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COMPARISON OF EFFECT OF GROUP REFLECTION AND INDIVIDUAL EDUCATION METHODS ON QUALITY OF LIFE AFTER OPEN HEART SURGERY IN PUBLIC HOSPITALS IN SHIRAZ 2016

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ABSTRACT

Aim
This study is performed to evaluate effect of group reflection and compare it with individual education in regard to quality of life of patients under CABG.
Context
Professional nursing has had great progress in recent decade. Nursing administrations should trust clinical judgment and be able to make important decisions based on the evidence.
Method
In this experimental study, 120 patients after coronary artery bypass graft surgery were chosen by purposive sampling methods. Inclusion criteria were implemented for discharged patients and subjects were randomly divided between test and control groups. Self-care program was performed in 12 sessions using a cycle for test group. Control group followed routine individual education programs. For assessment we used demographic and quality of life (SF-36) questionnaires after discharge (beginning of education), three and six months after the education. We used SPSS software, independent t test, chi-square and RMANOVA were used to analyze data.
Findings
Test and control groups had no significant difference in demographic variables. Comparing test and control groups by independent t-test showed that in almost all variables of life quality, after 3 or 6 months of education sessions, significant difference will be present. Comparing the two groups indicated that after 12 session of group education through reflection in test group, variables of physical performance, general health, vitality, emotional role play (emotional limits), mental health, physical health and quality of life showed significant changes.
Conclusion
Results of current study indicate improvement of quality of life by group reflection. Therefor it calls for more attention toward group education using more functional approaches.
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Introduction

According to the report by world health organization (WHO), cardiovascular disease are the main cause of death in the world. Although we can prevent death of people in severely bad conditions using advanced medical technology, coronary disease yet remain the main cause of morbidity and mortality in industrialized and developing countries [1,2].

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Although the main part of treating cardiovascular diseases is medication and diet, but many patients need non-pharmacological methods such as coronary artery bypass surgery. In many cases coronary artery bypass is the only treatment to extend life of patient [3].

In fact after myocardial infarction, health risks resulting from coronary ischemia threats life of patients. Diagnosis and treatment of disease is very effective on patients' quality of life. Quality of life is an important concept to the patients. It is considered as multidimensional concept including physical, mental, social and welfare performance. Studies show that myocardial infraction has negative effects on patients' quality of life and patients with symptoms of angina or other cardiac symptoms report lower quality of life [3, 4]. Today patient education is fundamental and vital care program in treatment systems and is known as the holding stone of all medical and health professions. Reducing stress and its related preventive behaviors require identifying lack of skills and planning to educate them. People have the right to participate in the process of improving and maintaining their health. Health maintenance is possible by increasing awareness and this can only be done through education [5]. Studies show that patients need information about conditions of their illness and improvement and their participation in education programs has positive effects [5].

Porter & Perry (2001) believe that education results in extension and development of knowledge and abilities of the learners. It helps them maintain what they have realized understood. It also enables them to analyze their own and other's performance and test and exercise their findings. Therefor they can improve their abilities, intelligence and judgment and provide better quality of services [6]. One of the biggest groups that needs education is heart patients. Education helps patients adapt with their illness and cooperate with prescribed treatment methods. Also it teaches the patient how to eliminate problems caused by the new conditions [6].

Dewey (2000) defines reflection models and points out that models transform conflict, ambiguity and doubt to clarity, coherence and coordination. He believes that reflection motivates the person to seek and find principles that help eliminate doubts. He understands significance of previous experiences for reflection and believes that ideas and suggestions depend on these experiences [7].

Reflection is for effective and logical activities in people that seek new experiences in order to obtain new deductions and evaluations. This definition is academic and effectively simplifies reflection [8]. Observing all scenarios form various angles such as people, relation, situation, location, chronological order and incidents help people make situations more comprehensive. This enables them to analyze and visualize the experiences in the respecting field of attention.

Unfortunately Iran's educational system mostly uses traditional methods. These methods focus on increasing and improving the memories and does not rely on enhancing thinking skills. Also after education, usual atmosphere in hospitals doesn't provide opportunities to develop skills or grow. Therefor it is necessary to set development of critical thinking skills as the main education goal and implement the best strategy to improve it [1].

Due to importance of education plan and lack of sufficient knowledge regarding effect of novel group education on patients' quality of life in Iran, research is necessary. Respecting findings can be very helpful in evaluating education programs in Iran. Therefor the current research was performed to study effect of group reflection on patients' quality of life after CABG. We hope this will help highlight the importance of this program in order to optimize physical, psychological and social performance of cardiac patients following CABG.

Material and methods

This is a random trial with control group where effect of group reflection on patients' quality of life (dependent variable) of 120 patients in test and control groups is studied. Scores for test and control groups' quality of life questionnaires were studied before and after intervention. Also changes in both groups compared to before the intervention was studied. Population of research was patients undergone coronary bypass surgery in AL Zahra charity hospital. They were randomly put in test and control groups. We chose samples due to necessity of improving quality of life for such patients, their availability due to open heart surgery in the same hospital and frequent follow up after surgery, dealing with clinical situations such as symptoms, side effects and medications and also possibility of studying them.

This quasi experimental study was performed on 120 patients after coronary artery bypass graft surgery. Samples included patients undergone coronary bypass surgery in Fatemeh Zahra heart hospital and entered our study using the respective criteria. These criteria included age of 45 to 75, undergone coronary artery bypass graft, absence of heart failure and untreated malignant arrhythmias, no previous history of heart surgery, no known history of mental illness, lack of consumption of narcotic drugs and psychotropic substances, ability to understand and speak and read and write in Persian. Exclusion criteria included any problem that could eliminate possibility of cooperation.

After receiving written consent from patients, researcher randomly divided subjects to test (n=60) and control (n=60) groups. Questionnaires were used as data gathering tools. Two separate questionnaires were used. The first included demographic information such as age, sex, education, occupation, location, marital status, income, family history and history of hospitalization. Second one is quality of life questionnaire SF-36 which includes 36 questions in physical and mental areas. It generally includes 8 sub-areas such as physical performance, physical role, bodily pain, general health, vitality, social performance, emotional role and mental health. Validity of content was used to verify validity of tool and reliability was determined by Cronbach alpha in the first 20 questionnaires calculated as follows: physical performance (85%), physical role (85%), general health (80%), vitality (85%), social performance (81%), emotional role (80%) and mental health (85%).

Demographic information were set according to inclusion criteria. Content validity was verified by eight experts and a poll form faculty members of Shiraz Medical University. In this research group reflection was considered as the independent variable and quality of life as the dependent variable.

SF-36 questionnaire has eight components of general health (6 questions), physical health (10 questions), mental health (6 questions), social activity (2 questions), bodily pain (2 questions), role of physical health in role play (4 questions), role of mental health in role play (3 questions) and vitality (3 questions).

This questionnaire is standardized for population of Iran. Persian edition of this tool is assessed by Dr. Ali Montazeri and its validity and reliability are verified. It seems that SF-36 questionnaire is more consistent with Iran's culture and society. Likert scale (perfect, very good, good, rather good and bad) was used to evaluate the answers. This scoring was done in two sessions. In the first session, a score between 0 and 100 was set to each response. In the second step average scores for each physical and mental dimension was calculated and was scored from 0 to 100.

After preparing data tools, researcher visits the respective medical centers and chooses subjects that meet inclusion criteria. We should mention that sampling depends on compliance of age and sex in both groups. Questionnaires were filled out after receiving consent from subjects. Researcher read question out loud to subjects and then transferred their answers to paper. After filling the questionnaire, both test and control groups received usual medical and nursing treatments. Subjects in test group also participated in group reflection sessions. They participated in 12 sessions lasting for 3 hours. In the first session patients were familiarized with process of reflection and a scenario was performed as role play. They were educated about anatomy and physiology of heart and established an overall knowledge of coronary artery bypass surgery and causes of heart disease. Other sessions were held using Gibbs cycle [9] which includes description, feelings, evaluation, analysis, conclusion, and action plan. Symptoms of each patient were addressed using role play by leader of group and members. Other issues such as coping mechanisms for improvement, procedures to change and improve lifestyles, prevention of complications of coronary artery bypass, moderators of these factors, amount and type of physical activity after coronary artery bypass surgery, educating use of drugs and other educational matters were covered too. Issues of learning in group which include adaptation, cooperation, commitment, ability to make relations, creating motivation and encouragement, devising active and dynamic processes, assigning goals and standards, preparing suitable context for discussions among all group members, answering the fundamental questions and leading the process were considered [10].

Quality of life questionnaire SF-36 was filled out for test group in three stages: after discharge, three months and also six months after education. Results of these three stages are compared for test and control groups. Results were analyzed by SPSS software, independent t-test, chi square and RAMANOVA tests.

Findings

Of 60 patients in test group chosen in a purposive manner for group reflection programs, 9 (18%) persons in spite of filling demographic form and planning, participated in less than 6 sessions and therefor were eliminated.

Also 41 persons (62%) participated in all 12 session (12 weeks) and 10 patients (16.6%) participated in less than 2 sessions (more than 8 sessions). Of the 51 persons in test group, 4 persons (7.8%) were women and 47 (92%) were men. Average age in test group was 54-63.

Of 60 patients in control group that were chosen randomly and filled consent and demographic information forms, 6 persons (10%) despite follow-up never visited the hospital and 50 persons (83.3%) visited in both stages of three and six months after discharge for routine visitation and filling out quality of life questionnaire SF-36. Also in control group 4 persons (6.6%) visited only once after surgery.

Of these 54 persons (90%) in control group that visited at least once, 23 (42.5%) were women and 32 (57.4%) were men. Average age was 58-71 for control group. Table no. 1 compares demographic characteristics of the two groups. Based on results of study, quality of life for test and control group in 12 weeks after discharge and 12 sessions of reflection for test population had statistically significant effects in all aspects except general health. Results showed that in dimensions of physical performance, general health, vitality, emotional role play (emotional limits), mental health, physical health and quality of life, there were stats]istically significant differences between test and control groups.

Using RAMANOVA test we found significant differences in different stages of research in variables physical performance (test and control groups), physical role play (physical limitation of test group), bodily pain (test and control groups), general health (test group), mental role play (emotional limitation of test group), mental health (test and control groups), physical health (test and control groups) and quality of life (test and control groups).

Table 1: comparison of demographic characteristics of two groups

Variable	Test group averagestandard deviation	Control group averagestandard deviation	P
Age	61.536±6.269	62.869±8.288	0.379
Married (%) Single (%)	75.60 4.9	67.4 6.5	0.708
Occupation: employed	36.6	41.3	0.112

unemployed	4.9	17.4	
retired	58.8	41.3	
Residence:			
owner	76.1	80.5	0.806
tenant	21.7	17.1	
live with others	2.2	2.4	
Education:			
high school	17.1	17.4	
diploma	10.22	34.8	
Associate degree	24.4	28.3	0.462
Bachelor of science	26.8	17.4	
Master of science	7.3	2.2	
PHD	2.4	0	

Table 2: comparison using independent t-test for both groups

stage	After discharge			Three months			Six months		
Group	Test	Control	P	Test	Control	P	Test	Control	P
Variable	averagestandard deviation	averagestandard deviation		averagestandard deviation	averagestandard deviation		averagestandard deviation	averagestandard deviation	
performance	20.56± 69.71	12.61± 77.09	0.233	13.72±37.31	12.61± 16.32	0.000	11.74±19.64	11.65± 56.87	0.001
Physical limitations	18.55± 07.49	10.54±77.59	0.258	15.64± 67.02	12.54±20.59	0.003	12.61± 49.46	11.56±80.33	0.052
Bodily pain	19.55±58.79	15.47±85.01	0.023	13.61±51.58	12.55±16.90	0.042	15.64±94.32	10.60±73.86	0.234
General health	13.57±91.54	12.57±75.70	0.678	13.65±80.34	8.60±90.72	0.064	14.64±27.03	8.58±75±81	0.041
Vitality	17.63±57.21	12.58±34.88	0.138	17.69±12.30	12.59±50.18	0.003	15.66±81.11	9.59±79.74	0.029
Social performance	17.62±89.50	14.59±29.24	0.348	19.67±15.68	12.60±55.15	0.036	16.66±71.87	10.64±81.16	0.366
Emotional limitation	17.58±28.33	12.58±95.88	0.868	15.64±31.83	10.56±97.14	0.004	12.67±92.98	8.59±70.93	0.001
Mental health	16.62±91.60	14.61±46.05	0.745	16.67±17.98	12.95±86.03	0.006	17.65±32.01	12.56±66.09	0.008
Physical health factors	12.56±70.38	9.54± 00.67	0.468	10.65± 30.81	7.58± 48.13	0.000	9.66± 92.11	7.60± 88.47	0.005
Mental health factors	12.61± 90.66	7.59± 14.62	0.358	13.67± 32.45	8.58± 70.63	0.001	2.66± 28.49	6.59± 27.98	0.003
Quality of life	11.59±34.02	6.57±94.11	0.350	11.66±7.64	7.58±0.38	0.000	10.66±21.30	6.60±07.22	0.001

Discussion

Test and control groups didn't indicate significant differences for demographic variables. Assessing quality of life before cardiac rehabilitation program in test and control groups showed that there was no significant difference among any variables of quality of life before group reflection sessions except bodily pain.

Performing group reflection for 12 weeks after discharge in test group resulted in improved physical performance, physical role play, physical health, factors of physical health and quality of life. Therefor we can conclude that performing group reflection after three months has the most effect on physical on physical performance, mental health and factors of mental

health compared to social performance. Also findings show that three months after discharge, patients in test group didn't indicate significant difference in vitality, social performance and emotional role play.

Comparing changes in dimensions of quality of life for the two groups signifies effect of group reflection on improving quality of life. Studies on effect of group reflection for different dimensions of quality of life in Iran have been very few and no evidence was obtained to indicate effectiveness of group reflection on improving quality of life of patients especially within the area of cardiac surgery.

Since group reflection procedure using Gibbs cycle was used in the intervention program, it seems that implementing this cycle with concentration on reviewing scenarios similar to real situations, has had some effects on improving quality of life.

An overview of the cycle shows that the first stage of the cycle begins with a description of all the events surrounding the patients' scenarios with complete details [11]. This characteristic enhances physical performance compared to mental, psychological and social performances. In addition to studying details of scenario, here we generally effect of patient's intervention on the scenario and his/her performance is carefully studied.

In description stage, patient is free from his/her own framework and speaks about feelings, thoughts, effect of events on him/her and the resulting feeling [12]. It seems this is effective in elevating mental and psychological performance.

In third stage of Gibbs cycle, patients in test group evaluate the scenario. They study all positive and negative points regarding the scenario [11]. Evaluating all aspects has been effective on improving social performance and role play has had positive effects on various aspects of quality of life after six months.

Up to now scenario was studied from different angles. In conclusion stage, patients research about other actions. In other words they obtain results that indicate what they could have done different form the scenario [9]. It seems that this stage has significant effects on physical role play, emotional role play and vitality after six months in test group.

In the sixth stage of Gibbs cycle, during group reflection we planned the scenarios. We asked patients what they will do when facing such situations [11]. Patients were obligated to think and provide solutions for future planning. This has been effective on all aspects of quality of life, especially mental health.

Reviewing scenarios and educations in different aspects of quality of life using various stages of Gibbs cycle caused patients to think that the area they have problems in, requires fundamental changes. Therefor they constantly studied new ways that could end in better performances.

The researcher recognizes effect of group reflection on different aspects of life is due to dynamic nature of group and common situations. Issues mentioned about group reflection caused patients to remember it as a good experience. They stated positive concepts of reflection as ensuring, having enough time for reflection, obtaining new perspectives, understanding others situations and more effective relation with other patients.

Using clinical scenarios consistent with patients' situation for group reflection, played an important role in effectiveness of intervention. Clinical scenarios devised for cardiac intensive care after surgery, used the simulated issues for analysis and decision making of nurses.

Unfortunately in Iran and other parts of the world, there hasn't been wide ample research regarding implementation of group methods for patients. Group reflection is merely used for some researches on nurses.

Gustafson (2004) did a research on using reflection to develop nursing profession [12]. Moloney (2006) used reflection on a daily basis in orthopedic section on 16 nursing students. Effect of group reflection on enhancing abilities of students in different stages of description, analysis, understanding new perspectives, learning and evaluation confirm results of current research [13].

Other studies indicate effect of procedures other than reflection on different aspects of quality of life. For example Mercuris (2009) used Macnew questionnaire to assess quality of life of heart patients [14]. He studied quality of life of patients before surgery, 4 months and also 1 year after the surgery. Results showed that quality of life significantly increased 4 months after surgery and it continued although at a lower rate until a year. In Czeisler et al (2008) [15] and Jegier et al (2009) [16] studies also, quality of life after rehabilitation improved. Yet in all these studies, procedures other than reflection have had significant but temporary and short-term and improvements. At the end or three months after applying the procedure, significant improvement was observed in all aspects of quality of life. While for some aspects and especially mental health and social performance, statistically significant differences diminished after three months. This is while using group reflection method resulted in significant improvement in all physical, mental, psychological and social aspects even after six months.

In order to educate the improvement, provide methods to change and enhance life styles, prevent complications of coronary artery bypass, moderate these factors, set the type and amount of physical exercises after coronary artery bypass surgery, using medication and other educational issues in various studies, numerous techniques have been used. But the results indicate inefficiency of education methods. Education can be done using traditional methods, but there is little known how to apply these concepts in action. Learning and acting upon these skills should be performed with reference to real situations. Therefor all educational aspects were included in this research, using treatment scenarios devised by patients themselves.

Tobias (2016) studied effect of group reflection on clinical teachers [17]. To carry out this strategy, teachers were motivated to reflect on ideas, formulate and choose alternative measures. They participated in this meeting to reflect deeply on critical issues. This resulted in changing educational strategies and had lasting effects. Lasting effect of this education strategy is consistent with our results after six months, indicating significant improvement in all aspects of quality of life.

In a study by Fook (2010) using critical thinking to support health promotion in palliative care, suggestion based on critical reflection are provided [18]. In this article by explaining new learning method, performance is promoted using critical thinking in personal growth program, the person understands his/her own skills. This complies with goals of current study. Reflection and criticizing education programs are effective methods in transferring medical educations [19], as described in an article by Ramani (2006).

Bailey (2007) in a one year process of introducing, facilitating and evaluating, used a project including reflection training of 8 nurses for palliative care in Milford care center, Republic of Ireland. Researcher prepares topics to discuss subjects such as understanding reflection process, reflection scenarios, group leadership, forward movement and introducing reflection for palliative care nurses. With this strategy nurses could obtain new insights in clinical environment and promote clinical processes. It was proven that an organization can provide fundamental strategy to support nurses for quality palliative care [20].

Redmond (2004) in an article explains reflection and uses this learning model in order to organize educational goals in health, social and education [21]. An overall review of various reflection ideas and then understanding of different levels by clinical staff is explained. Afterwards this technique is combined with complicated daily situations that staff deal with. This technique is a proper guide for both the theory and action using reflection.

Abedi (2008) in a study introduces lack of time as an obstacle for reflection which is not consistent with current study [22]. Evaluation in reflection is the most time consuming stage.

Epstein (2008) recognizes reflection as an empirical learning method in students. Reflection as an educational and learning tool has increased intellectual capacity of students.

Conclusion

Due to growing heart disease and role of patients in improving their health and rehabilitation with the help of these programs, it is necessary to pay more attention to implementing effective education methods. Patients regularly deal with situations where there is no clear sign or completely true answer. Therefor necessity of learning, improvement methods and changing education styles related to characteristics such as deep approach to learning, high self-confidence, higher levels of cognitive development can help patients cope with complicated clinical situations.

Another finding of this study is that patients didn't limit application of this method to themselves. Therefor we can infer that the most important goal of this active and experimental method is helping patients empower themselves in all aspects of life. Listening to the ideas, feelings and thoughts of patients, Q&A and feedback for the situation of patients, education is facilitated. Proper atmosphere for reflection with role play model has effectively increased awareness and skills and improves mental and social aspects.

Researcher hopes these findings could be used in clinical practice and improve quality of self-care for patient. Therefor it's necessary to adopt measures to select the most effective educational tool and the best time to train patients. On the other hand, costs and the need for experts should be affordable and consistent with existing facilities and the most effect on heart related health issues. Application of this method is very limited in clinical situations. Especially in relation to educating the patient which is a main job for nurse, teacher-centered methods are used in Iran. Promotion of learning levels requires active methods with inclusive participation, deeper thinking and more practice. Due to importance of level of capability and self-confidence in patients and effectiveness of efforts to meet their needs, using reflection as an education model is emphasized.

This method as an important and innovative method to encourage and support health promotion procedures in patients. It shares a wider and more comprehensive perspective of patients' self-care activities.

Declarations

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Competing interests

The authors declare that they have no competing interests.

Authors' contributions

Material management designed the concept for the study, developed the study design, supervised data collection and analysis, drafted the manuscript, and was involved in study coordination and manuscript revision. subjests for sessions , ran the study intervention, was involved in the conception of the study, performed the analyses and drafted the manuscript. MHD contributed to the study design and intervention. All authors read and approved the final manuscript.

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