ORIGINAL ARTICLE

Quality of Life for Post Coronary Artery Bypass Grafting in Saudi Arabia

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Abstract

Objective: Cardiovascular disease is the leading cause of death globally. Patients with coronary artery disease can benefit from a popular surgical surgery called coronary artery bypass grafting, which improves symptoms, mortality rates, and quality of life (QoL), this study aims to assess quality of life for post-coronary artery bypass grafting in Saudi Arabia. **Methodology:** A cross-sectional study was conducted from July 2024 to January 2025. The electronic online questionnaire was published through social media in all regions of Saudi Arabia. It consisted of socio-demographic data, past medical and surgical history, and questions related to QoL. The collected data were analyzed using the Statistical Package for the Social Sciences program version. **Results:** The study was conducted on 402 post-coronary artery bypass grafting patients in Saudi Arabia. The mean age was 57.4 years, with 53.2% males. A high education level was noted, with 63.5% holding a bachelor's degree or higher. Socioeconomic factors were significant, with 40.8% earning over 15,000 SAR monthly. Satisfaction with health was reported by 67.9%, clinical findings showed 84.8% adhered to medications, and 51.5% experienced complications. Psychological well-being improved for 90%. Younger married males had better recovery outcomes. **Conclusion:** While our study demonstrates that a significant proportion of patients operated for coronary artery bypass grafting in Saudi Arabia experience improvements in their quality of life, it also highlights critical areas for intervention, including pain management, lifestyle modification, and financial support.

Key words: Coronary artery bypass grafting, cyclic vomiting syndrome, quality of life

INTRODUCTION

In many wealthy nations, it continues to be one of the worst illnesses, leading to both disability and death.[1] It is concerning because cardiovascular diseases (CVDs) are rising in emerging nations as a result of both disease transition and economic expansion.[1] Patients with CVD, coronary artery disease, can benefit from a popular surgical surgery called coronary artery bypass grafting (CABG), which improves symptoms, mortality rates, and quality of life (QoL).[2] Since Rene Favaloro invented CABG in 1968, the procedure has seen methodological advances, including minimally invasive techniques and off-pump surgery to minimize invasiveness.[3] It is well established that CABG usually improves functional capacity and symptoms, prolongs long-term survival, and reduces catastrophic cardiac events, compared with other medical care or percutaneous coronary therapies.[4]

However, the standard procedure entails sternotomy and occasionally splenectomy, which puts some patients at risk for common side effects such anxiety, depression, physical

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impairment, and isolation.[5] These effects may make patients' QoL either not as good as it was or may deteriorate[6] from 87 patients analyzed within the study.[6] Eighty-seven percent of the patients' low QoL was connected to their overall health, 85% had poor social functioning, and 70% had issues with their physical functioning and energy.[7,8]

The primary reason for conducting this study was to assess the QoL for patients after CABG in Saudi Arabia to enrich the scientific studies published on the same subject with more known and important results and conclusions, especially in the Arab region.

METHODOLOGY

Study design

The present study is a web-based descriptive cross-sectional study. Data were obtained through an online questionnaire directed to the general population in Saudi Arabia.

Participants, recruitment, and sampling procedure

The studied group included people who had CABG surgery from all regions of Saudi Arabia who participated in completing the questionnaire.

Sample size

To determine the bare minimum of responders required to constitute a representative sample for the entire population, sample size calculations were made. The Raosoft sample size calculator was utilized to ascertain the appropriate sample size. With an indicator percentage of 0.50, a 5% margin of error, and a 95% confidence interval (CI), 377 was the estimated sample size.

Inclusion and exclusion criteria

For this study in particular, the following inclusion criteria were all individuals who live in Saudi Arabia who have undergone CABG surgery.

Method for data collection and instrument (data collection technique and tools)

A survey questionnaire designed to assess the QoL for individuals who have undergone CABG surgery in Saudi Arabia. The questionnaire consists of the following key sections:

Informed consent

- This section includes the study title and sub-title, and seeks the participant's consent to participate in the survey. It is provided in both Arabic and English versions
- The consent section informs the participants about the purpose of the study, the duration of the survey (5 min), and the targeted audience (people who have undergone CABG surgery)
- It also assures the participants that their personal information was kept confidential and their responses were used only for research purposes.

Socio-demographic questions

- This section collects the participant's demographic information, such as gender, age, residential area, educational qualification, and income level.
- The questions are presented in both Arabic and English, allowing participants to respond in their preferred language.

Clinical questions

- This section includes questions related to the participant's clinical history, such as whether they are a smoker, the time since their CABG surgery, and their overall health status.

The survey utilizes a combination of closed-ended and open-ended questions to gather both quantitative and qualitative data from the participants. The closed-ended questions, such as gender, residential area, and income level, allow for easy categorization and statistical analysis. The open-ended question, such as age, provides more detailed and nuanced information from the participants.

The data collection method for this survey is a self-administered questionnaire, where the participants are expected to fill out the survey on their own. This approach allows for a larger sample size and reduces the potential for interviewer bias. The use of both Arabic and English versions of the questionnaire ensures accessibility for the target population in Saudi Arabia.

Overall, the survey was designed to gather comprehensive information about the QoL experienced by individuals after undergoing CABG surgery in Saudi Arabia, which can be valuable for understanding the outcomes of this medical intervention and informing future healthcare practices.

Pilot test

It was done to estimate the time needed to complete the sheet and to verify the tool's validity and usefulness. Ten CABG patients had the QoL assessment performed on them. The results of the pilot research were considered, and the tool was revised by specialists. The research did not include patients who participated in the pilot project.

Analyze and entry method

Data were entered on the computer using Microsoft Office Excel (2016) for Windows. The data were then imported

into the Statistical Package for the Social Sciences (SPSS) software, version 20 (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.) for statistical analysis.

RESULTS

Table 1 displays various demographic parameters of the participants with a total number of 402. Participants in this study's demographic profile establish a valuable understanding of CABG patients' post-operative QoL. The mean age for participants (57.4 years) stands out because 22.9% of them were above 64 years old, showing 402 people in the entire study cohort distributed across age groups. Gender distribution within this research shows a nearly equal balance, with males representing 53.2% of participants, because this matches typical patterns from cardiovascular studies. The study participants demonstrated a high level of educational attainment since 63.5% of them possessed bachelor's degrees or higher, which could affect their post-CABG recovery performance because of enhanced health literacy abilities. The study data show an enormous distribution of respondents toward higher income categories because 40.8% of participants earn above 15,000 SAR monthly. Socioeconomic elements might be fundamental in measuring patients' QoL following surgery. Most of the participants identified as married individuals, comprising 73.9% of the total.

As shown in Figure 1, a group of 402 participants in the research allowed investigators to determine essential information about patient contentment with health after CABG. A major subset of 82 participants, equating to 20.4% expressed "very satisfied" attitudes about their health condition, which reflects their positive recovery progress along with their nursing assessment for patient satisfaction health survey. The demographic majority, consisting of 191 participants (47.5%) stated they felt satisfied, indicating mostly positive outcomes. A significant portion of respondents displayed negative transformation outcomes based on their reported dissatisfied and very dissatisfied sentiments, which amounted to 26.1% and 6.0% of the total participants.

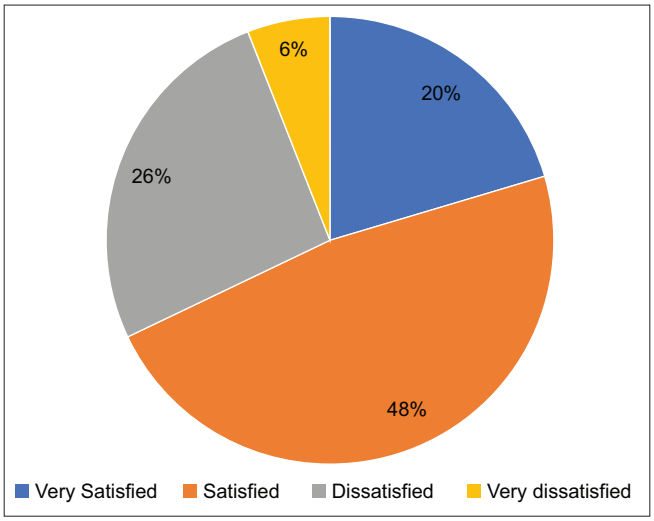

Figure 1: Satisfaction of the health among participants

Table 1: Sociodemographic characteristics of participants (*n*=402)

Parameter	No.	Percentage
Age (Mean: 57.4, Standard deviation: 8.9)		
53 years or less	112	27.9
54–58	109	27.1
59–63	89	22.1
64 or more	92	22.9
Gender		
Female	188	46.8
Male	214	53.2
Educational qualification		
Elementary school	11	2.7
Middle school	23	5.7
High school	97	24.1
Bachelor	184	45.8
Postgraduate studies	71	17.7
I don't have an academic qualification	16	4.0
Residential area		
Northern region	83	20.6
Southern region	54	13.4
Central region	72	17.9
Eastern region	77	19.2
Western region	116	28.9
Monthly income in SAR		
Less than 1000	19	4.7
1000–5000	52	12.9
5001–10000	66	16.4
10001–15000	101	25.1
More than 15000	164	40.8
Job status		
Student	11	2.7
Employed	140	34.8
Unemployed	63	15.7
Businessman	73	18.2
Retired	115	28.6
Marital status		
Single	40	10.0
Married	297	73.9
Divorced	33	8.2
Widowed	32	8.0

As illustrated in Table 2, the clinical parameters of 402 CABG patients' post-surgery appear in Table 2 of the research article to show factors affecting their postoperative QoL. Data revealed that smoking affects half of the participants who were part of the study since 52.5% currently smoked, raising concerns about recovery difficulties and health results. The heart disease diagnosis breakdown reveals the wide range of patient health profiles because ischemic heart disease stands as the primary affliction (37.1%) at the time of CABG surgery. Most of the CABG patients (84.8%) showed adherence to their essential post-operative medications according to self-report about their medication usage. The report presents an alarming finding because health complications following surgery were experienced by 51.5% of patients.

As shown in Figure 2, the research article data deliver valuable knowledge about post-CABG surgical QoL for the entire sample of 402 participants. The study findings demonstrated that medical treatment becomes necessary for 200 patients who make up 49.8% of the total 402 participants during their everyday activities post-surgery. The data revealed a frequent need for medical treatments according to 36.3% (146 participants) of the studied population, and 8.2% (33 individuals) required these services very often. Out of all respondents the minority group that never needs medical care accounts for 5.7% (23 participants).

Table 2: Parameters related to clinical information of patients (*n*=402)

Parameter	No.	Percentage
Are you smoker?		
No	115	28.6
Yes	211	52.5
Ex-smoker	76	18.9
Heart disease		
Hypertensive heart disease	101	25.1
Dilated cardiomyopathy	93	23.1
Ischemic heart disease	149	37.1
Other	59	14.7
Medication intake		
No	61	15.2
Yes	341	84.8
When did you do the surgery?		
Less than 1 year	89	22.1
More than 1 year	91	22.6
More than 2 years	81	20.1
More than 3 years	72	17.9
More than 4 years	44	10.9
More than 5 years	25	6.2
Do you suffer from any health complications after the surgery?		
No	195	48.5
Yes	207	51.5
Do you adhere to taking prescribed medication regularly after the surgery?		
No	44	10.9
Yes	358	89.1

Table 3 presents detailed findings about life quality results from patients who received CABG medical procedures among 402 tested individuals. A considerable percentage of 84.9% of participants noted that they received proper support from family and friends during their recovery period post-CABG procedure. Most of the patients experienced either an excellent or very good QoL after having CABG surgery, according to 59.7% of the respondents. The high rate of 26.1% of participants who are unsatisfied with their health requires continuous support and intervention toward addressing post-surgical challenges. A high percentage of 90% reported better mental and emotional health following CABG surgery, according to study findings about psychological advantages. Many participants demonstrated physical pain levels severe enough to disrupt their daily activities, since 56.8% of them reported physical pain that appeared sometimes or occurred frequently.

As shown in Table 4, the research article delivers important findings regarding participant QoL after undergoing CABG. Most of the participants showed positive results after CABG surgery because they strongly believed their energy levels were sufficient since 75.6% of them reported having enough energy both "very often" and "quite often." Financial challenges seem to affect some patients' postoperative

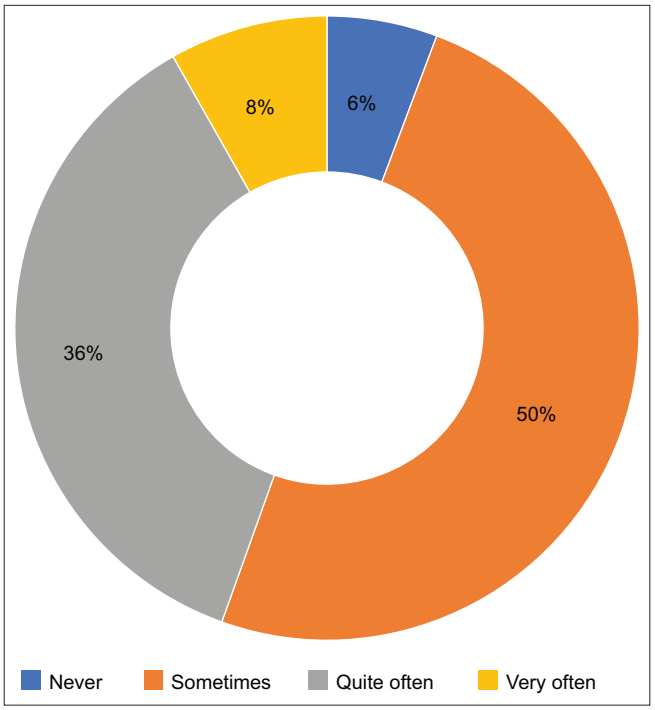

Figure 2: Needing medical treatment among participants

Table 3: Participants' quality of life, assessment of feelings, and experiencing things (*n*=402)

Parameter	No.	Percentage
Do you get the kind of support that you need from others?		
Strongly agree	147	36.6
Agree	194	48.3
Disagree	48	11.9
Strongly disagree	13	3.2
How would you rate your quality of life?		
Excellent	112	27.9
Very good	128	31.8
Good	113	28.1
Poor	41	10.2
Very poor	8	2.0
How satisfied are you with your health?		
Very satisfied	82	20.4
Satisfied	191	47.5
Dissatisfied	105	26.1
Very dissatisfied	24	6.0
How often do you have negative feelings such as (blue mood, despair, anxiety, depression)?		
Very often	27	6.7
Quite often	103	25.6
Sometimes	151	37.6
Never	121	30.1
Have you noticed an improvement in your mental and emotional well-being after the coronary artery bypass grafting surgery?		
No	40	10.0
Yes	362	90.0
To what extent do you feel that physical pain prevents you from doing what you need to do?		
Never	21	5.2
Sometimes	193	48.0
Quite often	155	38.6
Very often	33	8.2
How much do you need any medical treatment to function in your daily life?		
Never	23	5.7
Sometimes	200	49.8
Quite often	146	36.3
Very often	33	8.2
How much do you enjoy your life?		
Never	8	2.0
Sometimes	114	28.4
Quite often	132	32.8
Very often	148	36.8
To what extent do you feel your life is meaningful?		
Never	17	4.2
Sometimes	87	21.6
Quite often	145	36.1
Very often	153	38.1
How well are you able to concentrate?		
Never	12	3.0
Sometimes	103	25.6
Quite often	186	46.3
Very often	101	25.1
How safe do you feel in your daily life?		
Never	8	2.0
Sometimes	96	23.9
Quite often	141	35.1
Very often	157	39.1
How healthy is your physical environment?		
Never	16	4.0
Sometimes	121	30.1
Quite often	150	37.3
Very often	115	28.6

Table 4: Participants' quality of life, ability to do things, and satisfaction regarding various aspects of life (*n*=402)

Parameter	No.	Percentage
Do you have enough energy for everyday life?		
Very often	91	22.6
Quite often	213	53.0
Sometimes	87	21.6
Never	11	2.7
Have you enough money to meet your needs?		
Very often	128	31.8
Quite often	158	39.3
Sometimes	108	26.9
Never	8	2.0
How available to you is the information that you need in your day-to-day life?		
Very often	135	33.6
Quite often	143	35.6
Sometimes	111	27.6
Never	13	3.2
To what extent do you have the opportunity for leisure activities?		
Very often	96	23.9

(Contd...)

Table 4: *(Continued)*

Parameter	No.	Percentage
Quite often	121	30.1
Sometimes	137	34.1
Never	48	11.9
How well are you able to get around?		
Very often	172	42.8
Quite often	139	34.6
Sometimes	82	20.4
Never	9	2.2
How satisfied are you with your sleep?		
Very satisfied	103	25.6
Satisfied	197	49.0
Dissatisfied	87	21.6
Very dissatisfied	15	3.7
How satisfied are you with your ability to perform your daily living activities?		
Very satisfied	121	30.1
Satisfied	166	41.3
Dissatisfied	105	26.1
Very dissatisfied	10	2.5
How satisfied are you with your capacity for work?		
Very satisfied	118	29.4
Satisfied	172	42.8
Dissatisfied	99	24.6
Very dissatisfied	13	3.2
How satisfied are you with yourself?		
Very satisfied	134	33.3
Satisfied	178	44.3
Dissatisfied	81	20.1
Very dissatisfied	9	2.2
How satisfied are you with the conditions of your living space?		
Very satisfied	129	32.1
Satisfied	164	40.8
Dissatisfied	96	23.9
Very dissatisfied	13	3.2
How satisfied are you with your health access?		
Very satisfied	171	42.5
Satisfied	157	39.1
Dissatisfied	62	15.4
Very dissatisfied	12	3.0

well-being because "very often" enough money reports reached just 31.8% of participants. Respondents show frequent access to vital life information, according to 69.2% of participants. A large percentage of patients (77.4%) mention that they move around frequently. Most of the patients expressed dissatisfaction with their sleep quality and performance of daily living activities, as data show 45.5% of patients were not satisfied.

Table 5 shows that QoL has a statistically significant relation to gender (P = 0.006) and age (P = 0.002). It also shows a statistically insignificant relation to educational qualifications, residential area, monthly income, job status, marital status, and smoking. Participants of male gender and aged 53 years or less were found to have a better QoL than others.

Table 6 shows that improvement in mental and emotional well-being after CABG has a statistically significant relation to gender (P = 0.036), age (P = 0.001), marital status (P = 0.001), and smoking (P = 0.017). It also shows a statistically insignificant relation to educational qualification, residential area, monthly income, and job status. Participants of male gender, aged 53 years or less, and married were found to have more improvement in mental and emotional well-being after CABG.

Table 7 shows that energy for everyday life has a statistically significant relation to suffering from health complications after surgery (P = 0.014), adherence to prescribed medications (P = 0.020), and support from others (P = 0.0001). It also shows a statistically insignificant relation to smoking, having heart disease, using medications, and the time of having the surgery. Participants who did not suffer from complications after surgery, adhering to prescribed medications, and getting good support from others had better energy for everyday life than others.

DISCUSSION

This research studied QoL among patients who received CABG procedures in Saudi Arabia. The survey results demonstrate that most patients showed better overall health, but they continue to face challenges mainly due to physical pain, together with health care needs and financial issues. Findings from the Masoumi *et al*. study were substantiated by our research which showed that 90% of patients experienced better mental-emotional health after CABG surgery, maintaining QoL benefits, yet these improvements tapered in later stages.[9] Time plays a vital role in recovery because patients achieve positive first outcomes but need continuous rehabilitation support to maintain improved health status. The findings demonstrated that better post-operative success rates occurred in male patients below 40 years old, which matches the gender disparity reported by Rana *et al*. regarding cardiac rehabilitation QoL enhancement in male patients.[10] Studies show that demographic information requires consideration when monitoring surgical recovery, together with QoL outcomes. Our study revealed that 51.5% of patients developed complications following CABG intervention,

Table 5: Relationship between quality of life and sociodemographic characteristics

Parameters	Quality of life		Total (*n*=402) (%)	*P*-value*
	Good or excellent (%)	Poor (%)		
Gender				
Female	156 (44.2)	32 (65.3)	188 (46.8)	0.006
Male	197 (55.8)	17 (34.7)	214 (53.2)	
Age				
53 years or less	107 (30.3)	5 (10.2)	112 (27.9)	0.002
54–58	97 (27.5)	12 (24.5)	109 (27.1)	
59–63	77 (21.8)	12 (24.5)	89 (22.1)	
64 or more	72 (20.4)	20 (40.8)	92 (22.9)	
Educational qualification				
Elementary school	8 (2.3)	3 (6.1)	11 (2.7)	0.657
Middle school	19 (5.4)	4 (8.2)	23 (5.7)	
High school	85 (24.1)	12 (24.5)	97 (24.1)	
Bachelor	164 (46.5)	20 (40.8)	184 (45.8)	
Postgraduate studies	63 (17.8)	8 (16.3)	71 (17.7)	
I don't have an academic qualification	14 (4.0)	2 (4.1)	16 (4.0)	
Residential area				
Northern region	70 (19.8)	13 (26.5)	83 (20.6)	0.054
Southern region	47 (13.3)	7 (14.3)	54 (13.4)	
Central Region	65 (18.4)	7 (14.3)	72 (17.9)	
Eastern Region	62 (17.6)	15 (30.6)	77 (19.2)	
Western Region	109 (30.9)	7 (14.3)	116 (28.9)	
Monthly income				
Less than 1000SR	18 (5.1)	1 (2.0)	19 (4.7)	0.251
1000–5000	43 (12.2)	9 (18.4)	52 (12.9)	
5001–10000	56 (15.9)	10 (20.4)	66 (16.4)	
10001–15000	86 (24.4)	15 (30.6)	101 (25.1)	
More than 15000	150 (42.5)	14 (28.6)	164 (40.8)	
Job-status				
Student	7 (2.0)	4 (8.2)	11 (2.7)	0.069
Employed	125 (35.4)	15 (30.6)	140 (34.8)	
Unemployed	52 (14.7)	11 (22.4)	63 (15.7)	
Businessman	66 (18.7)	7 (14.3)	73 (18.2)	
Retired	103 (29.2)	12 (24.5)	115 (28.6)	
Marital status				
Single	34 (9.6)	6 (12.2)	40 (10.0)	0.316
Married	266 (75.4)	31 (63.3)	297 (73.9)	
Divorced	27 (7.6)	6 (12.2)	33 (8.2)	
Widowed	26 (7.4)	6 (12.2)	32 (8.0)	
Smoker				
No	102 (28.9)	13 (26.5)	115 (28.6)	0.921
Ex-smoker	67 (19.0)	9 (18.4)	76 (18.9)	
Yes	184 (52.1)	27 (55.1)	211 (52.5)	

**P*-value was considered significant if ≤ 0.05

Table 6: Improve mental and emotional well-being after CABG in association with sociodemographic characteristics

Parameters	Improvement in mental and emotional well-being after CABG		Total (*n*=402) (%)	*P*-value*
	No (%)	Yes (%)		
Gender				
Female	25 (62.5)	163 (45.0)	188 (46.8)	0.036
Male	15 (37.5)	199 (55.0)	214 (53.2)	
Age				
53 years or less	5 (12.5)	107 (29.6)	112 (27.9)	0.001
54–58	10 (25.0)	99 (27.3)	109 (27.1)	
59–63	6 (15.0)	83 (22.9)	89 (22.1)	
64 or more	19 (47.5)	73 (20.2)	92 (22.9)	
Educational qualification				
Elementary school	1 (2.5)	10 (2.8)	11 (2.7)	0.375
Middle school	3 (7.5)	20 (5.5)	23 (5.7)	
High school	11 (27.5)	86 (23.8)	97 (24.1)	
Bachelor	15 (37.5)	169 (46.7)	184 (45.8)	
Postgraduate studies	6 (15.0)	65 (18.0)	71 (17.7)	
I don't have an academic qualification	4 (10.0)	12 (3.3)	16 (4.0)	
Residential area				
Northern region	13 (32.5)	70 (19.3)	83 (20.6)	0.399
Southern region	4 (10.0)	50 (13.8)	54 (13.4)	
Central Region	6 (15.0)	66 (18.2)	72 (17.9)	
Eastern Region	6 (15.0)	71 (19.6)	77 (19.2)	
Western Region	11 (27.5)	105 (29.0)	116 (28.9)	
Monthly income				
Less than 1000SR	3 (7.5)	16 (4.4)	19 (4.7)	0.455
1000– 5000	7 (17.5)	45 (12.4)	52 (12.9)	
5001–10000	9 (22.5)	57 (15.7)	66 (16.4)	
10001–15000	8 (20.0)	93 (25.7)	101 (25.1)	
More than 15000	13 (32.5)	151 (41.7)	164 (40.8)	
Job-status				
Student	3 (7.5)	8 (2.2)	11 (2.7)	0.065
Employed	8 (20.0)	132 (36.5)	140 (34.8)	
Unemployed	7 (17.5)	56 (15.5)	63 (15.7)	
Businessman	6 (15.0)	67 (18.5)	73 (18.2)	
Retired	16 (40.0)	99 (27.3)	115 (28.6)	
Marital status				
Single	7 (17.5)	33 (9.1)	40 (10.0)	0.001
Married	21 (52.5)	276 (76.2)	297 (73.9)	
Divorced	9 (22.5)	24 (6.6)	33 (8.2)	
Widowed	3 (7.5)	29 (8.0)	32 (8.0)	
Smoker				
No	19 (47.5)	96 (26.5)	115 (28.6)	0.017
Ex-smoker	7 (17.5)	69 (19.1)	76 (18.9)	
Yes	14 (35.0)	197 (54.4)	211 (52.5)	

**P*-value was considered significant if ≤0.05. CABG: Coronary artery bypass grafting

Table 7: Energy for everyday life in association with patients' clinical information

Parameters	Energy for everyday life		Total (*n*=402) (%)	*P*-value*
	Never or sometimes (%)	Often or always (%)		
Smoker				
No	28 (28.6)	87 (28.6)	115 (28.6)	0.545
Ex-smoker	15 (15.3)	61 (20.1)	76 (18.9)	
Yes	55 (56.1)	156 (51.3)	211 (52.5)	
Do you have heart disease?				
Dilated cardiomyopathy	21 (21.4)	72 (23.7)	93 (23.1)	0.895
Ischemic heart disease	39 (39.8)	110 (36.2)	149 (37.1)	
Hypertensive heart disease	25 (25.5)	76 (25.0)	101 (25.1)	
Others	13 (13.3)	46 (15.1)	59 (14.7)	
Do you use medication?				
No	14 (14.3)	47 (15.5)	61 (15.2)	0.778
Yes	84 (85.7)	257 (84.5)	341 (84.8)	
When did you have the surgery?				
Less than 1 year	15 (15.3)	74 (24.3)	89 (22.1)	0.472
More than 1 year	23 (23.5)	68 (22.4)	91 (22.6)	
More than 2 years	22 (22.4)	59 (19.4)	81 (20.1)	
More than 3 years	17 (17.3)	55 (18.1)	72 (17.9)	
More than 4 years	13 (13.3)	31 (10.2)	44 (10.9)	
More than 5 years	8 (8.2)	17 (5.60	25 (6.2)	
Do you suffer from any health complications after the surgery?				
No	37 (37.8)	158 (52.0)	195 (48.5)	0.014
Yes	61 (62.2)	146 (48.0)	207 (51.5)	
Do you adhere to taking prescribed medication regularly after the surgery?				
No	17 (17.3)	27 (8.9)	44 (10.9)	0.020
Yes	81 (82.7)	277 (91.1)	358 (89.1)	
Do you get the kind of support that you need from others?				
Strongly agree	19 (19.4)	128 (42.1)	147 (36.6)	0.0001
Agree	49 (50.0)	145 (47.7)	194 (48.3)	
Disagree	23 (23.5)	25 (8.2)	48 (11.9)	
Strongly disagree	7 (7.1)	6 (2.0)	13 (3.2)	

*P-value was considered significant if ≤ 0.05

thus questioning the persistent effectiveness of CABG in this demographic. The study by Ejheisheh *et al*. proved complications create substantial negative effects on health-related QoL in CABG patients.[11] The high complication rate observed during our research could be explained by the high number of smoking participants, since 52.5% identified as smokers. Study findings regarding patient surgical outcomes create concern since smoking has established negative effects on these outcomes, according to Sharma *et al*. reports about pre-operative smoking cessation programs.[12] Smoking intervention and lifestyle modification hold essential value in improving both QoL and post-operative recovery. The research revealed that 84.8% of participants followed their medications correctly, but medication adherence showed a meaningful connection (P = 0.020) to post-surgical energy levels. Dens validates this research through his studies on medication compliance as an essential factor for better CABG patient outcomes.[13] Medication adherence and QoL establish a critical link that Healthcare providers must start focusing on educating patients about essential post-operative pharmacotherapy. Our findings showed that social support is essential for recovery following the operation, since 84.9% of respondents received proper family and friendship assistance. Guo's study confirms the findings by showing social support functions as an important factor for anxiety reduction and improved cardiac surgery patient recovery.[14] Our findings displayed positive results, yet physical pain and unhappy sleep quality remained widespread because 56.8% of participants experienced pain that limited their daily tasks. Multiple studies show that effective postoperative

pain control represents an essential element in CABG patient care.[15] The high rate of patient dissatisfaction regarding sleep quality (45.5%) creates a serious concern because sleep disturbances adversely impact recovery, along with QoL. The research conducted by Jere and Mistry proves the link between sleep quality and functional capacity, so healthcare providers must manage both physical and psychological aspects of recovery in their postoperative care plan.[16] The survey revealed financial stability as a problem since 31.8% of patients stated their resources matched their needs. The study results parallel Cohen *et al*.'s academic research, which showed cardiac procedures create economic strain and then negatively affect QoL.[17] Patients who experience financial challenges following CABG surgery face additional stress that delays their recovery, thus health providers need to implement post-operative financial counseling as part of procedural plans.

The cross-sectional design of this study hinders researchers from establishing direct cause-and-effect relationships regarding multiple variables' impact on QoL measurements. Patients who report their health data might introduce biases because they may give inflated data regarding their health improvements and underestimate the complications they experience. Future longitudinal research should be pursued to fully assess how CABG procedures affect patient QoL through time and identify successful treatment approaches that boost recovery outcomes for this patient group.

CONCLUSION

While our study demonstrates that a significant proportion of post-CABG patients in Saudi Arabia experience improvements in their QoL, it also highlights critical areas for intervention, including pain management, lifestyle modification, and financial support. The findings underscore the necessity for a multidisciplinary approach to post-operative care that addresses the diverse needs of patients, ultimately aiming to enhance their overall well-being and QoL.

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ETHICAL APPROVAL

Informed consent was obtained from each participant after explaining the study in full and clarifying that participation was voluntary. Data collected were securely saved and used for research purposes only.

INFORMED CONSENT

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

DATA AND MATERIALS AVAILABILITY

All data associated with this study are present in the paper.

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