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EFFECTIVENESS OF DISCHARGING PLAN ON SELF-CARE BEHAVIORS OF PATIENTS AFTER CORONARY ARTERY BYPASS SURGERY

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ABSTRACT
This study aimed to determine the effectiveness of applying discharge on self-care reports among patients undergone to coronary artery bypass surgery. In this clinical trial study 80 patients who undergone coronary artery bypass surgery randomized in two control and experimental groups. The control group received only usual care and in the experimental group discharging plan administered including: 5 educational sessions- providing manual at discharge time and follow up with ten times phone contact with patients after discharge. The self-care questionnaire administered pre- post, 2 weeks and two months after an educational intervention among patients of both experimental and control groups. The Chi square statistic was used to compare background variables such as gender and marital status. The t-test was also used to compare continuous data eg.Age.Finally the repeated measure analysis of variance was used to compare self-care scores of the groups. The results showed there was not a significant difference between two groups before the intervention. But there was a significant difference in self-care behaviour reports between experimental and control group after the discharge plan intervention (P= 0/0001). Administration of discharging plan is an effective method for enhancement of self-carebehaviours in patients after coronary bypass surgery which suggesting as a potentially critical program to administer in the whole country.

Keywords: Discharge Program, Self Care Behaviors, Coronary Bypass Surgery

INTRODUCTION
Regarding high prevalence of coronary artery diseases and consequently the coronary artery bypass graft, there are not deserved publish studies in number, andthe effects of releasing a program on self-care behaviours. Thus, administration of discharging plan is an effective method for enhancement of self-care behaviours in patients after coronary bypass surgery which suggesting as a potentially critical program to administer in the whole country.
Heart diseases are one of the most important causes of death and disabilities in the worldwidewhich is associated with the physical, mental and self-care capabilities and imposes a heavy cost for patients, care givers and the society (Hemati *et al.,* 1391). Coronary artery diseases are the most prevalent heart related diseases whichaccompany a high mortality rate (Kownatora *et al.,* 2009). Although the heart disease has been decreased relatively but still is a first cause of mortality and premature death in 26% of men and 16% women (Nehrir *et al.,* 2009). The heart surgery considered as an effective curemethod for coronary artery diseases therefore coronary artery bypass graft are used frequently to repair coronary artery related problems (Hazavehei*et al.,* 2008; Mosayebi *et al.,* 2011). The heart surgery is associated with several physical and mental problems (Dehdari *et al.,* 2007). On the other hands regarding the increasing number of patients with chronic disorders there is limitation in providing health care services. Therefore the

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researchers believe that the patients should be enabled to appliying programs like self- care (Seyam *et al.,* 2011). Self-care services is a new trend in health care and includes a group of health providing activitieswhich is accomplished by the person oneself. The important principle of self-care acts include participation and adopting responsibility of the person (Seyam *et al.,* 2011). Researches showed that self-care behaviors has an important role in recovery from coronary artery diseases in Iran and other parts of the world (Shojae *et al.,* 2009). Educational program in care setting impact the lifestyleof patients (Shidfar *et al.,* 2007). However it is ignored or administered without organized planning (Deyirmenjian *et al.,* 2006). Although the healthcare may require a large number of units and healthcare delivery specialist, but the nurse come as the first responsible for fulfilling patients' needs and educating patients about self-caring methods. In order to providethe persistent care, the nurse should insert the discharge plan in the health-care programs (Taylor *et al.,* 2010).

Neglecting the preparation of patients to self-care after realizing usually is more dangerous than the disease itself, and medical team specially nurses should take part actively in its continuance. Releasing program is an opportunity to make the patients prepared for self-care and following the therapy (Babaei *et al.,* 2011). Discharge program was at first started in United State 1960 that was aimed to facilitate patients facing with postoperative care problems after releasing (Lin *et al.,* 2009). Benefits of discharge program include; increasing capabilities in patients and families regarding to self-care, decreasing mortality rate after releasing, patients' more adaptation to disease, preventing inaccurate releasing, improved responsibility in the patients and medical teams, increased confidence in the client and the family, shorter time of hospitalization and a safe and peaceful transition to home life (Ghafari and Mohamadi, 20075). Although executing an effective and useful releasing program is a priorities for health care and therapy, but a major part of its administration on bedside is vague and unclear (Watts *et al.,* 2005).

Since administrating releasing program requires expense, it should be examined regarding to the effectiveness, to persuade the health-care system to execute it. In addition, our clinical experiences indicate that releasing the clients is usually done regardless attending the patient and care givers needs, and then releasing is prescribed with sole physical health and regardless of nurse's opinion. Therefore this study aimedat developing and recommending execution of the discharge program, and explore the effects of administrating educational discharge program on patients' self-care after coronary artery bypass graft.

MATERIALS AND METHODS

This study approved in Mazandaran University of Medical Science and consent form signed by all participants of the study. The study was a clinical trial study including two groups i.e.educational (N=40) andthe control group (N=40). According to a similar study (Babaei *et al.,* 2011) the sample size selected with regard to confidence level of 95%, statistical power was equal to (0.8=β -1) and average effect of was d=0.7. The study population included all patients with coronary artery tightness and ischemic accident related to it such as heart attack who hospitalized and undergone to coronary artery bypass graft.

Inclusion criteria included; willingness to participate in the study, full consciousness during the study, having a care giver at home, having an active phone number to call, experiencing surgery for first time.

Exclusion criteria: having speech and audio problems, having emergency states (history of cardiopulmonary resuscitation during hospitalization periods, after leaving the operating room) and having a balloon pump inside the artery, having a psychiatric disorder.

The data were gathered via a researcher made questionnaire with two subscale. The first part comprisedof the demographic information such as: age, gender, job, education, marital status, BMI index, history of heart disease, fatty blood, diabetes, blood pressure and tobacco usage. The second part of questionnaircomprised15 questionsrelated self-care behaviors. Attended axis in the self-care model included the manner of following an appropriate prescribed diet, exercise and physical activity, sleep quality and sex, giving up harmful habits, the manner of caring surgical wound and a renewed visit to the doctor that were designed on a Likert scale. Each item had a 1 to 5 scoring option. To determine the validity of the tools, the content validity was used, so that the forms were set after reviewing source books, articles and other authorized sources and also valid internet sites of medical science on the issue,

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and after that, the items sent to professionals, specialists and university teachers of nursing and midwifery and needed changes applied. To determine reliability of educational and self-care behavior questionnaires, the test-retest method was used. To do so, 15 questionnaires were completed by the patients and after two weeks, the retest was administered and reliability index in correlational coefficient was estimated.

The administration process also was as below: the researcher inspected the volunteers through the prepared list a day before the operation. If the patients passed the prerequisites they were informed about our targets and process verbally and if they were interested, they could include in research design. In data gathering phase, we declared confidently while received a letter of satisfaction from the patients and their families. The sample selecting was an accessible one and allocating to educational and control groups was done randomly, so that the samples was assigned to the groups via the random numbers table. After selecting the samples, in the first 24 hours of receipting patients to hospital, the demographic information form was filled via an interview. Releasing a program for the treatment group was started after the operation and leaving the ICU ward to CCU. The controlgroup received the routine care (receiving a training pamphlet that prepared by the ward and also answering probable questions asked by patients). After gathering the demographic data that was gathered by reviewing their files and asking directly, the self-care questionnaire in patients of two groups was administered. After that, regarding to the educational needs of patients in the treatment group, the training program was executed. Training materials of releasing program were delivered in the presence of an interested person from the patients' family that was literate and had the most responsibility and communication at home to take care of the patient. The training was tailored to their level of education and needs. Training contents acquired by reviewing some of the newest sources and getting some advices from heart specialists. The training sessions included 5 daily sessions of 30 to 60 minutes (Babaei *et al.,* 2011). Regarding special needs of each patient, the training was done individually. Then the pocket book of releasing program provided to the clients. The book includes some information about after operation cares that is written in a simple language and tried to cover the frequent asked questions by CAGB patients. Following up phase was done at home through a 2 week interval between releasing and the first referring to heart clinic. It was shown via phone in 2 sessions per week. At the first referring session, the self-care questionnaire was completed for both groups. In that phase, the treatment group also had an opportunity to receive answers to their extra questions too. The next consultation was done at the clinic 1 month and 2 months after the releasing period orderly and the questionnaire was filled in for 3th and 4th times by both groups. In the intervals between referring to the clinic, telephonic follow ups were done one time at week so that at the end of program, total calls of 10 times had been done for the treatment group. Calling for patients motivated them to remain active in the self care program and provided facility to ask any possible questions.

The data were analysed by SPSS program and by descriptive methods that include mean scores and standard deviations for continuous variables, and frequencies for qualitative variables. The Chi square statistic was also used to compare background variables such as gender and marital status. The t-test was also used to compare continuous data such as age. At last the repeated measure analysis of variance was used to compare self-care scores of the groups.

RESULTS
Demographic and medical variable related to the before intervention phase is depicted in table 1. A majority of the participants were married (97.5%), housekeeper (45%), and not well educated (67.5%). 67.5% of the participants had a history of hospitalization and 66.25% reported a history of heart attack. 50% had a history of fatty blood, 66.25% had a history of blood pressure, 55% had a history of diabetes and 18.75% had a history of smoking cigarettes. The variables had no considerable correlation but age. According to table 2 the mean score for self-care behaviors of the groups was 63.14 ± 14.8 at the first phase that is a moderate score. The result of t-test to compare the mean score of that statistic in the second phase was not significantly different among the groups (p=0.91). But comparing the self-care scores of the groups with the t-test showed that the groups had significant differences in the last 3 phases, Two

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Table 1: Demographic and medical information of both groups

Variables		Control group Mean (SD) /frequency	Educational group Mean (SD) /frequency	Test	P
	Age	57.23± 9.35	61.25± 7.4	t-test	0.03
	BMI	26.73± 4.67	26.7± 4.85	t-test	0.97
Gender	Male	40 (50%)	42(52.5%)	Chi-square	1.0
	Female	40(50%)	38 (47.5%)		
Marital status	Married	40(50%)	42(52.2%)	Chi-square	1.0
	Single	40(50%)	38(47.5%)		
Employment	Employee	3(7.5%)	5%	Chi-square	0.97
	Worker	4(10%)	7.5%		
	Housekeeper	38(47.5%)	42.5%		
	Retired	6(15%)	17.5%		
	Private job	6(15%)	20%		
	Unemployed	0.0%	2.5%		
	Others	2(5%)	5%		
Education	Elementary	70%	62.5%	Chi-square	0.309
	Guidance school	12.5%	10%		
	High school	10%	25%		
	University degree	7.5%	2.5%		
Residence	Urban	65%	50%	Chi-square	0.258
	Rural	35%	50%		

weeks after the intervention (p=0.003), one month after the intervention (p=0.0001), two months after the intervention (p=0.0001), orderly. We used the muscle test to examine the severity of groups' variance. The result showed that the differences were significantly difference (p=0.001). So by not being sphere, the Greenhouse-Geeser test was used and the results showed that self-care scores of the groups regards to the groups and interaction between the groups and the time, were significantly improved (power=0. 00, df= 1.66, p= 0.0001).

Analysis of repeated measures showed that self-care scores of the groups were significantly different (p=0. 0001). The results showed that the relationships were significant in all the 4 phases of the intervention group. In the control group, the results were significant in comparing phases 1 and the other phases (p=0.0001). But the second phase didn't show significant differences with the other phases.

Table 2: Comparing self-care scores in the 4 phases of evaluation

	Mean scores of self-care for each phase				*Analysis of variance*	
Groups	Time 1	Time 2	Time 3	Time 4	Amount	p
Control	63.32 ± 14	97.94 ± 10	80.87 ± 10	82.11 ± 11	40.322	0.0001
Educational	62.97 ± 15	85.90 ± 6.82	89.08 ± 4	91.47 ± 2	95.239	0.0001
T-test						
Groups	Time 1	Time 2	Time 3	Time 4		
Educational (Pvalue)	0.918	0.003	0.0001	0.0001		
Control(Pvalue)	0.134	5.221	19.072	33.754		
T	0.103	3.014	4.633	5.202		

DISCUSSION
The results of this study showed that the total mean scores of self-care behaviors of our sample during hospitalization periods of both groups were relatively weak. The result is consistent with Syem *et al.,* (2011) findings. Direk and colleagues also explored the self-care behaviors of patients after coronary artery bypass grafting and reported a moderate scores (Direk and Çelik, 2012). Shojae *et al.,* (2009) also

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showed that 26 percent of the patients with heart diseases had a good self-care behaviours and the others had a poor or moderate scores.

Our results showed that the mean scores of self-care for educational and control group were not significantly different at baseline, so they were in homogeny. The mean scores of self-care in the groups were significantly different after the intervention so that self-care behaviourswas increased in the educational group. Similar studies have been done on the background of effectiveness of training forbehaviour related to different diseases. For example Shojafard *et al.,* explored the effectiveness of training program based on empowerment on improving self-care behaviors of patients with type 2 diabetes in Isfahan-Iran (Shojaeezadeh *et al.,* 2013). Baker *et al.,* (2011) also explored the effects of training through phone and consultation on knowledge of self-care behaviors and symptoms of heart disease in California. Shojafard *et al.,* (2008) in a research investigated the effects of a training program on self-care behaviors and advantages and obstacles of doing the behavior on patients with heart diseases in Tehran-Iran. As it said, all these studies had similar results as this study. Arzani *et al.,* (2005) also evaluate the effects of training before releasing in mother of new born babies to following visual, auditory and brain medical examinations. They observed that training before the release time, could increase referrals to following clinic. So they proposed that executing the program should be done in the wards of infant special care.

In this research we administered the training program in the treatment group as a releasing pollen. So that in addition to individual face to face training with the patients and care givers, we also phoned to them after releasing and their questioned were answered. Shyu *et al.,* (2008) investigated the effects of giving information to families and care-givers of patients who underwent stroke and found that the scores of care-givers regarding to understating how to care were increased in comparison to control participants. In addition the patients and care givers of the intervention group had a more sense of satisfaction. The present study showed that the patients of the intervention group were satisfied about releasing program. In another study, Lin and the other explored the effects of releasing a program on patients with broken hip bone. They found that the scores of knowledge and acts of self-care were higher in the educational group and the differences of mean score were significant (p=0.0001, f=20.5) (Lin *et al.,* 2009). Cebeci and Çelik, 2011) in a study of exploring the effectiveness of releasing programs and consultation on stress and anxiety levels after CABG in Turkey, found a positive effect for the program regarding to decrease stress and anxiety of patients (p<0.05).

In this study age mean scores were 57.23 ± 9.35 and 61.25 ± 7.4 for control and intervention respectively. The differences were significant (p=0.03). As the mean score of educational group was higher than the control group, and that self-care scores of the intervention group were higher than the control group, it could be said that our intervention had a positive effect and the result was not affected by the age variable. At the end, with a brief conclusion on the literature it could be found that although the releasing program is well known for a long time, but still the studies are investigating its effects. On the other hands, the program should be set regarding to cultural consideration to be applicable. Also regarding high prevalence of coronary artery diseases and consequently the coronary artery bypass graft, there are not deserved publish studies in number, regarding the effects of releasing a program on self-care behaviours. In other words there is a great need to expand the program basically and be accessible to all patients especially those with chronic diseases.

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