

The relationship between Emotional Competencies and Situation Awareness during simulated emergency care: An exploratory study

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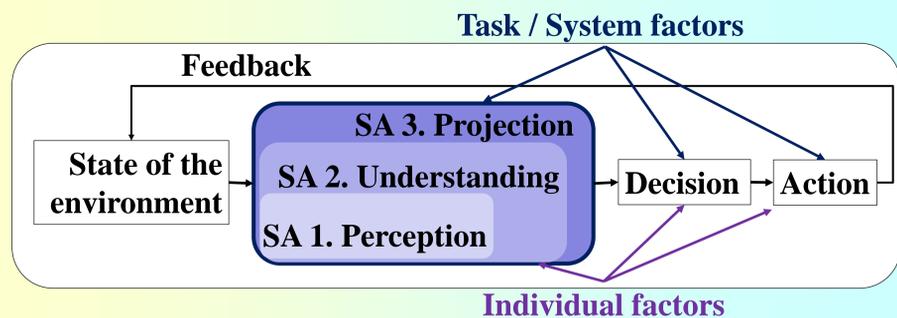
Introduction

Emergency care is a particularly stressful medical activity, since physicians are confronted with life-threatening situations in time-constrained environments where their decisions must be made as fast as possible (Bagnara, Parlange, and Tartaglia, 2010)

Moreover, Situation Awareness (SA) is a critical factor, as information about the patient's state is often unknown or uncertain

Even though some studies have highlighted the positive impact of physicians' emotional competencies (EC) on the quality of care (Bourgeon et al., 2015), the relationship between EC and SA remains unclear

Fig. 1 Model of Situation Awareness (ADAPTED FROM ENDSLEY, 1995)



Objective. To determine if EC may influence medical performance through SA processes.

Methods



Participants: 12 military resident physicians

Emergency care simulation:

- 1) Unconscious victim with respiratory distress => Controlled Mechanical Ventilatory Management
- 2) Sudden degradation of oxygen saturation due to respirator breakdown => Manual ventilation

Emotional Competencies: Score at the *Trait Emotional Intelligence Questionnaire (TEIQue)*

Medical performance: Time from respirator breakdown to manual ventilation

SA evaluation:

- SA level 1: Time from breakdown to awareness of oxygen desaturation
- SA level 2: Time from SA level 1 to awareness of respiratory distress
- SA level 2': Time from SA level 2 to awareness of respirator breakdown
- SA level 3: Time from SA level 2/2' to manual ventilation decision

Results

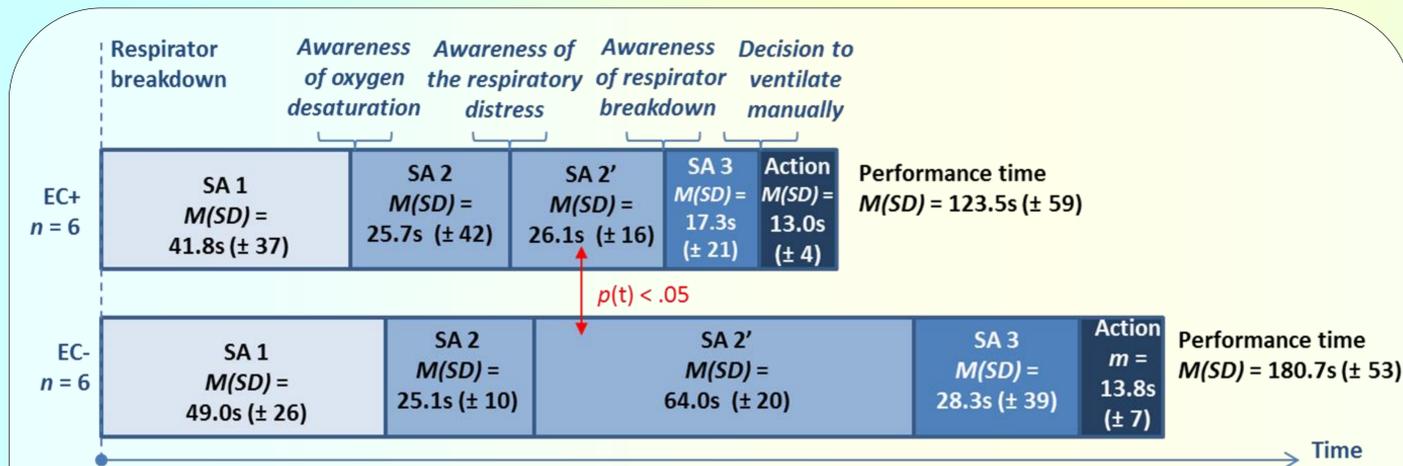


Fig. 2 Participants' medical performance and time to obtain each level of Situation Awareness according to their Emotional Competencies (Abbreviations: N, Number of Participants; M, Mean; SD, Standard Deviation; SA, Situational Awareness)

- On the whole, tendency of the EC+ group to perform better than the EC- group
- This effect was due primarily to a difference in the time needed for participants to understand that manual ventilation was required (SA2')
- Participants in the EC- group also took longer to anticipate patient risk during respirator breakdown

Discussion

The results of this exploratory study indicate that medical residents with low EC have difficulties developing Situation Awareness when faced with unexpected situations that involve a vital risk.

These difficulties seem to be related to difficulties with understanding the situation, which generates high anxiety (Bourgeon, et al., 2015). Moreover, subjects with low EC also seem to have difficulties anticipating which actions are required to address respirator breakdown, leading potentially to fatal consequences.

Conclusion

Despite the limitations of this exploratory study, these results show that the emotional dimension has to be integrated into decision-making models.

When facing high-risk situations, emotional competencies seem to facilitate Situation Awareness through faster understanding of the situation and anticipation of its evolution.

Hence, education and training in simulation settings must be favored even for emotional management training.

References

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Acknowledgements The authors thank the Direction Générale de l'Armement (DGA) for its financial support.