



CODEN [USA]: IAJPBB

ISSN: 2349-7750

## INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

<http://doi.org/10.5281/zenodo.546231>

Available online at: <http://www.iajps.com>

Research Article

### COMPARISON OF THE EFFECT OF SELF-CARE EDUCATION THROUGH HOSPITAL ROUTINE AND SOCIAL NETWORKS METHODS ON QUALITY OF LIFE OF CORONARY ARTERY BYPASS GRAFT PATIENTS

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Received: 12 March 2017

Accepted: 26 March 2017

Published: 28 March 2017

**Abstract:**

**Background and Purpose:** Coronary artery bypass grafting [CABG] is currently performed to relieve coronary artery disease. This study evaluates the effects of two self-care approaches of hospital routine technique and social networks on the quality of life of patients undergoing CABG.

**Methods:** One hundred candidates of CABG were enrolled in this study who then completed the questionnaires of demographic characteristics and MacNew heart disease health-related quality of life. Before hospital discharge, patients attended a 20-30 min self-care education session, held by the researcher and received a self-care booklet after CABG. Afterwards, participants were randomly divided into two groups of intervention and control. The intervention group received self-care education for four weeks after the surgery through a "Telegram Group". Subjects of both study groups filled the questionnaires again after six weeks. Data analysis was performed with SPSS version 21 using descriptive and inferential statistics.

**Results:** Both study groups were homogenous regarding demographic characteristics. According to the results of paired t-test, quality of life and its dimensions increased in both intervention and control groups after the intervention. On the other hand, results of independent t-test, used to compare the study groups, revealed lower quality of life in the intervention group before the test and no statistically significant difference between the groups after the test.

**Conclusion:** Although the quality of life was at a lower level in the intervention group before the tests, the post intervention quality of life increased in this study group so that reached the mean quality of life of the control group. It seems that education in any form could improve the quality of life.

**Keywords:** self-care education, approach, hospital routine, social networks, quality of life, coronary artery bypass graft.

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Please cite this article in press as Faezeh Sahbaei et al, *Comparison of The Effect of Self-Care Education Through Hospital Routine and Social Networks Methods on Quality of Life of Coronary Artery bypass Graft Patients*, Indo Am. J. Pharm. Sci, 2017; 4(03).

**INTRODUCTION:**

Cardiovascular diseases are the leading cause of mortality and disability in developed and developing countries [1]. According to the literature, three-fourths of global deaths and 82% of disabilities after cardiovascular diseases occur in countries with average income [2]. Some of the methods applied to control this disease are medical therapy, percutaneous coronary intervention and coronary artery bypass grafting [CABG] [3]. While CABG is not the certain cure for severe coronary artery disease, which causes death all over the world, it could be associated be symptoms of heart pain, improved quality of life and decreased mortality rate [4, 5]. Evaluation of quality of life in patients after CABG is one of the long-term results of the treatment [3]. The quality of life is an important outcome in evaluation of patients and a good sign in a population of cardiovascular patients and those with chronic diseases [2]. The World Health Organization [WHO] defines the quality of life as the awareness of individuals of their situation in life in the cultural context and value system, where they live, compared to their goals, expectations and standards. Generally, the quality of life include the health status of a person, such as physical and social functions, mental health and awareness of general health, which people experience directly [2]. Self-care by patients is one of the crucial results of health, which focuses on activities to improve one-self and increase the quality of life, while decreasing physical and physiological symptoms [6]. Self-management in patients with chronic diseases is an important component of health, and could be associated with decreased readmission costs and related complications, leading to improved health and quality of life [7]. Education is one of the major components of self-care and involves information about signs and symptoms of the disease, changes in lifestyle and adherence to the treatment [8].

The quality of life of patients after CABG can be improved through training the patients after the procedure by nurses [5]. One of the most important roles of nurses is training patients in order to enabling them to coping with changes and modifications in life [9]. Today, the sensitivity of physicians and hospitals toward the value of patients, as well as their needs and priorities has been raised. In this process, patients have an active role in their health and treatment. Scientists believe that information and communication technologies, especially the internet, have facilitated these changes and could help training the patients [10]. Organization of early treatments has changed in the majority of developed countries in the past few decades, being pushed toward remote treatment [11].

Telemedicine is the technology of information and communication for provision of healthcare services

or monitoring the health status of patients from a distance [12]. Increased use of online healthcare programs for patients with chronic diseases has paved the way for use of information and communication technologies to increase the availability of education for patients [13]. In addition, use of online training for patients increases their general knowledge about health [14]. Social networks can be used to increase healthcare-related information [15]. Self-care has a significant role in chronic situations. Over the last few years, the number of people with more desire to obtain information about their chronic disease on the internet has increased. Self-care through reliance on online social networks leads to shorter duration of management of the chronic disease, compared to professional healthcare [16]. Our researcher, with 10-year experience in cardiac surgery ward, felt the need for follow-up of the condition of patients after discharge. Given the high statistics of this surgery in our country and decreased age of this type of patients, follow-up after hospital discharge is of paramount importance.

Some of the most accessible methods for training patients are cellphones and telegram social network. Iranian is the number one users of telegram. Therefore, this application as a cost-effective method could be used to train patients underwent CABG and to improve their quality of life.

**MATERIALS AND METHODS:**

This clinical trial with a quasi-experimental design was conducted to compare self-care training through two methods of social networks and routine process of hospitals on the quality of life of patients after CABG. In this research, sample population included all patients who underwent CABG in Vali Asr Hospital.

Inclusion criteria were just CABG operation [not combined with valve replacement], length of stay in the ICU for less than 96 hours, aged >30 years, lack of history of known mental diseases, lack of history of chronic diseases [with the exception of cardiovascular disease with cardiac contractility over 40%], having access to telegram, being literate and willingness to participate in the research. Exclusion criteria were lack of willingness to continue the research at any time. In total, 100

eligible patients were selected using the  $\frac{Z^2 P(1-P)}{d^2}$   $n=[\alpha-0.05, d-0.01]$  formula and randomly divided into two groups of intervention and control.

Data collection tools included the questionnaire of demographic characteristics of the participants, such as gender, age, marital status, occupational status, educational level and history of cardiovascular diseases, and MacNew heart disease health-related quality of life.

Internal consistency of MacNew questionnaire was estimated at <90% [17]. In addition, interclass correlation coefficient for the emotional and physical dimensions was 90%, whereas it was 94% and 95% for the social dimension and total score [18]. Validity of this questionnaire was estimated at 92% using content validity method [19].

The MacNew questionnaire has 27 items and evaluates the quality of life of patients in three emotional [13 items], physical [14 items] and social [14 items] dimensions.

Scoring of this questionnaire was based on a 7-point Likert Scale. The minimum and maximum scores of the questionnaire are 27 and 189, respectively. Higher score is indicative of better quality of life.

In this research, sampling duration was five months [from July 22, 2016 to December 21, 2016]. Data collection tools were provided for the patients and completed before the study. Moreover, routine care, which included offering an educational booklet about self-care, verbal learning about this topic for 20-30 minutes and answering the questions of patients, was conducted for patients before discharge.

In the intervention group, self-care training continued for four weeks through the telegram application in addition to routine cares of the hospital.

In addition to the interactions between the researcher and patients, an association was created between the patients, so that they could discuss their problems regarding self-care techniques.

If false information is transferred between the patients, the researcher intervened and corrected the mistakes. Six weeks after hospital discharge, the MacNew questionnaire was completed by the patients one more time.

Data analysis was performed in SPSS version 21 using Chi-square, Fisher's exact test, as well as paired and independent t-tests.

### RESULTS:

According to the results of this study, no significant difference was observed between the intervention and control groups in terms of gender, age, marital status, occupational status, educational level and history of cardiovascular diseases [Table 2].

**Table 1: Comparison of demographic characteristics of the control and intervention groups**

variable		Intervention group		Control group		statistical test	
		[N]	[%]	[N]	[%]	P-value	$\chi^2$
Age [year]	40>	2	4%	2	4%	2.32	0.50
	40-50	2	4%	6	12%		
	50-60	27	54%	23	46%		
	60<	19	38%	19	38%		
Gender	Male	34	68%	29	58%	0.30	1.07
	Female	16	32%	21	42%		
Educational level	Below diploma	34	68%	32	64%	1.96	0.37
	High school diploma	7	14%	4	8%		
	Academic degree	9	18%	14	28%		
Occupational status	Employed	25	50%	21	42%	2.21	0.53
	Retired	12	24%	17	34%		
	Housewife	12	24%	12	24%		
	Unemployed	1	2%	0	0%		
Marital status	Married	47	94%	47	94%	0.00	1
	Divorced or widowed	3	6%	3	6%		
History of cardiovascular disease	Yes	17	34%	13	26%	0.76	0.38
	No	33	66%	37	74%		

Results of paired t-test indicated a significant increase in the scores of all dimensions of quality of life of patients in the intervention and control groups after the intervention [ $P < 0.05$ ].

On the other hand, the results of independent t-test revealed that scores of all dimensions of quality of life and total score of quality of life of patients in

the intervention group were significantly lower, compared to the control group [ $P < 0.05$ ]. Nevertheless, no significant difference was observed between the groups after the intervention in terms of the scores of all dimensions of the quality of life and total score of quality of life of patients [ $P > 0.05$ ] [Table 2].

**Table 2: Comparison of quality of life before and after training in the intervention and control groups**

Dimension	Time	Intervention group	Control group	Independent t-test	
		Mean±SD	Mean±SD	P-value	t
Emotional	Before intervention	66.62±13.86	73.74±12.12	0.007	-2.734
	After intervention	77.14±8.19	78.86±11.90	0.402	-0.841
	Paired t-test	P=0.000 T=-4.809	P=0.002 T=-3.307		
Physical	Before intervention	58.78±11.29	65.16±15.40	0.020	-2.362
	After intervention	70.60±10.56	70.48±14.48	0.962	0.047
	Paired t-test	P=0.000 T=-5.390	P=0.025 T=-2.318		
Social	Before intervention	57.66±10.87	64.96±11.72	0.002	-3.228
	After intervention	69.52±8.35	70.64±10.30	0.552	-0.597
	Paired t-test	P=0.000 T=-5.669	P=0.002 T=-3.195		
Total	Before intervention	115.20±19.64	127.50±24.28	0.006	-2.785
	After intervention	135.60±14.88	137.58±21.74	0.597	-0.531
	Paired t-test	P=0.000 T=-5.634	P=0.002 T=-3.194		

**DISCUSSION AND CONCLUSION:**

According to the results of this study, all dimensions of the quality of life significantly increased in both study groups after the intervention.

Subjects of the control group received the primary and routine care of the hospital, which had a positive impact on their knowledge. In addition, it is possible that patients would visit the nurses at the clinics, which affected their health status [20]. Any form of education improves the quality of life due to the fact that training raises the awareness of patients toward their health [21].

According to the mean scores of dimensions of quality of life and total score of quality of life, while the scores of both groups increased after the intervention, the score of the intervention group increased more than the control group. In this regard, the intervention group received the score of 10.52 regarding the emotional dimension, whereas 5.12 score was assigned to the control group. Regarding the physical dimension, the intervention and control groups received 11.82 and 5.32 scores, respectively. In terms of the social dimension, the mentioned groups received the scores of 11.86 and 5.68, respectively. Mean total score of quality of life increased to 20.4 and 10.08 in the intervention and control groups, respectively.

While the intervention group had a low score of quality of life before the intervention, the quality of life of the participants not only increased after the intervention, but it also got really close to the mean quality of life of the control group.

In a study by Bak et al. [3], quality of life was evaluated at three points of time before the surgery, and six and 12 months after the procedure. According to the results of the mentioned study, the quality of life before surgery in the intervention group was lower than the control group, which is in line with the present research. This difference between the intervention and control groups could be due to lack of homogeneity between the groups in terms of neglected demographic characteristics, such as exercise, walking and daily activities [22]. Baraz et al. [21] also compared routine hospital education and training through video for patients undergoing hemodialysis. According to the results of the aforementioned study, all dimensions of the quality of life [i.e., physical, social and emotional] increased in the study groups after the intervention. However, this difference between the groups was not statistically significant. In another study by Ramelet et al. [23], the control group received standard care of the clinic, whereas the participants of the intervention group were followed up by telephone for 24 months in addition to the routine care. Their results were indicative of improved quality of life in children and their families of the intervention group, which revealed a significant difference between the groups in this regard. The

results of the mentioned study are not in congruence with our findings, which was affected by the duration of intervention. It seems that short-term intervention is not sufficient for changing the results [20]. Results demonstrated no significant difference between the two groups after the intervention. The quality of life of patients could decrease in a short period due to surgical complications, anxiety of individuals after the surgery regarding its outcomes, length of hospital stay and provision of surgery and hospital costs. Therefore, follow-up and control of the course of treatment could increase the quality of life of patients in long term [24]. On the other hand, patients with low quality of life after the surgery had inadequate score of quality of life before the intervention as well [1]. The other possibility is that intervention was not tailored to the needs of the patients since individual differences must be taken into consideration in order to design an effective intervention [20, 25]. Telephone call or sending emails seemed to act as a good intermediary, associated with improved quality of life [26, 27]. Enhanced quality of life is the basis of treatment and a significant part of nursing duty. It is the responsibility of nurses to teach patients about self-care [21].

**Acknowledgements**

This article was a part of Samaneh Pakzaban dissertation in Nursing in MSc. The authors appreciate the cooperation of all professors, as well as the head and personnel of ICU of Vali Asr Hospital, Qom, Iran, and all the participants.

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