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Cognitive-behavioral therapy (CBT) for reducing implicit biases among healthcare professionals

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Abstract

An implicit bias, also known as an unconscious bias, refers to the unconsciously held thoughts, feelings, and behaviors towards a group of people or social identity. As an unconscious process, they are difficult to identify, manage, and control. In the healthcare system, they can increase health disparities by affecting patient-provider interactions through clinical decision-making, such as providing shortened consultation times or decreasing the probability of referral to specialists. Despite that, effective strategies have been discovered and implemented to mitigate the impacts of implicit biases; however, there is still a limited amount of research regarding the effects of these interventions on healthcare professionals. Additionally, the use of psychotherapy as a method to reduce implicit biases hasn't been extensively researched. A systematic review of literature was conducted to provide new insights into how cognitive-behavioral therapy (CBT) can alleviate the influence of unconscious prejudices and stereotypes in the healthcare profession. The two main mechanisms involved are identifying and promoting awareness of implicit biases, as well as reshaping irrational thinking patterns and fostering behavioral changes through techniques such as stereotype replacement, mental imaging, perspective taking, mindfulness, and individuation to mitigate unconscious biases. Further areas of research and interventions, including the creation of psychometric tests to identify unconscious stereotypes among physicians and assessments to measure changes in patient care and health, are also discussed.

Keywords: cognitive behavioral therapy, implicit bias

Introduction

An implicit bias, also known as an unconscious bias, refers to thoughts, feelings, or behaviors towards a group of people or social identity that are unconsciously held or recognized. In the healthcare system, they can impact how healthcare professionals perceive, interact with, and treat patients (Capatosto et al., 2016), which can impact patient-provider interactions through treatment decisions and adherence, leading to inefficient healthcare delivery and poor health outcomes (Hall et al., 2015).

In the past, cognitive-behavioral therapy (CBT) has been proven effective in helping people find new ways to behave by changing negative or irrational thinking patterns (Davis & Saripalli, 2018). Although implicit biases can be reduced through effective strategies, there is a limited amount of research on the effects of these interventions among healthcare providers (Schnierle et al., 2019). Therefore, this systematic review aims to provide new insights into how CBT can promote awareness of implicit biases and provide strategies to mitigate the harmful impacts of these biases among physicians.

This review contains multiple levels of individuals, including a clinician who administers CBT, a physician who receives CBT to identify and tackle their implicit biases, and the patients visiting the clinic who may be impacted by the physician's implicit biases. While this article focuses mainly on physicians, CBT would most likely also provide a favorable approach to tackle implicit biases among other healthcare professionals, including

physician assistants, pharmacists, nurses, and experts in public or community health. To minimize confusion, the word 'clinician' will refer to the person administering CBT, 'client' and 'physician' will be used to refer to the physician receiving CBT, and 'patient' will be used when referring to the patient receiving care from the physician who is receiving CBT.

Methods

With the COVID-19 pandemic being relatively recent, there has been an influx of literature surrounding the increased prevalence of health disparities due to various aspects of the pandemic for low-income persons and racial and ethnic minority populations (Kim et al., 2020). One of these aspects are the implicit biases held among healthcare professionals (Johnson-Agbakwu et al., 2020).

Based on a PubMed and Google Scholar search, to our knowledge, there have not been any studies focused on how CBT can be used to reduce implicit biases among healthcare professionals, both during the pandemic and amidst other health situations. A systematic literature review was performed, allowing for reproducible methods to identify, select, and assess all relevant research related to this topic.

This analysis was conducted by surveying articles in PubMed and Google Scholar with the predetermined set of search terms, such as "implicit bias," "cognitive behavioral therapy" and "CBT." Other search terms to broaden sensitivity while maintaining specificity included "implicit racial bias," "implicit prejudices," "implicit bias healthcare," "implicit bias among physicians," "how to reduce implicit bias," and "reducing implicit bias among healthcare professionals," which yielded (n = 44) relevant papers to be screened.

From the papers screened, (n = 11) articles were excluded due to publish date (older than 15 years), credibility (not peer-reviewed), language (other than English), and relevance (focused on other psychological processes that cause bias and affect health disparities; not focused on implicit stereotypes and prejudices against groups of people but rather animals, inanimate objects, etc,).

This allowed for (n = 33) full-text articles to be assessed for eligibility, which were evaluated thoroughly on whether they should be considered for the final qualitative synthesis. In the end, (n = 8) full-text articles were excluded.

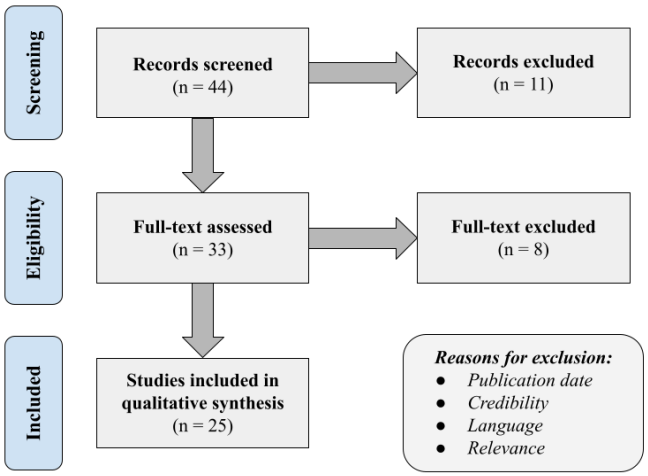

FIGURE 1. PRISMA Flow Diagram showing the vetting process of this systematic review of 43 articles.

Some of these articles only explored the importance of reducing implicit biases, rather than the techniques and strategies that could be used to mitigate the impacts of these stereotypes. However, research about implicit biases and their mitigation strategies in contexts other than medicine, such as education or the general population, was also included to provide a robust analysis of the literature on the topic, given the limited amount specific to the association between implicit bias and CBT. This would also avoid the possibility of overlooking evidence that could still be relevant to the research question, allowing for the adaptation of current implementation strategies for healthcare workers. Ultimately, 25 articles were included in the final qualitative synthesis.

Additionally, websites from national agencies, trusted organizations, and medical textbooks,

such as Mayo Clinic and the National Health Service (NHS), were used to supplement details and provide basic insights about the methods of CBT. Content was compared across multiple sources to ensure this research study was reliable and credible.

A weakness of this research method is the exclusion of many relevant papers that were not written in English. Since implicit biases are a natural and universal phenomenon that everyone possesses, this could have offered novel and valuable perspectives into how CBT could be applied to reduce implicit bias among different groups of people and social identities.

Implicit Biases

What is an implicit bias?

An implicit bias, also known as an unconscious bias, refers to thoughts, feelings, or behaviors towards a person or group of people that are present but unconsciously held or recognized, affecting our actions and decisions without us realizing. They are an example of the brain's fast, automatic, intuitive, and unconscious (implicit) thinking mode as one is not aware of them, making them difficult to acknowledge and control (Hall et al., 2015).

How do implicit biases impact the healthcare system?

Implicit biases can impact how healthcare professionals perceive, interact with and treat patients (FitzGerald & Hurst, 2017), especially among physicians who provide care to disadvantaged populations, including racial/ethnic minorities, the poor, sexual minorities, the mentally ill, the overweight or obese, and the disabled (Capatosto et al., 2016). This can be shown in patient-provider interactions through clinical decision making (e.g., doing more or less diagnostic work, chronic disease management), causing poor health outcomes, leading to higher disease prevalence, lower life expectancy, and increased mortality among these social groups of people (Hall et al., 2015). Therefore, it is important to assess strategies to reduce these biases among providers.

Examples of implicit bias among healthcare professionals

A common form of implicit bias is an implicit racial bias, which is when individuals prefer people of a particular race unconsciously. Many healthcare providers often have an implicit bias in terms of positive attitudes towards White people and negative attitudes towards people of color (Hall et al., 2015), which has led to several racial health disparities in the US and has hurt patients from marginalized racial populations.

Another common form is an unconscious gender bias, which are automatic mental associations formed on how we judge people based on traditional feminine and masculine assigned traits, stemming from traditions, norms, values, culture, or experience (The Bureau for Employers' Activities & International Labour Organization, 2017). These biases can greatly contribute to health disparities by gender (Chapman et al., 2013).

Other common forms of implicit bias is lesbian, gay, bisexual, transgender, and questioning (LGBTQ+) bias. In the healthcare system, LGBTQ+ individuals are known to experience higher levels of health disparities compared to the general population, resulting in a lower standard of care or restricted access to healthcare services among these patients (Sabin et al., 2015). These biases can also cause patients to delay seeking care due to past experiences with discrimination (Simpson et al., 2013).

Causes of implicit bias

One common cause of implicit bias is that we, as humans, like taking mental shortcuts. In general, our brain uses knowledge about past regularities, patterns, and associations to generate predictions about what is expected to occur, compared to what has actually happened. This is thought to be an evolutionary development that ensured survival among the human family's

earliest ancestors to quickly decide whether a person, animal, or situation encountered was likely to be friendly or dangerous. Long later, one's brain can still use these tendencies to categorize everything experienced (Marcelin et al., 2019). However, this could unwittingly get in the way of healthcare professionals attempting to establish genuine and empathetic relations with their patients (Hall et al., 2015) if practitioners become reliant on their unconscious stereotypes and inaccurate cognitive shortcuts to guide clinical decisions (Rynders, 2019).

Another reason is social and cultural influences. Although most people would reject negative ideas associated with disadvantaged groups (Glas & Faloye, 2020), these marginalized groups are often portrayed in disparaging settings when one is growing up, which could impact decision-making later on in life (FitzGerald & Hurst, 2017).

Consequently, research has shown that children use group membership unconsciously to guide attitudes and stereotypes towards groups of people. These groupings are rooted in early development—children begin to recognize what distinguishes them from others and believe that what is similar to them is 'good' and what is different from them is 'bad' (Baron et al., 2014). Forming negative opinions and associations about outgroup members early on in life can contribute to the development and aggravation of implicit biases.

How can cognitive-behavioral therapy reduce implicit biases among healthcare professionals?

What is cognitive-behavioral therapy (CBT)?

Cognitive-behavioral therapy (CBT) is a form of psychotherapy that focuses on how thoughts, emotions, and actions are all interconnected and can negatively impact each other in a vicious cycle (National Health Service, 2019).

CBT's main purpose is to identify inaccurate, overwhelming, or negative thinking patterns; view challenging situations more clearly; and break these down into smaller parts. It has been proven as a very useful tool to treat mental health disorders and help people manage stressful life conditions. Traditional CBT treatments are usually spread over 5 to 20 weekly or fortnightly sessions, with each session lasting from 30 to 60 minutes (Mayo Clinic, 2019).

Identifying troubling situations or conditions

The first step of CBT is to identify troubling situations, conditions, or problems that are disrupting the life of the client (Mayo Clinic, 2019). In the context of applying CBT to reduce implicit biases among healthcare professionals, this step would include identifying cognitive biases.

To do this, physicians could take one or more Implicit Association Tests (IAT) (Edgoose et al., 2019). This test operates by categorizing words and images into one of two categories (e.g., Fat/Thin; Good/Bad) and measuring the strength of associations between these concepts and evaluations (i.e., social groups and identities), as either slight, moderate, or strong (Project Implicit, 2011).

Psychological research has also shown that unconscious biases can cause subtle changes in the behavior of healthcare professionals when treating patients. This can include smiling less, verbally dominating conversations, and providing less eye contact (Capers, 2020). Since healthcare professionals (and all other individuals) are unaware of their unconscious biases, they would not realize the stereotypes that guide their patient interactions. Therefore, they could be expected to deny these biases if questioned.

Despite that, oftentimes, clients may be brought into CBT by peers, such as partners or employers, that have pressured them to go against their own will (Sokol & Fox, 2019), thus CBT can potentially be used as a treatment to recognize implicit biases not only for healthcare professionals who believe that there might be something wrong but also for those who reject this. From here, the problem can be identified, and the other steps of treatment can be planned and implemented.

Identifying negative thoughts, emotions, and behaviours towards the problem

The second step of CBT is to identify negative or irrational thoughts, emotions, and behaviors towards the problem (Mayo Clinic, 2019). In this context, this step would include promoting awareness of the physicians' own unconscious biases and understanding their impact on patient care. This can be done in various ways. This might include learning and educating providers about what implicit biases are and their impacts on clinical decision-making. Another important part of this approach would be educating oneself about different groups of people and cultures as well as learning what language and behaviors could come across as offensive or hostile. A recent systematic review investigated methods to reduce LGBTQ+-related implicit biases among healthcare professionals (Morris et al., 2019). It was deduced that programs designed to increase provider knowledge of the LGBTQ+ community (e.g., understanding sexual orientation and gender identity) through lectures and interviews, could prove successful in reducing implicit biases. Similar programs could be implemented to increase knowledge representing a variety of aspects related to patient health from stigmatized groups to help providers recognize and create new values and attitudes towards these groups of people.

Reshaping and challenging negative, inaccurate, or irrational thinking patterns

The final step of CBT is to reshape and challenge negative, inaccurate, or irrational thinking (Mayo Clinic, 2019). In this case, this step would include fostering a behavioral change to reduce the influence of these biases among providers.

CBT is based on the cognitive model. This is a model that shows that perceptions of an initial situation are what actually influences and triggers reactions, feelings, and physiological responses towards the conditions, not the situation itself (Sokol & Fox, 2019). Situations in which actions taken by healthcare professionals are impacted by implicit biases can lead to health disparities. However, it would also mean that the provider has responsibility for their response after becoming aware of their own biases in the previous stage of treatment and would mean that their behaviors and attitudes are changeable and can become more rational. This could be done by implementing strategies that allow practitioners to manage their implicit biases.

One strategy could be stereotype replacement, which involves recognizing that a response is stereotypical, reflecting on why this happened, and considering how a biased response could be replaced in the future (Brown et al., 2021). For example, if a physician was treating a patient from a minority population, they might directly jump to conclusions and base their opinions on their predictions about the patient's different treatment adherence capabilities. They would directly assume that the patient would not comply with the medication, therefore, the physician might not provide the appropriate medication and consequently treat the patient disparagingly. However, if the physician replaces this stereotype and asks the patient if they can comply with this medication, this will open discussion about alternative treatment options (if necessary). It would also allow the provider to engage in positive interactions and increase contact with stereotyped group members, which can reduce implicit biases by changing and improving cognitive associations and representations of the group.

Additionally, research has strongly supported the use of mental imaging to replace automatic responses involving stereotyping of others. These people could be abstract (e.g., modern Native Americans), famous (e.g. Barack Obama or Lin-Manuel Miranda), or non-famous/personal (e.g. a close friend or a teacher). This strategy works by making positive examples more salient in the mind and making them easily accessible if placed in a situation that could show implicit biases (Edgoose et al., 2019).

Another retrospective approach could include perspective-taking, which involves taking the first-person perspective of an individual in a stereotyped group, increasing psychological proximity towards the group, and improving automatic or impulsive irrational group evaluations (Devine et al., 2012). Studies have shown how perspective-taking can increase patient satisfaction and can be used as a useful technique in clinical practice and decision making (Blatt et al., 2010). Overall, this technique would help physicians build empathy and teach them to pause, think, and reassess situations in which they have interacted with individuals from a stereotyped group or when societal stereotyping has been observed, allowing re-evaluation of how a patient may feel about certain treatment options or diagnostic tests. This would allow providers to operate more effectively in relation to fulfilling their role in eliciting therapeutic change (Moudatsou et al., 2020). It would also encourage practitioners to be active bystanders in situations where unintentional prejudiced actions occur among peers. An example of this could include watching videos and listening to presentations of patients from affected groups who describe their experience with discrimination in healthcare settings, which can have a powerful and long-lasting impact and increase cultural humility (Sukhera et al., 2020).

Another alternative approach could be mindfulness, to improve coping abilities and biological reactions that influence attention, emotional regulation, and habit formation. Since cognitive shortcuts are often used under pressure or in response to complex time-limited decision-making conditions (Bogetz et al., 2021), this technique could be especially helpful for physicians who often experience these circumstances due to their stressful work environment (Wong, 2008). Current research has already established that mindfulness could reduce discriminatory behaviors and cause people to rely less on their instincts (Lueke & Gibson, 2016). Therefore, mindfulness could be used to mitigate implicit biases by increasing physicians' awareness of their ability to control potentially biased responses and reducing sources of cognitive loads, such as stress or burnout. This could be done through meditation, yoga, or connecting with nature.

Another potential approach is individuation, which involves acquiring specific information about affected populations to allow providers to associate patients with unique attributes rather than group-based and possibly discriminatory attributes (Devine et al., 2012). This helps prevent inaccurate, stereotypic, or prejudicial assumptions towards individuals and is rather simple to apply since a physician's individual identity is likely to intersect with their patients' social groupings, such as sexual orientation, race, ethnicity, or gender.

Additionally, after treatment has started and strategies have been learned, physicians must still remember to deliberately reflect on their unintentional biased actions to help open discussion about interactions with patients from stigmatized groups, which is important in reducing stereotype activation and application (Marcelin et al., 2019).

Strengths of using CBT to reduce implicit bias

One strength of using CBT to reduce implicit biases among healthcare professionals is that it incorporates a continuous process of improvement, practice, and reflection (National Health Service, 2018). This would be necessary to ensure that these unconscious biases are mitigated, instead of using single educational approaches or awareness campaigns. It teaches the physician methodical and practical strategies that could be used in everyday clinical contexts, even after their treatment has finished.

Additionally, CBT can be provided in many different formats, including groups, self-help books, and apps. This can be especially advantageous in combating implicit biases among several people in healthcare institutions.

Another important thing to remember is that even if cognitive-behavioral therapy isn't used to directly mitigate implicit biases and rather to

reduce the negative effects of stressful situations, it can still reduce the effects of these unconscious biases. Clients often try cognitive behavioral therapy to stop negative thinking patterns that make individuals feel anxious or scared (National Health Service, 2019). Implicit biases are more common in stressful or time-limited conditions and, since doctors are particularly prone to this, CBT could provide a framework for physicians by helping them be more optimistic and less negative towards these pressuring situations.

Weaknesses of using CBT to reduce implicit bias

One weakness of using CBT to reduce implicit biases is that CBT focuses on the person's capacity to change their thoughts, feelings, and behaviors.

Therefore, this approach would not address or consider any wider problems in systems or families that could have an impact on the physician's implicit biases (National Health Service, 2018), such as the influences and beliefs of peers that have caused the provider's implicit bias and are further exacerbated by often being surrounded by these people. This could impact attitudes and reduce the effectiveness of the therapy.

Furthermore, the focus of CBT is focused on the present and specific issues and is problem-oriented (Fenn & Byrne, 2013). This would mean that it does not address the underlying causes of unconscious biases among healthcare professionals, such as a narrow-minded upbringing, etc.

Conclusion

In summary, the mechanisms of cognitive-behavioral therapy (CBT) can be used to mitigate implicit biases among healthcare professionals by 1) identifying the implicit biases, 2) promoting awareness of the unconscious biases and recognizing their impact on patient care and health, and 3) teaching and implementing strategies that help reduce implicit biases. Mitigating the impacts of unconscious biases is essential since they can still be held even if the physician claims to have egalitarian beliefs and aims to provide quality healthcare for all individuals.

Research has revealed a need for more information investigating the impacts of these implicit biases on patient health and care and how they can be reduced among physicians (Maina et al., 2018); therefore, this systematic review aimed to provide a methodical way to do this, by both raising awareness of physician subconscious biases and providing potential cognitive and behavioral interventions of the management and reduction of implicit biases among physicians to reduce healthcare disparities. This form of psychotherapy also aims to provide continued exposure in reducing these biases to fully integrate the information into other knowledge and skills, since real changes in the healthcare professionals' implicit biases have not been shown with one-time training or educational approaches in the past.

Despite this, there were several limitations to this systematic review. Firstly, there was a limited amount of literature on the effective implementations that could be used to reduce implicit biases, so there was not a substantial amount of information on the question of this research paper. In the future, more research needs to be conducted on each of the mentioned specific cognitive and behavioral interventions to extensively examine and assess their effectiveness for healthcare professionals, as well as improvements that could be made or new strategies that could be implemented.

Another limitation is that this research topic mainly focuses on the interpersonal causes of implicit biases. Therefore, it does not consider situational factors in healthcare that could exacerbate these unconscious stereotypes. One of these factors is the lack of diversity in healthcare. This presents additional barriers to addressing health inequity and creates work environments that are at risk for defensiveness, passivity, and apathy in healthcare. There has already been evidence that increasing diversity in the healthcare workforce could improve

healthcare delivery, especially to underserved groups of people in the general population (American College of Physicians: Internal Medicine, 2010). CBT can also be applied to the wider clinical population (e.g., as group therapy) to further evaluate and mitigate systemic prejudices and stereotypes that drive inequalities in healthcare institutions. Another factor is the medical curriculum and its impact on physicians' ways of processing information. Medical education prioritizes pattern recognition, which relies on combinations of signs and symptoms to suggest diseases that are helpful in the clinical context. However, it can increase the possibility of healthcare professionals directly using these potentially stereotypic thought patterns when experiencing stress, pressure, or unfamiliar situations, promoting inaccurate and inconsistent clinical decision-making and judgment (Brown et al., 2021). This might include directly thinking that a White child with recurrent respiratory infections would have cystic fibrosis—even though these diagnoses are based on true prevalence rates, they may not always apply to individual patients (Marcelin et al., 2019). Another major factor is a physicians' busy work schedule. Attending regular CBT sessions can take up a large portion of time (National Health Service, 2018), which would be especially inconvenient for most physicians that work between 40 to 60 hours a week and a quarter of physicians who often work 61-80 hours a week (American Medical Association, 2015). Therefore, using CBT to reduce implicit biases might not be feasible for physicians in some cases.

Despite these weaknesses, this research paper can provide new approaches to combating the issue of implicit biases among physicians. There are various recommendations for what can be done in the healthcare community to minimize implicit biases. For instance, to identify the various types of implicit biases, more non-standardized measures also need to be designed by researchers to assess the amount of knowledge that physicians possess about the discrimination faced by stigmatized patient groups in the healthcare system. This would allow knowledge gaps to be pinpointed that may be causing implicit bias and provide background information for how CBT could be used to reduce these biases among physicians. Assessments to complement the Implicit Association Test (IAT) that focus specifically on diseases and environmental and physical influences on health (e.g., lifestyles) that are stereotypical among certain groups of people, could be used to do this. For example, if a diagram representing sickle cell disease came up, and there were three options: a Black person on the left of the screen and a White person on the right, physicians might be more likely to choose the left option due to their unconscious stereotypes about the association between diseases and social groups/identities. Researchers have also highlighted the challenge of measuring changes in implicit biases, so this is also an important issue to be investigated in future studies. Moreover, examining reduction strategies for specific patient groups (e.g., Black individuals, gay and lesbian people) lends further insight into the types of strategies that are most effective for reducing the implicit bias of those individuals among physicians.

Furthermore, physicians should also continually renew their training in the medical field to lessen the effects of these cognitive biases. This could be done through continuing medical education (CME), which aims to help healthcare professionals maintain their competence and learn more about new and developing areas in the field of healthcare (National Institutes of Health (NIH), 2017). In this case, CBT could be applied in this area of continuing education to discuss how implicit biases can impact health disparities and help physicians develop strategies to mitigate unconscious stereotypes in daily interactions with patients. However, there could still be potential weaknesses to this. For example, certain countries and healthcare institutions have different requirements of what can and cannot be included as part of a physician's CME credits, so this idea may not be feasible in some situations. As well as that, the healthcare professional would

generally choose certain CME credits depending on their own interests, therefore, it would be unlikely for a practitioner to purposefully pick a CME credit on implicit bias if they aren't aware of these biases. A potential solution to this is to assess the practice management of the healthcare provider before choosing a CME credit. For example, this could be applied through an inspection (e.g. surveys, interviews, etc.) of patients treated by the physician to see if they believe that they have been receiving the best quality of care from the practitioner. If they haven't, then physicians should be encouraged to choose a CME credit to mitigate the impacts of their implicit prejudices in clinical judgment and decision-making.

Overall, to fully achieve health equity, medical practitioners and institutions have a responsibility to cultivate awareness and mitigate the damaging impacts of unconscious biases on patient management and health, to provide a high quality of care to all patients.

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