

Medical Students' Self-Ratings of Interprofessional Knowledge and Performance Before and After Simulation- Based Education

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Purpose of Our Study

- Analyze the impact of simulation-based education (SBE) in training second year (M2) medical students on selected aspects of interprofessionalism knowledge and team-oriented patient care.

Background

- Assessment of the clinical performance of health professions students is multi-method, complex and prone to subjectivity of evaluators.
- A critical component of simulation-based education (SBE) is guided reflection on the part of the learner, resulting in gradually increasing confidence in one's own skill set. A growing body of research evidence has documented the utility of SBE for educating health care professionals on a wide variety of topics.²
- SBT is an ideal format for bring together learners from various health care disciplines, so that they may learn to work together toward safer patient care.^{3,4}

Methods

- A total of 166 M2 (second year) medical students self-assessed their inter-professionalism knowledge and team leadership skills before and after a simulation-based educational experience, then provided feedback.
- Students completed exercises featuring clinical patient care scenarios pertaining to trauma and geriatric/nursing home care.
- Students were observed by faculty members and each other (peers), and rotated between learning stations approximately every 45 minutes until all students completed all stations. A debriefing session followed.

Methods

- A 5-point Likert scale (1=very low to 5=very high) survey asked participants to self-rate confidence and skills before and after the SBE experience; response rate = 100%.
- Data analyses were performed using the ANOVA procedure for item means ($p \leq .05$) and Pearson Correlation procedures ($p \leq .05$).
- We compared item means across all 162 students and also examined medical student class differences.

Pre- and Post-Test Survey Items

| Item | Please assess the change in your knowledge/skill level pertaining to the subject matter below: |
|------|---|
| 1 | Information exchange: delivering information to and from the right sources at the right time |
| 2 | Communication delivery: ensure messages are understood as intended |
| 3 | Supporting behavior: actions taken that enable team members to effectively compensate for one another |
| 4 | Team leadership/followership: behaviors that help to ensure the team moves forward in a positive and united direction |
| 5 | Identify own strengths and areas for development as a functional health care team member |

Results: Self-Confidence Ratings

Self-reported confidence in all 5 measures increased
(N=162, ANOVA $p \leq .05$)

| Mean Before Activity | Mean After Activity | 1= Very Low to 5 = Very High | Significance |
|----------------------|---------------------|------------------------------------|--------------|
| 2.94 | 3.65 | Information Exchange | 0.001 |
| 3.12 | 3.76 | Communication Delivery | 0.006 |
| 3.00 | 3.73 | Supporting Behavior | 0.012 |
| 3.07 | 3.70 | Team Leadership | 0.001 |
| 2.99 | 3.71 | Identifying Strengths & Weaknesses | 0.040 |

Results: Inter-Item Correlations

- Four of five post-test survey items were associated with academic year, indicating a class effect in terms of self-reported benefit of SBE:

| Survey Item | Pearson Correlation | Significance |
|------------------------|---------------------|--------------|
| Information exchange | 0.252 | p=.001 |
| Communication Delivery | 0.239 | p=.002 |
| Supporting Behavior | 0.234 | p=.003 |
| Team Leadership | 0.273 | p=.001 |

Student Feedback

- 95% of students reported that course objectives were met.
- 91% of students reported that the learning experiences were worthwhile, and would have a positive impact on their approach to patient care and related clinical work.
- Key themes in comments: students felt experience was “very real” and also felt “more empowered to speak up” when part of a care team.

Student Comments

- I learned how to communicate in a high intensity situation
- I learned first-hand how a good IPE team should work
- Won't be as nervous to speak up as a medical student when patient safety is an issue
- Learned the importance of teamwork in a very effective, fun way
- I will speak up if I feel it is in the best interest of the patient...or if I'm uncomfortable about something
- I will be more vocal in calling out mistakes
- Timeouts will be helpful in clinical practice, as well as identifying when to speak up

Limitations

- Somewhat small sample size (162 students over four academic years) at a single medical school; may not be generalizable.
- Have not compared self-reported knowledge gains and performance of medical students with other types of assessment.
- Correlation with medical school class was weak.

Conclusions

- Simulation-based education provided students with an opportunity to learn, refine and demonstrate inter-professionalism knowledge and teamwork skills while working with practicing healthcare professionals in a safe educational environment.
- Further research is needed to determine whether students retain knowledge and skills learned during SBE exercises.

References

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Questions or Comments?

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