

Is Clinical Decision Making Skills are Developed through Academic Nurturing? A Review Based on Available Literature

Nageshwar V

PhD Scholar, Manipal College of Nursing, Manipal University, Manipal

Judith A Noronha

Professor, Manipal College of Nursing, Manipal University, Manipal

Anitha Nileshwar

Professor and HOD, Anaesthesiology, KMC, Manipal

Anice George

Professor, Manipal college of Nursing, Manipal University, Manipal

Manjunath Prabhu

Professor, Anaesthesiology, KMC, Manipal

Baby S Nayak

Professor, Manipal College of Nursing, Manipal University Manipal

Tessy Treesa Jose

Professor, Manipal College of Nursing, Manipal University Manipal

Blessy Prabha Valsaraj

Associate Professor, Manipal College of Nursing, Manipal University Manipal

Abstract

Introduction: Today's nurses are having challenges, demanding their ability to the profession. Nursing education should concentrate on educating competent health care providers to handle complex health care technology with fundamental implications for latest generation of patients. This paper aims to identify the various strategies used to enhance the clinical decision making ability among nurses. **Methods:** A comprehensive systematic review of published literature and journal articles from PubMed and Cinhal databases was done. Search strategy specific to each database was used. During initial search 6808 titles were retrieved and after screening 12 articles were selected for full text screening. Finally 12 research articles were selected based on the inclusion criteria. **Results:** Out of 12 articles, 7 research studies supported that clinical decision making can be developed using different types of simulation (such as human patient simulators, simulated clinical experiences, simulation to create rubric assessment). Two of those studies propose clinical reasoning abilities can be acquired through Outcome-Present state Test (OPT) model. Individual studies used strategies like concept mapping, educational interventions, analogy guided learning experiences, structured reflection in education and workshops can develop clinical decision making. Computer based and multimedia computer simulation program did not showing any clear outcome. **Conclusion:** Clinical decision making is an abstract skill which can be developed by using different strategies in different specialities and different situations. Since situational factors and time constraints are evident in practice, findings were supportive for clinical decision making(CDM) skill. The ideal setting for students to learn CDM skills is real clinical practice environment, especially when facilitated by opportunities for immediate feedback and reflection. CDM is necessary for providing quality patient care and favouring patient satisfaction.

Keywords: Decision making, Nurses, Judgement, Clinical Competence

1. Introduction:

Nursing is one of the professions in the world which is faced with numerous challenges to provide quality care for the patients. The Nursing goal is to comfort the patient by providing physical, emotional, spiritual and psychological care based on priority. Nurse has to undergo various levels of training to provide patient an ultra-comprehensive care. Recent trend suggests that evidence informed health care to be practiced to uplift the accountability of the practice. To Practice evidence, do we have enough decision making ability? Does the education and practice enable us to develop the ability needed? What all the requisites to develop these abilities among nurses?

Keeping this in view, a systematic review was conducted to identify and describe strategies available to

develop clinical decision making abilities among nurses and to assess the effectiveness of different types of interventions to develop clinical decision making abilities among nurses.

Thompson & Dowding (2002) defines “clinical decision making as choosing between alternatives”. Clinical decision making is a process that nurses often use to make judgements regarding patient care and management. As nurses become more experienced as care providers, the process of clinical decision making becomes easier and more manageable and the forms of decision making become increasingly intricate.

“Clinical decision making is a complex activity that requires practitioners

- To be knowledgeable in relevant aspects of nursing,
- To have access to reliable sources of information and appropriate patient care networks and
- To work in a supportive environment” (O'Neill *et al.* 2005).

To develop nurses as systematic decision makers, education and training need to include a framework that helps in development of the basic cognitive, psychomotor and attitude dimensions of clinical decision making ability. (Smith *et al.* 2004, Thompson *et al.* 2004).

1.1 Need for Clinical decision making skills

There is a vast literature which suggests a wide gap in the area of nurses' clinical decision making. There is a lack of evidence to show that decision making ability can be developed with a particular strategies. But new technology is challenging all the professions especially health care providers which include nurses and nurse educators. (Ebright, Patterson, Chacko, & Render, 2003)

Future novice nurses will take responsibility of handling complex situations to take clinical decisions. Since nurses today, are working with few mentors, it is not a good idea to dream for nurses to enhance such a skill to where decisions will be safe and accurate. Hence, there are suggestions that nurses should be expert in practice by getting experience to change from abstract concept to concrete skills. (Benner *et al.*, 1996; Decker, 2006).

According to the theory, decision making starts with education (Brooks & Sheperd, 1990) (Brigham, 1993). The basic foundation to develop clinical decision making skill develops through initial level of professional nursing education where students are asked to provide care using nursing process (Hughes & Young, 1992). Nursing process is a less effective way in teaching decisions regarding resources utilisation and exploration of possible execution of plan within the frame (Brooks & Thomas, 1997).

Evidence also suggests, if there is professional carryover of clinical experiences, there will be development and reinforcement of clinical decision making (Jenkins, 1985). Tanner stated that there was a limited research regarding classroom or clinical educational approaches to improve clinical judgement in nursing students using models. She reviewed 200 studies related to clinical judgement in the development of model. She writes that nurse consistently improve his or her reasoning or decision skills after frequent error in decision, where nurse analyzes the problem. She proposed research related to pedagogies to integrate facts and experiences to develop clinical reasoning and judgement (Tanner, 2006)

Researchers conclude that decision making is a skill to be learned by educators. (Baxter & Boblin, 2008). If the students concentrate on completion of routines rather than systematic protocol to the responses of patient' priority needs, the opportunity for learning clinical judgement will lost (Dillard, Sideras, Ryan, Carlton, Lasaster, & Siktberg, 2009)

Strengthening of students to provide competitive care through educational preparedness by incorporating new pedagogies, educators must influence education-practice gap by meanse of using reflection in classroom(Glynn, 2012).

Hence it was found necessary for us to design a program which is essential for developing decision making skills among novices. Hence a systematic review is defined to review the available literature for developing clinical decision making skills among nurses.

1.2 Aim

The aim of this review is to identify the various strategies used to enhance the clinical decision making skills of nurses.

1.3 Objectives

- To identify and describe strategies available in improving the clinical decision making skills among nurses
- To assess the effectiveness of all types of interventions to improve the clinical decision making skills among nurses

2. METHODOLOGY

2.1. Search Strategy methods:

An electronic search of articles published in various journals till Jan 2014 was conducted. Search was restricted to only English language. The database search done was Pubmed-Medline and CINAHL. Articles containing following key search terms were retrieved

2.1.1 Types of Interventions:

- Education, Workshop, Training program, Mentoring, Preceptorship, Programmed instruction, Self instructional program, Self learning, Lecture, Discussion, Workbook activity, Reflective learning, Critical thing, Training modules, Online training, Think aloud technique, Demonstration

2.1.2 Types of Studies:

- Randomized controlled trials, Cluster randomized trial, Non-randomized controlled trials, Before – after intervention trial, Interrupted time-series studies, Prospective controlled cohort studies.

2.1.3 Type of Participants:

Nursing professionals including student nurses and nurse educators

2.1.4 Settings:

- Hospital, Academic Institution, Urban and rural health centres, Nursing homes

2.1.5 Outcomes

- Improving clinical decision making skills among nurses

2.1.6 Delivery of Interventions

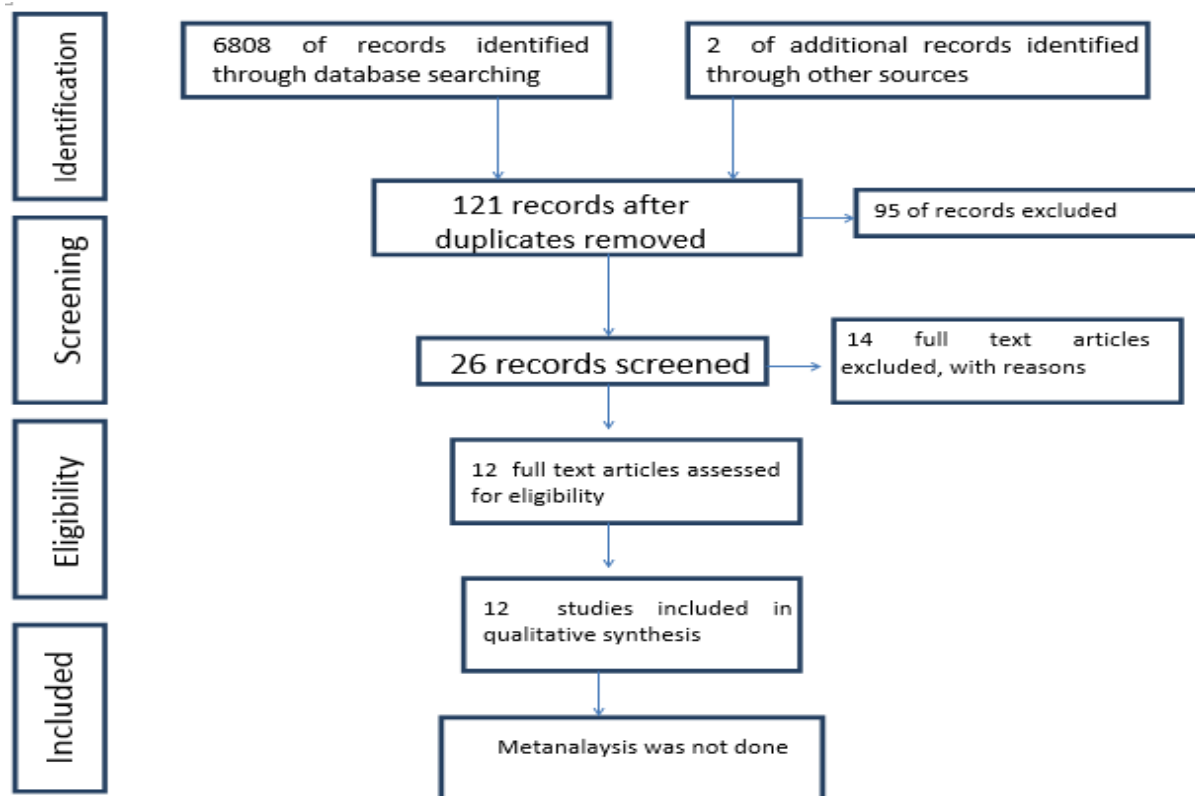
- There will be no restriction on who delivered the interventions. These may include researchers.

The systematic search was conducted by framing the terms individually and in combination with all and synonyms, also according to the database. In addition to this, a manual google scholar search was undertaken using the keywords and search synonyms from already found articles. An addition of 2 articles were found.

Initial search retrieved 6810 articles over which 121 articles were selected manually. Duplicates were removed and reviewed 26 articles for eligibility. Two articles were excluded because of duplications in two databases. Three more studies were excluded due to unavailability of full text. Three were qualitative longitudinal descriptive studies. One was concept paper. Five of them were considered not related to clinical decision making. Hence twelve articles were screened which includes qualitative, quantitative and mixed studies.

3. RESULTS:

3.1. PRISMA FLOW CHART



3.2. Table no.1: Data Extraction table

Sl no and Author	Source and title	Country	Variables	Instruments	Sample and sampling technique	Design	Intervention	Duration	Findings	Conclusion
1. Cioffi, Purcal, & Arundell, 2005	A pilot study to investigate the effect of a simulation strategy on the clinical decision making of midwifery students	Australia	Clinical decision making	Verbal protocols – data collection, data review and inference	36, Purposive	Qualitative	Simulations and decision rules, think aloud	30-40 mins daily in third semester	Decisions in one variable favoured by simulations and no significance in another variable. Hence results are not clear	Tentatively conclude that use of simulation can promote deeper learning
2 Rhodes & Curran, 2005	Use of human patient simulator to teach clinical judgement skills in a baccalaureate nursing Program	US	Critical thinking and clinical judgement	Observations, Debriefing, evaluation survey	21, Purposive	Qualitative	Case scenario,	60 minutes	Students thought that the experience was positive and would be beneficial to any student	The HPS is a tool to enhance critical thinking and clinical judgement regarding client care. Active participation by students can strengthen the ability of the student
3 Lasaster K., 2006	Clinical judgement development : Using simulation to create assessment rubric	Portland-US	Development of clinical judgement	Observation, Rubric in simulation laboratory, debriefing and focus group discussion	39 students	Exploratory	Computerized human patient simulations	150 Minutes	Five themes emerged: 1. Strengths and limitation of high fidelity simulation 2. Paradoxical nature 3. Intense desire for more feedback 4. Importance of student connection with others 5. Few general recommendation for improved facilitation	In addition to clinical practicum, students can better learn when they are clear about expectations and receive direct feedback about their performance
4. Lasaster K., 2007	High fidelity simulation and the development of clinical judgement : students' experience	Portland-US	Experiences of students towards development of clinical judgement	Observations, Debriefing and focus group participation	48 students	Qualitative	Case scenario in high fidelity simulation	150 minutes	Students experiences strengths: integrator of learning, breadth of experience gained and limitations : Non – verbal communication of high fidelity simulation	New graduate nurses need clinical judgement skills to function in today's complex care settings. But pressures on real patient care practically present a challenge for quality facilitator oversight and assessment, which can be controlled in simulation settings
5 Dillard, Sideras, Ryan, Carlton, Lasaster, & Siktberg, 2009	A collaborative project model to apply and evaluate the clinical judgement model through simulation		Evaluation of clinical judgement scenario	Questionnaires, reflective journals and self report	68 students, convenience Sampling	Qualitative and quantitative	Workshop for faculty. Simulation and debriefing	15 minutes	High fidelity simulation could actively engage students individually in the learning process. The results support active management of student with the objectives to support	Faculty development is a priority for the process of integrating the pedagogy of simulation in to nursing curricula. Well

Sl no and Author	Source and title	Country	Variables	Instruments	Sample and sampling technique	Design	Intervention	Duration	Findings	Conclusion
									learning during simulation	planned and debriefed simulations can be effective clinical experience because they facilitate the application of clinical judgement
6	Guhde, 2010 Use of online exercises and patient simulation to improve students' clinical decision making By Jacqueline Guhde 2010	Ohio-US	Improve clinical judgement	Assignment rating,	83 students	Qualitative and quantitative	Simulation, Debriefing and Reflection	2 days	Results shows that students utilized critical thinking skills through the assignment, enhanced awareness on importance of patient assessment and it was good assignment to adopt in the curriculum	The assignment involving both online education and patient simulation, gave students an opportunity to analyse their own critical thinking.
7	Glynn, 2012 Clinical judgement development using structured classroom reflective practice : A qualitative study By Donna M Et al, 2012	Boston-US	Perception of development of clinical judgement in BSN students who experience structured reflective practice	Interviewed to describe clinical judgement and reflective practice	34 students,	Qualitative study	Structured reflective classes	90 minutes every week in early nursing course	Themes are 1. Application of acquired knowledge. 2. Perceived increased patient care experiences 3. Situated teaching and prioritizing 4. Reassurance, communication, realization of depth of science in nursing	The students reported that their participation in the structured reflective sessions improved their perceptions of their ability to apply acquired theoretical knowledge to patient situations
8	Jaime L G 2012 Use of concept mapping to build clinical judgement skills.	US	Critical thinking	Concept mapping rubric	8 4 th yr BSN , Convenience	Qualitative	Concept mapping exercise	6 days	Students expressed that the concept mapping activity and rubric lead them to make better clinical decisions and increased critical thinking skills	Use this strategy to promote ease for the student in growth of critical thinking skills
9	Bambini, Washburn, & Perkins, 2009 Outcomes of clinical simulation for novice nursing students: Communication, confidence, Clinical Judgement	Michigan_US	Self efficacy of nursing students	Pretest-posttest-follow up survey	112 students, Convenience Sampling	Integrated-quasi-experimental repeated measures design	Clinical simulation	3 hours	Three themes emerged: Confidence, Communication and clinical judgement	Further research should be directed toward using simulated experiences to evaluate a students' ability to prioritize and provide safe care
10	Powell-Laney, 2010 Use of human patient simulators to enhance the clinical decision making of nursing students	Pennsylvania-US	Clinical decision making ability	Decision-making exam scores and clinical performance.	133	Quasi-experimental differentiated treatment study	Human Patient Simulation	20-25 Minutes	Students in the simulation groups were more likely to score higher on the clinical decision-making exams and to respond clinically by performing CPR more	Results validate the use of HPS technology in nursing education. Ultimately patients may benefit from increased knowledge

Sl no and Author	Source and title	Country	Variables	Instruments	Sample and sampling technique	Design	Intervention	Duration	Findings	Conclusion
									quickly on the manikin than students in the case study groups.	and speed of care from practical nurses whose training was improved through the use of HPS technology.
11. Edelen & Bell, 2011	Role of analogy guided learning experience in enhancing students' clinical decision making abilities by Bonnie Gilbert Edelen, 2011	Hartford – US	Need for educational intervention to promote clinical decision making	Clinical decision making rubric	51 Students and 10 faculty instructors	Quasiexperimental, non equivalent groups, post-test only comparison group design	Analogy guided learning activities	12 days	Demonstrated the enhancement of clinical decision making skills	Faculty instructors can use this format and provide feedback on journal entries to help students gain insight about their clinical decisions and alter or support future decision making scenarios
12 Maneval, et al., 2012	Effect of high fidelity patient simulation on the critical thinking and clinical decision making skills of new graduate nurses	Pennsylvania-US	Critical thinking and clinical decision making skills	Health sciences reasoning test and Clinical decision making in nursing scale	26 new graduate nurses, convenience sample	Pretest-posttest design	Simulation and debriefing	10 week orientation	High fidelity simulation did not significantly improve either critical thinking or clinical decision making	Fundamental relationship between construct of critical thinking and high fidelity patient simulation experience as well as effect of other variables, such as educational preparation and externship experiences

3.3. Summary of findings:

The available literature refined to get 5 qualitative, 4 quantitative, and 3 mixed approach.

Out of 12 articles, 5 research studies supported that clinical decision making can be developed using different types of simulation (which includes human patient simulators, simulated clinical experiences, simulation to create rubric assessment etc). Individual studies from each strategy like concept mapping, educational interventions, analogy guided learning experiences, structured reflection in education and workshops can develop clinical decision making. Computer based and multimedia computer simulation program are not showing clear outcome on this area.

Most of the descriptive research on clinical judgement is centred on its use in nursing practice area rather than on its enhancement in nursing students. (White, 2003).

The effect of simulation on critical thinking and clinical judgement is inconclusive. Further study of relationship between nurse externship programs and the concept of clinical decision making and critical thinking is needed. (Maneval, et al., 2012)

4. DISCUSSION

More number of studies has demonstrated the need for simulations in preparing nurses for clinical practice (Plastere & Mills, 1983) (Wildman, 1997) (Wies & Guyton-Simmons, 1998) (Vandrey & Whitman, 2001). But, actual effect resulting clinical decision making is not conclusive (Wildman, 1997) (Roberts, White, & Fitzpatrick, 1992)

A study supported association between participation in the simulation and increasing confidence among students, addressed the outcomes descriptively; the results suggest that students benefitted from the simulation. Hence, simulations can positively affect the decision making process among students (Cioffi, Purcal, & Arundell, 2005).

The Human patient simulator is a strategy to develop critical thinking and clinical judgement about

patient care. Active participation of students is necessary to strengthen the ability to make appropriate decisions (Rhodes & Curran, 2005).

Clinical judgement is intensively related to practice, in which high fidelity simulation opportunities are created for students with clinical practicum, so that students can learn better to improve their performance. But, the simulation laboratory offers challenging, practically oriented patient situations, requiring critical judgement skills. The debriefing, after the simulation provides an opportunity for students to reflect on their thinking and performance and discover alternative interventions from each other and facilitator. (Lasaster K. , 2007).

Powell-Laney (2010) validates in a study the use of simulation technology for teaching clinical decision making in students. Student learned better when they confronted with human patient simulator than traditional teaching.

Well planned and debriefed simulations can be an effective clinical experience because they provide opportunity for clinical judgement, which is often encountered in practice by complexity of tasks and to provide comprehensive care. (Dillard, Sideras, Ryan, Carlton, Lasaster, & Siktberg, 2009).

An innovative rubric using concept mapping is used to guide students. Concept mapping emerged as a milestone in development of clinical decision making as a teaching strategy. Suggestions for the use of this strategy includes briefing the case and description at each level to promote better learning experience for the student in the developing critical thinking (Gerdeman, Lux, & Jacko, 2012)

There is a perceived improvement in development of clinical judgement and confidence through structured classroom reflective. New pedagogies have to be incorporated with structured reflection of patient care situations in classroom to narrow theory-practice gap and improve clinical judgement of novices (Glynn, 2012). Communication, Confidence and clinical judgement were identified as qualitative comments given by students as an outcome quality clinical simulation. (Bambini, Washburn, & Perkins, 2009)

Researchers have identified that nursing students' clinical decision making includes cognitive ability to interpret information in the context of changing situational environments (Benner, Sutphen, Leonard, & Day, 2010) (Bittner & Tobin, 1998) and is influenced by students' prior experience (O'Reilly, 1993) and interactions with patient, Clinical tutors and staff. (Benner P. , 2004) (White A. , 2003)

Influencing factors which promotes nursing student's clinical decision making ability includes simulation (Howard, 2007), computerised instruction, case studies (DeMarco, Hayward, & Lynch, 2002) and reflective writing (Allen, Rubenfeld, & Scheffer, 2004). Since situational factors and time constraints are evident in practice, findings have not got weightage to account for clinical decision making skill. The ideal setting for students to learn CDM skills is real clinical practice environment, especially when facilitated by opportunities for immediate feedback and reflection. (Clynes & Raftery, 2008)

4.1 Importance in Education

This generation health care centers expect entry level competence, including critical thinking and clinical decision making skills, for all nurses. This reflects the excessive demands of rapid changes in work culture. (Utley-Smith, 2004) However, in a survey of 532 hospitals, 494 long term care facilities, and 163 home health care agencies, Smith and Crawford (2004) found that employers perceived that more than 50% of novice nurses lagged behind in clinical decision making skills. The nursing education system should focus on preparing the graduate nurses with necessary clinical decision making so as to satisfy educational and employer standards.

4.2 Future Significance

The results extended in this review supports engaging novices exclusively comparing structural similarities between the current and previous experience to enhance retention and transfer of knowledge in future needs. In contrast to all the studies which conducted in simulated or classroom settings, future studies should engage in analytical structuring of the students and reflective practice in clinical settings.

Outcome suggests that this process enhance Clinical decision making skills among novices. They are consistent with previous studies that demonstrated explicit case comparison using analogical reasoning process which positively influence clinical decision making ability and accuracy (Edelen & Bell, 2011)

4.3 Limitations

- Database search was limited
- Search strategy was refined to clinical decision making only
- Meta- analysis will give more accuracy
- Confined to area of Nursing

Conclusion

Clinical decision-making skills can be enhanced through various intervention strategies. Since nurses are key decision makers within the healthcare team they are expected to learn certain decision making skills and

implement in practice

Bibliography

1. Allen, G., Rubenfeld, M., & Scheffer, B. (2004). Reliability of assessment of critical thinking. *Journal of Professional Nursing* , 20, 15-22.
2. Ashcraft, A. S., Opton, L., Bridges, R. A., Cabellero, S., Veasart, A., & Weaver, C. (2013). Simulation Evaluation Using a Modified Lasaster Clinical Judgement Rubric. *Nursing Education Perspectives* , 34 (2), 122-126.
3. Bambini, D., Washburn, J., & Perkins, R. (2009). Outcomes of Clinical Simulation for Novice Nursing Students: Communication, Confidence, Clinical Judgement. *Nursing Education Perspectives* , 30 (2), 79-82.
4. Barlett, R., Bland, A., Rossen, E., Kautz, D., & Benfield, S. (2008). Evaluation of Outcome-Present State Test Model as a Way to Teach Clinical Decision Reasoning. *Journal of Nursing education* , 47 (8), 337-344.
5. Baxter, P. E., & Boblin, S. (2008). Decision Making by Baccalaureate Nursing Students in the Clinical Setting. *Journal Of Nursing Education* , 47 (8), 345-349.
6. Benner, P. (2004). Using the dreyfusmodel of skill acquisition to describe and interpret skill acquisition and clinical judgement in nursing practice and education. *Bulletin of Science, Technology and Society* , 24, 188-199.
7. Benner, P., Sutphen, M., Leonard, V., & Day, L. (2010). *Educating nurses: a call for radical reform*. Stanford, CA: Jossey-Boss.
8. Bittner, N., & Tobin, E. (1998). Critical thinking strategies for clinical practice. *Journal for Nurses in Staff Development* , 14, 267-272.
9. Bland, A. R., K, E., Rossen, Bartlett, R., Kautz, D. D., Carnevale, T., et al. (2009). Implementation and Testing of the OPT MODEL as a Teaching Strategy in an Undergraduate Psychiatric Nursing Course. *Nursing Education Perspectives* , 30 (1), 14-21.
10. Brigham, C. (1993). Nursing Education and Critical Thinking: Interplay of content and thinking. *Holistic Nursing Practice* , 7 (3), 48-54.
11. Brooks, E. M., & Thomas, S. (1997). The perception and judgement of senior baccalaureate student nurses in clinical decision making . *Advances in Nursing Sciences* , 19 (3), 50-69.
12. Brooks, K. L., & Sheperd, J. M. (1990). The relationship between clinical decision making skills in nursing and general thinking abilities of senior nursing students in four types of nursing programs. *Journal of Nursing Education* , 29, 391-399.
13. Cioffi, J., Purcal, N., & Arundell, F. (2005). A Pilot Study to Investigate the Effect of a Simulation Strategy on Clinical Decision Making of Midwifery Students. *Journal of Nursing Education* , 44 (3), 131-134.
14. Clynes, M., & Raftery, S. (2008). An essential element of student learning in clinical practice. *Nurse Education in Practice* , 8, 405-411.
15. Conger, M. M. (1999). Evaluation of an Educational Strategy for Teaching Delegation Decision Making to Nursing Students. *Journal of Nursing Education* , 38 (9), 419-422.
16. DeMarco, R., Hayward, L., & Lynch, M. (2002). Nursing students' experiences with and strategic approaches to case based instruction: a replication and comparison studies between two disciplines. *Journal of Nursing Education* , 41, 165-174.
17. Dillard, N., Sideras, S., Ryan, M., Carlton, K. H., Lasaster, K., & Siktberg, L. (2009). A Collaborative Project to Apply and Evaluate the Clinical Judgement Model Through Simulation. *Nursing Education Perspectives* , 30 (2), 99-103.
18. Ebright, P., Patterson, e., Chacko, B., & Render, M. (2003). Understanding the complexity of registered nurse work in acute care settings. *The Journal of Nursing Administration* , 33, 630-638.
19. Edelen, B. G., & Bell, A. A. (2011). The Role of Analogy Guided Learning Experiences in Enhancing Students' Clinical Decision Making Skills. *Journal of Nursing Education* , 50 (8), 453-460.
20. Gerdeman, J. L., Lux, K., & Jacko, J. (2012, May 13). Use of Concept mapping to build Clinical Judgement Skills. *Nursing Education in Practice* , 11-17.
21. Glynn, D. M. (2012). Clinical Judgement Development Using Structured Reflective Practice: A Qualitative Study. *Journal Of Nursing Education* , 51 (3), 134-139.
22. Guhde, J. (2010). Using Online Exercises and Patient Simulation to Improve Students' Clinical Decision Making. *Nursing Education Perspectives* , 31 (6), 387-389.
23. Harman, L., Wabin, D., MacInnis, L., Baird, D., Mattiuzzi, D., & Savage, P. (1989). Developing Clinical Decision-Making Skills in Staff Nurses: An Educational Program. *The Journal Of Continuing Nursing Education* , 20 (3), 102-106.
24. Howard, V. (2007). *A comparison of educational strategies for the acquisition of medical-surgical nursing knowledge and critical thinking skills; Human patient simulation Vs Interactive case study approach*. Doctoral dissertation.

25. Hughes, K. K., & Young, W. B. (1992). Decision making stability of clinical decisions. *Nurse Educator* , 17, 12-16.
26. Jenkins, H. M. (1985). Improving Clinical Decision making in Nursing. *Journal of Nursing Education* , 24, 242-243.
27. Lasaster, K. (2007). Clinical Judgement Development : Using Simulation to Create an Assessment Rubric. *Journal of Nursing Education* , 46 (11), 496-503.
28. Lasaster, K. (2007). High Fidelity Simulation and the Development of Clinical Judgement : Students' Experiences. *Journal of Nursing Education* , 46 (6), 269-275.
29. Maneval, R., Fowler, K. A., Kays, J. A., Boyd, T. M., Shuey, J., Harne-Britner, S., et al. (2012). The Effect of High Fidelity Patient Simulation on the Critical Thinking and Clinical Decision Making skills of New Graduate Nurses. *The Journal of Continuing Education in Nursing* , 43 (3), 125-134.
30. O'Reilly, P. (1993). Barriers to effective clinical decision making. *St Vincent's Monographs* . <http://www.ciap.health.nsw.gov.au>.
31. Plastere, H. P., & Mills, N. (1983). Teach Management theory through fun and games. *Journal of Nursing Education* . , 22, 80-83.
32. Powell-Laney, S. K. (2010, August). THE Use of Human Patient Simulators to Enhance the Clinical Decision Making of Nursing Students. Walden University, Pennsylvania, United States.
33. Pritchard, M. J. (2006). Making effective clinical decisions: a framework for nurse practicers. *British Journal of Nursing* , 15 (3).
34. Rhodes, M. L., & Curran, C. (2005). Use of Human patient Simulator to teach Clinical Judgement skills in Baccalaureate Nursing Program. *Computers, Informatics, Nursing* , 23 (5), 256-262.
35. Roberts, J. D., White, A. E., & Fitzpatrick, J. M. (1992). Simulation: Current status in nurse education. *Nurse Educator Today* , 12, 409-415.
36. Smith, J., & Crawford, L. *Report of findings from 2003 employers survey (Research Briefs Vol 14)*.
37. Standing, M. (2007). Clinical decision-making skills on the developmental journey from student to Registered Nurse: Longitudinal inquiry. *Journal of Advanced Nursing* , 60 (3), 257-269.
38. Tanner, C. A. (2006). Thinking like a nurse: A Research Based Model of Clinical Judgement in Nursing. *Journal of Nursing Education* , 45 (6), 204-211.
39. Utley-Smith, Q. (2004). 5 competencies need by new baccalaureate nurses: An interpretive study. . *Nursing Education Perspectives*, 25, 166-169 .
40. Vandrey, C., & Whitman, K. (2001). Simulator training for novice critical care nurses : preparing providers to work with critically ill patients. *American Journal of Nursing* , 101 (9), 24GG-24LL.
41. White, A. (2003). Clinical decision making among fourth-year nursing students: An interpretive study. *Journal of Nursing Education* , 42, 113-120.
42. White, A. H. (2003). Clinical Decision Making Among Fourth-Year Nursing Students: An Interpretive Study. *Journal of Nursing Education* , 42 (3), 113-120.
43. Wies, P., & Guyton-Simmons, J. (1998). A computer simulation for teaching critical thinking skills. *Nurse Educator* , 23, 30-33.
44. Wildman, S. (1997). The value of simulation in the management education of nurses: Students' perception. *Journal of Nursing Management* , 5, 207-215.