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EXPLORING SELF-CONFIDENCE OF STUDENTS AFTER THEIR SIMULATION EXPERIENCE AT COLLEGE OF NURSING – KING SAUD UNIVERSITY KSA

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ABSTRACT

Background: Nursing and other health experts are progressively utilizing simulation as a methodology and an instrument for instructing and learning at all levels that require clinical preparing. Technology-assisted learning, such as simulation, can provide learners with real opportunities to practice in safe and secure environments that have the ability to improve self-efficacy bridge the gap between theory and practice. **Aim of the Study:** The aim of this study was to explore self-confidence of Nursing students after their simulation experience. **Materials and Method:** Cross-sectional quantitative descriptive correlational design was used to explore self-efficacy of students after their simulation experience in a College of Nursing among nursing students who were exposed to laboratory simulation at least one semester. Convenience sampling technique utilized. Self-efficacy of nursing students assessed by the 25 items dveloped by Stump, Husman, and Bream (2012). **Results &&Conclusion:** The total number of participants in this study were 204 female student nurses. Participants indicated that their self-efficacy enhanced after clinical simulation experience (m=3.46 to 3.75). Utilizing simulation as a procedure and strategy for clinical training leads to advancement and promotion of the learning experience of the nursing students. **Recommendation:** Nursing schools should pay an exceptional attention to apply the simulation experience that can provide their students with sufficient information and good training. Responsible parties in nursing schools should check the quality of the simulation experiments periodically and employ all capacities to improve them to make them closer to reality. Nursing education specialists must concentrate on the different practical sides of the nursing profession in order to ease the process of imitating them using simulation techniques.

KEYWORDS: Exploring, Confidence, Satisfaction, Self-Efficacy, Simulation, Nursing Students.

INTRODUCTION

Technology integration has become one of the most prominent characteristics of learning environments; many instructors at different levels tend to employ technology tools in classrooms to ease the process of learning. This integration, in fact, has its positive reflections on both teaching and training processes. At the level of medical practice, can say that technology integration has developed the professional knowledge, skills, and competencies of different healthcare professionals within different countries. The rapid development of information and communication has greatly affected the nursing practice all over the world (Risling, 2016). Landeiro, Freire, Martins, Martins & Peres (2015) revealed there were many technological methods that used in order to enhance nurses' education. Among the new technological methods that used in the teaching, learning and training of nurses are the use of laboratory practice, clinical scenarios, and simulation-based techniques (Baptista, Martins, Pereira & Mazzo, 2014). Simulation-based techniques have received wide recognition in the recent decades at different levels, especially at the level of clinical practice.

Simulation accepted as an effective mechanism to stimulate real clinical practices. A simulation is an educational tool that complements the traditional teaching experience by enabling students and healthcare professionals to learn in an environment that eliminates risks and promotes learning. The simulation showed to be an excellent educational intervention to enhance nursing students' satisfaction with the learning experience, increase students' self-confidence, and enhance students' perception of increased skill

performance (Jeffries & Rizzolo, 2006). The simulation was can be regarded as an interactive teaching and learning method that has the ability to provide effective application of clinical knowledge into nursing practice (Edgecombe, Seaton, Monahan, Meyer, LePage & Erlam, 2013). It has the ability to provide nurses and health care providers with the required competencies and skills necessary to fulfill the changing requirements and demands of the current healthcare systems (Quirós & Vargas, 2014). Simulation as a learning strategy primarily used with small groups of learners in a laboratory setting that offers experiential learning opportunities, where the objective is to link theory to practice. Many educators consider that clinical simulations are very helpful to foster and enhance critical thinking skills among students and there is a need for change in nursing education to help students transfer theoretical knowledge into a clinical context and develop the necessary personal abilities (Akhu-Zaheya, Gharaibeh, & Alostaz, 2013).

Nurses have to develop and apply knowledge in real experiences (Cant & Cooper, 2010). One of the most important characteristics of simulation learning is that it has the ability to support the integration of theory into practice in order to reflect what learned into practice within a safe environment (Moule, 2011). The aim of nursing programs was professional provide graduate nursing students with the required skills that can be used in making critical decisions regarding the care of patients with confidence. These programs also aim to provide clinical competencies that influence the quality of patient care, improve patients' outcomes, and enhance self-confidence (Kirkman, 2011). Many educators think that nursing education requires an increasing level of technical knowledge such as online teaching, simulation, and computer-based learning systems (Edwards & O Connor, 2011).

Many researchers have shown that simulation-based learning can be more effective than traditional methods of learning (Tosterud, 2015). Accordingly, there is a need to determine the benefits of simulated learning, especially at the level of increasing self-efficacy, satisfaction, and confidence among nursing students. It is also important to consider, whether the human patient simulator is the most effective tool to use for experiential learning when time and costs evaluated. Worthy here to mention that the absence of self-confidence and decreased satisfaction level can negatively affect nursing judgment at the bedside. Nursing students who have low levels of self-efficacy, satisfaction and confidence cannot independently of developing the skills and competencies deemed to be essential in evidence-based practice.

Simulation

A simulation that used in order to imitate different processes taken place in the real world, in order to help nurses understand the different activities and processes taken place in the clinical context and improve their practice. In other words, simulation can be regarded as a teaching practice, through which nurses can identify the best practices in the clinical setting(Omer, 2016).

According to Jefferies, simulations placed from low fidelity to high fidelity depending on the degree, to which they address reality. On the low-fidelity, end experienced such as using case studies or role-play. In the middle of the continuum, there are partial task trainers or computer-based simulators. Finally, at the other end of the continuum, there are full-scale, high-fidelity patient simulators which are extremely realistic and sophisticated and provide a high level of interactivity, and realism for the learner(Jeffries & Rizzolo, 2006).

When looking at the situation in healthcare environments, we can notice that nurses are facing great challenges, especially those related to response to the ever changing requirements of medical settings that require, in fact, possessing professional competencies and medical knowledge to effectively respond to these challenges (Winum, 2017). The use of simulation as a teaching and training strategy has been be increasing dramatically at the level of nursing education and other health specializations (Omer, 2016).Different types of simulation also improved nursing student ability regarding the decision-making process. In addition, simulation-based teaching can play an effective role, especially at the level of overcoming different deficiencies in performance, as a result of the use of traditional teaching methods (Gudayu, Badi, & Asaye, 2015).

Fletcher & Wind have summarized these benefits as follows safety was simulated lives and health can jeopardize to any extent required for learning. Economy was simulated materiel, equipment, and other resources, physical or fiduciary can use, misused, and expended as needed. Visibility was Simulation could provide visibility in at least two ways; it can make the invisible visible. Control the visibility of details, allowing the learner to discern the forest from the trees or the trees from the forest as needed. Time control simulated time can speed up, slowed down or stopped. It can also be completely reversed, allowing learners to replicate specific problems, events, or operational environments as often as needed (Gudayu et al., 2015).

Simulation Learning Process

Debriefing is a major advance in simulation, especially in the restorative field. Simulation at times even fills in as an affection for debriefing. Regularly, Debriefing happens effectively, creating a subjective input and an ideal learning exchange. Nevertheless, some of the time, the facilitator faces challenges. An inefficient questioning can be portrayed as takes after: the Debriefing of a clinical recreation session is useless when facilitators or students see the event of a hindrance

that has frustrated the learning procedure (Der Sahakian et al., 2015).

The pre-briefing task helped students to contribute in charting situation objectives and usually consisted of communication of the patient presentation, roles, tasks, time allotment, and orientation to general environment and the equipment (Meakim et al., 2013). Clinical simulation is an effort to reproduce some or nearly all of the vital features of a clinical situation, in order to make the situation more implicit and to be able to manage when this scenario arises in real clinical practice (Norman, 2012a). The scenario-based simulation learning has the benefit that it makes learners aware of realistic clinical scenarios in a simulated learning environment, despite waiting for the unusual situation to happen in real-life sceneries(Dreifuerst, 2009). According to the study of Kim, Choi, and Kang, self-efficacy, and performance ability. Following the training, simulation-based learning was a useful method for practical ability and this was good to acquire both knowledge and technique. Not only evaluation of theoretical knowledge but performance ability related to practice by developing lessons with various methods and content. In addition, a standard evaluation method needed to be developed (Kim, Choi, Kang, & Kim, 2011).

Oh & Han found that nursing simulation-based education for nursing students may increase problem-solving process but no effective self-efficacy (Oh & Han, 2012). Self-efficacy is a judgment or perception of one's ability to carry out a particular course of action. The most powerful input to self-efficacy was the successful performance of a behavior. When promoting healthy behavior with clients, Pender, Murdaugh, and Parsons, 2006 identified the most powerful influence on self-efficacy as the client's successful performance of a behavior. When nurses provided positive feedback, clients were more likely to repeat behaviors successfully (Smid, 2009). In the provision of healthcare, inaccurate calibration of self-efficacy may lead to adverse patient outcomes. A nursing student who incorrectly believes that he or she is capable of performing a skill may harm the patient if he or she independently performs the skill instead of appropriately seeking help(Stump, Husman, & Brem, 2012). According to the chang study find that simulation training for new graduate critical care nurses is useful to improve performance ability in emergencies. Hence, providing simulation training to critical care nurses during an orientation period would improve quality of critical care nursing and help the new graduate's nurse's adaptation(Chang, Kwon, Kwon, & Kwon, 2010).

Aim of the Study

The aim of this study was to explore self-confidence of students after their simulation experience in a College of Nursing.

Research Questions

In order to fulfill the aim of the study, the following research questions were investigated and answered:

1. What is the demographic profile of the nursing students in terms of age, GPA, and year level?
2. What is the self – confidence of students in a College of Nursing after their simulation experience?
3. Are there significant associations between select demographic characteristics and self- confidence of the students?
4. Are there significant correlations between and among self- confidence of the students?

METHODOLOGY

Research Design

The cross-sectional quantitative descriptive correlational design used for the current study. Researcher decided to use a quantitative, descriptive research methodology and validated and reliable survey instruments to explore the self-efficacy, satisfaction and confidence of nursing student after simulation experience in King Saud University (KSU).

Research Setting

This study conducted in the College of Nursing, King Saud University after having the securing permission. The College of Nursing, which was established in 1977 to be a loop within the system of health colleges in Saudi Arabia, as awards a bachelor's degree (BSN) in nursing. The college offers two undergraduate nursing programs; one is a four-year program for high school graduates (regular) and the other is an accelerated program for diploma student in nursing (bridging). Up to 30% of clinical teaching and learning occurred using low fidelity to high fidelity simulation strategies. The College of Nursing has simulation training integrated in the curriculum/program. The college has (n=26) simulation laboratories. The simulation laboratories are fully equipped with two way mirrors and wireless intercom system so that the faculty/professor could observe students' staff nurses interaction. In simulation scenarios, different tools and equipment are used such as Sim Man 3G, a high-fidelity simulation manikin, etc. (Adel, Elham, Hana, Nazek, & Mona, 2016).

Participants

The target population for this study was female BSN students from level 3 to level 8 of King Saud University, Riyadh who had been exposed to simulation learning at least one semester. The sample size was determined based on a 0.5 confidence interval and 95% confidence level. The number of participants to achieve the effective sample size was 177. The accessible population was 326 total of student. The researcher distributed 280 questionnaires and received 204 completed questionnaires with a response rate of 62.5%. No incentives were provided to the participants.

Sampling plan

Convenience sampling is referred to the researching subjects of the population that are easily accessible to the researcher(Given, 2008). Nursing students included were those who had courses in the skills used in laboratories with clinical simulation components, covering different levels and courses.

Inclusion and Exclusion Criteria

Students who participated in this study were in levels 3, 4,5,6,7 and 8 who participated in simulation activities in the laboratories and some of them had clinical rotations in the hospital. They were currently enrolled both in regular and bridging programs. Inclusion criteria for participants were female nursing students enrolled in the College of Nursing in the Academic Year 2016-2017, 2nd semester.

Characteristics of research sample

Frequencies and percentages of research sample calculated according to the variables **(level).**

Table 3.1. Distribution of research sample according to level of regular undergraduate and bridging.

	Level	Frequencies	Percentage
Regular Undergraduate	3	10	4.9%
	4	21	10.3%
	5	14	6.9%
	6	25	12.3%
	7	7	3.4%
	8	31	15.2%
Bridging program	6	33	16.2%
	8	63	30.9%
Group	Regular Undergraduate	108	52.9%
	Bridging program group	96	47.1%
	Total	**204**	**100.0%**

Instrument

Survey questionnaires were adopted after reviewing related literatures. Questionnaires comprised of two parts, namely, Demographic profile, Self-confidence it was measured by combined questionnaires developed by Frank D. Hicks (2009) and NLN (2005) with a total of 23 items.

Part I: The researcher developed a Demographic Profile questionnaire to acquire descriptive information about each subject participating in this study. Individuals affected by many situational variables that may influence their identification with and their attitudes regarding their simulation experience including age, gender, GPA, (regular or bridging), level.

Part II: Nursing Students' Self-confidence in Learning. This part included 23 items confidence scale based on a5-point Likert scale, with scores ranging from 1 (not at all confident) to 5(very confident).It was adopted from the NLN (2006) 8 items and Hicks (2006) 15 items. The reliability coefficient value of the scale adopted from NLN (2006) 0.87. Few confidence scale items adopted from Hicks (2006), which published in the work of Hicks and Li (2009). (Frank D. Hicks, Lola Coke, Suling Li, & National Council of State Boards of Nursing, 2009). Cronbach's alpha value for reliability of confidence was 0.96. For further validity and reliability, this 4-part questionnaire utilized to conduct a pilot study applied to participants in Saudi Arabia with 10% of the sample of students was not included in the target participants of the study.

Validity and Reliability

Pilot Study was conducted in 23 student nurses that represent 11% from total sample size. They selected randomly from different level in same nursing collage, however they did not allow participating in the actual study. It was observed that no problems were exist. it takes five to ten minutes to complete the questionnaire.P-value at the 0.01 level (2-taild) or at the 0.05 level (2-tailed) considered .and Cronbach alpha reliability coefficient was (0.966).

Ethical consideration

The study proposal submitted to the Institutional Review Board and approved number (IRB/3-21-72520), to assure the feasibility and suitability of the study and guarantee that it met all ethical considerations. Official approval to conduct the study taken from the administration of the selected setting. The official permission from the authors taken to adopt the surveys in collecting data for the current study. The tool statements revised and no modifications made to suit its utilization.

The participants who met the inclusion criteria invited to participate in the study. In this process, an information verbal explaining the introduction, purpose, process, risks, benefits, alternative procedures if any disclosed, assurance of anonymity, and confidentiality of the study provided to all the participants. They signed a consent form attached to the questionnaire. The participants informed that they had the right to withdraw from the study at any time and for any reason.

Method of Data Collection

Following ethical approval from the college of nursing. The researcher explained the purpose of the study to each participant prior to fill the questioner of the study. All participants voluntarily provided written consent. Participants received assurance that participation was voluntary, the results were confidential, and their participation did not affect their course grade.

Methods of Data Analysis

According to the research nature and the target sought to achieve. Once data gathered, researcher verified the completeness of the questionnaires. Therefore, it coded, loaded, and analyzed by using Statistical Package for Social Science SPSS ® program version (22.0). The data and returns were treated through using the various statistical models to perform statistical analysis. The descriptive statistics used to compute means, variances, and standard deviations.

Scoring System

To give a clear meaning for the mean scores of the items, the response from sample that calculated for each item in the scale, calculated as the range for the scale.

Response degree was determined by giving (5) to very high response, (4) for high response, (3) for medium response, (2) for weak response, and (1) for very weak response, and the response degree was determined for each sentence or dimension according to the following table:

Table 3.6. Scoring system criteria.

Phrase	Mean score	Weight
Strongly agree or very confident	4.20 to 5	Very high
Agree or confident	3.40 to less than 4.20	High
Neutral or Moderately	2.60 to less than 3.40	Medium
Disagree or Somewhat not confident	1.80 to less than 2.60	Weak
Strongly disagree or Not at all confident	1 to less than 1.80	Very weak

RESULTS

Table 1. Arithmetical averages (means) and standard deviations of the responses of the sample members around the variables of the questionnaire.

No.	Variable	Mean	Standard deviation	Statement arrangement	Response Degree
1	Nursing Students' Self-Confidence in Learning	3.51	.593	3	High
The total summation of questionnaire variables		**3.56**	**.514**	**--**	**High**

Table 2. Results of kruskal-wallis test between age and the self-confidence.

Variables	Age	No.	Mean Rank	Chi- Square	Sig.	Statistical significance
Nursing Students' Self-Confidence in Learning	20-21	62	102.94	4.287	.369	Not Significant
	22-23	34	120.24			
	24-25	10	92.45			
	26-27	58	98.45			
	More than 28	40	95.14			

Table 3. Results of kruskal-wallis test between gpa and the 3 questionnaire variables self-confidence.

Variables	GPA	No.	Mean Rank	Chi- Square	Sig.	Statistical significance
Nursing Students' Self-Confidence in Learning	2.0-3.0	4	90.13	5.006	.082	Not Significant
	3.1- 4.0	54	87.72			
	4.1-5.0	146	108.30			

Table 4. Results of spearman's correlation test between level and the3 questionnaire variables self-confidence.

		EI
Self-condidence	Spearman's Correlation	**.118**
	Sig. (2 – tailed)	**.226**

The Correlation is not significant between Self-confidence and level.

Table 5. Spearman rank correlation coefficient result.

	Self confidence		Satisfaction		Self-efficacy		N
	Rs	p-value	Rs	p-value	rs	p-value	
Self confidence			.489**	.000	.431**	.000	**204**

DISCUSSION

Majority of the age of nursing students were between (20-21) years with 30% and lowest age of nursing students were more than 28 years, which mean the majority of participant, was young society. The result showed that GPA of most nursing student with very good and excellent degree that mean the high performance level of participant. In terms of level of nursing students, majority came from level eight of regular undergraduate and bridging. Participants were involved from different program of nursing student from both regular undergraduate and bridging. As well as from different level .Therefore, results could be reliable and reflect the actual situation that could be suitable for any future action to improve the self-efficacy, satisfaction and confidence of nursing student after their simulation experience. Lastly, it seems that most of participants from level eight, could reflect the stability status for those participants in current setting.

The questionnaire variables reached a (high) degree from the perspective of research sample, at the first rank came "Nursing Student's Self-confidence", The outcomes about of this appeared to be that the participants were fulfilled and satisfied with their learning and that the clinical simulation session moved forward their self-efficacy and confidence. Nursing Students have shown a high self-confidence in learning. Ranked first, the nursing students were strongly confident when they evaluate the effectiveness of their interventions for an individual with shortness of breath. At the second rank, the nursing students had a high response to be strongly confident by developing the skills and obtaining the required knowledge from this simulation to perform necessary tasks in a clinical setting. The last rank showed that the nursing students were strongly confident in mastering the content of the simulation activity that my instructors presented to them. The rest of third variable items "Nursing Students' Self-Confidence in Learning" revealing a high response. The result of this study is congruent with a recent study done at College of Medicine Riyadh where medical students were found to be satisfied with simulation based education (Agha, Alhamrani, & Khan, 2015).

The results showed that there were no statistical differences according to age variable regarding the third variable "Nursing Students' Self-Confidence in Learning ",These findings were in congruent with Nursing Education Simulation Framework by Jefferies (2015) suggested that the outcomes of self-confidence is due to combination of factors related to demographic characteristics (Jeffries, Rodgers, & Adamson, 2015).. On the one hand, there were no statistical differences between the GPA and the third variable "Nursing Students' Self-Confidence in Learning. Moreover, findings illustrated that there is statistical significance among the nursing students' self-confidence in learning with their satisfaction in learning after their simulation experience. This is consistent with previous research by Lubbers & Rossman. Many researchers confirmed that the use of simulation in clinical and nursing practice can have many positive effects on high levels of satisfaction and self-confidence with the fidelity of the simulation experience were (Lubbers & Rossman, 2017).

CONCLUSION

As previously mentioned, the aim of the current study explored self- confidence among nursing students after their simulation experience in a College of Nursing. Specifically, this study gleaned on utilizing simulation as a procedure and strategy for clinical training advances and promotes student learning. Nursing students' enhances self-confidence after simulation that set up or prepare them for genuine living experience and speed the progress to proficient professionals in the future. The study concluded that there were no statistical differences between age, GPA and the first variable "Nursing Students' Self-Confidence in Learning.

Limitation

Although generalization was required in scientific researches, there were certain limitations found in this current study. First, this study was limited to explore self- confidence of students after their simulation experience due to participant include one gender (female).

Recommendations

College of Nursing

Nursing schools should pay an exceptional attention to apply the simulation experience that can provide their students with sufficient information and good training. In addition, training courses should be provided to faculty members in order to enable them to make full use of the simulation experience and smoothly mimic the different nursing experiences to their students. The Colleges of Nursing must develop their infrastructure and provide different software and hardware that can used to present the simulation activities. This study is only limited to nursing students, as such future researches like faculty members ' perceptions can also be considered.

Nursing Administration

Responsible parties in nursing schools should check the quality of the simulation experiments periodically and employ all capacities to improve them to make them closer to reality. The nursing administration in different colleges must provide the suitable financial support to fund the simulation activities. In addition, administration and leadership in nursing institutions should organize simulation trainings, seminars and workshops in order to enable both faculty members and students to understand the great benefits of using simulation in education.

Nursing Education

Simulation, the art of designing clinical scenarios to mimic reality, has succeeded in becoming an important aspect of nursing curriculum for decades. Curriculum designers can integrate simulation as part of its

educational development to enable the nursing students to identify the modern trends in the nursing practice. In this context, nursing education specialists must concentrate on the different practical sides of nursing profession in order to ease the process of imitating them using simulation techniques. Different factors affecting the simulation activity can be a part of future researches. Finally, nursing education designers must improve the quality of the provided programs in order to cope with the international trends of nursing education that heavily depends on technology integration.

Nursing Practice

Nursing practice must depend on providing high quality of services that could have great effects on both patients and the healthcare sector as a whole through making full use of modern technology. The daily life practices of nursing students shall be a reflection of what taught to them through simulation strategies in order to enable nurses themselves to do their tasks accurately without any errors. Future researchers can extend the scope of discussion through investigating the effect of simulation on job performance and quality of healthcare services among in-service nurses. Comparative studies can also be identified such as the effect of simulation experience on nursing practices in both public and private healthcare sectors.

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REFERENCES

1. Adel, S., Elham, F., Hana, K., Nazek, Z., & Mona, A. Strategic Plan, College of Nursing, KSU, 2016; 4.
2. Agha, S., Alhamrani, A. Y., & Khan, M. A. Satisfaction of medical students with simulation based learning. *Saudi medical journal*, 2015; *36*(6): 731.
3. Bambini, D., Washburn, J., & Perkins, R. Outcomes of clinical simulation for novice nursing students: Communication, confidence, clinical judgment. *Nursing education perspectives*, 2009; *30*(2): 79-82.
4. Bandura, A. *Self-efficacy: The exercise of control*: Macmillan ,1997.
5. Bearnson, C. S., & Wiker, K. M. Human patient simulators: A new face in baccalaureate nursing education at Brigham Young University. *Journal of Nursing Education*, 2005; *44*(9): 421.
6. Billings, D. M., & Halstead, J. A. *Teaching in Nursing-E-Book: A Guide for Faculty*: Elsevier Health Sciences ,2015.
7. Binder, C. R., Knöri, C., & Wäger, P. Simulation of socio-ecological transitions with Agent Based Modelling: From real systems to conceptual models.
8. Bradley, P. The history of simulation in medical education and possible future directions. *Medical education*, 2006; *40*(3): 254-262.
9. Brannan, J. D., White, A., & Bezanson, J. L. Simulator effects on cognitive skills and confidence levels. *Journal of Nursing Education*, 2008; *47*(11): 495-500.
10. Chang, S.-J., Kwon, E.-O., Kwon, Y.-O., & Kwon, H.-K. The effects of simulation training for new graduate critical care nurses on knowledge, self-efficacy, and performance ability of emergency situations at intensive care unit. *Korean Journal of Adult Nursing*, 2010; *22*(4): 375-383.
11. Cooper, J., & Taqueti, V. A brief history of the development of mannequin simulators for clinical education and training. *BMJ Quality & Safety*, 2004; *13*(1): 11-18.
12. Cremonini, V., Ferri, P., Artioli, G., Sarli, L., Piccioni, E., & Rubbi, I. Nursing students' experiences of and satisfaction with the clinical learning environment: the role of educational models in the simulation laboratory and in clinical practice. *Acta Bio Medica Atenei Parmensis*, 2016; *86*(3): 194-204.
13. Der Sahakian, G., Alinier, G., Savoldelli, G., Oriot, D., Jaffrelot, M., & Lecomte, F. Setting conditions for productive debriefing. *Simulation & Gaming*, 2015; *46*(2): 197-208.
14. DNP-c, M. N., & DNP-c, M. P. Mrs. Chase and her descendants: A historical view of simulation. *Creative nursing*, 2010; *16*(3): 101.
15. Dolly Goldenberg PhD, R., & Carroll Iwasiw EdD, R. The effect of classroom simulation on nursing students' self-efficacy related to health teaching. *Journal of Nursing Education*, 2005; *44*(7): 310.
16. Dornyei, Z. Research methods in applied linguistics.
17. Dreifuerst, K. T. The essentials of debriefing in simulation learning: A concept analysis. *Nursing education perspectives*, 2009; *30*(2): 109-114.
18. Foster, J. G., Sheriff, S & ,.Cheney, S. Using nonfaculty registered nurses to facilitate high-fidelity human patient simulation activities. *Nurse Educ*, 2008; *33*(3): 137-141.
19. Fountain, R. A., & Alfred, D. STUDENT SATISFACTION with High-Fidelity Simulation:

Does It Correlate with Learning Styles? *Nursing education perspectives*, 2009; *30*(2): 96-98.
20. Gaba, D. M., & DeAnda, A. A comprehensive anesthesia simulation environment: re-creating the operating room for research and training. *Anesthesiology*, 1988; *69*(3): 387-394.
21. Given ,L. M. *The Sage encyclopedia of qualitative research methods*: Sage Publicatio, 2008.
22. Gordon, C. J., & Buckley, T. The effect of high-fidelity simulation training on medical-surgical graduate nurses' perceived ability to respond to patient clinical emergencies. *The Journal of Continuing Education in Nursing*, 2009; *40*(11): 491-498.
23. Gosselin, A. M. Nursing Simulation Experience: Self-Efficacy, State Anxiety, Locus of Control, and Simulation Effectiveness, 2013.
24. Gudayu, T. W., Badi, M. B., & Asaye ,M. M. Self-Efficacy, Learner Satisfaction, and Associated Factors of Simulation Based Education among Midwifery Students: A Cross-Sectional Study. *Education Research International, 2015*.
25. Herrmann, E. K. Mrs. Chase: A noble and enduring figure. *AJN The American Journal of Nursing*, 1981; *81*(10): 1836.
26. Higazee, M. Z. A., Rayan, A., Ades, M. A., & Alrawashdeh, F. Nursing Students' Satisfaction with Their Clinical Experiences .
27. Hughes, R. *Patient safety and quality: An evidence-based handbook for nurses* Agency for Healthcare Research and Quality Rockville, MD, 2008.
28. Jeffries, P. R. A framework for designing, implementing, and evaluating: Simulations used as teaching strategies in nursing. *Nursing education perspectives*, 2005; *26* (2) :10-96 ,
29. Jeffries, P. R., & Rizzolo, M. A. Designing and Implementing Modelsfor the Innovative Use of Simulationto Teach Nursing Care of Ill Adults and Children: A National, Multi-Site, Multi-Method Study [Summary Report], 2006.
30. Jeffries, P. R., Rodgers, B., & Adamson, K. NLN Jeffries simulation theory: Brief narrative description. *Nursing education perspectives*, 2015; *36*(5): 292-293.
31. Johnson, R. R. Instructional simulation: The interface with the student. *Behavior Research Methods*, 1974; *6*(2): 12.
32. Judge, T. A., & Bono, J. E. Relationship of core self-evaluations traits—self-esteem, generalized self-efficacy, locus of control, and emotional stability—with job satisfaction and job performance: A meta-analysis. *Journal of applied Psychology*, 2001; *86*(1): 80.
33. Kaddoura, M. A. New graduate nurses' perceptions of the effects of clinical simulation on their critical thinking, learning, and confidence. *The Journal of Continuing Education in Nursing*, 2010; *41*(11): 506-516.
34. Kamerer, J. (2015). Teaching healthcare professionals using simulation. *Saramento, CA: Net CE* .
35. Kim, H.-R., Choi, E.-Y., Kang, H.-Y., & Kim, S.-M. The relationship among learning satisfaction, learning attitude, self-efficacy and the nursing students' academic achievement after simulation-based education on emergency nursing care. *The Journal of Korean Academic Society of Nursing Education*, 2011; *17*(1): 5-13.
36. Kuznar, K. A. Associate degree nursing students' perceptions of learning using a high-fidelity human patient simulator. *Teaching and Learning in Nursing*, 2007; *2*(2): 46-52.
37. Leedy, P. D., & Ormrod, J. E. *Practical research*: Pearson Custom, 2005.
38. Leigh, G. T. High-fidelity patient simulation and nursing students' self-efficacy: a review of the literature. *International Journal of Nursing Education Scholarship*, 2008; *5*(1): 1-17.
39. Liaw, S. Y., Scherpbier, A., Rethans, J.-J., & Klainin-Yobas, P. Assessment for simulation learning outcomes: a comparison of knowledge and self-reported confidence with observed clinical performance. *Nurse Educ Today*, 2012; *32*(6): 35-39.
40. Lubbers, J., & Rossman, C. Satisfaction and self-confidence with nursing clinical simulation: Novice learners, medium-fidelity, and community settings. *Nurse Educ Today*, 2017; *48*: 140-144.
41. Mack ,P. Understanding Simulation-Based Learning. *SGH-Life Support Training Centre* ,2009.
42. Magnetico, J. L. *Clinical Simulation and Nursing Student Perceptions of Satisfaction, Self-Confidence, and Critical Thinking*. Walden University, 2017.
43. Martins, J .C. A., Mazzo, A., Baptista, R. C. N., Coutinho, V. R. D., Godoy, S. d., Mendes, I. A. C., & Trevizan, M. A. The simulated clinical experience in nursing education: a historical review. *Acta Paulista de Enfermagem*, 2012; *25*(4): 619-625.
44. McConville, S. A & ,.Lane, A. M. Using on-line video clips to enhance self-efficacy toward dealing with difficult situations among nursing students. *Nurse Educ Today*, 2006; *26*(3): 200-208. doi:10.1016/j.nedt.2005.09.024
45. McRae, M. E., Chan, A., Hulett, R., Lee, A. J & ,. Coleman, B. The effectiveness of and satisfaction with high-fidelity simulation to teach cardiac surgical resuscitation skills to nurses. *Intensive and Critical Care Nursing*, 2017; *40*: 64-69.
46. Meakim, C., Boese, T., Decker, S., Franklin, A. E., Gloe, D ,.Lioce, L., Borum, J. C. Standards of best practice: Simulation standard I: Terminology. *Clinical Simulation in Nursing*, 2013; *9*(6): 3-11.
47. Mohammed, S. A., & Ahmed, H. M. The Effect of Simulation Training on Nurses and Intern Nursing Students' Skill, Confident and Satisfaction Regarding Neonatal Resuscitation ,2016.
48. The NCSBN National Simulation Study: A Longitudinal, Randomized, Controlled Study

Replacing Clinical Hours with Simulation in Prelicensure Nursing Education. *Journal of Nursing Regulation*, 2014; *5*(2): 3-40. doi:https://doi.org/10.1016/S2155-8256(15)30062-4
49. NLN. A Vision for Teaching with Simulation. *NLN Board of Governors* ,2015.
50. Norman, J. Systematic review of the literature on simulation in nursing education. *ABNF Journal*, 2012.
51. Oh, H.-K., & Han, Y.-I. Effects of nursing simulation-based education on problem solving process and self-efficacy of nursing college students. *The Korean Journal of Health Service Management*, 2012; *6*(4): 245-254.
52. Omer ,T. Nursing Students' Perceptions of Satisfaction and Self-Confidence with Clinical Simulation Experience. *Journal of Education and Practice*, 2016; *7*(5): 131-138.
53. Pike, T., & O'Donnell, V. The impact of clinical simulation on learner self-efficacy in pre-registration nursing education. *Nurse Educ Today*, 2010; *30*(5): 405-410.
54. Polit, D., & Beck, C. Nursing research: generating and assessing evidence for nursing research: Philadelphia: Lippincott Williams & Wilkins ,2008.
55. Ricketts, B., Merriman, C & ,.Stayt, L. Simulated practice learning in a preregistration programme. *Br J Nurs*, 2012; *21*(7): 435-440.
56. Rodgers, D. L. (2007). High-fidelity patient simulation: a descriptive white paper report. *Healthcare Simulation Strategies*, *10*(4), 68-77 .
57. Roth, P .L., & Switzer III, F. S. A Monte Carlo analysis of missing data techniques in a HRM setting. *Journal of Management*, 1995; *21*(5): 1003-1023.
58. Rush, S., Firth, T., Burke, L., & Marks-Maran, D. Implementation and evaluation of peer assessment of clinical skills for first year student nurses. *Nurse education in practice*, 2012; *12*(4): 219-226.
59. Saied, H. The Impact of Simulation on Pediatric Nursing Students' Knowledge, Self-Efficacy, Satisfaction, and Confidence. *Journal of Education and Practice* ,2017.
60. Sanford, P. G. Simulation in nursing education: A review of the research. *The Qualitative Report*, 2010; *15*(4): 1006.
61. Sherer, M., Maddux, J. E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R. W. The self-efficacy scale: Construction and validation. *Psychological Reports*, 1982; *51*(2): 663-671.
62. Singh, H., Kalani, M., Acosta-Torres, S., El Ahmadieh, T. Y., Loya, J., & Ganju, A. History of simulation in medicine: from Resusci Annie to the Ann Myers Medical Center .*Neurosurgery*, 2013; *73*(1): 9-14.
63. Slager, D., Feenstra, C., Ayoola, A., Flikkema, M., & Bartels, S. Synthesis of nursing care across the life span using laboratory simulation: A senior-level course. *Journal of Nursing Education*, 2011; *50*(2): 95-98.
64. Smid, M. K. *NURSING STUDENTS'SELF EFFICACY*. College of Saint Mary ,2009.
65. Smith, S. J., & Roehrs, C. J. High-fidelity simulation: Factors correlated with nursing student satisfaction and self-confidence. *Nursing education perspectives*, 2009; *30*.
66. Stump, G. S., Husman, J., & Brem, S. K. The Nursing Student Self-Efficacy Scale: development using item response theory. *Nurs Res*, 2012; *61*(3): 149-158. doi:10.1097/NNR.0b013e318253a750
67. Sullivan, J. R., & Guerra, N. S. A closer look at college students: Self-efficacy and goal orientation. *Journal of Advanced Academics*, 2007; *18*(3): 454-476.
68. Thabane, L., Ma, J., Chu, R., Cheng, J., Ismaila, A., Rios, L. P., . . . Goldsmith, C. H. A tutorial on pilot studies: the what, why and how. *BMC medical research methodology*, 2010; *10*(1): 1.
69. Weekley, J. A., Hawkes, B., Guenole, N., & Ployhart, R. E. Low-fidelity simulations. *Annu. Rev. Organ. Psychol. Organ. Behav.*, 2015; *2*(1): 295-322.
70. Winum, A. BSN Students' Satisfaction and Self-Confidence in Simulation-based Learning ,2017.
71. Yuan, H. B., Williams, B. A., Fang, J. B., & Ye, Q. H. A systematic review of selected evidence on improving knowledge and skills through high-fidelity simulation. *Nurse Educ Today*, 2012; *32*(3): 294-298.
72. Zimmerman, B. J & ,.Martinez-Pons, M. Student differences in self-regulated learning: Relating grade, sex, and giftedness to self-efficacy and strategy use. *Journal of educational Psychology*, 1990; *82*(1): 51.