

The impact of Synergy Model on nurses' performance and the satisfaction of patients with acute coronary syndrome

Asghar Khalifehzadeh¹, Mahdi KarimyarJahromi², Ahmadreza Yazdannik³

ABSTRACT

Background: Despite many progresses in the improvement of care status and the management of acute coronary syndrome, cares quality is far from the desirable conditions. Today, due to the great emphasis on resources management, costs control, the effectiveness of patient care, improving quality and responsibility, the good patient care is necessary. Two dimensions are referred for improving the quality: process (standard- based and safe services) and resultant (client satisfaction). The present study, aimed at determining the impact of Synergy Model on nurses' performance and the satisfaction of the patients with acute coronary syndrome.

Materials and Methods: In a quasi- experimental study in a two-group and two-step form, a sample of 22 nurses and 64 patients with acute coronary syndrome in cardiac intensive care units of some university hospitals in 2010-2011 were recruited. Synergy Model was explained and carried out for the studied groups in a workshop and its impact on nurses performance in different areas and patients' satisfaction was examined by using two checklists: "examining the nurses' performance quality" and "examining the patients satisfaction".

Findings: Differences between the mean scores of the nurses in communicative, supportive, care and educational domains and total performance were statistically significant before and after the intervention ($p < 0.001$). However, in therapeutic domain, changes were not significant. There was a statistically significant difference between the average satisfaction score of the two groups ($p < 0.001$).

Conclusions: Applying Synergy Model as a basis for receiving nursing cares was effective in increasing patient satisfaction and in the performance of nurses of cardiac intensive care units.

Key words: Nurses performance, patient's satisfaction, synergy model, acute coronary syndrome

¹ MSc, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.

² MSc Student, School of Nursing and Midwifery, Jahrom University of Medical Sciences, Jahrom, Iran.

³ PhD, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

Address for correspondence: Asghar Khalifehzadeh, MSc, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran
Email: khalifehzadeh@nm.mui.ac.ir

This article was derived from MSc thesis in the Isfahan University of Medical Sciences, No: 389459.

INTRODUCTION

Acute coronary syndrome refers to the cases in which, coronary ischemic disorder puts the person at the risk of developing myocardial injury and heart failure and in 50% of patients, sudden death is the first sign.^[1] Despite many progresses in improving care status and the management of acute coronary syndrome, the quality of cares in many patients with acute coronary complications is far from the ideal conditions.^[2] Today, because of the great emphasis on the resources management, costs control, the effectiveness of patients care, improving quality and responsibility, the good care of patient is necessary.^[3]

Assessing the services quality, is one of the indicators of the effectiveness of interventions which helps to improve the services quality by monitoring the system and identifying the strengths and weaknesses. Quality assessment studies are performed using the measurement of medical outcomes, cost and patients satisfaction.^[4]

Pazargadi and colleagues^[5] defined the nursing care

Access this article online

Quick Response Code:	Website: www.***
	DOI: ***

quality from the viewpoint of experts and clinical nurses: "offering the safe and standard nursing care based on clients' needs, in a way that leads to patient satisfaction" and they expressed that different factors involve in nursing services quality, but "standardized services" and "client satisfaction" are concerned more. In fact, process (safe and standard services) and outcome (client satisfactions) are referred to define the quality of care.^[5]

Nevertheless, special attention has been recently paid to client satisfaction as one of important indicators of health care quality. From 1990s, the measurement of patient satisfaction has been considered as a way of finding out the patients' views and opinions about their care in most health care centers.^[6] One of the key symptoms of quality in health services is patients satisfaction. As services quality determines patient's opinions and their satisfaction, evaluating the services quality and patient satisfaction are dependent and associated issues.^[7]

On the other hand, nursing service does not have a theoretical framework for organizing the performances, researches and evaluations. Applying some models may make nurses responsible and be able to predict the outcomes of their practice.

Care models provide the possibility of performances coherence in the care spectrum. Models consider the specific patient's needs and result in providing skilled nurses and appropriate facilities to obtain the desirable results.^[8] Synergy model, suggested by American association of critical nursing (AACN) in 1993, was proposed by a set of experts to draw the critical cares activity domain. This model, by using different ways, develops nursing competences and the assurance of maximum coordination between competences of nurse and patient individual needs.

The main concept of this model indicates that there is an interaction between needs or characters of patients and their families and nurses' capabilities and characteristics. Synergy is established when patients needs and characters are matched with nurses' competences and talents. Offering maximum care is improved by coordination between patients' character (needs) and nurses' characteristics (competencies). Patients have biological, emotional, social and intellectual aspects which are flourished in various stages of growth. In Synergy Model, all aspects of patients (body, mind, spirit) are taken into consideration.^[9] Patients, families and services are being coordinated so that the necessary background is provided for patient-nurse relationship.

Synergy Model establishes the nurses' practice in relation

with patient and his family.^[1] This study, aimed to investigate the impact of applying Synergy Model on nurses' performance and the satisfaction of the patients with acute coronary syndrome

MATERIALS AND METHODS

This was a quasi-experimental study which was conducted in two groups and two steps. Patients were investigated in two control and intervention groups and the nurses in two before and after investigation steps. The samples were collected from cardiac coronary care units (CCU) of Nour and Alzahra hospitals, both affiliated to Isfahan University of Medical Sciences, in 2010-2011. Synergy Model was explained to nurses in a workshop and its impact on their performance in various areas as well as patients' satisfaction were investigated. In the first group, 22 nurses of CCUs were investigated before and after intervention through a checklist. The second group included 46 patients with acute coronary syndrome in these CCUs who met the inclusion criteria divided into two intervention and control groups.

The patients in control group received routine and usual nursing cares but the patients in intervention group received the same nursing care based on Synergy Model. Two checklists entitled "examining the performance quality" and "examining the patient's satisfaction rate" were used for data collection. The performance quality checklist included 100 items to assess the nurse performance quality in 5 dimensions: communication, care, treatment, support, and education. Each item was asked as "Yes", "No" and "Not applicable". Nurses filled out the checklist through self-examination method. To determine the nurses' performance quality score, "1" was given to the yes and "zero" to no. "Not applicable" choice was not used in analysis. The total performance score was a number between "zero" to "100".

The patient's satisfaction checklist was completed in an interrogative way by the researcher. To determine patients' satisfaction, the items were answered in the form of "Yes" or "No" and "1" was given to yes and "zero" to no. Checklist consisted of 25 items. After scoring, patients were divided into 3 categories: high satisfaction (17-25), moderate (9-16), and low satisfaction (0-8).

Both instruments had high scientific validity and confidence. The instrument for measuring the nurses' performance quality, the instrument for measuring the patients satisfaction and Synergy Model had the sensitivity and specificity more than 90-95% (K=96%) in different studies.^[3]

To increase the stability of questionnaire completion by the researchers, the correlation method between examiners and/or observers and the Kendall agreement coefficient were used. For analyzing data, SPSS software was employed.

FINDINGS

Majority (95.5%) of nurses was female and all had nursing bachelor degree. The most frequent (45.5%) employment status was official (permanent) and the least frequent (9%) one was human forces distribution plan (provisional). Most nurses (36.6%) had a work experience of up to 5 years and 9.1% more than 20 years. Mean work experience was 8.5 years. Most nurses (50%) had a work experience up to 5 years in CCU and 4.5% more than 20 years. The average work experience in CCU was 7.3 years.

In both intervention and control groups, the majority were female (35.5% and 47% respectively). With regard to age in control and intervention groups, most patients were more than 70 years old (38.2% and 35.2% respectively). Considering risk factors, family history had the highest (73.5% and 70.5% respectively) and diabetes the least (20.6% and 17.6% respectively) frequency. With regard to the length of suffering from heart disease, patients in both intervention and control groups mostly suffered from heart disease less than 5 year period (61.8 and 55.9% respectively) and 17.6% in both groups had a disease length of 5-10 years.

In the case of performance quality, the highest average score [96.8 (4.9)] before intervention was in therapeutic domain and after intervention was in supportive domain [98.5(9.4)] and the least performance scores average pre- and post- intervention was in communicative domain (83.5 and 91.8 respectively). In addition, the average performance score of nurses in communicative, supportive, care and educational domains as well as total performance was improved after the intervention but not in therapeutic domain. None of nurses were in weak level in various domains of performance and in total, except

for communicative domain before and after intervention (18.1 and 9.1% respectively) and educational domain before intervention (4.5%) which were in "moderate" performance level, the nurses were in "good" level in other domains. The comparison of nurses' scores from their own viewpoint, before and after the intervention is shown in table I.

In terms of patient satisfaction, the score was 16.3(2.48) in the intervention group and in control group, it was 12.6(2.2) that the difference was statistically significant ($p < 0.001$).

DISCUSSION

Synergy Model, as a professional care model, expresses a framework which determines the nurse's relationship with patient, other nurses and the rest of care team. In addition, this model gives nurses a common language for a definition and relation between patients needs.^[8] This Model is an excellent framework for organizing the care performance for patient within health care system.^[10]

In terms of investigating the model as a basis for nursing cares, three aspects of the outcomes can be considered in relation to patient, nurse and health care system. Outcomes are the specific aspects of nursing care which determine and measure the nurse role in offering care to patient and his family. These aspects include the patient satisfaction, the complications rate, failure in resuscitation and the costs.^[8]

In terms of performance quality status, several studies showed that it is not desirable in Iran. In the study of Ghamari Zare and colleagues^[3] which was done with the aim of investigating the nurses performance quality and the satisfaction of patients in CCU, it was shown that the nurses communicative and educational performance quality was weaker than other performances, and their therapeutic performance was of higher quality than other domains. But in terms of total performance, contrary to our findings, the nurses performance quality level was in 28% weak, 64% moderate and only 8% had good performance.^[3]

Table 1: Comparing the performance score of nurses from their own viewpoint before and after the intervention

	Post-intervention mean(SD)	Pre-intervention mean(SD)	t	P-value
Communicative performance	91.8(14.3)	83.2(17.3)	2.04	0.03
Care performance	97(5.1)	94.2(5.2)	2.64	0.07
Therapeutic performance	98.0(3.7)	96.8(5.4)	0.946	0.18
Supportive performance	98.5(4.9)	94.7(7.9)	2.02	0.03
Educational performance	95.6(5.9)	92.4(9.9)	1.57	0.05
Total	96.8(4.5)	93.7(5.3)	3.1	0.005

In Habibipour and Vanaki study almost all patients in both control and trial groups showed dissatisfaction before running the intended program.^[11] Habashizadeh *et al.* also found that only 24% of patients in control group and 6% in trial group were highly satisfied before program initiation.^[12] In Dabirian and Zolfaghari study, findings showed that 14.3%, 27.9%, 11.4% and 2.1% of patients stated that the quality of care was weak, moderate, good and very good, respectively.^[13]

On the other hand, our findings showed that the nursing care quality was desirable from the viewpoint of majority of nurses. Patients and nurses, due to the different intellectual background, have different understanding and views about the performances quality. In Zaman Zadeh and colleagues study, 42% of patients evaluated the nursing care quality desirable in physical, 32% in psychosocial and 61% in communicative dimension whereas these figures were 92.6%, 78.5% and 91.1%, respectively, from the viewpoint of nurses.^[14] In Neishaburi and colleagues study, the care quality in psychosocial dimension was desirable from the viewpoint of 31.6% of patients and 92.6% of nurses and in communicative dimension, it was 24.7% and 56.8% respectively.^[15]

The patient satisfaction of cares was more reported in week and moderate level. In Ghamari Zareh and colleagues study, 71.4% of patients in CCU expressed moderate satisfaction and 2.85% high satisfaction, which is very close to the findings of this study. In Julayi and colleagues study the majority of patients (57.6%) had moderate satisfaction of nursing cares and 39.7% were highly satisfied.^[16] Nouhi *et al.* reported the client's average satisfaction of nurses' educational performance as 45.8(18.9) which were at moderate level.^[17] In Dehghan Nayeri and colleagues study, 76.4% of patients expressed the satisfaction rate of nurses performance in their privacy at low and moderate level.^[18] However, in Rouhi *et al.* showed that 60.3% of patients were satisfied with cares and 24.8% had a moderate satisfaction.^[19]

Regarding the impact of applying the Synergy Model, in the qualitative study by Yellen, three conclusions were obtained. For patients it was improving their satisfaction with treatment, better tolerance and reducing the pain and intermittent claudication, changing the behavior and performance, quit smoking and improving the life quality. In terms of nurse the finding was establishing an effective therapeutic relationship with patient and for system reducing the adverse events, reducing the complications, reducing the mortality rate and the length of staying in the hospital were among the conclusions.^[20] Smith stated that applying this model is vital to meet the patient

cultural needs.^[21] In addition, since creating a therapeutic and healing environment is very difficult especially in intensive care units, performing cultural cares on the basis of this model can be very important in establishing these conditions and offering theory-driven cares.^[21] In Graham-Garcia and colleagues study it was determined that applying this model for patients and also their families had positive results and effects on recovery.^[22] Kuriakose found that the use of approved characters in this model, results in improved patients care by nurses and promotes the patients prognosis by improving the interaction between patient and family, nurse and nurse, and nurse and system.^[23] Brewer *et al.* emphasized that establishing relationship between the nurses and patients characters leads to increased quality of intervention result.^[24] Arashin wrote that the use of the Synergy Model, as a guide in Rapid Response Team (RRT), causes the improvement in coordination and relationship and acceleration in preventive interventions and the improvement in the intervention outcome in patients.^[25]

This model has been applied in several clinical centers. Some reports and case studies expressed how to use it in the guidance of critical and acute patients' care as well as the assistance in achieving the maximum results^[26] and also as a pattern in conducting the nursing rounds.^[27]

This model has applications for nursing authorities too. This includes assistance in determining the appropriate ratio of staff to patients^[28] a pattern for describing nursing job, accomplishing assessments and developing clinical advanced programs.^[29] Other outcomes of this model have been in measuring the results and allocating financial resources, as a part of program.^[30] Developing clinical programs and improving the quality and measuring the satisfaction, the patient satisfaction, delegating the nursing actions and using this model in intensive workshops are other outcomes of applying this Model.^[31]

Therefore, as it was determined in this study, applying this model in intensive care units leads to improved quality of nurse's performance and as a result, improved patients satisfaction.

ACKNOWLEDGMENT

We acknowledge all colleagues who assisted and cooperated in this study, especially respected professors of school of nursing in Isfahan University of Medical Sciences, personnel of CCU wards in "Alzahara" and "Nour" hospitals and the master students of critical nursing.

REFERENCES

- Kaplow R, Hardin SR. *Critical care nursing: synergy for optimal outcomes*. 1st ed. Sudbury: Jones & Bartlett Learning; 2007.
- Farkhr Zadeh H, Moradi M, Mahmoudi M, Nader Pour N, Bagheri Rad M, Ahmad Zadeh Asl M, et al. Examining the care quality of patient with acute coronary syndrome in Amir Aalam hospital related to Tehran Medical Sciences University". *Tehran University Medical Journal (TUMJ)* 2006; 64(2): 149-54.
- Ghamari Zare Z, Anousheh M, Vanaki Z, Haji Zadeh A. Examining the nurses performance quality and patients satisfaction in intensive care units. *Zahedan Journal of Research in Medical Sciences* 2008; 10(1): 27-36.
- Taghi Zadeh Z, Rezaie Pour A, Mehran A, Alimoradi Z. Usage of communication skills by midwives and its relation to clients' satisfaction. *Hayat* 2006; 12(4): 47-55.
- Pazargadi M, Zaghari Tafreshi M, Abed Saeidi J. Nursing care quality from the viewpoint of nurses. *Research in Medicine* 2007; 31(2): 147-53.
- Schulmeister L, Quiett K, Mayer K. Quality of life, quality of care, and patient satisfaction: perceptions of patients undergoing outpatient autologous stem cell transplantation. *Oncol Nurs Forum* 2005; 32(1): 57-67.
- Khamse M, Aghili R, Baradaran Moghadam HR, Arabi A. Patients satisfaction of outpatient services in Endocrine and metabolism clinics of firouzgar therapeutic educational center.". *Payesh* 2006; 6(1): 71-6.
- Kaplow R, Reed KD. The AACN Synergy Model for Patient Care: a nursing model as a Force of Magnetism. *Nurs Econ* 2008; 26(1): 17-25.
- Khalifehzadeh A, Tavasoli AA, Golshahi J, Sanei H, Mirdehghan A, Payehdar Z, et al. Synergy Model in Clinical Teaching of Critical Care MSc Nursing Students and Cardiovascular Diseases Patients. *Iranian Journal of Medical Education*. 2011; 10(5): 593-601.
- Kerfoot KM, Lavandero R, Cox M, Triola N, Pacini C, Hanson D. Conceptual models and the nursing organization: Implementing the AACN Synergy Model for patient care. *Nurse Leader* 2006; 4(4): 20-6.
- Habibipour B, Vanaki Z. The Assessment of effect discharge planning on patients satisfaction. *Scientific Journal of Hamadan Nursing and Midwifery Faculty* 2008; 16(2): 25-31.
- Habashizadeh A, Vanaki Z, Navipour H, Ebrahimizadeh S. The effects of active clinical nursing supervision on patient satisfaction. *J Mashhad School Nursing and Midwifery* 2010; 10(1): 52-60.
- Dabirian A, Zolfaghari H, Abed Saidi J, Alavi Majd H. Views of AIDS patients regarding nursing care quality in healthcare centers affiliated to Shaheed Beheshti and Tehran Universities of Medical Sciences. *Journal of Nursing and Midwifery Shaheed Beheshti University of Medical Sciences and Health Services* 2008; 18(61): 40-5.
- Zaman Zadeh V, Moghadasiyan S, Vali Zadeh L, Haghghi Khoshku N. Comparing the patients and nurses viewpoints about the nursing care quality Offered in educational hospital. *Journal of Nursing and Midwifery of Tabriz Medical Sciences University* 2004; 1(2): 37-45.
- Neishaburi M, Raies Dana N, Ghorbani R, Sadeghi T. Examining the nursing care quality from the viewpoints of nurses and patients of therapeutic- educational centers of the city of Semnan. *Koomesh* 2010; 12(2): 134-43.
- Julayi S, Gyuri A, Taavoni S, Bohrani N, Reza Pour R. Patients satisfaction rate of nursing care in educational hospitals of selected cities of country. *Iranian Journal of Nursing Research* 2007; 2(6-7): 37-44.
- Nouhi A, Fekri A. Examining the evaluation problems of clinical skills From the viewpoint of nursing professors of Kerman Medical Science University. *Journal of Kerman University of Nursing and Midwifery* 2008; 8(1-2): 29-34.
- Dehghan Nayeri N, Aghajani M. Respecting the patients privacy by the treatment team and its relation to patients satisfaction in Emergency ward. *Hayat* 2010; 16(1): 13-22.
- Rouhi Gh, Hosseini SA, Asayesh H, Behnampoor N, Rahmani H. Relationship between nurses spent time for care and patients satisfaction in internal ward in Gorgan 5th Azar Hospital. *Payavard Salamat* 2009; 3(1-2): 65-74.
- Yellen EA. Synergy and peripheral percutaneous transluminal angioplasty. *J Vasc Nurs* 2007; 25(1): 7-11.
- Smith AR. Using the synergy model to provide spiritual nursing care in critical care settings. *Crit Care Nurse* 2006; 26(4): 41-7.
- Graham-Garcia J, George-Gay B, Heater D, Butts A, Heath J. Application of the Synergy Model with the surgical care of smokers. *Crit Care Nurs Clin North Am* 2006; 18(1): 29-xii.
- Kuriakose A. Using the Synergy Model as best practice in endotracheal tube suctioning of critically ill patients. *Dimens Crit Care Nurs* 2008; 27(1): 10-5.
- Brewer BB, Wojner-Alexandrov AW, Triola N, Pacini C, Cline M, Rust JE, et al. AACN Synergy Model's characteristics of patients: psychometric analyses in a tertiary care health system. *Am J Crit Care* 2007; 16(2): 158-67.
- Arashin KA. Using the Synergy Model to guide the practice of rapid response teams. *Dimens Crit Care Nurs* 2010; 29(3): 120-4.
- Hardin S, Hussey L. AACN Synergy model for patient care. Case study of a CHF patient. *Crit Care Nurse* 2003; 23(1): 73-6.
- Annis T. The synergy model in practice: The interdisciplinary team across the continuum of care. *Critical Care Nurse* 2002; 22(5): 76-9.
- Mullen J. The Synergy Model in practice: the Synergy Model as framework for nursing round. *Critical care nursing* 2002; 22(9): 66-8.
- Hartigan RC. The Synergy Model. Establishing criteria for 1:1 staffing ratios. *Crit Care Nurse* 2000; 20(2): 112, 114-2, 116.
- Czerwinski S, Blastis L, Rice B. The Synergy Model: building a clinical advancement program. *Crit Care Nurse* 1999; 19(4): 72-7.
- Curley MA. Synergy: the unique relationship between nurses and patients, the AACN Synergy model for patient care. New York: Sigma Theta Tau; 2007.

How to cite this article: Khalifehzadeh A, KarimyarJahromi M, Yazdannik AR. **The impact of Synergy Model on nurses' performance and the satisfaction of patients with acute coronary syndrome.** *Iranian Journal of Nursing and Midwifery Research* 2012; 17(1): 16-20.

Source of Support: Isfahan University of Medical Sciences, **Conflict of Interest:** None declared.