

Assessment of Patients' Knowledge and Lifestyle Before Coronary Artery Bypass Grafting Surgery

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Abstract

Background: Adhering to a healthy lifestyle post coronary artery bypass grafting surgery is associated with a lower risk for complications, including coronary heart disease, stroke, sudden cardiac death and infections. Thus, promoting adherence to a healthy lifestyle has the potential to not only substantially reduce the burden of patients but could be a simple, but important, strategy to lower overall morbidity and premature death in cardiac patients. **Aim:** the study aims to assess patients' knowledge and lifestyle before coronary artery bypass grafting' surgery. **Study design:** A descriptive research design. **Setting:** The study was conducted at cardiac outpatient clinics, inpatient units, and post cardiothoracic surgery intensive care unit (ICU) in Academic institute for heart surgery affiliated to Ain Shams University Hospital. **Study subjects:** A purposive sample of 60 patients undergoing coronary artery bypass grafting' surgery. **Results:** the mean age of the study group was (54.86±5.03), 33.35% of the study subject had satisfactory level of total knowledge. While 66.65% of the study subjects had unsatisfactory level of total knowledge and 58.35% of the study subject had unhealthy lifestyle behaviors. While 10% of the study subjects had unhealthy lifestyle behaviors. **Conclusion:** the patients had unsatisfactory level of knowledge, and unhealthy lifestyle behaviors before CABG surgery. **Recommendation:** Designing and implementing continuous educational guidelines in other media such as: social media and mobiles applications to improve lifestyle behaviors for patients undergoing CABG surgeries.

Keywords: lifestyle modification, CABG surgery, patients' outcomes.

Introduction

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 (Martin & Turkelson 2016).

After CABG surgeries healthy lifestyle was associated with significant reductions in the incidence of recurrence of coronary heart disease and clinical risk factors, including diabetes, hypertension, and hypercholesterolemia. Adhering to a healthy

lifestyle is associated with a lower risk for complications, including coronary heart disease, stroke, sudden cardiac death and infections. Thus, promoting adherence to a healthy lifestyle has the potential to not only substantially reduce the burden of post-CABG patients but could be a simple, but important, strategy to lower overall morbidity and premature death in cardiac patients (Ali, Yasir, Sherwani, Fareed, Arshad, Abid & Muhammad 2017).

Significance of the study :

Worldwide, each year more than 300,000 patients are undergoing CABG

surgery. Approximately one-fifth of them will have recurrence of coronary heart disease symptoms within the first 5 years. This risk increases with age and is higher among women. Up to 30% will have angina in the first postoperative year, increased risk for myocardial infarction, and greater need for re-operation (Saboula, Hussein & Habouh, 2020).

Aim of the study:

This study aims to evaluate the effect of educational guidelines on lifestyle modification and clinical outcomes for patients undergoing coronary artery bypass grafting' surgery through the followings:

1. Assessing knowledge for patients undergoing coronary artery bypass grafting' surgery.
2. Assessing lifestyle for patients undergoing coronary artery bypass grafting' surgery .

Research Questions:

To fulfill the aims of current study the following research questions were formulated:

1. What are the level of knowledge for patients undergoing coronary artery bypass grafting surgery?
2. What are the level of lifestyle for patients undergoing coronary artery bypass grafting surgery?

Method

Research design:

In the present study, a descriptive design was utilized.

Setting:

The study was conducted at cardiac outpatient clinics, inpatient units and post open heart intensive care unit in Academic institute for heart surgery affiliated to Ain Shams University Hospital, Cairo, Egypt.

Subjects:

A purposive sample of 60 postoperative patients undergoing coronary artery bypass grafting' surgery, from the previously mentioned setting. The study subjects were selected according to certain inclusion criteria. Type I error with significant level alpha (α) = 0.01 (confidence level 99%). The inclusion criteria were (1) Adult patients, from both genders, prepared to CABG surgery, with no neurological or mental disorders, (2) Patients who are able to comprehend instructions, (3) Patients who are not exposed to any educational or learning experience previously related to CABG surgery, (4) Patients who will agree to participate in the study.

Tools of data collection include:

(A) Patients' interviewing questionnaire which divided into three parts; socio-demographic data of patients undergoing CABG surgery; medical health profile of patients; and patients' knowledge regarding coronary artery disease, CABG surgeries, lifestyle modification and self-care after CABG surgery. It was developed by the researcher after reviewing the related literatures (Wadie, Shaheen & Nashat 2013; Hinkle & Cheever 2018). Regarding scoring of patients' knowledge

assessment questionnaire, the correct answer had got one score while the wrong one had got zero. The scores of each statement were summed up giving a total score, then the total score for all the knowledge questionnaire were calculated and categorized as follows; scores less than 45 (< 75%) was unsatisfactory and scores equal or more than 45 ($\geq 75\%$) was satisfactory. (B) Lifestyle Indicator questionnaire was a standard tool adapted from (Godwin, Streight, Dyachuk, Hooven, Ploemacher, Seguin & Cuthbertson 2008) to assess patient' lifestyle behaviors before CABG surgery, including diet, exercise, alcohol consumption, smoking habits, life stress and medication habits, lifestyle total score on a scale of 0 to 12, were categorized as unhealthy (0-4), intermediate (5-8), or healthy lifestyle (9-12).

The phases of data collection started by selecting patients who are met the inclusion criteria. The aim and nature of the study was explained to patients. Patients' interviewing questionnaire and lifestyle indicator questionnaire were filled by all the patients within 30 to 40 minutes for every patient. Data collection process continues for a period of eight months starting from January 2020 to August 2020.

Statistical analysis:

Data were transferred into SPSS for window, version 20.0 Armonk, NY: IBM Crop. Quantitative data were presented as mean and standard deviation (SD) to present normally distributed continuous variables. A chi-square test χ^2 was used to

compare categorical data to determine the differences before and after implementation of lifestyle modification module. The significance of the observed difference was obtained at P value ≤ 0.05 .

Results

Patients' socio-demographic characteristics of patients under the study, the mean age of the study subjects was (54.86 \pm 5.03). Regarding the gender, the current study showed that 91.65 % of the study subject were males. As regard marital status, 90% of the study subjects were married. In addition 86.6% of the study subjects didn't have enough income for treatment.

Table (1): Patients' knowledge: revealed that the satisfactory level of knowledge including patient knowledge regarding CAD, CABG, lifestyle modification and patient knowledge regarding self-care after CABG were (45%, 20%, 41.66% & 25%) respectively.

Figure (1): Regarding the satisfactory level of total knowledge, figure (1) showed that 33.33% of the study subject had a satisfactory level of total knowledge. While 66.66% of the study subjects had an unsatisfactory level of total knowledge.

Table (2): Patients' lifestyle behaviors: Regarding the lifestyle behaviors, shows that, the study subjects' unhealthy lifestyle behaviors including diet, exercise, alcohol consumption, smoking, stress and medication adherence were (25%, 85%, 5%, 50%, 40% & 20%) respectively.

Figure (2): Regarding the total lifestyle behaviors, showed that 58.35% of the study subject had unhealthy lifestyle behaviors. While only 10% of the study subjects had healthy lifestyle behaviors.

Table (1): Differences between study and control group subjects regarding satisfactory level of knowledge' items.

| Items of knowledge | Before CABG surgery | | | | | |
|---|---------------------|-----|----------------|-----|-------|------|
| | Control N= 30 | | Study N= 30 | | Total | |
| | N | % | N | % | N | % |
| Patient knowledge regarding CAD | 1 | 40. | 1 | 50. | 2 | 45 |
| | 2 | 0 | 5 | 0 | 7 | |
| Patient knowledge regarding CABG surgeries | 5 | 16. | 7 | 23. | 1 | 20 |
| | | 7 | 3 | | 2 | |
| Patient knowledge regarding lifestyle modification | 1 | 40. | 1 | 43. | 2 | 41.6 |
| | 2 | 0 | 3 | 3 | 5 | 6 |
| Patient knowledge regarding self-care after the surgery | 8 | 26. | 7 | 23. | 1 | 25 |
| | | 7 | 3 | | 5 | |
| Total knowledge | 9 | 30 | 1 | 36. | 2 | 33.3 |
| | | | 7 | | 0 | 3 |

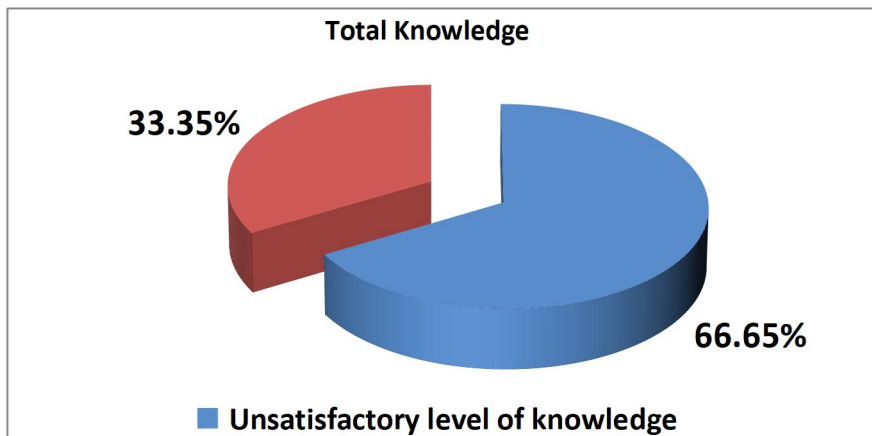
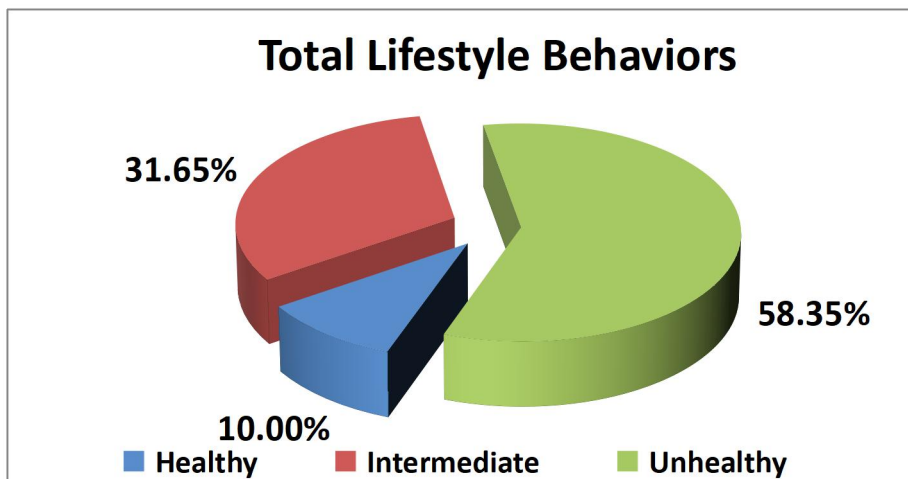


Figure (1): Percentage distribution of study subjects regarding satisfactory level of total knowledge

Table (2): Differences between study and control group subjects regarding lifestyle behaviors.

| | Before CABG surgery | | | | | |
|----------------------------|------------------------|------|-----------------------|------|-------|-------|
| | Control group N =30 | | Study group N = 30 | | Total | |
| | N | % | N | % | N | % |
| Diet | | | | | | |
| Unhealthy | 7 | 23.3 | 8 | 26.7 | 15 | 25 |
| Intermediate | 23 | 76.7 | 22 | 73.3 | 45 | 75 |
| Healthy | 0 | 0 | 0 | 0 | 0 | 0 |
| Exercise | | | | | | |
| unhealthy | 27 | 90 | 24 | 80 | 51 | 85 |
| intermediate | 3 | 10 | 6 | 20 | 9 | 15 |
| healthy | 0 | 0 | 0 | 0 | 0 | 0 |
| Alcohol consumption | | | | | | |
| unhealthy | 2 | 6.7 | 1 | 3.3 | 3 | 5 |
| intermediate | 7 | 23.3 | 4 | 13.3 | 11 | 18.3 |
| healthy | 21 | 70 | 25 | 83.3 | 46 | 76.65 |
| Smoking | | | | | | |
| unhealthy | 16 | 53.3 | 14 | 46.7 | 30 | 50 |
| intermediate | 6 | 20 | 7 | 23.3 | 13 | 21.65 |
| healthy | 8 | 26.7 | 9 | 30 | 17 | 28.35 |
| Stress | | | | | | |
| unhealthy | 12 | 40 | 12 | 40 | 24 | 40 |
| intermediate | 12 | 40 | 14 | 46.7 | 26 | 43.35 |
| healthy | 6 | 20 | 4 | 13.3 | 10 | 16.65 |
| Medication | | | | | | |
| unhealthy | 4 | 13.3 | 8 | 26.7 | 12 | 20 |
| intermediate | 19 | 63.3 | 16 | 53.3 | 35 | 58.3 |
| healthy | 7 | 23.3 | 6 | 20 | 13 | 21.65 |

**Figure (2):** Percentage distribution of study subjects regarding total lifestyle behaviors.

Discussion

Regarding the socio-demographic characteristics of patients under the study, the finding of this study revealed that the mean age of the study group was (54.86 ± 5.03) . These results are in agreement with Fakhry, Balbaa, Senna, and Saleh, (2020), who studied "Timing of coronary artery bypass grafting surgery after acute myocardial infarction" that was conducted in Kasr Al-Ainy University Hospitals", and mentioned that the mean of age of patient undergoing CABG surgery was (58.4 ± 7.3) years.

In addition, the current study showed that the majority of the study subjects were males. This might be due to the elevation of the incidence of coronary artery disease among males than females. These results are similar to the results of Abd Allah, Bakr, Abdallah Abdelrahman, Taha and Kamel, (2020), in a study titled " Preoperative left stellate ganglion block: Does it offer arrhythmia-protection during off-pump CABG surgery? A randomized clinical trial" that was conducted in Assiut, Egypt, and reported that the majority of study subjects were males.

Regarding the satisfactory level of total knowledge, the current study showed that about one third of the study subject had a satisfactory level of total knowledge while two thirds of the study subjects had an unsatisfactory level of total knowledge. This result is in agreement with Torknejad, Babaei and Mirmohammadsadeghi, (2020), who studied "Effect of an educational intervention based on BASNEF model on treatment adherence after coronary artery bypass surgery", and found that, the mean score of knowledge of the patients was unsatisfactory before the intervention.

The present study revealed that more than half of the study subjects were practicing unhealthy lifestyle behaviors, while the minority of the study subjects were practicing a healthy lifestyle behaviors. This result is in accordance with Safabakhsh, Arbabisarjou, Jahantigh, Nazemzadeh, Rigi, and Nosratzahi, (2016), in a study titled "The effect of health promoting programs on patient's lifestyle after coronary artery bypass graft-hospitalized in Shiraz hospitals" and mentioned that the study subjects had unhealthy lifestyle before implementing the Health Promotion Program (HPP).

Conclusion

Based on findings of the current study, it can be concluded that, the patients had unsatisfactory level of knowledge, and unhealthy lifestyle behaviors before CABG surgery.

Recommendation

The result of this study projected the following recommendations:

Recommendations related to education:

- Designing and implementing systemically educational guidelines for patients undergoing CABG surgery in the hospitals.
- Developing and dissemination of educational guidelines in media such as: social media and mobiles applications to improve lifestyle behaviors and reduce the cardiac risk factors among patients with CABG.
- A simplified, comprehensive, and illustrated Arabic language guided booklet with images should be submitted to each newly admitted patient before CABG surgery.

Recommendations related to research:

- Replication of the current study on a larger sample in different geographic areas is recommended to achieve generalization of the results and wider utilization of educational guidelines.

Recommendations related to nursing service:

- Establish periodical in-service education for nursing staff that help in proper management for CABG patient to improve their lifestyle and outcomes.

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Ethical Clearance:

Institutional ethical committee obtained for the study.

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self

Conflict of Interest:

None

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