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Comparison of Quality of Life before and After Open Heart Surgery

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Abstract

***Background*:** The aim of this study was to evaluate the quality of life after cardiac surgery and to compare quality of life before and after open heart surgery.
***Materials and Methods*:** 49 patients participated in this study. The data were then analyzed by SPSS-13 statistical software.
***Results*:** Three months after the operation, life quality score increased (p=0.001), but unlike the improvement of physical status, mood improvement was not observed 3 months after surgery.
***Conclusion*:** According to the mental status of patients, it is recommended to perform necessary actions.

Introduction

Among debatable topics of the recent decades in clinical research is the evaluation of life quality [1]. The measurement of life quality is important, and its improvement is mentioned to be as the most important purpose of therapeutic intervention; this particularly becomes more significant in chronic diseases which have no known cure [2]. Among this, cardiovascular diseases have been highly prevalent in recent years. Researchers have shown that one person dies from cardiovascular disorders every second [3]. Although exact statistics about the Iranian patients with heart diseases is not available, some statistics showed that the prevalence of cardiovascular diseases and its mortality rate have risen from 20-25% to 35-40% in Tehran [4]. Several methods are used to treat cardiovascular diseases; one of them is coronary artery bypass graft surgery [5]. According to the studies performed in the United States, the number of coronary artery bypass surgeries increased from 150,000 in 1979 to more than 500,000 in 1995. In Iran, 60 percent of all cardiovascular surgeries are related to coronary artery bypass graft surgery [6].

The increasing need for surgery makes it necessary to pay special attention to such patients and to determine their quality of life after surgery. A lot of researches done around the world have confirmed the improvement of life quality after heart surgery [6]. However, some studies reported poor life quality after cardiac surgery [7]. In addition, the quality of life is a challenging issue to both health care providers and recipients; due to the high cost of surgical and medical interventions, the impact of these interventions on the quality of life after surgery is not predictable among patients [8]. In this regard, due to the limited studies in this field in Iran, we decided to determine and compare the quality of life of heart patients before and after bypass surgery.

Materials and Methods

This analytical study is a correlational descriptive research conducted on 49 patients undergoing open heart surgery who were referred to the Golestan Hospital, Ahwaz University of Medical Sciences. Inclusion criteria included: age, electivity and type surgery. Exclusion criteria included a creatinine level of more than 1.4 mEq/L, having history of an underlying disease such as stroke, chronic obstructive pulmonary disease, and autoimmune disease. Sampling was done within 6 months.

To participate in the study, patients wrote a consent form. The standardized questionnaire of SF-36 and the demographic information questionnaire were data gathering tools of the study. SF-36 questionnaire has 8 components that include: general health (6 questions), physical health (10 questions), mental health (6 questions), social activity (2 questions), bodily pain (2 questions), physical role functioning (4 questions), emotional role functioning (3 questions), vitality and joy (3 questions). Likert's scale (excellent, very good, good, fairly bad, and bad) was used to assess the responses.

The answers were scored 1-5; score 1 for bad and score 5 for excellent. The scores of the 8 components were changed to 0-100; higher scores indicated better quality of life. The demographic information questionnaire consisted of 24 questions and included education, age, gender, marital status, residence, duration of hospitalization, smoking history and duration, history of hypertension (systolic pressure greater than140 mm/Hg

Table 1. A comparison of the physical items of the SF-36 questionnaire between the baseline status, 1 month and 3 months after surgery

Dimensions / Time	Vitality and exuberance Mean ± SD	Pain Mean ± SD	Play a role in health Mean ± SD	Physical performance Mean ± SD
Baseline	195.10±79074	102.14±62.90	146.94±194.83	565.82±227.34
1 month later	221.84±56.11	100.51±41.77	8.1±57.14	523.47±159.78
p-value	0.04	0.79	0.001	0.19
Baseline	195.10±79.74	102.14±62.90	146.94±194.83	565.82±227.34
3 months later	242.35±52.98	122.96±43.32	132.44±154.23	729.59±154.25
p-value	0.001	0.07	0.83	0.001
1 month later	221.84±56.11	100.51±41.77	8.1±57.14	523.47±159.78
3 months later	242.35±52.98	122.96±43.32	132.44±154.23	729.59±154.25
p-value	0.01	0.002	0.001	0.001

Table 2. A comparison of the psychological items of the SF-36 questionnaire between the baseline status, 1 month and 3 months after surgery

Dimensions / Time	Social performance Mean±SD	Public Health Mean±SD	Play a role in mental health Mean±SD	Emotional wellbeing Mean±SD
Baseline	138.78±73.07	266.84±50.10	177.55±148.97	264.08±113.13
1 month later	75.51±51.15	270.92±26.68	214.29±136.93	351.43±71.41
p-value	0.001	0.56	0.2	0.001
Baseline	138.78±73.07	266.84±50.10	177.55±148.97	264.08±113.13
3 months later	134.69±55.15	277.24±34.41	251.02±112.03	361.33±65.88
p-value	0.62	0.3	0.001	0.001
1 month later	75.51±51.15	270.92±26.68	214.29±136.93	351.43±71.41
3 months later	134.69±55.15	277.24±34.41	251.02±112.03	361.33±65.88
p-value	0.001	0.35	0.05	0.2

and diastolic pressure greater than 90 mm/Hg) and its duration, history of hyperlipidemia and its duration, the type of vessel used in surgery, duration of stay in cardiac ICU, duration of heart disease and the waiting time for surgery. SF-36 is a standard questionnaire with a 0.95 validity and 0.9 reliability [9]. To determine the scientific validity of the questionnaire, its demographic information was observed by more than 10 professors of the faculty, then following observation of supervisors and scientific advisor of dissertation, corrective recommendations were done on the questionnaire and it was used.

To determine the reliability of the tool, a pilot sampling was performed using Cronbach's alpha estimation and the questionnaire reliability was determined 92%. It should be mentioned that the questionnaires were completed through interview in three stages; before surgery and 1 and 3 months after surgery. The collected data were then analyzed by SPSS-13 statistical software and χ^2 test.

Results

The findings of this research showed that the mean age of participants in the study was 58.29 years and the highest frequency belonged to the age group of 45-75 year. Also, in terms of gender distribution, 67% of study subjects were male. Since hypertension is a risk factor for heart disease, patients' history of hypertension was studied and the results showed that 39% of the patients had high blood pressure. On the other hand, because the duration of heart disease and the waiting time for surgery are predictive factors of surgery outcome, the data of present study showed that the mean duration of disease was 23.47 months and the mean time before operation was 7.06 months. The results that include analysis of the 8 components of SF-36 questionnaire are presented in tables 1 and 2.

Discussion

Health along with the quality of life is defined as the personal concept from mental and physical performance capacity. This concept affects different aspects of life [10]. The results of this study showed that the quality of life improved 3 months after surgery, while the quality of life score difference is not statistically significant after 1 month. Hunt et al. showed a significant improvement three months after operation (p<0.0005), while the improvement rate was not significant one month after surgery (p=0.29); these results are consistent with the results of the present study [11]. Laponen et al. studied the quality of life 6 months after surgery and Kristin et al. evaluated the quality of life 3 months after surgery and showed the improvement of quality of life score; these researches also are consistent with the results of the present study [12, 13]. Ballan & Lee showed no difference between preoperative and postoperative psychological and mental states in terms of life quality, but the general health status–a psychological aspect of life quality–was significantly improved after surgery (p<0.001) [14]; These results are not consistent with the results of the present study which may be attributed to the differences in culture and people's lifestyle. On the other hand, since the life quality of patients did not show improvement mentally in some components after 1 and 3 months of surgery, by providing opportunities for therapeutic consultations and emotional supports, one can help to improve the patients' emotional status, which will affect the quality of life in coming months.

In addition, because the results of the pain level 1 month after surgery indicated that the pain control was ineffective, it is recommend that the pain be controlled

more effectively, which will lead to better physical activity and thus improvement of the patient's life quality.

Short duration of follow ups can be mentioned as a limitation for this study, so we suggest further studies to evaluate long-term results of open heart surgery on patients' quality of life.

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Authors' Contributions

Sadighe Fayazi was involved in preparing the main idea of this study, supervising the project, and interpretation of the data Neda Sayadi was involved in drafting of the manuscript, critical review of the content as well as collection, analysis and interpretation of the data Mahin Gheybizadeh was involved in supervising the project, interpretation of the data, and final critical revisions of the study with regard to the intellectual content.

Conflict of Interest

The authors declare no conflict of interest.

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