

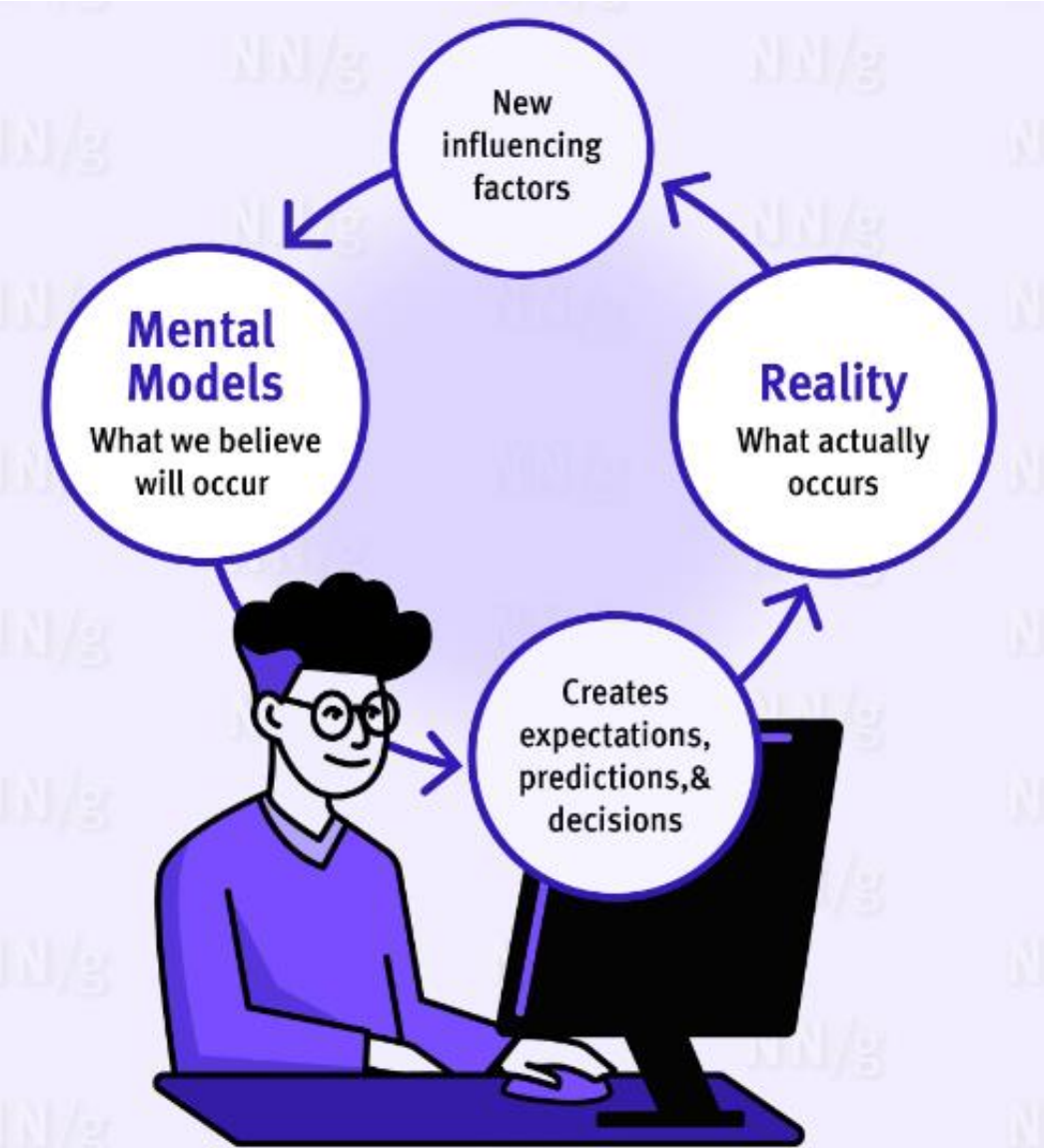
Mental models of anesthesiologists and surgeons in the operating room. A qualitative study.

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Background

Mental models help understand the complex structure of cognitive systems by embodying internalized knowledge of theories, principles, and procedures. Aligning individual mental models in medical relationships fosters teamwork, patient safety, and professional well-being. Effective communication between anesthesiologists and surgeons in the operating room (OR) is crucial for patient safety and a positive working relationship. Our study aims to summarize and raise awareness about the mental models of these professionals for better collaboration in the operating room.

Definition: A mental model is an internal representation of external reality: that is, a way of representing reality within one’s mind. Such models are hypothesizing to play a major role in cognition, reasoning and decision-making.



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Methodology

- Qualitative approach by investigation of mental models and interactions between anesthesiologists and surgeons in the OR.
- Data collection by conducting 17 semi-structured interviews, of 9 anesthesiologists and 8 surgeons from 5 French University Hospitals centers during 2022-2023, allowed reaching thematic saturation.
- Thematic analysis and comparison of mental models was performed by one researcher from each speciality.

Participants	Anesthesiologists	Surgeons
Gender		
Men	6	6
Women	3	2
Clinical experience		
Less than 10years	4	4
10 years and more	4	5
Age Category (years)		
30-45	2	5
45-60	5	1
60 and more	2	2

Table : Participants’ characteristics.

Results

Common features represented the acknowledgement, for an effective collaboration, of the significance of :

- open dialogue,
- mutual trust, and
- specialized expertise

Notable differences highlighted divergences around :

- skill mastery perception,
- approaches to resident training, and
- perceptions of hierarchy in the OR.

The distinctive subsets of mental models between specialties outlined three main **sources of relational stress**:

- *patient - physician relationships history,*
- *hierarchical dynamics in the OR, and*
- *considerations of collateral advantages.*



Exploring Professional Objectives revealed distinct features of mental models: Few similarities and prominent differences

Anesthesiologists, prioritizing patient safety, aim to mitigate procedural complications and sustain vital function equilibrium.
“My goal (in the OR) as an anesthesiologist is that the patient survives the anesthetic. In anesthesia, I'm not going to improve his state of health, that's the surgeon who can do that most of the time.” (Anesthesiologist 5)

Surgeons, stated technical efficiency as their main professional objective striving for diminishing operative time. They also emphasized personal performance to lower post-surgical complication.
“By their very nature, surgeons operate and want to operate, so they tend to fill their operating schedule with more operations than they have time for.” (Anesthesiologist 9)

Trust, familiarity, and experiential synergy in time are fundamental components for shaping the ideal interdisciplinary collaboration between the actors in the OR.
“Working with them on a regular basis is crucial. It's essential not to have to work with a new partner every day.”(Surgeon 1)
“Be acutely aware that we are in the same boat, working together. It's a partnership based on the expertise of each part and on dialogue.” (Surgeon 7)



Conclusion:

Our study identified specific characteristics of mental models employed by anesthesiologists and surgeons in the OR. Shared characteristics clearly catalyze a positive relational dynamic highlighting the recognition, understanding, and integration of other's perspectives. Awareness of diverging characteristics is crucial as it allows fine-tuned, targeted relational adjustments with possible important consequences on patient safety and professional well-being.