Cognitive bias in healthcare: Impacts on diagnosis and patient care.

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Introduction

The healthcare system relies on clinicians to make timely and accurate decisions. However, human cognition is inherently prone to bias. Cognitive biases—systematic patterns of deviation from norm or rationality in judgment—are especially dangerous in medical contexts, where decisions can directly affect human lives. From diagnostic overshadowing to confirmation bias, these mental shortcuts can lead even the most experienced professionals astray [1].

Clinicians may fixate on the initial information or symptoms presented and fail to adjust their diagnosis when new data becomes available. For example, anchoring on a patient's first-reported symptom may prevent the clinician from considering alternative diagnoses [2].

This bias involves favoring information that confirms a preconceived belief or hypothesis while disregarding contradictory data. A doctor may diagnose a common illness and ignore evidence that suggests a rare but serious condition.Medical professionals may judge the probability of a diagnosis based on how easily they recall similar cases. If a clinician recently treated a case of viral fever, they might incorrectly apply the same diagnosis to the next patient with similar symptoms [3].

Physicians may overestimate their diagnostic ability, leading to premature closure of differential diagnosis or refusal to seek second opinions.Once a diagnosis is recorded, subsequent providers may accept it without further scrutiny, allowing an error to propagate through the treatment chain.Cognitive bias is a key contributor to diagnostic errors—accounting for an estimated 75% of all such errors according to some studies. These biases distort the clinical reasoning process and can result [4].

Time-sensitive illnesses such as cancer or sepsis may not be diagnosed quickly enough due to reliance on an initial, incorrect hypothesis.When bias skews diagnosis, treatment plans can become either overly aggressive or insufficient, both of which compromise patient care [5].

Consistent misdiagnosis or lack of listening due to cognitive bias can erode trust between patient and provider, impacting adherence to treatment.Beyond diagnosis, cognitive biases affect overall patient management, communication, and outcomes. Biases can lead to

Clinicians may dismiss or minimize symptoms based on biases related to gender, race, or socioeconomic background, leading to disparities in care. Stereotyping or assuming based on non-clinical factors (e.g., assuming drug-seeking behavior in certain demographics) can cause harm and widen health disparities [6].

When patients feel unheard or misjudged, satisfaction and compliance with medical advice decline, reducing treatmenteffectiveness.Educating healthcare professionals about common biases and training them to recognize and counteract these in real time can improve clinical reasoning [7].

Standardized checklists and AI-based support tools can assist clinicians in evaluating a broader range of differential diagnoses.Encouraging clinicians to engage in reflective thinking—stepping back to question their assumptions and review alternatives—can prevent premature diagnostic closure [9].

Collaborative diagnostics involving multi-disciplinary teams can reduce individual cognitive errors through diverse perspectives andshared scrutiny.Promoting a culture where seeking second opinions is encouraged rather than stigmatized helps ensure more accurate diagnoses [10].

Conclusion

Cognitive bias is an invisible yet pervasive force in clinical settings that affects diagnosis, treatment, and patient relationships. With proper awareness, training, and systemic support, healthcare providers can mitigate the negative effects of cognitive biases. Integrating evidence-based decision-making tools and promoting a culture of continuous learning and reflection are essential to delivering safer, more effective patient care. In a field where the margin for error is minimal, addressing cognitive bias is not just a cognitive concern—it is a moral imperative.

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