Quality of Life among Post CABG Patients

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Abstract

Introduction: Coronary artery bypass grafting (CABG) surgery is one among the most common procedures performed in the world, and it is one of the possible treatments for coronary artery disease (CAD). Although the effectiveness of coronary artery bypass grafting (CABG) is being evaluated in terms of mortality, complications or recurrence of symptoms, empirical studies assessing the change in patients quality of life (QOL) after CABG need to be studied as findings keep changing as time progress. A systematic analysis of how well the patient is considering a multiple variable need to be studied which has greater impact in improving the overall performance of the patients after CABG.

Aim: Aim of the study is to assess the quality of life among post coronary artery bypass grafting (CABG) patients.

Method: A quantitative approach with a descriptive design using a non-probability convenience sampling technique was used to collect data from 101 post CABG patients. The setting used for the study was CVTS OPDs at AIMS, Kochi. A standardized quality of life questionnaire (SF-36) along with a semi-structured questionnaire to assess socio-demographic and clinical data.

Results: The study result showed that the majority of samples (97%) had good QOL with mean score of 69.22. PCS (96%) showed higher value than MCS (68. 3). A significant association found between QOL and socio-demographic variables like occupation (p=0.018).

Conclusion: Overall QOL improved one year after CABG.

Keywords: *Quality of life and CABG.*

Introduction

Cardio vascular diseases is one of the most common diseases seen in elderly persons and approximately 50% of persons over 65 years of age have clinical signs of the disease. Cardiovascular disease is a major cause of functional impairment and is the cause of death in elderly persons. The cardiovascular changes affect the overall functions of persons life(1)

The treatment of coronary artery disease are mainly medical therapy and surgical therapy. Failure of medical management often leads to surgical management, that is revascularization with percutaneous coronary intervention or coronary artery bypass grafting (CABG), uses arterial or venous vessels to create a new pathway for blood to reach the coronary arteries, thus "bypassing" the stenosis(2).

Coronary artery bypass grafting (CABG) is an established and highly effective therapy for coronary artery disease. CABG has been effective than the medical therapy, for the relief of angina pectoris[4]. The first coronary artery bypass operation in human being

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was using a saphenous vein graft and coronary artery anastomosis was performed in November 1964 by Garrett and Debakky[3].

According to American Heart Association (AHA) 2015, health data, more than 190 countries shows coronary artery disease remains as the number one global cause of death with 17.3 million of deaths in each year. The number is expected to rise up 23.6 million by 203010[4]

The global burden of disease (GBD) study reported, it is estimated that 47 million Indians had coronary artery disease (CAD) in 2013. Cardio vascular disease has become the leading cause of morbidity and mortality in India during the last three decade[5].

CABG is associated with financial burden because of days lost from work, excess cardiology visits, diagnostic testing, and use of medications. The self-perception of the quality of life depends on the patient's own abilities to cope with the illness, usually individuals who are better able to adjust to their illness perceive the quality of life as being higher. A poor psychosocial adjustment to illness in turn reflects a more impairment of the quality of life

Preoperative risk scores are essential tools for risk assessment, cost–benefit analysis, and the study of therapy trends. Various scoring systems have been developed to predict mortality and morbidity after cardiac surgery. Risk stratification will inform patients and clinicians of the likely risk of death for a group of patients with a similar risk profile undergoing the proposed operation. This information is useful and should form part of the basis on which the patient and surgeon decide whether to proceed or not. Risk models were also applied for quality improvement programs comparing year-to-year outcomes, as well as allocation of healthcare resources through the prediction of length of stay and postoperative complication rates [11].

Although the effectiveness of coronary artery bypass grafting (CABG) is being evaluated in terms of mortality, complications or recurrence of symptoms, empirical studies assessing the change in patients quality of life (QOL) after CABG need to be studied as findings keep changing as time progress. A systematic analysis of how well the patient is considering a multiple variable need to be studied which has greater impact in improving the overall performance of the patients after CABG.

Although the effectiveness of coronary artery bypass grafting (CABG) is being evaluated in terms of mortality, complications or recurrence of symptoms, empirical studies assessing the change in patients quality of life (QOL) after CABG need to be studied as findings keep changing as time progress. A systematic analysis of how well the patient is considering a multiple variable need to be studied which has greater impact in improving the overall performance of the patients after CABG.

Method of Study

Quantitative research approach with descriptive design was used to identify the QOL among post CABG patients. The study was conducted among 101 post CABG patients after one year of surgery and coming for follow up in CVTS OPDs of Amrita Institute of Medical science, Kochi. The subjects were selected by non-probability convenience sampling technique. The data were collected using structured questionnaire. The tool developed and used for the study were tool I was a semi-structured questionnaire to assess the socio-demographic characteristics, which had two sections. Section A socio –demographic variables and section B included clinical variables. Tool II was a SF-36 standardized tool to assess the quality of life of post CABG patients. The tool developed and used for data collection was a standardized structured questionnaire. The content validity was obtained from 7 experts. The tool was found to be valid. Informed written consent was obtained from the samples after explaining the purpose of the study. Data collection was conducted in CVTS OPD. Anonymity and confidentiality of samples were maintained. A pilot study was conducted among 10 samples who met the eligibility criteria . It was found that the research design was appropriate, research tools were valid and reliable and the study was amendable to statistical analysis .The data was analyzed using descriptive and inferential statistics. The description of sample characteristics based on socio-demographic and clinical variables were computed using descriptive statistics. Association between QOL and selected socio demographic and clinical variables were assessed using inferential statistics.

Result

Table I: Distribution of sample characteristics based on demographic variables n = 101

Sl. No.	Demographic variables	Frequency (f)	Percentage (%)
1	**Marital status**		
	Single	31	30.7
	Married	58	57.4
	Widow/widower	10	9.9
	Divorced/separated	2	2
2	**Education**		
	Primary education	32	31.7
	High school	46	45.5
	Diploma	23	22.7
3	**Occupation**		
	Employed	60	59.5
	Unemployed	41	40.5
4	**Food**		
	Vegetarian	21	20.8
	Non- vegetarian	80	79.2
5	**Income**		
	2165-6430	3	3
	6431-10718	13	12.9
	10719-16077	43	42.6
	16078-21347	42	41.6
6.	**Type of family**		
	Joint family	9	8.9
	High school	92	91.1

The data presented in table I shows that the majority of sample 65(64.4%) were under the age group of 61-70 years. In gender, majority of sample were male 92 (91.1%). Most of the sample 58(57.4%) were married & 46 (45.5%) were having high school education. The data illustrated that most of the samples were unemployed retired 27(26.7%) and 25(24.8%) were private employed. The monthly income of 43(42.6%) sample were ranges from Rs. 10719-16077. When considering the food habits most of the 80(79.2%) sample were non vegetarian. The majority 92(91.1%) of the sample were belongs to nuclear family.

Table 2: Distribution of sample characteristics based on clinical variables n=101

Sl.No.	Clinical variables	Frequency (f)	Percentage (%)
1	Types of surgery		
	ON pump	16	15.8
	OFF pump	85	84.2
2	**Indications of CABG**		
	Single vessel disease	2	2
	Double vessel disease	23	22.8
	Triple vessel disease	76	75.3

Sl.No.	Clinical variables	Frequency (f)	Percentage (%)
3	**Ejection fraction**		
	Normal (52-72%)	78	77.2
	Mild (41-51%)	19	18.8
	Moderate (30-40%)	4	4
4	**Alcoholic habits**		
	Current alcoholic	3	3
	Non –alcoholic	27	26.7
	Ex-alcoholic	62	61.4
	Occasionally alcoholic	9	8.9
5	**Smoking habits**		
	Current smoker	6	5.9
	Non-smoker	30	29.7
	Ex-smoker	65	64.4
6	**Body mass index**		
	Over weight	5	4.9
	Obesity	1	1
	Normal	95	94.1
7	**Complications after CABG**		
	Without complications	60	59.4
	Wound infection	1	1
	Pain	1	1
	Others	39	38.6
8	**Hours of sleep per day**		
	More than 10 hours	7	6.9
	6-8 hours	78	77.2
	4-6 hours	10	9.9
	4 hours	6	5.9
9	**Co morbidities**		
	One co-morbidity	1	1
	Hypertension	13	12.9
	Diabetes mellitus		3
	Dyslipidaemia	3	
	Two co-morbidities	11	10.9
	Hypertension and diabetes	17	16.8
	Hypertension and dyslipidaemia		
	Dyslipidaemia and diabetes	4	4
	Three co-morbidities		
	Hypertension, diabetes mellitus and dyslipidaemia	15	14.9

Data in the table-2 depicts that among 101 samples the common types of surgery were OFF pump 85(84.2%). Consider the indications of surgery majority were having triple vessel disease 76(75.3%) and were having normal EF 78(77.2%). Regarding smoking habit majority of the samples were ex-smoker 65(64.4%) and 62(61.4%) were ex alcoholic. Among the samples 95(94.1%) had normal BMI. Considering the complications majority 60(59.4%) were had no complications after CABG. Regarding the hours of sleep per day most of them had 6-8 hours of sleep.

Section II: Description of QOL assessment of post CABG patients:

Table 3: Description of quality of life among post CABG patients n=101

	Minimum value	Maximum value	Good QOL (%)	Poor QOL (%)	Mean value	Standard deviation
Overall quality of life (QOL)	39	94	97	3	69.22	9.368

Table 3 shows that among 101 samples majority of them (97%) had good quality of life with a mean score of 69.22 and standard deviation of 9.368.

Section II: Description of samples based on components of quality of life n=101

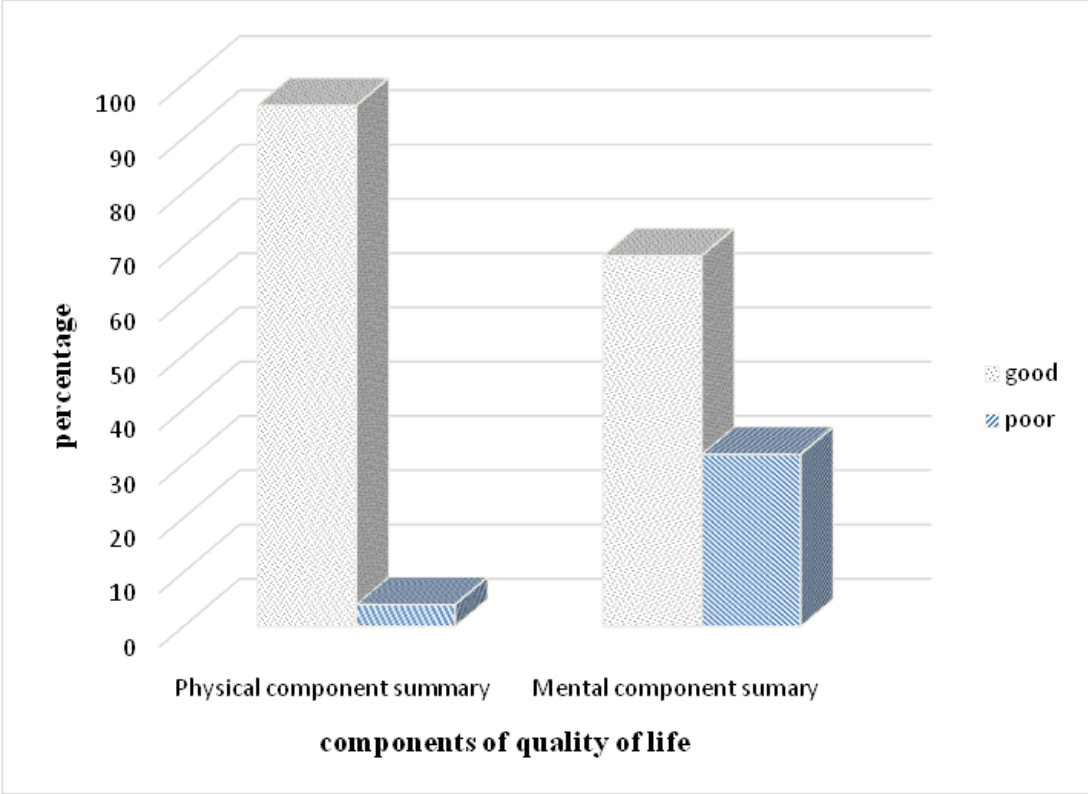

Figure 1: Bar diagram representing distribution of samples based on components of quality of life.

Figure 1 depicting the components of QOL, in the physical component summary 96% had good physical component score with mean score 77.98 and 68.3% had good mental component score with mean value of 57.07. Hence physical functioning was considered to be better than mental functioning

Section II : Description of samples based on domains of physical components summary n=101

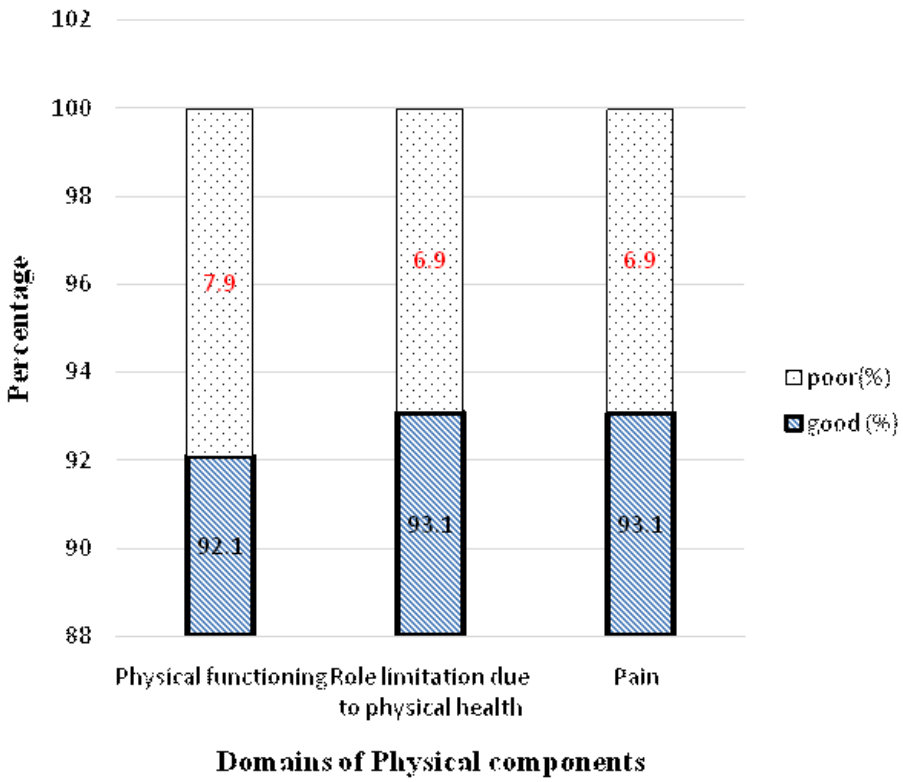

Figure 2: Bar diagram representing quality of lifebased on domains of physical components

Figure 2 depicting domains of physical component summary (PCS) of QOL. Majority (93.1%) expressed they had no role limitation due to physical health, regarding pain majority (93.1%) had no pain. Considering the physical functioning, majority (92.1%) had good physical functioning.

Section II: Description of samples based on domains of mental components summary n=101

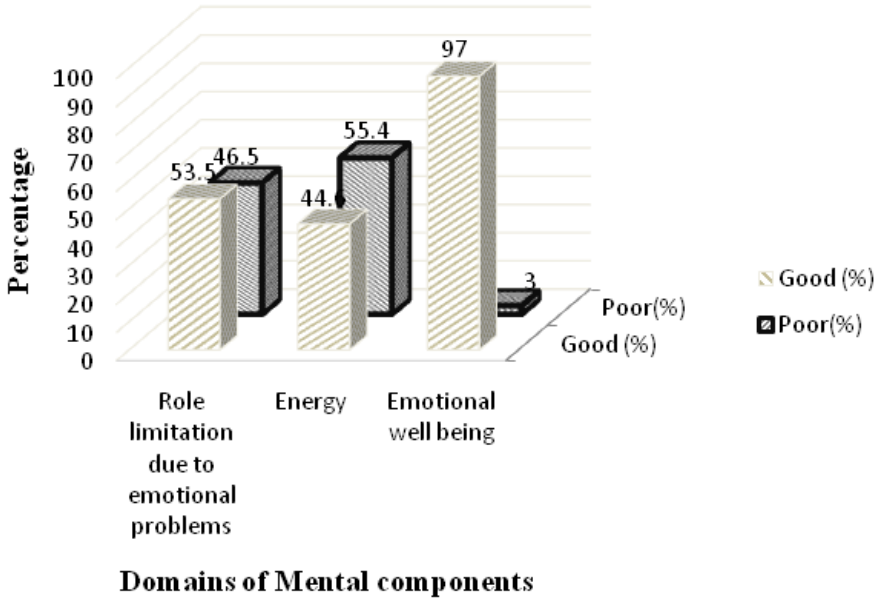

Figure 3: Diagram representing quality of lifebased on domains of mental components

Figure 3 depicting domains of mental component summary (MCS) of QOL. Majority (97%) samples experienced good emotional wellbeing and 53.5% expressed good score in role limitation due to emotional problems. Considering energy and fatigue 44.6% had good energy.

Distribution of mean and standard deviation of quality of life: Among 101 samples the highest mean score was observed in bodily pain (84.30), it means that patients had less pain and lowest mean score was observed in energy/fatigue (46.93) means that they had lack of energy.

Association between quality of sleep and selected demographic variables: The association between Quality of sleep and selected demographic variables like age, gender, marital status, education, income, diet pattern and type of family were not statistically significant with p value of 0.05 level. Whereas, occupation showed statistically significant (0.051).

Discussion

The first objective was to identify the quality of life among post coronary artery bypass grafting patients: The results from the present study showed that overall quality of life of post CABG patients 97% had good quality of life with mean score of 69.22 and standard deviation 9.368. Considering the physical component summary 96% samples had good quality of life with mean score 77.98, and mental component summary 68.3% samples had good quality of life with mean score 57.07. That means PCS higher than MCS.

In relation to physical component summary, majority of the samples (93.1%) expressed no role limitation due to physical health with a mean score of 73.64. considering the physical functioning most of them (93.1%) were having good physical functioning with a mean score of 73.79. Regarding pain 93.1% had no pain with mean score of 84.30.

In relation to mental component summary most of the sample (55.4%) were lacking energy level with mean score 46.93. Regarding role limitation due to emotional wellbeing majority of the patient (53.5%) weren't having any role limitations with a mean score of 55.78. A vast majority of sample (97%) expressed good emotional well-being with a mean score of 68.51.

The similar findings were observed in a descriptive study conducted by Anastasios Merkouris, Dimitrios Pistalos to assess the QOL after CABG patients at Greece in 2008. The findings showed that the overall QOL of patients was improved, good level of QOL with an average score of 80.4[6].

The present study findings are contradictory to a study findings done by Lee GA conducted a cohort study to assess the patients reported health related quality of life five years post CABG at Australia in the year 2008. The findings showed that good level of QOL with an average score of 66.02%. MCS (53.6) was higher than PCS (45.8). PCS had poor QOL and MCS had good QOL[7].

The second objective was to find the association between the quality of life and with selected socio demographic variables among post Coronary Artery Bypass Grafting patients

The present study showed a significant association with occupation and QOL (p=0.018), QOL was unaffected by all the other socio-demographic variables

Taghipour H.R conducted a descriptive study to assess the QOL one year after CABG at Iran in 2011. The result showed that mean age of patients was 61.4, most of them are male. On pump surgery had better general health than off pump 47.9 (p=0.024). Negatively correlated with EF r=-0.220. chi- square value is 0.19[8].

Descriptive study conducted by Elishevasimchen to assess the relation between QOL and socio demographic factors at Israel. The findings showed that female sex and low socio economic background were associated with low health related QOL.[9]

Conclusion

Overall QOL improved one year after CABG. majority of the samples expressed more physical wellbeing than of emotional wellbeing henceforth,there is an alarming need to give a holistic care for patients.

Conflict of Interest: Nil

Source of Funding: Self

Ethical Clearance: Ethical clearance obtained from institutional ethical committee of Amrita Institute of Medical Sciences, Kochi for conducting this study.

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