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# Effect of simulation training on the practice of medical students

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# Effect of simulation training on the practice of medical students

## **Abstract**

One of the remaining challenges in simulation-based medical education (SBME) is to show that it has a positive impact on clinical outcome (1). We report an investigation of simulation teaching in medical students using self-reported measures of change in practice as a surrogate measure of clinical impact. We describe reasons given by students for increased clinical confidence and the key points that they learned from SBME.

## **Keywords**

effect, training, simulation, practice, medical, students

## **Disciplines**

Medicine and Health Sciences

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# Effect of simulation training on the practice of medical students

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## Introduction

We investigated the effect of simulation training on medical students by asking them about its impact on their clinical work. We describe the reasons given by students for increased clinical confidence and the key points that they learned from simulation based medical education (SBME).

## Methods

Medical students at The University of Wollongong spend 12 months from their second to third year based in hospitals and on campus. The 2007 cohort of students received one standardised immersive simulation experience towards the end of this time. They then spent 12 months in clinical community placements throughout NSW.

Students were surveyed at the end of these placements and asked how learning from simulation had influenced their experience in their first full time clinical work placement.

Evaluation was conducted using the four level approach described by Kirkpatrick in the 1950s – what the students thought and felt, increases in knowledge, extent of behaviour change, and effect on performance outcomes. Responses were grouped into themes for analysis.

## Results

94% of students completed the questionnaire (63 /67).

Kirkpatrick level one – all students enjoyed simulation, felt that it had been relevant, and wanted to have had more exposure to it.

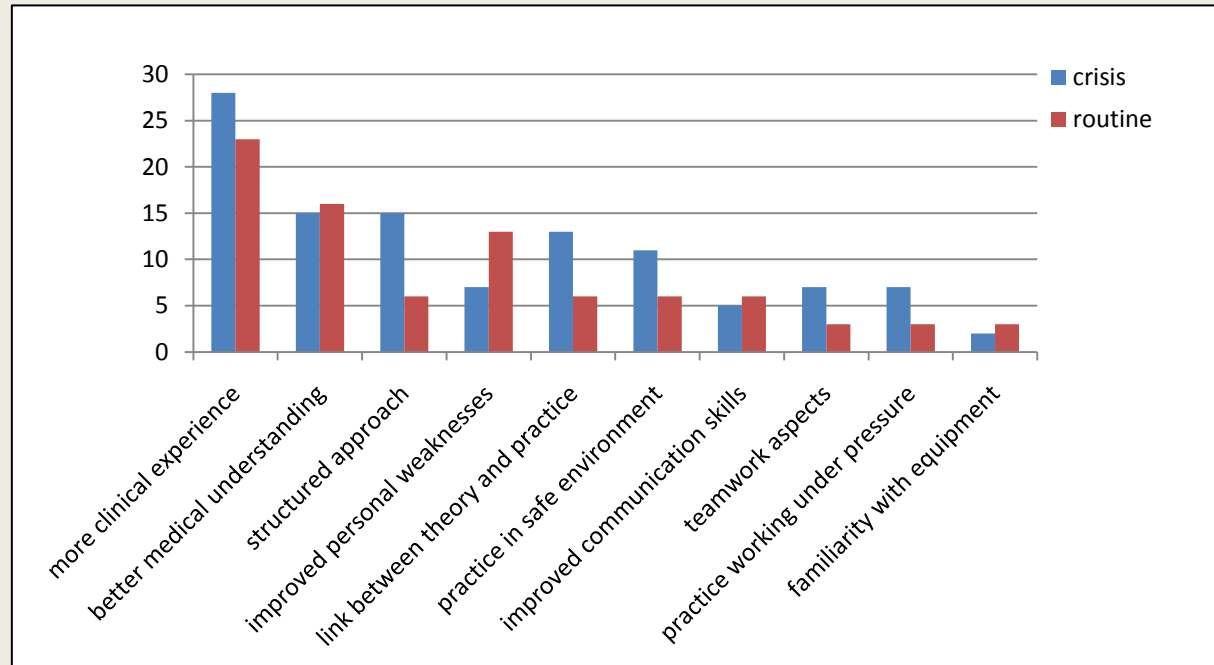
Kirkpatrick level two – students listed a range of key learning points (table).

Kirkpatrick level three – 93% stated that simulation had increased their confidence in handling medical crises either a little or a lot, with 83% agreeing for routine medical cases. Reasons are described in the figure. 25% of students described using something they had learned in simulation in real clinical cases whereas 16% said that they had still not encountered any real acutely unwell or emergency patients. One student gave an example of a real life experience that had assisted them in their simulation scenario.

## Key learning points (percentage of respondents to this question, multiple answers possible)

Medical / technical	26 (75%)
Communication	17 (49%)
Teamwork	16 (45%)
Other human factors	6 (18%)
Other	4 (11%)

## Proportion of students giving the following reasons for increased confidence in either crisis or routine situations (percentage of respondents to this question)



## Conclusion

Students valued their learning from simulation. After only one standard 'dose' of SBME, they reported increased confidence in the real clinical world. Their key learning points were mainly medical, but non-technical points were also learned by a significant number. Our survey suggests that, for medical students, SBME is effective in increasing medical knowledge, increasing case exposure, helping provide a structured approach to crises, and in the translation and application of theory to practice in a safe environment.