Background: Experience and knowledge of acutely ill patients are important factors influencing the nurses’ decision-making process. Clinical reasoning is considered an essential skill in developing nursing practical competency and central to nursing professional practice. Highly skilled nurses and doctors and an increased number of nurses can reduce the number of deteriorated patients. Simulation is being widely used as a teaching and learning strategy in nursing and medical education; it has positive effects in improving students’ knowledge acquisition, satisfaction and competency.   
  
Method: An integrated literature review was conducted to assess the impact of using simulation on nurses’ reasoning and decision making abilities in treating acutely deteriorated patients. Electronic databases, key journal, generic internet search engines, and hand searches of reference lists for articles published between1990-2013.  
  
Results: This review revealed that students’ critical thinking abilities positively affected with simulation experience. Reflection is an important factor for developing critical thinking abilities during the simulation experience. Simulation can positively influence students’ confidence and it seems to improve students’ situational awareness but with limited evidence.  
However, conflicting information was noted regarding fidelity level of the simulation, studies separately focusing on either analytical or non-analytical approach for developing clinical reasoning or using reflection and performance review for developing critical thinking. Few methodological issues with the cited studies like the appropriateness of the measurements tools for critical thinking as high order skills and most of the studies used qualitative methods with limited transferability. Few studies used quantitative methodology but also had issues with small samples to support simulation as evidence base educational strategy in this context.   
  
Conclusion: More evidence is needed about the role of simulation on nurses’ clinical reasoning and decision making skills. The use of a combination between analytical and non-analytical approaches for clinical reasoning has been supported in different disciplines like medicine as a more effective method to improve students’ reasoning abilities. Also the use of effective debriefing by providing a structural performance feedback has been advocated recently to improve students’ reasoning abilities in simulated environment.