

## Impact of Comprehensive Discharge Program on Patients' Outcomes after Open Heart Surgery

<sup>1</sup> Esraa Mahmoud Abdallah, <sup>2</sup> Marwa Moustafa Hegazy, <sup>3</sup> Sabah Saied Mohamed, <sup>4</sup> Rasha Fathy Mohamed

(1) Assistant lecture of Medical Surgical Nursing, Faculty of Nursing, Ain Shams University, Egypt, (2) Professor of Medical Surgical Nursing, Faculty of Nursing, Benha university and (3,4) Assistant professor of Medical Surgical Nursing, Faculty of Nursing, Benha University, Egypt.

### Abstract

**Background:** The discharge program for cardiac surgery patients is a key element in the care of patients. **Aim:** This study aimed to evaluate the impact of comprehensive discharge program on patients' outcomes after open heart surgery. **Design:** Quasi-experimental research design. **Setting:** This study was conducted in Cardiovascular Surgery Unit and Outpatient Clinic at Benha University Hospital & Nasser Institute. **Study subjects:** 150 patients were scheduled for open heart surgery. **Data collection tools:** It was involved three tools. I: Patients' assessment questionnaire to assess patients' socio-demographic characteristics, medical history, patient knowledge regarding open heart surgery and nursing discharge instructions. II: Patient' outcomes assessment to assess patients' outcomes and consists two parts (patient' outcomes record & activity of daily living). III: The perceived stress scale to evaluate how different situations affect patients' feelings and the thoughts. **Results:** 13.3% of studied patients had satisfactory total knowledge regarding open heart surgery pre-program implementation whenever, improved to 88 % post program implementation and slightly decreased to 85.3% Follow-up program implementation, concerning total stress level for patients, 52.0 % of studied patients had a high total stress level pre-program implementation whenever, 55.3 % and 52% of them had a moderate and low total stress level post program and follow-up program implementation respectively, concerning total out-comes for the patients, 14 % of studied patients had satisfactory total out-comes pre-program implementation whenever, improved to 84.0 % post program implementation and slightly decreased to 83.3 % follow up program implementation. **Conclusion:** Implementation of the educational program has highly significant positive effect on total knowledge, total stress scale and clinical outcomes for the patients undergoing open heart surgery, which support the study hypothesis. **Recommendations:** The effective education and information are required to enhance understanding of pre & post-operative care and equip the open-heart care unit and at outpatient clinic with simple illustrated guidelines protocol or program covering the comprehensive discharge instructions for open heart surgery patient's.

**Keywords:** Discharge program, Open heart surgery, Patients' outcomes.

### Introduction

Open Heart Surgery (OHS) become the standard of care for patients with multi vessel coronary artery disease. The most common kind of heart surgery is Coronary Artery Bypass Graft surgery (CABG), it is an

effective modality for the management of a subset of coronary artery diseases patient. Correct congenital heart disease or treat valvular heart disease created by different causes including endocarditis. It also includes heart transplantation. Open heart surgery is a

major operation that requires close monitoring and immediate post-operative support (**Kamarajah et al., 2020**).

Measuring outcomes of the open-heart surgery might be done through indicators like ADLs and wound healing. Traditional outcomes measures include successful operation, incidence of serious complications like stroke, myocardial infarction, bleeding or death, normal vital signs, body weight and normal blood values like blood glucose level (**Mohammad, 2022**).

Hospital discharge planning indicates that this is a process that occurs between admission to the hospital and the discharge event. Prehospital reporting is as important as the start of the discharge planning process: it offers the opportunity to summarize the visit, teach patients how to take care of themselves at home and address any remaining questions or concerns. Resignation planning helps patients communicate with health care professionals and primary care providers on the best way to manage their chronic needs after leaving the hospital (**Graham et al., 2019**).

Educating the patient and family is the responsibility of the nursing, which is one of the most important aspects of patient preparation for discharge, and should take place during the period of stay in the hospital and don't wait until the last minute. Every day, patients must be educated about drugs, including pain medication, forecasts about activity levels, diet, Sternal precautions, and care for incisions, signs and symptoms of infection. Patients should be involved in their care as much as they are able. Families should be participated when possible, particularly family members who will take care of patients at home (**Jabr et al., 2022**).

### **Significant of the Study**

Heart surgery is one of the most effective methods in treating cardiovascular diseases, more than 50% of patients have problems in personal, social, and professional adaptation after surgery. (**Zinchenko et al., 2019**).

However, in Egypt there is no national statistics available about open heart surgery, meanwhile the medical records of post open heart surgery at Nasser Institute hospital revealed that the number of patients who was admitted in year 2019 was 2040 patients. Neglecting of discharge instructions after open heart surgery can cause physical, social and psychological problems so implementing educational program for those patients will lead to improve their lifestyles. Nurses play an important role in the assessment of patients' needs and teach them to have better outcomes, living longer and enjoy of life.

### **Aim of the study**

The aim of the current study was to evaluate the impact of comprehensive discharge program on patients' outcomes after open heart surgery

### **Research Hypothesis**

The study hypothesized that:

- H1: There will be positive improvement in patients' knowledge & outcomes post implementing the educational program.
- H2: The level of stress for open heart patients will be decreased post program compare with preprogram.

### **Subjects and Methods**

#### **Study design:**

Quasi- experimental design used to conduct this study.

#### **Setting:-**

This study was conducted in cardiovascular surgery unit and outpatient clinic at Benha University Hospital & Nasser Institute.

- At Benha University Hospital, cardiovascular surgery unit located at third floor in medicine building and

## Impact of Comprehensive Discharge Program on Patients' Outcomes after Open Heart Surgery

consisted of two rooms, each room contains five beds.

- At Nasser Institute Hospital, cardiovascular surgery unit at second floor consisted of sixteen room, nine of them containing two beds and the other seven containing one bed.

### **Subjects:-**

All available patients scheduled for open heart surgery (Convenient sample) for six months, they were 150 adult patients (22 patients at Benha university hospital & 128 patients at Nasr institute hospital)

### **Tools of data collection:**

#### **Tool one: Patients' Assessment Questionnaire:**

It was be used to assess patients' socio-demographic characteristics, medical history, patient knowledge regarding the open heart surgery and nursing discharge instructions which developed by researcher based on reviewing of literature such as **Zhao,(2014), Doering et al., (2018)** and **Gouge, (2017)**, it would be consisted of four parts:

**1-Socio-demographic variables** such as patients' age, sex, marital status, educational level, occupation, date and type of surgery.

**2- Medical history** such as present and past medical history.

**3- Patients' knowledge regarding open heart surgery.**

**4- Assessment of nursing discharge program.**

**-Scoring system:** the scores were distributed as one score for correct answer and zero score for incorrect answer.

- ❖ **According to statistical report it was distributed as:**
  - 70% and above considered as satisfactory (36-51 score).
  - Below 70% considered as unsatisfactory (0-35 score).

**Tool two: Patient' outcomes assessment:** It was developed by the researcher based on reviewing of literature such as **Moorhead et al.,(2018), Stone et al.,(2019), Werner et al.,(2019)** and **Guo and Sapra,(2020)** to assess patients' outcomes and consists of two parts

**1- Patient' outcomes record:** used to assess patients' outcomes such as vital signs, body weight, lipid profile, blood glucose level and coagulation profile.

❖ **-Scoring system:** the scores were distributed as 1 for normal level and 0 for abnormal level.

❖ **According to statistical report it was distributed as:**

- 70% and above considered as satisfactory (21-29 grads).
- Below 70% considered as unsatisfactory (0-20 grads).

**2- Activity of daily living:** used to assess patients' ability to perform activities.

**- Scoring system:** the scores were distributed as 2 score for completely independent, 1 score for requires assistive person or device & zero score for dependent (does not participate).

**According to statistical report it was distributed as:**

- 70% and above considered as satisfactory (12-16 grads).
- Below 70% considered as unsatisfactory (0-11 grads).

#### **Tool three The Perceived Stress Scale (PSS):**

It was standardizing tool by **Cohen et al, 1994**; it was be used to evaluate how different situations affect patients' feelings and the thoughts.

**-Scoring system:** The scores were be distributed as 0- never & 1- almost never & 2- sometimes & 3- fairly often & 4- very often

Individual scores on the PSS can range from 0 to 40 with higher scores indicating higher perceived stress.

► Scores ranging from 0-13 would be considered low stress.

► Scores ranging from 14-26 would be considered moderate stress.

► Scores ranging from 27-40 would be considered high perceived stress.

### **Educational program**

It was designed by the researcher according to assessment of patients' needs after reviewing the related literature consisted of six sessions.

**Theoretical discharge** instructions include the basic information about open heart surgery such as introduction about heart disease, modifiable and non-modifiable risk factors of heart disease, indication of open heart surgery, activity restrictions after surgery, signs and symptoms of infections may occur, guidelines for infection prevention, diet, medication instructions, and directions for continued medical supervision after discharge.

**Practical guidelines** included practical steps regarding wound care, wound protection after surgery during movement, proper setting, standing, coughing, deep breathing exercises, upper and lower limb exercises, walking in addition to performance of activities of daily living including bathing, driving and homework.

### **Validity and reliability:**

The revision of the tools was done by a panel of seven medical surgical nursing expertise to test the relevance and clarity of contents and minor modifications were done in the form of rephrasing and organization of some questions (one professor, three assistant professors and three lectures).

Testing reliability of proposed tools was done by Cronbach's alpha test. It was used to examine whether the questionnaire had internal consistency (tests reached 0.933 for knowledge questionnaire, 0.83 for perceived

stress scale (PSS), 0.792 for outcomes questionnaire & 0.978 for daily living activities) which indicates acceptable reliability.

### **Ethical consideration:**

- The research approval obtained from the ethical committee before starting the study from dean of faculty of nursing Benah University. The researcher clarified the objective and aim of the study to patients included in the study.

-The researcher assured maintaining anonymity and confidentiality of patients' data.

- Patients informed that they are allowed to choose to participate or withdraw from the study at any time.

### **Pilot study:**

It was done on 10 % of the studied patients (15 patients) to assess the applicability of the study tools and estimate the proper time required for answering the required data. All participants in the pilot study were excluded from the main study.

### **Field work:**

#### **A-Assessment phase:**

1. Assessment of patients' knowledge regarding open heart surgery and discharge instructions was being done. This assessment shed light on current knowledge to detect the defect and help in developing the educational program according to results.
2. The study sample was 150 patients as a follow:
  - \* At Benha university hospital (22patients).
  - \* At Nasser institute hospital (128 patients).
3. The study was done during morning & Afternoon shifts three times weekly during the time of the study (one year) started from beginning of May 2020 till May 2021.

## Impact of Comprehensive Discharge Program on Patients' Outcomes after Open Heart Surgery

4. Interview with available patients to explain the aim of the study, the effect of this study on their recovery after discharge and take their approval to participate in the study prior to data collection.
  5. The researcher collected data about physical assessments, stress perceived scale and Patient' outcomes assessment record by using questionnaires before developing the educational program by using tool I, II and III.
  6. The researcher set up a teaching session plan covering all objectives, these objectives were categorized into general and specific objectives. The sessions were conducted at patients' rooms in the inpatient unit and outpatient clinic.
  7. The discharge instructions were discussed with the patients by the researcher individually. Each session took approximately 15-30 minutes. The researcher demonstrated the practical part of the discharge instructions using the available equipment, videos, and booklet.
- 3- Informing nurses with time table chart to keep patients in ward and provide the researcher with any needed supplies.
  - 4- Conducting the program.
  - 5- The program consisted of (6) sessions.
    - ❖ session one which discuss educational program contents, knowledge about anatomy of the heart, function of the heart, heart disease and causes of heart disease.
    - ❖ session two which discuss information about open heart surgery, causes of open-heart surgery, necessary tests before open heart surgery, illustrate how to prepare for the operation, precautions after open heart surgery and risks of having an open heart surgery.
    - ❖ Session three discuss necessary knowledge and practice about wound care at chest, chest wound protection, wound care at leg and the instructions for healing sternum.
    - ❖ Session four discuss necessary knowledge and practice about points should be remembered before exercising, benefits of early exercise, types of exercises that the patient will do after open heart surgery, your body's natural and unnatural response to exercise.
    - ❖ Session five also discuss necessary knowledge and practice about what to do and what not to do after operation, safe home activity during the first six weeks, emotional adaptation and postoperative diet.
    - ❖ Session six discuss necessary knowledge and practice about home medications after valvular surgery & CABG, special instructions after valvular surgery, hospital discharge instructions and cases

### **B-Planning phase:**

The researcher was collect data about the study setting to put plan for carrying out the study. Educational program was be developed by the researcher according to patients' needs, moreover teaching materials e.g (discussion, demonstration and booklet) was be prepared to help in covering theoretical and practical information

### **C-Implementation phase:**

- 1- Maintenance of administration acceptance.
- 2- Timing the program implementation which was in the morning and/or afternoon shifts (after 9 AM until 5 PM o'clock).

that need to come to the emergency department.

**D-Evaluation phase:**

This phase used to evaluate the effect of the comprehensive discharge program on patients' outcomes after open heart surgery using the same mentioned tools as following:

- Post- test→ immediately of the implementing the program by using tool I, II and III.
- Follow up→ after 3 months of the implementing the program by using tool I, II and III.

**Statistical Analysis:**

Data presented in the form of tables and figures using the Statistical Package for Social Sciences version 21.0 (SPSS). Qualitative variables were presented in the form of frequencies and percentages, quantitative variables were presented in the form mean and SD. Test of significance were used to find out associations between study variables. Chi-square ( $\chi^2$ ) test of significance was used in order to compare proportions between two qualitative parameters. Spearman's rank correlation coefficient (r) was used to assess the correlation between two variables. The confidence interval was set to 95% and the margin of error accepted was set to 5%. The p-value was considered significant as the following:

P value  $<0.05^*$  was considered significant (S), P value  $<0.001^{**}$  was considered as highly significant (HS) and P value  $>0.05$  was considered nonsignificant (NS).

**Results:-**

**Table (1)** illustrates that 60.7% of studied patients were males and 48.0% aged from  $41 \leq 60$  with mean age  $50.8 \pm 16.62$  years old, regarding marital status 66.7% of them were married moreover, 38.7% had intermediate educational level, 51.3% of them were housewives /not working or retired and 77.3% of the patients were from rural areas.

**Figure (1)** illustrates that 13.3% of studied patients had satisfactory total knowledge regarding open heart surgery pre-program implementation whenever, 88.8% of them had satisfactory knowledge post and 85.3% had satisfactory knowledge Follow-up program implementation respectively.

**Figure (2)** illustrated that 52.0% of studied patients had a high total stress level pre-program implementation whenever, 55.3% of them had a moderate total stress level post program implementation and 52.0% of them had a low total stress level follow-up program implementation.

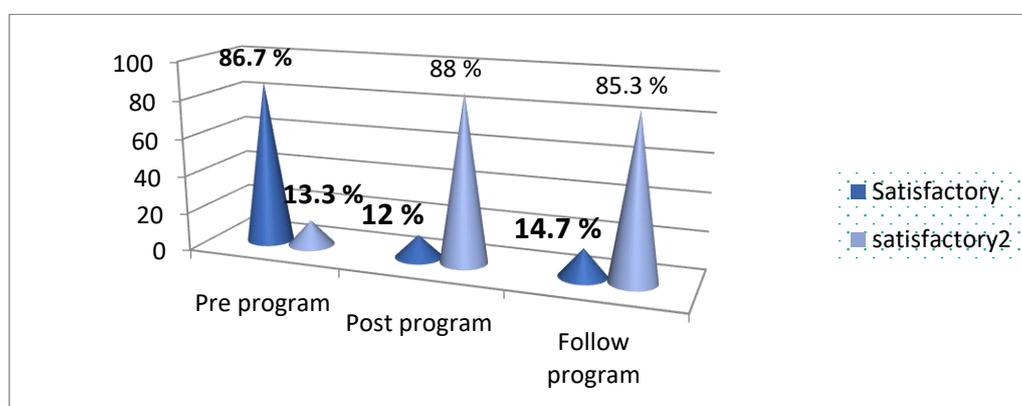
**Figure (3)** illustrates 14% of studied patients had satisfactory total out-comes pre-program implementation whenever, 84% of them had satisfactory total out-comes post and 83.3% of them had satisfactory total out-comes follow-up program implementation respectively.

**Table (2)** shows that there was statistically significant positive correlation between patients' total knowledge and patients total out-comes post program implementation ( $p < 0.05^*$ ) whenever there was highly statistically significant positive correlation between patients' total knowledge and total patients out-comes follow-up program implementation ( $p < 0.001^{**}$ ). Also, there were statistically nonsignificant correlation between patients' total stress and their total (outcomes & knowledge) preprogram implementation ( $p > 0.05$ ) and also there were highly statistical significant correlation between total stress and total (outcomes & knowledge) follow up program implementation ( $p < 0.001^{**}$ ).

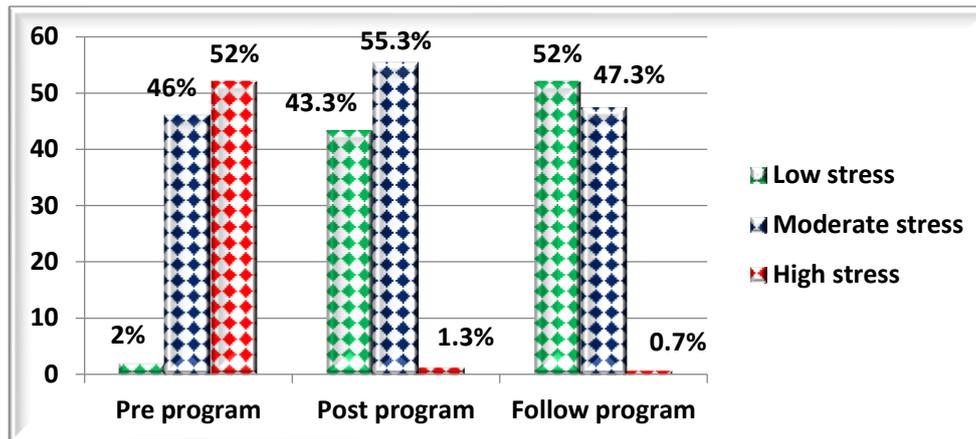
## Impact of Comprehensive Discharge Program on Patients' Outcomes after Open Heart Surgery

**Table (1): Frequency and percentage distribution of studied patients' according to their demographic characteristics (N=150).**

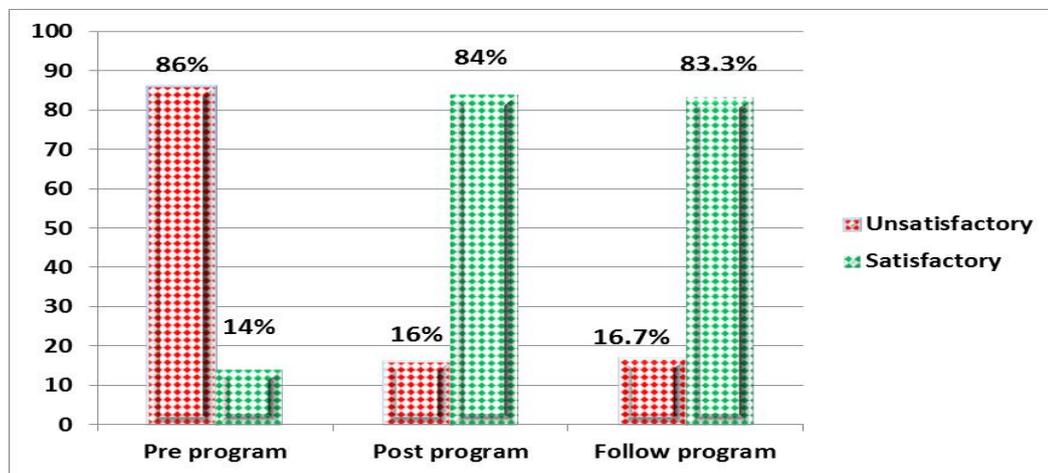
Demographic characteristics	No	%
<b>*Gender</b>		
Male	91	<b>60.7</b>
Female	59	39.3
<b>*Age</b>		
20≤40	36	24.0
41≤60	72	<b>48.0</b>
>60	42	28.0
Mean ±SD 50.8 ± 16.62		
<b>Marital Status</b>		
Single	16	10.7
Married	100	<b>66.7</b>
Widow	20	13.3
Divorced	14	9.3
<b>*Educational level</b>		
Illiterate	16	10.7
Read and write	51	34.0
Intermediate learning	58	<b>38.7</b>
High educated or more	25	16.7
<b>*Occupation</b>		
Clerical work	52	34.7
Manual work	21	14
Housewife/not working or retired	77	<b>51.3</b>
<b>*Residence</b>		
Rural	34	22.7
Urban	116	<b>77.3</b>



**Figure (1): Distribution of studied patients according to total knowledge regarding open heart surgery pre, post & follow-up program implementation (n=150).**



**Figure (2):** Distribution of studied patients according to their total stress level pre, post & follow-up program implementation (n=150).



**Figure (3):** Distribution of studied patients according to their total out-comes pre, post & follow-up program implementation (n=150).

**Table (2):-** Correlation between patients’ total out-comes regarding open-heart surgery and their total knowledge & stress pre, post & follow-up program implementation (n=150).

Scale	Patients' outcomes				Total knowledge		
		pre-program	post-program	Follow up-program	pre-program	post-program	Follow-program
Total Knowledge	r	0.124	0.176	0.200	-	-	-
	p- value	0.130	0.31*	0.000**	-	-	-
Total Stress	r	0.144	0.162	0.356	0.038	0.236*	0.796
	p- value	0.079	0.048*	0.000**	0.646	0.004	0.000**

Non sig. >0.05    Sig. <0.05\*    High sig. <0.001\*\*

## Impact of Comprehensive Discharge Program on Patients' Outcomes after Open Heart Surgery

### Discussion

Open heart surgery which is integral to the treatment of cardiovascular disease, may result in fragile recovery, and decreased self-confidence in doing activities of daily life, in order to reduce the complications and further re-admission the individuals must develop the knowledge and skills for self-management at home to prolong their survival. Nurses have a key role in discharge program to help patients and their families prepare mentally and physically for the surgical process and learn how to effectively self-manage postsurgical symptoms once they are discharged home (Fouad et al.,2020).

Discussion of the findings will cover five main areas. The first part represents the socio-demographic characteristics and disease history of the studied patients. Second part is concerned with patient knowledge regarding open heart surgery. Third part displays the perceived stress scale (PSS) for the studied patients. Forth part concerning with evaluation of the patients' outcomes immediately and three months post educational guidelines. The fifth part is concerned with the relations and correlations between the study variables.

**Regarding the socio-demographic characteristics of patients under the study,** the current study showed that nearly two thirds were males and half of them aged from  $41 \leq 60$  with mean age  $50.8 \pm 16.62$ . This might be due to the elevation of the incidence of coronary artery disease among males than females, this explanation was supported by Mansour et al., (2020) entitle "Coronary computed tomography angiography versus invasive coronary angiography: medical staff perceptions and diagnostic interest in Gaza-Palestine" who mention the incidence of

coronary artery disease increase among males than females.

These results are similar to the results of Rief et al., (2020) in a study titled "Preoperative optimization of patient expectations improves long-term outcome in heart surgery patients: results of the randomized controlled PSY-heart trial" and reported that the majority of study subjects were males. While the present finding is inconsistent with Ramadan, (2018) whose study entitled "Health related quality of life for patients after open surgery" that half of the study subjects were less than forty years old and two thirds of them were females.

**Regarding educational level,** the result of this study revealed that more than one third of studied patients had intermediate educational level. This result is agreement with Mundal et al., (2018) who mentioned that nearly one half of the studied subjects had educated. Also this result inconsistent with Ramadan (2018) who mentioned that more than two fifths of studied subjects can't read or write. This may be referred that this study group and Ramdans' study group were treated at Ain Shams University Hospitals, that is a center which served low –income sector of patients who is usually hadn't and /or little education.

**Related to work status,** the current study revealed that more than half of studied patients were house wife, not working or retired. This might be due to most of the study subjects were within ( $41 \leq 60$ ) years, and usually by this age they are becoming retired according to Egyptian law. This result goes in the same line with a study conducted by Younes et al., (2019 )entitle "Psychiatric disturbances in patients undergoing open-heart surgery" who stated that less than half of the

patients not work which may increase stress of being dependent on others.

**Regarding residence**, the current study revealed that more than three quarters of studied patients were from urban areas. This result is agreement with **Ramadan (2018)** who mentioned that more than two fifth of studied subjects were from urban areas. However this result inconsistent with **Tehrineshat et al.,(2021)** who found in a study entitle “The effect of multi-component interventions on the incidence rate, severity, and duration of post open heart surgery delirium among hospitalized patients” that the majority of the studied patients were from rural .

**Regarding patients’ total knowledge parts about open-heart surgery pre, post & follow-up program implementation**, these study illustrated that the majority of studied patients had unsatisfactory total knowledge regarding open heart surgery pre-program implementation whenever, the majority of them had satisfactory knowledge post & Follow-up program implementation. This result may be due to the effectiveness of educational instructions on study group subjects, the valuable comprehensive information acquired in the guidelines and active participation from study group during theoretical and practical session that was discussed through the implementation of educational instructions.

This result consistent with **Özdemir & Önler, (2021)** whose study entitled “The effect of a structured patient education intervention on the quality of life for coronary artery bypass grafting patients: A prospective randomized controlled study” revealed that highly statistically significant differences were found between the pre and post intervention knowledge scores regarding wound care, nutrition, physical exercises, postoperative

drug use and returning to work , the post intervention scores were higher than the pre intervention scores. The results of this study revealed that structured planned patient education for CABG patients was effective in increasing their knowledge levels and also the patients who received the planned education experienced less limitation in usual daily activities due to physical health problems than the patients who received the unstructured information about their self-care at home.

**Distribution of studied patients according to their total stress level pre, post & follow-up program implementation**, this study illustrated that more than half of studied patients had a high total stress level pre-program implementation whenever, more than half of them had a moderate total stress level post program implementation and more than half of them had a low total stress level follow-up program implementation. This result might be due to discussing the methods of stress management and anxiety control during educational guidelines implementation.

This result consistent with **Fouad et al., (2020)** who revealed that significant difference post program and there were significant decreased in level of anxiety among the patients which could be in providing pre and post-operative nursing instructions.

**Distribution of studied patients according to their total out-comes pre, post and follow-up program implementation**, this study illustrated that the majority of studied patients had unsatisfactory total out-comes pre-program implementation whenever, the majority of them had a satisfactory total out-comes post & follow-up program implementation. The researcher point of view, The results may be due to majority of the studied sample had stable preoperative state and less comorbidities before surgery as most

## Impact of Comprehensive Discharge Program on Patients' Outcomes after Open Heart Surgery

of cases are planned cases, the previous result might be due to the positive effect of educational guidelines on clinical outcomes among patients, the power of education to increase knowledge and change lifestyle behaviors that have positive impact on patient condition and clinical outcomes after operation.

This result is similar to **Alkan et al., (2020)** in a study titled “Assessment of healthy lifestyle behaviors after coronary artery bypass surgery” who mentioned that the nursing education and implementation of healthy lifestyle behaviors can influence the outcome after open heart surgery.

**Correlation between patients' total out-comes regarding open-heart surgery and their total knowledge & stress pre, post & follow-up program implementation:** This study showed that there was statistically significant positive correlation between patients' total knowledge and patients total out-comes post program implementation whenever there was highly statistically significant positive correlation between patients' total knowledge and total patients out-comes follow-up program implementation . Also, there were statistically nonsignificant correlation between patients' total stress and their total (outcomes & knowledge) preprogram implementation and also there were highly statistical significant correlation between total stress and total (outcomes & knowledge) follow up program implementation.

This study showed the importance of providing comprehensive discharge instructions to patients' regarding open heart surgery in improving total health status, total outcomes and also decrees level of stress post-operative.

This finding in accordance with **Azer et al., (2021)** who found Significant differences in improvements throughout educational program phases among study group regarding total score of knowledge and total of anxiety about open heart surgery immediately post and follow up program implementation.

### **Conclusion**

Most studied patients had unsatisfactory total knowledge regarding open heart surgery pre-program implementation whenever, the majority of them had satisfactory knowledge post & Follow-up program implementation. Concerning total stress scale, the present study showed that more than half of the study patients had a high total stress level pre-program implementation whenever ,more than half of studied patients had a moderate stress level post implementation of educational program and also more than half of them had a low stress level follow –up program implementation. In addition, the current study illustrated that the majority of studied patients had unsatisfactory total out-comes pre-program implementation whenever, the majority of them had a satisfactory total out-comes post & follow-up program implementation. Implementation of the educational instructions has highly significant positive effect on total knowledge, total stress scale and clinical outcomes for the patients undergoing open heart surgery, which support the study hypothesis.

### **Recommendations:**

#### **I. For patients:**

1. Effective education and skill information are required to enhance understanding of pre & post-operative care.
2. Prepare and provide information prior to open heart surgery to prepare patients in the form of booklets.

**II: For nurses:**

1. Special training sessions must be presented for cardiac nurses concerning discharge planning post cardiac surgery in addition to regular evaluation of nurses' practices.
2. Conduct of an educational programs regarding discharge planning to improve nurses' practices.

**III. In services:**

1. Arrange with patient to follow-up care through phone calls & clinic visits would help to pinpoint problems and solve it.
2. Establishment of specialized cardiac clinics in all health centers to help guiding and caring for patient with open heart surgery.

**IV: On the educational level:**

1. Equip the open heart care unit and at outpatient clinic with simple illustrated guidelines protocol covering the comprehensive discharge instructions for open heart surgery patient's.
2. Develop an in service audiovisual materials training/education about comprehensive discharge instructions for open heart surgery patient's.
3. Establish a website to give instructions about open heart surgery for the patients undergoing the open heart surgery.

**V: For research (future study):**

1. Repeat analyzed studies about open heart surgery in males and females that will helpfully lead to more effective and preventive – based strategies for future.
2. Replication of the current study on larger probability sample is recommended to achieve generalized ability and wider utilization of the designed program.

**References**

**Alkan, S., Topal, E., Hanedan, M., & Mataraci, İ. (2020).** Assessment of healthy lifestyle behaviors after coronary artery bypass surgery. *Turk Kardiyol Dern Ars*, 46(3), Pp:169-174.

**Azer, S. Z., Eldeen, S. M. A., Abd-Elwahb, M., & Ahmed, A. M. (2021).** Impact of educational program among open heart surgery Patients on minimizing the incidence of post operative infections. *Journal of American Science*, 7(6), Pp:820-834.

**Cohen, S., Kamarck, T., & Mermelstein, R. (1994).** Perceived stress scale. *Measuring stress: A guide for health and social scientists*, 10(1), Pp: 22-30.

**Doering, L., McGuire, A. , & Rourke, D. (2018).** Recovering from cardiac surgery: what patients want you to know. *American Journal of Critical Care*, 11(4), Pp: 333-343.

**Fouad, M. R., Ali, Z. H., & Abd Hafez, N. G. E. (2020).** Evidence of pre and post-operative care for open heart surgery patient's on physiological and psychological Outcomes. *International Journal of Novel Research in Healthcare and Nursing*. Vol. 7, Issue 1, Pp: (1185-1201 Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

**Gouge, C. (2017).** Improving patient discharge communication. *Journal of Technical Writing and Communication*, 47(4), Pp: 419-439.

**Graham, H. L., Lac, A., Lee, H., & Benton, M. J. (2019).** Predicting long-term mortality, morbidity, and survival outcomes following a cardiac event: a cardiac rehabilitation study. *Rehabilitation Process and Outcome*, 8, Pp: 22-40.

**Guo, H. J., & Sapra, A. (2020).** Instrumental activity of daily living (IADL). *StatPearls [Internet] Publishing LLC*.

**Jabr, E. M., Taha, N. M., & Metwally, E. A. (2022).** Nurses' Knowledge and Practice Regarding Care for Patients Undergoing Cardiac Catheterization. *Zagazig Nursing Journal*, 18(1), Pp:1-15.

## Impact of Comprehensive Discharge Program on Patients' Outcomes after Open Heart Surgery

- Kamarajah, S. K., Bundred, J., Weblin, J., & Tan, B. H. (2020).** Critical appraisal on the impact of preoperative rehabilitation and outcomes after major abdominal and cardiothoracic surgery: a systematic review and meta-analysis. *Surgery*, 167(3), 540-549.
- Mansour, H., Alajerami, Y., & Najim, A. (2020).** Coronary computed tomography angiography versus invasive coronary angiography: medical staff perceptions and diagnostic interest in Gaza- Palestine. *Irish Journal of Medical Science* (1971), Pp:1-9.
- Mohammad, I. R. (2022).** Patients' Perception and Nurses' Concerns after Nursing Educational Program about Recovery Phase following Cardiothoracic Surgery. *Nursing Open*, 9(1), 775-784.
- Moorhead, S., Johnson, M., Maas, M. L., & Swanson, E. (2018).** *Nursing Outcomes Classification (NOC)-e-book: Measurement of health outcomes.* Elsevier Health Sciences.
- Mundal, L. J., Iglund, J., Veierød, M. B., Holven, K. B., Ose, L., Selmer, R. M. & Retterstøl, K. (2018).** Impact of age on excess risk of coronary heart disease in patients with familial hypercholesterolaemia. *Heart*, 104(19), Pp:1600-1607.
- Özdemir, B., & Önler, E. (2021).** The effect of a structured patient education intervention on the quality of life for coronary artery bypasses grafting patients: A prospective randomised controlled study. *Journal of Perioperative Practice*, 31(4), Pp:124-131.
- Ramadan, M. (2018).** Health related quality of life for patients after open surgery, 52, pp. 87-92.
- Rief, W., Shedden-Mora, M. C., Laferton, J. A., Auer, C., Petrie, K. J., Salzmann, S. & Moosdorf, R. (2020).** Preoperative optimization of patient expectations improves long-term outcome in heart surgery patients: results of the randomized controlled PSY-HEART trial. *BMC medicine*, 15(1), Pp:1-13.
- Zinchenko, Y., Bokeria, L., & Kiseleva, M. (2019).** Psychological factors and outcomes of coronary surgery. *Psychology in Russia*, 6(4), P. 160
- Stone, G. W., Kappetein, A. P., Sabik, J. F., Pocock, S. J., Morice, M. C., Puskas, J., ... & Serruys, P. W. (2019).** Five-year outcomes after PCI or CABG for left main coronary disease. *New England Journal of Medicine*, 381(19), 1820-1830.
- Tehranneshat, B., Hosseinpour, N., Mani, A., & Rakhshan, M. (2021).** The effect of multi-component interventions on the incidence rate, severity, and duration of post open heart surgery delirium among hospitalized patients. *Journal of Cardiothoracic Surgery*, 16(1), Pp:1-8.
- Werner, R. M., Coe, N. B., Qi, M., & Konetzka, R. T. (2019).** Patient outcomes after hospital discharge to home with home health care vs to a skilled nursing facility. *JAMA internal medicine*, 179(5), Pp: 617-623.
- Younes, O., Amer, R., Fawzy, H., & Shama, G. (2019).** Psychiatric disturbances in patients undergoing open-heart surgery. *Middle East Current Psychiatry*, 26(1), Pp:1-7.
- Zhao, Y. (2014).** planning intervention for elderly patients with coronary heart disease in Tianjin, China: a randomized controlled trial. Hong Kong Polytechnic University (Hong Kong). *Western journal of nursing research*, 2(1), Pp: 32-45

## تأثير برنامج الخروج الشامل على نتائج المرضى بعد جراحة القلب المفتوح

اسراء محمود عبدالله محمود - مروه مصطفى راغب - صباح سعيد محمد - رشا فتحي محمد

جراحة القلب المفتوح هي عملية كبرى تتطلب مراقبة دقيقة ودعمًا فوريًا بعد الجراحة. يعمل تثقيف المريض على تحسين النتائج الجراحية، مما يسهل التعافي السريع ويحد من المضاعفات بعد الجراحة. يعد تثقيف المريض ومشاركته أمرًا مهمًا إذ وجب للمريض الامتثال للتغيير السلوكي والحفاظ عليه. تُعد تعليمات الخروج لمرضى جراحة القلب المفتوح عنصرًا أساسيًا في رعاية المرضى إذا تعرف بعملية تصنيف وتجهيز احتياجات المريض الصحية والمتوقعة عند الخروج من المستشفى. لذلك هدفت الدراسة الي تقييم تأثير برنامج الخروج الشامل على نتائج المرضى بعد جراحة القلب المفتوح. وقد أجريت الدراسة في وحدة والعيادة الخارجية لجراحة القلب والصدر بمستشفى بنها الجامعي ومعهد ناصر. وقد لوحظ من الدراسة الحالية أن غالبية المرضى الخاضعين للدراسة لديهم معرفة كاملة غير مرضية فيما يتعلق بتنفيذ ما قبل برنامج جراحة القلب المفتوح كما كان لدى الغالبية منهم معرفة مرضية خلال المتابعة بعد تنفيذ برنامج. فيما يتعلق بمقياس الإجهاد الكلي أوضحت الدراسة الحالية أن أكثر من نصف مرضى الدراسة لديهم مستوى إجهاد إجمالي مرتفع قبل تنفيذ البرنامج كما كان أكثر من نصف المرضى الخاضعين للدراسة لديهم مستوى إجهاد معتدل بعد تنفيذ البرنامج التعليمي وأيضًا أكثر من النصف منهم لديهم مستوى منخفض من الإجهاد خلال متابعة تنفيذ البرنامج. بالإضافة إلى ذلك كان لدى غالبية المرضى الخاضعين للدراسة لديهم مستوى غير مرضٍ للنتائج الكاملة قبل البرنامج كما كان لدى الغالبية منهم نتائج مرضية بعد تنفيذ البرنامج واثناء المتابعة ايضاً. لذلك خلصت الدراسة إلى أن تنفيذ التعليمات التعليمية له تأثير إيجابي كبير على المعرفة الكلية و مقياس الإجهاد الكلي والنتائج السريرية للمرضى الذين يخضعون لجراحة القلب المفتوح مما يدعم فرضية الدراسة.