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The effect of communication using Peplau's theory on satisfaction with nursing care in hospitalized older adults in cardiac intensive care unit: A quasi-experimental study

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Abstract:

BACKGROUND: Patient satisfaction helps healthcare organizations to improve their quality level and nurse-patient relationship is effective in increasing satisfaction. The aim of this study was to determine the effect of communication using Peplau's theory on satisfaction with nursing care in hospitalized older adults' patients in cardiac intensive care unit.

MATERIALS AND METHODS: This quasi-experimental study was conducted by available sampling method on 78 hospitalized older adults (39 interventions, 39 control) in cardiac intensive care unit of Guilan hospitals in north of Iran in 2021. In the intervention group, Peplau's communication theory (four stages of orientation, identification, exploitation, and resolution) was implemented and the control group received routine care. At the time of discharge, patient satisfaction questionnaire of quality of nursing care was completed for both groups. Data were analyzed through descriptive and inferential statistics (independent *t* test, Chi-square test).

RESULTS: The mean score of nursing satisfaction in the intervention group (5.4 ± 93.0) was significantly higher than the control group (6.8 ± 75.7) ($t(64) = 11.54, P < 0.001, d = 2.84$). In other words, the mean satisfaction scores of nursing care in the intervention group were 17.4 units (95% confidence interval: 14.4-20.4) more than the control group.

CONCLUSION: Using Peplau's communication theory in the care of hospitalized older adults in cardiac intensive care unit can lead to improvement of satisfaction, so it is suggested to use this communication method in the care of these patients to improve the level of satisfaction, quality of care, and functional independence.

Keywords:

Aged, communication, nurses, patient satisfaction

Introduction

Aging is one of the most critical stages of life and is a growing process that in the near future will account for a high percentage of the global population.^[1] The older adults population is will have increased from 822 million people worldwide to 2 billion by

2050.^[2] According to the statistics of the world health organization, in almost all countries, the age group over 60 is growing much faster than other age groups.^[3] With aging, chronic diseases have increased among the older adults and cardiovascular cases are among the most common chronic and fatal ones for many adults worldwide.^[4] Chronic

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coronary artery diseases are debilitating and progressive, which, in addition to hurting patients' quality of life, imposes enormous expenditures on countries' health systems.^[5] Self-care in patients with heart failure is one of the main pillars treatment which includes providing information about the signs and symptoms of the disease, lifestyle changes, and adherence to treatment and helping to treat the disease.^[6] Patient satisfaction is a measure for the quality of care and is also dynamic and difficult to define. Patient satisfaction is a suitable indicator for measuring success in providing care^[7] and in fact facilitates efficient hospital management.^[8] Patients' satisfaction with nursing care assesses the quality of fulfilled and unmet needs and identifies gaps in nursing interventions.^[9] Measuring patient satisfaction provides important information about performance and thus contributes to comprehensive quality management.^[10]

Hospitalized patients are the main people for whom the health care is provided and present a good picture about hospitals and organizations to the community^[8] and the largest group of service providers in the healthcare system are the nurses,^[11] they are the key members of the healthcare team that facilitate the compatibility and adaptation of the hospitalized patients.^[9] Therefore, it is essential that nurses know the patients' expectations to improve their satisfaction.^[12] Patient satisfaction of the hospital depends greatly on their satisfaction with nursing care.^[13] Patient-centered communication plays a vital role to patient satisfaction.^[14] Proper communications between nurses and patients create feelings of hope, satisfaction, more compliance with the treatment, and ultimately improvement of treatment outcomes in patients.^[15] In other words, it results in more cooperation of patients for more accurate autobiographical expression of their situation^[16] which can help reduce the likelihood of wrong procedures in treatment.^[15]

All members of the healthcare team must communicate with patients effectively in order to offer the best possible treatment, and Physicians' and nurses' communication skills are critical components of healthcare quality.^[17] A study by Versluijs *et al.*^[18] showed the effectiveness of communication on patient satisfaction. Since humans are unique, there is no ideal way to communicate, but by acquiring knowledge and skills in this field, we can take steps to improve this important issue.^[16] Since nursing is a practical system based on professional knowledge, it is essential that nurses use their professional knowledge to develop and improve their skills in providing clinical care. In this regard, theories presented by nursing theorists can be effective.^[19] Peplau's theory of interpersonal relationship focuses on the relationship between nurses and patients and considers nursing as a human relationship with the specific framework.^[16,20]

He considers the interpersonal relationship as one of the effective factors in increasing the perception and understanding of patients' needs, their problems and expectations of disease control process, as well as engaging clients to accept responsibility and help them recover, maintain, and promote their health.^[21,22] This process consists of four stages of orientation, identification, exploitation, and resolution in nurse-patient relationships.^[23]

Peplau's theory provides a suitable framework for nurse-patient relationships^[24] and by identifying the patients' problems, reduces anxiety caused by needs and problems.^[25] The older adults hospitalized in the cardiac intensive care unit need more education at the time of hospitalization and discharge according to the type of disease^[26] and also the minimum hospitalization time in this unit is 48 to 72 hours,^[25] which is a good time to implement this model. Considering that the studies have not focused on the target group of the older adults, and communication with this group is important, and Guilan province has the highest rate of the elderly population in Iran; therefore, the present study was conducted to determine the effect of communication using Peplau's theory on satisfaction with nursing care in hospitalized older adults' patients in cardiac intensive care unit in the public hospitals of Guilan province, Iran, until by continuing and pursuing the use of this communication theory in the care of the older adults, it improved the level of satisfaction and the quality of patient care.

Materials and Methods

Study design and setting

This quasi-experimental study was conducted on 78-hospitalized older adults in cardiac intensive care unit in public hospitals of Guilan province, north of Iran in 2021.

Study participants and sampling

Inclusion criteria included patients with heart disease with instructions to be admitted to the intensive care unit, able to communicate, being 60 years and older, having read and write literacy to complete the questionnaire, having minimum vision and hearing to communicate and complete the questionnaire and willingness to participate in the study, and criteria for not entering the study including dementia and cognitive impairment (obtaining a score of 7 and lower from the AMT tool) being connected to the ventilator device, and exclusion criteria: Lack of patient cooperation, critical illness, and acute conditions in a way that they are unable to communicate with the nurses or the occurrence of the patients' death. In order to determine the sample size, type I error was 0.05 and type II error was 0.2 (power 0.8), and according to the previous studies and

the researcher's expectation of practical difference, the effect size of $0.7 = d$ (large) sample size was estimated to be 33 in each group, which was determined by 15% of probable loss in each group of 39 and a total of 78 people.

In this study, sampling was done in an available manner so that patients who met the inclusion criteria were included in the study and then, using Random allocation software, subjects were placed in the control and intervention group and then data were collected using a questionnaire.

Data collection tool and technique

The tools used in this study were personal and social information questionnaire (age, sex, education level, marital status, income level, occupation, life status, and number of hospitalizations) and patient satisfaction questionnaire with nursing care quality questionnaire. PSNCQQ has been designed by Laschinger *et al.* (2005)^[27] and is a standard and specific tool for assessing patient satisfaction with the quality of nursing care. The questionnaire has 19 main items and 4 additional questions (satisfaction with the overall quality of care during hospitalization, overall health status, overall quality of nursing care and hospital recommendation intention to family and friends). In each item, patient satisfaction is rated from perfect = 5 to very weak = 1 based on Likert scale. The minimum score of this

questionnaire is 23 and its maximum is 115. It is reported as an average score. In this study, content validity ratio and the validity index were used to determine the validity of the tool (CVI = 0.97, CVR = 0.88) and the reliability was determined by 0.82 Alpha Cronbach method.

Intervention

Among 83 hospitalized older adults in cardiac care units, 78 who were eligible to enter the study were randomly assigned to two groups of interventions (using Peplau's personal relationship theory) and control each 33 [Figure 1].

At first, both groups completed a demographic questionnaire. Then, the control group received the usual care and in the intervention group, Peplau's therapeutic communication theory was used. This theory consists of four stages: orientation, identification, exploitation and resolution, the orientation phase begins from the first patient-to-nurse relationship and the researcher plays the role of a stranger. This phase consists of a 20-minute session which is held upon arrival of patients to the cardiac intensive care unit. At this point, the researcher summarizes the measures that the care team is taking to improve patients' health. Then, the researcher simply and briefly describes the time of visitation, nutrition, a description of nurse duties and services, alarms and

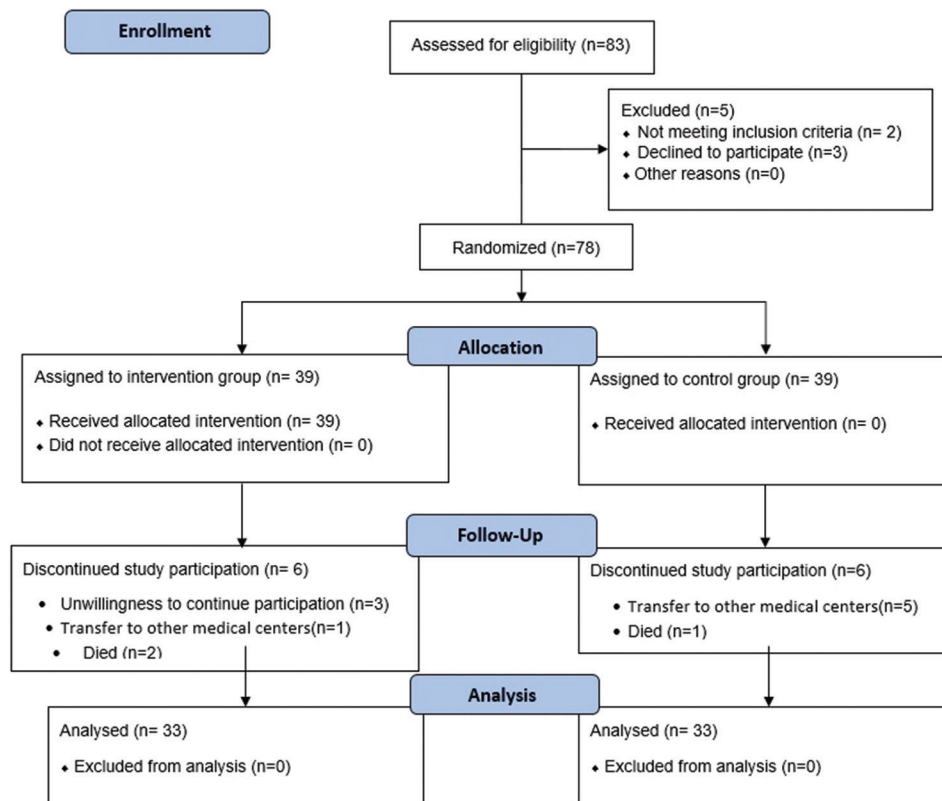


Figure 1: Study diagram

warnings, and finally, the patient becomes familiar with the physical space and facilities of the ward and the medical staff. Therefore, the patients' trust in the nurses is formed. The second step is the identification phase. This step consists of a 30-to-40-minute session that is performed after recording the patient's medical diagnosis and medication orders. At this point, the physical and mental information of each patient is collected by the nurse, then the patient expresses their feelings, fears, and concerns by talking about their problems. At this stage, the researcher asks the patient to share all his questions and uncertainties about the disease and hospitalization in the cardiac intensive care unit and to determine his expectations of the care-therapy team. Then, the most appropriate professional help to the patient is determined and the patient begins the sense of belonging and the ability to deal with problems in order to reduce the feeling of powerlessness and hopelessness. At the end of this stage, according to the patient's problems and with the agreement of the patient and the researcher, the care plan is developed. This program is recorded by the nurse for each patient with the title of nursing diagnosis in the patient's file in the nursing report section to continue the care in different shifts. On the second day of hospitalization, the exploitation phase will be held in two 10-minute sessions by the researcher. At this stage, the designed care plan is evaluated in terms of accuracy of implementation and going toward independence and professional assistance is used based on the patient's needs and interests to solve the problem. The necessary changes are made and at the end of the session, in coordination with the patient and their family, the time of the second session of this stage is determined. The second session of exploitation will be held in the presence of the patient and their family and will be teaching about diet and medication, blood pressure examination, tests, physical activity, and time of referral to the doctor. At the resolution stage, the session will be held for 20 minutes at the time of patient's discharge. This is the resolution stage of nursing-patient relationship and all the training given to the patient will be evaluated by asking them questions and all the vague and unclear points in this regard will be revealed and resolved and the time of the next visit will be set. At the time of discharge, both groups completed PSNCQQ.

Data analysis

In this study, the values of quantitative variables were expressed as mean (standard deviation) and the values of qualitative variables were expressed as frequency. To compare the demographic characteristics between the control and intervention groups, independent *t* test was used for quantitative variables and Chi-square test (or Fischer's exact test) was used for qualitative variables. The mean satisfaction with the quality of nursing care was compared between the control and intervention

groups using independent *t* test. Kolmogorov-Smirnov test was used to investigate the default normality of satisfaction scores from nursing care by intervention and control groups. Data were analyzed using SPSS software version 20 and the significance level was considered 0.05.

Ethical consideration

Permission was obtained from the university and related hospitals. Data collection after approval of ethics committee of Guilan University of Medical Sciences (IR. GUMS. REC.1400.402) and obtained informed consent from patients and observing ethical considerations and in accordance with the Helsinki statement.

Results

The mean age in the intervention group was 6.4 ± 70.8 and in the control group was 73.8 ± 8.8 and overall was 7.3 ± 3.72 . The older adults in the intervention and control groups were homogeneous in all individual and social variables except previous education history ($P > 0.05$). Demographic information of the samples is presented in Table 1.

The mean score of nursing satisfaction in the intervention group was (5.4 ± 93.0) and in the control group (6.8 ± 75.7). The mean satisfaction scores of nursing care in the intervention group were 17.4 units (CI 95%: 14.4-20.4) more than the control group. Cohen's effect size *d* was 2.840, which was large [Table 2].

Multiple linear regression was used to compare the satisfaction scores of nursing care between the intervention and control groups by adjusting the previous education history variable. By adjusting this variable, the results indicated that satisfaction with nursing care in the intervention group was 17.8 units (20.9 to 14.6: CI 95%, $b = 17.8$) higher than the control group [Table 3].

Discussion

The aim of this study was to determine the effect of communication using Peplau's theory on nursing care satisfaction in hospitalized older adults in cardiac care unit. The results indicated that the satisfaction score in the intervention group was (5.4 ± 0.93) by using Peplau's communication theory, and it was higher than the control group which was (6.8 ± 75.7), in other words, using this communication model increased satisfaction in hospitalized older adults' patients in cardiac intensive care unit.

Hosieni *et al.*^[25] (2017) in their study considered that communicating with patients using Peplau's theory affects patients' satisfaction with the quality of nursing

Table 1: Demographic information of the older adults hospitalized in the cardiac intensive care unit

Variable	Category	Total (n=66), n (%)	Group		t/χ ²	P
			Control (n=33), n (%)	Intervention (n=33), n (%)		
Gender	Male	33 (50.0)	16 (48.5)	17 (51.5)	0.06	0.80 [‡]
	Female	33 (50.0)	17 (51.5)	16 (48.5)		
Marital status	Married	57 (86.4)	28 (84.8)	29 (87.9)	-	0.99 [§]
	Widowed	9 (13.6)	5 (15.2)	4 (12.1)		
Number of children	1-2 children	13 (19.7)	5 (15.2)	8 (24.2)	0.86	0.35 [‡]
	3 children and more	53 (80.3)	28 (84.8)	25 (75.8)		
Living condition	With wife/husband	57 (86.4)	28 (84.8)	29 (87.9)	-	0.99 [§]
	Alone or with children	9 (13.6)	5 (15.2)	4 (12.1)		
Lodging	City	44 (66.7)	24 (72.7)	20 (60.6)	1.09	0.29 [‡]
	Village	22 (33.3)	9 (27.3)	13 (39.4)		
Education	Illiterate	49 (74.2)	24 (72.7)	25 (75.8)	-	0.99 [§]
	High school	9 (13.6)	5 (15.2)	4 (12.1)		
	Diploma and Academic	8 (12.1)	4 (12.1)	4 (12.1)		
Income Level	High	13 (19.7)	7 (21.2)	6 (18.2)	-	0.99 [§]
	Mid	51 (77.3)	25 (75.8)	26 (78.8)		
	Low	2 (3.0)	1 (3.0)	1 (3.0)		
Previous hospitalization	Yes	59 (89.4)	32 (97.0)	27 (81.8)	-	0.10 [§]
	No	7 (10.6)	1 (3.0)	6 (18.2)		
Previous training history	Yes	15 (22.7)	12 (36.4)	3 (9.1)	6.99	0.008 [‡]
	No	51 (77.3)	21 (63.6)	30 (90.9)		
Health condition	Weak	4 (6.1)	3 (9.1)	1 (3.0)	-	0.59 [§]
	Medium	52 (78.8)	26 (78.8)	26 (78.8)		
	Good	10 (15.2)	4 (12.1)	6 (18.2)		

[†]Independent t-test; [‡]Chi-square test; [§]Fisher's exact test

Table 2: Comparison of the average scores of satisfactions with nursing care between intervention and control groups

Variable	Group	Mean±SD	Mean difference (CI 95%)	t (64)	P*	Cohen d
Satisfaction with nursing care	Control	75.7±6.8	(14.4, 20.4)	11.54	<0.001	2.84
	Intervention	93.0±5.4	17.4			

CI: Confidence interval. [†]Independent t-test

Table 3: Comparison of the average scores of satisfactions with nursing care between two groups with the adjustment of the variable of previous education

Variable	Unstandardized coefficient			P*	Cohen d
	b	SE	(CI 95%)		
Group (intervention to control)	17.8	1.6	(14.6-20.9)	11.12	<0.001
Previous training history (yes to no)	1.4	1.9	(-2.4-5.2)	0.76	0.45

b: Regression coefficient; SE: Standard error

care which is in line with the results of our study. Study by Putra *et al.*^[28] (2021) also indicated that nurse-patient therapeutic relationship has a significant effect on patients' satisfaction. Goh *et al.*^[10] (2016) described nurses' caring and professional behaviors as reasons for increasing patient satisfaction. Gholami *et al.*^[29] (2018) considered communication skills training of healthcare workers effective on patient satisfaction. Darsini asserted that nurses' verbal and nonverbal communication had an effect on patient satisfaction.^[30] These findings are consistent with the results of the present study. The study of Lotfi *et al.*^[31] (2019) revealed that communication between nurses, and burn patients were very poor which resulted in very low patient satisfaction. Furthermore,

the outcomes of the studies of Asif *et al.*,^[32] Shabbir *et al.*,^[33] and Manzoor *et al.*^[34] revealed a significant relationship between patient satisfaction and healthcare services. The results of a systematic review study found that using of intrapersonal and interpersonal health education and promotion theories had a good overall influence impact on various health outcomes among cardiovascular patients.^[35]

Appropriate communication is one of the basic needs of patients, and a very important part of nursing care that in addition to informing the patients about the disease and the type of treatment, it leads to understanding of the patients' concerns and leads to better understanding

and empathy, psychological support, improving physical, mental, and behavioral consequences of the disease and providing patient comfort.^[36] In the healthcare system, good communication skills can improve staff and patient satisfaction, quality of service, and patient safety.^[17] The ultimate goals of nursing are health and recovery. Therefore, achieving this goal becomes possible through knowledge, skills, and communication with the clients.^[37] Furthermore, passing communication skills makes nurses more effective and efficient.^[38] Kourakos *et al.*^[39] (2018) expressed the relationship between healthcare professionals with the patients as important and affecting disease outcomes and adaptation to the disease and linked this relationship with patient confidence, patient satisfaction as well as quality of life. Allenbaugh *et al.*^[40] (2019) found that teaching communication skills to nurses increases patient satisfaction in their study. Also, the relationship between the healthcare providers and the patients affects the process of care, acceptance, and compliance with medication.^[41] Lack of proper and effective communication between nurses and patients reduces patients' satisfaction, discourages patients to perform proper, and timely treatment guidelines, and reduces the effectiveness of treatment, and recovery of the patients.^[42]

In the study by Ozlu and Uzun, it was stated that it is necessary that patients receive information about their disease.^[12] Using communication methods plays an important role in increasing patient satisfaction with the quality of nursing care. Patient satisfaction with nursing care constitutes a significant part of the overall satisfaction with the quality of care provided. Satisfaction with nursing care is considered as the most important indicator in predicting patient satisfaction with the overall care provided. Nurse-patient interaction is the cornerstone of the nursing profession, and positive communication between nurses, and patients can be vital in the quality of nursing care.^[11] Patients' satisfaction with nursing care is recognized as the most important predictor of overall satisfaction with hospital care, and as an important goal of any healthcare organization,^[10] it is also the most important indicator of quality of care and is considered as one of the results of healthcare services.^[43]

Limitation and recommendation

One of the limitations of this study was not having a standard questionnaire to assess the satisfaction of older adults' patients. On the other hand, this study was conducted in public hospitals, so the results cannot be extended to the private sector. Future studies are suggested for comparison between public and private sectors. Since this study has only been conducted in cardiac intensive care unit, generalization of its results is also subject to this limitation. Therefore, similar studies

in other units are recommended for more generalized results.

Conclusion

The present study confirmed the positive effect of Peplau's theory on satisfaction of hospitalized older adults' patients in cardiac intensive care unit. Therefore, using this model in older adults' care can improve the level of satisfaction, and quality of their care, and ultimately lead to increased functional autonomy, and reduced their care-related needs. It is suggested to investigate this communication theory in different patients and age groups in future studies, as well as suggested to investigate and comparison the effect of other models of communication on patients' satisfaction.

Ethical approval

The study protocol conforms to the ethical guidelines of Helsinki as reflected in an approval by the Ethics Committee of Guilan University of Medical Sciences, Iran (approval No.: IR.GUMS. REC.1400.402). Informed consent was obtained from all individual participants included in the study.

Contribution statement

All authors have made substantial contributions to the following: RMG, HF, AD and SM designed the research; HF carried out the data collection; RMG and SM completed the data and statistical analyses and drafted the manuscript; all authors edited, read, and approved the final manuscript.

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Conflicts of interest

There are no conflicts of interest.

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