High-fidelity simulation and self-efficacy: An approach to understanding the value of simulation for training emergency medical teams

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INTRODUCTION

Self-efficacy is defined by Bandura as the "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997). In many situations, including medical emergencies, self-efficacy plays an important role in the realisation of appropriate behaviour (Maibach, 1996; Turner, 2009). Given the nature of the sources of self-efficacy - mastery experiences, vicarious experiences, social persuasions, physiological and emotional states - high-fidelity simulation could appear as a learning situation which may reinforce self-efficacy (Turner, 2007).

OBJECTIVE

Assess the impact of high-fidelity simulation on self-efficacy for the management of critical paediatric emergencies for pre-hospital medicalised emergency teams.

METHODOLOGY

Training program
- Implementation of training sessions using high-fidelity simulation.
- 24 simulation sessions were performed allowing Emergency Services staff to benefit from this program (n = 68)
- Each session, conducted by a Mobile Emergency and Resuscitation Unit (i.e. a paramedic, a nurse and a physician) consists of three simulated situations about paediatric emergencies (infant cardiac arrest, emergency intubation, septic shock)
- Each simulation was followed by a debriefing.

Assessment
- Use of self-efficacy scales specifically adapted to each profession
- Measurement of self-efficacy on a visual analogue scale (VAS)
- Assessment of self-efficacy before (pre test) and immediately after training (post test) followed by a final assessment 4 months later.

RESULTS

\[ \Delta \text{ (pre test - post test)} = 25 \text{ ; } p < 0.001 \]
\[ \Delta \text{ (pre test - 4 months later)} = 20.3 \text{ ; } p < 0.01 \]

CONCLUSION

This study is part of a social cognitive perspective which focuses on the psychological processes involved in determining behavior. In showing the increased self-efficacy, the results allow us to better understand the scope of simulation for training health professionals and some of the psychological mechanisms brought into play in this type of training. Future studies should focus on specific elements of high-fidelity simulation involved in the development of self-efficacy (Leigh, 2008), in order to optimise the construction of simulation sessions.