

Comparing the Effect of Simulated Patient and Lecture Training Methods in the Clinical Self-Efficacy of Nurses Caring for Patients With Acute Coronary Syndrome

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Abstract- Various training methods can be used to enhance the clinical self-efficacy of nurses caring for patients with the acute coronary syndrome (ACS). The present study aimed at investigating and comparing the effect of simulated patient and lecture training methods in the self-efficacy of nurses' clinical performance caring for ACS patients in 2016. This was a quasi-experimental study. The population consisted of 62 nurses working in cardiac intensive care units (CICU) of associated hospitals with Jahrom University of Medical Sciences. Sampling was done with the conventional method and divided into two groups; "lecture" and "simulated patient" education through random assignment. Data was collected with the Self-efficacy of Nurses' Clinical Performance Questionnaire before and after the intervention. Data analysis was performed with SPSS v16.0 software and paired and independent t-tests. There was a significant difference between pre- and post-intervention self-efficacy mean scores in the two groups ($P < 0.05$). In addition, there was no significant difference between pre-intervention self-efficacy mean scores in the two groups ($P > 0.05$). The simulated patient training method was more effective in enhancing nurses' self-efficacy in caring for ACS patients than the lecture method.

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Introduction

As the most common cardiovascular disease, acute coronary syndrome (ACS) is induced by ischemic coronary arteries and is a developing factor behind myocardial injury and heart failure (1,2). Despite medical advancements, this syndrome is a key debilitating factor increasing mortality rate and threatening patients' survival (3). The nursing community plays a major role in delivering care to ACS patients, enhancing whose self-efficacy is an empowering factor in helping them care for such patients (4). According to the self-efficacy theory, improving individuals' confidence in their capacities and skills enhances their performance (5,6), cognitive, social, emotional, and behavioral (7) skills and their capacity for exercising knowledge and academic and professional skills (8). Providing adequate training in clinical skills as well as developing informed competence in nursing care, in particular in intensive care units (ICU), is an effective

means of enhancing nurses' self-efficacy (9). Unfortunately, a great deal of educational effort put in the field of nursing is currently below expectations, achieving a mere fraction of the predefined goals in practice (10). A disregard for the educational needs of the nursing community as well as substandard, incorrect plan provision, and implementation can also be seen in Iran (11,12).

The variety of training and learning styles, more than any other factor, has attracted the attention of educational experts in recent years (13). In their view, effective training is the most important factor in the learning process (14). Training methods are of great significance in facilitating effective learning (15). Educational change, including adopting modern training methods relevant to the content being taught, is integral to any education system aiming at enhancing the quality of education (16). Giving lectures, as a teacher-oriented method, is still the most common training method (17,18), primarily

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involving the oral presentation of subject matters by professors and lecturers (19). Although time- and cost-efficient (20,21), this method provides little opportunity for interaction and participation in the learning process (20,22). Simulated/standardized patient is a modern training method (23) founded on the principles of adult learning (24,25) in which the trainee is put in a very similar setting to clinical departments and is given feedback from the simulated patient (26). Although a number of studies have been conducted on the impact of simulated patient training in nursing, there is little empirical evidence regarding its practical outcomes, making future studies a necessity (27). The present study aimed at investigating the effect of simulated patient and lecture training methods in the clinical self-efficacy of nurses caring for ACS patients hospitalized in the affiliated hospitals' CICUs to Jahrom University of Medical Sciences in 2016.

Materials and Methods

This was a quasi-experimental study conducted in the affiliated hospitals' CICUs to Jahrom University of Medical Sciences in the fall of 2016 and in collaboration with Isfahan University of Medical Sciences. Subjects included 62 nurses who met the inclusion criteria, *i.e.*, willingness to participate in the study, holding an academic degree of at least a bachelor's degree, and more than three months of work experience in CICUs (28). Written consents were obtained for participation in the study. They were selected using the convenience sampling method and divided into "lecture" and "simulated patient" groups (31 nurses each) through random assignment. The data collection tool was the Clinical Performance Self-efficacy Questionnaire, where the first part contained demographic information, and the second involved the Clinical Performance Self-efficacy Questionnaire developed by Cheraghi *et al.*, (2008). The questionnaire consisted of 4 domains and 37 items classified as follows: "patient examination" with 12 items, "nursing diagnosis and planning" with nine items, "nursing care plan implementation" with ten items, and "care plan assessment" with six items. Data collection

was done through self-assessment by subjects from the two groups in two stages, *i.e.*, before the study and one week after. The questionnaire was designed in a 4-point Likert scale from 0 to 100% as follows: 0-20% (I am not sure at all), 30-40% (I am not sure), 50-70% (I am somewhat sure), and 80-100% (I am completely sure). They were given a score of 1-4, respectively, with 37 and 148 the minimum and maximum scores. Lower and higher scores suggested lower and greater clinical performance self-efficacies. The overall score was classified into three levels: low (37-74), average (74.1-111), and high (111.1-148). The questionnaire's face and content validity, examined in 2008, was reported as 97%. Moreover, a Cronbach's alpha of 94% was obtained as the measure of its reliability.

Data were analyzed using SPSS v16.0, descriptive statistics (frequency distribution and mean scores), chi-square test, Mann-Whitney U test, as well as paired and independent t-tests.

Results

Sixty-two nurses, in two groups of 31, participated in this study. The intervention was done in the form of ACS patient care training through lectures and simulated patient methods for the two groups. 48 (77.4%) subjects were female. The mean age (SD) of participants was 32.27 (7.40) years. The majority of nurses (90.3%) had bachelor's degrees, and 58.1% were employed officially. The mean (SD) overall experience and CICU experience was 9.62 (7.84) and 6.30 (5.69) months.

No significant difference was seen in the two groups in terms of age ($P=0.435$), sex ($P=0.220$), work experience ($P=0.239$), academic degree ($P=0.394$), and type of employment ($P=0.768$).

Tables 1 and 2 display comparisons of the nurses' self-efficacy mean scores before and after the intervention.

Results from the independent t-test revealed that there was no significant difference between pre-intervention self-efficacy mean scores in the two groups ($P=0.648$). They also showed a significant difference between post-intervention self-efficacy mean scores in the two groups ($P=0.037$).

Table 1. The comparison of the nurses' self-efficacy means scores before and after intervention in the two groups

Groups/ Variable	Before Intervention/ Mean (SD)	After Intervention/ Mean (SD)	Paired t-test	
			t	P
The lecture group	114.55 (25.07)	127.68 (16.81)	-0.701	0.038
The simulated patient group	113.64 (25.58)	131.09 (12.25)	-4.555	0.000

Table 2. The comparison of the nurses' self-efficacy means scores before and after intervention in the two groups

Groups/ Variable	The Lecture Group, Mean (SD)	The simulated patient group, Mean (SD)	Independent t-test	
			F	P
Before intervention	114.55 (25.07)	113.64 (25.58)	0.211	0.648
After intervention	127.68 (16.81)	131.09 (12.25)	4.616	0.037

Discussion

The results demonstrated a significant improvement in nurses' self-efficacy using the standardized patient method compared to the lecture method (30). Contrary to the lecture method, the standardized patient method involves active learning methods, which have led to successful results in numerous studies (31,33). Active, collaborative learning results in better learning, prolonged information retention, and greater joy on the part of students (34).

In the study by Sheikh al-Eslami & Behsavan (2014), prescription writing for patients with infectious diseases was significantly better and more accurate using the simulated patient method as opposed to conventional ones, with all students expressing full content with the former (35). In the study by Manzari *et al.* (2015), simulated patient training improved clinical decision-making in ICU nurses (36). Yoo (2003) and Owen & Ward-Smith (2014) reported enhanced clinical judgment, patient assessment, and communication skills on the part of nursing students receiving standardized patient training (37,38). In the study by Sadeghian *et al.*, (2014), mannequin-assisted clinical simulation resulted in the enhancement of medical students' performance in emergency rooms (39). Another study (2011) reported enhanced teamwork activity and performance on the part of midwives delivering emergency care to eclamptic patients employing the standardized patient method (40).

In the present study, nurses were actively participating throughout the standardized patient training and offered feedback based on their knowledge and experience. In the study by Manzari *et al.*, (2015), giving feedback in the course of standardized patient training was also effective in ICU nurses' performance (36). Endacott *et al.*, (2012) regard feedback in simulated settings as an important strategic key in enhancing clinical decision-making in emergency situations (41). In addition, standardized patient training contributes significantly to the improvement of problem-solving skills and the integration of clinical information, hence a unique, valuable resource in clinical and communicative skill training (35).

In this study, lecture training also improved the awareness level of nurses caring for ACS patients significantly. In the study by Jafarimanesh *et al.*, (2016), lecture training improved the awareness of nurses as well (42). Other studies point to a positive, significant relationship between lecture training and the level of trainees' learning and retention (43,44). Despite the advancements in the knowledge and the development of modern techniques, lecture training, as a teacher-oriented method, remains to be an important (45), safe, and straightforward (46,47) method.

The results of a number of studies are inconsistent with those of ours. In the study by Gordon *et al.*, (2006), no difference was observed between the standardized patient and lecture methods (48). In the study by Maneval *et al.*, (2012), the standardized patient method had no impact on the enhancement of critical thinking and clinical decision-making by bachelor's students of nursing (49). In the study by Lotfi *et al.*, (2010), no difference was observed in the performance of bachelor's students of the operating room using the standardized patient and critical thinking methods (50). Such inconsistencies with the present study may be due to different training contents, subjects, implementation methods, and variables.

The use of standardized patients can enhance the awareness level of nurses in various care fields, including ACS. The conventional lecture method is also effective, although the standardized patient method could develop sustainable analytical, problem-solving, critical thinking, and learning skills. Based on the findings of this study, it is recommended that the modern standardized patient training method be utilized in the in-service continuing education of nurses along with the lecture method to enhance and broaden their level of learning.

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References

- Jahromi MK. Assessing characteristics of the patients suffering from Acute Coronary Syndrome based on synergy model. *Iran J Crit Care Nurs* 2013;6:127-34.
- Khalifehzadeh A, KarimyarJahromi M. The impact of Synergy Model on nurses' performance and the satisfaction of patients with acute coronary syndrome. *Iran J Nurs Midwifery Res* 2012;17:16-20.
- Mettananda C, Rothwell P, Li L, Mehta Z, Gutnikov S. Comparison of risk factors for stroke subtypes versus acute coronary syndrome: A population-based study. *2016;10:284.*
- Lu M, Tang J, Wu J, Yang J, Yu J. Discharge planning for acute coronary syndrome patients in a tertiary hospital: a best practice implementation project. *JBIDatabase System Rev Implement Rep* 2015;13:318-34.
- Rostami H, Ghahramanian A, Golchin M. Educational needs of myocardial infarction patients. *J Nurs Midwifery Urmia Univ Med Sci* 2011;9:157-64.
- Hosseini M, Azimzadeh E. Correlation between self-efficacy and nurses' conflict management strategies. *J Health Promot Manag* 2013;2:16-23.
- Vaezfar S, Azadi M, Akbari Balotanbegan A, Rahimi M. The Predictive Role of Self-efficacy and Social Support in Nurses' Burnout. *IJN* 2014;27:140-9
- Haghani F, Asgari F, Zare S, Mahjoob-Moadab H. Correlation between Self-Efficacy and Clinical Performance of the Internship Nursing Students. *Res Med Educ* 2013;5:22-30.
- Salimi T, Karimi H, Shahbazi L, Dehghanpour M, Hafezieh A, Parandeh K, et al. Evaluation of Clinical Skills of Final Year Nursing Students in Critical Care Units. *J Shahid Sadoughi Univ Med Sci* 2005;13:60-6.
- Aitken L, Marshall A, Chaboyer W. *ACCCN's Critical Care Nursing*. Mosby Australia: Elsevier Health Sciences; 2016.
- Farmani P, Zeighami Mohamadi S. Viewpoints of the nurses in social security hospital of Karaj and Shahriar on nursing continuing education (2009). *Iran J Med Educ* 2011;11:336-8.
- Ebrahimi H, Mohammadi Hosseini F, Amirmia M, Mehraee A, Jamali V, Hejazi SA. Factors Influencing Nurses' Participation in Continuing Education Programs in Tabriz University of Medical Sciences. *Iran J Med Educ* 2012;12:518-26.
- Darvishzade M, Sabzevari S, Garrosi B, Hassanzade A, Akbar. Reviewing Learning Styles Regarding Medical Students of Kerman University of Medical Sciences and Providing a Teaching Method Appropriate based on Their Views. *Strides Dev Med Educ* 2013;10:376-84.
- RImaz S, Zarei F. Exploring the teaching and learning approaches from the viewpoint of postgraduate students and their lecturers. *Iran J Health Educ Health Prom* 2013;1:67-82.
- Adib-Hajbaghery M, Rafiee S. Comparing the Effectiveness of Group Discussion and Lecture Methods on the learning of medical sciences students: A Review Study. *Iran J Med Educ* 2016;16:53-62.
- Savery JR. Overview of problem-based learning: Definitions and distinctions. Essential readings in problem-based learning: Exploring and extending the legacy of Howard S Barrows. *IJPBL* 2015;9:5-15.
- Monzavi A, Sadighpour L, Jafari S, Saleh N, Kharazi Fard MJ. Viewpoints of Clinical Dentistry Students on the Factors Affecting the Quality of Lectures in Theoretical Courses. *Iran J Med Educ* 2012;11:832-41.
- Ghafourifard M, Haririan H, Aghajanloo A, Ghanei R. Comparison of case-based and lecture teaching methods the viewpoint of nursing student. *Educa Strategies Med Sci* 2013;6:7-12.
- Mollazadeh H, Kameli A, Mirhosseini F, SHOJA M. Comparing the effect of education by lecture and multimedia software on learning of fundamental of nursing in nursing students. *J North Khorasan Univ Med Sci* 2014;6:151-9.
- Kianian T, Zare M, Ildarabadi E, Karimi Moonaghi H, Saber S. Evaluation of training competency of health care workers in training clients and patients. *J Nurs Educ* 2014;3:51-60.
- Hafezimoghadam P, Farahmand S, Farsi D, Zare M, Abbasi S. A comparative study of lecture and discussion methods in the education of basic life support and advanced cardiovascular life support for medical students. *Turkey J Emerg Med* 2013;13:59-63.
- Noohi E, Abbaszadeh A, Sayed Bagher Madah S, Borhani F. Collaborative learning experiences in problem-based learning (PBL) education: a qualitative study. *J Qual Res Health Sci* 2013;1:255-67.
- Asadi A. The Role of Standardized Patient in Medical Education and How to Prepared. *Res Med Educ* 2007;1:47-51.
- Zaghari tafreshi M, Rasouli M, Sajadi M. Simulation in nursing education: A review article. *Iran J Med Educ* 2013;12:888-94.
- Maas NA, Flood LS. Implementing high-fidelity

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- simulation in practical nursing education. *Clin Simul Nurs* 2011;7:e229-e35.
26. Rauen CA. Simulation as a teaching strategy for nursing education and orientation in cardiac surgery. *Crit care nurse* 2004;24:46-51.
 27. Reese CE, Jeffries PR, Engum SA. Learning together: Using simulations to develop nursing and medical student collaboration. *Nurs Educ Perspect* 2010;31:33-7.
 28. Karimyar Jahromi M. Nurses' Quality of Performance in Intensive Care Units based on Synergy Model. *Iran J Nurs* 2013;26:74-83.
 29. Cheraghi F, Shamsaei F, Shaikholsalmi F, Hasantehrani T. Relationship between Self-Efficacy and Learning and Study Strategies in Nursing and Midwifery Students of Hamedan University of Medical Sciences. *Iran J Med Educ* 2013;13:331-40.
 30. Mustapha K, Gilli Q, Frayret J-M, Lahrichi N, Karimi E. Agent-based Simulation Patient Model for Colon and Colorectal Cancer Care Trajectory. *Procedia Comput Sci* 2016;100:188-97.
 31. Pishgahi A, Dareshiri S, Owlia MB, Halvani A, Noori Majelan n, Salman Roghani H, et al. The Effect of Active Learning Method on Stability of Information and Satisfaction of Physiopathology Students in Yazd University of Medical Sciences. *Iran J Med Educ* 2010;9:208-15.
 32. Ghasemian Safaei H, Farajzadegan Z. Active participation of student s in teaching. *Iran J Med Educ* 2012;11:1129-30.
 33. Naderi A, Baghaei R, Mohammad por Y, Aliramaei N, Ghorban zadeh K. Comparison of the Effect of Competency-Based Education Model and Traditional Teaching on Cognitive and Clinical Skills Learning among ICU Nursing Students. *Iran J Med Educ* 2012;12:698-708.
 34. Momeni Danaei S, Zarshenas L, Oshagh M, Omid Khoda SM. Which method of teaching would be better cooperative or lecture? *Iran J Med Educ* 2011;11:24-31.
 35. Zia sheikholeslami N, Bahsoun M. New method of education in prescription of various infectious diseases through simulated patients. *Strides Dev Med Educ* 2014;10:504-6.
 36. Manzari Z, Shahraki Moghaddam E, Heshmati Nabavi F, Mazloom SR, Khaleghi E. The effects of teaching by using standardized patients on critical care nurses' clinical decision making. *Iran J Crit Care Nurs* 2015;8:69-78.
 37. Yoo MS, Yoo IY. The effectiveness of standardized patients as a teaching method for nursing fundamentals. *J Nurs Educ* 2003;42:444-8.
 38. Owen AM, Ward-Smith P. Collaborative learning in nursing simulation: near-peer teaching using standardized patients. *J Nurs Educ* 2014;53:170-3.
 39. Sadeghnezhad H, Khazaei T, Nasiri A. Comparing the Effect of Concept Mapping to Clinical Simulation on Emergency Medical Students Clinical Decision Making. *Iran J Med Educ* 2014;14:241-51.
 40. Siassakos D, Fox R, Crofts JF, Hunt LP, Winter C, Draycott TJ. The management of a simulated emergency: better teamwork, better performance. *Resuscitation* 2011;82:203-6.
 41. Endacott R, Scholes J, Cooper S, McConnell-Henry T, Porter J, Missen K, et al. Identifying patient deterioration: using simulation and reflective interviewing to examine decision making skills in a rural hospital. *International J Nurs Stud* 2012;49:710-7.
 42. Jafarimanesh H, Zand S, Ranjbaran M, Varvani Farahani P, Sadrkia GR. Comparing the effectiveness of SMS and lectures on the job training for nurses. *Iran J Med Educ* 2015;15:579-88.
 43. Henderson A, Cooke M, Creedy DK, Walker R. Nursing students' perceptions of learning in practice environments: a review. *Nurse Educ Today* 2012;32:299-302.
 44. Heron PR. Effect of lecture instruction on student performance on qualitative questions. *Phys Rev Spec Topics-Physics Educ Res* 2015;11:010102.
 45. Hora MT. Limitations in experimental design mean that the jury is still out on lecturing. *Proc Natl Acad Sci* 2014;111:E3024-E.
 46. Pearce RS, Okwuashi LO. Lecturing versus Teaching in Foundation and First Year Mainstream Chemistry. *J Modern Educ Rev* 2013;3:568-75.
 47. Gaberson K, Oermann M. *Clinical teaching strategies in nursing*. USA: Springer publishing company; 2010.
 48. Gordon JA, Shaffer DW, Raemer DB, Pawlowski J, Hurford WE, Cooper JB. A randomized controlled trial of simulation-based teaching versus traditional instruction in medicine: a pilot study among clinical medical students. *Adv Health Sci Educ* 2006;11:33-9.
 49. Maneval R, Fowler KA, Kays JA, Boyd TM, Shuey J, Harne-Britner S, et al. The effect of high-fidelity patient simulation on the critical thinking and clinical decision-making skills of new graduate nurses. *J Contin Educ Nurs* 2012;43:125-34.
 50. Lotfi M, Khani H, Fathi AE, Mokhtari M. Effect of compound education simulation and critical thinking strategies on clinical decision making in surgical technologist students. *Nurs Midwifery J* 2011;5:5-11.