race.[17] Like other knowledge organization systems, the Dewey Decimal System reflects the biases of the people who created it. Now entrenched in its structure and history, these biases toward a white, male, Christian, heterosexual world view have proven difficult to dislodge.

Although created in a more modern context, search algorithms are still created by human beings and reflect their biases. Library discovery systems use complex, opaque algorithms, but bias can be seen in the results they retrieve.[18] In 2013, Noble noted in her article on algorithmic bias that typing "black girls" into Google yielded racist, pornographic results.[19] Even though Google results for "black girls" have changed since her article brought attention to the issue, other searches that she suggests have not changed so drastically. At the time of writing this chapter, the top result for "Asian girls" was a page entitled "Hot Asian Girls." Similarly, a top result for "woman athletes" was "30 Hottest Female Athletes Who Dominate Their Sport."

HOW LIBRARIANS AND RESEARCHERS CAN ADDRESS IMPLICIT BIAS

Libraries, including health sciences libraries, have begun to develop materials that address implicit bias. ACRL has a webpage that defines implicit bias and

provides strategies for minimizing its effects.[20] Librarians have run continuing education classes at various conferences, including conferences hosted by ALA Midwinter, the Medical Libraries Association, and the Rochester Regional Library Council.[21] These sessions teach participants to define implicit bias within the context of health sciences libraries and offer strategies for recognizing and addressing implicit bias in interpersonal interactions.

On an interpersonal level, implicit bias interventions include replacing negative biases with positive ones and seeking out opportunities to engage with diverse groups.[22] These include five specific strategies to replace negative biases with positive biases: stereotype replacement, counter-stereotype imaging, individuation, perspective taking, and increasing opportunities for contact. In stereotype replacement, a nonstereotypical response replaces a stereotypical response. Librarians must first recognize that the negative stereotype exists in their minds, then work on replacing that stereotype with a positive label. Counter-stereotype imaging builds on stereotype replacement and requires imagining, in detail, an alternative description. Once librarians recognize that the stereotype itself is bad, they should actively recall someone who proves that negative stereotype to be false. Individuation requires librarians to obtain personal examples of the negative stereotype and to recall multiple occasions during which the negative stereotype was proven false by multiple people. In perspective taking, librarians consider and empathically understand the first-person experience of a member of the stereotyped group. It is not possible to fully understand the experiences of any individual or group, but by using empathy to better understand the perspective of the stereotyped group, librarians can start to break down their biases. Increasing opportunities for contact with the stereotyped groups is important in all these strategies, because through contact librarians can disprove the negative stereotypes in their minds.

Beyond interpersonal interactions, critical librarianship elucidates the places where bias also exists within library systems, such as catalogs and search algorithms.[23] When librarians can identify bias in systems, they can build less-biased systems. Within cataloging, for example, indigenous librarian Brian Deer developed a specialized classification system that reflected an indigenous worldview rather than traditional Western systems such as the Library of Congress Classification or the Dewey Decimal System.[24] The Aanischaaukamikw Cree Cultural Institute and the X̲wi7x̲wa Library both adapted this system to better reflect various indigenous knowledge systems in their collections.[25]

Librarians can also teach patrons to mitigate bias within existing systems. In reference services, critical reference literature positions the reference interview as a critical conversation in which both librarians and patrons examine the assumptions within research questions and information sources

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and address them by adjusting their own research approaches.[26] After acknowledging that the systems in use have biases, librarians can guide patrons toward recognizing where the holes in the literature exist and where systems make literature difficult to find. Librarians can determine what information exists on a topic and who created that information, figure out how the information is arranged and described, and encourage their patrons to ask the right questions.

A CURRICULUM FOR REDUCING IMPLICIT BIAS

In response to the need to enhance the understanding of implicit bias in health sciences literature for library and information professionals, we created a curriculum, "Working on Ourselves: Mitigating Unconscious Bias in Literature Searching," to help other information professionals better understand how implicit bias affects interpersonal interactions, health science literature, and information systems, and how they can address these biases in their work. Participants can adapt the curriculum to their own institutions without specialized materials. To encourage reuse and adaptation, the curriculum is freely available under a Creative Commons license.[27] To ensure facilitators can modify the curriculum to meet the needs of the different institutions, we provide various options for adapting the active learning activities, the lecture aspect, and the live searching examples to different lengths of time; the technology availability; and the familiarity of the participants with health sciences librarianship.

Explore Personal Bias

The IAT is a well-documented tool that utilizes images and keyboard strokes to assess people's unconscious biases.[28] By taking the test, librarians can explore their personal biases and reflect on their own experiences either as individuals or within a group setting. It can be useful for librarians to ask themselves what expectations they have before taking the test and whether they are surprised by their results. It can also be helpful to describe how different kinds of biases may affect results, such as ingroup bias, which is a tendency to favor a group that an individual identifies with over others; or halo-and-horns bias, a tendency to let one positive or negative trait overshadow others.

To create a personal connection with the topic, it can be useful to link personal experiences with the experiences of larger groups and societal patterns, especially with individuals who do not identify as people of color. One way to do this is by connecting microaggressions (lived experiences) with implicit bias (unseen motivations that can create larger patterns). Microaggressions are brief, seemingly innocuous interactions that communicate hostile,

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derogatory, or prejudicial stereotypes about a group.[29] Microaggressions can be intentional or unintentional, but when they are unintentional, they are one way that unconscious bias manifests. They vary from insensitive comments about minority groups to subtle disparagements of librarians' looks or abilities to feelings of isolation working in predominantly white institutions. Microaggressions occur everywhere, including within academic libraries and at reference desks.[30]

To identify microaggressions in a workshop setting, participants can identify microaggressions that they have experienced by writing them on sticky notes and placing the notes somewhere in the room, such as on a table or on a wall. These do not have to be racial microaggressions but can relate to gender, age, accent, socioeconomic status, education level, and ability/disability. Workshop facilitators can ask the participants to walk around, read the sticky notes, and draw checkmarks on sticky notes that describe a situation they have themselves experienced or that they have seen a coworker experience. After a brief discussion, ask participants to revisit the sticky notes and draw an "X" on sticky notes that detail situations that they have seen a patron experience. Discuss the patterns, similarities, and differences that appeared in the two rounds of marking sticky notes. This shifts the conversation from librarians' experiences to those of the patrons and builds empathy for patrons. While much of the literature on microaggressions in libraries focuses on the experiences of librarians, it is important to consider patrons' experiences as well because negative interactions with library staff can discourage patrons from returning to the library.

Discuss Medical Literature

Reading and discussing disparities in health care links implicit bias to medical literature and health sciences libraries through concrete examples. Workshop facilitators can choose one article or several that encompass a theme to discuss. In one-shot workshops, there is rarely enough time for participants to read through articles. Rather, the facilitator summarizes the article's findings and asks participants to discuss them. For example, treatment and referral rates are a relatively straightforward introduction to health disparities.[31] Research articles can illustrate how the unconscious bias of individuals creates harmful patterns when a large population of professionals hold similar biases. Or, in the case of people of color being underrepresented in clinical trials, participants might discuss whether they think unconscious bias influenced doctors' decisions to continue prescribing a medication or the companies' decisions to continue promoting a medication despite the evidence that it did not work. Non–health sciences librarians can use other discipline-specific literature instead. For example, children's literature has traditionally suffered

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from a lack of representation of characters of color and could be used in place of the medical literature.

Model the Reference Interview

In our workshops, we model reference interview and literature search strategies that mitigate implicit bias. One presenter acts as an example patient, much like standardized patients (trained professionals who act as patients in classes to teach students how to interact with and diagnose them) are used in medical education. In our example, the "patient" is looking for information on managing diabetes, while the "librarian" walks the example patient through a reference interview. Participants are encouraged to ask the example patient questions that they think will help them in their literature search. As a group, we discuss which questions are important, such as language preferences, reading level preferences, and cultural/dietary habits, and how to ask potentially personal questions in ways that are appropriate and respectful. Providing participants with opportunities to practice their new and adapted skills is an important way to ensure that the class provides recommendations for positive interactions that help to negate bias in their daily routine.

Developing patient scenarios and acting as a standardized patient must be handled with sensitivity. When teaching medical and allied health students, we often rely on the faculty to provide realistic, appropriate patient scenarios for literature searches. Standardized patients go through extensive training to avoid causing offense, misrepresenting conditions, or sharing sensitive private health information. In this curriculum, we developed a patient scenario based on personal and professional experience. We choose to act it out because we received consistent feedback from participants who felt that discussing hypothetical reference interviews was not as effective as roleplaying. Because we run these as train-the-trainer sessions, we talk about our decision to give them this experience, but we do not recommend that they try to roleplay the reference interview in their own workshops. Rather, we suggest that they split into small groups, give each group one of the example scenarios that we include in the curriculum, and ask participants to imagine that this scenario is the information they received in the course of the reference interview.

Each group receives an example scenario and uses it to formulate a PICO (patient/population, intervention, comparison, outcome) search strategy. This is a well-established technique used in evidence-based practice to ensure that a research question can easily translate into a database and that clinicians consider the best available evidence that applies to their patient. This is an excellent place to address unconscious bias because the clinician must consider which parts of a patient's identity are medically relevant and what

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the patient's preferences are. An example research question is: What is a more effective treatment for an older woman presenting with diabetes, increased exercise or a combination of dietary modification and increased exercise?

P(atient/Population): Woman in her 60s
I(ntervention): Diet modification and exercise
C(omparison): Exercise alone
O(utcome): Type II diabetes prevention

Faculty often present cases with this much information. Students may also want to consider the woman's mobility, specific kinds of exercise and/or dietary issues, and any other relevant information. Then they develop a search string, using appropriate synonyms and Boolean operators, and use it to search a health sciences database. Many health sciences library patrons employ a PICO search strategy when working with patients or doing research and consult with their librarian in the development of the search strategy. PICO search structures allow for the relatively easy insertion of diverse populations that patrons might not otherwise consider. By adding more specific information into the population aspect, such as the ethnicity of the patient, the PICO question framework can be used to help address biases in the health care system and in the health sciences literature. In the case above, knowing that the patient is a woman of Asian descent would be helpful in finding more useful information, particularly when it comes to diet modification. Librarians can use the PICO framework to consciously ensure they are taking into consideration important factors such as ethnicity, LBGTQ+, or other often overlooked factors that need to be considered as part of everyday practice when searching for information to help patients or library patrons.

Perform a Literature Search

Participants in the workshop may split into small groups and conduct a literature search together. Sometimes groups find no information that is specific to the patient's demographics and cultural preferences because so much medical research focuses on healthy white adult men without comorbidities. This illustrates the lack of health sciences literature and patient education materials that focus on people of color, health disparities, and linguistic and culturally specific needs. Even when such information exists, it may be difficult to find within mainstream databases. Cataloging is part of the problem, as are algorithms. So is whether vendors choose to include and make available materials that do not match the typical straight white male population with one health condition. This is certainly the case when searching for multilingual, culturally specific patient education materials. Luckily, there are a number of specialized collections,

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such as EthnoMed or SPIRAL, that health sciences librarians can use and recommend as resources to their patrons. EthnoMed (https://ethnomed.org) provides cultural and medical resources on immigrant and refugee populations in Seattle, Washington. It provides resources for both doctors and patients in eleven languages. SPIRAL (http://spiral.tufts.edu/topic.shtml) is a portal for patient education materials in English and several Asian languages, hosted by the Hirsch Health Sciences Library at Tufts University.

The session ends with a final group discussion about unconscious bias in ourselves as librarians and our research within the profession and is closed with an evaluation of the session. At this point, we often discuss ways to adapt the curriculum to encompass other topics and library specialties. Participants have discussed complementary health, LGBTQ health care, regionally specific statistics, and the history of medicine.

The role that health sciences librarians often play in developing search strategies creates opportunities for addressing unconscious bias in their work with patrons. Other librarians can also find these opportunities—whether teaching in a school, instructing university students, or working with the public—by being aware of and connecting their patrons to resources that they might not otherwise consider when searching for information.

CONCLUSION

Understanding that implicit bias affects the work of librarians, it is important to consider how librarians can combat it. Our curriculum, "Working on Ourselves: Mitigating Unconscious Bias in Literature Searching," helps librarians understand the ways unconscious bias upholds unspoken, systematic structures of power that confine the library profession and encourages librarians to consider how they can use their gained knowledge and experiences to help make the library profession more equitable for information professionals and our patrons. One way to do this is for librarians to train their colleagues to consider biases in patron interactions, collections, and library systems. Our curriculum uses health sciences research as an example of how bias affects scientific research, and how that can be detrimental to the patrons we serve and the populations that they serve in turn.

Health science librarians have the power to help medical and allied health professionals and patients find the information they need and encourage researchers to be more inclusive in their research. We encourage our patrons to think about how to improve the outcomes for all patients they work with by urging them to consider and use materials that move beyond the typical white male subjects who define most clinical trials and research. As academic and research librarians, we encourage patrons to consider how unconscious biases

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might affect library patrons when they consult with librarians and when they design and execute their searches.

Ultimately, reducing the effects of implicit bias is a job for all librarians because it exists in all parts of librarianship. It is there when we teach patrons in formal sessions and through reference interviews. It is there when we catalog materials and design search algorithms. It is there when we choose what materials to promote. It is there when we recruit and hire new librarians and make decisions about tenure and promotion. In all these situations, librarians are choosing, consciously or unconsciously, which stories to center and which members of our communities to welcome. Librarians from all types of institutions can encourage library patrons and stakeholders to consider how bias might be impacting their work by asking questions, being aware of the biases in the information they use, and encouraging everyone who uses the library to self-reflect on unconscious bias. Whether through a program such as the one described here, or through other forms of outreach and engagement, librarians can train each other and enhance their practices, improving the outcomes for everyone who uses the library.

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