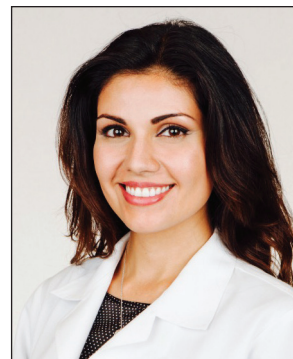


Cognitive Biases in Dermatology Training

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Cognitive biases are patterns that physicians develop based on predetermined judgments that can influence their decisions regarding patient care. Unfortunately, they are usually encountered on a daily basis in clinics. A few examples include affective, anchoring, availability, confirmation, zebra, and Sutton's biases.

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As young physicians, we are taught to be as objective as possible when evaluating a patient; however, cognitive biases are regularly encountered in day-to-day patient experiences and can unfortunately influence our clinical decision-making skills to be subpar.

Consider the following case: An overweight 74-year-old man with diabetes mellitus and a non-healing ulceration on the left lower extremity presented to the emergency department for repeat evaluation. He previously had been treated by an outside dermatologist for stasis dermatitis and was being managed with compression, elevation, and lubrication of both lower extremities. Often, the initial reaction is to conclude that the patient does in fact have an ulceration associated with stasis dermatitis and changing the management strategy or performing a biopsy would not change the outcome. However, this response limits the potential to provide the patient with a thorough examination. If the patient is treated with the same management strategies that previously failed rather than delving into all the causes for nonhealing ulceration

on the left lower extremity, a vital diagnosis could be missed. In this scenario, when the patient was ultimately biopsied, the diagnosis was an ulcerative squamous cell carcinoma.

These subconscious predetermined decisions regarding difficult patient encounters come from the physician's heuristics, a process of decision-making wherein a snap judgment about a patient occurs because it is similar to prior patient encounters or a set of views from prior knowledge of the disease.^{1,2}

A recent article by Cohen and Burgin³ elucidated a set of cognitive biases that often are encountered in dermatology practices, including affective, anchoring, availability, and confirmation biases; zebra retreat; and Sutton's slip.

Affective Bias

Affective bias is a process in which emotions regarding a patient interaction alter the objective perspective and reasoning of a patient. For example, consider the case of a pemphigus vulgaris patient who does not want to be on prednisone due to weight gain and persistently presents to the dermatology clinic insisting that the physician taper the dosage. To avoid the constant frustration and upsetting the patient further, the dermatologist tapers the dosage of prednisone prematurely and the patient has a flare.

Anchoring Bias

Anchoring bias occurs when initial information regarding a patient causes one to jump to a conclusion rather than developing a thorough history. An example may be if an infant presents with a mole on the nasal dorsum that the patient's father reports has only been present for a short while. Without performing imaging studies or asking for further history, the physician decides to biopsy the lesion. The biopsy results show a neural mass, such that a nasal glioma cannot be ruled out. In this bias, magnetic

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resonance imaging would have been prudent prior to biopsy and premature action.

Availability Bias

Availability bias refers to a diagnosis that immediately comes to mind, as it is common or recently encountered, such as in the example presented at the beginning of this column about the patient with squamous cell carcinoma.

Confirmation Bias

Confirmation bias caters to elucidating information that confirms your own clinical suspicion as opposed to determining the true cause of the disease etiology. Consider the following example: An obese patient presents with a history of painful sores on the bilateral lower extremities. The physician asks specifically about diabetes mellitus and mobility. When the patient answers yes to poor mobility and diabetes mellitus, the physician asks questions confirming an initial suspected diagnosis of stasis dermatitis. Unfortunately, as the patient continues to get worse, it is revealed that his medication history indicates he has been taking sulfasalazine for several years, and it is eventually determined that the patient has cutaneous Crohn disease.

Zebra Retreat

This bias describes a physician's unwillingness to consider a diagnosis because it is very obscure, even if it is correct. For example, the case of the patient described in the previous example with a diagnosis of cutaneous Crohn disease also can be considered as an example of zebra retreat. Because the clinician may rarely think of this diagnosis due to its infrequent presentation, he/she may not consider doing a biopsy or investigate further.

Sutton's Slip

This bias describes a situation in which a physician disregards a problem because a thorough examination is not performed, which is classically noted when physicians treat their family and friends. If asked about a mole or lesion regarding its questionable nature, a dermatologist may either disregard it or not evaluate it carefully, as the person is in a casual setting.

Final Thoughts

Although there are several other types of cognitive biases, those described here show that on several occasions, dermatologists can be swayed toward an incorrect diagnosis simply because of a subconscious thought process. Often times, such as in multiple-choice examinations, initial guesses are usually the best answers, but care has to be taken when in a clinical setting. Our patients rarely are good historians and do not present in well-written question stems. The biases emphasize that dermatologists in training should keep their minds open, focus on getting a clear and concise history, and use their knowledge as a tool to derive a well thought-out answer.

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