

## Quality Of Life And Lifestyle Of Patients Before And After Coronary Artery Bypass Grafting (CABG).

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**Abstract:** Coronary artery bypass grafting (CABG) is a procedure used to help improve and save the lives of thousands of coronary artery disease patients every year. About 90% of patients experience significant improvement after CABG surgery. Keeping all this in view a study to assess and compare quality of life and lifestyle of patients before and after CABG was carried at selected hospital of Punjab. Exploratory Comparative Survey Design was used and using purposive sampling technique sixty patients who came for follow up 3 months after CABG were selected. The data was collected using standardized WHO-BREF questionnaire to measure quality of life and structured lifestyle questionnaire for measuring lifestyle. The findings of the study indicated that mean of quality of life before CABG (103.87) is higher than mean of quality of life after CABG. Whereas no significant difference was found in lifestyle before and after CABG. Positive significant correlation was there between quality of life and lifestyle before and after CABG. Quality of life was found to be significant associated with educational status, monthly income, and marital status and also the lifestyle was found to be significantly associated with gender, monthly income, and educational status. Patients had better QOL before surgery; QOL and lifestyle affect each other as better lifestyle results in better QOL.

**Keywords:** Coronary Artery Bypass Grafting, Quality of life, Lifestyle.

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Coronary artery disease (CAD) is among the leading cause of death for both men and women in the United States and has been for every year for more than a century (American Heart Association [AHA], 2000)<sup>1</sup> According to the National Institutes of Health (NIH) approximately thirteen million people have CAD in the United States and the number is rising every year (NIH, 2005). According to the World Health Organization (WHO) cardiovascular disease will take the lives of approximately 3.8 million men and 3.4 million women around the world every year (Emslie, 2005)<sup>2</sup>. Among cardiac surgeries, coronary artery bypass grafting (CABG) is the most common type of heart surgery to minimize this damage in coronary arteries and about 90% of patients experience significant improvement after CABG surgery.<sup>3</sup>

According to WHO 2010 it is estimated that more than 800,000 CABG surgeries are performed worldwide every year. CABG is the most common type of open heart surgeries in the United States, with more than 500,000 surgeries performed each year. In India, approximately 50,000 CABG surgeries are performed annually.<sup>4</sup> The outcome of treatment has been measured by survival rates, test results, return to work figures, and clinical judgment. Recently, however, the emphasis has been more toward assessing outcome in terms of patients' perceptions of changes in their state of health over time and how this affects their lives; in other words, assessing the health-related quality of life.

Among the health sciences, quality of life (QOL) is divided into five main categories: physical and material well-being, relations with other people, social activities, personal development, and recreation (Anderson et al., 1999)<sup>5</sup>. QOL encompasses a holistic approach to medicine by including not only the patient's physical status, but mental, emotional, and social status as well (Szygula-Jurkiewicz et al., 2005).<sup>6</sup>

Therefore, there is a need to evaluate the patient's perception of the stressfulness surrounding the surgical procedure and to understand the possible effects of this perception on recovery and in different aspects of quality of life after CABG. In the light of the above the researcher found it is desirable to assess quality of life and lifestyle before and after CABG.

### Purpose

The purpose of this comparative exploratory study is to (1) To compare quality of life and lifestyle of patients before and after CABG (2) To determine relationship of quality of life and lifestyle of patients before and after CABG. (3) To determine association of quality of life and lifestyle of patients before and after CABG.

### Methodology

**Research design:** Non experimental with exploratory comparative design.

**Setting:** the study was conducted at Fortis health care limited Mohali, Punjab.

**Population:** Patients who underwent CABG at Fortis hospital and came for follow up after 3 months of CABG.

**Sampling technique:** Purposive sampling technique was used.

**Sample size:** 60 patients who came for follow after 3 months.

In view of the nature of the problem and to accomplish the objectives of the study, WHOQOL-BREF questionnaire and structured lifestyle questionnaire were used to compare the quality of life and lifestyle of patients. Validity was ensured in consultation with guides and experts in the field of nursing and psychiatric. Reliability was done using Cronbach's alpha. The calculated value of reliability coefficient for quality of life before and after CABG was found to be  $r=0.70$  and  $0.80$  respectively. The calculated values of reliability coefficient for structured lifestyle questionnaire was found to be  $r=0.86$  before and  $r=0.88$  after CABG.

### **Description of tool**

#### **WHOQOLBREF questionnaire**

This questionnaire has 26 items on a five-point likert scale, which includes one global item about QOL, respectively, and 25 items relating to four domains calculated as the sum of eight items for physical, six for psychological, three for social and eight for environmental QOL .

The four domain scores are scaled in a positive direction with higher scores in indicating a higher quality of life. Each response carries 1-5 scores with maximum score of 130 and minimum score of 26 respectively

#### **Structured lifestyle questionnaire**

The structured lifestyle questionnaire scale was prepared by the researcher to assess and compare lifestyle of the patients before and after CABG which consisted of 15 items which were categorized according to different domains of lifestyle such as physical domain having (8), psychological (3) sexual recreational (2) and spiritual (2) items. A minimum score of 1 was given to each response selected by the respondents whereas in certain selected items more than one response could be selected. The maximum score of the tool was 61 and minimum score was 15.

#### **Performa for selected variables**

The Performa for selected variables was prepared by the researcher to collect data on selected personal variables having in total nine items such as:

Demographic variables: consist of age, gender, monthly income, occupation, and marital status, dietary pattern

Clinical variables: consist of presence of chronic illness, any previous surgery, and use of tobacco.

#### **Data collection procedure**

The final study was conducted at Fortis health care limited, Mohali, Punjab. Following formal approval from concerned administrative authorities 60 patients were selected using purposive sampling technique. Data was collected using interview technique. Patients were instructed to give answers by recalling their quality of life before CABG and then answering the same questions with respect to their quality of life after CABG the purpose of the study was explained and the subjects were assured about the confidentiality of their responses.

### **Results**

The data represents that 40% of the patients were in the age-group of 50-60 years, whereas 21% were in the age group of 61-70years. 11% were in age of 71-80 years and there were only 7% patients who were above 80 years of age. It also shows that majority of the patients (75%) were male and 25% were females. Nearly 1/3<sup>rd</sup> of patients were educated up to senior secondary (32%) and graduate level (31%) whereas 10% had secondary level education followed by 10% having primary level and post graduate level of education. 57% of the patients were vegetarian and 43% were non-vegetarian. Most of the patients (78%) were married; 17% widow/widower; 3% divorced and 2% were unmarried. 35% of patients were retired government employees and 33% were self employed whereas 18% were unemployed and 13% were private employees. With regard to monthly income, majority (53%) of patients had monthly income above Rs.30, 000 followed by 27% who had monthly income between Rs.20001-30000; 18% had Rs.10, 000 to 20,000 monthly income.

The data also reveals that majority (67%) of patients were not having any chronic illness whereas 34% had chronic illness such as diabetes (22%) and hypertension (12%). It was found that majority of patients (87%) had not undergone any previous heart surgery while 13% had previous heart surgery. It was also found that 12% of patients were consuming tobacco, whereas majority (88%) of patients were not consuming tobacco in any form.

#### **Comparing quality of life of patients before and after CABG**

The data presented in Table 1 indicates that the mean quality of life score before CABG was  $103.87 \pm 10.18$  with a range of 85-121 and median as 104.5. It also shows that the mean quality of life score after CABG was  $102.65 \pm 9.60$  with a range of 85-119

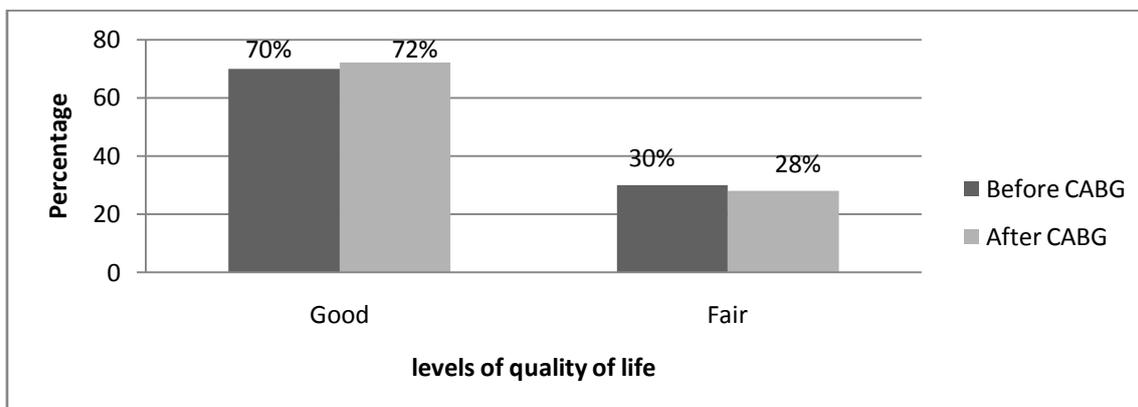
**Table 1** Range, Mean, Median and Standard Deviation of Quality of Life scores of Patients Before and After CABG.

N=60				
Quality of life	Range	Mean	Median	SD
Before CABG	85-121	103.87	104.5	10.18
After CABG	85-119	102.65	101	9.60

Maximum score =130

Minimum score =26

Fig.1 highlights the frequency and percentage distribution of patients according to the level of quality of life before and after CABG. Of interest is that before CABG, majority (70%) of the patients had good quality of life followed by 30% of patients who had fair quality of life and also after CABG, majority (72%) of the patients had good quality of life, followed by 28% with fair quality of life.. None of the patients had poor quality of life before and after CABG.



**Fig: 1** Bar graph showing the distribution of patients based on their quality of life before and after CABG.

Table 2 highlights domain wise ranking of quality of life of patients before and after CABG. Notable is that highest mean percentage of quality of life score obtained by patients was in social domain (88.13%), followed by environmental domain (81.53%), global domain (81.6%), physical domain (78.9%) and psychological domain (74.9%). Similarly after CABG, social domain had the highest mean percentage (87.53%) followed by global domain (84.4%), environmental domain (81.82%), physical domain (75.92%) and psychological domain (74%).

**Table 2** Domain Wise Mean, Mean Percentage and Rank of Quality of Life of Patients Before and After CABG

N=60							
Domain	Maximum scores	Before CABG			After CABG		
		Mean	Mean %	Rank	Mean	Mean %	Rank
Global	05	4.08	81.6%	III	4.22	84.4%	II
Physical	40	31.55	78.9%	IV	30.37	75.92%	IV
Psychological	30	22.48	74.9%	V	22.20	74%	V
Social	15	13.22	88.13%	I	13.13	87.53%	I
Environmental	40	32.53	81.32%	II	32	81.82%	III

Maximum score=130

Minimum score =26

The obtained mean difference was found to be statistically significant as obtained 't' value (2.12) was higher than table value (2) at 0.05 level of significance, which suggests that there was a significant difference in quality of life of patients before and after CABG (Table 3).

**Table 3** Mean, Mean Difference, Standard Error of Mean Difference and 't' value of Quality of Life scores of Patients Before and After CABG

N=60						
Quality of life	Mean	M <sub>D</sub>	SD <sub>D</sub>	SE <sub>MD</sub>	't' value	p value
Before CABG	103.87					
After CABG	102.65	1.22	4.42	2.84	2.12	0.04*

t (59) =2; \*Significant (p≤0.05)

**Comparing lifestyle of patients before and after CABG**

Table 4 indicates that mean lifestyle score of patients before CABG was 41.72± 5.19 with the range of 35-53 and median 41.72. It also shows that the mean lifestyle score after CABG was 40.97±4.52 with the range of 36-50 and median 41.5. Mean lifestyle score of patients before CABG was slightly higher than after CABG.

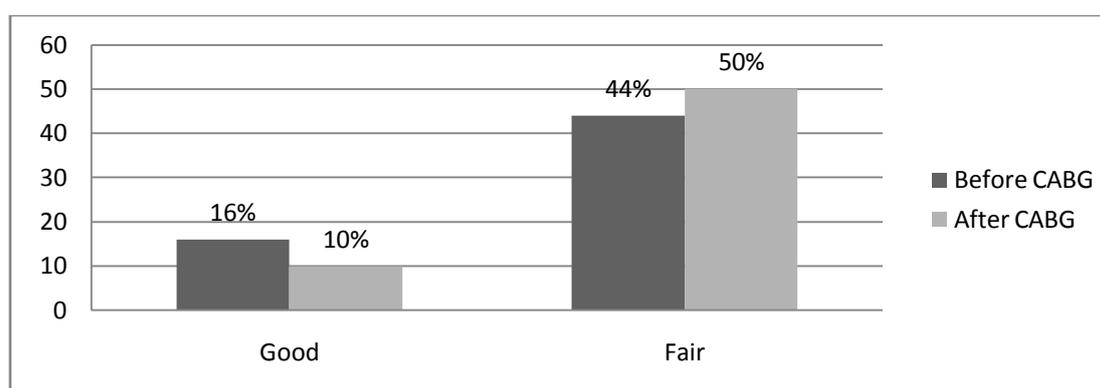
**Table 4 Range, Mean, Median and Standard Deviation of Lifestyle Scores of Patients Before and After CABG**

Lifestyle	Range	Mean	Median	SD
Before CABG	35-53	41.72	43	5.19
After CABG	36-50	40.97	41.5	4.52

Maximum score =61

Minimum score =15

Fig.1 highlights the frequency and percentage distribution of patients according to the level of lifestyle before and after CABG. It reveals that before CABG, majority (73%) of the patients were having fair level of lifestyle, followed by 27% with good level of lifestyle. Similarly, after CABG majority of the patients (83%) were having fair lifestyle and 17% had good level of lifestyle.



**Fig 2: Bar graph showing distribution of patients based on their lifestyle before and after CABG.**

Table 5 highlights domain wise ranking of lifestyle of patients before and after CABG. Notable is that highest mean percentage score obtained by patients was in spiritual domain (95.42%), followed by physical domain (60.85%), sexual/recreational domain (55.17%), and psychological domain (45.24%). Similarly after CABG, patient had highest mean percentage (94.17%) in spiritual domain, followed by physical domain (59.74%), sexual/recreational domain (56.17%), and psychological (45.24%) domain.

**Table 5 Domain Wise Mean, Mean Percentage and Rank of lifestyle of Patients Before and After CABG**

Domains	Maximum score	Before CABG			After CABG		
		Mean	Mean %	Rank	Mean	Mean %	Rank
Physical	35	22.5	60.85%	II	23.30	59.74%	II
Psychological	10	6.33	45.24%	IV	6.33	45.24%	IV
Sexual & recreational	8	5.52	55.17%	III	5.52	56.17%	III
Spiritual	8	7.63	95.42%	I	7.53	94.17%	I

Maximum score =61

Minimum score =15

The obtained mean difference was found to be statistically non-significant at 0.05 level of significance, which suggests that there was no difference in lifestyle of patients before and after CABG.(Table 6).

**Table 6 Mean, Mean Difference, Standard Deviation Difference and ‘t’ value of Lifestyle scores of Patients Before and After CABG**

Lifestyle	Mean	M <sub>D</sub>	SE <sub>MD</sub>	SD <sub>D</sub>	‘t’ value	p value
Before CABG	41.72					
After CABG	40.97	0.75	1.01	3.41	1.70	0.09 <sup>NS</sup>

NS-not significant (p>0.05)

### Correlation of quality of life and lifestyle before and after CABG

It depicts that the overall lifestyle had positive correlation with all the domains of quality of life and also with the total overall quality of life. Therefore, it is inferred that lifestyle is related to quality of life of patients before and after CABG, as improvement in lifestyle leads to better quality of life. Hence research hypothesis H<sub>3</sub> is accepted and null hypothesis H<sub>03</sub> is rejected which suggests significant relationship between quality of life and lifestyle before and after CABG.

### Associations

Quality of life had a significant association with monthly income, educational status and marital status. Chi square value computed between quality of life after CABG with clinical variables showed no significant association.

Lifestyle was found to be significantly associated with regard to gender, monthly income, educational status lifestyle was found to be associated. Chi square value computed between lifestyle after CABG with clinical variables showed no significant association.

### Discussion

Many researchers have been conducted in national and international arena to compare the quality of life and lifestyle before and after CABG. The discussion has been presented here in context of objectives and findings of the study have been presented in context of the findings revealed by the other researchers .In the present study there was a significant decrease in the quality of life after CABG (t =2.12; p=0.04) which is inconsistent with a study conducted by **Marsza Neff**<sup>7</sup> according to which results indicated there was an improvement in quality of life although not statistically significant (t value -1.69; p=0.14). In the present study, there was significant decline in physical domain (p=0.01) after CABG, the results are found to be inconsistent to the findings of **J O Hunt et.al (2011)**<sup>8</sup> according to which there was significant improvements in QOL, as were seen in physical functioning (P <.0001), bodily pain (P =.024). In the present study no significant change was found in social domain (0.09) after CABG which is inconsistent to study conducted by **J O Hunt et.al (2011)** according to which there was a significant improvement in social functioning (P =.011). In the present study no significant change was found in psychological domain (0.14) domain after CABG which is inconsistent to study conducted by **J O Hunt et.al (2011)**<sup>9</sup> according to which there was a significant improvement in role limitations resulting from emotional status (P =.003) after CABG. In the present study the mean lifestyle score of patients before CABG was (41.72) and the mean lifestyle score after CABG was 40.97, which reveals that mean lifestyle score of patients before CABG was slightly higher than after CABG. In a study, there was no significant correlation in spiritual and physical domain (r=0.09) which is inconsistent to the findings reported by **Maj-Britt Raholm,et.al**<sup>10</sup> (2003) that the dimensions of spiritual experience and physical well being were significantly related (r=0.46, p<0.0005). The present study revealed that there was no significant association between quality of life after CABG and presence of chronic illness which was inconsistent to the findings of **Geraldine Lee**<sup>11</sup>, which support the view that comorbid illness has a negative effect on physical QOL in people who have undergone CABG. In the present study, gender had no significant association with quality of life after CABG and the results are inconsistent with the study conducted by **Tung .H H(2008) et.al**<sup>12</sup>, who compared to women, men had better quality of life associated with lower anxiety level, greater use of problem focused coping strategies and more gender role responsibility. Difference in the findings could be due to different settings and also in the present study no tool was used to assess the anxiety level and coping strategies. According to **Seyed Khalil Foruzan-Nia**<sup>13</sup> CABG had adverse effect on sexual activity of the patients as evident from the p-value (0.00). This is inconsistent with present study according to which the mean difference between sexual domain before and after CABG was found to be statistically non significant (p=0.13).

**Limitation** The findings of the study cannot be generalized to the population due to the single setting. Recall by patients could not be always reliable as, patients may not be able to recall the previous quality of life and lifestyle properly or may relate it to their present. The tool used for lifestyle was structured and not standardized.

**Implications** Coronary artery bypass grafting is not only a surgical intervention; it also involves physical, psychological, emotional and social problems. Nurses play a pivotal role in rehabilitation of patients who underwent CABG. It is necessary for the nurse to know the existing quality of life (QOL) of patients to plan interventions towards improving quality of life and lifestyle of the patients. This study provides an understanding of quality of life and lifestyle of patients and provides direction for future intervention development, research and clinical practice in areas like Quality of life assessment, developing intervention for CABG patients, management of complications, individualized care, sexual counseling, hope program and support group and family care. Nurse can significantly impact the patient's quality of life through provision of education, encouragement, determining the social, psychological, spiritual needs and promotion of exercise and progressive activity.

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