Original Article

The impact of the training of nurse-patient communication skills on resilience and distress tolerance in hospitalized patients: A trial study

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ABSTRACT

Background and objective: The interaction between nurse and hospitalized patient is of particular importance. The present study aims to determine the effectiveness of the training of nurse-patient communication skills on resilience and distress tolerance in hospitalized patients in Imam Khomeini hospital of Tehran. Materials and methods: In this study, quasi-experimental method (pre-test, post-test with control group and follow-up period) was used. The statistical population of this research consists of all nurses of Imam Khomeini hospital of Tehran. 30 nurses were selected using the voluntary sampling method and then they were divided into two experimental and control groups of 15 people. Both groups were in interaction with 30 hospitalized patients. These patients completed the Treatment Satisfaction and Life Expectancy Questionnaires before and after 15 days of course completion. The research hypotheses were analyzed using Multivariate Analysis of Covariance (MANCOVA), Repeated Measures ANOVA and SPSS21 software. Findings: The results of the analysis showed that the training of nurse-patient communication skills has been able to be effective in resilience and distress tolerance of hospitalized patients. After the effect of independent variable (nurse-patient communication skills), the score of resilience and distress tolerance of the experimental group was higher and its difference with the control group has become significant. Discussion and conclusion: It is recommended that nurses apply communication skills so that they are more effective in interacting with hospitalized patients with more distress tolerance.

Keywords: Effective communications skills, resilience and distress tolerance, hospitalized patients.

Introduction

Nursing is an independent discipline and a branch of medical sciences; its mission is to offer required health, care, treatment and rehabilitation services at the highest standards to provide, maintain and promote the health of society [1]. Communication skills of nurses play an effective role in the process of following the treatment in hospitalized patients. Sadeghi Sharmeh et al. showed that short-term training of communication principles and techniques of treatment to nurses can have positive effect on the various aspects of communication skills [2]. The establishment of communication is the key of playing the role of nursing and in fact, it is considered as the basis of the work of nurses in the care of patients [3]. It seems that people who cannot interact effectively with others and have interpersonal problems, they show signs of anxiety [4] and this results in loss of performance. Studies have shown that the establishment of effective communication affects some psychological components, especially when the duration of the relationship with clients is long-term [5]. In addition to being one of the important patient needs, proper communication is a very important aspect of nursing cares. In addition to informing the patient about the disease and its type of treatment, it leads to identifying patient concerns and plays an important role in

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better understanding and empathy, psychological and mental support, improving physical, psychological and behavioral outcomes and providing patient comfort [6]. In contrast, the absence of a proper communication is one of the most important reasons for not understanding psychosocial and social needs of patients [7, 8]. Hence, today, the training of interpersonal communication skills to nurses is considered as one of the most important ways to improve the quality of care. Because it leads to the change of attitudes and behaviors of nurses toward the usefulness of these skills, promoting their job satisfaction and also identifying needs, making positive changes in clinical status and obtaining the satisfaction of patients [9, 10]. Fathi Ashtiani et al. showed that communication skills based on cognitive-behavioral theory and through reducing the symptoms of stress and anxiety (as psychological distressors) can enhance the mental health of nurses and hospital staff [11].

Resilience is defined as the ability of the individual to successfully adapt with the threatening conditions and stressors of life and is a type of recovery with emotional, sentimental and cognitive consequences [12, 13]. Resilience is not only sustainability in injuries or threatening conditions, it is also the active and productive participation of individuals in social environment [14]. Research has shown that individuals with high resilience show low levels of avoidance and can tolerate the pain caused by their disease, they have no catastrophic attitude toward their pain and they go less toward the disaster [15, 16]. Resilient people have good feelings about their surroundings and believe in their ability to change their environment [17]. Alipour et al. found that the support of friends, relatives and important people could predict the resilience [18]. The concept of resilience is a new approach that emphasizes on the increase of coping strategies by following and reducing the probability of non-following [19]. Benard, Werner and Smith consider support and care relationships as essential sources of resilience, they state that people who provide this kind of support for other individuals are reliable. These kind of people provide individuals with intimacy, care and attention and help them to better understand themselves (especially their abilities and resources) [20, 21]. Andamikhoshk showed that distress tolerance had a significant relationship with life satisfaction through the mediating role of resilience [22].

Distress tolerance has been defined as the ability of a person to experience and tolerate negative emotional states [23]. In fact, distress tolerance is a variable of individual differences and refers to the capacity of experience and resistance against emotional distress [24]. Individuals with low levels of distress tolerance are involved in dysregular behavior in a wrong attempt to deal with their negative emotions [25]. This dysregular behavior is probably due to the suffering of the disease. People who suffer from physical discomfort, they also suffer from distress; such people are anxious, depressed or irritable [26]. The results of different research indicate that distress tolerance influences the assessment and outcomes resulted from negative emotional experiences, so those who have less distress tolerance than others are more likely to have an intense reaction to stress. In addition to this, these people show weak coping capacities against distress, and so they try to avoid such circumstances by employing strategies that aim to reduce negative emotional states [25]. Given the above description and also the absence of contemporary and updated research in the field of the impact of the interaction between nurses and patents on psychological indicators involved in their recovery, the present study seeks to answer the question of whether the training of nurse-patient communication skills is effective on resilience and distress tolerance of hospitalized patients in Imam Khomeini hospital of Tehran.

Materials and Method

This is a quasi-experimental study with pre-test, post-test, control group and follow-up period. The statistical population of this research consists of all nurses and patients in different parts of Imam Khomeini Hospital of Tehran during the second half of the year 1395 (September 2016-March 2017). The voluntary sampling method was performed; 30 nurses and 30 patients were divided in experimental and control groups and the questionnaires were filled out. The criteria for entering the study for patients were: having reading and writing skills, fluency in Persian language, being between 25 and 45 years old, the absence of another effective physical or psychological disease, not being in the early stages of diagnosis and treatment and also not being at the stage of chemotherapy and radiotherapy. The criteria for the exclusion of patients from the research were: having more than one surgery during the hospitalization, having several surgeries over the past two years, using psychedelic drugs associated with psychological disorders and the request for non-cooperation by the patient. The criteria for entering the study for nurses were: Having bachelor's degree or higher in nursing, working in all shifts of the hospital, having tendency and also physical and mental ability to participate in the study. The criteria for the exclusion of nurses from the research are: Having less than 6 months of work experience, having mental and psychological illness, using psychedelic drugs associated with psychological disorders, end of years of service and residency before the expected time. The summary of the intervention sessions based on the cognitive-behavioral approach was developed and implemented as follows:

Table 1: The description of training sessions of effective communication skills

Session	Objective	Method	Assignment
1	Familiarity of group members with each other and with the trainer, group rules,	Introducing and familiarizing the group members, expressing the rules and objectives of the group, understanding the components of communication, definition of communication	Nurses were required to search and record different types of their daily interactions in a shift

	importance of communication, definition of communication from the viewpoint of nurses, communication of nurses	as a mental phenomenon by nurses, types of communication of nurses in a work shift	
2	Acquaintance of nurses with the concept of effective communications	After the review of the previous session, during this session, nurses became acquainted with the concept of effective communication and also the features of an effective communication	Recording effective communications in a work shift
3	Acquaintance of nurses with the concept of ineffective communication and its impact on an interaction	Review of the previous session, familiarization of nurses with ineffective communication and its role in interacting with hospitalized patients	Recording ineffective communication with the patient during the receipt of health care in a work shift
4	Familiarization of nurses with the process of communication, communication levels and communication forms	Review of the previous session, during this session, nurses get acquainted with the process of communication, they learn communication levels and get informed about different forms and types of communication	They identify their communication levels and specify the kind of communication they use more frequently
5	Acquaintance of nurses with non-verbal elements of communication, introduction to body language	Review of the previous session, during this session, nurses become acquainted with non-verbal elements and learn the basics of body language including facial expressions, gestures, body states, tone of voice, sound of voice, and eye contact	Searching for physical and non-verbal modes in interaction with the hospitalized patient
6	Continuing the discussion about body language and its meaning, talking about the impact of touching and listening actively on the patients' healing process	Review of the previous session, during this session, nurses become familiar with the body state and its meanings. In the following, they become acquainted with active touch and listening skills and become aware of their impact on patients' recovery and healing process	Using body language in daily communication and trying to interpret the body language of patients and their companions. Using the skills of touching and listening the patient during the hospitalization
7	Dealing with aggressive patients and companions, ending and overview	Review of the previous session, during this session, nurses learn how to deal with aggressive patients or their attendants, the assessment of the risk of anger before its occurrence, the problems of patients and their attendants in the occurrence of anger. At the end of the session, while thanking for the presence of nurses, a review of previous sessions is done and nurses are asked to apply this method in the treatment process, after completing the course and starting the research and in the following of their clinical work	Nurses should implement the assessment of anger and the manner to deal with it during the work shift using the above-mentioned elements. According to the content of session, they should do effective intervention. They should use the provided techniques in clinical practice and provide services to hospitalized patients in different parts of the hospital

Conner-Davison Resilience Scale:

This scale includes 25 questions and is developed by Connor and Davidson [27] for measuring the power of coping with pressure and threat. This scale evaluates different dimensions of resilience including (competency, personal strength, confidence in personal instincts, tolerance of negative emotions, positive acceptance of affections, safe relationships, inhibition and spirituality). For using this scale in Iran, the translation process was firstly carried out in Persian language and after the confirmation of scale makers, the license was issued. Then, Cronbach's alpha method was used to determine the reliability and factor analysis method was used to determine the validity. The obtained reliability was completely consistent with the reported reliability of the scale by its makers, equal to 0.93. The present results are in line with the findings of other studies that have examined the validity and reliability of this scale [28]. In the present study, Cronbach's alpha reliability of the questionnaire was equal to 0.79.

Distress Tolerance Scale:

This scale is made by Simons and Gahir [23]. Distress tolerance scale determines the capacity of experience and tolerance of negative psychological states. This scale includes 15 questions and evaluates 4 subscales of distress tolerance, being attracted by negative emotions, mental assessment and estimation of distress and adjusting efforts to relieve distress. The scoring method is based on 5-point Likert scale. Cronbach's alpha coefficients for subscales were respectively 0.72, 0.82, 0.78, 0.70 and also 0.82 for the whole scale. It has also been clear that this scale has sufficient criterion validity and initial convergence [23]. In this study, Cronbach's alpha reliability for the questionnaire was equal to 0.85.

For data analysis, SPSS21 software was used in descriptive and inferential levels. Firstly, descriptive statistics related to the demographic variables of the research sample were presented. To investigate the research hypotheses, Repeated Measures ANOVA has been used and also Komolgorov-Smirnov and Levene's tests have been used to verify the presumptions.

Findings

The analysis of descriptive findings showed that the minimum age of patients was 23 and the maximum age was 42 (average: 30.31); 21 people of the sample group (70%) were male and 9 people (30%) were female. 22 people among patients (73.3%) were married and 8 people (27.7%) were single. In this group, 10 people (33.3%) didn't have high school diploma, 11 people (36.7%) had high school diploma, 7 people (23.3%) had Bachelor's degree and 2 people (6.7%) had Master's degree or higher. In the sample of nurses, the minimum age was 23 and the maximum age was 38 (average: 29.46); 13 nurses (43.3%) were male and 17 (56.7%) were female. 21 people of the

sample group (70%) were married, 8 nurses (27.7%) were single and one nurse (3.33%) was widowed or divorced.

Table 2: The results of Komolgorov-Smirnov test (presumption of normality) and Levene's test (presumption of equation of two groups variances) about the presumption of normal distribution of scores

	Group	Komolgorov-Smirnov test			Levene's test			
		Statistic	Degree of freedom	Significance	F	Df1	Df2	Significance
Resilience	Experimental	0.791	12	0.559	2.816	1	28	0.104
	Control	0.723	12	0.673				
Distress tolerance	Experimental	0.566	12	0.906	0.227	1	28	0.637
	Control	0.593	12	0.873				

As can be seen, the scores of both variables of resilience and distress tolerance have normal sample distribution. Thus, the present analysis has no limit for the use of parametric tests. The obtained value of F in Levene's test for both variables of resilience and distress tolerance is not significant, so the condition for the homogeneity of variances is observed. Box test results were used to investigate the presumptions of homogenous covariance matrix for the variable of resilience (M Box's =0.365, F=0.112, and significance level of 0.953) and for the variable of distress tolerance (M box's = 4.065, F=0.343 and significance level of 0.969); it shows that the condition of homogeneity of covariance matrix is observed.

Table 3: The results of multivariate covariance analysis for exploring the impact of the training of effective communication skills on variables of resilience and distress tolerance in hospitalized patients

		Value	F	Freedom degree of assumption	Freedom degree of error	Significance level
Piley effect	Resilience	0.860	79.741	2	26	0.000
	Distress tolerance	0.883	39. 444	4	21	0.000
Wilks' Lambda	Resilience	0.140	79.741	2	26	0.000
	Distress tolerance	0.117	39. 444	4	21	0.000
Hetling effect	Resilience	6.134	79.741	2	26	0.000
	Distress tolerance	7.513	39. 444	4	21	0.000
The biggest root	Resilience	6.134	79.741	2	26	0.000
	Distress tolerance	7.513	39. 444	4	21	0.000

Given the significance of multivariate covariance test, it can be concluded that there should be a significant difference in at least one of the components of psychological distress (distress tolerance, being attracted by negative emotions, mental assessment and estimation of distress and adjusting efforts to relieve distress) and resilience between two experimental and control groups. Thus, to analyze this significance, single-factor ANCOVA was used.

Table 4: Results of ANCOVA for investigating the effect of the training of effective communication skills on the variable of distress tolerance and sub-variables

Source of change	Variable	Sum of squares	Degrees of freedom	Average of squares	F value	Significance level	Effect size	Power
Group	Distress tolerance	201.927	1	201.927	84.966	0.000	0.78	1.000
	Being attracted by negative emotions	121.823	1	121.823	17.989	0.000	0.42	0.982
	Mental assessment and estimation of distress	766.203	1	766.203	54.601	0.000	0.69	1.000
	Adjusting efforts to relieve distress	207.939	1	207.939	48.781	0.000	0.67	1.000
Error	Distress tolerance	038	24	2.377				
	Being attracted by negative emotions	162.533	24	6.772				
	Mental assessment and estimation of distress	787.336	24	14.033				
	Adjusting efforts to relieve distress	102.306	24	2.263				

As can be seen in the table above, there are significant differences between two experimental and control groups in the post-test stage for all sub-variables of distress tolerance (being attracted by negative emotions, mental assessment and estimation of distress, adjusting efforts to relieve distress). For the variables of distress tolerance, being attracted by negative emotions, mental assessment and estimation of distress and adjusting efforts to relieve distress, respectively 78, 42, 69 and

67 percent of changes variance are explained by grouping variable.

Table 5: The results of ANCOVA for investigating the impact of the training of effective communication skills on the variable of resilience

Source of change	Variable	Sum of squares	Degrees of freedom	Average of squares	F value	Significance level	Effect size	Power
Group	Resilience	21404.522	1	21404.522	122.062	0.000	0.819	1.000
Error	Resilience	4734.650	27	175.357				

As can be seen in table 5, for the variable of resilience, there is a significant difference between two experimental and control groups in the post-test stage. In this variable, 81% of changes variance can be explained by grouping variable. Now, the results of ANOVA are investigated by repeated measures. The question is whether the impact of the training of effective communication skills to nurses has been durable over time. Firstly, the hypothesis of Kreuth is investigated.

Table 6: Mochely table based on the equality of covariance for the components of satisfaction with treatment and life expectancy

	Component	Mochely test	Approximate chi-square	Degree of freedom	Significance
Distress tolerance	Distress tolerance	0.863	3.970	2	0.137
	Being attracted by negative emotions	0.939	1.692	2	0.429
	Mental assessment and estimation of distress	0.960	1.104	2	0.576
	Adjusting efforts to relieve distress	0.982	0.488	2	0.784
Resilience	Resilience	0.962	1.060	2	0.589

The results of Mochely test show that Kreuth hypothesis, which was one of the presumptions of variance analysis with repeated measures, is estimated to be a general unit for all sub-variables of resilience and distress tolerance.

Table 7: ANCOVA of post-test scores of psychological distress in experimental and control groups

Component		Sum of squares	df	Average of squares	F	P	Effect size	Test power
Distress tolerance	Interaction of time variable and grouping	122.600	2	61.300	23.839	0.000	0.460	1.000
	Error	144.000	56	2.571				
Being attracted by negative emotions	Interaction of time variable and grouping	128.956	2	64.478	12.851	0.000	0.315	0.996
	Error	280.978	56	5.017				
Mental assessment and estimation of distress	Interaction of time variable and grouping	411.756	2	205.878	16.528	0.000	0.371	0.999
	Error	697.556	56	12.456				
Adjusting efforts to relieve distress	Interaction of time variable and grouping	113.156	2	56.578	15.088	0.000	0.319	0.996
	Error	242.089	56	4.323				

The results of table 7 related to ANCOVA indicate that the training of effective communication skills have been able to maintain its impact on all components of psychological distress (Distress tolerance, being attracted by negative emotions, mental assessment and estimation of distress and adjusting efforts to relieve distress) over time. The results of the table below show the impact of the training of effective communication skills on the resilience of hospitalized patients.

Table 8: ANCOVA of post-test scores of life expectancy in experimental and control groups

Component		Sum of squares	df	Average of squares	F	P	Effect size	Test power
Resilience	Interaction of time variable and grouping	11650.822	2	5825.411	24.856	0.000	0.470	1.000
	Error	13124.578	56	234.357				

The results of ANCOVA table indicate that the training of effective communication skills has been able to maintain its impact on resilience over time.

Table 9: Mean and standard deviation of the components of distress tolerance and resilience in experimental and control groups

	Pre-test				Post-test				Follow-up			
	Experimental group		Control group		Experimental group		Control group		Experimental group		Control group	
Component	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Distress tolerance	35.40	5.57	29.40	4.93	59.33	5.57	28	6.07	58.06	3.51	31.60	4.73
Resilience	26.86	14.26	23.86	15.10	77.06	13.97	23.26	11.97	75.40	18.63	27.13	18.75

According to the results of the table above, for the variables of distress tolerance and resilience, the averages of the experimental group were more than control group in post-test and follow-up stages. Thus, after the effect of the independent variable (effective communication skills), the scores of two variables of distress tolerance and resilience have increased in hospitalized patients in the sample group.

Discussion and Conclusion

The objective of the present study was to determine the effectiveness of the training of effective communication skills to nurses on the satisfaction with treatment and life expectancy of hospitalized patients in Imam Khomeini hospital of Tehran. The results of this study showed that the training of effective communication skills has been able to maintain its impact on the variables of distress tolerance and resilience over time. In some aspects, the present study is in line with the studies [29] and [18]. Rajeian and Goudarzi showed that there is a significant relationship between social support and resilience [29]. Alipour et al. also showed that resilience could be used as a mediator variable to enhance the effect of perceived social support on treatment compliance [18]. For explaining the results of the present study, and considering its relationship with previous studies, it can be stated that nurse-patient communication skills can be effective in the resilience of hospitalized patients as one of the principles of social skills and social support. As the protective model of resilience shows, biological, psychological and spiritual balance is usually bombarded by urgencies, stressors, adverse conditions, opportunities, and other forms of external and internal change of life [30]. According to this model, a negative message and a risk factor are in interaction. The severity of perceived urgency depends on the quality of resilience and previous resilience reconciliation. Hospitalized patients have different levels of resilience than healthy people and even people with chronic illness, because of their high physical involvement with their disease and the severity and intensity of their illness. The high power of erosion of the illness causes patients to loose immediately their individual resources to cope with illness and also their biological, psychological and social balance. The training of effective interactions to the medical staff and especially to nurses will improve the level of resilience in hospitalized patients. The present research can be an introduction to future research in the field of effective communication between nurse and patient and components such as the resilience of hospitalized patients, so health psychologists can help these patients and strengthen them in coping with their disease thorough the training of effective communication skills of nurses with patients and also by providing interventions based on the increase of resilience. The results of this study have also shown that the training of effective communication skills has been able to maintain its effect on the components of psychological distress (Distress tolerance, being attracted by negative emotions, mental assessment and estimation of distress and adjusting efforts to relieve distress) over time.

The results of table 7 and 8 showed that effective communication skills of nurses could be effective in distress tolerance of hospitalized patients. The results of the present study are in line with the results of Amiri, Nouri and Samavatian [31], Fathi Ashtiani et al. [11] and also in some aspects with the research results of Koulivand et al. [26]. Amini et al. [31] showed that communication skills enhance the general heath and reduce depression, anxiety and social and physical function abnormalities. Ashtiani et al. [11] showed that communication skills lead to a significant reduction of stress and anxiety scores in individuals.

In explaining the findings of this research, it can be stated that emotions constitute an important part of human life and make the fundamental principle for survival. We, humans are created in such a way that we experience a wide range of emotions, which may be pleasant or unpleasant. Most people do not like the distressing emotions that can be cognitive, emotional or physical, but the experience of distress is a natural part of life, and its acceptance and the self-adaptation with it are inevitable. Negative emotions are a part of deterrent behavioral system and their main purpose is to prevent behaviors that lead to unpleasant consequences. In fact, the intolerance of unpleasant emotional experiences can be the cause of a large part of the everyday problems and sufferings of humans that interfere with a satisfying life. Hospitalized patients experience high levels of heterogeneity and mental distress because they suddenly needed to be hospitalized. According to the results of the present study, it seems that the constructive and effective interactions between

the therapeutic staff and patients can improve the distress levels of the patients. Giving appropriate information to patients, being open and welcoming, being ready to provide health care, having supporting behavior, etc., reduce the level of mental distress in patients and make them stronger to help themselves the hospital staff in their healing process. Also it appears that the principles applied by the medical staff, such as being receptive and welcoming, listening actively and empathically, providing appropriate information about the treatment process and offering health care at an effective time make the patient perceive an appropriate mental relaxation of receiving health care and have the willingness of cooperating with medical staff, especially with nurses. In this way, patients do self-control and self-care after discharge and they can enhance and accelerate their treatment process. The present research is an introduction to future research in the field of the training of effective communication skills to nurses and its impact on distress tolerance and resilience of patients, so the experts in health psychology can help these patients and fortify them in coping with their disease by providing interventions based on the increase of emotional regulation. Among the limitations of the present study, we can cite the quasi-experimental method, sample group of 25 to 45 years old, non-probabilistic sampling method, the lack of cooperation of some parts of the hospital at the beginning of the research project and not having trained nurses for education-based activities in the relevant section and during different work shifts.

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