Cognitive Bias in Clinical Decision-Making

Identify and Counteract your Inner Manipulator

Disclosure

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Objectives

By the end of this workshop, attendees should be able to:

1. Describe the concept of cognitive bias.
2. Define 2 types of cognitive bias.
3. Reflect on how personal cognitive bias can impact clinical decisions and may lead to diagnostic errors.
4. Apply curricular strategies to teach yourself and your learners how to recognize and overcome cognitive bias.

Agenda

I. Cognitive Bias introduction and theory
II. Effect of Cognitive Bias on clinical decision making and Diagnostic Error
III. Small Group Activity: Identifying Bias
IV. Introduction to Cognitive Debiasing Strategies and Toolkit
V. Small group Activity: Applying the Toolkit
VI. Wrap Up and Questions
Cognitive Bias

**Personal Experiences** become “hard wired” into the way our brain functions.

The **brain looks for the simplest** way to decision making, using associations:
- The brain as a **prediction machine**
- Seeks the **simplest path** to a conclusion.
What We See......

Fun

Exciting

Exhilarating

YEEP-EEEEEE!!

Steel
Nuts & Bolts
Curved Design
Bright Paint
Tracks

Scary

Nauseating

Dangerous

GET ME OUT!

Data Gathering

Knowledge

Experiences
Memory

Information
Processing

Verification
“...the delivery of health care has proceeded for decades with a blind spot; Diagnostic errors- inaccurate or delayed diagnosis- persist throughout all settings of care and continue to harm an unacceptable number of patients.”

How often would you estimate the diagnostic error rate to be in your own practice?

A. 10% or more (weekly)
B. 1% (monthly)
C. Almost Never
ETIOLOGY OF DIAGNOSTIC ERROR

- Cognitive Error Only: 28%
- Systems Error Only: 19%
- No Fault Error Only: 7%
- Both System and Cognitive Error: 46%
Cognitive Biases and Diagnostic Errors
Diagnostic Error

Estimated rate of 10-15%
Higher in fields that rely on data gathering and synthesis vs visual interpretation
System errors
No-fault errors

COGNITIVIE ERRORS
- Failed heuristics
- Cognitive biases
- Not usually a lack of knowledge but a problem in thinking

Cognitive Biases Lead to Cognitive Errors

Bias has a negative connotation
We all have them and must accept that we do
“Cognitive Dispositions to Respond”
“Predictable deviations from rationality”
Dual Process Theory: A Model for Diagnostic Reasoning

- Context: Ambient conditions, Task difficulty, Task ambiguity, Affective state, Modular responsibility

- Type 1 Processes:
  - Pattern recognition
  - Racial exercise
  - Dysinesthesia

- Type 2 Processes:
  - Intellectual ability
  - Education
  - Training
  - Critical thinking
  - Logical competence
  - Rationality
  - Feedback

- Type 1 Processes:
  - Hard-Wired Processes
  - Emotional Processes
  - Over-Learned Processes
  - Implicitly Learned Processes

- Calibration → Diagnosis
Risky Situations → Biases

Was this patient handed off to me?
Was the diagnosis suggested to me by a colleague?
Did I accept the first diagnosis that came to mind?
Did I consider other organ systems besides the obvious one?
Is this a patient I don’t like, or like too much, for some reason?
Am I feeling fatigued?
Am I cognitively overloaded or overextended?
Am I stereotyping this patient?
Have I effectively ruled out must-not-miss diagnoses?

Small Group Activity #1

- Select case from your folder
- First read it individually
- Using “List of Cognitive Bias/Heuristics” identify heuristics applied in case
- Personal reflection and small group share
Mitigating Cognitive Bias: What’s In Your Toolkit?

How do we overcome cognitive bias?

1. **Familiarize** yourself and be **Aware** of heuristics
2. Be **Conscious** of the decisions you make
3. Prompt yourself and your learners to **Reflect**
4. **Slow down** and be deliberate
5. When a diagnostic error is made, be **Open to learn and reflect**
5. Check out our **TOOLKIT!**
Tools to overcome cognitive bias

High-reliability professions:
- Airlines
- Submarines
- Nuclear Plant Operators
- Medicine (CLABSI)

High-reliability professions:
- Operating Room Procedures
  \textit{Our thoughts should be just as important!}

Great ways to get learners engaged in thinking about diagnostic error and cognitive bias

Even in a time crunch, \textit{one simple question} and forcing yourself to \textit{pause and reflect} can be life saving

The Toolkit

- General Diagnostic Error “Time out” Checklist
- Modified Graber Checklist (SAFER)
- Trowbridge’s Twelve Tips
- How Do Doctor’s Think Pocket Card
- Clinical Excellence Commission’s Take 2- Think, Do: \textbf{Red Team, Blue Team} Challenge
- The Power of the Simple Questions
- Resources inventory
Small Group 2 Activity #2

Using the same case you reviewed in activity 1:

- Apply assigned tool to mitigate your cognitive bias
- After using the tool, reflect on how this changed your thinking
- Be ready to share with large group

Time: 10 minutes

So... what are YOU going to do?

- **Understand** and **Recognize** Cognitive Bias

- Be **open** and **aware** to its effects on clinical decision making

- **Slow down.** Take a moment to **Pause** and **Reflect**.

- When in Doubt, **check it out**....

- **Share** your toolkit with colleagues and learners!
PAUSE... REFLECT...
ANY QUESTIONS?

Resources

Croskerry P. The importance of cognitive errors in diagnosis and strategies to minimize them. Acad Med 2003;78: 775-780.