

Biopsychosocial Needs of Patients Post Coronary Artery Bypass Graft

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Abstract

Background: coronary artery bypass graft (CABG) is considered alone of the most critical surgeries in Egypt nowadays. Assessing bio psychosocial needs for patients post (CABG) is very important for facilitating their recovery and helping them cope with any health problems. **Aim:** This study aimed to assess bio psychosocial needs of patient post coronary artery bypass graft (CABG). **Research design:** Descriptive exploratory design was used to achieve the aim of this study. **Setting:** This study was conducted in the Cardio Thoracic Outpatient clinics at Cardio Thoracic Academy affiliated to Ain Shams University Hospital. **Subject:** A purposive sample of 60 adult patients' post CABG were taken to conduct this study randomly selected. **Tools:** 1). Patient' interviewing questionnaire, 2: Bio psychosocial needs of patients post Coronary Artery Bypass Graft assessment tool. **Results:** 70% of patients under study had satisfactory level of knowledge regarding coronary artery bypass graft. As well as, there was higher mean score of the studied patients regarding their social needs 53.06 ± 13.63 rather than psychological needed 44.64 ± 7.37 and physical need 40.74 ± 12.53 . **Conclusion:** The studied patients reported the social needs very much need more than the other needs, more than half of the studied patients reported psychological needs regarding depression. **Recommendations:** further studies should be designed to encouraged Patients to participate in rehabilitation programs post coronary artery bypass graft surgeries to satisfy their physical, psychological and social needs.

Keywords: Biopsychosocial, Coronary Artery Bypass Graft

Introduction:

Coronary heart disease (CHD) is one of the most common causes of death worldwide. In 2014, heart disease accounted for 7.4 million deaths worldwide. CHD is caused by impaired blood flow to the myocardium, which results from accumulation of atherosclerotic plaque in the coronary arteries (Santarpino et al., 2015).

Coronary heart disease may be asymptomatic or may lead to angina pectoris, acute coronary syndrome, myocardial infarction and even sudden death, there are several risk factors that can lead to CHD such as cigarette smoking, high cholesterol level, high blood pressure; harmful use of alcohol (LeMone, Burke, GereneBauldoff & Gubrud, 2014).

Coronary Artery Bypass Grafting (CABG) is one way to treat the blocked or narrowed arteries it is to bypass the blocked portion of the coronary artery with a piece of a healthy blood vessel from elsewhere in patients body who suffering from CHD. Blood vessels or graft used for the bypass procedure may be pieces of a vein from leg or an artery in chest or an artery from wrist may also be used. Cardiac surgeon attaches one end of the graft above the blockage and the other end below the blockage. Blood bypasses the blockage by going through the new graft to reach the heart muscle. This is called coronary artery bypass grafting (Santarpino et al., 2015).

Coronary artery bypass grafting (CABG) is one of the most successful procedures available today, with risk of

serious complications such as bleeding during or after the surgery, blood clots that can cause heart attack, stroke or lung problems, infection at the incision site, pneumonia, breathing problems, pancreatitis, kidney failure, abnormal heart rhythms, failure of the graft and death (Bell, Hinderer, Winter & Alessandrini, 2017).

Nursing intervention should aim to help the patient maintain a good quality of life by developing ways to cope and comply with the constraints of the treatments and the possibility of complications occurring. Patient whose caregiver is more supportive, more flexible and good at problem solving have been found to have fewer problems in adherence (Yerokun, Williams, Gaca, Smith & Roe, 2016).

Assessing biopsychosocial needs for patients post coronary artery bypass graft (CABG) is very important for facilitating their recovery and helping them cope with any problems experienced after the operation. The assessment should undertake the needs for home adaptation to facilitate recovery and attention should be paid to the willingness and ability of familial and social networks to provide support during rehabilitation (Bomb, et al, 2015).

Meeting biopsychosocial needs of patient post CABG, well reduce symptoms, reduction in nonfatal recurrent of myocardial infarction, improve adherence with preventive medications, increase exercise performance, manage or control health factors like lipids level and blood pressure, increase knowledge about cardiac disease and its management, enhance ability to perform activities of daily living, improve health-related quality of life, improve psychosocial status, reduce hospitalizations length and use of medical resources and increased ability to return to work or engage in leisure activities (Servey & Stephens, 2016).

Aim of the Study:

This study aims to: This study aims to assess biopsychosocial needs of patient with coronary artery bypass graft (CABG) through: Assessing the demographic characteristics of patients with CABG. Assessing medical data of patients with CABG. Assessing knowledge of patients regarding CABG. Assessing biopsychosocial needs patients with CABG

Subjects and Methods:

The study was portrayed under the four main designs as follows: - Technical design. Operational design. Administrative design. Statistical design.

Technical design:

The technical design includes design, setting, subject and tools for data collection.

Design:

descriptive utilized for this study and accomplished by using descriptive statistics.

Setting:

This study was conducted in the Cardio Thoracic Outpatient Clinics at Cardio Thoracic Academy in Ain Shames University Hospital.

Subject:

A purposive sample of 60 adult patients' post CABG were taken to conduct this study randomly selected. The sample size was followed up in the above mentioned setting the previous year 2016 with the power of 80 %, $\alpha = 0.05$ and based on the power analysis equate that indicated 60 patients would be enough to conduct this study, the required sample size was calculated using Epicalc 2000 info software Patients were selected according to the following criteria:

Inclusion Criteria: The sample included in the study was recruited according to following inclusion criteria:

Adult patient over 18 years from both gender. Elective CABG. Able to comprehend instructions. Agree to participate in this study.
Exclusion criteria: patients with mental and psychiatric illness. post-operative complications.

Tools for data collection: Two tools were used:

Tool I: patient' interviewing questionnaire: This questionnaire was developed in simple Arabic language and filled by the researcher. It based on reviewing recent and relevant literatures, and included three parts.

Part 1: Patient' demographic characteristics: This part is concerned with assessing patients' demographic data which included age, gender, marital status, education level, work, place of residence and nature of living. It includes **ten** questions; it composed of **eight** questions in form of multiple choices questions (MCQ) and **two** questions in the form of (yes or no).

Part 2: Patients' medical data: This part is concerned with assessing patients' medical data based on the related literature. It is composed of **thirteen** questions, which was divided into **nine** questions of present medical history such as (diagnosis in admission, associated symptoms in last hospital admission, allergy and current medical treatment, body mass index, smoking, alcohol consumption, doing exercises). Then **two** questions of past medical history such as (suffering from chronic diseases, any previous surgery and post operation complication), and **two** questions of patient's family history.

Part 3: Patient' knowledge assessment questionnaire. This part was developed by the researcher to assess patient

knowledge regarding the Coronary artery bypass graft operation and their needs post operation. It included Twelve MCQ questions with five subtitles as the following: Definition (one question), symptoms (two questions), operation type (three questions), causes and risk factors (three questions), postoperative complications (three questions)

It included twenty seven statements in the form of true and false questions which were grouped into **seven** subtitles as the following: Information on taking medication (three statements) periodic detection and follow-up (two statements), care for the wound (five statements), nutrition Information (six statements), movement activity and exercise (five statements), sleep and rest (three statements), travel and work. (three statements).

❖ Scoring system:

The total grades for the patients' knowledge was Thirty-nine grades, each right answer was given one grade and the wrong one was given zero.

The total level of patients' knowledge score was categorized as the follows: If the score was $\geq 70\%$, it was considered a satisfactory level of knowledge (when the total grades were >27 grades). If the score $<70\%$, it was considered an unsatisfactory level of knowledge, (when the total grades were <27 grades).

Tool 2: Biopsychosocial needs of patients post Coronary Artery Bypass Graft assessment sheet:

This tool was developed and filled by the researcher in simple Arabic language, this tool was used to assess physical, social and psychological need of patients post CABG, it was adapted from standardized scales, it included three parts.

Part one: Coronary Revascularization Outcome Questionnaire (CROQ):

This part is concerned with assessing patients' physical need and activities of daily living, movement and transferring, and working post CABG, it was adapted from (Schroter and Lamping 2004). It included **eighteen** statements as choice which were grouped into **three** subtitles as the following: Daily activities (**four** statements), the movement and transferring (**nine** statements), ability to perform work efficiently (**five** statements).

❖ Scoring system:

Activity of daily living this scale is used to assess patient dependency and needing for assistant, patient always dependent take score **zero**, sometimes dependency scored **one**, never dependent patient scored **two** for each area of point, the score of the item were summed-up, the total score was **thirty-six** for the highly independency. The total scores for every subtitle were calculated by summing the patients' responses and the total tool were categorized into depend or sometimes need help independency, it was equal (zero to thirty-six) grades as the following: Daily activities (zero to eight grades), the movement and (zero to eighteen grades), ability to perform work efficiently (zero to ten grades). It was considered as the following: If the score was $\geq 70\%$, it was considered independent, (when the total grades were >25 grad) and. if score was $<70\%$, it was considered in-acceptable dependency (when the total grades were <25 grades)

Part two: Social Dysfunction Rating Scale (SDRS):

This part is concerned with assessing patients' social needs as self-perception, interpersonal relation and the sense of others and social performance. It was adapted from (Linn et al, 1969). This scale was modified

by the researcher to measure the negative aspect of patients' social adjustment translation and retranslation was done. It included **twenty** statements as choice which were grouped into three subtitles as the following: Self-perception (**four** statements), interpersonal relation and the sense of others (**six** statements) and Social performance (**ten** statements) **Scoring system** :Each item was ranged from zero to two classified as following: Always(zero) ,sometimes (one) **and** never(two) It was considered as following: If the score was $\geq 70\%$, it was considered acceptable no social dysfunction (when the total grades were >28 grades) and If the score was $<70\%$, it was considered unacceptable social dysfunction (when the total grades were <27 grades)

Part three: Psychological needs assessment sheet:

This part is concerned with assessing patients' Psychological need; it is adapted from (Gierlaszynska, Pudlo, Jaworska, Godula, and Gasior, 2016). It was used to assess psychological needs It included **sixteen** statements. **Scoring system**: Each item has ranged from 0-2 classified as following: Always (zero), sometimes (one) and never (two) It was considered as following: If the score was $\geq 70\%$, it was considered acceptable no social dysfunction (when the total grades were ≥ 22 grades) and If the score was $<70\%$ (when the total grades were more than 22 grades), it was considered in-acceptable social.

Operational design:

The operational design included preparatory phase, validity and reliability, pilot study and field work.

Preparatory phase:

It included reviewing the related literature, different studies and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals

and magazines to the theoretical part of the study and tools for data collection.

Validity and reliability:

Testing validity was ascertained by a group of 7 experts in medical surgical nursing specialist to determine whether the tools measure what it was supposed to measure. The expertise reviewed tools for clarity, relevance, applicability, comprehensiveness, simplicity and minor modifications were done. While, reliability of the study tools was done by alpha Cronbach test (0.98)

Pilot Study:

The pilot study was conducted on 6 patients (10% of the total study sample) who met the inclusion criteria to test feasibility and applicability of the tools used in this study. The patients who were included in the pilot study were included to the sample because no major modifications were done after conducting pilot study.

Ethical consideration:

An official letter was issued from the Faculty of Nursing Ain Shams University to Cardio Thoracic Outpatient clinics at Cardio Thoracic Academy affiliated Ain Shames University Hospital. In order to take the approval for conducting the study as well as the investigator would respect the patient's agreements by taking their verbal consent. The researcher clarified the objective and aim of the study to the patients included in the study. The researcher assured maintaining anonymity and confidentiality of the subjects' data. Patients were informed that they allowed choosing to participate or not in the study and that they have the right to withdraw from the study at any time without giving any reasons. Values, culture and beliefs were respected.

Field work:

The study was conducted in the Cardio Thoracic Outpatient Clinics at Cardio thoracic Academy affiliated Ain Shames University hospital. The process of data collection started in the first of March 2018 till the end of May 2018. The researcher was available 3 days / week (sun day –Tuesday – Thursday) at morning shifts to collect data and implement the study. The investigator was attending outpatient clinic of cardiac surgery to follow the medical doctors when they were taking history of patients, so the cases that full fill the criteria. Patients was grouped from 4-5 patients per week. Sometimes the investigator was consulting the doctors specially to classify the type of critical cases. After selecting the patients; the investigator obtained verbal consent and agreement after explanation of the study objective. When the patients agreed, interviewing and data tool filling was starting. Completion of questionnaire took from 30-45 minutes for every patient. Data tools were reviewed once it was finished for mistakes in filling and for clarifying some questions. The data of questionnaire were transferred on spread sheet on daily bases. This process continued for three months during which sample size of 60 participants was achieved. Staring for statistical working was on the first of June 2018

Statistical design:

The collected data were organized, tabulated, graphically and statistically analyzed using the Statistical Package for Social Science (SPSS version 20). Data were presented in tables and graphs. The statistical analysis included: Percentages (%), stander deviation (SD) and correlation coefficient (r)

Results:

Table (1): This table reveals that 46.7% of the studied patients included in this study their aged from 40 and less than 50 years old and 50% of them were male and 80% were married, also regarding their level

of education 38.3 % had moderate education, and 55% of them were working and 60 % of them getting not enough monthly income. Regarding residence, it was found that 85 % from urban areas and 86.7% living with their families. Also, 60% of the studied sample lives on the third floor or more and 86% of them using stairs.

Table (2):This table illustrates that 61.7% of the studied patients had a diagnosis with coronary artery disease, 100% of them were suffering from chest pain as chief complain. 95% of them did not have allergies for a particular type of food, 91.7% of them didn't have allergies to a particular medication. And 91.7% of the patient was on anticoagulation medications daily and 90% on lipidinhipter medication daily.

Table (3): This table shows that the 73.3% of the studied patient understudied were nonsmoker now and out of them 43.7% of previously smoker was a smoker for more than 10 years, 78.3 %from them didn't practice exercise, only 21.7% from patient practice walking continuously daily. Also, 33.3% of patients had light obesity about (25-29) from BMI, and no one from them was drinking alcohol.

Table (4): This table shows that 70% of the patient included in this study suffered from high blood pressure, 71.7% hadn't any previous surgery, 18.3 % had surgery in blood vessels and 28.3% had no complications after previous surgeries as well as 40 % had family history of heart disease and 45.0% of their family members were dead suddenly .

Table (5): This table represents that 93.3% of the studied patients had correct answers regarding the definition of CABG and nutrition post CABG. Also, 85.0% of them had correct knowledge about causes and risk factors of CABG and motor activity and exercise post CABG.

Table (6): This table represents that, 69.12% of the studied patients depended in their daily activities, and 52.6% of them were sometimes need help in movement and transferring also show that 55.3% of them can sometimes they performance have been affected post CABG.

Table (7): This table represents that, 50.7 %of the studied patients sometimes hadn't self-confidence 55% of them sometimes feeling aggressive toward others and feeling near to die also show 59.4 %of them haven't unsatisfactory relations with their family and lack social relationships.

Table (8): This table shows that 85.0%, 61.74%, 71.7%, 55.0%, 50.0%, 75.0%, 73.3%, 55.0% and 66.7 % of the studied patients sometimes have the need to be more patient, have important role in life, to be more dependent on self, to have some confidence as before, psychosocial support from other, practice some activities to improve mental status and have the courage to take about their health condition.

Table (9): This table represents that, there is a highly statistically significant relation between patients' age and their social needs ($T=5.57$ at p -value 0.002).

Table (10): This table represent that, there are statistical significant relation between patients' gender and total level of knowledge ($T=2.16$ at p value 0.03).

Table (11): This table represents that, there is a highly statistically significant relation between patients' education level and their total level of knowledge and total of social needs, whereas ($T=22.31$ and 7.11) with p -value (0.001 and 0.001) respectively.

Table (12): This table illustrates that there, is a weak negative correlation between the total satisfactory level of patients' knowledge and they're physical and psychological at $r = (-0.32$ and $-0.21)$ respectively. While a positive correlation between the total satisfactory level of patients' knowledge and their social needs at $r= 0.33$.

Table (1): Number and percentages distribution of the studied patients regarding their demographic characteristics (N =60).

	Item	N	Percentage
Gender	Male	30	50.0
	Female	30	50.0
Aga	18 <30 years	3	5
	30 < 40years	9	15
	40 <50 years	28	46.7
	50 years and more	20	33.3
Level of Education	Illiterate	19	31.7
	Moderate education	23	38.3
	Higheeducation	18	30.0
Marital Status	Married	47	78.3
	Unmarried	13	21.7
Working condition	Not working	27	45.0
	working	33	55.0
Monthly income	Not enough	36	60.0
	Enough	24	40.0
Residence	Rural	9	15.0
	Urban	51	85.0
Living condition	Alone	8	13.3
	With the family	52	86.7
which floor live	First floor	17	28.3
	Second floor	7	11.7
	third or more	36	60
How climb to flat	Using Stairs	52	86
	Using the elevator	8	14

Table (2): Number and percentage distributions of the studied patients regarding present medical history (n=60).

(A) present medical history	N	Percent
Diagnosis at admission		
Myocardial infarction	13	21.7
Angina pectoris	8	13.3
Coronary Artery Disease	37	61.7
Repair of a valve or replacement of the heart	2	61.7
Chief complain on admission		
Chest Pain	60	100.0
-Difficulty breathing	16	26.7
-Heart flutter	19	31.7
-Cyanosis and swelling at the extremities	14	23.3
Suffering from allergies: For a particular type of food		
-NO	57	95.0
-Yes	3	5.0
Allergic reaction to a particular medication		
	55	91.7
-NO		
-Yes	5	8.3
The medication you are dealing with right now		
-Anticoagulants	55	91.7
-Ant platelets	48	80.0
-Lipidinipter	54	90.0
-Diabetic medication	36	60.0
-Antihypertensive	38	63.3

Table (3): Number and percentage distributions of the studied patients regarding general medical data habits (n=60).

(B)General medical data / habit	N	%
Smoking now		
-NO	44	73.3
-Yes	16	26.7
Duration of smoking if previously smoker (=16)		
-Less than 5 years	4	25
-5 to 10 years	5	31
-More than 10 years	7	43
Practicing exercise		
-No	47	78.3
-Yes Regularly	13	21.7
Exercise type (N=13)		
- Walking continuously daily	13	100
-Rise and fall stairway	0	0.0
-Bike riding	0	0.0
Weight		
-BMI of 18 and under	2	3.3
-Healthy weight (BMI of 19 to 24)	12	20.0
-light obesity (BMI of 25 to 29)	20	33.3
-Obesity (BMI of 30 to 39)	17	28.3
Excessive obesity (BMI of 40 and above	9	15.4
Do you drink alcohol		
-No	60	100.0
-Yes	0	0.0

Table (4): Number and percentage distributions of the studied patients regarding Past medical history for patients post CABG (N=60).

C) the previous pathological history;	NO	%
Suffering from chronic diseases		
-High blood pressure	42	70.0
-Diabetes	33	55.0
-Heart disease	26	43.3
-Liver diseases	15	25.0
Previous surgeries		
-No	43	71.7
-Yes	17	28.3
Type of surgery (N=17)		
- heart	3	18
- lung	3	18
I-blood vessels	11	64
complications after previous surgeries (N=17)		
-No	17	100
-Yes	0	0.0
Family history		
cardiovascular disease		
-No	36	60.0
-Yes	24	40.0
Sudden deaths of a member of the family		
-No	33	55.0
-Yes	27	45.0

Table (5): Number and percentage distribution of the studied patients' knowledge regarding CABG (n=60).

Items of knowledge	Incorrect		Correct	
	No	%	No	%
Definition of CABG	4	6.7	56	93.3
Types of coronary artery delivery:	27	45.0	33	55.0
Causes and risk factors of CAD	9	15.0	51	85.0
Complications after CABG:	29	48.3	31	51.7
Taking medications post CABG	20	33.3	40	66.8
follow-up post CABG	8	13.3	52	86.7
Care of the wound	20	33.3	40	66.6
Nutrition post CABG	4	6.7	56	93.3
Motor activity and exercise post CABG	9	15.0	51	85.0
sleep and well-being post CABG	12	20.0	48	80.0
travel and work:	25	41.6	35	58.

Table (6): Physical needs patients post CABG.

Physical needs	Never	Sometimes	Always
Daily activates	5%	25.84%	69.12%
The movement and transferring	24.26%	52.6%	23.1%
Ability to perform work efficiently	8.3%	55.3%	36.4%

Table (7): Social needs post CABG.

Social needs post CABG.	Never	Sometimes	Always
Self-confidence	6.3 %	50.7%	44 %
The inner feeling and feelings towards others	34.4 %	55 %	10.6%
Social performance	16.8%	59.4 %	23.8 %

Table (8): Number and percentage distribution of studied patients regarding to their psychological needs.

Items	Never		Sometimes		Always	
	N	%	N	%	N	%
Need to be patient and not anger	6	10.0	51	85.0	3	5.
Need important role in life.	14	23.3	37	61.7	9	15
Frustration and anxiety about future	10	16.7	21	35.0	29	48.3
Feeling discomfort, tension and sleep disturbances.	0	0.0	18	30.0	42	70
Lack of energy in dealing with others.	3	5.0	33	55.0	24	40
Need to be e dependent on self than were before the operation.	3	5.0	43	71.7	14	23.3
Need to have same confidence as before	19	31.7	33	55.0	8	13.3
family excessive protection	20	33.3	40	66.7	0	0.0
Need psychosocial support from others	10	16.7	30	50.0	20	33.3
Need help from others to me lead to feeling ashamed and distrustful.	10	16.7	24	40.0	26	43.3
feeling of depression or frustration affects ability to commit to follow-up.	35	58.3	25	41.7	0	0.0
Need to practice some activities (prayer, reading, drawing, music, and reading) to improve mental state and help relax.	3	5.0	45	75.0	12	20
Need confidence in self to deal with current health conditions.	16	26.7	44	73.3	0	0.0
Need to feel satisfaction with personal life	24	40.0	33	55.0	3	5
Being concerned about future.	16	26.7	20	33.3	24	40
have the courage to talk about health condition.	9	15.0	40	66.7	11	18.3

Table (9): Relation between age of the studied patients and their total level of knowledge and biopsychosocial needs.

Items	Age	Mean	SD	T	P Value
Total level of Knowledge	18<30	44.90	13.34	2.00	0.124
	30 <40	41.92	13.49		
	40 < 50	39.86	11.23		
	50 years or more	42.82	8.35		
Total patient physical needs	18<30	32.40	6.41	0.87	0.462
	30 <40	44.41	13.18		
	40 < 50	41.67	14.33		
	50 years or more	39.04	9.85		
Total patient social needs	18<30	36.67	1.44	5.57	0.002**
	30 <40	47.50	0.00		
	40 < 50	50.18	11.98		
	50 years or more	39.88	7.93		
Total patient psychological needs	18 <30	53.10	0.00	2.29	0.088
	30 <40	45.52	1.63		
	40 < 50	45.19	8.58		
	50 years or more	42.19	6.68		

Table (10): Relations between gender of the studied patients and total of biopsychosocial needs.

Items	Gender	Mean	SD	T	P Value
Total level of Knowledge	Male	80.52	11.58	2.16	0.035**
	Female	74.53	9.85		
Total patient physical needs	Male	41.58	13.16	0.52	0.60
	Female	39.90	12.03		
Total patient social needs	Male	45.33	11.12	-0.24	0.80
	Female	46.00	10.16		
Total patient psychological needs	Male	43.44	7.45	-1.26	0.21
	Female	45.83	7.22		

Table (11): Relations between education level of the studied patients and biopsychosocial needs.

Items	Education	Mean	SD	T	P Value
Total level of Knowledge	Illiterate	69.37	5.90	22.31	0.00**
	Moderate education	76.27	7.25		
	High education	87.74	11.58		
Total patient physical needs	Illiterate	41.37	12.19	1.60	0.21
	Moderate education	43.48	14.90		
	High education	36.57	8.44		
Total patient social needs	Illiterate	38.95	5.09	7.11	0.00**
	Moderate education	47.72	13.23		
	High education	50.14	7.50		
Total patient psychological needs	Illiterate	42.93	5.49	0.86	0.42
	Moderate education	45.93	7.75		
	High education	44.79	8.58		

Table (12): Correlation between total satisfactory level of patients' knowledge and total physical, social and psychological needs.

Items	Total satisfactory level of patients' knowledge	
	r	P value
Total patient physical need	-0.32	0.013
Total patient social need	0.33	0.009
Total patient psychological need	0.21-	0.104

Discussion:

Coronary artery bypass graft (CABG) surgery has become an increasingly dominant treatment modality for coronary artery diseases (CADs), the leading cause of worldwide mortality and responsible for 30% of total deaths globally. CABG is providing beneficial results that enhance quality of life and minimize mortality and morbidity rate among CAD patients (**World Health Organization, 2016**).

The discussion of the findings covered 4 main parts: **part I:** concerned with patients' demographic and medical data of the patients under study, **part II:** concerned with patients' knowledge regarding to coronary artery bypass graft operation, **part III** biopsychosocial needs of the patients post coronary artery bypass grafting, **part IV:** presented the relations between the study variables.

Part I: patients' demographic and medical data, regarding the study patients' **demographic and medical data** the results of the present study showed that less than half of the studied patients their **age** were from 40 to 50 years old .so almost of the study patients were moderate education his result was opposite to study made in America by **Fredericks and Yau, (2017)** titled "Clinical effectiveness

of individual patient education in heart surgery patients: a systematic review and meta-analysis ".who found that less than half of the study subjects their age were below 40 years . This group of age may be due to aging process and disease prognoses.

However this result was consistent with the study by **Goyal, Idler, Krause and Contrada, (2005)**, who conducted study titled" Quality of life following cardiac surgery: Impact of the severity and course of depressive symptoms psychosomatic medicine ",who found that the almost half of the study subjects were above 40 years old.

Regarding the study patients '**gender**, the results of the present study showed that there is an equal percentage of men and women in the number of patients under study, this result was opposite to study by **Ferreira, et al... (2015)** titled "Sex differences in the prevalence of diastolic dysfunction in cardiac surgical patients" who found that female sex is at higher risk to don CABG ,and females were more likely to have prolonged time in hospital .From the researcher view that due to, that females are more risk for CAD especially with advanced age.

In the current study the results showed that more than three quarters of the study subjects were **married**

and living with family. These findings gone with **Hindle, (2017) about** "Early post-operative psychosocial and weight predictors of later outcome in cardiac surgery: a systematic literature review", who mentioned that the majority of their study subjects were married. From the researcher's point this might be due to that most of the study subjects were in the marriage, age and exposed to stress of everyday life events

One of the noticeable finding of the study was that one third of the studied patients were **illiterate.** These findings gone with **Sadek, (2012)** who done study titled "Health-Related Quality of Life Issues for patients after open heart surgery" and found that, almost half of patients under the study were illiterate. this may be attributed to low socioeconomic standards for patients' attended cardio-thoracic Academy affiliated to Ain Shams University Hospital

Regards patients **working status** the present study results indicated that more than half of sample was working. This result reverse study by **Takousi, et al, (2016)** who conducted a study titled "Health-related quality of life after coronary revascularization", who denoted that more than half of the studied patients were pensioners, this may be due to most of patients were have moderate education and high education who working to improve living condition

Concerning patients' **monthly income** the current study denoted that almost two third of the study sample had not enough monthly income, this result goes in the same line with analytic study by **McShall,**

(2015) titled with "Relationship quality as a predictor and moderator of health outcomes", who mentioned of the more than half study sample had not enough monthly income, the treatment cost very much in Egypt and most of them in low socioeconomic revealed treatment over financial expenditures.

As regards patients' **residence,** the current study revealed that majority of the patient's from urban areas. This result was congruent with a descriptive study made in Helwan by **Sadek, (2012) titled** with "Health-Related Quality of Life Issues for patients after open heart surgery" who reported that more than half of the studied patients reside rural areas. This may be due to the location of the hospital, it in an urban site in Cairo.

The present study revealed that more than two third of patient under study had **diagnosis** with coronary artery disease on admission and 100% of them were suffering from chest pain on admission This result contrast with **Fearon, (2018) in his study** titled by "Clinical outcomes and cost-effectiveness of fractional flow reserve-guided percutaneous coronary intervention in Patients with stable coronary artery disease" who reported that the majority of their studied subjects were diagnosed with CAD . this result may be due to that the chest pain come complies in coronary artery disease and it is the most common symptoms that patient complain and prompt them to go to the doctor

In relation to **smoking habits,** the study revealed that about three quarters of the studied patients' were nonsmoker and about more than half

of them were previous smoker and waking continuously daily this result was congruent with a descriptive study **Samet, (2013)** titled with "Tobacco smoking: the leading cause of preventable disease worldwide " who found that about two third from of the study subjects were smoker ., this could be due to the fact that most of the studied patient' age were above 40 years and they were subjected to major previous pressures at work or home, which led them to smoke as a bad habit.

Concerning patients' weight the result revealed that more than third from patients had **increase in weight** about (25-29) from BMI. This result were contrast with **Maur and Smith (2016)** in his study titled "guideline focused update on duration of dual anti platelet therapy in patients with coronary artery disease" who mentioned that that the majority of the study subjects were obese . this result may be due to around third of the studied patients were >50 years where the metabolism of the body as well as the mobility is decreasing among old age and decreasing of physical activity due to patients' condition.

Regarding patients' **practicing exercise**, the study results revealed that more than three quarters of the studied patients didn't practice exercise. This result was inconsistent with **Hweidi, (2018)** in his study titled by "Prevalence of depression and its associated factors in patient's post-coronary artery bypass graft surgery ", who found that the majority of their studied subjects were performing physical activity. This result may be due to the culture of Egypt society doesn't maintain a regular exercise.

As regards of studied patients' **past history** the present study indicated that nearly more half of studied patient had hypertension and severing from diabetes mellitus. This result was agreement with study done in Scandinavian by **Loponen ,(2009)** ,titled by " Health related quality of life after invasive treatment of coronary artery disease", who revealed that the majority of the studied subjects had hypertension. This result may be due to this might be due to the most of patient are smokers or have bad habits in eating.

As regards of studied patients 'family history the present study indicated that nearly less than half of studied patient had family members suffering from heart disease, These findings gone with **Hindle ..etal, (2017)** study about "Early post-operative psychosocial and weight predictors of later outcome in cardiac surgery: a systematic literature review", who mentioned that nearly half of the studied subject had family history of heart dieses this result may be due tofamily members share genes, behaviours, lifestyles, and environments that can influence their health and their risk for disease.

Part II: concerning patients' knowledge regarding the present study indicated that 80 % of the studied patients had correct answer about **definition and type** of CABG and causing of operation. This result was consistent with a descriptive study done in Ain Shams University by **Abdel- Aziz (2012)** titled "Effect of a rehabilitation program on quality of life for Patients with cardiothoracic surgery", who reported that the majority of patients had knowledge about definition, type of CABG and caused

doing operation. This result may be due to most of the studied patients had moderate or high education.

The present study indicated that more than two third of the studied patients had correct answer regarding to **complication post CABG**, this result was consistent with **Abdel- Aziz,(2012)** ,who reported that the most of patients had knowledge about complication that can be occurred post CABG. This result may be due to the reason is that most patients are from urban areas where, many health care setting are available.

The present study indicated that more two thirds of the studied patients had correct answer regarding to **cardiac medications**. This result was consistent with study by **Szygula-Jurkiewicz, Zembala, Wilczek and Polonski, (2011)** titled, "Health related quality of life after percutaneous coronary bypass graft surgery in patients with acute coronary syndromes without ST-segment elevation ", who reported that the majority of their studied subjects take medications regularly. This result may be due to the most of patients' having fears of cardiac complication after cardiac surgery so they comply with prescribed medications.

In the current study indicated that most of the studied patients had correct knowledge about **wound care**. This result was disagreement with a descriptive study done in Ain Shams University by **Falts, (2009)** titled with "Factors affecting compliance of patient with coronary artery bypass graft toward therapeutic regimen ",who mentioned that nearly a half of the patients never follow precaution with

wound care. This result may be due to give adequate information about the signs of inflammation and how to take care of the wound, through cardiac rehabilitation.

Concerning nutrition and sleeping the presented study showed that above 93 %of studied patients had correct knowledge regarded to **nutrition post CABG**, and rarely 55%of patients have good knowledge about **sleeping and rest**, this result inconsistent with **Fearon, (2018) in his study** titled by "Clinical outcomes and cost-effectiveness of fractional flow reserve-guided percutaneous coronary intervention in Patients with stable coronary artery disease" who mentioned that almost about patients were non-compliance to their diet and mentioned also less rarely a half of patient have insomnia. This result may be due to increase the level of health awareness of patients and regarding their physical needs post CABG.

Part III: Biopsychosocial needs of patients post CABG; concerning assessment of **physical needs**, the presented study showed that more than two thirds of studied patients practice daily physical activities always alone. This results were consistent with the view of **Hately, (2018)** study titled by " physical activity, physical function and quality of life in community-based maintenance cardiac rehabilitation", who found that physical functioning improves for some patients following CABG, this result may be due to cardiac rehabilitation programs that are started shortly after discharge improves exercise tolerance and muscle strength.

In relation to patients' **daily movement as physical needs** it was found that about half of them able to ascending stairs after a month of CABG without fleeing of pain or effort also, more than one third of patients under study able to ascend more than three floors after CABG without pain or effort. This results were contradicted with the view of **Smith, (2013) titled by "Effect of cardio respiratory fitness on short-term morbidity and mortality after coronary artery bypass grafting"**, who found that about 70% of patients with the post CABG reported fatigue when used stairs. this result may be due to the greater severity of perceived fatigue post-operative led to a poorer functional fitness, level of energy expenditure and lower levels of physical activity (PA).

As regards **ability of perform work efficiently** the study finding revealed that more then half of the studied patients able to move in home alone and walk half hour daily also sometimes they able to carry or lift light stuff but almost of them unable to walk more than mail (100 meter) or move heavy thing. This results were consistent with the view of **Lie, Bunch, Smeby, Arnesen, and Hamilton, (2012) titled by" Patients' experiences with symptoms and needs in the early rehabilitation phase after coronary artery bypass grafting"**. Who found that the patients under their study achieved short physical performance battery scores, slower walking speed and higher disability in ADLs that need more effort. his result may be due to the present study was carried out after one month of CABG, whereas symptoms associated with CABG such as pain and fatigue were relieved.

Regarding **social needs** of patients post CABG , the study result showed that more than half of the patient under studied **feeling incompetent and lack of motivation to think about future** this result was consistent with **Wang, (2018),titled by "Improving post-hospital care for Patients with complex medical and social needs: evaluation of a transitional care clinic (Doctoral dissertation)"**.Who found that the majority of the studied patients' had no motivation to think about future and feeling lack of self-confidence this result may be due to they feel with depression and Pain does not give them a chance to think about the future and lack of self-confidence due to poor physical condition

Concerning with **patients' inner feeling and feeling toward others**, the study result showed that about two thirds of patients had few relationships with others and fleeing aggressive towards others and tray to control in the environment around them to achieve their goals. This finding was in agreement with a study done by **Subih, et al (2018) titled by " Predictors of uncertainty among post discharge coronary artery bypass graft patients in Jordan"**. Who found that about half of patient in his study isolated from family, friends and the familiarity of home, which may produce depression. This result may be due to depression following CABG. The post-operative period involves substantial discomfort and pain, with patients being isolated from family, friends and the familiarity of home become aggressive and selfish.

Concerning **the psychological needs** of the studied patients the study result showed that,

two thirds of patients under study hadn't important role in life and discomfort, tension and sleep disturbances, this result goes in the same line with **Hweidi, Gharaibeh,, Al-Obeisat and Al-Smadi, (2018)**.in study titled by "Prevalence of depression and its associated factors in patients post-coronary artery bypass graft surgery". Who reported that the patients in their study their increasing recognition that CABG may be a risk factor for subtle cognitive decline or psychological abnormalities. This result may be due to Patients undergoing coronary artery bypass graft surgery often experience problems and symptoms such as immobility, pain and interrupted insufficient sleep.

Also the study result showed that, about half of the studied patients fell with lack of energy in dealing with other and hadn't self-confidence and fell with shame from asking help from others. This study is contrary to study by **Yang, Huang, Tsa and Lou, (2015)**, titled with " Sleep quality and emotional correlates in Taiwanese coronary artery bypass graft patients 1 week and 1 month after hospital discharge ".Who found in their study patients had an inability to cope with stressful events, lack cognizance of how many modifications in their health habits and lifestyle. This result may be due to health care system in Egypt phase lack cognizance of how many modifications in their health habits and lifestyle they need to follow as structured discharge planning and patient teaching are not observed

Part IV: Regarding the relation between age of the studied patients and their biopsychosocial needs, the study results revealed that,

age of the studied patients had statistically significant relation only for social needs with where the middle age groups also from 30 to 40 and from 40 to 50 had higher mean score than other groups. This finding was in agreement with study done by **Pogosova, et al., (2015)**, titled with "Psychosocial aspects in cardiac rehabilitation: From theory to practice " and who found that, there was relation between age of the studied patients and social needs. this result may be due to the patient at this age feeling with sham of his condition and isolation from people who in the same age as the result of his lack of confidence in himself because of his health and physical state and refuses to adapt to the changes to be observed after surgery.

Concerning relations of a gender and biopsychosocial needs of patient post CABG the mean knowledge scale for males is significantly higher than females with ($P < 0.05 = 0.0353$) and the difference between males and females in regarding their biopsychosocial are statistically non-significant. This result may be due the male was more educated than females in the patient under study sample.

This result was in agreement with **Fredericks and Yau, (2017)**, who did study titled by "Clinical effectiveness of individual patient education in heart surgery patients: a systematic review and meta-analysis" and who found, significant relation between gender and level of patient's knowledge.

As regards relations between patients' education level and their total knowledge and biopsychosocial needs post CABG. The study result

revealed that, that was a statistical significant relation between increasing the education level and the mean knowledge and statistical significant relation between increases of education level and social needs. This finding was in agreement with study by **Goldman, (2014)**. "Support from hospital to home for elders." and who found that, there was a significant difference between educated and uneducated groups among patients regarding their knowledge about disease process, this result may be due to inability of these patients' to read and comprehend the information about their diseases.

Conclusion:

Conclusion the present study revealed that more than two thirds of the had good knowledge. There was a highly statistically significant relation between patient's educational level, patients' monthly income and social needs. Also there was a significant relation between patients' age groups, marital status, working condition and social needs. While there was no significant relation between patients' education, patients' working, living with family, monthly income and physical needs. There was none statistically significant patient' working, level of education, marital status, monthly income and psychological needs.

Recommendations:

The following recommendations were inferred from the study; discharge planning must be applied for provision of continuity home care using nursing process until the needs of patients are met. Wright booklet should be

present in simple Arabic words illustrates pictures about patient physical needs to cardiac rehabilitation when required compliance as medication, exercise and diet. Patient should resume activities of daily living in a way that meet the needs of the most circumstances to help patient to copes with his condition post operation. Healthcare provider should make every effort to engage the patient's active participation in prescribed medical remain and modified life style that helps to decrease patients stress and improve patient's psychological status. Enhancing of social sport to patient through social agency to provide medication and financial aid. Further research studies are needed to focus on studying health related psychological and social needs of patients post CABG.

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