

# Topic 2: Cognitive Biases 2

Prof. Dr. Chew Keng Sheng  
Faculty of Medicine and Health Sciences,  
Universiti Malaysia Sarawak

# Classification of Cognitive Biases

## Classification (Campbell et al, 2007)

1. Over attachment to a particular diagnosis
2. Failure to consider another diagnoses
3. Inheriting someone else's thinking
4. Errors in prevalence perception or estimation
5. Errors contributed by patient characteristics or presentation context
6. Physician affect or personality
7. Impact of environmental factor

# Errors in prevalence perception or estimation

Availability bias

Gambler's fallacy

Posterior probability bias

# Availability bias

- Availability bias – this refers to our tendency to judge things as being more likely, or frequently occurring, if they readily come to mind.
- Therefore, a recent experience with a particular disease, for example, thoracic aortic dissection may inflate likelihood of a clinician to diagnose a patient with this disease every time when the clinician sees a case of chest discomfort.

# Gambler's fallacy

- The concept of this bias is borrowed from the gambling situation where if a coin is tossed ten times, and for every case of the toss, head is shown.
- A person with gambler's fallacy will say that if the coin is tossed for the 11th time, there must be a greater chance of being tail.

# Gambler's fallacy

- The coin actually has no memory and has a 50-50 chance of showing tail in each toss, which is independent of the previous outcomes.
- Example: a clinician see five cases of shortness of breath (SOB) in the course of a shift; in each case, the patient turns out to be having pneumonia. When the 6<sup>th</sup> patient with SOB comes....

# Posterior probability error

- The opposite of gambler's fallacy.
- In this, if a clinician sees five patients with shortness of breath (SOB) in the course of a working shift, which turn out to be pneumonia in every cases; when the 6th patient with SOB arrives, the tendency is to believe that this patient must be having pneumonia as well.

# Errors contributed by patient characteristics or presentation context

Fundamental attribution errors



# Fundamental Attribution Error

- Refers to the tendency to attribute the blame for a circumstance or event to the patient's personal qualities rather than the surrounding situation
- Social judgment, hold people responsible for their own behavior
- HIV patient with pneumocystis carinii as a result of his lifestyle than the disease process

# The Patients We “Dread” Seeing

- Groves (1978) listed four stereotypical behaviors of the “hateful” patients whom many physicians dread:
- The dependent clingers
- The entitled demanders
- The manipulative help-rejecters
- The self-destructive deniers

# Physician affect or personality

Sunk cost fallacy

Ego bias

Blind spot bias

Over-confidence bias

# Sunk-cost fallacy

- Refers to the phenomenon where the more a clinician invest in a particular diagnosis, the less likely he/she is to release it and consider alternatives. Common in financial investment.
- In clinical setting, the time, mental energy, the ego may prove to be too costly to let go.
- Confirmation bias maybe an associated manifestation of such unwillingness to let go of a failing diagnosis.

# Ego bias

- This refers to our tendency of overestimating the prognosis of one's own patients compared to that of a population of similar patients under the care of other physicians.

# Blind spot bias

- This refers to the bias that many people have where they believe that they are less susceptible to errors compared to others. This has some similarities with ego bias.