Cognitive bias is a well-defined phenomenon in the psychology literature that has been clearly shown to affect physicians’ decision making. “There are several different types of cognitive biases; healthcare professionals, including physicians, are at potential risk to fall prey to several specific cognitive biases and must be attuned to these,” says Nada Elbuluk, MD, MSc, FAAD. “The healthcare consequences of cognitive biases can vary but may include incorrect or delayed diagnoses, inadequate disease management, underestimation of disease burden with subsequent reduced quality of life in patients, and even increased mortality,” she says. “When dealing with health as the outcome, it is so important to minimize and ideally eliminate bias whenever possible.”

PHYSICIAN BIASES AND THEIR IMPACT

Many biases can affect patient care, including implicit bias, representation bias, and premature closure, according to Dr. Elbuluk.

Implicit bias. Implicit bias or unconscious bias is a form of bias that lately has received increased attention both in healthcare and more broadly. “It refers to the biases that individuals develop from preconceived notions; often these biases represent shortcut heuristic ways for us to make associations. Typically, we are not even aware—hence the term unconscious or implicit bias—of the thought in our head, but it then affects the outcome of what we do,” Dr. Elbuluk says. “It then affects our decision-making and action execution. An unconscious bias can exist in relationship to anything. In a healthcare setting, it could be related to the demographic background of a patient including their race or ethnicity, age, gender, sexual orientation, line of work, etc. When we approach the patient with these preconceived thoughts, it can then affect the decisions we make.”

Representation bias. In dermatology and even beyond the specialty, there is increasing attention to the lack of demonstrative images and information about how dermatologic conditions affect people of color. This lack of sufficient education can lead to various biases and creates a need to ensure that people at all levels of training—medical students, residents, fellows, other health care providers—are prepared to properly diagnose and treat various diseases in skin of color.

“If you don’t know what a presentation looks like in different skin colors, then you have a higher chance of missing the correct diagnosis,” Dr. Elbuluk says. She points as an example to a common condition like cellulitis. The “classic” presentation as described in light skin includes findings of a bright red, warm, spreading area that is painful. In reality, the presentation varies across skin tones. “High levels of melanin in the skin can mask redness; a lot of those ‘classic’
features that are described in lighter skin may not be visible in the same way in darker skin,” Dr. Elbuluk cautions.

Consider an inflammatory disease like eczema or psoriasis. Often, discussion of symptoms emphasizes redness. However, on different skin tones, inflammation may have a brown, brown-grey, or brown-purple hue. The dermatologist who equates “redness” with inflammation may improperly assess the patient’s condition as less severe, even though there are signs of significant inflammation. “This may lead to undertreatment, decreased quality of life, and greater disease burden,” she warns.

If, during training, a dermatologist is not shown representations of diseases in different skin colors, s/he won’t know to consider these presentations. People can fall prey to representative bias if they only think of a disease as a so-called “classic” representation of what they think it to be. This holds true for numerous dermatologic diseases. Keep in mind that providing the right diagnosis is just a start, as the key is to then appropriately and sufficiently treat people.

Premature closure. Premature closure bias can be similar to and in some cases directly related to representation bias. “It occurs when a physician settles on a diagnosis and ‘closes’ further consideration, based on incomplete data,” Dr. Elbuluk explains. As dermatologists well know, there is something of a paradox in skin disease: while cutaneous manifestations of a single disease may vary across skin tones, many different skin diseases will share similar cutaneous manifestations. A case of premature closure may occur like this: Suppose a person presents with an occupational exposure contact dermatitis. One week later, another patient in the same occupation presents with a similar red, itchy eczematous reaction. The physician makes the connection between the professions, assumes a second case of contact dermatitis and proceeds with a treatment plan, without asking additional questions that would help determine the true cause of the skin symptoms.

As an academic dermatologist, I have dedicated my work to both improving the care of skin diseases in skin of color and to leading efforts to increase diversity and inclusion. This led me to my work with VisualDx, where I serve as Director of Clinical Impact.

VisualDx is an app with numerous features, including point-of-care support. Within the database of thousands of images that clinicians can call up to confirm a diagnosis or use as illustrative examples for patients, approximately a third of the images are in skin of color. This representation of skin of color images is believed to be the most extensive of any print or electronic educational resource.

Additionally, the platform offers differential diagnosis support to help physicians arrive at an accurate diagnosis, if needed. This support has proven particularly useful for primary care physicians, who are estimated to see about 60 percent of all skin concerns treated in the clinic.

In addition to images, there is educational written content about skin diseases, including content that can be shared with patients digitally or via print-outs.

Most recently, VisualDx has launched Project IMPACT, which stands for Improving Medicine’s Power to Address Care and Treatment, with the goal to develop a global community of like-minded people focused on improving health equity in medicine. New England Journal of Medicine Group, Skin of Color Society, and other like-minded organizations have partnered with VisualDX in launching Project IMPACT.

The Project IMPACT website (www.visualdx.com/ProjectIMPACT), which will be continuously updated, provides a wealth of resources related to skin of color education. The website offers physician education (such as the spotlight series that highlights different conditions in skin of color) and a patient resources section.

To learn more and take the pledge to improve dermatologic care for people of color, visit visualdx.com/ProjectIMPACT.
Availability bias. Another form of bias similar to premature closure or representation bias is availability bias. Depending on the setting in which one practices, there are some dermatologists who will never encounter or treat certain rare skin diseases. But doctors still need to be aware of these and keep them in the differential diagnosis. Availability bias refers to the practice of depending on diagnoses that are readily available, i.e., more familiar, to the physician, at the exclusion of diagnoses that the physician is knowledgeable of but fails to consider.

“These and other biases have many downstream effects that range from decreased quality of life and increased disease burden to increased morbidity and mortality. Importantly, while we all as humans have biases, we also can become conscious of our unconscious biases,” Dr. Elbuluk says. “Healthcare professionals must make the effort to be aware of their unconscious biases in order to avoid acting on something without truly thinking about it.

“Improvements in medical education can help physicians identify these biases and, importantly, overcome them. This requires comprehensive changes, including multi-pronged approaches to expand the spectrum of what is considered representative.”

PATIENT BIASES

Bias is not limited to the physician and healthcare staff in the patient encounter. The patient may also have biases, including some form of those described above. A patient may not have a comprehensive medical education, but s/he does have access to Google. If the patient thinks s/he has psoriasis for example, s/he may research it in advance of the office visit. “If a patient with skin of color only sees images of psoriasis in light skin tones, s/he may conclude that the diagnosis does not fit. Thus, when the dermatologist renders a diagnosis of psoriasis with an appropriate treatment plan, the patient may be skeptical and be less likely to adhere to the prescribed regimen,” Dr. Elbuluk suggests.

Patient reliance on “Dr. Google” is a growing phenomenon in medical care and something all health care providers must be prepared to address. Physicians who simply dismiss patients’ questions and concerns will likely find that their patient interactions suffer as a consequence. In reality, in today’s digital age, dermatologists should assume patients have done or will do online research about their skin disease, even if they do not mention this research in the clinical encounter.

Rather than ignore the patient’s research, it is generally best to provide a thoughtful, fact-based response. “When it comes to lack of representative imagery, it may be a simple matter of assuring the patient that yes, what they found on the internet is an accurate representation of how psoriasis may look in some patients. But, you can explain, that does not account for variation in presentation across skin tones. Having ready access to images of the disease in a skin tone that more closely matches the patient’s tone can be reassuring and help build trust,” Dr. Elbuluk offers.

“We can connect with patients in a very powerful way when we show them what their disease looks like, and we show it to them in someone who looks like them. I use VisualDx in my clinic settings to show patients representative images of skin diseases,” she says. (See the sidebar for more about the company and Dr. Elbuluk’s role.) “This produces a sense of confidence and relief that the diagnosis I provide is accurate. Patients realize, ‘I’m not the only one who has this. I’m seeing an image from my doctor of what this looks like in someone with my skin color.’”

BUILDING RELATIONSHIPS

“Each of us has biases, and an important first step is to acknowledge what those are and be introspective about how we can address them for the betterment of ourselves and those that we interact with, particularly our patients. Confronting biases is an ongoing action on our parts,” Dr. Elbuluk says. She encourages physicians to identify and use tools to support them in expanding knowledge and improving patient care.

“When we provide the best care for patients, when we interact with each patient as an individual and come to the encounter with fresh eyes and a desire for understanding, we can develop trust that is essential to a long-term relationship. Patients who trust their doctor return to the doctor and adhere to the regimens provided leading to better patient outcomes,” she suggests.

“New technologies can help us to confront biases and improve patient care to arrive at an accurate diagnosis, establish an appropriate treatment plan, and encourage long-term adherence.”