Improving Decision Making and Cognitive Bias Using Innovative Approaches to Simulated Scenario and Debrief Design

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Complete List of Authors:	Jabur, Zaina; South London and Maudsley NHS Foundation Trust, Maudsley Simulation Lavelle, Mary Attoe, Chris
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Improving Decision Making and Cognitive Bias Using Innovative Approaches to Simulated Scenario and Debrief Design

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Zaina Jabur, MD, MPH, MBA[1]

Mary Lavelle, PhD[2]

Chris Attoe, BSc[1]

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Corresponding Author: Zaina Jabur, MD, MPH, MBA, South London and Maudsley Simulation Department, 108 Landor Road, Reay House, London SW9 9NT, E-mail: zainab.jabur@kcl.ac.uk

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[1] South London and Maudsley NHS Trust, London, UK

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[2] Patient Safety at the Patient Safety and Translational Research Centre, Imperial College NHS Trust, London, UK

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"The simplest approach to improving doctors' decision-making is to educate them about the existence of the biases…" (Bornstein & Emler, 2001).[1]

BACKGROUND

Over the last 20 years, healthcare systems globally have reduced the number of acute inpatient psychiatry beds, diverting resources to community-based teams. This has led to an increased number of patients from all specialities presenting to the Emergency Department. The Economist Intelligence Unit has projected a global trend of decreases in the number of hospital beds per 1,000 population until 2019, despite growing demand from growing and aging populations as well as the need for community- and home-care beds.[2]

This trend is especially noted in mental health. Since 2013, most UK mental health trusts have regularly experienced a lack of inpatient bed availability, with these problems have been widely described and addressed in national policy and guidance.[3]

When patients are in crisis, they are assessed by multidisciplinary mental health teams. Mental health professionals must balance the potential costs and benefits of several courses of action. These decisions and their consequences are complex, having significant implications for individuals, families, professionals and healthcare systems.

However, clinicians appear not to use the same process to make decisions or agree on treatment options. Clinicians tend to focus on finding the *right* decision rather than understanding the decision-making process that influences actions. Many different factors, including bias, contribute to variability in clinical decision-making, with some clinical presentations managed more consistently than others.[1]

To address this subjectivity and bias in practice, bring clinical practice in line with evidence-based guidelines, and improve clinical decision-making, a simulation course was developed and piloted. The cognitive processes and biases that underpin decision-making were the focus of the course, including scenarios and debriefing, rather than core clinical or technical information.

COURSE DEVELOPMENT

The course was developed for frontline staff in critical decision-making roles, from A&E, inpatient and community psychiatry settings. Scenarios were written by senior clinicians, drawing upon common clinical cases which were in the grey area, and challenging situations with no clear right or wrong answers.

Course development focused on the decision-making process, incorporating academic literature which stressed the importance of bias in decision-making.[4] The academic theory and educational approaches on cognitive biases were incorporated into the course introduction, scenario design, and debrief focus.

The course aimed to break down and examine the cognitive process of decision-making, exploring the biases and assumptions that impact clinical practice. Following an introduction to the rational decision-making cycle and an explanation of cognitive bias, the course followed three clinical cases over six simulated scenarios.

Each case began with a scenario with participants asked to take a targeted history and risk assessment, followed by a group debrief and voting on whether to admit or discharge from hospital. The second simulation followed the patient in the treatment setting (inpatient or community follow-up) voted on by the group and showed potential consequences of decisions.

Three scenarios of increasing complexity

- A 24-year-old male graduate student with no prior psychiatric history brought to A&E by concerned family for bizarre behaviour for several weeks following a school trip to Tibet.
- A 29-year-old female with a well-known psychiatric history of Borderline Personality Disorder (BPD) self-presented to A&E for the third time in a week, having superficially stabbed herself while calling an ambulance. Social stressors include housing and care coordinator on maternity leave.
- A 35-year-old stay at home mother of a six-year-old, three-year-old and two-month-old with prior history of post-partum psychosis, previously responsive to medication, now increasingly psychotic, with limited insight and support at home.

None of the scenarios or information are based on any actual patients.

Debrief

The debrief discussion models group decision-making process in practice and follows the decision-making cycle, starting with fact gathering and differentiating those from personal impressions, followed by brainstorming around treatment decisions, then exploring pros and cons to potential decisions (Figure 1). Learners are provided a ballot on which they are asked about thoughts at various points in the scenario as well as their decision to admit or discharge before and after the discussion. The ballot questions probe learners to reflect on what factors potentially influenced their decisions (Figure 1).

Unpicking differences between clinician's feelings, assumptions and projections, and differentiating those from facts, allows participants to understand all the personal factors, including biases, that are affecting their decisions and clinical actions. In some of the debriefs, a debate model is set up, with participants asked to make a case for the decision that is counter to their inclination, forcing them to look at the pros and cons of an alternate decision to that which they automatically favoured. The facilitator is intentionally provocative, playing devil's advocate, using direct questioning, drilling down to help people identify contradictions. The facilitator challenges participants to differentiate between facts and opinions, requiring that participants provide evidence for statements made. This is designed to help participants realize how often they make assumptions, snap judgments, at an unconscious level, often making decisions without realizing it, and how then the premade decisions lead their history taking with patients, and not vice versa.

The framework is also related back to documentation, helping to ensure that documentation supports clinically sound and rational decisions with clear due diligence.

Figure 1. Process of Decision-Making & Ballot Used in Debrief

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COURSE DELIVERY FINDINGS

The course was piloted four times, with 33 participants: 14 trainee psychiatrists; 15 mental health nurses; 4 social workers.

Facilitator observations

Tasks assigned in the simulations were frequently not followed, and rather impressions (or biases) influenced the approach taken with the patients, e.g. for the patient with BPD, after scenario pre-briefing, participants often began the scenario with discharge planning rather than an assessment.

Participants often appeared to have made decisions regarding risk and treatment before the scenarios began, although they were unaware of this. This aligns with participants not following the task, due to making treatment decisions when presenting issues and background histories were given, and then discussing treatment plans rather than gathering history. When this was highlighted during debrief, participants were able to recognise how biases and preconceptions caused them to shortcut the full process and miss potentially important information that would impact clinical care and risk management.

Clinical decisions in the different scenarios varied widely. There was no inter-patient consistency with treatment decisions for similar objective symptomatology and risk state, with decisions apparently more closely linked to perceptions about patient, i.e. bias. There were large shifts in clinical decisions from pre to post debrief discussion, indicating the influence of others in group decision-making and the impact of open discussions around cases and the decision-making processes.

DISCUSSION

The course feedback has been very positive thus far with extremely positive word of mouth, feedback and ongoing demand. Participants lauded having the opportunity for a forum to explore and examine their personal biases, while being able to see, for the first time, the consequences of clinician decisions to patient care. We are analysing the outcomes observed in the course, examining factors that accounted for differences in clinical practice.

The course is, timely, topical and highly relevant to clinicians. There is a great potential for further development of this course, including a more advanced level for more senior clinicians such as senior consultants and on call bed managers. In addition, we hope to be able to adapt the course to other clinical specialties in medicine as well as potentially branching it out to non-medical fields, such as business, law, other areas if academia, where similar factors seem to be at play.

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Contributorship Statement:

All authors contributed to the preparation and editing of the manuscript.

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Figure 1: Process of Decision Making & Ballot used in debrief
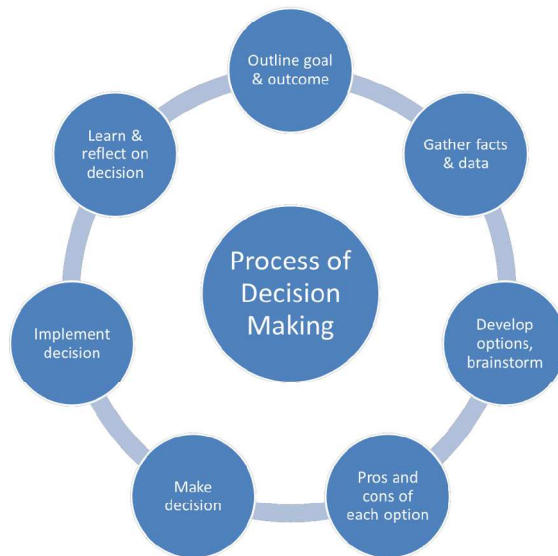
Decision Making Ballot

Patient: Scenario number:

1.   What are you initial thoughts before the interview?

2.   a) Pre discussion clinical decision (please circle):   Admit / Home

2.   b) What did you base your decision on? (please be specific)

2.   c) When did you make your decision?

3.   a) Post discussion clinical decision (please circle):   Admit / Home

3.   b) If your decision changed, why? (what specific factors contributed)

3.   c) If your decision did not change, why not? (what specific factors contributed)

Figure 1: Process of Decision Making & Ballot used in debrief

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