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Original Article

Relationship between adherence to treatment plans and quality of life in patients undergoing cardiac surgery

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Abstract

Objectives: Cardiovascular diseases are the primary cause of death all around the world, and the complications of heart disease can reduce the patient's quality of life.Adherence to a therapeutic plan can reduce surgical complications and promote the healing process. This study aimed to survey the relationship between adherence to a therapeutic plan and quality of life in discharged patients after a coronary artery bypass graft (CABG).

Methods: Descriptive correlational research was carried out to discover relationships among variables. The study was conducted in Hamadan hospital in 2014. Seventyone patients undergoing CABG surgery were selected by convenience sampling method. Before discharge, the patients completed the Mac New Quality of Life Questionnaire and adherence to therapeutic plan questionnaire that included medicine adherence, recommended care, diet and exercise orders, and incentive spirometry. After five weeks, patients again completed the questionnaires, and the data were analyzed.

Results: There was a positive and significant relationship between patients' quality of life and adherence to the treatment plan. As the treatment program increased, the patients' quality of life also increased ($r= 0.695$, $p <0.05$).

Conclusions: More adherence to treatment plans in patients undergoing CABG surgery leads to the enhancement of the quality of life in patients.

Keywords: Treatment plan, quality of life, Coronary artery bypass graft

Introduction

CVD accounts for 45% of all deaths in Europe, and the rate of deaths due to cardiovascular disease (CVD) in Europe is 3.9 million per year.Ischemic heart disease (IHD) is the main cause of mortality in Europe, responsible for 19% of all deaths among men and 20% among women each year (1). Due to the high prevalence and increasing burden of cardiovascular diseases in Iranian society, special attention should be paid to these diseases (2,3). Coronary artery disease (CAD) affects all aspects of life, and can influence the patient's quality of life and life

satisfaction (4). Pharmaceutical and surgical methods can be used to However, pharmaceutical and surgical methods can be used to lessen these effects. Coronary artery bypass graft surgery (CABG) is one of the most commonly used treatment options for coronary heart disease all over the world. Furthermore, transluminal coronary angioplasty is a more recent treatment method for these patients. (1, 5 But CABG surgery is always accompanied by fear, anxiety, and other complications that require much follow-up, training, and care for patients to experience a higher quality of life after the CABG surgery (6-8). An essential part of achieving a higher quality of life-depends on post-operative care and the patient's adherence to the therapeutic plan (6). In most studies, patient adherence focuses on the regular use of medications. Adherence to the treatment plan not only is the patient and family's behavior to use drugs correctly but to diet and lifestyle changes under the recommendations of health care providers (9).

Adherence is such an essential issue that the World Health Organization acknowledges that increased adherence to medical therapies impacts improving patient health (10). The rate of non-adherence to treatment is more than 60% in cardiac patients (11), and non-adherence to treatment in developing countries is greater than in developed countries (12). Regarding the impact of cardiac disease on all aspects of life, one of the most appropriate tools for measuring the quality of care and adherence to the therapeutic plan of patients is the self-report Health-Related Quality of Life (HRQOL) (13). Several studies showed a relationship between medication adherence and patient HRQOL that is often studied in chronic patients (14-16) Given the conditions of patients undergoing cardiac surgery that experienced acute conditions and then the chronic complications of cardiac disease and the complications of the surgery, this study decided to determine the relationship between the rate of adhering to therapeutic plan in patients undergoing CABG and the HRQOL score of this group of patients.

Materials and Methods

Descriptive correlational research was carried out to discover relationships among variables by using the convenience sampling method. The environment of the study was Hamadan hospital in 2014.The participants consisted of 71 patients discharged after CABG surgery from Ekbatan Therapeutic Learning Center in Hamadan. The sample size was estimated in the study conducted by Alizadeh-Charandabi et al. with a type I error of 5% and power of 80% in each group (17). Entrance criteria included psychological health, absence of underlying illnesses and ability to speak and dissatisfaction with the continuation of the study, and hospital readmission were the exclusion criteria.

The data gathering instruments included the MacNew Heart Disease HRQOL Questionnaire, and the self-reported questionnaire was designed based on the condition of patients after cardiac surgery. The MacNew questionnaire consisted of 26 items in three subscales: emotional functioning (11 items), physical functioning (5 items), and social functioning (10 items) to evaluate the quality of life in heart patients.The original version of the questionnaire consisted of 27 questions, but a question about sexual activity usually is eliminated by individuals. With a Likert scale ranging from “always” to “never” . The scoring ranged from 1 to 7, with the higher score indicating a better quality of life (18, 19). The researcher-made questionnaire consisted of six sections and followed the patient's therapeutic plan adherence. The first section was related to medication adherence which used the DAI-30 questionnaire (20). The second section consisted of 29 questions about the adherence care plan, section 3 included ten questions about diet adherence, Section 4 included ten questions related to exercise and physical activity, the fifth section consisted of 1 Question about adhering to surgical stabilization chest belt closure, and section 61 Question about using a recommended incentive spirometry after surgery.

The questionnaire was adapted from Food Frequency Questionnaire (FFQ) and Clinical Trials GroupACTG (AIDS) questionnaires (21, 22). The medication adherence questionnaire scoring criteria included the correct answer (score 1) and the wrong answer (score -1). But the rest of the questions on the Likert scale were never to always (score 1 to 5). The preliminary questionnaire was assessed for validity and reliability by assessing ten faculty members of Hamadan University of Medical Sciences, and a few changes were made to the instrument based on their comments. The internal consistency reliability of the results was determined by using Cronbach’s alpha (0.8) and Guttmann statistic tests to assess the reliability of the questionnaire.

All patients submitted a booklet containing all post-surgical care and education tips that the booklet suggested from authoritative scientific sources (23-25). The patients signed the consent form before discharge and completed the questionnaires with the help of the researcher.
Data were collected and analyzed with SPSS software version 20 employing Pearson correlation.

Results

Demographic data showed that most of the subjects were male (N=49), married (N= 62), and illiterate (N= 33). Most of the participants were over 65 years of age (N= 45) Table 1.

Table 1: Frequency and relative distribution of the subjects based on demographic characteristics

Variable	Levels	Number (N)	Percent (%)
Gender	Male	49	69
	Female	22	31
Age (Year)	> 65	45	63.3
	< 65	26	36.6
Marital Status	Married	62	87.3
	Widowed	9	12.6
Educational Level	Uneducated	33	46.4
	Elementary	16	22.5
	Diploma	11	15.4
	Higher Education	11	15.4
Living Location	Urban	51	71.8
	Rural	20	28.1
Households (Persons)	1-2	18	25.3
	2-4	34	47.8
	4-6	17	23.9
	>7	2	2.8

Pearson statistical test showed that there was a significant relationship between the total score of quality of life and the total score of adherence to the patient's therapeutic, implying that patients who had more adherences to the patient's therapeutic plan had a higher quality of life (r= 0.695, p <0.05) Figure 1.

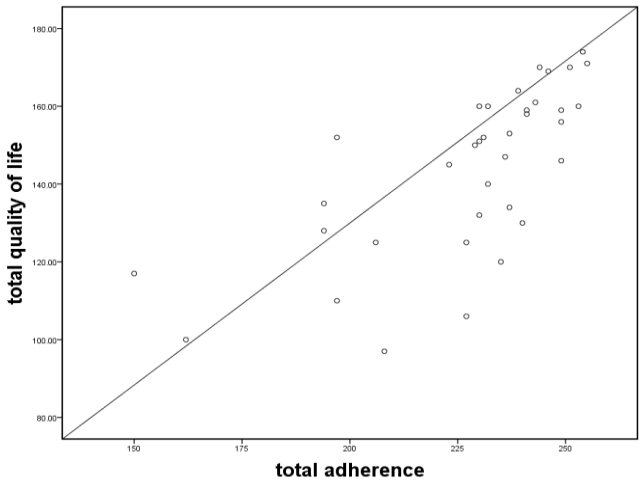

Figure 1: scatter graphs of correlation between medical adherence and quality of life

Discussion

In the present study, the HRQOL of patients was increased due to cardiac surgery. Similar to this findings, some other studies (26, 27)reported that stress after cardiac surgery could reduce the quality of life (28)Dews' Studies showed that people with life-threatening illnesses have more therapeutic plan adherence than those with chronic diseases (29). In this study, the rate of adhering to a therapeutic plan is in line with other studies (30, 31).Previous studies have reported a significant relationship between medication adherence and quality of life. A significant relationship was reported between the medication adherence and the quality of life in AIDS patients (32). A study reported direct relationship between medication adherence in patients with high blood pressure and their life quality (15), which is in agreement with the present study.The present study revealed a significant relationship between physical activity and HRQOL. The finding is in line with Grossel's studies that showed that Physical activity interventions slow the decline in quality of life in older adults with a mobility disability (33) and a study that proved a 12-week home-based cardiac physical activity program is safe and improved HRQOL (34).Salavati's studies showed cardiac rehabilitation could increase the quality of life (35), and adherence to a care plan in hemodialysis patients improved the quality of life (36). The results of Salavati's studies agree with the findings of the present study.Regarding nutrition and diet, in consensus with the present study, Bonaccio's study showed that adherence to a Mediterranean diet could increase the quality of life in individuals (37).Several studies have recommended the use of a surgical belt to reduce pain and improve respiratory status (38, 39). However, the current study revealed no relationship between the use of surgical belts and patients' quality of life. Using incentive spirometry in Chronic Obstructive Pulmonary Disease (COPD) and asthma patients could improve the quality of life of patients (40, 41). This study revealed a significant relationship between quality of life and using incentive spirometry.

Limitations: The small number and the psychological conditions of the samples when answering the questions can limit the generalizability of the results.

Conclusion

The results of this study showed that patients with a higher rate of adherence to the therapeutic plan have a better health related quality of life.

Conflicts of Interest

All authors declare that they have no conflicts of interest.

Acknowledgements

All procedures performed in studies involving human participants were under the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This study was approved by the research code 920210420 from the Hamadan Medical University Research Council.

Informed consent

Informed consent was obtained from all individual participants included in the study.

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