

Supportive Nursing Care and Satisfaction of Patients Receiving Electroconvulsive Therapy: A Randomized Controlled Clinical Trial

Ali Navidian¹; Hossein Ebrahimi²; Roghaieh Keykha^{3,*}

¹Department of Counseling, Pregnancy Health Research Center, Zahedan University of Medical Sciences, Zahedan, IR Iran

²Department of Nursing, Faculty of Nursing and Midwifery, Tabriz University of Medical Sciences, Tabriz, IR Iran

³Department of Nursing, Faculty of Nursing and Midwifery, Zahedan University of Medical Sciences, Zahedan, IR Iran

*Corresponding Author: Roghaieh Keykha, Department of Nursing, Faculty of Nursing and Midwifery, Zahedan University of Medical Sciences, Zahedan, IR Iran. Tel: +98-5433442482, Fax: +98-5433442481, E-mail: roghaieh.keykha@yahoo.com

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Background: Patient satisfaction is the most important criterion in evaluating the quality of care. Besides, its assessment in patients with severe mental disorder treated by electroconvulsive therapy (ECT) is highly appropriate. The ECT is accompanied by lower satisfaction and may exacerbate the patients' condition.

Objectives: The current study aimed to determine the effect of supportive nursing care on the satisfaction of patients receiving ECT.

Patients and Methods: This randomized controlled trial was conducted in the education center of Baharan psychiatric hospital, Zahedan, Iran. Seventy hospitalized patients receiving ECT were randomly divided into two groups of control (n = 35) and intervention (n = 35). The socio-personal and Webster Satisfaction Questionnaire were used as data collection tools. The intervention group received supportive nursing care by nurses trained in informational, emotional, and physical aspects. The control group received only regular nursing care. The levels of satisfaction were measured and compared between groups, before and after the intervention. Data were analyzed using the SPSS software, and Chi-square, independent and paired t tests, as well as covariance analysis were performed.

Results: The results showed similarities in socio-personal characteristics of both groups. However, there was a significant difference ($P < 0.001$) between the means of satisfaction in the groups, predominantly for the intervention group. In other words, a significant difference ($P < 0.001$) was observed between the means of satisfaction of the intervention (54.71 ± 5.27) and control (36.28 ± 7.00) groups after intervention by controlling the effect of socio-personal variables.

Conclusions: Results of the current study confirmed the effect of supportive nursing care on increasing the level of satisfaction in ECT receiving patients, recommending the use of this therapeutic method.

Keywords: Nursing Care; Patient Satisfaction; Electroconvulsive Therapy; Support

1. Background

Patient satisfaction is the most important criterion for measuring the quality of care, because quality of care depends on the level of patients' satisfaction, and can be used for evaluation of the care process (1). As the main goal of any healthcare system is to respect patients' needs and expectations, meeting their expectations is of great importance (2). Satisfaction, which is considered an important factor in medical care, facilitates patient cooperation and increases his or her contribution in the treatment procedure (3). Patient satisfaction resulting from nursing care increases the rate of adherence to drug therapy and post discharge care (4). Increasing the level of satisfaction among patients can only be met through better interaction between patients and nurses by increased involvement of the nurses, continuous care giving, competence of the nurse, and good communication (5).

Nurses, because of the inherent nature of their job, have much closer and continuous contact with patients

compared to the other medical staff. Therefore, their performance may affect patients' satisfaction and treatment effectiveness (6). Providing supportive care is one of the main tasks of nurses, which usually is also one of the main sources of support for the patients and their families during the illness and stress (7). Supportive care consists of a set of general and specific therapeutic interventions provided by the nurse, intended for the treatment and support of the patient (8).

Previous studies have shown that supportive nursing care for patients undergone invasive procedures, especially in patients with cancer, have improved their mood (9), and reduced their anxiety and depression (10). Electroconvulsive therapy (ECT) is one of the main therapeutic methods for patients with severe mental disorders, which its effect is associated with convulsions (11). Annually, about 100000 patients in the USA and more than one million patients throughout the world receive

ECT (12). Considering the high prevalence of mental disorders, their relevant complications and high efficiency of ECT, this therapeutic method is considered useful and effective (13). The extensive application of ECT has been restricted for years by the lack of public acceptance secondary to continuous social, political, and legal attacks against this therapeutic method (14). Based on the conducted studies, 90% of the public opinion considers that the main sources of data regarding this method are collected from the patients received ECT (15). In the light of such results, misconceptions and stories were formed around the treatment with ECT. As a result, the use of this method is associated with misunderstanding and stigma, leading to lower satisfaction (16). Also, the unrealistic view of media toward the ECT and lack of proper training necessary to eliminate the gap between falsification and reality are the other reasons contributing to satisfaction reduction (12).

Patients with lower satisfaction do not usually observe medical advices and are rarely trainable; they have no control over their behavior, which leads to continuous hospitalization (17). Thus, it is of great importance to consider patient's satisfaction and set standards to promote satisfaction levels. Studies conducted in Iran on patients receiving ECT have mostly focused on the efficiency and complications of this method, and areas such as satisfaction before, during, and after ECT psychiatric nursing care and trainings have been overlooked, resulting in fear, concern and dissatisfaction concerning ECT. This trend is obvious in most patients receiving this therapeutic method (18). Although cognitive impairment and physical complications related to ECT are frequently considered, patient's satisfaction after this therapeutic method is almost neglected (19). Also, no study was found regarding the effect of supportive care on the level of satisfaction in patients who receive ECT.

2. Objectives

Considering the extensive use of ECT in Iran (20), researchers conducted this study to determine the effect of supportive nursing care on the satisfaction of patients receiving ECT. They also wanted to show the importance of providing proper supportive nursing care to increase the level of satisfaction in these patients, if any.

3. Patients and Methods

This study was a randomized clinical trial performed in Baharan psychiatric hospital, affiliated to Zahedan University of Medical Sciences, Zahedan, Iran, from July to August 2013. The research started after receiving the introduction letter from the Research Deputy and approval of the ethics committee of Tabriz University of Medical Sciences, Tabriz, Iran. Baharan psychiatric hospital with 5 wards and 80 beds is the only governmental, referral, and specialized hospital in southeast of Iran. This research is also registered in the Iranian Registry of Clinical Trials

under the code IRCT201306036834N6.

The study population included all patients receiving ECT during or after the study. Inclusion criteria were age ≥ 18 years, ability to read and write, no physical disorder that can cause cognitive impairment, and no cognitive impairment and impaired reality perception. Exclusion criteria were having acute psychosis symptoms, withdrew from the study, and receiving less than 4 sessions of ECT.

To determine the sample size, a pilot study was conducted on 24 patients receiving ECT, who had the inclusion criteria. Considering $\alpha = 0.05$, power = 0.9, and based on the mean difference and standard deviation after and before the intervention (mean \pm SD before intervention was 24.33 ± 2.42 and after intervention was 0.5 ± 4.54), 30 subjects were estimated for each group based on the sample size formula ($Z_{1-\alpha/2} = 1.96$ and $Z_{1-\beta} = 1.28$). Then, considering the possibility of subject attrition, 35 patients were allocated for each group, which totalized 70 eligible patients in the study. A total of 186 patients were assessed for eligibility by convenience sampling method. Of this people, only 70 patients were eligible (98 patients not meeting inclusion criteria and 18 patients refused to participate). Then, through simple random allocation method, 35 patients were indiscriminately assigned to the intervention and 35 to the control group (Figure 1).

$$(1) \quad n = \frac{(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta})^2 \times (S_1^2 + S_2^2)}{(\bar{x}_1 - \bar{x}_2)^2}$$

A 2-part questionnaire was used as the data collection tool. The first part included demographic information such as age, gender, marital status, and level of education, whereas the second part contained Webster's satisfaction questionnaire (of the received care) comprising 15 items: 10 items evaluate general satisfaction of the received services, and 5 items (2-5, 14) score the level of patient's satisfaction of interventions during the anxiety. The scoring phrases were set as follows: 1) totally disagree, 2) disagree, 3) neutral, 4) agree, and 5) totally agree. Each patient scores between 1 and 5. The sum of the scores of these 15 phrases represents the overall scoring, ranging from 15 to 125. The higher the average scores, the higher the patients' satisfaction of the received care. The reliability coefficient for the questionnaire was measured to be 0.93. In the current study, the validity of the translations and concepts was compared with that of the English original text, after translation to Persian. Then, the questionnaire was given to 10 faculty members of Tabriz University of Medical Sciences, Tabriz, Iran and any necessary corrections were applied after receiving their comments. The Cronbach α reliability was determined at 0.80. Also, the reliability was determined from the aspect of reproducibility (interclass correlation) at 0.80, based on the pretest and posttest conducted on the 24 subjects.

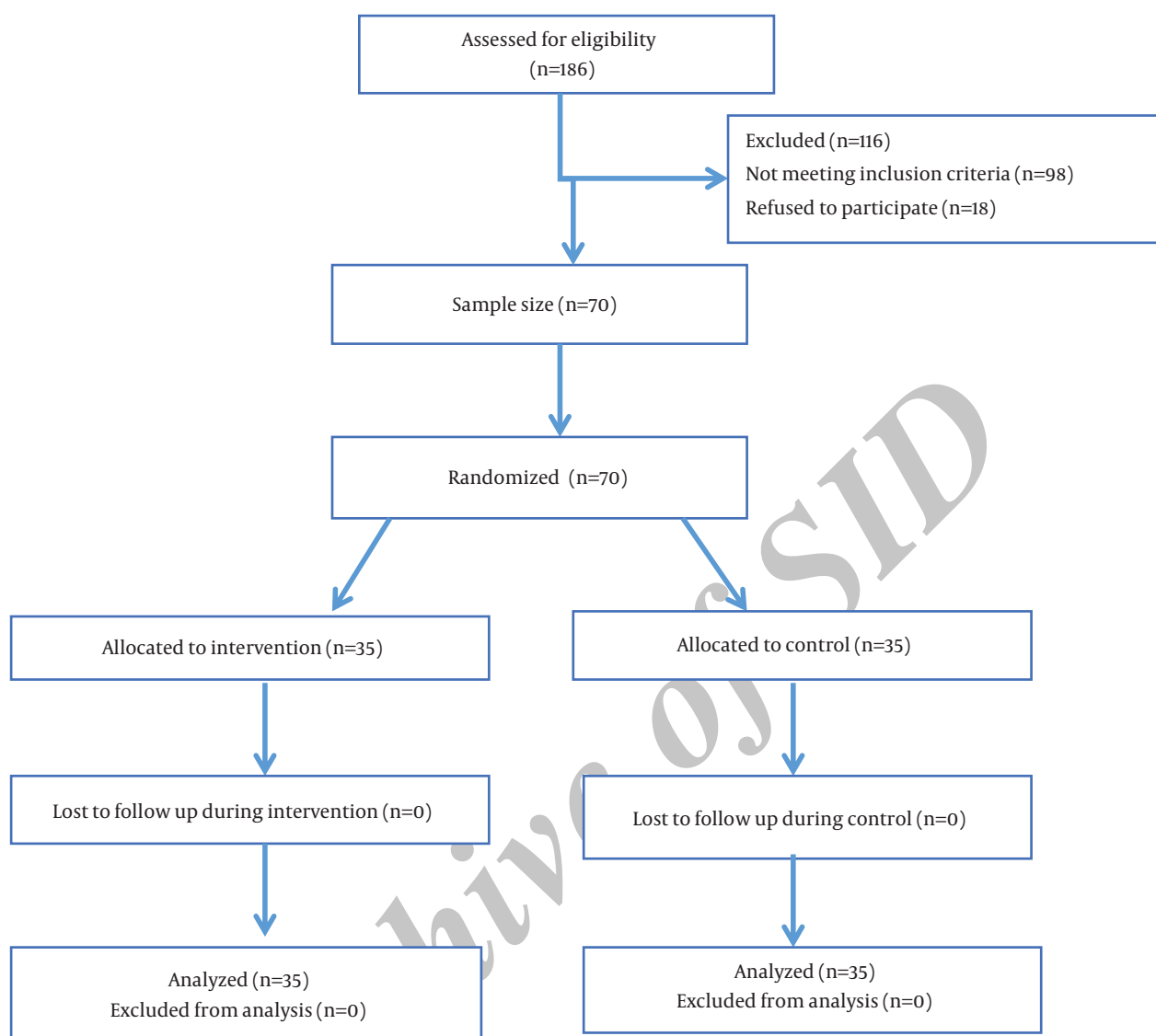


Figure 1. Flowchart of Participants Through Each Stage of Randomized Trial

To conduct the study, the researchers gave some information regarding the study to the eligible volunteer patients who were expected to receive ECT. Then, the written informed consent was obtained and subjects were randomly allocated into the intervention and control groups. First, the pretest satisfaction was determined through the questionnaire and subjects with lower or normal satisfaction were selected for the study. Nurses of the intervention and control group were different. Supportive nursing care was given to the intervention group by the nurses interested in participating in the study. The nurses had been trained the executive skills based on a booklet provided by the researcher a week before the start of the study. To evaluate the usefulness of the trainings, nurses' feedback was obtained through pretest and

posttest questionnaires designed according to the handbook. The difference between the test scores was more than 50%. The handbook was selected from the related articles, reference books, and journals, considering the aims of the study. Interventions were given by the end of the ECT sessions, which were at least 4 sessions. Sessions usually started around 9 AM, every other day. Interventions were performed from 12 hours before to 6 hours after receiving ECT. Interventions comprised the proper communication with the patient and providing supportive care in the informational, emotional and physical aspects such as giving information to the patient, encouraging the patient to express his feelings, evaluating beliefs and negative fears of the patient, supporting the patient to decide on ECT, explaining the reasons for us-

ing ECT, its advantages and disadvantages, explaining the responsibility of medical group members, and answering the questions before, during, and after receiving ECT. It also implied giving physical care such as keeping the patient fasting, bladder evacuation, taking jewelry, and metal ornaments off, making a proper venipuncture, and taking care of the patient in case of post-ECT cognitive defects. The general care and training such as ensuring patients fasting, bladder evacuation, and taking off the jewelry and metal ornaments were performed by the control group nurses. At the end of the last ECT session, the patients' satisfaction were determined in both intervention and control groups, and to avoid post-ECT cognitive defecting factor, the questionnaires were completed 6 hours after receiving ECT.

3.1. Data Analysis

Collected data were analyzed using SPSS software ver.15.0 (SPSS Inc., Chicago, Illinois, The USA). Descriptive statistics such as frequency, rate, mean, and standard deviation were employed to describe participants' characteristics and their satisfaction level. Also, because of the normal distribution of data in both groups within the satisfaction variable confirmed by Kolmogorov-Smirnov test, independent sample t test was performed to compare satisfaction scores before and after the intervention

in both groups (paired samples t test), and to compare satisfaction mean differences of both groups before and after the intervention. P value of less than 0.05 was considered as significant in this study.

4. Results

To compare demographic information, such as gender, marital status, occupation, and level of education, Chi-squared test showed similar results for both groups. Also, results of the independent t test showed insignificant difference ($t = -0.03$, $P < 0.05$) in the mean age between the intervention (41.00 ± 10.90 y) and control (41.08 ± 11.22 y) groups. Demographic information of the two groups are shown in Table 1. Results of the paired t test showed significant differences between the mean satisfaction scores of the intervention group, before (37.37 ± 5.76) and after (54.71 ± 5.27) the intervention. This test also indicated significant differences between the mean satisfaction score of the control group, before (38.85 ± 7.51) and after (36.28 ± 7.00) the intervention (Figure 2). Results of the independent t test showed no significant difference between the mean satisfaction scores of the intervention and control groups, before the intervention ($P = 0.35$). However, the results of this test indicated significant difference between the mean satisfaction scores of the two groups, after the intervention (Table 2).

Table 1. Demographic Characteristics of Patients Receiving ECT in the Intervention and Control Groups^a

Variable	Intervention (n = 35)	Control (n = 35)	df	χ^2	P Values
Education			5	3.00	0.69
Illiterate	7 (20.0)	10 (28.6)			
Primary school	4 (11.4)	5 (14.2)			
Secondary school	6 (17.1)	3 (8.6)			
Diploma	16 (45.7)	15 (42.8)			
Associate	2 (5.8)	1 (2.9)			
Bachelor or higher	0 (0)	1 (2.9)			
Job			4	3.07	0.54
Employee	0 (0)	1 (2.9)			
Self employed	8 (22.9)	6 (17.1)			
Retired	2 (5.7)	3 (8.6)			
Jobless	16 (45.7)	20 (57.1)			
House wife	9 (25.7)	5 (14.3)			
Gender			1	0.05	0.81
Male	16 (45.7)	17 (48.6)			
Female	19 (54.3)	18 (51.4)			
Marital status			2	1.46	0.48
Single	10 (28.6)	13 (37.2)			
Married	21 (60.0)	16 (45.7)			
Divorced	4 (11.4)	6 (17.1)			

^a Values are presented as No. (%).

Analytical results of Levene's test ($f = 0.23$, $P = 0.63$) revealed equality in dependent variances of variables in the two groups of the study, and based on the result of Kolmogorov-Smirnov test (Statistic = 0.12, Sig. = 0.13) the data were normally distributed, which was used as a necessary default in the analysis of covariance (ANCOVA). Results of the ANCOVA test showed a significant difference between the mean satisfaction scores of both groups after intervention ($P < 0.001$). Considering the effect of demographic variables such as age, gender, marital status, education, and occupation, there was a significant difference between the mean satisfaction scores of both groups, after intervention ($P < 0.001$), which means supportive nursing care may increase the level of satisfaction.

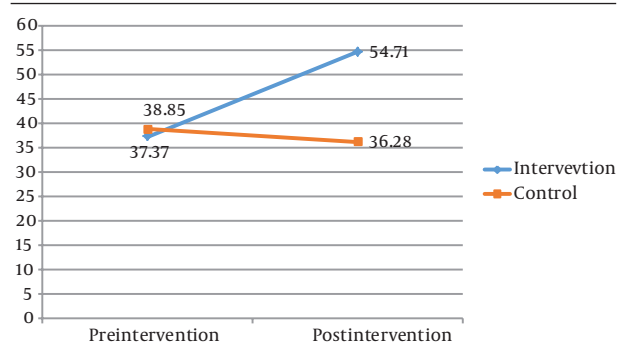


Figure 2. Mean Score of Satisfaction in the Intervention and Control Groups

Table 2. Comparison of Mean Score of Patients' Satisfaction in Intervention and Control Groups Before and After the Intervention

	Before Intervention	After Intervention	95% CI for Changes	P Value ^a
Groups				
Intervention	37.37 ± 5.76	54.71 ± 5.27	-19.75, -14.92	0.001
Control	38.85 ± 7.51	36.28 ± 7.00	0.80, 4.34	0.001
95% CI for Changes	-4.68, 1.70	15.47, 21.38		
P values^b	0.35	0.001		

^a Paired t test.

^b Independent t test.

5. Discussion

Comparing the mean satisfaction scores of both groups showed significant differences between the mean scores of patients before and after intervention. However, the mean satisfaction score of the intervention group increased from 37.37 (± 5.76) to 54.71 (± 5.27), and, in contrast, decreased in the control group from 38.85 (± 7.51) to 36.28 (± 7.00). There was a significant difference between the mean satisfaction scores of the two groups, before and after the intervention. Increase in the mean satisfaction after receiving ECT in the intervention group might be due to the fact that patients were given the chance to express their feelings, providing proper information from reliable references regarding the ECT procedure, and useful trainings. The results of the current study showed that providing supportive care in the informational, emotional, and physical aspects may have positive effects on the patients who receive ECT. Rajagopal et al. (21) also conducted a study on the level of satisfaction from ECT among the patients and their relatives. Results of their study showed that the level of satisfaction regarding ECT among the patients' relatives was higher than the patients themselves. Participants also complained about the lack of information before receiving ECT, fear of ECT, and continuous cognitive impairment (21). The results of the current study indicated the importance of satisfaction and identified factors causing dissatisfaction in the patients who receive ECT. The positive effects of support-

ive nursing care on the informational, emotional, and physical aspects of this variable were also indicated.

Sienaert et al. (22) conducted a study on the level of satisfaction after receiving ECT and its association with the treatment-related variables like memory disorders, and also patient-related variables such as level of depression and negative emotions. The results of their study showed that the level of post-treatment complications and giving supportive care based on the symptoms are the most important factors associated with the level of satisfaction. In the current study, providing supportive care in the 3 aforementioned aspects reduced mental complications associated with this therapeutic method and also indicated the importance of patients' satisfaction (22).

Uzun conducted a study on the level of patients' satisfaction from the nursing care in a world class university hospital in Turkey. Results showed that the most dissatisfying factors regarding nursing care were the level of tangibility, reliability, accountability, assurance, and empathy, which have to be improved. The results of this study also emphasized on the important role of nursing care on the patients' satisfaction (23). The informational, emotional, and physical aspects assessed by this study are similar to those of the current study. Providing such supportive care was associated with a higher level of satisfaction in ECT receiving patients.

Studies conducted on ECT receiving patients have most-

ly focused on the physical complications associated with this therapeutic method, while in the current study, the effect of care and training on the level of satisfaction were evaluated. In this regard, the study of Najafi et al. (24) on the effect of video training on the post-ECT complications revealed that video training before treatment may reduce complications such as headache, memory disorder, and vomiting. Training provided in this study was compatible with the informational and physical supportive cares of the current study, while reduced physical complications result from this therapeutic method applied efficiently. The current study evaluated the effect of such supportive care on the level of satisfaction and indicated that it can increase the level of satisfaction in ECT receiving patients.

Akhoondeh et al. (20) evaluated the effect of training on the consciousness and cognitive status of the ECT receiving patients. The results of their study showed that training before ECT may affect the cognitive status of the patients. Patients who were trained regarding the advantages, procedure, and temporary complications of this therapeutic method, had a better cognitive status (20). The training provided by their study is compatible with the informational supportive care of the current study. In our trial, supportive care was provided by trained nurses and results showed that the level of satisfaction in the intervention group was high.

In the present report, the important role of supportive nursing care was investigated and the results showed positive effects of these supports on the satisfaction associated with ECT. The results of the current study are also in line with those of Eghtedar et al. (25) who conducted a trial study on the quality of life of 100 women with breast cancer who received supportive nursing care in the informational, emotional, and physical aspects. The results of their work showed that improving supportive nursing care may improve the quality of life of the patients with breast cancer (25). The study of Leung et al. (26) also indicated the important role of supportive care in decreasing the symptoms of mental disorders. They evaluated the effect of supportive emotional care on the level of anxiety and depression in 507 Chinese elderly and indicated that supportive emotional care plays a more important role than instrumental supports in mental disorders (26). The results of their study are compatible with those of the current study regarding emotional support.

The results of the current study showed that supportive nursing care increase the patients' satisfaction when receiving ECT. Considering the high prevalence of mental disorders and their huge associated psychological burden, and in view of the high efficiency of ECT, this treatment was considered as a useful and effective therapeutic method, which is widely used. However, it sometimes results in patients' dissatisfaction due to the lack of public acceptance, negative attitude toward this therapeutic method, and invalid references. Because dissatisfaction is associated with failure to follow therapeutic recommen-

dations and loss of confidence to control their behavior at home (26), to make these patients satisfied, providing supportive interventions seems to be crucial. Nurses have more communication and interaction with patients, due to the nature of their job. Therefore, providing proper and standard supportive nursing care may play an important role in the patients' satisfaction from this therapeutic method. These interventions are easy to apply and may come along naturally with the duties of the nurses. Also, nursing authorities and managers may prepare the nurses to provide specific care and support for ECT receiving patients through holding training courses.

Identifying the control group subjects by the nurses through their contact with the intervention group nurses was one of the limitations of the current study. However, this issue was somewhat controlled through training the nurses of the evening and morning shifts, gaining their support, participation through promotional programs, and cooperation with the management system. However, more targeted actions are recommended to minimize possible exchange of information between the intervention and control groups. Randomized controlled trial study design and supplying of educational content of ECT supportive nursing care for nurses are the strengths of current study. Small sample size and caution in generalizing the results (because of its implementation in local area) are limitations of this study too.

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Authors' Contributions

All authors conceived the study and contributed to the study design. Ali Navidian have performed statistical analysis, interpreted the data, and supervised the study from design to final report. Hossein Ebrahimi participated in writing and approving the proposal, implementation, and interpretation of findings. Roghaieh Keykha contributed in the teaching of supportive care to nurses, data gathering, writing proposal and manuscript. All authors reviewed and edited the manuscript and approved the final draft.

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