

Great Evidence in Medical education Summary (GEMeS)

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Educational Question or Problem	Is simulation-based teaching better than case-based teaching in terms of knowledge gain, knowledge retention and satisfaction?
Bottom Line	There was no difference for knowledge gain and retention but increased satisfaction with simulation-based teaching.
Why is it relevant to Emergency Medicine Education?	<p>Emergency physicians are often the ones that teach resuscitation skills, and simulation is often a technique used to do so. As simulation is taking place more and more in our programs, we will be asked to buy expensive equipment, develop scenarios, and we could end up investing a lot of time in these endeavours. Considering the cost and time to do so, is it worth the investment?</p> <p>This study helps us to understand the limitations of simulation as an educational modality, by becoming more realistic about what simulation can or cannot do.</p> <p>There is a fair place for simulation, but we have to use it for what it really is good for.</p>
Level of Evidence	Non-randomized controlled trial, with cross-over design
Reference	<p>Couto, T. B., Farhat, S. C. L., Geis, G. L., Olsen, O., & Schwartsman, C. (2015). High-fidelity simulation versus case-based discussion for teaching medical students in Brazil about pediatric emergencies. <i>Clinics (São Paulo, Brazil)</i>, 70(6), 393–9.</p> <p>http://doi.org/10.6061/clinics/2015(06)02</p>
Hyperlink to PubMed link or Journal Link	<p>http://eutils.ncbi.nlm.nih.gov/entrez/eutils/elink.fcgi?dbfrom=pubmed&id=26106956&retmode=ref&cmd=prlinks</p> <p>http://www.scielo.br/pdf/clin/v70n6/1807-5932-clin-70-06-393.pdf</p>
Study Design	Non-randomized controlled trial, with cross-over design, of simulation-based teaching compared with case-based discussion among medical students using a pre-test, a post-test and a retention test (4–6 months later) via multiple-choice questionnaires (MCQs)

Funding Sources	<p>The work was supported by the Departamento de Pediatria da Faculdade de Medicina da Universidade de São Paulo. Simulations and case-based discussions were performed at the <i>Faculdade de Medicina da Universidade de São Paulo</i> (FMUSP) during students' emergency pediatric rotation, with no additional external funding. Laerdal Medical lent SimBaby^S for this project.</p>
Setting	<p>The voluntary intervention was offered to all 174 sixth-year (the final year in Brazilian medical education) medical students of the FMUSP during their first-semester rotation clerkship in pediatrics (emergency department or pediatric ward) in 2012.</p>
Level of Learning	<p>Undergraduate medical education</p>
Synopsis of Study	<p>To answer their question, they offered all sixth-year medical students to participate in this trial. One cohort ($n = 76$) was taught anaphylaxis with a simulation scenario and supra-ventricular tachycardia with case based discussion. Another cohort ($n = 87$) was taught the same concepts but the methods were inverted.</p> <p>163 participated, 124 filled the satisfaction questionnaire and 108 filled the retention test (4-6 months later), for a 33.7% loss to follow-up.</p> <p>No difference was found between the two teaching methods in terms of knowledge gain and retention.</p> <p>Satisfaction was better with simulation.</p> <p>They state that a one-time simulation may not be enough for the students to really gain from it as they are learning the method as much as the content.</p> <p>The next step will be to test their hypothesis with multiple scenarios instead of one, their assumption being that retention should be better with simulation than case-based discussion, if the method is adequately mastered by the students.</p>