Comparing patients’ quality of life before and after Coronary Artery Bypass Graft surgery (CABG)

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A R T I C L E   I N F O

Article type:
Original article

Article history:
Received: 7 Jul 2014
Revised: 9 Aug 2014
Accepted: 8 Sep 2014

Keywords:
Coronary Artery Bypass Graft surgery (CABG)
Quality of life
MacNew questionnaire

A B S T R A C T

Aims: Cardiovascular diseases are one of the main causes of mortality in the world. Coronary Heart Disease (CHD) is one of the cardiovascular diseases that influence patients’ quality of life. Evaluating quality of life of these patients is one of the components of treatment; this study is done with the aim of comparing patients’ quality of life before and after CABG.

Methods: This cross-sectional study was conducted on 90 patient’s candidate for CABG in Baqiyatallah and Jamaran Heart hospitals of Tehran in 2013. Sampling was done among the patients who had the inclusion criteria through convenient sampling method. Collecting data was done before and two months after surgery; MacNew specific Questionnaire of heart patients’ quality of life was used for this purpose. Paired t-test and SPSS17 software were used for statistical analysis.

Results: The mean score for quality of life before and two months after surgery was respectively 225.4 (24.88) and 168.6 (34.7). Also quality of life had significant decrease before surgery in compare with after surgery regarding emotional, physical and social dimensions (p<0.001).

Conclusions: Quality of life will be decreased in a short period of time due to surgical complications. Conducting longitudinal studies is recommended for more accurate assessment of this concept.

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1. Introduction

Nowadays, Coronary Heart Diseases (CHD) is a health problem and it is one of the main causes of mortality in the world [1]. It is estimated that ischemic heart diseases are going to be at the top of fifteen cause of global diseases [2]. This disease does not only influence patients’ health, but also social relationships, life pattern, family atmosphere, occupation and income levels are influenced by it too [3]. CHD has many pathological effects on different aspects of physical, psychological, social and spiritual health [4-5]. Actually quality of life is a sign of quality of health cares and it is a part of treatment program. Evaluating...
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quality of life in chronic diseases provides more 
information for the treatment team about 
patients’ health status [6-7]. 
One of the causes of decrease in mortality due 
to coronary artery diseases is using Coronary 
Artery Bypass Graft (CABG) surgery technique 
[8]. Almost 60 percent of all the patients with 
coronary artery ischemic diseases experience 
CABG [9].
Although techniques and medical sciences 
progresses decrease cardiac patients’ mortality, 
many patients who underwent surgery should 
pass their life with its psychological 
consequences such as lack of self-confidence, 
loss of confidence in performing daily 
activities, anxiety and depression due to lack of 
good recovery; these consequences can 
decrease quality of life of these patients to a 
high extent [10]. From the other side, not 
treating patients’ psychological consequences 
after surgery imposes huge costs to the 
Quality of life is a multidimensional concept 
which includes an individual’s physical, 
psychological and social status; it is a sense of 
well-being which is due to satisfaction or 
dissatisfaction with different aspects of life 
which are important for an individual. Quality 
of life is recognized as an important outcome 
and a patient’s response to the disease treatment 
or a special process [12]. Change in patients’ 
quality of life is one of the important outcomes 
of CABG surgery [12]. Therefore evaluating 
quality of life is one of the main parts of 
treatment [13-14].
Dehdari et al. believe that post-surgery anxiety 
and stress decreases quality of life in these 
patients [15]; but Louonen believes that CABG 
decreases mortality and relieves angina pains 
and increases quality of life in these patients 
[16]. Quality of life is recognized as a valuable 
index for measuring health status by public 
health and medical researches. Considering 
increasing rates of CABG and evaluating 
quality of life as an important index in these 
patients, we decided to conduct a study with the 
aim of assessing quality of life of the patients 
before and after CABG.

2. Methods
90 patients candidate for CABG in Baqiyatallah 
and Jamaran Heart hospitals in 2012 and 2013 
were selected for this cross-sectional study. 
Sampling was done through convenient 
sampling method among the patients who had 
the inclusion criteria. Related information was 
collected before and two months after surgery. 
Inclusion criteria included; EF(Ejection 
Fraction) higher than 40 percent, being a male, 
lack of experiencing surgery before and being 
20 to 60 years old. Exclusion criteria included; 
post-surgery complications which cause 
physical impairment and patient’s longer 
discharge such as long-term stay in ICU and 
lack of patient’s cooperation.
The questionnaire includes a part of 
demographic information. MacNew heart 
special tool was used for measuring quality of 
life. Quality of life self-assessment tool 
includes a translated version of MacNew which 
is designed for measuring the effect of 
treatment and education on cardiac 
rehabilitation patients. MacNew has a rapid 
response and it is sensitive to health changes 
related to quality of life following various 
interventions for cardiac patients. This 
questionnaire is performed successfully for at 
least twelve clinical and experimental studies 
and it has been tested on more than 5200 
patient with cardiac problems [17]. This 
questionnaire includes three emotional (14 
questions), physical (12 questions) and social 
(13 questions) dimensions.
The maximum score of every question was 
seven (the best present conditions of quality of 
life) and the minimum score was one (the worst 
present conditions of quality of life). Higher 
score in every area means higher quality of 
health. Validity and reliability of MacNew 
questionnaire has been proved by Stephen 
Houfer et al. in 2004. Houfer et al. measured 
quality of life of the patients suffering from MI 
in 2004 by using this questionnaire on 465
patients in three time dimensions including baseline, one and three months later; it had an acceptable reliability by internal correlation and dependence coefficient of 0.73 [18]. Asadi Lari believed that the above tools are valid for measuring quality of life [19]. Informed written consent was taken from the patients for considering ethical points. Data analysis was done by paired t-test and SPSS17 software.

3. Results
90 male patients candidate for CABG were assessed in this study. Their age mean was 52.4±5.52. 12.2 percent of the participants had elementary education, 13.3 percent secondary education, 30% Diploma and 44.4 percent had university education. 30 percent of them were military patients, 17.8 percent were clerks, 34.4 percent were retired and 17.8% were self-employed.

Regarding satisfaction with income; 13.3 percent were completely satisfied, 50% satisfied, 28.9 percent dissatisfied and 7.8 percent were completely dissatisfied. 66.3 percent did not have regular exercise. 78.9% did not smoke and 21.1 percent were smokers. Table 1 shows mean and standard deviation of the quantitative variables in the samples of the study.

Komolgraph-Smironof one-sample statistical test was used to assess the distribution of quantitative data in the groups of the study. Results indicated that quantitative variables had normal distribution (p>0.05).

Table 2 shows distribution of absolute and relative frequency of the qualitative variables in the samples of the study.

The score mean was measured in three dimensions of quality of life before surgery; the score mean in the emotional dimension,
physical dimension and social dimension were respectively; 76.6 (10.5), 7.76(76.2) and 7.65(72.5). Two months after surgery the scores mean in emotional, physical and social dimensions were respectively 58.1(12.9), 57.5 (11.56) and 53.01(11.25), which have been decreased in compare with before surgery and there was significant different between them (table 3).

4. Discussion
The score mean of quality of life in the samples of the study in three emotional, physical and social dimensions before surgery were more appropriate than after surgery. Findings of this study are in consistent with the findings of the study of Bahramnejad et al. In the study of Bahramnejad et al. quality of life was measured before surgery and the group of the study was in an appropriate situation [20]. In this study, quality of life was measured two months after CABG; the results of our study indicate decrease in quality of life of the patients in three emotional physical and social dimensions and the total quality of life. In the study of Rava et al. quality of life was decreased after CABG too. Rava believes that decrease of quality of life in these patients is due to depression after CABG [21]; they believe that CABG does not improve quality of life of the patients after surgery alone, but also controlling anxiety and stress before and immediately some days after surgery is very important in long-term improvement of patients’ quality of life [21]. Quality of life has been decreased in its emotional dimension in this study too.

Results of the study of Bahramnejad et al. were similar to ours. Bahramnejad et al. achieved that patients have inappropriate quality of life three months after surgery [20]. Quality of life is in a low level in a short period of time due to complications of the surgery and disease such as patient’s post-surgery anxiety regarding the result of the surgery, duration of hospital stay and surgery and hospital expenses.

Misterig et al. in a study stated that sooner discharge leads to higher quality of life [22-23]. Results of the study of Lopunen et al. were not in consistent with ours; it can be because of sampling time, sample size, being single-gender study and also educations that the patients received after surgery [16]. The researcher believes that some factors such as physical and mental weakness and involvement of the patients before surgery, stress and anxiety, mood of death, concern about the future and concerns of the cost of discharge are factors that influence patients’ quality of life. The researcher believes that some factors such as severity and duration of disease and its complications can influence patients’ quality of life. Probably family supports and economic and social status are among the factors, which influence quality of life.

Considering the results of the present study and the conducted studies in this regard, the researcher believes that disease symptoms and complications are not fully resolved in months after surgery and probably because of this patients suffer from anxiety and it influences thier quality of life. Sadeghi et al. showed that quality of life has been decreased one month after CABG in control group in which post-surgery routine follow-up was done; this decrease in the score of quality of life can be because of problems and complications due to surgery and decrease in patients’ functions [24]. Branason et al. also believes that patients talk about several types of emotional problems and decrease in their activity one to three months after surgery [25]. Chan and Leon believe that different physiological and psychological problems are going to be seen in the patients after coronary artery surgery, which are basically due to fear, anxiety and immobility and consequently health related quality of life will be distorted in these patients [26-27]. Also Kouinski et al. studied quality of life of Postmenopausal Women undergoing CABG and found out that quality of life has been decreased after surgery [28]. Therefore findings of our study are in
consistent with the findings of the studies of Sadeghi, Branason, Chan, Leon and Koinski. Being a single-sex study, little time for evaluating quality of life are among the limitations of the study, therefore, it is recommended to assess the quality of life in a longer period of time after surgery and to conduct the studies about both men and women in the future studies.

5. Conclusions
Quality of life is recognized as a valuable indicator for measuring health status by the public health and medical researches. Considering the results of the present study, it is necessary to pay more attention to mental and psychological conditions of the patients candidate for CABG and patients should be ready for encountering the future conditions through providing necessary educations before, during and after surgery. Post-surgery cardiac rehabilitation and improving the culture of participating in cardiac rehabilitation programs are recommended due to their proved results regarding promotion of quality of life.

6. Acknowledgments
This article is taken from an approved thesis by nursing college of Baqiyatallah (AJ) Medical Sciences University. We thank and appreciate those who helped us in this project such as patients, supervisors and personnel of men heart wards and the clinic of Baqiyatallah (AJ) and Jamaran Heart hospitals and also cardiovascular research center of Baqiyatallah (AJ) hospital.

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