Psychiatry

Medicine of the Mind
Mind vs Brain
Physical vs Mental Illness
Bio-psychosocial Model

Biology
Psychology
Social

Which is more important and which gets priority in management as well as diagnosis?
Experts and expertise

- 10000 hours of training required no matter what area of expertise
- Medical experts have the knowledge and logical design
Psychiatric Diagnosis

- Doctor-patient interaction and what the patient and informants tell the doctor
- Psychiatric diagnosis is interpretive
- How do we reach these decisions?
Scientific reason

...is stable physical phenomena which can be known through invariant laws and need to be differentiated from practical reasoning.
Cause and Effect

- Doctors look for cause and effect whereas patients look for effect and cause
  - Montgomery (2006)

- Is it any different from EMs and disease/illness perceptions?
Clinical Errors

- Clinical errors in malpractice suits in the USA related to wrong diagnosis and resulting inappropriate management
- Related to risk to the self and to others
- Personality, emotional, cognitive, and philosophical factors are all part of the decision making process Burstein et al (1994)
Clinical Errors

- Misdiagnosis remains around 10%
- Common missed diagnosis are Pulmonary embolism 7%, MI 12%, Neoplasms 12% and Infections 11% (Wilhelm and Shaffic 1996)
- False negatives in 24, 30, 22, 34% respectively
Clinical Errors

- 181 cases out of 429 alleged claims missed diagnosis - remains around 10%
- 56% cancer diagnosis missed commonest for breast cancer
- 36% errors due to cognitive bias, 16 % due to memory and 9% due to lack of vigilance

Cognitive Errors

- Manifested by fallacy in triggering one or more hypotheses, developing a cognitive representation, gathering and processing information and verification

- Cognitive errors due to faulty triggers, faulty context and problems in information gathering and faulty verification
Clinical Reasoning

- Steps: triggering one or more hypotheses
- Developing a cognitive representation
- Gathering and processing information
- Verification
Cognitive Diagnostic Errors

- Faulty triggering
- Faulty context formulation
- Faulty information gathering and processing
- Faulty estimation
- Faulty interpretation
- Faulty causal model
- Over-reliance on clinical axiom
Clinical decisions

- Personality, intuition, expertise, experience, personal style, reports by patients and informants, and professional literature all need to be explored (Gibbs and Gambini 1999)
Critical thinking

...is purposeful thinking with clear, precise, specific, accurate, relevant, consistent, logical, deep, complete, significant, adequate and fair characteristics.
Thinking and Deciding

☐ What is thinking? Affects our plans and goals and decisions---------the kind of thinking we would all want to do, if we were aware of our own best interests in order to achieving our goals (Baron 2008)

☐ Thinking about decisions, beliefs and goals
Thinking and Deciding

- Deciding is choice of action - of what to do and not do
- Decisions depend upon beliefs and goals
- Beliefs - how strongly we believe and which of parallel beliefs we follow
Decision making

- Proximal: Family, job, housing, educational and socio-economic status
- Distal: Kinship, social and cultural Factors
Decision Making (HBR 2001)

- Classifying the problem
- Defining the problem
- Specifying the answer to the problem
- Deciding what is ‘right’ not what is acceptable
- Building the action into decision
- Testing validity and effectiveness
Definition of Decision Making

- What is this about?
- What is pertinent here?
- What is the key to the situation?
Instinct

- That vague feeling of knowing something without knowing exactly how or why often described as professional judgement, intuition, gut instinct, inner voice or hunch
What is this gut instinct?

- Uncanny ability to detect patterns, perhaps subconsciously that other people either overlook or mistake for random noise
- Well-honed instincts with logical thinking
What is this gut instinct?

- Mind continuously processes information that we are unaware of…’aha’ response
- Conscious mind learns something that subconscious mind has always known
- Left brain-right brain (conscious rational, logical vs subconscious, intuitive and emotional)
Deliberation

- Unconscious thought theory detects recurring patterns
- Conscious thought is rule based and very precise
Decision Making

- Decision making is far from a cold, analytic process. Our emotions and feelings play a crucial role but these have to be balanced.
- Experts see patterns that elicit from memory the things they know about such situations.
Decision Making

- Truly inspired decisions seem to require an even more sophisticated mechanism called cross-indexing which in this context is the ability to see similar patterns in disparate fields.
- Danger is that we may ‘overfit’ data.
Biases in decision making

- Other biasing factors in psychiatric decision making are premature closure, rigid beliefs, technology used, status, power, differences between clinician and patients (Gambill 2006)
Clinical decisions

- Conversion of unconscious judgements into clinical decision making and making sense require reasoning and can be explored by repeated questioning and looking to arrive at right decision with right questions. Reasoning uses causal explanation (Scriven1976)
The way we think

- affects the way we plan our lives
  thinking about decisions, thinking about beliefs and thinking about goals
Cognitive Errors

- Cognitive errors influence decision making which is determined by how information is framed. Newell et al. (2007)
Errors and types

- Three types of errors: skills based slips, rule based mistakes, and knowledge based mistakes

Reason(1990)
Clinical reasoning

- Two options in clinical decision making: problem solving and judgement application
- Hypotheses generation—generally 4-5 generated, rarely more than 7. Elstein and Bordage (1988)
Experts

- Experts make best decisions when they use detection, recognition, qualitative analysis and monitoring (Ericcson et al 2006)
- Rational choices strategy and pattern recognition (Soelberg 1967)
- Cognitive dissonance (Yates et al 2003)
Patients

- In giving history patients make errors because of mistakes in comprehension, recall, evaluation and expression.
- All these will affect decision making and also the way the clinician frames questions
Hypothesis Evaluation

- Bayesian theory: How people should evaluate hypotheses and conceptual framework within which the evaluation takes place.
Bayes Theorem

- How to identify data sources that are most useful for discriminating between competing hypotheses
- Assess implications of observed datum vs competing hypotheses
Bayes Theorem

- Aggregate implications of different data into relative likelihood of those hypotheses being correct
- Use that appraisal to select the course of action
Probability Theory

- Knowledge is represented in terms of statements and subjective probability versus one’s confidence in its truth
- Updating
- Likelihood ratio
- Action
Hypotheses

- Hypotheses must be created in order to be evaluated
- One’s beliefs must be translated into subjective probabilities of the form appearing in the model
Dual Process theory

- Two underlying cognitive processes for clinical reasoning: analytical and intuitive, both affected by surrounding factors.
- Pattern recognition will determine intuitive and automatic decision will prevail otherwise pattern 2: analytical and effortful.
Aims

- Aim of the study was to explore in depth how psychiatrists make decisions

Method

- Purposive sampling of psychiatrists of various nationalities, gender, ages, experience
- Basic demographics collected
- Ethical approval
- Interviews lasting 30-90 minutes
- Transcribed verbatim and analysed
Method

- Asked to describe most recent difficult case they had seen and why and how they reached decisions in making diagnosis and planning management and what was the decision

- Compare this with the last expensive purchase they made eg house, car
Method

- A 5 stage process of analysing was used: familiarising, thematic framework, indexing, charting and mapping and interpretation by a trained anthropologist
Method

- 4 themes determined the framework:
  - overall approach to psychiatric practice,
  - perceptions of clinical and management decision making,
  - perceptions of difficult clinical and management decision making
  - difference between novices and experts
Results

- Seven themes emerged: information gathering; training in psychiatry; intuition and experience; evidence-based practice (EBP); cognitive reasoning; uncontrollable factors and the multi-disciplinary team.
Information gathering

- Not systematic
- Accurate and detailed history
- Sifting out and confirming
- Investigations- not routine
- Medical notes
- Other sources
Training in psychiatry

- Influenced by their own training
- Medical and bio-psychosocial models
- Distinction between theory, experience and actuality
- Mentors’ and teachers’ models
Clinical intuition

- Risk assessment and management—see what is expected
- Intuition combined with experience
- Patient variation
- Experts versus novices
Evidence Based Practice

- Risk
- Uncertainty and Guidelines
- Patient variation
- Combined with intuition
- Limitations of EBP
Cognitive Reasoning

- Hypotheses testing
- Trial and error
- Heuristic value of what is said
Uncontrollable Factors

- Risk assessment
- Social pressures on the patient and the clinician
- Institutional factors and requirements: cost and time
- Accessibility and availability
Multi-disciplinary teams

- Expertise
- Risk management
- Uncertainty
- Conflict
Decision Making

- Complex combination of experience and intuition, training and evidence
- Decisions were heavily influenced by the psychiatrists’ level of experience as well as uncontrollable factors such as time pressures, cost and availability and accessibility of resources.
Decision Making

- Decisions were dependent on the level of risk and uncertainty.
- Such external pressures and uncontrollable factors are known sources of error and bias in the decision making process.
Issues

- Small size
- Personal choices
- Time pressures
- Cost availability
- Experts more likely to rely on intuition
Conclusions

- Differences between novices and experts
- Clinical experience makes a major difference
- Uncertainty
- Risk
Thank you for your attention