



Investigating the Effect of Follow-up Care on the Self-concept of Patients under Coronary Artery Bypass Grafting

**Yusef Haghighi Moghaddam^{1*}, Neda Mobadersani², Behnam Askari³
and Javad Rasouli⁴**

¹Department of Nursing, Faculty of Nursing and Midwifery School,
Urmia University of Medical Sciences, Urmia, Iran.

²Student Research Committee, Seyed-al-Shohada Hospital,
Urmia University of Medical Sciences, Urmia, Iran.

³Department of General Surgery, School of Medicine, Seyedoshohda Hospital,
Urmia University of Medical Sciences, Urmia, Iran.

⁴Department of Biostatistics and Epidemiology, School of Medicine,
Urmia University of Medical Sciences, Urmia, Iran.

Authors' contributions

This work was carried out in collaboration among all authors. Authors YHM and NM designed the study, wrote the protocol and wrote the first draft of the manuscript. Author JR performed the statistical analysis, managed the analyses of the study and performed sampling. Author BA managed the literature searches and performed sampling. Author NM managed of the study, edited and wrote the manuscript. Authors YHM and NM wrote, submitting and editing manuscript. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2020/v32i130395

Editor(s):

(1) Syed A. A. Rizvi, Ph.D (Chemistry), Ph.D (Pharmaceutics), M.S., M.B.A., M.Sc., Assistant Professor, Department of Pharmaceutical Sciences, College of Pharmacy, Health Professions Division, Nova Southeastern University, 3200 South University Drive, Fort Lauderdale, USA.

Reviewers:

(1) Arthur N. Chuemere, University of Port Harcourt, Nigeria.

(2) Suprakash Chaudhury, Dr. D. Y. Patil University, India.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/54693>

Original Research Article

Received 10 December 2019

Accepted 16 February 2020

Published 28 February 2020

ABSTRACT

Introduction: Since coronary artery angina pectoris is a chronic disease, it negatively affects patients' self-concept. In this study, the effect of follow-up care on the self-concept of patients undergoing coronary artery bypass grafting was investigated.

*Corresponding author: E-mail: hagigym@yahoo.com;

Materials and Methodology: In this study, the clinical trial was measured using self-concept questionnaire considering the effect of follow-up or constant care on 60 patients under coronary artery bypass grafting in Seyed-al-shohada heart center of Urmia. Eight to twelve weeks after the operation, the follow-up care, which is an Iranian native model was administered through telephon. Data collection tools included patients' demographic data collection form as well as self-concept questionnaire consisting of 25 Likert-scale items of 1 to 5 (totally positive, positive, neutral, negative, totally negative), which measured 25 features.

Results: In the current study, the mean age of patients in both groups (intervention and control) was 59.68 ± 7.43 and 59.48 ± 5.79 years old, respectively. In addition, the mean weight of patients in both groups (intervention and control) equaled 77.82 ± 10.67 and 75.22 ± 7.53 kg. According to the results of the mean, the perceived threat after the intervention was 45.16 ± 4.28 in the intervention group and it was 40.43 ± 5.22 in the control group, showing a significant statistical difference between two groups ($p < 0.001$). The perceived challenge after the intervention was 70.86 ± 6.82 in the intervention group and it was 67.13 ± 6.37 in the control group, showing a significant statistical difference between two groups ($p = 0.028$).

Conclusion: The mean of self-concept score increased after the intervention and the observed results could have positive effects on the treatment of patients.

Keywords: Follow-up care; self-concept; coronary artery bypass grafting.

1. INTRODUCTION

Coronary artery diseases are amongst the most common cardiovascular diseases and one of the main reasons of death in most of the countries in the world. Most of the patients having this kind of disease do not respond to the medical treatments, thus found themselves under coronary artery bypass grafting [1]. This is the main reason for the death resulting from various cardiovascular diseases [2]. It has been estimated that cardiovascular disease would be the first reason for disabilities in the disabling diseases' list of the world till 2020 [3].

The annual death rate due to cardiovascular ischemic diseases in a country's population aged over 40 years, is estimated to be 14 in every 1000 individuals [4]. Various methods including medicines, angioplasty through balloons, laser as well as discharging thrombosis have been used to treat coronary artery diseases. Despite developments in new treatments, operation is still the only choice of treatment in most of the cardiovascular diseases [5]. Coronary artery bypass grafting is a primary selection method for treating coronary artery angina pectoris [6]. Regardless of chronic diseases' effects on the physical dimensions of patients, such diseases can affect self-concept and quality of life, accordingly. Self-concept is the mental image of every individual that includes all his perceptions (appearances, values and beliefs) affecting his behaviors and it refers to the time one uses the word "I" [7,8].

It has been proven nowadays that those having an appropriate and positive self-concept regarding themselves, are more compatible toward disease [9] and follow health care programs better [10].

According to the study conducted by Heidari et al. in the heart center of Mashhad, there was a positive and significant correlation between self-concept dimensions and adherence to the treatment and increasing self-concept was accompanied with the increase in the adherence to the treatment scores, which is considered a positive finding in the treatment process [11]. Therefore, this study investigated the effect of follow-up care on the self-concept of patients under coronary artery bypass grafting in Seyedoshohada Hospital of Urmia.

2. MATERIALS AND METHODS

In this clinical trial study, the effect of follow-up or constant care on 60 patients under coronary artery bypass grafting of Seyed-al-shohada Hospital of Urmia was measured using self-concept questionnaire. Eight to twelve weeks after the operation, the follow-up care, which is considered an Iranian native model, was administered through telephone. This model includes 4 phases of introduction, sensitization, control and evaluation. Inclusion criteria to the study included the consent to participate in the study, having an age range of 18-75 years and not having psychological problems. Exclusion criteria, as well, included noncooperation in the rest of the research, and not participating in the

follow-ups regarding the measurement of self-concept. The sample size was calculated to be 60 patients considering Salehi Moaeni et al. study [12] as well as the calculation of 5% alpha with the confidence scope of 95% and statistical power of 80% also the variance and mean amount before and after the intervention. This number increased to 60 patients through applying 20% attrition. Data collection tools included patients' demographic data collection form and self-concept questionnaire which included 25 Likert items from 1 to 5 (totally positive, positive, neutral, negative, totally negative) measuring 25 features. The scoring process was reversed in negative questions. Considering the self-concept level's scoring, they were rated as 33.3% meant low self-concept, 33.3-66.6% meant moderate self-concept and 66.6% and over meant high self-concept. The score scope of this questionnaire varied from 25 to 125 and higher scores meant better self-concept.

Safavi et al. [13] in Iran measured the reliability of this questionnaire and obtained 0.80 and 0.88 reliability using internal conformity method as well as test-retest method respectively, which indicated the great reliability of this scale.

2.1 Data Analysis

To evaluate the results of the research, results from research units were codified and analyzed using SPSS, version 19, software. To have access to research purposes, descriptive statistics (frequency distribution, mean and standard deviation tables) as well as statistical analysis methods including parametric tests (in case data were normal) such as paired t-test and non-parametric tests (in case data were not normal) such as McNemar's test were utilized. This study was confirmed by Ethics Committee (IR.UMSU.REC.1397.352) and the IRCT code having a number of IRCT20181105041560N2 was obtained.

3. RESULTS

This study included 60 patients and aimed at determining the effect of follow-up care model's administration on the self-concept in patients under coronary artery bypass grafting in Seyed-al-shohada heart center of Urmia during 2018-2019. The mean age of patients in both groups

(intervention and control) were 59.68 ± 7.43 and 59.48 ± 5.79 years, respectively. To compare the mean age between two groups, t-test was utilized, which indicated that there was no statistically significant differences between two groups ($p=0.9$). Moreover, the mean weight of patients in both groups (intervention and control) was 77.82 ± 10.67 and 75.22 ± 7.53 kg, respectively, which showed that there were no differences between two intervention and control groups. Actually both groups were homogeneous in terms of age and weight ($p=0.29$) (Table 1). Demographic data have been presented in Table 2. Table 3, though, indicates the comparison between the mean scores of self-concept before the intervention in two groups. According to these results, there were no significant differences between two groups in terms of the mean of self-concept dimensions before the intervention. According to the results, the mean after perceived threat was 45.16 ± 4.28 in the intervention group and it was 40.43 ± 5.22 in the control group after applying the intervention, showing a statistically significant difference between two groups ($p<0.001$). In addition, the perceived challenge in the intervention group was 70.86 ± 6.82 and in the control group, it was 67.13 ± 6.37 after the intervention showing a statistically significant difference between two groups ($p=0.028$). Overall, the mean after the intervention in the intervention group was 116.03 ± 8.57 and it was 107.57 ± 5.82 in the control group, showing a statistically significant difference between two groups ($p<0.001$) (Table 4).

4. DISCUSSION

Considering the fact that the current research's chosen treatment was coronary artery bypass grafting [5,6], the optimal treatment was of utmost importance in these patients. The improvement in the patients' self-concept is among factors affecting the treatment process. Patients do not comprehensively follow their treatment process after coronary grafting, which causes further and repeated hospitalizations [14,15]. Actually, the improvement of chronic diseases such as cardiovascular diseases is largely dependent on the adherence to the treatment [15]. In this study, the effect of follow-up care on the self-concept of patients under coronary artery bypass grafting was investigated in Seyed-al-shohada heart center of Urmia.

Table 1. Comparing quantitative demographic information of the investigated samples in both intervention and control groups

Variable	Intervention group		Control group		Independent t-test	P value
	Mean	SD	Mean	SD		
Patients` age	59.68	7.43	59.48	5.79	t=0.11 df=58	0.90
Patients` weight	77.82	10.67	75.22	7.53	t=1.04 df=58	0.29

Table 2. Comparing qualitative demographic information of the investigated samples in both intervention and control groups

Variable		Intervention group		Control group		Test result
		Number	Percent	Number	Percent	
Gender	Male	11	36.7	14	51.9	X ² =1.33
	Female	19	63.3	13	48.1	P=0.24
Age	More than 60	15	51.7	12	44.4	X ² =0.29
	Less than 60	14	48.3	15	55.6	P=0.58
Marital status	Single	1	3.4	0	0	X ² =1.68
	Married	19	65.5	16	61.5	Df=3
	Widow	7	24.1	9	34.6	P=0.64
	Divorced	2	6.9	1	3.8	
Educational status	Illiterate	10	33.3	10	37	
	Less than diploma	15	50	12	44.4	X ² =1.84
	Diploma	1	3.3	3	11.1	Df=3
	More than diploma	4	13.3	2	7.4	P=0.60
Smoking experience	Yes	15	55.2	18	66.7	X ² =0.77
	No	13	44.8	9	33.3	P=0.37
Disease experience	Yes	14	46.7	16	59.3	X ² =0.90
	No	16	53.3	11	40.7	P=0.34
Diabetes	Yes	7	23.3	6	22.2	X ² =0.010
	No	23	76.7	21	77.8	P=0.92
Hypertension	Yes	9	30	12	44.4	X ² =1.27
	No	21	70	15	55.6	P=0.25
Renal disease	Yes	3	10	1	3.7	X ² =0.86
	No	27	90	26	93.3	P=0.35
Early myocardial infarction	Yes	3	10	3	11.1	X ² =0.019
	No	27	90	24	88.9	P=0.89
Low cardiac output (EF%)	Yes	8	27.6	4	14.8	X ² =1.35
	No	21	72.4	23	85.2	P=0.24
Early complications	Yes	7	23.3	7	25.9	X ² =0.052
	No	23	76.7	20	74.1	P=0.82
Angiography results	Involvement of 3 vessels	19	63.3	13	48.1	X ² =2.22
	Involvement of LM	7	23.3	9	33.3	P=0.52
	Involvement of 1 vessel	2	6.7	1	3.7	
	Involvement of 2 vessels	2	6.7	4	14.8	

Table 3. Comparing self-concept scores` mean after the intervention in both intervention and control groups in patients under coronary artery bypass grafting

Self-concept dimensions		Mean±SD	Statistics	P value
Perceived threat	Intervention group	42.11±5.41	0.27	0.78
	Control group	40.70±5.92		
Perceived challenge	Intervention group	65.53±6.58	-0.35	0.72
	Control group	66.16±7.52		
Overall	Intervention group	102.53±8.23	-0.13	-1.51
	Control group	106.87±7.92		

Table 4. Comparing self-concept scores` mean before the intervention in both intervention and control groups in patients under coronary artery bypass grafting

Self-concept dimensions		Mean±SD	Statistics	P value
Perceived threat	Intervention group	45.16±4.28	3.83	<0.001
	Control group	40.43±5.22		
Perceived challenge	Intervention group	70.86±6.82	2.52	0.028
	Control group	67.13±6.37		
Overall	Intervention group	116.03±8.57	3.94	<0.001
	Control group	107.57±5.82		

In a study similar to that of the current study, Poshtchaman et al. [14] investigated the effect of two telephonic and message follow-up care methods on patients' adherence to the treatment after coronary artery bypass grafting. Before being discharged, two telephonic and message groups received in-person trainings and educative booklets. In telephonic follow-up group, telephone calls were made three times a week for two months and in message follow-up group, one message was sent daily for two months. According to the findings of the research, telephonic as well as message follow-ups, both, led to the improvement of patients' adherence to the treatment after coronary artery bypass grafting [14]. This study was similar to that of ours since a relational intervention had been selected and its effects on the adherence to the treatment were positive and significant. Our research was also relational and it was consistent with Poshtchaman et al.'s study. In another study conducted by Ahrari et al. [10] to investigate the self-concept role of compatibility pattern on the adherence to diet in patients suffering from heart failure, self-concept threat had a reverse relationship with the adherence to the diet and self-concept challenge had a direct relationship with the adherence to the diet. Regression test results indicated that the reduction in self-concept threat perception and its dimensions as well as the increase in self-concept challenge perception and its dimensions led to the increase in the adherence to the diet. Therefore, nurses should search for tactics and interventions such as counseling and education so that patients having heart failure not consider their diet as a threat; rather consciously and robustly face their own diet as a challenge, so that their adherence to the diet can be increased [16]. In this respect, our study in the regression analysis showed that adherence to the treatment and self-concept dimensions had a significant relationship with the kind of therapeutic group. Thus, the amount of self-concept and adherence to the treatment changes can be predicted as compared with the allocated groups; such a

relationship would be positive and significant, which means that follow-up care intervention causing the increase in the adherence to the treatment, would also lead to the increase in self-concept, whose mutual effects in optimal treating of patients can be observed.

Furthermore, Salehitali et al. [17] explored the effect of educational interventions and constant cares at home on re-hospitalization, reference to the doctor and therapeutic costs in a 6 months follow-up period regarding heart failure patients. The results showed that the mean of re-hospitalization, reference to the doctor and therapeutic costs were significantly different in both groups. In this study, the administered intervention included the education and care of patients at their homes in a 6 months period. According to the results of this study, nurses' constant educational and caring interventions at home were accompanied with the reduction in re-hospitalization level and reference to the doctor [17].

To increase the adherence to the treatment, follow-up process can be performed through various methods, which may have significant effects regarding the increase in the adherence to the treatment. In the current study, follow-up care was considered as the main intervention, which was accompanied with the increase in the adherence to the treatment score. This was consistent with the results of Aroun et al. study. In a study conducted by Lina et al. in 2018 in Sweden, the effect of adherence to the treatment in patients having therapeutic resistance, who were controlled over blood pressure, was investigated. Having diabetes had a preventive significant relationship with the adherence to the treatment, which means that the ratio of calculated danger was less than 1, meaning that the increase in adherence to the treatment had preventive effects on diabetes improvement [18]. The results of the current study were consistent with this research since intervention increased the adherence to the treatment and adherence to

the treatment factor had positive effects in chronic diseases' process.

5. CONCLUSION

The mean of self-concept score increased after the intervention. The observed results can have positive effects on the treatment procedure of patients. Forward-looking effects of self-concept in the treatment process may provide better improvement from the operation and disease.

CONSENT

Inclusion criteria to the study included the written consent to participate in the study.

ETHICAL APPROVAL

This study was confirmed by Ethics Committee (IR.UMSU.REC.1397.352) and the IRCT code having a number of IRCT20181105041560N2 was obtained.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

- Asadi Noughabi A, Shaban M, Faghihzadeh S, Asadi M. Effect of cardiac rehabilitation programs first phase on anxiety in patients with coronary arteries bypass surgery. *Hayat*. 2009; 14 (3-4):5-13.
- Sadeghi Shermeh M, Razmjoei N, Ebadi A, Najafi Mehri S, Asadi-Lari M, Bozorgzad P. Effect of applying continuous care model on quality of life in patients after coronary artery bypass graft surgery. *J Crit Care*. 2009;1(2):1-6.
- Go AS, Mozaffarian D, Roger VL, Benjamin EJ, Berry JD, Borden WB, et al. Heart disease and stroke statistics--2013 update: A report from the American Heart Association. *Circulation*. 2013;127(1):e6-245.
- Talebizadeh N, Haghdooost AA, Mirzadeh A. Epidemiology model of ischemic heart disease in Iran. *Payesh*. 2009;8(2):163-70.
- Lewis SL, Dirksen SR, Heitkemper M, Bucher L. Medical-surgical nursing: Assessment and management of clinical problems. 9th ed. Elsevier Health Science; 2013.
- Amirian Z, Hemmati Maslakpak M, Jalali R, Khalkhali H, Salehi S. The effects of regular physical activity at home on patients' quality of life after coronary artery bypass surgery. *Knowledge & Health*. 2013;8(2):51-6.
- Rabiepoor S, Khodaei A, Valizadeh R. Husbands' participation in prenatal care and breastfeeding self-efficacy in Iranian women: A randomized clinical trial. *Medical Journal of the Islamic Republic of Iran*. 2019;33:58.
- Mosharraf R, Aghaee A, Hasan Zadeh A, Poor Agha Koochak M. Relationship between satisfaction and expectation with self-esteem and self-concept in patients using complete denture. *Shiraz University of Dental Journal*. 2007;8:60-70. (In Persian)
- Tahmasebi S, Ghofranipoor F, Ravaghi K, Moghadasi J, Sadegh-Moghadam L, Kazemnejad A. The effect of group discussion method on the self-image of teenaged thalassaemic patients. *Journal of Shahrekord University of Medical Sciences*. 2006;7:50-57. (In Persian)
- Ahrari S, Heydari A, Vaghee S. The role of self-concept mode of roy's adaptation model on adherence of diet regimen in heart failure patients. *Horizon Med Sci*. 2012;17(4):18-24.
- Moieni M, Poorpooneh Z, Pahlavanzadeh S. Investigating the effect of family-focused nursing intervention on caregiver burden of the family members of the patients undergoing coronary bypass surgery in Isfahan Shahid Chamran Hospital during 2012. *Iran J Nurs Midwifery Res*. 2014; 19(2):187.
- Beck AT, Steer RA, Epstein NB. Beck self-concept test. *Psychol Assess*. 1990;2(2): 191-7.
- Safavi M, Samadi N, Mahmoodi M. The relationship between self-concept and quality of life in patients with type 2 diabetes. *Med Sci*. 2013;23(2):148-53. (Persian)
- Poshtchaman Z, Jadid MM, Atashzadeh SF, Akbarzadeh BA. Assessing patient adherence to treatment after coronary artery bypass graft. *Journal of Sabzevar University of Medical Sciences*. 2015; 22(4):668-675.
- Forouzesh M, Sanagoo A, Vakili MA, Jouybari L. The effect of telenursing (telephone follow up) after discharge on

- readmission due to complications after coronary artery bypass graft surgery. Journal of Urmia Nursing and Midwifery Faculty. 2017;15(8):584-94.
16. Jin J, Sklar GE, Min Sen Oh V, Li SC. Factors affecting therapeutic compliance: A review from the patient's perspective. Ther Clin Risk Manag. 2008; 4(1):269-86.
 17. Salehitali S, Hasanpour Dehkordi A, Hoseini Hafshejani S, Jafarei A. The effect of continuous home visits and health education on the rate of readmissions, referrals, and health care costs among discharged patients with heart failure. Hayat. 2010;15 (4):43-49.
 18. Holmqvist L, Boström KB, Kahan T, Schiöler L, Qvarnström M, Wettermark B, Hjerpe P, Hasselström J, Manhem K. Drug adherence in treatment resistant and in controlled hypertension—Results from the Swedish Primary Care Cardiovascular Database (SPCCD). Pharmacoepidemiology and Drug Safety. 2018;27(3):315-321.

© 2020 Moghaddam et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<http://www.sdiarticle4.com/review-history/54693>