Helping medical learners recognise and manage unconscious bias toward certain patient groups

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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.

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INTRODUCTION

Cognitive science has demonstrated that human behaviour, beliefs and attitudes are shaped by automatic and unconscious cognitive processes,[1] in which, without deliberate thought, we store and retrieve information to interpret – sometimes inaccurately – people, behaviour and situations. A cursory literature search reveals that many disciplines, including those of law, public health and social work, are considering the impact of unconscious cognitive processes on their work. Medicine, including medical education, is no exception. Researchers have explored the role of unconscious cognition in two areas: (i) clinical reasoning, particularly with respect to diagnosis,[2] and (ii) perceptions of patients and their influence on subsequent interactions and decisions.[3] As much has been written on the former, we will focus our attention on reviewing literature relevant to the latter.

Growing diversity[4] and emphasis on cultural competence[5] have created recognition among educators that medical students and residents (i.e. learners) should develop awareness of unconscious bias (UB). In this review paper, we briefly discuss key cognition concepts and how they have been considered in medicine. We then suggest that developing awareness about UB is a multi-stage process and describe a model by which this process might occur. We focus the majority of the paper on the literature relevant to potential educational strategies for creating awareness among learners and helping them address UB about patients. We conclude with recommendations to educators and education researchers.

COGNITION AND ITS RELEVANCE TO MEDICINE

As noted above, researchers have explored UB in two related but distinct areas of medicine. With respect to clinical reasoning, researchers have examined how cognitive shortcuts, or heuristics, can contribute to diagnostic reasoning (for better or worse).[2,6,7] A number of relevant heuristics, such as the availability heuristic (implying a tendency to diagnose diseases with which one has had recent experience) and confirmation bias (implying a tendency to seek information that confirms a diagnostic hypothesis one has already formed), have been identified.

Practitioner perceptions of patients can also be influenced by automatic cognitive processes, primarily in that these processes permit us to reduce a complex social world to manageable amounts of information through social categorisation. Unconscious bias in clinical care is activated when a doctor automatically (without thinking) classifies a patient as a member of a group and applies stereotypical characterisations of the group – whether positive or negative – to the individual. These stereotypes are more likely to be activated when cognitive resources are challenged by time limitations or stress,[8] a situation not uncommon for practising doctors and trainees managing complex clinical interactions.

Because bias is outside the doctor's consciousness, it is uniquely difficult to address. Like most people,[9] doctors may underestimate the extent to which biases influence their behaviour. Unfortunately, a wealth of data[3] highlight the contribution of doctor bias, particularly with regard to race or ethnicity, and gender, to disparities in care that may include discrepancies in the aggressiveness of treatment, transplant decisions, pain management and wait times for diagnostic testing. Other groups of people who receive disparate care include immigrants, members of various religious groups and individuals who are poor, obese, elderly, or gay, lesbian, bisexual or transgendered.[10] According to Burgess *et al.*: 'Fundamental and universal human information processing mechanisms lead to an unintentional ''disconnect'' between providers' desire to provide equal treatment and the way their actual clinical decision making is influenced by patient race/ethnicity, socioeconomic status and other social group membership.'[1] Van Ryn and Fu's[3] model illustrates how a provider's conscious and unconscious beliefs about a patient are foundational to his or her interpersonal behaviour in the medical encounter, interpretation of information or symptoms, and subsequent decision making. These beliefs interact with the patient's characteristics and presentation to produce a treatment outcome in which the influence of UB can be magnified when data are ambiguous.[9] When it is unrecognised and unmanaged, UB can lead to health care disparities.

Clinical reasoning researchers and educators often have different opinions about whether and how UB should be addressed in the education setting. Some advocate avoiding heuristics and other forms of UB altogether through conscious deliberation[11] or using tools to provoke deliberate review of decision making.[12,13] Others argue that such cognitive vigilance is unrealistic and that heuristics have developed in part because they are useful.[14] Many have debated dual-process models that rely on both unconscious heuristics and deliberate thought processes to achieve desirable clinical reasoning.[15–18]

The perspective one takes on this issue would influence how one would teach learners to address UB, although educators considering UB with respect to perceptions of patients have not, as far as we know, debated these issues. Although we agree that the activation of UB is outside our volitional control and therefore cannot be avoided or prevented, we take the position that some educational strategies may help a learner to become aware of potential UB and offer ways for reducing or mitigating against its impact; this position appears to be consistent with that of some in the clinical reasoning arena,[13,19,20] as well as with that of psychologists working in this domain.[21]

BECOMING AWARE OF UB: A DEVELOPMENTAL PROCESS

Medical educators often address UB within the context of their cultural competence curriculum.[5] Many recognise that cultural competence is gained incrementally through developmental phases and plan cultural competence education accordingly.[22,23] Multiple developmental models for cultural competence exist and emphasise that the developmental process is multi-phased,[24] continues beyond formal education,[25] and requires both cognitive and affective elements.[26] Regardless of the model, individuals may progress through these stages at different paces and certain stages may be more difficult than others.

Like these cultural competence models, we posit that developing awareness of one's UB is a developmental process in which learners increase awareness of and self-regulatory behaviour regarding UB. An adaptation of Bennett's intercultural competency model[24] (Table 1) illustrates how individuals might move from absolute denial of and defensiveness about UB to acceptance of UB and the ability to recognise it in oneself and then to mitigate its influence on behaviour with patients. Thinking about UB in this way has considerable implications for educators. Firstly, it suggests that educators must introduce the concept of UB (i.e. develop knowledge about and understanding of UB) and then help learners to develop acceptance of and respect for UB in order to move from Denial to Acceptance. To achieve Adaptation and Integration, educators may guide learners toward the 'application' of UB concepts, helping them to acquire strategies for recognising when UB may be activated in a medical encounter and for managing the impact of UB in clinical practice. As with any clinical skill, the progress of learners requires multiple opportunities to practise.[27] In this case, learners practise recognising when UB might be activated, consider how to manage it and are given timely feedback[28] provided by role models who have themselves progressed along the developmental path. This is especially critical, given that the stress of most patient care situations can magnify the activation of UB.[8] The process of becoming aware of UB is fluid and not every learner starts in the same place. Further, as learners encounter new forms of UB in themselves, they may experience earlier stages (Defence or Minimisation), even if they have reached Integration regarding other types of UB. Reaching Integration does not mean one recognises all of one's UBs, and, in fact, it may imply the contrary; Integration only assures the learner that he or she has the ability to recognise UB and the commitment to act to reduce its impact.

EDUCATIONAL STRATEGIES ARE INADEQUATELY TESTED

Although the existence of and processes creating UB have been studied extensively in psychology and across a variety of other disciplines,[21] little research has described or evaluated how medical educators can intervene to raise learners' awareness about UB or promote learners' progress along the continuum. We conducted a series of PubMed searches partnering each of the terms 'medical student' and 'resident' with each of three phrases for UB ('bias toward patients', 'implicit bias' and 'unconscious bias'). In addition, we conducted two searches using MeSH (*Me*dical *S*ubject *H*eadings) terms. We combined the MeSH terms 'undergraduate medical education' and 'graduate medical education' with the MeSH term 'prejudice' and then with the keyword 'bias'. These searches brought up 264 unique articles. Of these, only 19 (7.2%) actually described educational interventions. To more accurately capture current educational efforts to address UB, we also solicited information about how educators are addressing UB from the listservs of the Association of American Medical Colleges' four regional Groups on Educational Affairs. The material we describe here refers to what is known about the field at this time, although not all of the interventions described have been adequately tested. Documented approaches tend to fall within two broad categories: (i) strategies for helping learners increase awareness and recognition of UB, and (ii) strategies for helping learners reduce the impact of UB on clinical care.

EDUCATIONAL STRATEGIES FOR ADDRESSING UB: RECOGNISING BIAS

A number of techniques are currently in use for moving learners toward Awareness and Acceptance of UB. Although they are generally consistent with education theory, few data are available on their effectiveness in medical education. Techniques fall under three basic approaches: (i) understanding patients as individuals, not stereotypes; (ii) using the Implicit Association Test (IAT)[29] to assess learner UB, and (iii) using reflection activities. We discuss each of these briefly.

Many cultural competency curricula still emphasise the acquisition of knowledge about common cultural groups (e.g. understanding how to care for Latino patients) as the mechanism for improving patient care. Although it is well intentioned, this approach can promote reliance on stereotypes (as opposed to individual information) about patients as the basis for 'culturally appropriate' interactions. Instead, curricula should focus on teaching a core set of concepts and skills for interacting with each patient as an individual with a unique social and cultural perspective and context.[30] For example, rather than learning a stereotype of African-American patients as mistrustful of doctors, which may or may not be true for any given patient, it is more useful to learn how to recognise signs of mistrust in any patient and to become skilful in building trust in cross-cultural interaction. Focusing learners' attention on core cross-cultural issues such as mistrust, health beliefs and decision-making customs, rather than cultural group characteristics, will counter tendencies to see all members of social groups as homogeneous, and help learners become more attuned to areas in which UB may frame their thinking about patients.[10] Educators often illustrate how these core cross-cultural issues might be explored using a variety of models[5] (such as that of Kleinman[31]) and may find that the development of patient-centred attitudes among learners mitigates bias.[32]

Since 1998, the Implicit Association Test has been used to assess UB[29] and, often, to draw attention to UB as well as to challenge learners' self-perceptions. The computer-based, interactive IAT calculates how long it takes a participant to match pictures or words that correspond to a social group (e.g. gender, body size) to particular characteristics (e.g. good, bad). The IAT operationalises UB by proposing that participants will take relatively less time to match a group word or image to a characteristic if they already associate the social group with the characteristic than they will require if they do not already associate the social group with a particular characteristic. The IAT assesses biases about, among other things, race, ethnicity, immigrant status, obesity, age, religious affiliation and homosexuality.[33] Although some controversy exists, many studies of the IAT support its validity.[34] Its recent use among doctors has demonstrated unconscious preferences for European Americans over African Americans, in which UB exceeds self-reported biases,[35–37] the presence of anti-fat bias,[38] and the influence of race bias on the interview process.[39] Similar patterns have been found among medical and other health professions students.[40–42] We found only one published report of the use of the IAT expressly for medical education,[43] in which the IAT was used as a trigger for group reflection about UB. However, anecdotal evidence suggests medical educators are exploring this instrument and guidelines for its use are available.[23]

Reflection activities, such as writing or small-group discussion, are often used to create student awareness of potential UB. Methods to provoke reflection vary[44] and little evaluation information exists about successful means for initiating reflection regarding UB. Ring *et al.*[23] describe a number of possible triggers for UB reflection, including imagery exercises that provoke and then counter common stereotypes, standardised questions that challenge assumptions that may be present during history taking, and real or simulated cases identifying feelings about patients who differ from the subject and are potentially challenging to care for. Individual reflection without guided debriefing is less effective, but guided debriefing requires skill on the part of the facilitator.[43] Perspective-taking exercises also help learners to recognise their biases. Learners are asked to review an encounter (real or simulated) through the eyes of the patient and to consider how that person might have perceived, understood and reacted to what occurred.

These approaches to raise awareness about UB among medical learners are not without difficulty. In previous work[43] and in another study (RA Hernandez, P Haidet, AC Gill, CR Teal, unpublished data, 2011), we collected learner comments about UB. We offer selected comments here, not to describe the results of our work, but to illustrate some of the challenges that educators may experience when discussing UB with learners.

Like most of us, learners resist recognising bias in themselves and may reject it when it conflicts with their perceptions of themselves as humanitarians.[45] Learners (and some educators) may not appreciate the relevance of bias, depending on how they perceive a doctor's responsibilities in patient care.

An uncertain student from our discussion groups asked about an obstetrics patient:

> 'Did she receive the care that she needed? …her baby was born without any problem and I assume she was discharged without problem, so …did she receive the care that she needed from an OB [obstetrics] standpoint? I assume she did. Did she get the respect of being human from the doctor…[who was disparaging]? I don't think so. I think that we need to tease out and say, What is the role of a doctor?'

Further, efforts to draw attention to such biases must create an optimal amount of discomfort among learners. We want to permit reflection and encourage awareness, acceptance and attempts to reduce UB, rather than to overwhelm learners and facilitate the rejection of UB in order to reduce discomfort.[43] The importance of this distinction is illustrated by this student's observation:

> 'To some extent I think awareness is valuable, but sometimes I think it's just another thing to dislike about yourself.'

Learners may struggle with separating evidence-based recognition of patient risk factors from bias. For example, this student described an instance of confusion:

> 'Being trained as physicians you're trained to automatically think of these checklists in your mind… If you see somebody who's overweight, you know that you need to draw these labs and … screen them for, you know, hyperlipidaemia and diabetes, and so on and so forth, and so are those evidence-based or are those biases? I think it's both.'

Finally, and with impact for educators who rely on the IAT, learners often challenge the validity of the IAT and its value to them as doctors-in-training:

> '[The words in the IAT] weren't even the words that I would think to associate with ability and disability… some of the words just seemed too extreme, so I wasn't sure what to make of them, and that may not show validity in the test and therefore didn't really affect how I thought I should behave with patients.'

> 'I think just getting a certain number on a test doesn't necessarily mean that you don't have a bias. It just means you're better at taking the test.'

Educators must be prepared, both in attitude and in skill, for these and other challenges if they are to manage them successfully.

EDUCATIONAL STRATEGIES FOR ADDRESSING UB: REDUCING AND MANAGING BIAS

Our experiences suggest that as learners become aware of and accept the likelihood of UB in themselves, they often ask: 'What should I do about bias, once I recognise it's there?' Educators are likely to be expected to offer guidance for how to move into the stages of Adaptation and Integration and how to identify, reduce and manage UB. Teaching learners to recognise when a UB may be activated during a patient encounter may be the most difficult task for educators and few data are available to guide such efforts. Some have suggested that strong emotion (e.g. about a patient) may be an indicator that UB may have been activated[46] and encourage learners to reflect on such emotion in part as a means for surfacing UB.[47]

To reduce bias, contact with groups about which one may have biases can be effective, if certain conditions – equal status, cooperative goals and social norms favouring intergroup contact – exist.[48] Most teaching strategies employ variations on this idea, in which learners are required to interact with the groups about which they may hold biases, presumably to reduce bias and learn to manage it. These include: (i) positive exposure; (ii) immersion experiences, and (iii) cross-cultural simulations.

Exposure to and interaction with positive exemplars of social groups have been shown to reduce UB,[49] even with limited exposure (e.g. patient panels[23]). Immersion experiences in which learners provide care to members of groups about which they may have biases may offer greater benefit.[50] These might include community rotations in underserved areas, community-based service-learning projects, and global health experiences. These programmes rely upon intensive patient interaction (with guided reflection) to illuminate the learner's potential bias and provide opportunities for the learner to receive feedback on how the biases may be impacting his or her delivery of care. However, contact-based programmes are not without challenges. Learner participation may be limited or selectively biased. Learners may have negative experiences, which may solidify existing negative biases. Further, many contact-based experiences may not meet the criteria required to produce maximal effectiveness. Equal status and cooperative goals are hard to achieve, given the power difference between doctors and patients, even when the 'doctors' are learners. Finally, the hidden curriculum may hinder such approaches because authority figures (pre-clinical instructors, clinical preceptors)

may marginalise educational strategies to facilitate awareness and management of UB and may demonstrate UB themselves in their own clinical practice.[51]

In response to these issues, some medical educators are embedding opportunities to surface UB in standardised and virtual patient simulated cases, employing cross-cultural cases[45] and cases in which the patient presentation can be changed through appearance[52] or, in the case of virtual patients, weight,[53] skin tone or gender.[41] In this way, patient characteristics are used to activate a possible unconscious stereotype. Once a stereotype is activated, humans are likely to concentrate on confirming evidence,[6] actively seeking and interpreting information that confirms the stereotype. Through debriefing about the experience and facilitated reflection about what underlies the activation of the UB, such cases illustrate how UB can influence a patient encounter as impressions of a patient change the processes of history taking, physical examination, diagnostic decision making and treatment choice.[45] These situations are akin to permitting learners to make diagnostic errors in clinical reasoning from which they learn through feedback on the diagnostic process and the consideration of alternatives.[54] These types of activities offer potential advantages to educators. For example, educators could provide exposures to multiple diverse patients over which patterns in biased thinking can emerge. If learners focus too quickly on patient characteristics to the exclusion of other information (i.e. a heuristic called 'premature closure'), educators can explore failures to take adequate history and explore alternative explanations for symptoms.[2] Simulations offer opportunities to explore feelings about patients that are often seen as undesirable or challenging, as well as the possibility of assessing changes in learners' awareness of UB and ability to manage it in patient care. Simulations are by design similar to possible patient encounters, which might improve transfer (of bias awareness) to interactions with real patients.[55] Finally, they offer opportunities for increasing learners' skills and confidence in their ability to interact successfully with patients who differ from themselves, which has been suggested as a way to reduce bias.[56]

In recent years, an alternative approach to recognising bias has been proposed: namely, that of developing mindful practitioners by providing mindfulness training to learners.[21,57] Such training cultivates attention to one's own thought processes, responses to subtle cues, and how they affect decisions so that one pays attention to the details of the process of clinical care rather than falling back on habits and shortcuts such as stereotypes and UB. In an effort to reduce the possible impact of UB, mindful doctors might ask themselves these questions: What is informing my decision? What am I feeling? Have I seen this before in myself? What assumptions am I making? Virtually no research has assessed training approaches on a large scale and therefore this remains a highly touted, albeit experimental, approach.

CONCLUSIONS AND RECOMMENDATIONS FOR TEACHING ABOUT UB

We offer a synthesis of educational approaches that have been advocated and are in use, and which are supported by well-documented psychology and education theories, to guide educators who are grappling with how to address UB with learners. However, education research about UB in undergraduate and graduate medical education remains scarce. As Fig. 1 shows, we posit that learners move in and out of proposed developmental stages, becoming more aware of UB and often bringing forms of UB into consciousness where they might be managed in the medical encounter. We suggest that multiple and diverse educational experiences are necessary to progress through the developmental stages and integrate awareness of UB into regular practice in a mindful way. Learners should be given opportunities to become aware of their own biases while educators directly explicate the concepts of implicit versus explicit biases. Learners might have difficulty with the concept, not recognising that implicit bias, by definition, is without awareness and that reflective, mindful practice is required to become attuned to the activation of bias. As such, we believe that educators must be deliberate and skilled in their facilitation of reflection and discussion about UB and its relevance to clinical practice. Research suggests that UB can be altered when the recipient becomes aware of the UB and is motivated,[56,58] although not all educators would agree.

Figure 1 Potential educational strategies for increasing awareness about unconscious bias

Table 1 An adaptation of Bennett's intercultural competency model[24] illustrates how individuals might move from absolute denial of unconscious bias (UB) to the integration of strategies to mitigate the influence of UB on their interactions with patients

Bennett stage	Definition of stage in intercultural competency	Proposed definition of stage for bias awareness and behavioural manifestation
Denial	No awareness of cultural differences between self and others, or differences among cultural subgroups	Unawareness of UB Inability to differentiate between conscious bias and UB
Defence	Recognition of differences Denigration of cultural others Perception of cultural superiority	Recognition that UB may exist Failure to accept UB in oneself
Minimisation	Recognition of differences with minimisation of importance Expectation that human behaviours and values can be interpreted in a universal manner	Recognition of UB in others Perhaps recognition of the possibility of UB in oneself Trivialisation of potential impact Belief that one can treat all patients objectively
Acceptance	Acknowledgement of and respect for cultural differences	Recognition that UB exists Recognition of UB in oneself Ability to see potential impact on interaction with patients
Adaptation	Modification of behaviour to reflect awareness of and respect for cultural differences	Ability to reflect on possible previously unrecognised UB in oneself Ability to act on known biases to reduce potential impact on interaction with patients
Integration	No absolute cultural identity Ability to recognise behaviour as related to cultural context	Ability to recognise previously unrecognised UB in self and act to mitigate

We recommend that educators consider how to encourage change once a bias is recognised (and is therefore no longer unconscious). Positive, counter-stereotypical experiences with those about whom one is biased can correct negative stereotypes, and learners need to find more opportunities to make contact and engage in interaction with members of diverse groups. Learners must be guided in reflecting meaningfully on these experiences, given opportunities for UB to surface in patient encounters, and provided with debriefing and feedback about UB and how it may be influencing their clinical behaviour. Learners should be taught to see their patients as individuals and to guard against making premature decisions about patients based on their characteristics. Finally, educators must actively address the hidden curricula in their own institutions and garner the support of leaders and respected faculty members for the incorporation of experiences of and reflection and feedback on UB into curricula.

The model presented in Fig. 1 and the various educational strategies for addressing UB in medical education need to be rigorously evaluated. Far too little evidence exists in medical education, especially given the extent to which these cognitive processes and their effects have been evaluated and demonstrated in other disciplines. Researchers should explore how to intervene successfully with practising doctors, as well as learners themselves, not only to assure equity in care, but also because such practitioners often serve as role models for learners. Finally, like cultural competence education in general, links to patient outcomes are limited.[59] Researchers must examine if and how UB education efforts translate into improved patient care.

Education about UB is a challenging undertaking; we must be skilled in maximising learning and minimising backlash, given the sensitivity of the issue. The message to learners is much the same as that delivered by White and Chanoff to doctors on UB in health care:

'Understand and respect the tremendous power of unconscious bias... Do everything you can to become aware of and honestly face the biases that you personally might have, both those you know you have and those that take some digging to recognise... The most effective

measure is our willingness to confront our deepest feelings about those who are different from us.'[10]

The cognitive processes underlying the formation of UB may at times be useful and may be impossible to eliminate. Nonetheless, educators must determine how to help learners recognise their own tendencies as humans to form UB about other people. It is possible and valuable to guide learners in bringing UB to the surface, so that these biases, when they refer to patients, may be mitigated to lessen their impact in clinical interactions.

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