Effectiveness of simulation training on advanced life support algorithms in medical education

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Introduction

The use of simulation in education has been increasingly prevalent in recent years and medical education is no exception to this phenomenon. Hence, there is no doubt that simulation training in advanced life support algorithms has significantly improved the quality of care provided by doctors during actual cardiac arrest events.[1,2]

Aim

This study aimed to assess the effectiveness of the use of simulation scenarios for advanced life support (ALS) algorithms for postgraduate doctors. Effectiveness was measured in terms of the extent of familiarisation of algorithms (knowledge retention) and ability to apply the skills learned in early defibrillation and chest compressions in subsequent real practices.[2,3]

Methods

A total of 30 postgraduate doctors have attended ALS sessions from 1 April to 31 July 2021. Out of these 30, 15 have received simulation-based scenarios in ALS algorithms, while the remaining 15 underwent traditional lecture-based education. The survey questionnaires were created based on the student's perception of their level of confidence in applying algorithms in real-life practice.[3] This includes three main domains recorded in terms of familiarisations of ALS algorithms, early defibrillation, and cardiopulmonary resuscitation (Fig 1). A final survey was concluded upon knowledge retention and ability to apply skills acquired in real-life scenarios among two groups.

Results and discussion

Simulator-trained doctors showed significantly higher adherence to familiarisation of ALS algorithms (mean responses 90%) vs traditionally trained doctors (mean responses 44%). In terms of students' perception of the level of confidence in applying early defibrillation and cardiopulmonary resuscitation skills in real-life scenarios, participants in simulation training showed 94% of positive responses, while only 50% of the response was noted in the traditionally trained group.

A post-simulation training survey revealed that doctors were generally in favour of incorporating cardiopulmonary simulator training in ALS algorithms and early defibrillation with case-based scenarios.[2,3]

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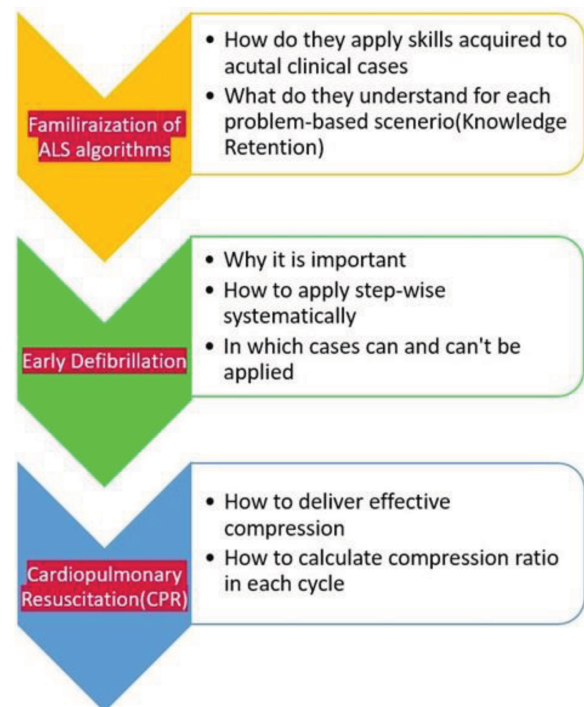

Fig 1. Effectiveness measures in three domains.

Conclusion

The role of simulation-based training in ALS algorithms is highly valued in postgraduate medical education, which helps acquire foundational skills in actual cardiac arrest situations.[1] Nevertheless, simulation aids the translation of pre-clinical knowledge into real-life clinical skills so that this should be implemented in the formal curriculum as an adjunct to traditional lecture-based training.[2] ■

References

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