



**THE IMPACT OF PATIENT EDUCATION ON QUALITY OF LIFE OF
PATIENTS UNDERGOING CORONARY ARTERY BYPASS GRAFTING
IN THE WEST BANK OF PALESTINE**

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Rebhi BSHARAT

12/7/2017

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(Ph. D. Thesis)

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ABSTRACT

The present study was carried out as experimentally study to determine the effect of pre and post-operative educational program based on DVD and Booklet on Quality of Life (QoL) and discharge problems in patients with coronary artery bypass graft (CABG) surgery after one month of discharge. The study population was chosen among the patients who have undergone CABG surgery in Palestine Medical Complex, and Arab Especial Hospital affiliated in the West Bank, Palestine. The sample of study consisted of 160 patients undergoing CABG surgery between December 2015 to April 2016. "Personal Information Form", "The Home Follow-Up Form after Discharge", "SF-36 Health Survey" forms and effectiveness of education programe were used for data collection before and after intervention. Patients in the intervention group were provided preoperative education and training with booklet and DVD 1-3 days before surgery and reinforced at discharge, follow up after discharge was provided within three intervals; 2 days, 10 days and one month after discharge, while the patients in the control group did not receive planned education and training other than the ordinary verbal instructions. For evaluation of the data percentile calculation, mean, Chi-squared, the paired sample t- test, and Variance analysis, Tukey tests were used. Comparing the intervention group to the control one, problems were found fewer in the intervention group than control group ($p<0,05$). Investigating quality of life before surgery, there was no significant difference between the mean scores of QoL domains in the two groups ($p>0,05$), except in terms of the Role limitations due to physical health ($p<0,05$). One month after discharge, significant difference was observed between the intervention and control group in all QoL domains ($p<0,05$). Finally, education programe and follow up given to patients in the intervention group had a positive impact on decreasing the problems they had and increasing their quality of life. Therefore, patient's education programs are recommended to be applied for CABG patients.

Science Code : 1032.01

Key Words : Patient education, quality of life, discharge problems, coronary artery bypass graft surgery.

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FİLİSTİN BATI ŞERİA' DA KORONER ARTER BY-PASS GREFT AMELİYATI
OLAN HASTALARA VERİLEN EĞİTİMİN YAŞAM KALİTESİ ÜZERİNE
ETKİSİNİN BELİRLENMESİ
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ÖZET

Bu çalışma, Filistin Batı Şeria'da Koroner Arter By-Pass Grefti (KABG) uygulanan hastalara DVD ve eğitim kitapçığı aracılığıyla verilen eğitimin yaşam kalitesi üzerine etkisinin belirlenmesi amacıyla deneysel olarak yapılmıştır. Çalışmanın evrenini, Ramallah'taki Filistin Tıp Kompleksi ve Nablus'daki Arap İhtisas Hastanesinde KABG amacıyla yatan hastalar oluşturmuştur. Örneklemine ise Aralık 2015 ve Nisan 2016 tarihleri arasında ameliyat olan ve çalışmaya katılmaya gönüllü olan 160 hasta alınmıştır. Çalışmanın verileri, kişisel bilgi formu, taburculuk sonrası evde takip formu ve SF-36 yaşam kalitesi ölçeği ile toplanmıştır. Veriler ameliyattan 2 gün sonra, hasta taburcu edildikten 10 gün ve bir ay sonra toplanmıştır. Uygulama grubuna ameliyattan 1-3 gün öncesinden eğitim kitapçığı ve DVD'den oluşan eğitim programı yardımıyla, çalışma konusunda eğitilmiş bir hemşire tarafından eğitim verilmiş, taburculukta ise tazeleme eğitimi verilmiştir. Kontrol grubu ise rutin servis bakımı olan sözel eğitimi almıştır. Verilerin değerlendirilmesinde, yüzdelik, ortalama Ki Kare, t testi, varyasyon analizi ve Tukey testi kullanılmıştır. Uygulama grubunun kontrol grubuna göre daha az sorun yaşadığı saptanmıştır. Ameliyat öncesi dönemde iki grubun yaşam kalitesi puan ortalamaları fiziksel sağlık ana boyutunun rol kısıtlaması alt grubu dışında, diğer alt gruplar arasında anlamlı bir fark saptanmamıştır. Uygulama grubu ile kontrol grubu hastalarının taburculuktan bir ay sonraki yaşam kalitesi puan ortalamaları açısından gruplar arasında önemli bir fark olduğu saptanmıştır. Sonuç olarak; deney grubundaki hastalara verilen eğitimin, yaşanan problemi azaltmada ve yaşam kalitesini artırmada olumlu etkisi olduğu belirlenmiştir($p<0,05$). Bu nedenle KABG ameliyatı olan hastalara eğitim programının uygulanması tavsiye edilmektedir.

Bilim Kodu : 1032.01

Anahtar Kelimeler : Hasta eğitimi, yaşam kalitesi, taburculuk sonrası problemler, koroner arter by greft ameliyatı.

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LIST OF SYMBOLS AND ABBREVIATIONS

The symbols and abbreviations used in this thesis are presented in below with explanations.

Symbols	Descriptions
AHA	American Heart Association
Am	Ante Meridiem "before midday"
AEH	Arab Especialized Hospital
BMI	Body Mass Index
CV	Cardiovascular
CVD	Cardiovascular Diseases
CABG	Coronary Artery Bypass Grafting
CAD	Coronary Artery Disease
DVD	Digital Video Disc
HRQoL	Health Related Quality of Life
ICU	Intensive Care Unit
MoH	Ministry of Health
NHP	Nottingham Health Profile
NCSS	Number Cruncher Statistical System
OHC	Open Heart Centers
PMC	Palestine Medical Complex
PHIC	Palestinian Health Information Center
Pm	Post Meridiem "after noon"
PASS	Power Analysis And Sample Size
QoL	Quality of Life
RCT	Randomized Controlled Trial
SF-36	Short Form 36
SPSS	Statistical Package of The Social Science
UK	United Kingdom

Symbols**Descriptions****USA**

United State of America

WHO

World Health Organization

1. INTRODUCTION

Problem statement

Cardiovascular disease CVDs are chronic diseases spread out worldwide and are the most common causes of death all over the world. This direction has been predicted to continue to occupy the first leading cause of death worldwide until 2020 (Lehtonen, 2009). During the past 36 years, there has been a dramatic increase in the number of cardiac surgical procedures involving the surgical treatment for valvular disease and CABG (Algeash, 2005).

CAD is one of the most important, CVD and a worldwide health problem. It is estimated that in 1990, CVD accounted for 24% of the world's 50,4 million death. By 2001 CVDs were responsible for 29% of all deaths. By 2020 the world population will grow to 7,8 billion and 32% of all deaths. By 2030 the population is expected to reach 8,2 billion and CVDs will cause 33% of all deaths (Braunwald, 2011:10).

According to the Palestinian health report from the Palestinian Health Information Center (PHIC), issued in 2014, one of the most common CVD is coronary artery disease (CAD). CVDs are recognized as the major cause of mortality in Palestine. Mortality statistics issued by MoH showed that the percentage of death due to CVD was 31,2% from all of the deaths in 2012 and increased to 31,9% in 2013. The report mentioned also that there were 3566 deaths in 2013 due to cardiovascular disease and 750 patients underwent open-heart surgeries, In 2014 there was 941 cases of CABG, this indicates that there is threefold increase in the number of cases since 2000. 85% of all the open heart surgeries are CABG which is the major procedure utilized to alleviate the effects of CVD (PHIC: 2014).

CABG is not only a procedure used to diminish the negative effects of coronary artery disease and reduce the risk of further damage to the heart, but also a procedure used to improve patient's health related quality of life (HRQoL) and avoid early mortality due to this disease (Bak & Marcisz, 2014). The main goal of CABG is relief of angina and increased life expectancy. CABG is mainly performed in elderly patients to reduce mortality and improve their QoL (Graham et al. 2006). The research referring to evaluation

of QoL after CABG has been inconclusive. Never the less, the majority of patients, QoL has improved after CABG (Miller, 2003).

QoL consists of dimensions that are related to each other. There are three major domains in QoL: physical, psychological and social dimensions (Davoudi, 2012). Psychological dimension is correlated to the concepts of mental and emotional well-being and some other issues such as depression, fear, anger, happiness, self-control and anxiety. One of the dimensions of QoL in recovery period after CABG is mental status of patients which has an inevitable role in other dimensions including social functioning and restarting job and activities. Depression is the major and most prevalent mental outcome in this period that can influence the process of recovery in patients (Davoudi, 2012).

Cardiac surgery is perceived as a crisis or a life-threatening event for most patients. When an individual faces a threatening event, the situation is appraised cognitively, and if found threatening, anxiety is aroused. Patients who seek information about their surgery are attempting to cope by trying to have some control of the situation through knowledge (Mohajer, 2001).

One of the most effective ways and essential tool for empowering patients with knowledge about CABG surgery is Patient education; which is a process that delivers health-related information to a patient in order to promote changes in behavior that will optimize health practices and assist the individual in acquiring new skills for living. Quality patient education can shorten the length of the hospital stay and improve self-care management skills (Babaei, 2007; Cebeci, 2008; Urden, Stacy & Lough, 2006).

Health education is a necessary tool for the health and it aims to promote health level and reduce the behaviors that cause disease. On the other hand, health and QoL also have a mutual relationship. Meanwhile, educational programs as intervening factor can play an important role in removing the health problems and changing the QoL. In other words, the goal of health education is to promote health and quality of life of individuals. Early health education can be effective not only in health improvements, but also in other social domains and QoL. Health education programs attempt to change lifestyle in cardiac patients, including patients with CABG (Sabzmakan et al. 2012). Most of the risk factors causing cardiac disease are related to behavior and awareness of individual (Sabzmakan et

al. 2012). The experiences of advanced countries have shown that educational interventions focusing on behavior change were able to modify risk factors. Mental health educational programs showed the importance of controlling mental pressure and depression in recovery and promotion of QoL in cardiovascular patients (Sabzmakan et al.2012).

The patients undergoing CABG surgery deserve to have confidence that the professional nurse is knowledgeable, caring, efficient, and effective in providing necessary preoperative care. Proper preparation of the patient and significant others, expertise during the Intraoperative phase, and a thorough knowledge base combined with skill and compassion of the nursing staff during the postoperative phase increases the likelihood of a positive outcome for the patient (Robert et al.2012).

Educating patients strongly reduces cardiac mortality, improves mental status, QoL, satisfaction from medical care, and decreases behavioral risk factors in patients after CABG. The value of educational programs depends upon the efficacy of the programs which is itself influenced by appropriate use of educational models. The value of health education programs is also dependent upon their efficacy, and the effectiveness of health education programs highly depends on appropriate use of required theories and models in health education (Allahverdipour, 2004).

Today, open heart surgery is considered as one of the most effective and valuable methods in treatment of CVDs. The success of cardiac surgery is measured by low mortality, relief of symptoms and improvement in the QoL. Although most of the patients do experience relief of symptoms after surgery as they become more active and independent (Kattainen et al. 2004). Research findings indicated that the rate of recovery is related to lack of information of the patient before and after surgery. Therefore, patient education may contribute in facilitating home recovery, success of treatment and reduction of cost (Algersha, 2005).

The patient and their family's preparation is an important part of the cardiac surgery as it increases knowledge, decreases anxiety and promotes patient and family involvement (Milander & Bucher 1999:313). Research over the past three decades has provided evidence for the importance of patient education. Positive effects of preoperative health

care information on indices of postoperative pain, distress, and recovery are well documented (Johnson, 1999; Oshodi, 2007). Heart diseases are increasing year after year due to many causes and one of them is the life style. And according to global statistics, it accounts for 31% of deaths among the causes of deaths worldwide, nevertheless there is great burden of heart diseases socially and economically (WHO, 2011).

Open heart surgery in Palestine is considered a recent surgery which started in 1989, there are six centers for open heart surgery (five private and one governmental) with 941 surgeries in 2014, while in the year 2000 there were 300 cases (PHIC, 2014). This reflects the increasing number of patients with CVDs and their need of surgery, but the interest of the medical staff about the patients who undergo open heart surgery is purely related to the success of the surgery and reduction of the complications and there is no follow up for the patient after the operation. In addition, there is no standard patient educational program relevant to open heart surgery and even to any surgical procedures in governmental or private hospitals. According to research in Palestine there are no related studies to patient education for any surgery.

Therefore, this research ought this study because there is a pressing need to construct an educational program for patients with open heart surgery in an attempt to alleviate the complications of the surgery and to enhance their QoL after operation.

The purpose of the study

This study aims to examine the effect of pre and post operative educational intervention based on DVD, Booklet on QoL and reduce discharge problems in patients with CABG surgery.

Hypothesis of the Study

H1.1: Educational programmes reduce problems experienced by the intervention group patients after discharge.

H1.2: Educational programmes increase the intervention group QoL after discharge.

Significance and importance of the study

Considering the increase in atherosclerosis and CABG surgery worldwide and in Palestine, with regards the to the importance of improving the QoLof these patients and accelerate their recovery and return back to their normal lives, this study is conducted to evaluate the effect of pre and post operative health education programmes on QoLin bypass surgery patients.

There is no evidence that reported studies which are related to the nursing intervention after open heart surgery are conducted in our country. Therefore, the researcher ought to design the present study because there is a pressing need to construct an educational nursing programme for patients with open heart surgery and to study its effect on acceleration of postoperative recovery.

The importance of this study evolves from the regular work with patients suffering from heart diseases and undergoing open heart surgery. These patients face lack of knowledge and huge psychological pressures especially anxiety because of the great burden of open heart surgery either to the patient himself or to his/her family, this is related to the nature of this kind of surgery and the complexity of the surgery pre and post operatively, also during the operation itself and to the probability of its success. All these pressures develop great stress and anxiety to the patient, so the importance of this study can be summarized as the following:

- 1- This is the first study in Palestine that concerns about the impact of pre and post operative patient education on patients undergoing open heart surgery.
- 2- It will provide healthcare providers with information about the effect of patient education on Quality of life.
- 3- It will help healthcare providers to select the proper education programmes that meets the patient's needs.
- 4- It will provide others with a database to make further studies and research to improve the patient educational program for open heart surgery patients.
- 5- It will provide healthcare workers (especially nurses and doctors) with the opportunity to increase the chances of the operation's success by finding a relation between the operation success and the variables of the study.

- 6- It will contribute to building an educational programme to deal with complications and improve quality of life.

Limitation

- 1- The study was conducted only in the West Bank. Centers of Gaza Strip and Jerusalem/Al-Quds were excluded due to the Israeli occupation and difficulty in getting permission to reach there.
- 2- Prevailing political situation in the area which greatly limits transportation during the home follow up.
- 3- The intervention and control groups were simller in sociodemographic data exept education, age, previus had surgery and length of in hospital stay(days).

2. GENERAL INFORMATON

2.1. Coronary Artery Disease

CAD is known as ischemic heart disease (Bhatia, 2010:23), and causes ischemia of the heart muscles. Ischemia is a condition described as “cramping of the heart muscle.” It occurs when the narrowed coronary artery reaches a point where it cannot supply enough oxygen-rich blood to meet the heart’s needs. The heart muscle becomes “starved” of oxygen. Ischemia causes chest pain or other symptoms (Roger, 2011). CAD is a group of diseases that includes: stable angina, unstable angina, myocardial infarction, and sudden cardiac death. It is within the group of cardiovascular diseases of which it is the most common type (Wong, 2014).

CADs are the most common type of heart disease. Globally, it is the leading cause of death and is predicted to remain so for the next 20 years (Mathers & Loncar, 2006; Sam, 2006). In 2013 CAD resulted in 8.14 million deaths (16.8%) up from 5.74 million deaths (12%) in 1990 (Wong, 2014). Each year, approximately 3.8 million men and 3.4 million women die from CAD (WHO report, 2004). In 2020, it is estimated that this disease will be responsible for a total of 11.1 million deaths globally (Mathers & Loncar, 2006) and by 2050, it is estimated that 20 million people will die from coronary artery diseases (Sam, 2006). According to American Heart Association statistics, 770 000 Americans suffered a new coronary attack in 2008, and a further 430 000 experienced a recurrent attack. An additional 190 000 silent first heart attacks are estimated to occur each year (Lloyd-Jones et al. 2009).

Due to this increasing incidence across the world CAD has been described as a true pandemic that respects no borders. WHO reported about the global burden of disease that, 30% of people in the world die of a heart attack and other heart related problem every year (Sam, 2006). More people die annually from CVDs than from any other cause of death globally. Over 75% of CVD deaths take place in low- and middle-income countries (<http://www.who.int/cardiovascular>, 2016).

In developed countries the disease is declining, for instance the risk of death from CAD for a given age has decreased between 1980 and 2010, also the number of cases of CAD

for a given age has decreased between 1990 and 2010. In the United States in 2010 about 20% of those over 65 had CAD, while it was present in 7% of those 45 to 64, and 1.3% of those from 18 to 45. Rates are higher among men than women of a given age (CDC, 14 October 2011).

Despite the recent decline in developed countries, both CAD mortality and the prevalence of CAD risk factors continue to rise rapidly in developing countries. Developing countries are attributable to the increasing incidence of atherosclerotic diseases, perhaps because of urbanization, rapid socioeconomic growth, higher risk factor levels (such as obesity, diabetes, dyslipidemia, hypertension and tobacco consumption and the like), the relatively early age at which they manifest, the large size of the population and the high proportion of individuals who are young adults or middle-aged in these countries (Yusuf et al. 2001). Between 1990 and 2020, the increase in ischemic heart disease mortality (120% in women and 137% in men) in the developing countries is expected to be much greater than those in the developed countries (29% and 48%, respectively), there is a relative lack of prevention and control measures to decrease exposure to these risk factors in developing countries (Okrainec et al. 2004).

Due to high prevalence of CVDs, it imposes a high social and financial burden on individuals, families and healthcare systems around the world. In 2004–2005, three of the four costliest diseases in Canada were CVD related, costing taxpayers \$1.4bn for hospital in-patient care (Canadian Heart Health Strategy, 2009) and another \$20.9bn for medical staff services, hospital costs, lost wages, and decreased productivity. CVDs cost the European Union's economy almost €196bn a year (Nichols, 2012).

2.1.1. Coronary artery disease risk factors

There are many risk factors associated with CAD, some are modifiable risk factors, others are non modifiable risk factors (Boudi, Subhi & Ali, 2013; <http://www.world-heart-federation.org> CVD-risk-factors (2106); Coronary-Artery-Disease, 2016).

Modifiable risk factors can be treated or changed as; hypertension is the single biggest risk factor. Abnormal blood lipid levels, which is high total cholesterol, high levels of triglycerides, high levels of low-density lipoprotein or low levels of high-density

lipoprotein. Tobacco use, whether it is smoking or chewing tobacco, the risk is high especially if smoking is started at young age. Passive smoking is also a risk factor. Physical inactivity increases the risk of heart disease 50%. Obesity is a major risk and predisposes to diabetes which is also a risk factor. Having Type2 diabetes makes someone twice as likely as who does not. A diet high in saturated fat is estimated to cause about 31% of coronary heart disease worldwide. A chronically stressful life, social isolation, anxiety and depression also increase the risk of heart disease. High level of alcohol consumption will damage the heart muscle. Certain medicines may increase the risk of heart disease such as the contraceptive pill and hormone replacement therapy (Boudi, Subhi & Ali, 2013; <http://www.world-heart-federation.org> CVD-risk-factors (2106);Coronary-Artery-Disease, 2016).

Non-modifiable risk factors are factors that cannot be changed as; simply getting old increases the risk; where the risk doubles every decade after the age of 55. Family's history, the risk increases if a first-degree blood relative has had coronary heart disease before the age of 55 years (for a male relative) or 65 years (for a female relative). Gender is a significant risk factor, men are at greater risk of heart disease than a pre-menopausal woman, but once past the menopause, a woman's risk is similar to a man's. Ethnic origin also plays a role, people with African or Asian ancestry are at higher risks of developing CAD than other racial group (Boudi, Subhi & Ali, 2013; <http://www.world-heart-federation.org> CVD-risk-factors (2106); Coronary-Artery-Disease, 2016).

2.1.2. Coronary artery diseases and coronary artery bypass graft surgery

The achievement of positive results in the treatment of patients suffering from coronary heart disease is possible to the common introduction of invasive procedures on the heart, particularly in the coronary arteries. Among cardiac surgeries, CABG is the most common type of heart surgery. It is a widely used technique for the treatment of CAD (Bruunar, 2011). CABG is performed to minimize the damage in coronary arteries. Although surgery does not stop the progression of atherosclerosis (Coronary Artery Disease), which deposits material in to artery walls, narrowing them and eventually limiting blood flow. Nearly 90%of patients experience significant improvement after CABG surgery (Daniel, 2007).

It is estimated that more than 800,000 CABG surgeries are performed worldwide every year. CABG is the most common type of open heart surgeries in the United States, with more than 500,000 surgeries performed each year (Larosa & Brown, 2005). Every year, 28,000 CABG surgeries are performed in the UK (Mark, 2005). In West Bank–Palestine, 941 CABG surgeries were performed in 2014 (PHIC, 2014).

CABG surgery is performed to restore blood flow to the heart. This relieves chest pain and ischemia, improves the patient's quality of life, and in some cases, prolongs the patient's life. The goals of the procedure are to relieve the angina and to enable the patient to resume a normal lifestyle and to lower the risk of a heart attack (Sabzmakan, 2012). These procedures are performed more and more often in elderly patients to reduce mortality and improve their QoL (Graham et al. 2006; Kamiya, et al. 2007).

2.1.3. Problems after coronary artery bypass graft surgery

CABG surgery is a major surgery, and patients may experience any of the complications associated with this surgery. The risk of death during CABG surgery is about 2-3% (Keogh & Kinsman, 2004). Possible complications include graft closure and development of blockages in other arteries, long-term development of atherosclerotic disease of saphenous vein grafts, abnormal heart rhythms, high or low blood pressure, blood clots that can lead to a stroke or heart attack, infections, and depression (Keogh & Kinsman, 2004). Use of the heart-lung machine also can cause complications, memory loss and other changes, such as difficulty in concentrating or thinking clearly, may occur in some people. It increases the risk of clots forming in blood vessels, which can cause a stroke or other problems. These complications are more likely to occur in people who are older, who have high blood pressure or lung disease, a history of smoking, or who drink excessive amounts of alcohol. They are also more likely to occur in those who have conditions such as diabetes, kidney disease, lung disease, or peripheral vascular disease caused by a reduced supply of blood to the brain. It is probable that being poor is associated with a greater degree of stress, social isolation, and inadequate access to quick or preventive treatment. In addition, some patients can develop a fever associated with chest pain, irritability, and decreased appetite (Al-Daakak et al. 2016; Hawkes et al. 2006). This is due to inflammation involving the lung and heart sac, and is sometimes seen one to six weeks after surgeries that involve cutting through the pericardium (the outer covering of the heart). This reaction is usually a

mild, self-limited illness, but some patients may develop fluid build-up around the heart that requires treatment (National Heart Lung and Blood Institute, 2013).

Most of the problems that patients may encounter during the first month after their discharge include problems related to the respiratory system (pneumonia, dyspnea, sputum production), circulation (edema, hypotension, hypertension), pain control, the operation area (wound infection etc.), drug use (adverse effects, lack of knowledge on the part of the user), nutrition (anorexia, nausea), excretion (constipation, urinary tract infection), exercises (not knowing how to do exercises), self-care (inability to care for oneself, not knowing how to wash oneself, not being able to get dressed on one's own), pain control (not understanding the correct times for pain control), shoulder, back or chest pain, insomnia, nightmares, emotional changes, palpitation, weakness, fatigue (tiredness), mood swings, depression or loss of appetite (Dal, Bulut & Demir, 2012; Elitoğ & Erkuş, 2008; Mistiaen & Poot, 2006).

Although recent developments have increased the success rate of CABG surgeries, they are not sufficient to eliminate altogether the physical, psychological and social problems that individuals face in the period following their discharge (Aydın, 2000; Beggs et al. 1998; Shuldham, 2001). Patients who have undergone CABG surgery reported that they have experienced postoperative pain, insomnia, changes in appetite or taste, chest pain, respiratory difficulty, arrhythmia, palpitations, numbness of arms, diarrhea, constipation, nausea, vomiting, abdominal distention, weight loss, anxiety related to the treatment and their ability to adhere to the recommended physical activity, edema of chest and leg incisions, weakness, headache, dizziness and depression (Akbari, 2014; Aydın, 2000; Beggs et al. 1998, Boudrez & DeBacker, 2001; Cebeci, 2008).

Numerous studies reported that giving brief, clear information oriented to individual needs of patients in discharge training can help prevent complications and reduce the incidence of re-hospitalizations (Driscoll, 2000; Naylor, 1999; Savage & Grap, 1999).

Full recovery from traditional CABG may take 6–12 weeks or more, the patient will feel weak because of the extended bed rest in the hospital. However, within a few weeks, the patient should begin to feel stronger. Less recovery time is needed for nontraditional CABG (Ostwald, Godwin & Cron, 2009).

2.1.4. Improving coronary artery diseases outcomes

One of the key methods of improving CAD outcomes; is with the cardiac rehabilitation programs including promoting physical activity and improved diet and stopping smoking. The benefits of cardiac rehabilitation programs are well established, (Lavie et al. 2009) (home based and hospital based) regarding physiological parameters, improved psychological status, in the elderly and in terms of cost effectiveness. However given the importance of behavioural lifestyle modification, any cardiac rehabilitation program must encompass all the modifiable risk factors.

Physical activity decreases the resting blood pressure, increases serum HDL cholesterol and decreases triglycerides independently of any weight loss (Warburton, 2006). As a consequence, the Chief Medical Officer in the UK has recommended a minimum of 30 minutes of moderate intensive physical activity on five or more days a week (Department of Health, 2004). The benefits of this physical activity have been reported in patients with CAD (Aldana et al. 2003; Ayabe et al. 2004).

Programs to aid patients to stop smoking are also available with one recent study demonstrating that hospital-initiated smoking cessation in those with CAD is successful in a randomized controlled trial (Smith & Burgess, 2009).

2.2. Coronary Artery Bypass Graft and Quality of Life

The prognosis of treatment by CABG is assessed by the survival rate, ability to return to work, clinical symptoms, and the patient's performance (Ballan & Lee, 2007). Recently, the assessment emphasizes the patient's appreciation of the changes in their health condition, in other words, their HRQoL (Anderson & Burchkadt, 1999). Assessing health status not only needs a series of interventions to increase the life span, but also requires attending to the way in which an individual's health is developed (Rakhshanderu, 2002). CABG is one of these treatments, which is conducted to improve the quality of life, reduce discomfort, and prolong the life span of patients with CAD (Kattainen et al. 2005).

Therefore, issues concerning QoL are central to management decisions regarding chronic diseases and may facilitate patients informed choice when making decisions about

treatment such as invasive surgery. In a healthcare system in which total cures for chronic disease are rare, patients, their families, and caregivers are interested in a therapy that benefits their symptoms, physical function, and social roles (Tully, 2013).

Tracking HRQoL in different populations can identify subgroups with poor physical or mental health and can help guide policies or interventions to improve their health (Lewis, 2003). Increasing attention has been given to monitoring HRQoL variables in relation to the outcome of the surgery (Visser, 2000).

The concept of QoL lacks a formally agreed definition, but it is clearly complex, abstract and multidimensional. QoL is distinct from (but related to) health and many attempts to define QoL have been based on the WHO definition of health (Fayers & Machin, 2002). The WHO QoL assessment group defines QoL as “the individual’s perception of their position in life in context of the culture and value system in which they live and in relation to their goals, expectations, standards, and concerns” (WHO_QoL, 1995). Attempts to distinguish between QoL in the more general sense (often referred to as the overall quality of life) and QoL related to the requirements of clinical medicine and medical research have led to the introduction of the (HRQoL). Several definitions of HRQoL have been proposed, a popular definition is that by (Wenger & Furberg, 1988) “Those attributes valued by patients, including: their resultant comfort or sense of well-being; the extent to which they are able to maintain reasonable physical, emotional, and intellectual function; and the degree to which they retain their ability to participate in valued activities within the family, in the workplace, and in the community” (Wenger & Furberg, 1988).

It is believed that the traditional end points, which are mainly focused on the biologic and physiologic outcomes, may not capture the impact of the intervention on patients’ HRQoL. As a result, a growing interest has appeared during the past decades for assessing and measuring the impact of diseases and their treatments on the patients’ QoL, especially in long-term and chronic diseases (Al-Kaade & Phauptman, 2001). CAD is one of these chronic diseases which impair the patient’s functional capacity and QoL (Lukkarinen & Hentinen, 2006).

An advantage of QoL is that it does not only take physical health into consideration but emotional, social and functional aspects of life. Physicians’ perspectives and patients’

perspectives can be very different and what a physician may regard as "a successful procedure" may not be perceived in the same light as the patient or their family. Examining both perspectives may ensure patients and healthcare professionals can set realistic goals about what to expect following interventions, in particular after cardiac surgery. Although the patient's perspective is important, information on QoL can potentially come from several sources: physicians, nurses, spouses and families. The other benefit of measuring QoL is that subjective data is relatively inexpensive and the information is relatively easy to collect. Given the costs associated with CAD and its chronic nature, evaluation combining objective and subjective methods is becoming more common (Lee, 2008).

The risk associated with CABG is currently considered by patients and healthcare professionals not only in terms of safety of the procedure and the possibility of complications occurring, its success rate in reduction of angina symptoms or durability of the achieved effect, but also – more and more frequently – in the context of the length of hospital stay, discomfort associated with pain, and the need for early rehabilitation and improvement of QoL (Koch, Khandwala & Blackstone, 2008).

2.2.1. Factors that affect QoL in coronary artery disease

There are several factors that affect QoL and when examining QoL, it is important to consider these variables. The main variables are depression, anxiety and the presence of other diseases/conditions. It is important to consider these factors when planning and managing patient care and in particular when planning cardiac rehabilitation programs. There are other factors that affect QoL related to the environment and social determinants of health (Lee & Carrington, 2007).

Depression is strongly correlated with the presence of angina within a CAD population. A study demonstrated that angina is predictive of significantly worse emotional, physical and social health related QoL and a higher depression level on the Symptom Checklist- 90 (SCL-90). The authors reported that at a six-week follow-up, patients with angina reported significantly worse QoL. It is evident that angina symptoms in CAD patients affect QoL and the presence of depression depressive symptoms adversely affects QoL (Frasure-Smith & Lespérance, 2008).

Anxiety is another psychological state investigated in relation to CAD but there is a paucity of evidence. The prevalence of anxiety in those with CAD has been reported at 36%, with a lifetime report of anxiety disorder of 45%. Some studies have reported an association between anxiety and the development and recurrence of CAD. A high prevalence of generalized anxiety and moderate to severe anxiety symptoms was reported in CAD patients (Lavie & Milani, 2004).

The presence of comorbid illness affects QoL in those with CAD. As highlighted by Netuveli et al. (2005), there can be a fourfold increase in functional limitation in those with chronic conditions and it seems important that healthcare professionals recognize the negative effect of chronic illness on QoL. For those with CAD who underwent CABG in the presence of comorbid illness, there were substantially more symptoms (angina and breathlessness) and a higher rate of pre- and post-operative Myocardial Infarction (Azzopardi & Lee, 2009). The study also reported that the majority of patients perceive themselves to have good QoL five years post CABG, however the presence of comorbid illness has a negative effect on physical QoL. Sawatzky et al. (2007) observed that those with chronic illness tend to participate in less physical activity which in turn can worsen their physical QoL and increase problems such as immobility and pain.

2.2.2. Measuring QoL

When examining QoL, it is important to choose a suitable tool that captures all the relevant aspects. QoL questionnaires can be categorized into disease specific and generic questionnaires. Dempster & Donnelly, (2000) conducted a literature review to inform researchers about the most appropriate generic and disease specific measures of health related QoL for use among people with ischemic heart disease in terms of reliability, validity, and sensitivity to change. The main disease specific are; the QoL after myocardial infarction; the Seattle angina questionnaire; the QoL index -cardiac version, the angina pectoris QoL questionnaire, and the summary index. Several generic measures of HRQoL, or health status, have been used among people with ischemic heart disease, the most commonly used generic instruments in heart disease are the Nottingham Health Profile (NHP), the Sickness Impact Profile and the SF-36 questionnaire.

There have now been many QoL studies published highlighting the long-term benefits of CABG in terms of physical health, absence of symptoms and improved functional ability (Lee, 2008; Herlitz et al. 2000). However, CABG is not curative and often symptoms can return, especially angina. In those who experience angina several years after CABG, a strong association between the presence of symptoms and restrictions in activities and decline in physical functioning is reported (Herlitz et al. 2000; Caine et al. 1999). Interestingly, studies have examined clinical parameters in relation to functional capacity of the individual, that is, if a person has reduced cardiac function this correlates with a patient's subjective QoL. Caine et al. (199) reported poor left ventricular function as a predictor of patient functional ability using multivariate analysis. Also, poor pre-operative HRQoL was also a strong predictor of a reduction in HRQoL five years after surgery. QoL questionnaires therefore can assist in monitoring patients' symptoms and thus their functional ability following CABG (Caine et al. 1999).

QoL usually diminishes in elderly patients with CHD. Bak, (2014) conducted a study to monitor the QoL of elderly after CABG. The result showed that there was a significant improvement in all QoL domains by 6 and 12 months after surgery, the values for particular domains of QoL improved more in men than in women. Bak, (2014) results were in consistent with the findings of other study as Peric et al. (2010) who examined QoL using the NHP in nearly 250 patients undergoing CABG surgery. They observed that low QoL before CABG improved 6 months after surgery. Graham et al. (2006) evaluated QoL in elderly patients after CABG, four years after surgery; the patients had better health status and better QoL than those who did not undergo revascularization.

Many authors have used the SF-36 questionnaire to measure QoL in CABG patients. Michalsen et al. (2005) used SF-36 questionnaire in cardiovascular patients showed significant improvements in the test group after the intervention in seven dimensions of general health, physical functioning, physical limitation, social functioning, mental health, vitality and bodily pain while the patients of the control group had significant improvements only in four dimensions; general health, social functioning, mental health and bodily pain. In a study by Lindsay et al. (2003), the SF-36 questionnaire was used to determine the effect of rehabilitation programs after the CABG surgery. There was a significant difference between the two groups in terms of physical functioning and physical limitation.

In a study by Babaei et al. (2007), they also used SF-36 questionnaire in order to evaluate the QoL after the CABG surgery. The intervention group participated in the educational intervention programs based on Miko Education Pattern. One month after the CABG surgery, the results showed that there was a significant correlation between the physical functioning, mental problems, physical limitation, mental health and vitality. It showed that health education improved QoL of patients after CABG surgery. Dehdari, (2003) using SF-36 questionnaire showed that one month after the surgery, there was a significant difference between the test and control groups in terms of physical functioning, physical limitation, mental problem, vitality and mental health. In the study of Sabzmakan, (2012), similar results were found with the study of Michalsen et al. (2005) (for the physical functioning) as well as the study of Babaei et al. (2007); Dehdari, (2003) there was a significant difference after the intervention between the two groups in terms of mental problems.

Similarly, Tofighi et al. (2012) used SF-36 to evaluate the changes in HRQoL in patients with CAD, in terms of treatment type, age and gender, during the two-year follow up, between one to three-year post-treatment periods, the results showed that there was a significantly improvement during follow up of physical functioning, role-emotional, mental health, and mental components summary scale. On the other hand, bodily pain, social functioning, and physical components summary scales deteriorated in the same period.

Also Staniūtė et al. (2010) aimed to evaluate the changes in HRQoL in patients with coronary artery disease with regard to age, gender, and treatment method by using SF-36. The researcher concluded that the greatest improvement of HRQoL was seen at 6 months and within the period up to 2 years remained at the same level.

In a survey study by Bradshaw et al. (2005) on HRQoL of Western Australia CABG patients 6 to 20 years after surgery using SF-36, revealed that HRQoL among long-term survivors of CABG was worse than that of the age- and sex-matched general population due to the presence of angina or heart failure, and to co-morbidities such as diabetes and hypertension. However, participants who did not report symptoms of angina or heart failure enjoyed a HRQoL equivalent to the Australian population norms.

QoL has been the key end-point of adult cardiac surgery. QoL is an objective measurement to assess a patient's outcome after CABG surgery. It encompasses aspects of a patient's life such as family, education, sport/hobbies, social responsibilities, financial and health status. All these areas affect a patient's perception of QoL (WHO, 2006; Hawkes et al. 2006).

2.3. Patient Education and Follow Up After Discharge

Patient education is an essential aspect for empowering patients with knowledge about CABG surgery. It is a process that delivers health-related information to a patient in order to promote changes in behavior that will optimize health practices and assist the individual in acquiring new skills for living. Quality patient education can shorten the length of the hospital stay and improve self-care management skills (Babaei et al. 2007; Cebeci & Celik, 2008; Urden, Stacy & Lough, 2006).

Important patient outcomes include improved information retention, high patient satisfaction (Zhang et al. 2012) and increased adherence to therapy (Utriya Prasit, Moore & Chaiseri, 2010). Physical and psychological recovery and improved QoL can occur when there is education. (Fredericks et al. 2009).

Any type of surgery is a cause of stress to the patient. It becomes even more stressful when the heart, a vital organ, is involved. Some of the patients may respond with expression of helplessness, insecurity and isolation due to discomfort, pain and fear of breaking stitches. The patient who is undergoing cardiac surgery requires specific information about postoperative problems, activity progression, nutrition and medication, (Kaur, Verma & Singh, 2007).

Early research, published by Janis, (1958), demonstrated that giving preoperative education to patients is beneficial. He realized that successful emotional inoculation could be achieved in patients facing severe stress by giving them preparatory information containing accurate warnings about what to expect. After Janis had opened up this field of research, numerous studies were conducted to investigate the impact of preoperative education. Hayward showed that patients who had received preoperative information required less analgesia and recovered faster than those who had not (Hayward, 1976). A meta-analysis of 191 studies focusing on how psychoeducational interventions influence

recovery showed a positive effect of preoperative patient's education on postsurgical pain, psychological wellbeing, anxiety and satisfaction (Devine, 1992). Ronco et al. (2012) published a systematic review from 2004 to 2010 evaluating a total of 19 studies involving 3,944 patients. Frequently analyzed outcomes were anxiety, knowledge, pain and length of hospital stay. The objective knowledge was the only positive outcome influenced by patient education (Ronco et al. 2012).

Towell & Nel, (2010) conducted a study to explore the CABG patient's experience and benefit of pre-operative education programme as positive and lower anxiety levels. They found that the majority of the patients were positive about the programme and were empowered to take control of anxious situations in their lives. Moreover, the critical review by Oshodi, (2007) aimed to analyze and discuss published research in the effect of preoperative education on postoperative outcomes such as pain, anxiety, and recovery, since 1994 he found that all studies reported one or more statistically significant effect in the outcome measures and all support the use of preoperative education. Except Young et al (1994) who did not report any significant effects. Al-gersha, (2005); Kaur, (2007) also investigated the effect of planned preoperative education on the recovery of CABG patients, and found that preoperative education is an extremely effective method to strength self care abilities and enhance recovery. Sabzmakan, et al. (2012) evaluated the effect of an educational intervention PRECEDE on depression and QoL of patients with CABG 4 to 8 weeks after surgery. The findings confirmed the improvement of psychological status and depression of the patients which finally increased QoL of patients after CABG. Veronocivi et al. (2013) concluded in their literature review on studies related to discharge education for cardiovascular surgery that patient education is essential and no studies reported negative findings in relation to preoperative education.

Education of patients with a chronic disease and improving QoL of these patients gets a growing attention, Goodman, et al. (2003). According to Babae, (2007) the study assessment of QoL, education can improve health QoL in patients with CABG.

According to Gallagher & McKinley, (2007), patient education can be considered an important aspect of patient care. If patients are not educated regarding their care, they may be at risk of complications for example, more post-operative pain, more readmissions and an increased length of stay. The purpose of pre-operative education is to give the patient

and their family the tools that they need to be able to make informed decisions Lewis et al. (2007). Attitudes greatly affect the recovery rate, therefore patients need information about what to expect, they also need to understand that their active participation in their care is necessary for a complete and successful recovery (Graziano, 2004). Based on Utriya Prasit, et al. (2010) findings, educating patients and their families about what to expect after discharge, including rehabilitation, helps to decrease fears, depression and anxiety as they can anticipate what is going to happen physically and mentally and are therefore better prepared to handle these situations.

Cardiac surgery can save lives and improve QoL. The outcomes of cardiac surgery can be affected by the quality of pre-operative health education provided to these patients. A comprehensive health education programme for cardiac surgery patients sets the stage for preventing post-operative complications and improving patients' outcomes (Havrilak, 2005). Investing time in preparing cardiac surgery patients pre-operatively assists in eliminating information gaps which can interfere with the patient's post-operative complications (Shuldham, Fleming & Goodman 2001).

McHugh et al. (2001) and Ciccone et al. (2013) reported that the waiting time before surgery can be used for appropriate education (with elements of psychiatry), and emphasized the role of the nurse in improving QoL for patients with heart failure.

Education of the patient after CABG surgery, in addition to monitoring all the vital organ functions of the body, and follow-up programs are very important (Al-Gersha et al. 2005). Therefore, patient education may contribute to facilitating home recovery, success of treatment and reduction of cost. Several researchers have shown that patients with cardiac surgery need a lot of information about what they can expect during their recovery period at home. The need to provide information to patients before and after cardiac surgery is commonly accepted in clinical practice, while the lack of information during hospitalization and after discharge may delay recovery during this period (Al-Gersha et al. 2005).

While preoperative education programs have demonstrated favorable effect on post-surgical outcomes, there are no guidelines or standards for how best to educate cardiovascular (CV) surgery patients for self-management after discharge (Goodman et al.

2003). The literature revealed that patient education is offered at various times and to different patient populations, including to preoperative in-patients and to post-surgery outpatients (Fredericks, 2009). Importantly, Shuldham, (2001) and Goodman et al. (2003) reported that providing discharge education preoperatively is more effective in helping patients and caregivers cope with acute and chronic health issues than offering the same education at other times.

The competencies of a health educator include the following (Bastable & Susan, 2011):

- Incorporate a personal ethic in regards to social responsibilities and services towards others.
- Provide accurate, competent, and evidence-based care.
- Practice preventative health care.
- Focus on relationship-centered care with individuals and their families.
- Incorporate the multiple determinants of health when providing care.
- Be culturally sensitive and be open to a diverse society.
- Use technology appropriately and effectively.
- Be current in the field and continue to advance education.

2.4. Education for Adult Patient

Adult education is a practice in which adults engage in systematic and sustained self-educating activities in order to gain new forms of knowledge, skills, attitudes, or values (Merriam & Brockett, 2007). Patients undergoing CABG surgery are mostly adults. Adult learners have principles and many characteristics and the caregiver must notice that (Pappas, 2013; Ellen & Patricia, 2014).

2.4.1. Principles of adult education

Adults need a reason for learning.

- Adults want to know from a personal perspective why it is important to attend an educational activity.

- Communicating evidence that supports the need for an educational program is essential. Adults have the right and responsibility to know the rationale for attending educational activities.

Adults are self-directed learners responsible for their own learning.

- Self-direction in adults stems from a desire to have control over what they learn and how they learn it.
- Adults participate in the planning, implementation, and evaluation of educational activities.
- Adults participate in assessing educational needs.

Adults bring varied life experiences to learning situations.

- Life experiences may enhance learning even if they do not directly relate to the program topic.
- Adult learners should be encouraged to share their life experiences if they are willing to do so.
- The nursing professional development educator facilitates learning by helping learners apply their personal experiences to enhance the learning process.

Adults are life-oriented learners. They focus on obtaining knowledge and skills that will help them in their daily lives.

- Adults need to understand how specific knowledge, skills, and behaviors will benefit them in job performance, interpersonal interactions, and professional development.
- Adults become impatient if they are forced to participate in educational activities that they believe are not purposeful or beneficial to work or their personal lives.
- Adults approach education from a task-, problem-, or life-oriented perspective.

Adults respond to both intrinsic and extrinsic motivators.

- Motivators are factors perceived to be of benefit to the learner.
- Examples of extrinsic motivators include salary increases, promotions, improved working conditions, and public recognition.

- Examples of intrinsic motivators include increased self-esteem, ability to enhance interpersonal relationships, and enhanced job satisfaction.
- Adults are more responsive to intrinsic motivators. Connecting educational program purpose to the adult learners' intrinsic motivators increases learning.

Nursing professional development educators must consider internal and external motivators when planning learning activities (Pappas, 2013; Ellen & Patricia, 2014).

2.4.2. Nursing role in patient education

Many studies emphasized that nurses have a key role in preoperative education to help patients and their families prepare mentally and physically for the surgical process and learn how to effectively self-manage post-surgical symptoms once they are discharged home (Frederick et al. 2009; Moore and Dolansky, 2001). Also Al-Gersha et al. (2005) recommend that the implementation of the educational program should be performed by nurses for patients with open heart surgery before and after the operation, as well as during the recovery period.

When teaching the patient and family, the nurse should focus on the factors that influence patient education including (Cebeci, 2004):

- Patient's diagnosis and state of health,
- Patient's knowledge and experience,
- The priorities of the patient's learning
- Types of learning (written, oral).
- Socio-economic status of the patient.
- Providing patient education materials and dealing with the method of presentation.
- Cultural and religious preferences of the patient.
- The patient's language and education level.
- Pertaining to the patient's visual hearing and other senses deficiencies.
- Duration of the patient's learning. Enough time must be allowed for practical work during the learning process itself for assimilation, testing, acceptance and internalization.
- The patient's functional ability.

- Age and/or developmental factors.

Intervention in nursing is a planned, organized, progressive, and logical process of teaching and learning provided to patients and clients in all clinical settings. Patient education is a significant part of regular nursing care and is an essential nursing standard practice that significantly impacts a patient's health and QoL. As Azzizadeh, (2013) asserts, patients generally need information about their own illness, the treatment they undergo, side effects, complications, and about health-related problems. It is also important for patients to know about future treatments. In addition, some information is needed on daily activities, practical solutions, and on financial issues. Patients and their family should be fully informed about the available options and the associated procedural risks and benefits (Roussakis, Balaka & Dedeilias, 2012).

CABG surgery patients have to make considerable adjustments, to adapt to the new life situation. These should be based on knowledge, for allowing competent and confident informed choices. Thus nurses are often involved in developing educational programs and act as teacher or coach) supported that nurses should be equipped with the appropriate knowledge and skills(Boudrez & DeBacker 2001; Holst et al. (2007); Oshodi, 2007. Also it is essential that all health trusts provide adequate training for nurses, emphasizing the importance of preoperative education as an empowering activity. Nurses have the greatest opportunity to initiate and reinforce patient education as they spend more time with patients than do surgeons or anesthetists.

Patient education should include (Akbari, 2014):

- a. The assessment considers and evaluates cultural and religious practices, emotional barriers, desire and motivation to learn, physical and cognitive limitations, language barriers, and financial implications of care choice.
- b. When called for by the patient's age and length of stay, the hospital assesses and provides patients' academic education needs.
- c. Patients are educated about the safe and effective use of medication, according to law and their needs.
- d. Patients are educated about the safe and effective use of medical equipment.

- e. Patients are educated about potential food–drug interactions, and provided counseling on nutrition and modified diets.
- f. Patients are educated about rehab techniques to help them adapt or function more independently in their environment.
- g. Patients are taught that pain management is a part of treatment.
- h. Patients are informed about access to additional resources in the community.
- i. Patients are informed about when and how to obtain any further treatment or follow-up care they may need.
- j. The hospital clarifies what the responsibilities of patients and their families are regarding the patient’s ongoing health care needs and gives them the knowledge and skills they need to carry out their responsibilities.
- k. With respect to privacy, hospital teaches and helps patients maintain good standards for personal hygiene and grooming, including bathing, brushing teeth, caring for hair and nails, and using the toilet.

2.4.3. Patient education methods

Patient education is a vital component of health care and there are different teaching methods used by health care practitioners to teach patients. There are several teaching methods and strategies for the delivery of patient education that were effective in increasing knowledge, decreasing anxiety and increasing satisfaction (Friedman et al, 2011). According to literature, patient teaching methods included computer technology, audio and videotapes, written materials, verbal instruction, and demonstrations. Computer interventions increase patient knowledge, reduce anxiety and increase satisfaction (Gysels & Higginson, 2007; Jeste et al. 2008; Meilleur & Littleton-Kearney, 2009; Trevena, 2006; Wofford, 2005). Audiotapes of consultations increase patient knowledge (Trevena, 2006). Videotape interventions increase patient knowledge and satisfaction (Johnson, 2005; Trevena, 2006). All written information should be prepared at a reading level appropriate for the general population, patient information packages improve patient knowledge, especially if provided prior to the first clinic appointment (Johnson, 2005). Verbal

instruction is the least effective teaching strategy and should not be used alone (Johnson, 2005; Trevena, 2006). Demonstrations are a good teaching strategy (Yankova, 2008). Illustrations to complement text result in greater patient comprehension than text alone especially in those with low literacy skills (Johnson, 2005).

Targeted interventions that provide patient-specific information have been found to increase patient knowledge, decrease anxiety and increase satisfaction (McPherson, Higginson & Hearn 2001). In addition, structured teaching has been shown to be much more effective than unstructured ad hoc teaching (Yankova, 2008). Culturally appropriate patient education has also been found to increase patient knowledge (Khunti et al. (2008). The use of multiple teaching strategies is also a viable option. Friedman, evaluated the effect of various teaching strategies and methods of delivery for patient education on patient outcomes, and found in the systematic review that patients who received patient education using several different strategies had better outcomes than patients receiving one teaching method (Friedman et al, 2011).

3. METHODOLOGY

3.1. The Study Design

This study is a clinical trial with experimental correlation design. This Quantitative research was conducted through a questionnaire that measures the effectiveness of a pre and post operative patient education on the QoL for patients undergoing CABG surgery one month after discharge, this method was suitable to the purposes of the study.

The study was concerned to examine the hypothesis that the implication of pre and post operative patient educational program had an important role in reducing problems of patients with CABG surgery and enhancing the QoL measures after one month of discharge.

3.2. Characteristics and Setting of the Study

Six hospitals in Palestine provide healthcare services for open heart surgery. The total number of cases admitted in 2014 was 941: as shown in Table 3.1

Table 3.1. The number of patients scheduled to elective open heart surgery in 2014

Name of hospital	No of operation in 2014
Palestine Medical Complex(PMC)	313
Almyzan Hospital	148
Arab Especialized Hospital(AEH)	235
Almaqased Hospital	94
Al-Ahli Hospital	66
Nablus Specialist Hospital	74
Total	941

Palestine Medical Complex(PMC) (governmental hospital), and Arab Especialized Hospital(AEH) (private hospital) were chosen because they receive the largest number of patients from different provinces and regions in the West Bank almost half of the total

number. So the sample was representative and can be generalized to the Palestinian population in the West Bank.

This study was conducted in the surgery department of cardiac surgery in two hospitals (PMC), and (AEH), West Bank. The PMC includes four wings, pediatric wing, Ramallah wing, and cardiac surgery wing, and emergency wing, also there is a polyclinic, a clinic, intensive care unit, and emergency room. It accommodates 250 patients in PMC and, there are two patients' examination rooms in the polyclinic. Fifteen nurses give care preoperatively and postoperatively in the clinic with 27 beds. Eighteen nurses work in the intensive care unit which contains ten beds. The nurses work in three different shifts (7:00 Am–14:00 Pm; 14.00 Pm – 21:00Pm; 21:00 Pm –07:00 Am). Five nurses work in the morning shift while three nurses each work in the evening and night shifts (MoH policies). AEH includes polyclinic, a clinic, and an intensive care unit, emergency room, it accommodates 80 patients. There are two patients' examination rooms in the polyclinic. Twelve nurses give care preoperatively and postoperatively in the clinic with 15 beds. Thirteen nurses work in the intensive care unit which contains 6 beds. The nurses work in three different shifts (7:30 Am–15:00 Pm; 15.00 Pm – 22:00 Pm; 22:00 Pm –07:30 Am). Four nurses work in the morning shift while three or two nurses each work in the evening and night shifts according to severity of case (AEH policies).

The aforementioned hospitals performed CABG surgery, heart valve replacement, and surgical interventions for congenital heart diseases. The patients were admitted to the clinic 1-3 days before their surgery and were discharged approximately four days after their surgery. There was no plane for patient education and discharge training, or follow-up counseling service at these hospitals. However, educational related to CABG surgeries and heart valve replacements were only verbal instruction and routine care were delivered to the patients undergoing these surgeries at discharge by doctor or nurse. These instruction contained general information about no smoking, don't take high rich meal in cholesterol, but the potential problems that they would encounter as, wound care, diet, personal care, walking, exercising, and taking medications, driving, check-up time, and alcohol usage were not delivered to patients. The patients were invited to the polyclinic to be checked up by the doctor related to their case, 7 to 10 days and a month after their discharge.

3.3. Study Population

The target population of the study was all patients aged 34 to 80 years scheduled for an elective CABG at PMC and AEH (in West Bank during the period (December 2015 – April 2016) were recruited, during that period it was expected that the PMC received from 30-35 open heart surgery monthly and AEH received from 25 – 30 open heart surgery monthly. So during the collection data period it was 164 patients who were the target sample. Patients who met the eligible criteria and gave a written consent to participate in the study was the study sample.

During the implementation of the study, one patient from the control group died and another patient dropped out, two patients from the intervention group dropped out after discharge without explaining the reasons so 160 patients continued with the study.

3.4. Sampling of the Study and Eligibility Criteria

The target population consisted of 941 patients in 2014. The sample size calculation was done using the NCSS (Number Cruncher Statistical System) – PASS (Power Analysis and Sample Size) 2006 software. Accordingly, a sample size of approximately 164 patients would be sufficient to give 80% power to detect an increase of 20% in the mean score in any subscale of the SF-36 at 5% significance level. Of 164 patients, 82 were placed in the intervention group while the remaining 82 were in the control group.

3.4.1. Selecting sample

According to statistician the cases were selected from one Hospital A (PMC) and the control group from another Hospital B (AEH) for one month and a half, then make the opposite, take the control group from hospital A and take the cases from hospital B for another month and a half. To avoid data contamination between the intervention and the control group there was one week hold.

3.4.2. The eligible patients should meet the following criteria

The eligible patients were classified into two groups. Group one received the information from both the booklet and DVD. The second group received nothing except the general verbal instructions.

- The age of the patient should be from 34-80 years old.
- Should be able to read and write Arabic language.
- Does not suffer from mental illness or disability that prevents the patient from writing or reading or seeing.
- Agree to sign the consent letter and voluntarily accept to participate in the research study.
- No previous cardiac surgery “Did not experience a cardiac surgery”.
- Not admitted as an emergency case.
- Scheduled electively to the surgery.
- Length of stay in the ICU not more than one week.

Research criteria for excluded from the sample:

- Unwilling to continue the study,
- Complicated patient and stay more than 10 days in I C U,
- Dying during the study time

3.5. DataCollection

3.5.1. Data collection tools

Four data collection tools entitled “personal information form” (Appendix I), “The home follow-up form after discharge” (Appendix II), and SF-36 Health Survey” (Appendix III), “Effectiveness of The Educational Program” (Appendix IV) were used in the study.

Personal Information Form

The personal information form was developed by the researcher and consisted of 18 (section A) and 7 (section B) sub-categories (Appendix I). The total items on this form were questions about gender, age, height, weight, educational status, marital status, occupation, place of residence, economic status (Monthly income), whether living alone or not, length of CAD, history of CABG surgery in close relatives, suffering from chronic (long term) disease, the duration of suffering from chronic disease, history of surgeries, presence of CAD-inducing factors (smoking, narjile, excessive alcohol consumption, hypertension, diabetes, obesity, family history of CAD). In addition, there was information about the number of replaced veins, length of cross-clamping, total duration of pumping, status of complication development during the patient's surgery, and duration of stay in the intensive care unit (ICU) and hospital, ICU length of stay, graft number, graft type, post operative complication and readmission.

The Home Follow-up Form After Discharge

The researcher developed this form by using a wide variety of resources (Akbari, 2014; Çelik, 2008; Dal, Bulut & Demir, 2012) and consulting experts (Appendix II). The total items of this form were questions regarding any physical, psychosocial and communication problems or difficulties and complications experienced, by the patients after discharge such as respiratory difficulty, fatigue, chest pain, palpitation, edema of the legs, loss of appetite, nausea, constipation, drainage from or redness at the surgical wound, introversion, unwillingness to make social contact, fear, attention deficit problem, refusal to see visitors, insomnia, and back pain. In addition, it included three questions about with whom the patient would live during the four weeks after discharge, the educational level of the person helping to care after discharge, and the information resource most widely used after discharge (Cebeci & Çelik, 2008; Dal, Bulut and Demir, 2012; Elitoğ & Erkuş, 2008; Mistiaen & Poot, 2006; National Heart Lung and Blood Institute, 2013).

SF-36 Health Survey

SF-36 Health Survey has 36 items and was developed by Rand Corporation in 1992 (Alimohammadpour & Yousefi, 2008). Cronbach's alpha was found ranging from 0.65 to 0.90 in the validity and reliability study. The SF-36 includes one multi-item scale that assesses eight health concepts: (1) Limitation in physical functions because of health problems (PF-10 items); (2) Limitation in social activities because of physical or emotional problems (SF-2 items); (3) Limitation in usual role activities because of physical health problems (RP-4 items); (4) bodily pain (BP-2 items); (5) general mental health (MH-5 items); (6) limitation in usual role activities because of emotional problems (RE-3 items); (7) vitality (VT-4 items) and (8) general health perceptions (GH-5 items). Each scale consists of two to ten items, and each item is rated 2–6 points on the Likert scale (Appendix III). The scale score is calculated by summation of all the scores of items belonging to the same scale from 0 to 100 with higher scores indicating higher levels of function and/or better health (Alimohammadpour & Yousefi, 2008; Taghipour et al. 2011).

Effectiveness of Educational Program Form

The researcher developed this form by using a wide variety of resources and consulting experts (Appendix IV). This form was especially prepared to measure the effectiveness of the educational program: the booklet and DVD for intervention group, it contains 15 items, on the Likert scale from one to five where five is the highest and one is the lowest.

3.5.2. The Educational Program Booklet and DVD

The researcher constructed an educational program that consists of a booklet and video. It was constructed after a thorough review of literature using a wide variety of resources, consulting experts and review of literature and related studies concerning the design of educational programs for CABG surgery. The interest of the search was mainly on videotapes, DVDs and booklet or brochure. Also the opinions of experts were considered "cardiac surgery specialist, 4 PhD Nursing, and physiotherapist ". It was tested for reliability and validity through piloting .

The educational program was designed to provide the patients with information that will help him or her to enhance the QoL after CABG. The programme's content is relative to (1) Heart anatomy and physiology and simple aspect of surgical procedure, (2) Focus points for preoperative patient education such as sights and sounds in the preoperative environment, preoperative medications and anticipated sensations, use of incentive spirometer, length of the operation, expectations related to postoperative environment, availability of postoperative pain medication, effectiveness of splinting incision for pain control, preoperative preparation and instruction for evening before surgery, morning of surgery and operation room, postoperative presence of an endotracheal tube, anticipated time of intubation and communication issues (3) Relaxation exercise and deep breathing, (4) Activities which include, walking programme, exercise after operation and one month after discharge, (5) Some problems that the patient may experience post surgery and how the patient can manage it, such as weakness and fatigue, change in appetite, constipation, sleep disturbance, change in amount and odor of perspiration, incision discomfort or pain, incision drainage, muscle aches and wound care, (6) Diet information lists of foods recommended and not recommended for a healthy heart, it is especially low cholesterol diet, (7) Signs and symptoms of complications especially infection (9) stairs, lifting, driving and sexual activity information, (8) Information on medications that he might use, (10) Things you should do or avoid after returning home and visiting and social relationship, (11) What to do for feeling better emotionally after the surgery and when return to the work, (12) When to call the physician or nurses in emergency and appointment.

The educational programme was implemented, once the patients consent to surgery and the research project had been confirmed. The intervention group and the control group completed a questionnaire about socio-demographic data and SF36 QoL, before the intervention. Before 1-3 days of operation the educational program tools was given to the intervention group by a well trained nurse, while the control group was received the ordinary routine care by the medical staff either a nurse or a doctor.

3.6. Nurse Training

Well trained nurse was available during questionnaire filling by each participant to clarify any question from the participants. The questionnaire consisted of three main parts and one additional part for the intervention group to measure the effectiveness of the educational

program. The first part consisted of personal information. The second part consisted of home follow up care, the third part QoL SF-36 and effectiveness of education programme for intervention group only, the filling of the questionnaire needs 20-25 minutes to be completed. Four nurses were trained by the researcher; two in each hospital, the training focused on the followings:

- Explain the purpose and importance of the study for the eligible sample.
- Emphasize on the voluntary participation.
- Ensure signing the consent letter by the voluntary participated patient.
- Make face to face interview or by phone to assess the patient for filling the questionnaire.
- The nurses were trained how to illustrate the booklet and DVD, by using educational tools such as slides, educational posters, demonstration and spirometer use. In addition, the nurse was trained how to ask questions and answer the patients, giving feed-back, emphasis on reinforcement points, and summary of important training points, and give attention to patient's non-verbal behaviors.
- Training nurses needed five sessions, each session two to three hours long.

3.7. Pilot Study

Data collection tools were tested for structure and clarity in the pilot study. Therefore, 16 patients consisting of 10% of the sample participated in the pilot study.

It was carried out at PMC and AEH for CABG surgery. The patients were selected prior to the surgery, to pre-testing and the implementation of the intervention education program. According to the results of the pilot study modifications for the instrument were done.

3.8. Study Implementation

The study implementation was conducted between December 20-2015 until April 1- 2016 (Figure 3.1). The intervention group had consisted of those patients who received planned preoperative, reinforce postoperative, and at discharge education and training services during the time of their hospitalization and provided home visit or given information by phone after discharge, while the control group had routine nursing care that include;

applying medicine and measuring vital signs with no plan for education and training services. Education programme services were applied according to patients' individual needs and through education and a training booklet and DVD which were developed for this purpose.

3.8.1. Control Group

- The trained nurse filled in the “Personal information form section A” (Appendix I) and the “SF-36 Health Survey” (Appendix III) for control group patients in the first 24 hours after admission to the surgical unit by using face to face interview method.
- The nurses gave routine nursing care to the patients in the control group.
- The day that the patients in the control group were discharged, the trained nurse filled in “Personal information form section B (Appendix I) regarding patients' surgery and postoperative period according to file and observation form for the patients.
- The trained nurse filled “The home follow-up form” (Appendix II) by calling or visiting them after 2 day and 10 days following discharge.
- The trained nurse filled “The home follow-up form” after discharge (Appendix II) and “SF - 36 Health Survey” (Appendix III) by face to face interview or by phone at four weeks after their discharge in the polyclinic.

3.8.2. Intervention Group

- The Trained nurse filled in the “Personnel information form section A” (Appendix I) and the “SF-36 Health Survey” (Appendix III) for the intervention group patients in the first 24 hours after admission to the surgical unit by using the face to face interview method.
- Twenty-four hours after the intervention group patients with CABG surgeries were admitted to the surgical unit from the intensive care unit, the trained nurse determined the interview time that was most appropriate for the patients and the hospital ward procedures. At the interview, the trained nurse delivered copies of the booklet and DVD to the patients in the intervention group on the day of their hospitalization, explaining the booklet and DVD also they emphasized that reading and Watching the information provided inside the booklet and DVD helped them, and encouraged them to ask

questions when they did not understand a topic and to express their problems clearly in order to explore possible solutions during training.

- The trained nurse determined the teaching time that was most appropriate for the patients and the hospital ward procedures. The trained nurse gave education postoperative and discharge training according to the educational program to the intervention group patients in the educational room or in their own room, with individual education and training between 11:00–1:00 and 16:00–20:00. Aimed at answering the questions of patients and relatives and correcting inappropriate practices which had not been covered in the teaching sessions. Discharge training was given in the appropriate room on the same floor equipped with sufficient light, proper ventilation and silence, with windows and enough chairs for ten patients to sit. Along with patients' education and training, the training booklet and DVD, educational tools such as slides, educational posters, demonstration, and spirometer were used. In addition, the trained nurse used different methods of teaching (questions and answers, giving feed-back, emphasis on reinforcement points, and summary of important training points) according to the training given to patients and family members, and gave attention to patient's non-verbal behaviors.
- The day that the patients in the intervention group were discharged, the trained nurse filled in "section B of Personal information form" about patients' surgery and postoperative period according to the patient files and the "SF-36 Health Survey" (Appendix III). The trained nurse filled "The home follow-up form" (Appendix II) by calling or visiting them at 2 day and 10 days following discharge. Also, given information according to patients' needs, and the educational program were provided by the trained nurse to meet the patient's and their family's needs. The trained nurse filled "The home follow-up form" (Appendix II) and the "SF-36 Health Survey" (Appendix III), by face to face interview or phone at one month after their discharge, and the information was continually given.
- The education and training time for individual patient lasted 35 -70 minutes while group education and training varied between 55- 120 minutes (mean: 140 minutes pre-post operative). For better training, at least one family member was with the patient and instructed the patient in order to help the patient. In all individual education and training, patients' characteristics (interests, ability, learning needs) were taken into account.

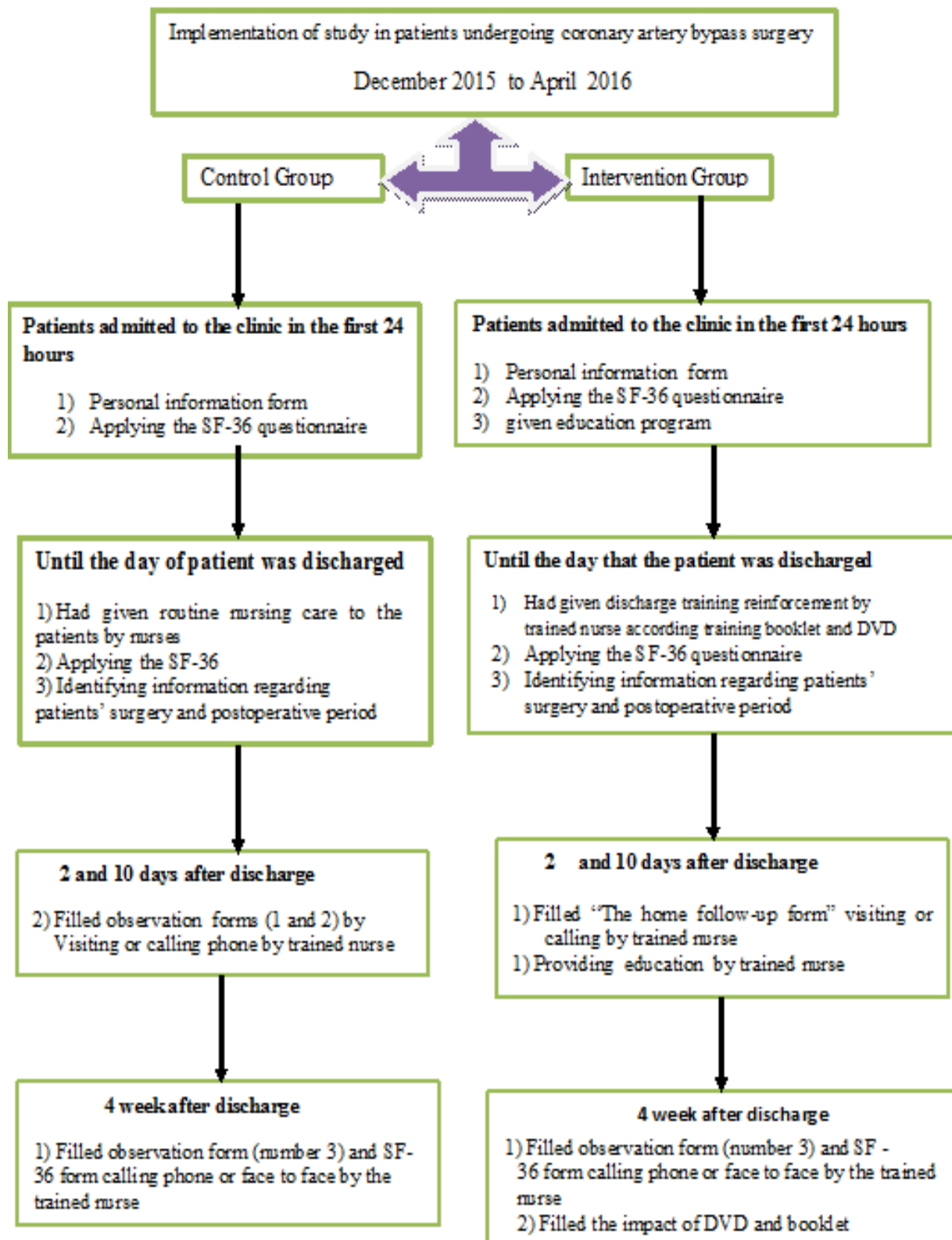


Figure 3.1. Flow chart about study implementation

3.9. Data Analysis

The association between quantity demographic information and QoL was analyzed with Pearson correlation analysis and association between demographic information and QoL was analyzed with Chi Square test and correlation between two groups. Mean and interaction effect of education on QoL in each group (in pre operative, at discharge and 1-month post education) was analyzed with paired t-test. Variance analysis ANOVA test and Comparison of QoL between two groups in one-month post education stages was analyzed with independent sample t test. P-value less than 0.05 was considered to be statistically significant. Analyses of data was performed using Social Package of Statistical Science SPSS (version 18.0). Frequencies, percentages, Means, and Standard Deviation-also was done.

Dependent variables of the study included QoL and post discharge problems while independent variables were age, sex, profession, job status, marital status, place of residence, who lives with the patient, educational level, health insurance, income status, number of the people in the family, care givers of the patient, CAD process, existence of coronary heart disease in the family, history of CABG surgery in the family, the presence of additional diseases, CABG factors, number of replaced vessels, cross clamp time, duration of surgery, and length of hospital stay.

3.10. Ethical Considerations

Permission for the study was granted by the Gazi University Ethics Committee (Appendix IV). The necessary written approval was obtained from the administration department of the hospital prior to this study (Appendix V). Patients were informed about the study and written informed consents were obtained (Appendix VI).

Ethical approval was given by the Ethics Committee at Palestine. Permission to conduct the study was also obtained from the administrators of the two hospitals. Written informed consents were obtained from the patients before they participate in the study. Anonymity, confidentiality, nonmaleficence and beneficence were ensured.

In this study the trained nurse gave the patients all the needed information about the research study, and explained the aim of study, the benefit of the study in the future, the design of the study, and the instrument used in the study. The participants were told that all the information was confidential and only used for the aim of the research study.

The patients were told that they have the autonomy to participate in the study and it was respected if they wanted to participate in the study or abstain from it. In order to insure the agreement of the patient to be part of the study population, an informed consent was attached with the questionnaire, where as the consent form explained the importance of the study for the world generally and for Palestinians especially.

The questionnaire was given to participants in this study and the questionnaire questions were explained to participants individually according to different level of education. The participants were told that they have the right to ask questions about the study and about the results of the study. For that, e-mail address and phone number of the researcher was added to the consent form.

4. FINDINGS

The findings of this study included patients' descriptive characteristics, health status and habits before surgery, distribution of disease, current hospital and operation experiences, distribution and comparative information in follow-up, problems experienced after discharge and the comparison of QoL before surgery, at discharge and 1 month after discharge.

Table 4.1. Characteristics of control and intervention group patients

Characteristics	Control group (n=80)		Intervention group (n=80)		Statistical evaluation	
	<i>f</i>	%	<i>f</i>	%		
Gender						
Male	64	80%	58	72,5%	$\chi^2 = 1,242$ $p = 0,265$	
Female	16	20%	22	27,5%		
Level of Education						
Uneducated	8	10,0%	18	22,5%	$\chi^2 = 21,465$ $p = 0,000$	
Primary	13	16,3%	31	38,8%		
Secondary	37	46,3%	15	18,8%		
University	22	27,5%	16	20,0%		
Marital status						
Married	76	95,0%	77	96,3%	$\chi^2 = 5,871$ $p = 0,061$	
Single	4	5%	3	3,7%		
Occupation						
Free business	33	41,3%	28	35,0%	$\chi^2 = 6,717$ $p = 0,152$	
Retired	12	15,0%	13	16,3%		
Unemployed	8	10,0%	17	21,3%		
House wife	11	13,8%	14	17,5%		
Other*	16	20,0%	8	10,0%		
Place of residency						
Village	39	48,8%	37	46,3%	$\chi^2 = 1,111$ $p = 0,574$	
City	35	43,8%	33	41,3%		
Camp	6	7,5%	10	12,5%		

Table 4.1. (continue) Characteristics of control and intervention group patients

Characteristics	Control group (n=80)		Intervention group (n=80)		Statistical evaluation	
	<i>F</i>	%	<i>f</i>	%		
Income status /Sh*						
Missing	10	12,5%	6	7,5%	$\chi^2 = 15,033$ $p = 0,005$	
Less than 1500	18	22,5%	24	30,0%		
1501 – 2500	35	43,8%	24	30,0%		
2501 – 3500	17	21,3%	15	18,8%		
3501 - 4500	0	0,0%	11	13,8%		
Life Status						
Living alone	0	0%	0	0	$t = 0,0$ $P = 1,0$	
Not living alone ^a	80	100%	80	100%		
Age	56.23 ± 11.94 (36-79)		60.67 ± 7.58 (34-74)		$t = -2.71$ $p = 0,007$	
BMI	25,56 ± 4,74 (15,73-35,96)		27,41 ± 4,36 (19,53-38,27)		$t = -2,57$ $p = 0,011$	

The significance level of $p < 0,05$ was accepted.

Sh*: Shaqel, the currency used in Palestine.

Other*: governmental, nongovernmental and United Nation employee.

^a With spouse, Spouse and my child/ children, my child/ children, Brother, ^b Mean ± standard deviation (min-max)

Statistical analysis in table 4.1 showed that there were significant differences between the control and intervention groups in terms of education ($p=0,000$), the intervention group had more uneducated and more primary education, while the control group had more secondary education.

Statistical analysis showed that there are significant differences between the control and intervention groups in terms of income status ($p < 0,05$), the intervention group income was higher than the control group (3501-4500). Also in terms of age ($p=0,018$), age mean of the intervention group was higher than the age mean of the control group. And in terms of BMI ($p=0,011$), the BMI mean of the intervention group was higher than the BMI mean of the control group.

Table 4.2. Habits and health status of control and intervention group patients before surgery

Health Status and Habits	Control group (n=80)		Intervention group (n=80)		Statistical evaluation	
	<i>f</i>	%	<i>f</i>	%	χ^2	<i>p</i> -value
Smoking	39	48,8%	31	38,8%	1,625	0,202
Alcohol abuse	4	5,0%	1	1,3%	1,858	0,367
Nargile usage	10	12,5%	11	13,8%	0,055	0,815
Had Chronic Illness ^a	39	48,8%	47	58,8%	1,609	0,205
Had CAD in Family	26	32,5%	20	25,0%	1,098	0,295
Had CABG surgery in family	20	25,0%	14	17,5%	1,345	0,246
Previously had surgery ^b	41	51,3%	24	30,0%	7,488	0,006

^a : Chronic diseases included hypertension, diabetes mellitus, asthma, dyspnea, arthritis

^b : Previously had surgeries included head and neck surgery, hands and feet surgery, gynecological surgery, eye surgery The significance level of $p < 0,05$ was accepted,

Statistical analysis in table 4.2 showed that there were significant differences between the control and intervention groups in terms of having Previous Surgery ($p=0,006$), the intervention group had less patients with previous surgery than patients in control group.

Table 4.3. Current hospital and operation experiences of control and intervention group patients

Current Hospital and Operation Experiences	Control group (n=80)	Intervention group (n=80)	Statistical evaluation
	$\bar{X} \pm SD$ (min-max)	$\bar{X} \pm SD$ (min-max)	
Duration of Surgery(hours)	3,70 $\pm$ 0,66 (2-5)	3,72 $\pm$ 0,71 (2,5-5)	t= -0,174 $p= 0,862$
Length of stay in ICU(days)	3,85 $\pm$ 0,78 (2-6)	3,74 $\pm$ 0,74 (2-5)	t= 0,937 $p= 0,350$
Length of in hospital stay(days)	7,46 $\pm$ 1,33 (5-10)	6,58 $\pm$ 1,17 (5-9)	t= 4,423 $p= 0,000$
Cross clamp time (minute)	38,86 $\pm$ 9,84 (24-67)	41,43 $\pm$ 9,85 (29-67)	t= 1-,578 $p= 0,117$
Hospital readmission n(%)	18 (22,5%)	10(12,5%)	$\chi^2=2,771$ $p=0,096$

* The significance level of $p < 0,05$ was accepted.

Statistical analysis in table 4.3 showed that there were significant differences between the control and intervention groups in terms of length of in hospital stay ($p=0,000$), the mean of the control group was higher than the mean of the intervention group.

Table 4.4. Surgery type and graft number of control and intervention group patient

Current Hospital and Operation Experiences	Control group (n=80)		Intervention group (n=80)		Statistical evaluation	
	<i>f</i>	%	<i>f</i>	%	χ^2	<i>p</i> -value
Type of surgery						
On pump	72	90	74	92,5	0,313	0,576
Off pump	8	10	6	7,5		
Number of graft						
One	0	0,00	1	0,01	1,602	0,923
Two	26	0,33	29	0,36		
Three	38	0,48	37	0,46		
Four	13	0,16	10	0,13		
More than four	3	0,04	3	0,04		

* The significance level of $p<0,05$ was accepted.

Statistical analysis in table 4.4 showed that there were no significant differences between the control and intervention groups in terms of type of surgery, number of graft and cross clamp time($p>0,05$).

Table 4.5. Information about the care givers of control and intervention group patients after discharge

Information about the Care Givers after Discharge	Control group (n=80)		Intervention group (n=80)		Statistical evaluation	
	<i>F</i>	%	<i>f</i>	%	χ^2	<i>p</i> -value
Caregivers						
Spouse	13	16,3%	11	13,8%	5,465	0,142
Spouse and child/ children	56	70,0%	62	77,5%		
child/ children	6	7,5%	7	8,8%		
Others	5	6,3%	0	0,0%		

*The significance level of $p < 0,05$ was accepted.

Statistical analysis in table 4.5 showed that there are no significant differences between the control and intervention groups in terms of Information about the care givers after discharge.

Table 4.6. The problems experienced by control and intervention group patients at discharge

Problems	Control group (n=80)		Intervention group (n=80)		Statistical evaluation	
	F	%	F	%	χ^2	p-value
Respiratory System						
Respiratory difficulty	55	68,8%	39	48,8%	6,602	0,010
Cardiovascular System						
Palpitation	33	41,3%	17	21,3%	7,447	0,006
Gastrointestinal System						
Loss of appetite	62	77,5%	49	61,3%	4,972	0,026
Constipation	27	33,8%	18	22,5%	2,504	0,114
Diarrhea	15	18,8%	10	12,5%	1,185	0,276
Nausea	11	13,8%	7	8,8%	1,002	0,317
Vomiting	4	5,0%	1	1,3%	1,858	0,367
Wound Healing						
Swelling at the surgical wound						
Leg	48	60,0%	19	23,8%	21,595	0,000
Chest	15	18,8%	9	11,3%	1,765	0,184
Leg & Chest	13	16,3%	7	8,8%	2,057	0,151
Pain at the surgical wound						
Leg	23	28,8%	10	12,5%	6,452	0,011
Chest	23	28,8%	8	10,0%	9,002	0,003
Leg & Chest	18	22,5%	7	8,8%	5,736	0,017
Drainage from the surgical wound						
Leg	18	22,5%	8	10,0%	4,592	0,032
Chest	9	11,3%	6	7,5%	0,662	0,416
Leg & Chest	6	7,5%	6	7,5%	0,000	1,000
Redness at the surgical wound						
Leg & Chest	26	32,5%	9	11,3%	10,569	0,001
Leg	18	22,5%	10	12,5%	2,771	0,096
Chest	11	13,8%	6	7,5%	1,645	0,200
Problems in Social Life						
Unwillingness to social contacts	7	8,8%	2	2,5%	2,943	0,167
Refuse to see visitor	6	7,5%	2	2,5%	2,105	0,276

Table 4.6. (continue)The problems experienced by control and intervention group patients at discharge

Problems		Control group (n=80)		Intervention group (n=80)		Statistical evaluation
Neurological Problems						
Fatigue	37	46,3%	17	21,3%	11,181	0,001
Dizziness	24	30,0%	7	8,8%	11,563	0,001
Psychological Problems						
Attention deficit problem	31	38,8%	19	23,8%	4,189	0,041
Introversion	23	28,8%	8	10,0%	9,002	0,003
Fear	17	21,3%	7	8,8%	4,902	0,027
Weakness	13	16,3%	8	10,0%	1,37	0,242
Pessimism	9	11,3%	5	6,3%	1,252	0,263
Sleep Problems						
Difficulty in falling asleep	50	62,5%	34	42,5%	6,416	0,011
Insomnia	44	55,0%	24	30,0%	10,23	0,001
Pain						
Back pain	54	67,5%	33	41,3%	11,11	0,001
Chest pain	50	62,5%	34	42,5%	6,416	0,011
Shoulder pain	48	60,0%	30	37,5%	8,105	0,004
Other problem ^b	65	81%	18	23%	55.303	0.000

^a: If patient has experienced problem once at discharge, there are considered as "problem".

^b: Other problems included fever, abdominal distention, headache, numbness, more sputum, cold feet, throat, chill swathing, sensitivity to odors, sexuality.

Statistical analysis in table 4.6 showed that there were significant differences between the control and intervention groups. Where the intervention group had less difficulties and less pain than the control group in the following terms: Respiratory difficulty ($p=0,010$). Loss of appetite ($p=0,026$). Swelling at the surgical wound from leg ($p=0,000$), Pain at the surgical wound from leg, chest and leg & chest together(all $p<0,05$). Redness at the surgical wound from leg and chest together ($p=0,001$). Drainage from the surgical wound from leg ($p=0,032$). Dizziness ($p=0,001$).

Attention deficit problem ($p=0,041$), Introversion ($p=0,041$). Fear ($p=0,027$). Difficulty in falling asleep ($p=0,011$). Insomnia ($p=0,001$). Back pain ($p=0,001$). Shoulder pain ($p=0,004$). Using elastic stocking ($p=0,000$).

Table 4.7. The problems experienced by control and intervention group patients during follow-ups after discharge

Problems	Follow-up1 2 day				Follow-up2 10 days				Follow-up3 One month			
	Control group (n=80)		Intervention group (n=80)		Control group (n=80)		Intervention group (n=80)		Control group (n=80)		Intervention group (n=80)	
	<i>f</i>	%	<i>F</i>	%	<i>f</i>	%	<i>f</i>	%	<i>F</i>	%	<i>f</i>	%
Respiratory System												
Respiratory difficulty	37	46,3%	20	25,0%	27	33,8%	8	10,0%	21	26,3%	5	6,3%
	$\chi^2=7,876$, $p=0,005$				$\chi^2=13,202$, $p=0,000$				$\chi^2=11,757$, $p=0,001$			
Cardiovascular System												
Palpitation	24	30,0%	12	15,0%	20	25,0%	5	6,3%	14	17,5%	0	0,0%
	$\chi^2=5,161$, $p=0,023$				$\chi^2=10,667$, $p=0,001$				$\chi^2=15,342$, $p=0,000$			
Gastrointestinal System												
Loss of appetite	50	62,5%	16	20,0%	36	45,0%	7	8,8%	29	36,3%	3	3,8%
	$\chi^2=29,813$, $p=0,000$				$\chi^2=26,746$, $p=0,000$				$\chi^2=26,406$, $p=0,000$			
Nausea	12	15,0%	5	6,3%	4	5,0%	0	0,0%	0	0,0%	0	100,0%
	$\chi^2=3,225$, $p=0,073$				$\chi^2=4,103$, $p=0,043$				$\chi^2=0$, $p=1$			
Vomiting	5	6,3%	2	2,5%	3	3,8%	0	0,0%	0	0,0%	0	100,0%
	$\chi^2=1,345$, $p=0,443$				$\chi^2=3,057$, $p=0,245$				$\chi^2=0$, $p=1$			
Constipation	28	35,0%	12	15,0%	16	20,0%	2	2,5%	18	22,5%	0	0,0%
	$\chi^2=8,533$, $p=0,003$				$\chi^2=12,269$, $p=0,000$				$\chi^2=20,282$, $p=0,000$			
Diarrhea	7	8,8%	3	3,8%	4	5,0%	0	0,0%	2	2,5%	0	0,0%
	$\chi^2=1,707$, $p=0,191$				$\chi^2=4,103$, $p=0,12$				$\chi^2=2,025$, $p=0,497$			

Table 4.7. (continue) The problems experienced by control and intervention group patients during follow-ups after discharge

Problems	Follow-up1 2 day				Follow-up2 10 days				Follow-up3 One month			
	Control group (n=80)		Intervention group (n=80)		Control group (n=80)		Intervention group (n=80)		Control group (n=80)		Intervention group (n=80)	
	F	%	f	%	f	%	f	%	F	%	f	%
Wound Healing												
Swelling at the surgical wound												
No	25	31,3%	65	81,3%	29	36,3%	75	93,8%	41	51,3%	78	97,5%
Leg	26	32,5%	13	16,3%	25	31,3%	4	5,0%	20	25,0%	2	2,5%
Chest	13	16,3%	2	2,5%	12	15,0%	1	1,3%	9	11,3%	0	0,0%
Leg & Chest	16	20,0%	0	0,0%	14	17,5%	0	0,0%	10	12,5%	0	0,0%
	$\chi^2=0$, $p=0,2$				$\chi^2=0$, $p=0,175$				$\chi^2=48,605$, $p=0,000$			
Pain at the surgical wound												
No	41	51,3%	51	63,8%	29	36,3%	75	93,8%	45	56,3%	78	97,5%
Leg	16	20,0%	12	15,0%	11	13,8%	4	5,0%	8	10,0%	2	2,5%
Chest	14	17,5%	8	10,0%	15	18,8%	1	1,3%	12	15,0%	0	0,0%
Leg & Chest	9	11,3%	9	11,3%	25	31,3%	0	0,0%	15	18,8%	0	0,0%
	$\chi^2=0$, $p=0,113$				$\chi^2=0$, $p=0,313$				$\chi^2=0$, $p=0,188$			
Drainage from the surgical wound												
No	52	65,0%	73	91,3%	57	71,3%	76	95,0%	72	90,0%	77	96,3%
Leg	11	13,8%	2	2,5%	6	7,5%	3	3,8%	4	5,0%	1	1,3%
Chest	6	7,5%	3	3,8%	6	7,5%	1	1,3%	3	3,8%	2	2,5%
Leg & Chest	11	13,8%	2	2,5%	11	13,8%	0	0,0%	1	1,3%	0	0,0%
	$\chi^2=17,067$, $p=0,000$				$\chi^2=19,484$, $p=0,000$				$\chi^2=3,018$, $p=0,302$			
Redness at the surgical wound												
No	41	51,3%	67	83,8%	48	60,0%	68	85,0%	67	83,8%	72	90,0%

Table 4.7. (continue) The problems experienced by control and intervention group patients during follow-ups after discharge

Problems	Follow-up1 2 day				Follow-up2 10 days				Follow-up3 One month			
	Control group (n=80)		Intervention group (n=80)		Control group (n=80)		Intervention group (n=80)		Control group (n=80)		Intervention group (n=80)	
	F	%	f	%	f	%	f	%	F	%	f	%
Leg	15	18,8%	5	6,3%	13	16,3%	5	6,3%	6	7,5%	4	5,0%
Chest	7	8,8%	3	3,8%	7	8,8%	2	2,5%	4	5,0%	2	2,5%
Leg & Chest	17	21,3%	5	6,3%	12	15,0%	5	6,3%	3	3,8%	2	2,5%
	$\chi^2=0$, $p=0,213$				$\chi^2=12,419$, $p=0,005$				$\chi^2=1,517$, $p=0,693$			
Problems in Social Life												
Refuse to see visitor	7	8,8%	4	5,0%	5	6,3%	1	1,3%	3	3,8%	0	0,0%
	$\chi^2=0,879$, $p=0,349$				$\chi^2=2,771$, $p=0,21$				$\chi^2=3,057$, $p=0,245$			
Unwillingness to social contacts	8	10,0%	3	3,8%	4	5,0%	2	2,5%	0	0,0%	0	100,0%
	$\chi^2=2,441$, $p=0,118$				$\chi^2=0,693$, $p=0,681$				$\chi^2=0$, $p=1$			
Neurological Problems												
Dizziness	21	26,3%	9	11,3%	18	22,5%	4	5,0%	14	17,5%	0	0,0%
	$\chi^2=5,908$, $p=0,015$				$\chi^2=10,329$, $p=0,001$				$\chi^2=15,342$, $p=0,000$			
Fatigue	25	31,3%	13	16,3%	23	28,8%	5	6,3%	19	23,8%	2	2,5%
	$\chi^2=4,97$, $p=0,026$				$\chi^2=14,026$, $p=0,000$				$\chi^2=15,841$, $p=0,000$			
Psychological Problems												
Pessimism	8	10,0%	4	5,0%	5	6,3%	1	1,3%	4	5,0%	0	0,0%
	$\chi^2=1,441$, $p=0,23$				$\chi^2=2,771$, $p=0,21$				$\chi^2=4,103$, $p=0,043$			
Attention deficit problem	23	28,8%	11	13,8%	17	21,3%	5	6,3%	12	15,0%	2	2,5%
	$\chi^2=5,378$, $p=0,02$				$\chi^2=7,589$, $p=0,006$				$\chi^2=7,828$, $p=0,005$			
Weakness	14	17,5%	9	11,3%	12	15,0%	4	5,0%	8	10,0%	0	0,0%
	$\chi^2=1,269$, $p=0,26$				$\chi^2=4,444$, $p=0,035$				$\chi^2=8,421$, $p=0,007$			

Table 4.7. (continue) The problems experienced by control and intervention group patients during follow-ups after discharge

Problems	Follow-up1 2 day				Follow-up2 10 days				Follow-up3 One month			
	Control group (n=80)		Intervention group (n=80)		Control group (n=80)		Intervention group (n=80)		Control group (n=80)		Intervention group (n=80)	
	<i>F</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>F</i>	%	<i>f</i>	%
Introversion	14	17,5%	6	7,5%	12	15,0%	4	5,0%	15	18,8%	1	1,3%
	$\chi^2=3,657$, $p=0,056$				$\chi^2=4,444$, $p=0,035$				$\chi^2=13,611$, $p=0,000$			
Fear	14	17,5%	9	11,3%	12	15,0%	5	6,3%	10	12,5%	3	3,8%
	$\chi^2=1,269$, $p=0,26$				$\chi^2=3,225$, $p=0,073$				$\chi^2=4,103$, $p=0,043$			
Sleep Problems												
Difficulty in falling asleep	51	63,8%	18	22,5%	39	48,8%	4	5,0%	32	40,0%	2	2,5%
	$\chi^2=27,75$, $p=0,000$				$\chi^2=38,958$, $p=0,000$				$\chi^2=33,613$, $p=0,000$			
Insomnia	45	56,3%	9	11,3%	44	55,0%	6	7,5%	40	50,0%	0	0,0%
	$\chi^2=36,226$, $p=0,000$				$\chi^2=42,007$, $p=0,000$				$\chi^2=53,333$, $p=0,000$			
Pain												
Chest pain	50	62,5%	34	42,5%	36	45,0%	7	8,8%	29	36,3%	3	3,8%
	$\chi^2=6,416$, $p=0,011$				$\chi^2=36,226$, $p=0,000$				$\chi^2=36,226$, $p=0,000$			
Back pain	55	68,8%	16	20,0%	45	56,3%	4	5,0%	42	52,5%	0	0,0%
	$\chi^2=38,512$, $p=0,000$				$\chi^2=49,45$, $p=0,000$				$\chi^2=56,949$, $p=0,000$			
Shoulder pain	49	61,3%	19	23,8%	44	55,0%	7	8,8%	39	48,8%	1	1,3%
	$\chi^2=23,018$, $p=0,000$				$\chi^2=39,403$, $p=0,000$				$\chi^2=48,133$, $p=0,000$			
Edema of the legs	38	47,5%	15	18,8%	28	35,0%	8	10,0%	25	31,3%	3	3,8%
	$\chi^2=14,925$, $p=0,000$				$\chi^2=14,337$, $p=0,000$				$\chi^2=20,952$, $p=0,000$			
Other problem												
Does not use elastic stocking	13	16,3%	0	0,0%	8	10,0%	0	0,0%	5	6,3%	0	0,0%
	$\chi^2=14,15$, $p=0,000$				$\chi^2=8,421$, $p=0,007$				$\chi^2=5,161$, $p=0,023$			

Table 4.7. (continue) The problems experienced by control and intervention group patients during follow-ups after discharge

Problems	Follow-up1 2 day				Follow-up2 10 days				Follow-up3 One month			
	Control group (n=80)		Intervention group (n=80)		Control group (n=80)		Intervention group (n=80)		Control group (n=80)		Intervention group (n=80)	
	<i>F</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>F</i>	%	<i>f</i>	%
Fever	8	10,0%	4	5,0%	6	7,5%	0	0,0%	2	2,5%	0	0,0%
	$\chi^2=1,441$, $p=0,23$				$\chi^2=6,234$, $p=0,028$				$\chi^2=2,025$, $p=0,497$			
Does not sleep on supine position	17	21,3%	9	11,3%	14	17,5%	5	6,3%	12	15,0%	1	1,3%
	$\chi^2=2,939$, $p=0,086$				$\chi^2=4,838$, $p=0,028$				$\chi^2=10,131$, $p=0,001$			
Weight Gain	15	18,8%	6	7,5%	10	12,5%	0	0,0%	7	8,8%	0	0,0%
	$\chi^2=4,44$, $p=0,035$				$\chi^2=10,667$, $p=0,001$				$\chi^2=7,32$, $p=0,014$			

Statistical analysis in table 4.7 showed that there were significant differences between the control and intervention groups in follow-up1, 2, and 3 since all $p<0,05$ whereas the intervention group had problems less than expected while the control group had problems more than expected in terms of the following problems: respiratory difficulty, palpitation, loss of appetite, constipation, dizziness, fatigue, attention deficit problem, difficulty in falling asleep, insomnia, back pain, shoulder pain, edema of the legs, not using elastic stocking, weight gain.

Statistical analysis showed that there are no significant differences between the control and intervention groups in follow-up1, 2, and 3 since all $p>0,05$ in terms of the following problems: pain at the surgical wound, vomiting, diarrhea, refuse to see visitor, unwillingness to social contacts, other problem.

Table 4.8. Quality of life mean score in control and intervention group patients

Quality Of Life Scale	Group	Before surgery	At discharge	After 1 month
		$\bar{X} \pm SD$	$\bar{X} \pm SD$	$\bar{X} \pm SD$
Physical functioning	Control	48,25±8,42	6,75±5,34	45,63±12,05
	Intervention	46,06±8,18	10±6,8	68,13±7,69
	Statistical Evaluation	t=1,666 , p=0,098	t=-3,362 , p=0,001	t=-14,081 , p=0,000
Role limitations due to physical health	Control	6,88±12,56	16,25±35,38	55,31±19,36
	Intervention	15,31±20,47	10,94±19,01	65,94±19,59
	Statistical Evaluation	t=-3,142 , p=0,002	t=1,183 , p=0,239	t=-3,451 , p=0,001
Role limitations due to emotional problems	Control	37,92±27,43	10±17,1	15,83±35,17
	Intervention	31,87±26,99	16,25±36,37	74,58±23,86
	Statistical Evaluation	t=-1,453 , p=0,148	t=1,391 , p=0,166	t=12,364 , p=0,000
Energy/fatigue	Control	28,44±8,7	29,38±8,76	30±8,68
	Intervention	28,94±9,2	30±8,68	62,13±12,55
	Statistical Evaluation	t=0,353 , p=0,724	t=0,453 , p=0,651	t=18,833 , p=0,000
Emotional well-being	Control	48,95±9,07	49,05±8,24	50,25±7,17
	Intervention	50,95±7,6	50,25±7,17	63,95±11,18
	Statistical Evaluation	t=1,511 , p=0,133	t=0,983 , p=0,327	t=9,228 , p=0,000
Social functioning	Control	37,97±16,21	38,44±14,45	37,81±14,06
	Intervention	37,66±14,13	37,81±14,06	72,97±11,67
	Statistical Evaluation	t=-0,13 , p=0,897	t=-0,277 , p=0,782	t=17,207 , p=0,000
Pain	Control	58,22±10,46	56,25±11,62	55,16±12,6
	Intervention	57,03±10,85	55,16±12,6	79,63±12,41
	Statistical Evaluation	t=-0,705 , p=0,482	t=-0,571 , p=0,569	t=12,373 , p=0,000
General health	Control	31,69±7,02	46,81±10,01	50,25±7,95
	Intervention	30,56±6,51	47,38±8,46	58,69±11,44
	Statistical Evaluation	t=-1,051 , p=0,295	t=0,384 , p=0,701	t=5,417 , p=0,000

*The significance level of $p < 0,05$ was accepted

Statistical analysis in table 4.8 showed that there were significant differences between the control and intervention groups before surgery in terms of Role limitations due to physical health scale ($p=0,002$), the intervention group was higher than the control group.

The results showed that there were significant differences between the control and intervention groups at discharge in terms of Physical functioning only ($p < 0,05$), whereas the intervention group was higher than the control group.

The results showed that there were significant differences between the control and intervention groups after 1 month in terms of all QoLScales since all $p < 0,05$ the intervention group was higher than the control group in: Physical functioning Role limitations due to emotional problems, Energy/fatigue, Emotional well-being, Social functioning, Pain, and General health.

Table 4.9. Test of differences in Quality of Life scores according to interactions between Group variable (Control and Intervention) and demographic variables

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DESCRIPTIVE CHARACTERISTICS		QUALITY OF LIFE MEAN SCORE											
		Control						Intervention					
		Quality Of Life Scale before surgery		Quality Of Life Scale at discharge		Quality Of Life Scale after 1 month		Quality Of Life Scale before surgery		Quality Of Life Scale at discharge		Quality Of Life Scale after 1 month	
		Mean±SD	Evaluation	Mean±SD	Evaluation	Mean±SD	Evaluation	Mean±SD	Evaluation	Mean±SD	Evaluation	Mean±SD	Evaluation
Gender	Male	36,19±4,27	t=-0,996, p=0,322	28,12±2,7	t=-1,522, p=0,132	64,41±6,62	t=0,667, p=0,507	38,59±4,65	t=1,544, p=0,127	30,97±4,93	t=-1,153, p=0,252	44,62±4,61	t=-0,122, p=0,903
	Female	37,29±4,74		29,2±3,17		63,31±6,69		36,7±5,44		32,39±4,86		44,76±3,94	
Education	Illiterate	35,23±4,92	F=0,5, p=0,683	27,65±3,74	F=0,333, p=0,801	62,67±6,93	F=0,179, p=0,91	38,47±5,16	F=1,347, p=0,265	31,98±3,7	F=1,281, p=0,287	45,05±4,32	F=0,895, p=0,448
	Primary	37,37±4,72		28,67±2,66		64,66±4,59		36,87±4,67		30,25±4,93		43,71±4,44	
	Secondary	36,73±4,26		28,63±2,93		63,99±7,15		39,87±5,12		31,08±6,17		44,97±4,41	
	University	36,03±4,41		28,19±2,63		64,5±6,92		38,25±4,76		33,06±4,67		45,79±4,51	
Marital status	Married	36,48±4,45	F=0,289, p=0,75	28,46±2,91	F=0,164, p=0,849	64,26±6,58	F=0,578, p=0,564	38,14±4,96	F=0,41, p=0,524	31,36±4,99	F=0,000, p=0,985	44,74±4,41	F=0,594, p=0,443
	Single	38,41±2,58		27,47±2,43		59,18±6,58		-----		-----		-----	
	Widow	-----		-----		-----		36,28±4,11		31,41±3,27		42,73±4,9	
	Divorced	35,07±5,14		27,78±1,9		63,47±10,86		-----		-----		-----	
Occupation	Free business	37,34±4,55	F=0,979, p=0,424	28,33±3,16	F=1,206, p=0,315	64,31±6,74	F=0,307, p=0,873	37,81±4,4	F=0,271, p=0,896	30,53±5,34	F=1,683, p=0,163	44,07±4,55	F=0,799, p=0,53
	Retired	35,68±3,93		27,99±2,08		63,41±6,58		39,11±5		34,27±5,68		46,07±4,28	
	Unemployed	35,34±3,66		28,58±3,5		65,62±6,61		38,29±5,2		30,25±3,45		43,93±4,38	
	House wife	37,44±4,97		30,03±3,28		62,54±6,34		37,23±6,34		31,11±4,82		44,56±4,13	
	Other	35,28±4,32		27,73±1,75		64,54±7,12		38,3±3,88		32,29±3,9		46,16±4,85	
Place of residency	Village	36,53±4,48	F=0,843, p=0,434	28,39±2,89	F=0,003, p=0,997	65,86±6,7	F=2,796, p=0,067	37,43±4,93	F=0,61, p=0,546	30,74±4,16	F=4,328, p=0,017	44,28±3,93	F=1,7, p=0,19
	City	36,08±4,23		28,44±2,78		62,51±6,17		38,51±4,97		32,97±5,29		45,61±5,01	
	Camp	38,61±5		28,43±3,59		62,08±6,65		38,98±4,92		28,3±4,72		42,93±3,56	
Had CAD in Family	Yes	36,45±4,3	t=-0,064, p=0,949	27,89±2,85	t=-1,139, p=0,258	64,02±6,7	t=-0,088, p=0,93	37,05±4,52	t=-1,072, p=0,287	30,58±5,28	t=-0,809, p=0,421	45,89±4,37	t=1,447, p=0,152
	No	36,51±4,49		28,67±2,85		64,16±6,64		38,41±5,04		31,62±4,82		44,25±4,38	
Had CABG Surgery in Family	Yes	36,75±4,39	t=0,307, p=0,76	28,26±2,86	t=-0,279, p=0,781	63,59±7,58	t=-0,405, p=0,687	37,22±4,73	t=-0,706, p=0,482	30,59±5,91	t=-0,639, p=0,524	46,08±4,63	t=1,329, p=0,188
	No	36,4±4,43		28,47±2,88		64,28±6,32		38,25±4,97		31,52±4,72		44,36±4,34	
Had Chronic Illness	Yes	35,69±4,51	t=-1,603, p=0,113	28,48±3,38	t=0,176, p=0,861	64,14±6,97	t=0,036, p=0,972	37,87±5,24	t=-0,432, p=0,667	31,34±4,93	t=-0,049, p=0,961	44,67±4,92	t=0,018, p=0,986
	No	37,25±4,21		28,36±2,3		64,08±6,34		38,35±4,48		31,39±4,99		44,65±3,63	
Previously had Surgery	Yes	36,82±4,36	t=0,679, p=0,499	28,35±2,88	t=-0,21, p=0,834	64,2±7,3	t=0,127, p=0,899	37,75±4,08	t=-0,381, p=0,704	31,46±4,71	t=0,121, p=0,904	44,43±5,08	t=-0,308, p=0,759
	No	36,15±4,47		28,49±2,88		64,01±5,91		38,21±5,27		31,31±5,05		44,76±4,14	

Table 4.9.(continue) Test of differences in QoL scores according to interactions between Group variable (Control and Intervention) and demographic variables

DESCRIPTIVE CHARACTERISTICS		QOL MEAN SCORE											
		Control						Intervention					
		QoL Scale before surgery		QoL Scale at discharge		QoL Scale after 1 month		QoL Scale before surgery		QoL Scale at discharge		QoL Scale after 1 month	
		Mean±SD	Evaluation	Mean±SD	Evaluation	Mean±SD	Evaluation	Mean±SD	Evaluation	Mean±SD	Evaluation	Mean±SD	Evaluation
Smoking	Yes	36,51±4,38	t=0,036,	28,15±2,55	t=-0,824,	63,27±6,83	t=-1,113,	38,51±4,63	t=0,641,	31,23±5,28	t=-0,18,	44,39±5,44	t=-0,435,
	No	36,47±4,47	p=0,971	28,68±3,13	p=0,413	64,91±6,38	p=0,269	37,79±5,12	p=0,523	31,44±4,74	p=0,858	44,83±3,67	p=0,665
nargile usage	Yes	36,89±4,7	t=0,308,	28,86±3,66	t=0,516,	62,84±6,65	t=-0,646,	37,59±6,3	t=-0,348,	31,51±5,75	t=0,108,	45,22±4,28	t=0,448,
	No	36,43±4,39	p=0,759	28,36±2,75	p=0,607	64,29±6,64	p=0,52	38,15±4,71	p=0,729	31,33±4,83	p=0,914	44,57±4,46	p=0,656
Alcohol Abuse	Yes	35,44±3,79	t=-0,487,	30,7±4,04	t=1,658,	61,35±6,56	t=-0,855,	31,00±0,00	t=-1,456,	37,56±0,00	t=1,273,	45,06±0,00	t=0,091,
	No	36,55±4,44	p=0,628	28,3±2,77	p=0,101	64,25±6,63	p=0,395	38,16±4,89	p=0,149	31,28±4,9	p=0,207	44,66±4,44	p=0,928
Type of surgery	On pump	36,5±4,35	t=0,031,	28,42±2,77	t=0,028,	64,5±6,61	t=1,608,	37,97±5	t=-0,616,	31,51±5,04	t=0,957,	44,67±4,41	t=0,074,
	Off pump	36,45±5,1	p=0,975	28,39±3,77	p=0,977	60,58±5,95	p=0,112	39,26±3,91	p=0,54	29,51±2,88	p=0,342	44,53±4,82	p=0,941
Number of graft	One	-----	F=0,871, p=0,46	-----	F=0,461, p=0,71	-----	F=0,484, p=0,694	39,08±0,00	F=1,07, p=0,377	33,25±0,00	F=1,603, p=0,182	47,00±0,00	F=0,137, p=0,968
	Two	35,48±5,05		28,19±3,14		64,32±7,96		38,93±5,12		30,65±5,08		44,88±4,67	
	Three	36,82±4,04		28,41±2,84		63,37±6,11		37,61±4,47		31,03±4,98		44,63±4,79	
	Four	36,99±4,29		28,49±2,44		65,16±5,59		36,15±4,82		32,57±3,94		44,09±3,15	
	More than four	38,86±2,86		30,25±3,04		67,18±5,11		41,52±8,61		37,53±2,15		44,06±1,05	
Age	<40	37,08±4,75	F=1,426, p=0,242	27,96±2,95	F=0,218, p=0,884	64,77±6,53	F=1,122, p=0,346	40,46±0,00	F=0,315, p=0,814	35,42±0,00	F=0,757, p=0,521	45,25±0,00	F=0,325, p=0,807
	40-60	37,07±4,79		28,34±2,8		65,5±5,52		37,87±5,35		30,46±4,82		44,06±4,73	
	61-80	35,64±3,91		28,64±2,78		62,72±7,38		37,98±4,74		31,91±5,11		45,08±4,33	
Income status	Non	34,99±4,22	F=1,621, p=0,192	28,94±3,32	F=0,221, p=0,882	62,08±7,11	F=0,769, p=0,515	36,87±5,37	F=0,648, p=0,63	31,77±5,15	F=0,598, p=0,666	46,97±3,87	F=0,852, p=0,497
	Less than 1500	35,65±4,26		28,05±2,89		63,44±5,95		37,29±5,9		31,88±4,75		44,18±3,97	
	1501 – 2500	37,68±4,32		28,5±3,07		65,28±6,96		38,33±4,79		31,4±5,32		45,23±4,23	
	2501 – 3500	35,83±4,56		28,33±2,21		63,6±6,38		39,65±3,11		31,82±5,34		44,62±3,88	
	3501 - 4500	-----		-----		-----		37,69±4,91		29,26±3,9		43,26±6,41	
Caregivers	Spouse	36,1±4,39	F=0,235, p=0,872	28,39±3,08	F=0,411, p=0,746	63,51±6,08	F=1,95, p=0,129	37,84±5,43	F=0,07, p=0,933	33,32±5,24	F=1,697, p=0,19	45,85±4,23	F=0,614, p=0,544
	Spouse and my child/ my children	36,75±4,62		28,37±2,8		65,04±6,71		38,17±4,9		30,82±4,92		44,37±4,39	
	My child/ my children	35,65±3,38		29,54±3,24		61,1±5,46		37,51±5		33,06±3,7		45,35±5,1	

Statistical analysis in table 4.8 showed there were statistically significant differences in mean scores of QoL only between place of residency groups in the intervention group at discharge ($p=0,017<0,05$) the post hoc test (Tukey HSD) showed that the mean score of QoL of the city group (Mean=32,97) was statistically higher than the mean score of QoL of the Camp group (Mean=28,3), table 4.10

Table 4.10. Booklet impact on patient only for intervention group

		Extremely Agree(5)	A lot (4)	Moderately (3)	A little (2)	Not all (1)	Mean	S.D
1	Did you have information about operation before reading the booklet?	0,0%	0,0%	7,5%	17,5%	75,0%	1,33	0,61
2	How easy is it to read this booklet?	21,3%	72,5%	6,3%	0,0%	0,0%	4,15	0,51
3	How much do the drawing help to understand the information?	80,0%	20,0%	0,0%	0,0%	0,0%	4,80	0,40
4	How easy is it to understand this booklet?	65,0%	20,0%	15,0%	0,0%	0,0%	4,5s 0	0,75
5	Is the length of the booklet is appropriate?	27,5%	71,3%	1,3%	0,0%	0,0%	4,26	0,47
6	How useful to you is the booklet for taken care for your operation?	51,3%	48,8%	0,0%	0,0%	0,0%	4,51	0,50
7	How well does the booklet meet your need for information about CABG operation??	41,3%	58,8%	0,0%	0,0%	0,0%	4,41	0,50
8	How much will this information help you improve the way you care for your operation?	46,3%	53,8%	0,0%	0,0%	0,0%	4,46	0,50
9	How much this information reduces the anxiety?	25,0%	75,0%	0,0%	0,0%	0,0%	4,25	0,44
10	Were the exercises useful to reduce pain?	33,8%	66,3%	0,0%	0,0%	0,0%	4,34	0,48
11	Was the booklet facilitates patients' adjustment to post-operative complications	52,5%	47,5%	0,0%	0,0%	0,0%	4,53	0,50
12	Do you recommend this booklet for CABG patients	66,3%	33,8%	0,0%	0,0%	0,0%	4,66	0,48
13	How much was booklet useful for your family member to deal with you?	56,3%	43,8%	0,0%	0,0%	0,0%	4,56	0,50
	Total	43,6%	47,0%	2,3%	1,3%	5,8%	4,21	0,14

Table 4.10 showed that the total degree of the respondents toward the booklet was high (mean=4,21)

The highest percentages of agreement were to the following statements; 1- How much do the drawing help to understand the information? (mean 4,8) 2- Do you recommend this booklet for CABG patients? (mean 4,66) 3- How much was booklet useful for your family member to deal with you? (mean 4,56) 4- Was the booklet facilitates patients' adjustment to post-operative complications? (mean 4,53).

The lowest statement was: Did you have information about operation before reading the booklet? (mean 1,33), most of the patients did not have information about the operation before reading the booklet.

Table 4.11. DVD impact on CABG patients in the intervention group

		Extremely Agree (5)	A lot (4)	Moderately (3)	A little (2)	Not all (1)	Mean	S,D
1	Did you have information about operation before watching the DVD?	0,0%	0,0%	20,0%	35,0%	45,0%	1,75	0,77
2	How easy is it to watch this DVD?	80,0%	20,0%	0,0%	0,0%	0,0%	4,80	0,40
3	How much does the DVD help to understand the information?	35,0%	65,0%	0,0%	0,0%	0,0%	4,35	0,48
4	How easy is it to understand this DVD?	55,0%	45,0%	0,0%	0,0%	0,0%	4,55	0,50
5	Is the length of the DVD is appropriate?	73,8%	26,3%	0,0%	0,0%	0,0%	4,74	0,44
6	How useful to you is the DVD for taken care for your operation?	61,3%	38,8%	0,0%	0,0%	0,0%	4,61	0,49
7	How well does the DVD meet your need for information about CABG operation?	83,8%	16,3%	0,0%	0,0%	0,0%	4,84	0,37

Table 4.11. (continue)DVD impact on CABG patients in the intervention group

		Extremely Agree (5)	A lot (4)	Moderately (3)	A little (2)	Not all (1)	Mean	S,D
8	How much will this information of the DVD help you to improve the way you care for your operation?	71,3%	28,8%	0,0%	0,0%	0,0%	4,71	0,46
9	How much this information in the DVD reduces the anxiety?	72,5%	27,5%	0,0%	0,0%	0,0%	4,73	0,45
10	Were the exercises in the DVD useful to reduce pain?	70,0%	30,0%	0,0%	0,0%	0,0%	4,70	0,46
11	Was the DVD helpful to facilitate your adjustment to post-operative complications?	71,3%	28,8%	0,0%	0,0%	0,0%	4,71	0,46
12	Do you recommend this DVD for CABG patients ?	77,5%	22,5%	0,0%	0,0%	0,0%	4,78	0,42
13	How much was DVD useful for your family member to deal with you?	81,3%	18,8%	0,0%	0,0%	0,0%	4,81	0,39
	Total	64,0%	28,3%	1,5%	2,7%	3,5%	4,47	0,15

Table 11 showed that the total degree of the respondents toward watching the DVD was very high (mean=4,47). The highest percentages of agreements were for the following

Statements; 1- How well does the DVD meet your need for information about CABG operation? (mean 4,84) 2- How much was DVD useful for your family member to deal with you? (mean 4,81) 3- How easy is it to watch this DVD? (mean 4,8) 4- Do you recommend this DVD for CABG patients? (mean 4,78).

The lowest statement was: Did you have information about operation before watching the DVD? (mean 1,75).

Results in table 4.10 and 4.11 showed that the DVD impact on patients (mean 4,47) was higher than Booklet impact (mean 4,21).

Table 4.12. Impact Booklet and DVD on CABG patients in the intervention group according to education, age and gender

Descriptive	Education	n	Mean	Std. Deviation	<i>f</i>	<i>p</i> -value
Booklet impact on patients	Uneducated	18	4.2564	.09872	2.565	.061
	Primary	31	4.1712	.14282		
	Secondary	15	4.1897	.14498		
	University	16	4.2644	.14035		
	Total	80	4.2125	.13806		
DVD impact on patients	Uneducated	18	4.4701	.13425	.794	.501
	Primary	31	4.4516	.16587		
	Secondary	15	4.5179	.12828		
	University	16	4.4471	.14654		
	Total	80	4.4673	.14828		
	Age					
Booklet impact on patients	<=60	33	4.1702	.15594	2.775	.069
	61-80	43	4.2433	.11861		
	>80	4	4.2308	.10879		
	Total	80	4.2125	.13806		
DVD impact on patients	<=60	33	4.4872	.15936	.934	.397
	61-80	43	4.4472	.14170		
	>80	4	4.5192	.11538		
	Total	80	4.4673	.14828		
	Gender	n	Mean		T	
Booklet impact on patients	Male	58	4.2095		0.309-	0.758
	Female	22	4.2203			
DVD impact on patients	Male	58	4.4602		0.693-	0.491
	Female	22	4.4860			

There were no significant differences in both Booklet impact on patients and DVD impact on patients due to Education, Age, and Gender ($p>0.05$).

5. DISCUSSION

In this chapter the researcher will discuss the main findings and results of the study that aims to assess the impact of patient education on QoL of patients undergoing CABG in the West Bank of Palestine. This study addressed many issues related to CABG patients in control and intervention groups; as personal information form, surgery process, patients' care givers in both groups after discharge, problems experienced during the follow-ups until one month after discharge, the interventions implemented, receiving educational programme and information services and findings related to QoL scores were discussed.

5.1. Discussion about Patients Who Have Undergone CABG, Personal Information form, Health Status and Habits, Hospital and Operation Experiences, Information about Patients' Care Givers in Control and Intervention Group after Discharge

The success of cardiac surgery is measured by low mortality rate, relief of symptoms and improvement in the QoL. Although most patients experience problems after surgery, they become more active and independent. The experienced problems can be reduced through helping the patients and their families to understand the recovery process better. This understanding can be enhanced through focusing on some of the predictable problems that the patients may encounter during the home recovery period that lasts (6-12) weeks and sometime lasting as long as 6 months after surgery (Ostwald, Godwin & Cron, 2008). Research findings indicated that the rate of recovery is related to the patient's lack of information about the processes before and after surgery, therefore patient's education may contribute to facilitation of home recovery, success of treatment and reduction of costs (Thomson et al. 2013).

Considering the patients in the intervention and control groups, CAD risk factors were found to be similar (Tables 4.1, 4.2, 4.3, 4.4). Only regarding the level of education, monthly income, age, BMI in patients' health status background in control and intervention groups, was a significant difference observed ($p < 0.05$). According to the findings, the majority of patients were rural residents, male and overweight in the intervention and control groups (Table 4.1). Most patients were from rural areas because most often urban areas have higher income and seek for treatment abroad also the distribution of population

in Palestine is higher in the rural areas. Many studies had revealed different CAD risk factors such as obesity, stress, urban life, sedentary lifestyle, and gender have been found to be an important factor affecting recovery symptoms of CABG patients. The majority of CAD risk factors such as stress and obesity need to be counseled in lifestyle modification, (Franklin et al. 2014; Steyn & Damasceno, 2006).

The demographic results revealed that most participants in both groups were married (Table 4.1). Being married, especially in a highly satisfying marriage, offers a significant benefit to long-term survival after CABG. Why marital status and marital satisfaction have this effect on survival? it is surely multifactorial, most likely a combination of spousal support and survivor motivation to adopt a healthy lifestyle, along with the provision of emotional support to the survivor, which all could have an effect on modulating the physiological mechanisms responsible for slowing the advancement of CVD (Akbari, 2014; Cebeci & Celik, 2008; King & Reis, 2012).

In addition, all participants in both groups were living with their families (Table 4.1). Other studies found that married patients who live with their spouse and children had higher self-care ability scores ($p < 0.05$) (King & Reis, 2012; Taghipour et al. 2011). Living with their families caused the families of patients who have undergone CABG to understand the demands better and this understanding can have a positive effect on the healing process (Geyer et al. 2009; Young et al. 1994). Patients and their relatives need assistance (Beggs et al. 1998; Roebuck, 1999; Savage & Grap, 1999). Following CABG surgery, patients spend most of their recovery time at home or with family members having to meet the needs of their care (Oren 2003; Shuldham, 2001). According to Schell & Puntillo, (2006) the patient's family should be included in the education. The illness of one of the members of the family has an influence on all the members of the family. The family acts as an agent providing cohesion, connection and closure, and in fostering patient well-being, Elliott et al. (2007) mentioned that critical illness has an impact on the patient, as well as the family, as it is a threat to the stable family unit.

Comparing the two groups based on education level, it was observed that the highest level of received education was primary school and literacy in the intervention group and secondary and university in the control group (Table 4.1). Akbari, (2014) found that most participants were primary school and literacy in the intervention group and literacy in the

control group. Cebeci, (2004) in their research reported that most of the participants in both groups had primary school education. The findings of the present study are similar and agree with the findings of the above mentioned study with the intervention group only. It should be taken into consideration that participants in both the control and intervention group were employed (Table 4.1). Many researchers have shown an increase in CAD resulting from job stress (Chandola et al. 2007; Yarnell, 2008).

Comparing the average body mass index (BMI), it was revealed that all participants were overweight, with a higher rate in the intervention group, there was significant difference between the two groups ($p < 0,05$) (Table 4.1), but statistical analysis showed that this factor at one month after discharge had no effect on QoL scores in both groups in ($p < 0,05$) (Table 4.9). Many studies, found that overweight patients undergoing CABG surgery and more problems were observed (Akbari, 2014; Cebeci & Celik, 2008; Reeves et al. 2003; Shirzad et al. 2003; Tuna, 2008). (Bagheri, 2014; Perrotta et al. 2007; Wagner, 2007) in their studies results suggested that BMI was an independent predictor of post-CABG complications and longer hospitalization but not with an increased, early or long-term mortality.

Regarding the age, the intervention group had a higher age average compared to the control group, there was significant difference between the two groups ($p < 0,05$), (Table 4.1), but statistical analysis showed that this factor at one month after discharge had no effect on the QoL score of patients in both groups in ($p > 0,05$) (Table 4.8). Dunning et al. (2008) found that age was not correlated with poor QoL. Many studies have reported relationships between age and various recovery measures following CABG surgery. Horneffer et al. (1987) and Sabzi et al. (2013) in their research found that CABG in the elderly patients had certain surgical risks such as chronic obstructive pulmonary disease, preoperative myocardial infarction, emergent surgery, and death, postoperative complications such as pulmonary complications, inotropic drug use, intra-aortic balloon pump use, prolonged ventilation, had longer mean postoperative hospital stays and infection were more frequent in the elderly than in the younger patients, and there were incidents of symptoms recurrence and degree of rehabilitation after discharge.

Furthermore, different results were found between studies regarding the improvement in the elderly sub groups during the recovery period. Najafi et al. (2008) found that elderly patients had a higher psychological score in comparison with the younger age. Staniute &

Brozaitiene, (2010) found that patients older than 65 years improved better in the physical functioning and physical component summary domain, but younger patients improved better in pain domain. In contrast Hokkanen et al. (2014) found that younger patients less than 65 maintained better physical and mental health than older subgroups at 12 years of follow up of CABG patients. Regarding these results, it is difficult to make any firm conclusion about the effect of age on the QoL. This may be related to differences and shortages in the study setting as; the methodology of the studies conducted or insufficient sample size or other co factors affected the results.

Patients in control and intervention groups before surgery were found to be similar in terms of health status and habits ($p>0,05$) (Table 4.2). Akbari, (2014) and Direk & Celik, (2012) in their studies found similar results about smoking and drinking alcohol status. Smoking is associated with significant pulmonary complications after CABG. Domburg et al. (2000); Saxena et al. (2014) found that patients who continued to smoke after CABG had a greater risk of death than patients who stopped smoking. They also underwent repeated revascularization procedures more frequently and myocardial infarction is more common and QoL was worsened. Dunning et al. (2008) found that current smoking is a significant predictor of poor QoL in 10 years post operative survivals of CABG patients. Al-Sarraf et al. (2008) also found that smoking cessation before CABG reduced the risk of serious pulmonary complications; these findings indicate that embarking on a smoking cessation program should not be deferred until after surgery. Therefore cessation of smoking was strongly recommended after CABG. Quitting smoking after CABG leads to better survivor prospects, and can be compared to non-smokers.

Comparing the patients based on their health status revealed that most cases of chronic diseases were among patients in the intervention group rather than control group as no significant difference was observed ($p>0,05$) (Table 4.2). Statistical analyses showed that this factor at one month after their discharge had no effect on the QoLscores of patients of both groups ($p>0,05$) (Table 4.8). It is worthy to mention that patients, who had chronic illness such as diabetes mellitus, chronic pulmonary disease, heart dysfunction and those with chronic kidney disease, were more likely to have complications. It is due to the fact that CVDs are associated with poor QoL after CABG. Not only physical but also psychosocial factors have an influence on these patients. It is worthy of mention that factors which play a role in the development of CVD in patients indicate that they carry

risks, (Direk & Çelik, 2012). Results in Table 4.2 showed that there was no significant difference between the control group and intervention in the habits and health status except those who previously had surgery that was a significant difference ($p<0,05$). but statistical analysis showed that this factor at one month after discharge had no effect on the QoLscores of patients in both groups in ($p>0,05$) (Table 4.8).

In this study, patients in control and intervention groups after surgery were found to be similar in terms of mean operation time, cross clamp time, used number of saphenous veins, average length of stay in ICU ($p>0,05$) Table 4.3 except length of hospital stay which was significantly different ($p<0,05$) between the control and intervention groups. This result is similar to McHugh et al. (2001); Naylor et al. (1999) and Naylor & McCauley, (1999) established that discharge training provided by nurses to patients who were hospitalized with cardiac problems had reduced the length of hospitalization and prevented re-hospitalization. In addition, Shuldham et al. (2002) had demonstrated the benefit of preoperative education on postoperative recovery of patients having cardiac surgery, which had a significant difference in length of hospital stay in the intervention group compared to the control group.

Intervention and control group had lived with their families after returning home. There was no significant difference ($p>0,05$) between the two groups regarding the people who took care of the patients at home after discharge (Table 4.5). In patients after CABG surgery, for better rehabilitation most do promote the participation of family members in the process of rehabilitation (Akbari, 2014; Al-gersha el at. 2005; Cebeci & Celik, 2008; Dantas & Ciol, 2008; Elliott et al. 2007; Gürlek & Yavuz, 2013; Schell & Puntillo, 2006).

5.2. Discussion about the Experienced Problems of Control and Intervention Group Patients after Discharge

After CABG surgery, patients experience various problems such as pain around the leg and chest incisions, weight loss, respiratory distress, sleep disturbances, fatigue, weakness, loss of appetite, constipation, difficulty taking a bath, limited body movements, unhappiness, and an inability to cope with stressors. They also experience role confusion in the family as well as problems concerning their lifestyle, level of engagement with social activities, relationships with their spouse's other family members and friends, (Akbari, 2014; Aydın,

2000; Direk & Çelik, 2012; Cebec & Celik, 2008; Çiftçi, 2006; Gardner et al. 2005; Özcan, 2008; Theobald & McMurray, 2004).

In this study, all patients experienced at least one problem after discharge. Control group patients reported more problems after discharge than intervention group patients. According to findings of the present study, the most frequently reported problem in the intervention group at discharge was loss of appetite (61,3%), also in the control group the most frequently reported problem at discharge was loss of appetite (77,5%) (Table 4.6). During the three follow ups the control group continued complaining from loss of appetite compared to the intervention group that were able to manage with this problem (Table 4.7). This result is similar to the findings of Jordanian study conducted by Al-Daakak et al. (2016), where (56%) of CABG patients reported loss of appetite two weeks after discharge. Jordanian people are similar to Palestinians in term of culture and food habits. Loss of appetite might be due to the medication taken during the recovery period (Parry, 2010), and lack of awareness of important healthy diet on the acceleration of recovery. The patients in the intervention group have experienced anorexia to a lesser degree because they received training on how to boost their appetite, how to cope with nausea and the positive effect of proper nutrition on healing.

According to the findings of the study, it was shown that the patients who have undergone heart surgery, have psychological problems which could have a negative effect on them. Carneiro et al. (2009) reported that patients with cardiac diseases undergoing different cardiac procedures have suffered from different levels and prevalence of anxiety. High levels of preoperative anxiety directly causing negative physiological manifestations (Viars, 2009) these would pose threats to the heart of patients with cardiac diseases. There was no significant difference between the control and intervention group except in the introversion where the intervention group was able to deal with this problem (Table 4.6).

The results of the follow up at the present study as demonstrated in (Table 4.7) showed that patients in the intervention group who received preoperative education experienced fewer problems after returning home than patients in the control group in all three follow ups. And there was a descending pattern of the problems reported by the intervention group from discharge until the third follow up (1 month after discharge). Patients in the control

group reported more problems in the three follow ups. These results were similar to (Akbari, 2014; Cebcei, 2012).

The results of the home follow up care as shown in Table 4.7 revealed that; at the first follow-up more than 10% of reported problems in the intervention group were: respiratory difficulties, palpitation, loss of appetite, constipation, leg swelling, wound leg, chest, back and shoulder pain, dizziness, weakness, fatigue, attention deficit problem, fear, difficulty in falling asleep, insomnia, wound edema and pain in leg, does not sleep on supine position. In the second follow-up, all of these problems were 10% less reported, and the most common reported problems were respiratory difficulties and wound edema in leg and loss of appetite and fear, until the third follow-up only respiratory difficulties and wound edema in leg and loss of appetite remained in less percentages (Table 4.7). The findings of the current study were in agreement with the study done by Akbari, (2014); Direk & Celik, (2012) and Tuna, (2008) on elderly patients who had undergone open heart surgery. Elitoğ & Erkuş, (2008) in their research, found that until 1 to 4 weeks after surgery in the intervention group patients' range of observed problems reduced to 50%. Some studies mentioned some problems that patients experienced during the post-surgery period and the way patients managed this period as: weakness and fatigue, anemia, change in appetite, sleep disturbance, change in amount and odor of perspiration, incision discomfort or pain, incision drainage, neck and shoulder or back discomfort, and muscle aches (Gortner & Jenkins, 1990; Tuna, 2008; Utriyaprasit & Shirley & Chaiseri, 2010). Breathing complications after CABG surgery increase hospital stay and are associated with high healthcare costs, (Freitas et al. 2012). In the present study patients reported other problems as; fever, abdominal distention, headache, numbness, more sputum, cold feet, throat, chill swathing, sensitivity to odors, sexuality. Many of these problems were found by Akbari. The observed differences between problems experienced by control and intervention groups could be due to the education given to the patients in intervention before surgery and at follow-ups after discharge. However, in control group patients observed more problems that were unsolved until third follow-up.

many studies reported that pain was the most frequent problem reported by patients and it needs to be addressed after CABG Akbari, (2014); Aydin, (2000); Beggs et al. (1998) the result of this study showed that the control group had more intense pain at discharge and in the three follow ups than the intervention group who demonstrated a continuous decrease

in the pain tense at discharge and during the follow ups (Table4.6) and (Table 4.7) these results were in concurrence with the results of Akbari, (2014); Cebeci & Celik, (2007) and Shuldham, (2001) reported that preoperative training was instrumental in reducing postoperative pain.

The patients in the intervention group have experienced less frequent occurrence of respiratory difficulty than the control group during the recovery period, this might be explained that the use of spirometer and the benefit of training on deep breathing and coughing exercises had a positive effect. Some studies confirmed that planned preoperative education and training increase postoperative deep breathing and coughing ability (Erdil & Özhan, 2001; Martinez & House-Fancher, 2000).

Education, especially face to face educational programs and giving information, was a very effective method in reducing their psychological problems. This teaching method encourages better interaction with patients and its simplicity is useful for nurses (Bessampor, 2004; Cebeci & Celik, 2011; Dunckley et al. 2008; Feyyazi et al. 2011; Mousavi et al. 2011; Musevi et al. 2012; Pfaffenberger et al. 2010; Zamanzadeh et al. 2013). In this study, preoperative education program with an interdisciplinary perspective, between patient, family and researcher, with consultancy services in conjunction with home care and follow-up, should be implemented with an improvement in quality, to reduce and eliminate the problems that patients encounter.

Many studies revealed that giving brief, clear information oriented to patients needs could help in preventing complications and reducing the incidence of rehospitalization (Boudrez & DeBacker, 2001; Driscoll, 2000; Naylor & McCauley, 1999; Naylor, 1999, Yilmaz, 2000).

Cardiovascular surgery education has been demonstrated to improve patients' post-discharge outcomes. Patients and their families require education to acquire the knowledge and skill to manage their post-Cardiovascular surgery home care (Veronovici et al. 2014). In particular, there was an amount of evidence that a nurse- led educational program was closely associated with a high reduction rate of complications and anxiety following cardiac events and readmissions to hospital. Moreover, the intervention of therapeutic lifestyle-change in a nursing program modified cardiac risk factors effectively and may

improve prognosis. The benefits of nursing support for cardiac rehabilitation patients can improve health outcomes and reduce the risk of a new cardiac event. It was of most importance for nurses to meet the rehabilitative care needs of patients through education, support, supervision and reinforcement (Al-gersha et al. 2005; Brennan et al. 2001; Fredericks, 2013; Kadda et al. 2013; Kaur et al. 2007; Krouse, 2001; Oshodi, 2007; Rahimianfar et al. 2013; Zhang et al. 2012).

Finally preoperative education and training with booklet and DVD that meets patient's needs may built up the patient's knowledge and skills and help preventing the development of complications post operation and empower patients to be able to deal with the problems they may encounter during the recovery period and consequently enhance the quality of their lives

5.3. Assessment of QoL Mean Scores of Control and Intervention Group Patients

QoL has emerged as an important concept and outcome in health and health care (Harrison, 1996). In public health and in medicine, the concept of health related QoL refers to a person or group perceived physical and mental health over time. Physicians have often used health-related QoL to measure the effect of chronic illness in their patients in order to better understand how an illness interferes with a person's day-to-day life. Similarly, public health professionals use health-related QoL to measure the effects of numerous disorders, short and long-term disabilities, and disease in different populations. Tracking health-related QoL in different populations can identify subgroups with poor physical or mental health and can help guide policies or interventions to improve their health (Direk & Çelik, 2012; Kaur, et al 2007; Oshodi, 2007; Rahimianfar et al. 2013; Tromp et al. 2004)..

Numerous studies agree that patients need assistance to accomplish self-care and QoL and that proper education and training and counselling can play a key role in helping them succeed. Providing training, counselling and support services to patients who have undergone CABG surgery and with the help of their close relatives, individuals develop self-care behavior, increase QoL, and ensure continuity of care at home while away from the hospital environment. Thus, potential problems and re-hospitalizations can be significantly averted (Akbari, 2014; Al-gersha et al. 2005; Cebeci & Celik, 2008; Direk & Çelik, 2012; Kaur, et al 2007; Oshodi, 2007; Rahimianfar et al. 2013; Tromp et al. 2004).

Results in table (4.8) showed that QoL mean scores were presented between patients in the control and intervention group before surgery and at discharge and one month after discharge. However, in all subcategories like physical functioning, physical role, bodily pain, general health perception, vitality, social function role, emotional role, mental health before surgery, no significant difference between groups was observed ($p>0,05$), except in terms of the role limitations due to physical health where a significant difference between life quality scores of patients in the two groups before surgery was observed ($p<0,05$). Furthermore, in all subcategories of the QoL scores in patients of both groups at discharge, no significant difference was observed ($p>0,05$), except for physical functioning which was statistical significant difference ($p<0,05$). While in all subcategories of the QoL scores in patients of both groups one month after discharge, significant difference was observed ($p<0,05$). Also in all subcategories of QoL, the obtained average QoL scores in the control group before and one month after discharge were not significantly different ($p>0,05$), but in the intervention group the obtained QoL scores in all cases before and one month after discharge were significantly different ($p<0,05$) (Table 4.8). These results were similar with Akbari, (2014) study results. In a study of Cebeci & Celik, (2007) they found there was a significant difference in self care scale means of the intervention and control group at discharge, also there was a significant difference in self care scale means of the intervention and control group at the first follow up (one week after discharge), and in the second follow up (one month after discharge). Furthermore, Babee et al. (2007) reported that there was significant difference in QoL means of the intervention and control group after one-month post operation. In addition, Bagheri et al. (2002) showed that group-counseling had positive effect on QoL in patients with myocardial infarction, analysis of the data one month post counseling showed that QoL had significantly improved pre and post counseling in intervention group but no improvement was found in control group. Almost similar results were found by Al gersha et al. (2005) where the health of the study group with CABG surgery was better than that of the control group. A statistical significant difference was found between the study and the control groups at functional capacity, self-efficacy through the period of follow up (one to three month) ($p\leq 0,05$). Kour et al. (2007) implemented a teaching module on self care activity for cardiac surgery patients, they found there was a significant difference in self care activity between intervention and control group in 4th and 7th day post operatively.

More over Kurcer & Ozby, (2001) studied the effect of patient's education and counseling on QoL, similar results were found to those of the current study. However, other studies found differences in some of QoL subcategories, for instance Gois et al. (2010) found that the differences were only statistically significant for general health and bodily pain. Other research found that QoL scores for physical functioning, role limitation due to physical health, and pain decreased from pre-CABG surgery compared to 2 weeks post-CABG surgery and returned to baseline values at 2 months post-CABG surgery Dantas et al. (2002) and Wintz & LaPier, (2007) reported that improvement in vitality, general health, and mental health by introducing interventions and focusing on those factors may improve QoL for those individuals (Akbari, 2014).

Results in Table 4.8 illustrated that there was not a statistically significant difference of the mean scores of QoLscore in both control and intervention groups regarding gender, job, age, economic status, life status, smoking, level of education, marital status and chronic illness but, regarding place of residency there was a significant difference in the mean score of QoL ($p < 0,05$). Despite these results other studies highlighted that the presence of a co-morbid illness affects the QoL in those with CAD and it seems important that healthcare professionals recognize the negative effect of chronic illness on QoL (Dantas et al. 2002).

Herlitz et al. (2005) found that several independent predictors affected the QoL of CABG survivors as history of diabetes, chronic obstructive pulmonary disease, high age, female sex, history of hypertension, and postoperative complications lower the QoL. Other researchers reported that diabetes was an independent predictor of worsened QoL (Welke et al. 2003).

With regards to gender, the result showed that there was no significant difference of gender on QoL of both groups. These results were in alignment with other studies for instance Tofighi et al. (2012) found no significant difference in QoL changes in terms of treatment strategy, age, gender, at first and third year of CAD surgery. In addition, Bradshaw et al. (2006) found that female sex was not an independent factor and little difference was found in their study of QoL in long term survivors of CABG patients in Western Australia.

In contrast other studies indicated that gender differences might be important in cardiac diseases in that women showed higher level of anxiety and distress and reduced QoL compared to men (Emery et al. 2004; Moser et al. 2003; Michalsen et al. 2005). In addition Herlitz et al. (2005) evaluated the QoL of 2000 Western Sweden CABG patients survivors 10 years after surgery, the information on QoL at 10 years was available in 976 patients (71% survivors), The results revealed that female sex is an independent predictor of lower QoL.

The same results were found by Peric et al. (2009) they investigated the effect of patients' personal characteristics on QoL, no significant difference was observed regarding age, job status, economic status, lifestyle, being a smoker/nonsmoker, and living place. While regarding gender, women had worse preoperative and postoperative QoL compared to men six months after CABG. These findings coincide with Herlitz et al. (1999) study. It reported that female sex is an independent predictor of worsened QoL even five years after operation. Furthermore, Najafi et al. (2008) aimed in their study to address the risk factors that had an impact on physical and mental health of CABG patients, these findings revealed that female sex was associated with low QoL psychological score. Moreover, Staniute & Brozaitiene, (2010) found that male patients improved in physical component summary domains better than female patients who improved better in mental health, and energy/vitality domain. But this improvement was not statistically significant. Gray, (2006); Kendel et al. (2010) reported that women who have undergone coronary bypass surgery, without any training, generally report poorer HRQoL than men.

While in Akbari, (2014) study, the researcher found that six weeks after patients were discharged in both groups QoL mean score was higher among females than males. The care provider should frequently assess the individual's mood for depression and help to boost patient's self-esteem (Dantas & Ciol, 2008). Bak & Marcisz, (2014) reported that QoL following CABG, in the energy, sleep, and physical mobility domains improved in different ways according to the gender of patient and were more favorable in men than in women. Ahmadzadeh, (2000); Babaei et al. (2013) and Ebadi et al. (2010) showed the positive effect of health education on knowledge and attitude, reducing anxiety in bypass surgery patients. According to these studies, it was demonstrated that health education improved QoL for patients with CABG in all cases using the SF-36 QoL scores, as significant differences were shown before and after the education program ($p < 0.05$). Home

care and post-discharge educational and consultancy services provided to the patients after CABG surgery could play an important role in reducing the problems experienced after discharge and improve QoL.

The greatest number (>50%) of interventions for solving problems in control patients was the use of medication in accordance with physicians' recommendations, calling for a doctor and giving necessary recommendations, doing massage on back and left shoulder, giving advice on nutrition and social life, and giving a psychological consultation to make interventions have better effects. The programmes were mostly applied to patients in the intervention group involved giving information and if problems arose, they got counselling with their physician and observing what was recommended in the instructional booklet and DVD, including: nutritional regulation according to the education booklet and DVD, having enough rest and sleep (drinking fluid and listening to music, having a dark room, a comfortable bed, a few walks before sleep, elevated feet at bedtime, taking a warm shower, reading books, watching TV, according to the booklet and DVD), not doing Valsalva's maneuver and preventing constipation. The activities which contributed to solving these problems were encouraging patients to express their feelings and doing exactly what the instructional booklet and DVD said, enhancing the QoL of patients (Appendix IX), (Additional Table 2^{ab}:139).

The educational intervention should be individualized; addressing patients' learning needs and be more intensive and comprehensive. Nurses may consider incorporating individualized patient education into their plan of care (Akbari, 2014; Cebeci & Celik, 2011; Direk & Çelik, 2012).

5.4. The Impact of DVD and Booklet on Patient's Recovery From Patient's Perspective

The current study was interested to explore the impact of booklet and DVD on CABG patient's ability to deal with the problems they may face during the recovery period while they were at home. The analysis of these results (Table 4.10, 4.11), revealed that the DVD and the booklet had a high positive impact on patients in the intervention group regarding all items (DVD mean (4,47) and booklet mean (4,21) (Table 4.10, 4.11)

According to results the impact of DVD had higher percentages than the impact of booklet in most of the items, for example 80% of patients mentioned that watching DVD was extremely easy while 72,5% of patients mentioned that booklet was easy a lot.

Regarding the recommendation of DVD and booklet to other CABG patients 77,5% and 66,3% respectively recommended the DVD and booklet to others. This reflects that these educational tools met patient's needs and were helpful to patients to reduce and overcome postoperative complications and enhance their QoL, nevertheless 81,3% of patients stated that the DVD extremely helped the patient's family members to deal with them, while 56,3% of patients mentioned that booklet extremely helped their family. These results emphasize that the content and illustrating figures and drawings of DVD and booklet were suitable for patients and their families.

It seemed that patients prefer watching DVD rather than reading booklet. This can be explained that watching needs less effort than reading and consumes less time. Furthermore, reading usually requires more skills than watching.

According to reviewed studies Krouse, (2001) concluded in his literature review of studies used video modelling in patient education that the use of video modelling has potential benefit for clinical practice in facilitating knowledge acquisition reducing anxiety and improving self care. Also Abbaszadeh et al. (2011) reported in his study that the mean score of knowledge in myocardial patient, diet, physical activity and perceive benefit, severity and susceptibility after video training increased significantly in the intervention group compared to the control group. The same results were found by Albert et al. (2003) who revealed that video training enhances self care behaviors. Keuler et al. (2007) suggested that patient education can result in higher knowledge level by using a computer rather than using a doctor.

The results in table 4.12 revealed that there was no significant difference between the average of both Booklet and DVD impact on the intervention group regarding education, age and gender. Although Griffin et al. (2003) demonstrated in their literature review that a relationship has been found between people with poor literacy skills and an increased risk of poor health (Weiss, Hart, McGee & D'Estelle, 1992). Literacy skills markedly decline with age, primarily because older people are likely to experience age-related disabilities

that might affect their reading ability. Despite these findings, in this study educating patient with booklet and DVD did not depend on the patient himself, but his family was necessary part during the education, so it was more likely that patient's family helped in reading the booklet after discharge.

Finally, the researcher proved that the use of preoperative educational program of booklet and DVD was an effective educational tool in improving CABG patient's QoL in the early recovery period, also patient's education and training pre surgery and informed at discharge helped in reducing the complications that patient's faced in the recovery period while at home with their families. Therefore, the first and second hypothesis stating that educational programme reduced problems experienced by the intervention group patients after discharge, and the educational programme increased the intervention group patients' QoL after discharge are accepted.

6. RESULTS AND RECOMMENDATION

6.1. Results

The aim of the present study was to investigate the effect of pre and post operative educational intervention based on DVD and Booklets on QoL in patients with CABG surgery. The training booklet and DVD were used for solving patients' physical, psychological and social needs to remove the problems experienced after their surgery and to increase QoL score after discharge. The following results were obtained.

- Within the scope of the research, most of the characteristics of patients in the control and intervention group were found to be similar, and no statistically differences were observed between patients of the two groups ($p>0,05$), except for level of education, monthly income, age, BMI in patients' health status background in control and intervention groups, a significant difference was observed ($p<0,05$) (Table 4.1).
- Habits and health status of control and intervention group patients before surgery were found to be similar. No statistically significant differences between patients of the two groups were observed ($p>0,05$), but statistically significant differences were observed in terms of having previously had Surgery in both groups ($p<0,05$). The results showed that previously had surgery was seen more in the control group (Table 4.2).
- No statistically significant differences were observed between the patients of control and intervention groups in terms of operation time, length of stay in ICU, cross clamp time, number of saphenous veins used, hospital and operation experiences ($p>0,05$), except length of stay in hospital had significant difference between the control and intervention groups ($p<0,05$), the mean of the control group (7,46) was higher than the mean of the intervention group(6,58) (Table 4.3, 4.4).
- Patients' care givers of control and intervention group patients after discharge did not significantly differ statistically about their information ($p>0,05$) (Table 4.5).
- Investigating the problems experienced by patients of control at discharge showed that the most common problems reported by patients were loss of appetite (77,5%),

Respiratory difficulty (68,8%), back pain (67,5%), difficulty in falling asleep (62,5%), shoulder pain and leg edema (60%), The least reported problem by patients in the control group was vomiting (5%). While the most reported problems by the intervention group at discharge were loss of appetite (61,3%), respiratory difficulty (48,8%), difficulty in falling asleep (42,5%), back pain (41,3%). The least reported problem by patients in the intervention group was vomiting (1,3%) (Table 4.6).

- Investigating the problems experienced by patients of control after discharge in the three follow ups showed that the most common problems reported by patients were loss of appetite (62,5%), (45%), (36,3%) respectively, back pain (68,8%), (65,3%), (52,5%), difficulty in falling asleep (63,8%), (48,8%), (40%), chest pain (62,5%), (45%), (36,3%), shoulder pain (61,3%), (55%), (48,8%). The least reported problem by patients in the control group was vomiting (6,3%), (3,8%), (0,0%) respectively. While the most reported problems by the intervention group after discharge were chest pain (42,5%), (8,8%), (3,8%), respiratory difficulty (25%), (10%), (6,3%), shoulder pain (23,8%), (8,8%), (1,3%), difficulty in falling asleep (22,5%), (5%), (2,5). The least reported problem by patients in the intervention group was leg and chest swelling at the surgical wound (0,0%), (0,0%), (0,0%) respectively (Table 4.6).
- QoLmean scores of patients in control and intervention groups showed that all categories of the SF-36 scale before surgery in the baseline score respectively, were physical functioning (48,25 - 46,06), physical role (6,88 – 15,31), bodily pain (58,22- 57,03), general health perception (31,69-30,56), vitality and energy (28,44- 28,84), social function (37,87-37,66), emotional role (37,92-31,67), and mental health (31,0- 27,32). All the scores in all scales between patients in control and intervention groups were similar and no significant difference was observed ($p>0,05$), except physical role significant difference was observed ($p<0,05$). QoLmean scores of patients in control and intervention groups at discharge showed that there was no statistically significant difference was observed ($p>0,05$), except for physical functioning which was significant difference ($p<0,05$).

But at one month after their discharge, inclusive follow-up scores between the patients in control and intervention groups respectively were, physical functioning (45,63- 68,13), physical role (55,31- 65,94), bodily pain (55,16- 79,63), general health perception (50,25-

58,69), vitality and energy (30,0- 62,13), social function (37,81- 72,97), emotional role (50,25- 63,95), and mental health (33,47- 68,41). As the results showed statistically significant differences between control and intervention groups were observed ($p<0,05$) (Table 4.8).

- Regarding the impact of DVD on CABG patients in the intervention group revealed that the total mean was very high (mean = 4,47). The highest statements were: the statement (How well does the DVD meet your need for information about CABG operation?) with mean (4,84) and the statement (How much was DVD useful for your family member to deal with you?) with mean (4,81), while the lowest statements were: the statement (Did you have information about operation before watching the DVD?) with mean (1,75). On the other hand, the impact of booklet on CABG patients in the intervention group revealed that the total degree of the respondent's attitudes was high (mean= 4,2). The highest statements were: the statement (How much do the drawing help to understand the information?) with mean (4,8) and the statement (Do you recommend this booklet for CABG patients) with mean (4,66). While the lowest statements were: the statement (Did you have information about operation before reading the booklet?) with mean (1,33) (Table 4.11).

6.2. Recommendations

In this study, education and training services were performed; taking patients' characteristics and needs were taken into consideration. The effects of this education programmes on reducing patients' problems and increase their QoL were measured. The following suggestions and recommendations are stated based on the findings:

- The positive results of the present study can be used in patients' care practically.
- Training and follow-ups should be continued after discharge.
- Contact with counselors should be provided for patients through a specific phone line.
- Follow-up centers in cardiovascular surgery hospitals should be established.
- Reinforcement of education during the follow-up period should be concerning to the patients needs.

- Implementation of the educational programme should be performed by nurses for patients with CABG patient before and after the operation, as well as during the recovery period.
- Patients should be assessed regarding their emotional status and the educational programme should be adapted to meet the needs of the patients.
- Patient education programme of the DVD and booklet for patient undergoing CABG should be implemented in the governmental and private health sector.
- The experience of the family regarding the pre-operative educational programme should be explored.
- Preoperative education and training of DVD and booklet is an extremely effective instrument to increase the level of performance of patients and enhance recovery.
- The role of nurse as patient educator is key important, nurse should be equipped and qualified with knowledge and skills they need to provide preoperative education or training for CABG patients
- The education program should be easily used by the patients and their families or the person who provide care to the patient during recovery.
- Hospital administrator should support patients teaching activities by providing sufficient time and personnel and developing teaching skills among health professionals

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APPENDIX

APPENDIX-1. Personal information form



Gazi University, Faculty of Health Sciences. Nursing Department

Subject / questionnaire for The Impact of Patient Education on Quality of Life of Patients Undergoing Coronary Artery Bypass Grafting (CABG) In the West Bank of Palestine.

Dear patient

The study form in your hand is concerned with identifying the **impact of patient education on quality of life of patients undergoing coronary artery bypass grafting (CABG) in the West Bank of Palestine**. This study will be used for the development of open heart surgery ward and to enhance and to improve the medical services introduced to patients undergoing open heart surgery, the researcher thanks you in advance for the time you allocate for filling the questionnaire form , the researcher would also like to clarify the followings:

The success of this study depends on the correct and preciseness of filling, so be patient and objective in the determination of your opinion for the purpose of achieving the goals that health institutions need.

There are no correct answers and other wrong, as far as; the answers reflect patient's views towards the questionnaire items.

Please don't leave any item unanswered.

The researcher is ready to answer any inquiries or complications that you might face.

Thank you for your cooperation

Rebhi Bsharat

APPENDIX-1. (continue) Personal information form

Part one :**Section one : Socio-Demographic data form**

Name and surname----- Date of admitting in hospital:-----

Your cell-phone Number .-----Home Number.-----

☒ **Name of hospital :** -----☒ **Gender :** 1- male 2- female☒ **Age :**-----☒ **Weight:**-----☒ **Height:**-----☒ **Educational :**

1- Illiterate 2- Primary 3- Secondary 4-University

☒ **Marital status:**

1- Married 2- single 3- divorced 4- widow

☒ **Occupation:**1- Free business 2- retired 3- Unemployed
4- House wife 5- other (explained)-----☒ **Place of residency**

1- village 2- city 3- camp 4- other-----

☒ **Monthly income(NIS)**1- Less than 1500 2- 1501 – 2500 3- 2501 – 3500
4- 3501 - 4500 5 – more than 4500☒ **Who are you living with?**1- Alone 2- Spouse 3- Spouse and my child/ my children
4- My child/ my children 5- Others (Please explain)-----☒ **Is there a member of your family had coronary artary disease ?**

a) Yes (Explain):...b) No:

☒ **Is there a member of your family had coronary artary paypass graft (CABG)?**

1) Yes (Explain):... 2) No:

APPENDIX-1. (continue) Personal information form

☒ **Are you suffering from chronic disease? If the answer is yes go to next question, if NO escap to next question.**

- 1) Yes (Explain):-----
- 2) No

☒ **For how long you suffer from the chronic disease?**

- 1) Year:
- 2) Month:
- 3) Day:

☒ **Have you had other operation before?**

- 1) Yes (Type and date of operation)-----
- 2) No:

☒ **Do you smoke ?**

- 1) Yes : how many cigarette per day? -----
- 2) No

☒ **Do you use nargile?**

- 1) Yes: how many time per day ?-----
- 2) No

☒ **Do you drink alcohol?**

- 1) Yes : Frequency / quantity: ...
- 2) No



Section two : post operative assessment

☒ **Type of surgery :**

- 1) On pump
- 2- off pump

APPENDIX-1. (continue) Personal information form

☒ **Cross clamp timeis** :-----

☒ **Number of graft**

1- One 2- tow 3- three 4-four 5- more than four

☒ **Did the patient develope any complication during surgery ?.**

1) Develope (Please define):-----

2)Not Develop

☒ **The duration of surgery is** :-----**hours**

☒ **Duration of stay of intensive Care unit:** -----**day**

☒ **Length of stay in the hospital** -----**day**

APPENDIX-2. The home follow-up form after discharge

Information about problems facing intervention group patients						
Problem	Problems occurrences status			Problem-Solving Interventions of Patients and patient's' Relatives (Explain)	Solution Status of problems	
	Follow up	Yes	No		Yes	No
Respiratory difficulty	1 st follow up					
	2 nd follow up					
	3 rd follow up					
Fatigue	1 st follow up					
	2 nd follow up					
	3 rd follow up					
Chest pain	1 st follow up					
	2 nd follow up					
	3 rd follow up					
Palpitation	1 st follow up					
	2 nd follow up					
	3 rd follow up					
Leg Pain	1 st follow up					
	2 nd follow up					
	3 rd follow up					

APPENDIX-2. (continue) The home follow-up form after discharge

Edema of the legs	1 st follow up					
	2 nd follow up					
	3 rd follow up					
Does not use elastic stocking	1 st follow up					
	2 nd follow up					
	3 rd follow up					
Loss of appetite	1 st follow up					
	2 nd follow up					
	3 rd follow up					
Nausea	1 st follow up					
	2 nd follow up					
	3 rd follow up					
Vomiting	1 st follow up					
	2 nd follow up					
	3 rd follow up					
Constipation	1 st follow up					
	2 nd follow up					
	3 rd follow up					
Diarrhea	1 st follow up					
	2 nd follow up					
	3 rd follow up					

APPENDIX-2. (continue) The home follow-up form after discharge

Unwillingness to social contacts	1st follow up					
	2nd follow up					
	3rd follow up					
Fear	1st follow up					
	2nd follow up					
	3rd follow up					
Attention deficit problem	1st follow up					
	2nd follow up					
	3rd follow up					
Pessimism	1st follow up					
	2nd follow up					
	3rd follow up					
Refuse to see visitor	1st follow up					
	2nd follow up					
	3rd follow up					
Difficulty in falling asleep	1st follow up					
	2nd follow up					
	3rd follow up					
Insomnia	1st follow up					
	2nd follow up					
	3rd follow up					

APPENDIX-2. (continue) The home follow-up form after discharge

Dizziness	1st follow up					
	2nd follow up					
	3rd follow up					
Fever	1st follow up					
	2nd follow up					
	3rd follow up					
Back pain	1st follow up					
	2nd follow up					
	3rd follow up					
Shoulder pain	1st follow up					
	2nd follow up					
	3rd follow up					
Does not sleep on supine position	1st follow up					
	2nd follow up					
	3rd follow up					
Weakness	1st follow up					
	2nd follow up					
	3rd follow up					

APPENDIX-2. (continue) The home follow-up form after discharge

Weight Gain	1st follow up					
	2nd follow up					
	3rd follow up					
Other problem (please explain	1st follow up					
	2nd follow up					
	3rd follow up					
Other problem (please explain	1st follow up					
	2nd follow up					
	3rd follow up					
Other problem (please explain	1st follow up					
	2nd follow up					
	3rd follow up					

APPENDIX-3. SF-HealthSurvey Form

1. In general, would you say your health is:

	Circle One Number	
A	Excellent	1
B	Very good	2
C	Good	3
D	Fair	4
E	Poor	5

2. Compared to one year ago, how would you rate your health in general now?

	Circle One Number	
A	Much better now than a year ago	1
B	Somewhat better now than a year ago	2
C	About the same as one year ago	3
D	Somewhat worse now than one year ago	4
E	Much worse now than one year ago	5

APPENDIX-3. (continue) SF-Health Survey Form

3. The following items are about activities you might do during a typical day.

Does your health now limit you in these activities? If so, how much?

	Circle One Number on Each Line)	Yes, limited a lot	Yes, limited a little.	No,not limited at all.
A	Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports.	[1]	[2]	[3]
B	Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf?	[1]	[2]	[3]
C	Lifting or carrying groceries.	[1]	[2]	[3]
D	Climbing several flights of stairs.	[1]	[2]	[3]
E	Climbing one flight of stairs.	[1]	[2]	[3]
F	Bending, kneeling or stooping.	[1]	[2]	[3]
G	Walking more than one mile.	[1]	[2]	[3]
H	Walking several blocks.	[1]	[2]	[3]
I	Walking one block	[1]	[2]	[3]
J	Bathing or dressing yourself.	[1]	[2]	[3]

Physical health

4. During the past 4 weeks, have you had any of the following problems with
your work or other regular daily activities as a result of your physical health?

	Circle One Number on Each Line	yes	No
A	Cut down the amount of time you spent on work or other activities	1	2
B	Accomplished less than you would like	1	2
C	Were limited in the kind of work or other activities	1	2
D	Had difficulty performing the work or other activities (for example, it took extra effort)	1	2

APPENDIX-3. (continue) SF-Health Survey Form

Psychological health

5. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious?)

	Circle One Number on Each Line	yes	No
A	Cut down the amount of time you spent on work or other activities	1	2
B	Accomplished less than you would like	1	2
C	Didn't do work or other activities as carefully as usual	1	2

Physical or psychological health

6. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

	Circle One Number	
A	Not at all	1
B	Slightly	2
C	Moderately	3
D	Quite a bit	4
E	Extremely	5

Pain severity

7. How much bodily pain have you had during the past 4 weeks?

	Circle One Number	
A	Not at all	1
B	Slightly	2
C	Moderately	3
D	Quite a bit	4
E	Extremely	5

APPENDIX-3. (continue) SF-Health Survey Form

8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework?)

	Circle One Number	
A	Not at all	1
B	Slightly	2
C	Moderately	3
D	Quite a bit	4
E	Extremely	5

9. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4weeks?

	Circle One Number on Each Line)	All of the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little of the Time	None of the Time
A	Did you feel full of pep?	[1]	[2]	[3]	[4]	[5]	[6]
B	Have you been a very nervous person?	[1]	[2]	[3]	[4]	[5]	[6]
C	Have you felt so down in the dumps that nothing could cheer you up?	[1]	[2]	[3]	[4]	[5]	[6]
D	Have you felt calm and peaceful?	[1]	[2]	[3]	[4]	[5]	[6]
E	Did you have a lot of energy?	[1]	[2]	[3]	[4]	[5]	[6]
F	Have you felt downhearted and blue?	[1]	[2]	[3]	[4]	[5]	[6]
G	Did you feel worn out?	[1]	[2]	[3]	[4]	[5]	[6]
H	Have you been a happy person?	[1]	[2]	[3]	[4]	[5]	[6]
I	Did you feel tired?	[1]	[2]	[3]	[4]	[5]	[6]

APPENDIX-3. (continue) SF-Health Survey Form

10. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.?)

	Circle One Number	
A	All of the time	1
B	Most of the time	2
C	Some of the time	3
D	A little of the time	4
E	None of the time	5

11. How TRUE or FALSE is each of the following statements for you?

	Circle One Number on Each Line)	Definitely True	Mostly True	Don't Know	Mostly False	Definitely False
A	I seem to get sick a little easier than other people	[1]	[2]	[3]	[4]	[5]
B	I am as healthy as anybody I know	[1]	[2]	[3]	[4]	[5]
C	I expect my health to get worse	[1]	[2]	[3]	[4]	[5]
D	My health is excellent	[1]	[2]	[3]	[4]	[5]
E	Did you have a lot of energy?	[1]	[2]	[3]	[4]	[5]

APPENDIX-4. Effectiveness of The Educational Program (only for intervention group)

Booklet impact on patient only for intervention group.						
		Extremely	A lot	moderately	A little	Not all
1-	Did you have information about operation before reading the booklet?					
2	How easy is it to read this booklet?					
3	How much do the drawing help to understand the information?					
4	How easy is it to understand this booklet?					
5	Is the length of the booklet is appropriate?					
6	How useful to you is the booklet for taken care for your operation?					
7	How well does the booklet meet your need for information about CABG operation??					
8	How much will this information help you improve the way you care for your operation?					
9	How much this information reduces the anxiety?					
10	Were the exercises useful to reduce pain?					
11	Was the booklet facilitates patients' adjustment to post-operative complications					
12	Do you recommend this booklet for CABG patients					
13	How much was booklet useful for your family member to deal with you?					

APPENDIX-4. (continue) Effectiveness of The Educational Program (only for intervention group)

14	What was the most important part of the booklet according to your perception					
15	What do you recommend for any addition					
DVD impact on patient						
		Extremely	A lot	moderately	A little	Not all
1	Did you have information about operation before watching the DVD?					
2	How easy is it to watch this DVD?					
3	How much does the DVD help to understand the information?					
4	How easy is it to understand this DVD?					
5	Is the length of the DVD is appropriate?					
6	How useful to you is the DVD for taken care for your operation?					
7	How well does the DVD meet your need for information about CABG operation?					
8	How much will this information of the DVD help you to improve the way you care for your operation?					
9	How much this information in the DVD reduces the anxiety?					
10	Were the exercises in the DVD useful to reduce pain?					
11	Was the DVD helpful to facilitate your adjustment to post-operative complications?					

APPENDIX-4. (continue) Effectiveness of The Educational Program (only for intervention group)

12	Do you recommend this DVD for CABG patients ?					
13	How much was DVD useful for your family member to deal with you?					
14	What was the most important part of the DVD according to your perception					
15	What do you recommend for any addition					

End

APPENDIX-5. Arabic questionnaire form



جامعة غازي
معهد العلوم الصحية / قسم التمريض

موضوع الدراسة / استبيان عن أثر تعليم المريض على جودة الحياة للمرضى الذين يخضعون لعمليات
ترقيع الشرايين التاجية في الضفة الغربية

عزيزي المريض

هذه الدراسة تهتم بتحديد أثر تعليم المريض على جودة الحياة للمرضى الذين يخضعون لعمليات ترقيع الشرايين التاجية في الضفة الغربية. وستساهم هذه الدراسة بتطوير أقسام جراحة القلب، وتحسين ورفع مستوى الخدمات الطبية المقدمة للمرضى الذين يخضعون لجراحة القلب المفتوح، يشكر الباحث على الوقت والجهد الذي بذلته في تعبئة هذه الاستمارة والتي تستغرق منك 10 - 15 دقيقة ، و الباحث يود أن يوضح ما يلي :

سيتم التعامل مع البيانات بسرية تامة وسيتم استخدام البيانات حصرا لأغراض البحث العلمي فقط. نجاح هذه الدراسة يعتمد على دقة وصحة المعلومات التي ستدلي بها، ارجو ان تكون صبوراً و موضوعياً عند اختيار الاجابة او تحديد رأيك عند تعبئة بنود الاستمارة كي تساعد في تحقيق الاهداف المرجوة من الدراسة.

اوكد انه لا توجد إجابات صحيحة او خاطئة، و الإجابات تعكس رأيك و وجهه نظرك لبنود الاستبيان. ارجو عدم ترك أي بند دون إجابة.

الباحث على استعداد للإجابة على أي استفسارات او صعوبات قد تواجهك
نشكر لكم حسن تعاونكم

الباحث

ربحي بشارات

0599117727 / 0597331199

APPENDIX-5. (continue) Arabic questionnaire form

الجزء الاول:

القسم الاول

الاسم الرباعي:----- تاريخ الدخول للمستشفى:-----

رقم تلفون البيت:----- رقم بلفون :-----

اسم المستشفى:----- ☒

الجنس: 1- ذكر 2- انثى ☒

العمر:----- ☒

الوزن:----- ☒

الطول:----- ☒

المستوى التعليمي: ☒

1- أمي (لا يقرأ ولا يكتب) 2- اساسي 3- ثانوي 4- جامعي

الحالة الاجتماعية: ☒

1- متزوج 2- اعزب 3- مطلق 4- ارمل

المهنة: ☒

1- عمل حر 2- متقاعد 3- لا اعمل 4- ربة بيت

5- غير ذلك (اذكر)-----

مكان السكن: ☒

1- القرية 2- المدينة 3- مخيم 4- غير ذلك

الدخل الشهري (بالشيكل): ☒

1- 1500 الى 2500 2- 2501 الى 3500 3- 3501 الى 4500

4- 4501 فاعلى

مع من تسكن؟ ☒

1- وحدي 2- مع الزوج/ة 3- مع الزوج/ة و الاولاد

4- مع الاولاد 5- غير ذلك (اذكر)-----

هل يوجد احد من افراد العائلة لديه مرض في الشرايين التاجية؟ ☒

1- نعم (اذكر من)-----2- لا

هل يوجد احد من افراد العائلة قام باجراء عملية ترقيع لشرايين ؟ ☒

1- نعم (اذكر من)-----

2- لا

APPENDIX-5. (continue) Arabic questionnaire form

- ☒ هل تعاني من مرض مزمن؟
- 1- نعم (اذكر)-----
- 2- لا (اذا كان الاجابة لا اتبع السهم)
- ☒ ما هي الفترة الزمنية التي عانيت فيها من المرض المزمن؟
- 1- -----سنة 2- -----شهر 3- -----يوم
- ☒ هل اجريت عمليات من قبل؟
- 1- نعم (اذكر نوع وتاريخ العملية)-----
- 2- لا
- ☒ هل تدخن؟
- 1- نعم (اذكر كم سيجارة في اليوم)-----
- 2- لا
- ☒ هل تستعمل النرجيلة؟
- 1- نعم (اذكر كم مرة في اليوم)-----
- 2- لا
- ☒ هل تشرب الكحول؟
- 1- نعم (اذكر كم مرة في اليوم و الكمية)-----
- 2- لا

القسم الثاني: بعد العملية

- ☒ نوع العملية :
- 1- باستخدام مضخة القلب و الرئة
- 2- بدون استخدام مضخة القلب و الرئة
- ☒ فترة استخدام مضخة القلب والرئة:-----
- ☒ عدد الشرايين المزروعة:
- 1- واحد 2- اثنان 3- ثلاثة 4- اربعة 5- اكثر من اربعة

APPENDIX-5. (continue) Arabic questionnaire form

هل تعرض المريض لمضاعفات اثناء العملية؟ ☒

1- نعم (اذكر من)-----

2- لا

الفترة الزمنية للعملية هي -----ساعة ☒

فترة مكوث المريض في العناية المكثفة هي -----يوم ☒

فترة مكوث المريض في المستشفى هي -----يوم ☒

معلومات عن المشاكل التي تحدث للمرضى و كيفية التدخل لحلها								
المشكلة		ظهور المشكلة			التدخلات لحل المشاكل من قبل المرضى وأقاربهم (شرح)		حل المشاكل	
		نعم	لا		نعم	لا		
صعوبة في التنفس	المتابعة الاولى							
	المتابعة الثانية							
	المتابعة الثالثة							
تعب	المتابعة الاولى							
	المتابعة الثانية							
	المتابعة الثالثة							
خفقان للقلب	المتابعة الاولى							
	المتابعة الثانية							
	المتابعة الثالثة							
الام في القدمين	المتابعة الاولى							
	المتابعة الثانية							
	المتابعة الثالثة							
تورم في القدمين	المتابعة الاولى							
	المتابعة الثانية							
	المتابعة الثالثة							
لا تستعمل جواريب مطاطية	المتابعة الاولى							
	المتابعة الثانية							
	المتابعة الثالثة							

APPENDIX-5. (continue) Arabic questionnaire form

				المتابعة الاولى	فقدان الشهية
				المتابعة الثانية	
				المتابعة الثالثة	
				المتابعة الاولى	غثيان
				المتابعة الثانية	
				المتابعة الثالثة	
				المتابعة الاولى	تقيؤ
				المتابعة الثانية	
				المتابعة الثالثة	
				المتابعة الاولى	امساك
				المتابعة الثانية	
				المتابعة الثالثة	
				المتابعة الاولى	اسهال
				المتابعة الثانية	
				المتابعة الثالثة	
				المتابعة الاولى	خراج من الجرح (اذكر من القدم ، الصدر او اي مكان اخر)
				المتابعة الثانية	
				المتابعة الثالثة	
				المتابعة الاولى	احمرار في الجرح (اذكر من القدم ، الصدر او اي مكان اخر)
				المتابعة الثانية	
				المتابعة الثالثة	
				المتابعة الاولى	الام في الجرح (اذكر من القدم ، الصدر او اي مكان اخر)
				المتابعة الثانية	
				المتابعة الثالثة	
				المتابعة الاولى	تورم في الجرح (اذكر من القدم ، الصدر او اي مكان اخر)
				المتابعة الثانية	
				المتابعة الثالثة	
				المتابعة الاولى	تشاؤم

APPENDIX-5. (continue) Arabic questionnaire form

					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	رفض مشاهدة الزوار
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	خوف
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	قلة في الانتباه والتركيز
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	افكار دخيلة
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	عدم الرغبة في مشاهدة الزوار
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	عدم الراحة في النوم
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	أرق
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	دوخة
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	ارتفاع في الحرارة
					المتابعة الثانية	

APPENDIX-5. (continue) Arabic questionnaire form

					المتابعة الثالثة	
					المتابعة الاولى	الام في الظهر
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	الام في الكتف
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	لا يستطيع النوم على الظهر
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	ضعف عام
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	زيادة في الوزن
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	مشاكل اخرى (اذكر)
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	مشاكل اخرى (اذكر)
					المتابعة الثانية	
					المتابعة الثالثة	
					المتابعة الاولى	مشاكل اخرى (اذكر)
					المتابعة الثانية	
					المتابعة الثالثة	

APPENDIX-5. (continue) Arabic questionnaire form

القسم الثالث: SF 36 أداة لتقسيم جودة حياة المريض :

1. بصورة عامة، كيف ترى حالتك الصحية (ضع أمام الإجابة المناسبة ✓, اختر اجابة واحدة وضع علامة)

أ. ☐ ممتازة

ب. ☐ جيدة جدا

ج. ☐ جيدة

د. ☐ لا بأس بها

هـ. ☐ سيئة

2. مقارنة بعام مضى، كيف تقيم حالتك الصحية الان بصورة عامة؟ (ضع أمام الإجابة المناسبة ✓, اختر اجابة واحدة وضع علامة)

أ. ☐ أفضل بكثير مما كانت عليه قبل عام

ب. ☐ أفضل نوعاً ما من العام الماضي

ج. ☐ تقريبا على ما هي عليه

د. ☐ أسوأ نوعاً ما من العام الماضي

هـ. ☐ أسوأ بكثير مما كانت عليه قبل عام

APPENDIX-5. (continue) Arabic questionnaire form

3. تتعلق البنود التالية بأنشطة يمكن أن تقوم بها خلال يومك العادي في الوقت الحالي، إلى أي مدى تقيدك حالتك الصحية:

3- لا تقيدني إطلاقاً	2- نعم تقيدني قليلاً	1- نعم تقيدني كثيراً	(اختر إجابة واحدة وضع علامة ✓ أمام الإجابة المناسبة)
☐	☐	☐	أ. من ممارسة الأنشطة الشاقة مثل: الجري، حمل الأشياء الثقيلة أو مزاولة الأنشطة الرياضية المجهدة جداً؟
☐	☐	☐	ب. من ممارسة الأنشطة متوسطة الجهد، كتحريك الطاولة أو التنظيف باستخدام المكنسة الكهربائية أو تنظيف حديقة المنزل والعناية بها؟
☐	☐	☐	ج. من حمل المشتريات من البقالة أو السوق المركزي (السوبر ماركت)؟
☐	☐	☐	د. من صعود الدرج <u>لعدة أدوار</u> ؟
☐	☐	☐	هـ. من صعود الدرج <u>لدور واحد فقط</u> ؟
☐	☐	☐	و. من الانحناء أو الركوع في السجود؟
☐	☐	☐	ز. من المشي لأكثر من <u>كيلومتر ونصف</u> ؟
☐	☐	☐	ح. من المشي لمسافة نصف كيلومتر؟
☐	☐	☐	ط. من المشي لمسافة مئة متر؟
☐	☐	☐	ي. من الاستحمام أو ارتداء الملابس بنفسك؟

الصحة الجسمية

4. تتعلق البنود التالية (أ، ب، ج، د) بالمشاكل التي يمكن أن تواجهك خلال تأديتك لعملك أو للأنشطة اليومية المعتادة نتيجة لحالتك الصحية الجسمية خلال الأسابيع الأربعة الماضية، هل تسببت حالتك الصحية الجسمية في:		
2. لا	1. نعم	(اختر إجابة واحدة وضع علامة ✓ أمام الإجابة المناسبة)
☐	☐	أ. التقليل من الوقت الذي تقضيه في العمل أو أي أنشطة أخرى؟
☐	☐	ب. التقليل مما تود إنجازه من العمل أو أي أنشطة أخرى؟
☐	☐	ج. تقيدك في أداء نوع معين من الأعمال أو أي أنشطة أخرى؟
☐	☐	د. أن تجد صعوبة في تأدية العمل أو أي أنشطة أخرى؟ (على سبيل المثال احتجت إلى جهد إضافي لتأديتها)

APPENDIX-5. (continue) Arabic questionnaire form

5. تتعلق البنود التالية (أ، ب، ج) بالمشاكل التي يمكن أن تواجهك خلال تأديتك لعملك أو للأنشطة اليومية المعتادة كنتيجة لحالتك الصحية النفسية (مثلا الشعور بالاكتئاب أو القلق) خلال الأسابيع الأربعة الماضية، هل تسببت حالتك الصحية النفسية في:

(اختر اجابة واحدة وضع علامة ✓ أمام الإجابة المناسبة)	1. نعم	2. لا
أ. التقليل من الوقت الذي تقضيه في العمل أو أي أنشطة أخرى؟	☐	☐
ب. التقليل مما تود انجازه من العمل أو أي أنشطة أخرى؟	☐	☐
ج. عدم انجاز العمل أو أي أنشطة أخرى بالحرص المعتاد؟	☐	☐

الصحة النفسية

الصحة الجسمية أو النفسية

6. خلال الأسابيع الأربعة الماضية، إلى أي مدى تعارضت صحتك الجسمية أو النفسية مع تأديتك لنشاطاتك الاجتماعية المعتادة مع عائلتك أو أصدقائك أو جيرانك أو أي من المناسبات الاجتماعية الأخرى؟

أمام الإجابة المناسبة)✓(اختر اجابة واحدة وضع علامة	
أ. لم يكن هناك أي تعارض إطلاقاً	☐
ب. كان هناك تعارض قليل	☐
ج. كان هناك تعارض متوسط	☐
د. كان هناك تعارض كبير	☐
هـ. كان هناك تعارض كبير جداً	☐

APPENDIX-5. (continue) Arabic questionnaire form

شدة الألم

7. ما شدة الألم الجسدي الذي عانيت منه خلال الأسابيع الأربعة الماضية؟

أمام الإجابة المناسبة)✓(اختر اجابة واحدة وضع علامة	
☐	أ. لم يكن هناك أي ألم
☐	ب. كان هناك ألم خفيف جدا
☐	ج. كان هناك ألم خفيف
☐	د. كان هناك ألم متوسط
☐	هـ. كان هناك ألم شديد
☐	و. كان هناك ألم شديد جدا

8. خلال الأسابيع الأربعة الماضية، إلى أي مدى أدى الألم الجسدي إلى التعارض مع تأديتك لأعمالك المعتادة (سواء داخل المنزل أو خارجه)؟

أمام الإجابة المناسبة)✓(اختر اجابة واحدة وضع علامة	
☐	أ. لم يكن هناك أي تعارض إطلاقاً
☐	ب. كان هناك تعارض قليل جدا
☐	ج. كان هناك تعارض متوسط
☐	د. كان هناك تعارض كبير
☐	هـ. كان هناك تعارض كبير جداً

APPENDIX-5. (continue) Arabic questionnaire form

10. خلال الأسابيع الأربعة الماضية، ما مقدار الوقت الذي تعارضت فيه صحتك الجسمية أو مشاكلك النفسية مع نشاطاتك الاجتماعية (مثل زيارة الأصدقاء والأقارب وغير ذلك)؟

أمام الإجابة المناسبة)✓(اختر إجابة واحدة وضع علامة	
☐	أ. كان التعارض في كل الأوقات
☐	ب. كان التعارض في معظم الأوقات
☐	ج. كان التعارض في بعض الأوقات
☐	د. كان التعارض في قليل من الأوقات
☐	هـ. لم يكن هناك تعارض في أي وقت من الأوقات

11. ما مدى صحة أو خطأ كل من العبارات التالية (أ، ب، ج، د) بالنسبة إلى حالتك الصحية؟

(اختر إجابة واحدة وضع علامة ✓ أمام الإجابة المناسبة)				
خطأ بلا شك	خطأ غالباً	لا أعلم	صحيحة غالباً	صحيحة بلا شك
☐	☐	☐	☐	☐
أ. يبدو أنني أصاب بالمرض أسهل من الآخرين.				
☐	☐	☐	☐	☐
ب. حالتي الصحية مساوية لأي شخص أعرفه.				
☐	☐	☐	☐	☐
ج. أتوقع أن تسوء حالتي الصحية.				
☐	☐	☐	☐	☐
د. حالتي الصحية ممتازة.				

APPENDIX-5. (continue) Arabic questionnaire form

شكراً لتعاونكمالقسم الرابع: اداة تقييم تاثير الكتيب و الفيديو على المريض (فقط للعينة التجريبية)

تأثير الكتيب على المريض						
	لا يوجد	قليل	متوسط	كثير	كثير جدا	
1						هل كان لديك معلومات عن العملية قبل قراءة هذا الكتيب؟
2						هل من السهل قراءة هذا الكتيب؟
3						هل ساعدتك الرسومات في فهم المعلومات؟
4						هل من السهل فهم هذا الكتيب؟
5						هل حجم الكتيب مناسباً؟
6						ما مدى فائدة الكتيب لك في العناية بالعملية؟
7						هل اوفى الكتيب تلبية الحاجة للحصول على معلومات حول عملية زراعة الشرايين التاجية؟
8						هل كانت المعلومات كافية لمساعدتك على تحسين الطريقة في رعاية العملية الخاصة بك؟
9						هل معلومات الكتيب ساعدتك بالحد من القلق؟
10						هل كان للتمارين والتدريبات فائدة للحد من الألم؟
11						هل كان للكتيب دور في تسهيل التكيف مع المضاعفات ما بعد الجراحة؟
12						هل توصي هذا الكتيب لمرضى زراعة الشرايين؟
13						هل كان الكتيب مفيد لافراد اسرتك للتعامل معك؟
14						ما هو اهم جزء من الكتيب وفقاً لمفهومك؟
15						هل تنصح باي اضافة على الكتيب؟

APPENDIX-5. (continue) Arabic questionnaire form

تأثير الفيديو على المريض					
	لا يوجد	قليل	متوسط	كثير	كثير جدا
1					هل لديك معلومات عن العملية قبل مشاهدة هذا الفيديو؟
2					هل مشاهدة الفيديو كانت واضحة؟
3					هل ساعدتك مشاهد الفيديو في فهم المعلومات؟
4					هل من السهل فهم هذا الفيديو؟
5					هل حجم " الفترة الزمنية" للفيديو مناسب؟
6					ما مدى فائدة الفيديو لك في العناية بالعملية؟
7					هل لبي الفيديو الحاجة للحصول على معلومات حول عملية زراعة الشرايين التاجية؟
8					هل كانت المعلومات كافية لمساعدتك على تحسين الطريقة في رعاية العملية الخاصة بك؟
9					هل معلومات الفيديو ساعدتك بالحد من القلق؟
10					هل كان للتمارين والتدريبات فائدة للحد من الألم؟
11					هل كان للفيديو دور في تسهيل التكيف مع المضاعفات ما بعد الجراحة؟
12					هل توصي في هذا الفيديو لمرضى زراعة الشرايين؟
13					هل كان الفيديو مفيد لافراد اسرتك للتعامل معك؟
14					ما هو اهم جزء من الفيديو وفقا لمفهومك؟
15					هل تتصح باي اضافة على الفيديو؟

انتهى

APPENDIX-6. Gazi University Ethics Committee Form

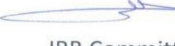
GAZİ ÜNİVERSİTESİ KLİNİK ARAŞTIRMALAR ETİK KURULU GİRİŞİMSSEL OLMAYAN ARAŞTIRMALAR KARAR FORMU									
ETİK KURUL BİLGİLERİ	ETİK KURULUNUN ADI	Gazi Üniversitesi Klinik Araştırmalar Etik Kurulu							
	AÇIK ADRES	Gazi Üniversitesi Tıp Fakültesi Dekanlık Binası 06500 Beşevler/Ankara							
	TELEFON	0312 202 69 58							
	FAKS	0312 202 46 73							
	E-POSTA	tipetikkurul@gazi.edu.tr							
BAŞVURU BİLGİLERİ	ARAŞTIRMANIN AÇIK ADI	Filistin Batı Şeria'da Koroner Arter By-Pass Greft Ameliyatı Olan Hastalara Verilen Eğitimin Yaşam Kalitesi Üzerine Etkisinin Belirlenmesi							
	KOORDİNATÖR/SORUMLU ARAŞTIRMACI UNVANI/ADI/SOYADI	Doç. Dr. Mevlüde KARADAĞ							
		G.Ü. Sağlık Bilimleri Fakültesi							
	DESTEKLEYİCİ (Varsa)								
	ARAŞTIRMANIN TÜRÜ	Hemşirelik faaliyetlerinin sınırları içerisinde yapılacak araştırmalar-Doktora Tezi							
	ARAŞTIRMAYA KATILAN MERKEZLER	TEK MERKEZ ☐	ÇOK MERKEZLİ ☒	ULUSAL ☒	ULUSLARARASI ☐				
DEĞERLENDİRİLEN BELGELER	Belge Adı	Tarihi	Ver.No	Dili					
	ARAŞTIRMA PROTOKOLÜ	14.01.2016	1	Türkçe ☒ İngilizce ☐ Diğer ☐					
	AYDINLATILMIŞ ONAM FORMU	14.01.2016	1	Türkçe ☒ İngilizce ☐ Diğer ☐					
DEĞERLENDİRİLEN DİĞER BELGELER	Belge Adı				Açıklama				
	ARAŞTIRMA BÜTÇESİ	☒							
	BİYOLOJİK MATERYAL TRANSFER FORMU	☐							
KARAR BİLGİLERİ	Karar No:	39			Toplantı tarihi: 25.01.2016				
	Yukarıda bilgileri verilen başvuru dosyası ile ilgili belgeler araştırmacının gerekçe amaç, yaklaşım ve yöntemleri dikkate alınarak incelenmiş ve uygun bulunmuş olup, araştırma dosyasında belirtilen merkez/merkezlerde gerçekleştirilmesinde etik ve bilimsel sakınca bulunmadığına, G.Ü. Klinik Araştırmalar Etik Kurulu üyelerinin oybirliği ile karar verilmiştir.								
	GAZİ ÜNİVERSİTESİ KLİNİK ARAŞTIRMALAR ETİK KURULU								
ETİK KURULUN ÇALIŞMA ESASI		Klinik Araştırmalar Hakkında Yönetmelik (13.04.2013), İyi Klinik Uygulamaları Kılavuzu							
BAŞKANIN UNVANI / ADI / SOYADI:		Prof.Dr.Sezai ŞAŞMAZ							
Unvanı/Adı/Soyadı	Uzmanlık Alanı	Kurumu	Cinsiyet		Araştırma ile İlgili		Katılım *		İmza
Prof.Dr.Sezai ŞAŞMAZ BAŞKAN	Deri ve Zührevi Hast. AD.	G.Ü.T.F.	E ☒	K ☐	E ☐	H ☒	E ☒	H ☐	
Prof.Dr.Zeki YILDIRIM BAŞKAN YARD.	Göğüs Hast. AD.	G.Ü.T.F.	E ☒	K ☐	E ☐	H ☒	E ☒	H ☐	
Doç.Dr.Tolga Reşat AYDOS RAPORTÖR	Tıbbi Farmakoloji AD.	B.Ü.T.F.	E ☒	K ☐	E ☐	H ☒	E ☒	H ☐	
Prof.Dr.Irfan KARAGÖZ ÖYE	Biyomedikal Kalibrasyon ve Araşt. Merkezi Müdürü	G.Ü.M.F.	E ☒	K ☐	E ☐	H ☒	E ☒	H ☐	
Prof.Dr.Özener Leman BOYUNAGA ÖYE	Radyoloji AD.	G.Ü.T.F.	E ☐	K ☒	E ☐	H ☒	E ☒	H ☐	

APPENDIX-6. (continue) Gazi University Ethics Committee Form

Prof.Dr. Rukiye Filiz KARADAĞ ÜYE	Poliklinik AD	G.Ü.T.F.	E ☐	K ☒	E ☐	H ☒	E ☒	K ☐	Katılm
Prof.Dr.Nesrin ÇOBANOĞLU ÜYE	Tıp Tarihi ve Eğit. AD	G.Ü.T.F.	E ☐	K ☒	E ☐	H ☒	E ☐	H ☒	Katılm
Doç.Dr.Mine Emin OCAKTAN ÜYE	Halk Sağlığı AD	A.Ü.T.F.	E ☐	K ☒	E ☐	H ☒	E ☐	H ☒	Katılm
Doç.Dr.Nuriye ÖZDEMİR ÜYE	İç Hast. AD, Tıbbi Onkoloji BD	Y.B.Ü.T.F.	E ☐	K ☒	E ☐	H ☒	E ☒	H ☐	Katılm
Doç.Dr.Murat AKIN ÜYE	Genel Cerrahi A.D	G.Ü.T.F.	E ☒	K ☐	E ☐	H ☒	E ☐	H ☒	Katılm
Doç.Dr.Mustafa ARSLAN ÜYE	Anesteziyoloji ve Reanimasyon A.D	G.Ü.T.F.	E ☒	K ☐	E ☐	H ☒	E ☒	H ☐	Katılm
Doç.Dr.Tuğba HIRFANOĞLU ÜYE	Çocuk Sağlığı ve Hast.A.D,Ç. Nör. BD	G.Ü.T.F.	E ☐	K ☒	E ☐	H ☒	E ☒	H ☐	Katılm
Av. Arzu BUZKIRAN KAYA ÜYE	Avukat	G.Ü.	E ☐	K ☒	E ☐	H ☒	E ☐	H ☒	Katılm
Özlem BOĞOĞLU ÜYE	Sivil Temsilci	G.Ü.	E ☐	K ☒	E ☐	H ☒	E ☐	H ☒	Katılm

* :Araştırma ile İlgili
** :Toplantıda Bulunma

APPENDIX-7. Written approval obtained from the administration department of the hospital (PMC and AEH)

An - Najah National University Faculty of Medicine & Health Sciences Department of Graduate Studies	بسم الله الرحمن الرحيم 	جامعة النجاح الوطنية كلية الطب وعلوم الصحة دائرة الدراسات العليا
IRB Approval letter		
Study title: The Impact of Patient Education on Quality of Life of Patients Undergoing Coronary Artery Bypass Grafting (CABG) in The West Bank of Palestine Submitted by: Rebhi M A Bsharat Date Reviewed: Sep 14, 2015 Date approved: Oct 7, 2015 Your study titled : “ The Impact of Patient Education on Quality of Life of Patients Undergoing Coronary Artery Bypass Grafting (CABG) in The West Bank of Palestine ” with archived number 90/Sep/2015 , Was reviewed by An-Najah National University IRB committee & approved on Oct 7, 2015 . Hasan Fitian , MD   IRB Committee Chairman, An-Najah National University		
نابلس - ص.ب 7 او 707 هاتف 707 2342902/4/7/8/14 (970)(09)2342910 فاكس (970)(09)2342910 Nablus - P.O.Box: 7 or 707 - Tel (970) (09) 2342902/4/7/8/14 - Faximile (970)(09)2342910 Email: hgs@najah.edu Web Site: www.najah.edu		

APPENDIX-7. (continue) Written approval obtained from the administration department of the hospital (PMC and AEH)

State of Palestine
Ministry of Health
Palestine Medical Complex

دولة فلسطين
وزارة الصحة
مجمع فلسطين الطبي

QPSFI 130

Research Clearance Form

Date: 8/10/2015

Upon the request of the student: **Rebhi Bsharat** From Gazi University, Faculty of Health Science, Department of Nursing

A study / scientific research on the subject : **The Impact of Patient Education on Quality of Life of Patients Undergoing Coronary Artery Bypass Grafting (CABG) in The West Bank of Palestine**

And after reviewing the purpose of the study, the Ethical Committee in Palestine Medical Complex agrees to allow the student to conduct the research in the complex facilities according to the scientific methodology and based on **"Informed Consent"**. The research will be used for the purposes of scientific research only and maintaining human rights, privacy and confidentiality of the patient and the beneficiaries within the complex. The research will also keep no harm to the patient as well as the facility components. Therefore, we hope that all managers and heads of departments to facilitate the mission of the researcher in the complex facilities.

Head of ethical committee

Dr. Mohamed Lutfi Mansour

رام الله من . ب البيرة 3838 هاتف 02 / 2982222 فاكس 02 / 2957942
Ramallah P.O.Box Al-Bireh 3838 Tel:- 02 / 2982222 Fax:- 02 / 2957942

APPENDIX-8. Written informed consents for patients

Consent Form for Participation in a Research Study

Title of Study (The Impact of Patient Education on Quality of Life (QoL) of Patients Undergoing Coronary Artery Bypass Grafting (CABG) in The West Bank of Palestine)

Researcher: Rebhi Bsharat

It is important that you read and understand the following explanation of the purpose and benefits of the study and how it will be conducted.

Purpose of the study:

This study aims to examine the effect of a pre-operative educational intervention based on DVD and Booklet on QoL in patients with CABG surgery. It can help us to use effective programs and establish preventive services to increase QoL after CABG

Procedure to be used:

The intervention group and the control group will complete a questionnaire about socio-demographic data and SF36 QoL, before the intervention. Before 3-5 days of operation, the educational program tools will be given to the intervention group by a well qualified nurse, while the control group will receive the ordinary verbal instruction by the medical staff either a nurse or a doctor. After one month of discharge the experimental and the control group will complete the QoL SF-36.

Risks and discomforts

There are no known risks associated with this research. Or discomforts associated with this research.

Potential benefits

This research may help us to understand.

- 1-This is the first study in Palestine that concerns about the impact of pre and post operative patient education on patients undergoing open heart surgery.
- 2-It will provide healthcare providers with information about the effect of patient education on Quality of life.
- 3-It will help healthcare providers to select the proper education program that meets the patient's needs.
- 4-It will provide others with database to make further studies and researches to improve the patient educational program for open heart surgery patients.
- 5-It will provide healthcare workers (especially nurses and doctors) with the opportunity to increase the chances of the operation success by finding a relation between the operation success and the variables of the study.

APPENDIX-8. (continue) Written informed consents for patients

6-It will contribute to build an educational and counseling programs to deal with complication and improve life quality.

Protection of confidentiality

In this study no need to mention your name and your identity will not be revealed in any publication resulting from this study.)

Voluntary participation

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalized in any way should you decide not to participate or to withdraw from this study.

Contact information

If you have any questions or concerns about this study or if any problems arise or if you have any questions or concerns about your rights as a research participant please contact (Rebhi Bsharat) phone No. 0597331199 – 0599117727 .

This consent form establishes that you have read and understood what taking part in this research study

1. I confirm that I have read and understand consent sheet for the above study and have had the opportunity to ask questions.
2. I understand that taking part is voluntary and that I am free to withdraw at any time without giving any reason.
3. I understand that any information that I give will only be used anonymously and I will not be identified when views are presented to other participants or in any publications and reports.
4. I consent to the researcher for reasons of moral or legal obligation. I understand that not giving my consent to this means I will not be approached to take part in this study.
5. I agree to take part in this study.

Participant's Name _____

Participant's signature _____

Date: _____

A copy of this consent form should be given to you.

APPENDIX-9. Appendix tables

Additional Table 1. Distribution of Patient's Answers to Problems after Discharge (OtherProblems)

Problems	Control Group		Intervention Group	
	F	%	F	%
Fever	21	26	8	10
Headache	11	13	3	4
Chill Swathing	8	10	-	-
Numbness	7	9	2	2.5
Sexuality	6	8	2	2,5
More Sputum	5	6	2	2.5
Abdominal Distention,	4	5	-	-
Cold Feet	2	3	-	-
Throat	1	1	1	1
Total	65	81.%	18	22.5%

*Patients after discharge, if are experiencing problems once "problem" has been assessed.

Additional Table 2^a: Interventions for Solving Problems by Patients and Family in Control Group after Discharge

INTERVENTIONS FOR SOLVING PROBLEMS	Frequency
Call for doctor	167
Use of medication in accordance with physicians recommendations	154
Making arrangements for Nutrition	107
Make appropriate arrangements for social life	103
Have initiatives for chronic diseases	93
Intervention to have a suitable positions	89
Intervention for wound infection recovery	56
Health care provider consultancy	43

APPENDIX-9. (continue) Appendix tables

Additional Table 2^b: Given Information to Patients During Follow-Up, in House, Consultants, Implemented Initiatives in the Intervention Group

GIVEN INFORMATION, CONSULTANTS AND IMPLEMENTED INITIATIVES	Frequency
Given Information	
If problems arise, consult with physician	145
Recommend exactly what instructional booklet and DVD included	127
Nutritional regulation according to education booklet and DVD	123
Initiatives that will help to your sleep	109
Daily living activities put in to the day	61
Breathing exercises according training booklet and DVD	56
Do not valsalva's maneuver and prevention of constipation	52
Having enough rest	49
Take initiatives for chronic disease	46
Taking analgesics if require	43
Respect to the incision site to control signs and symptoms related to wound infection	43
Do Hiking	39
Do elastic stock	34
Information about drugs	31
Intervention for having suitable positions	25
Hold them tightly across the incision before coughing	21
Information about sexual life	13

APPENDIX-9. (continue) Appendix Tables

Implemented Initiatives

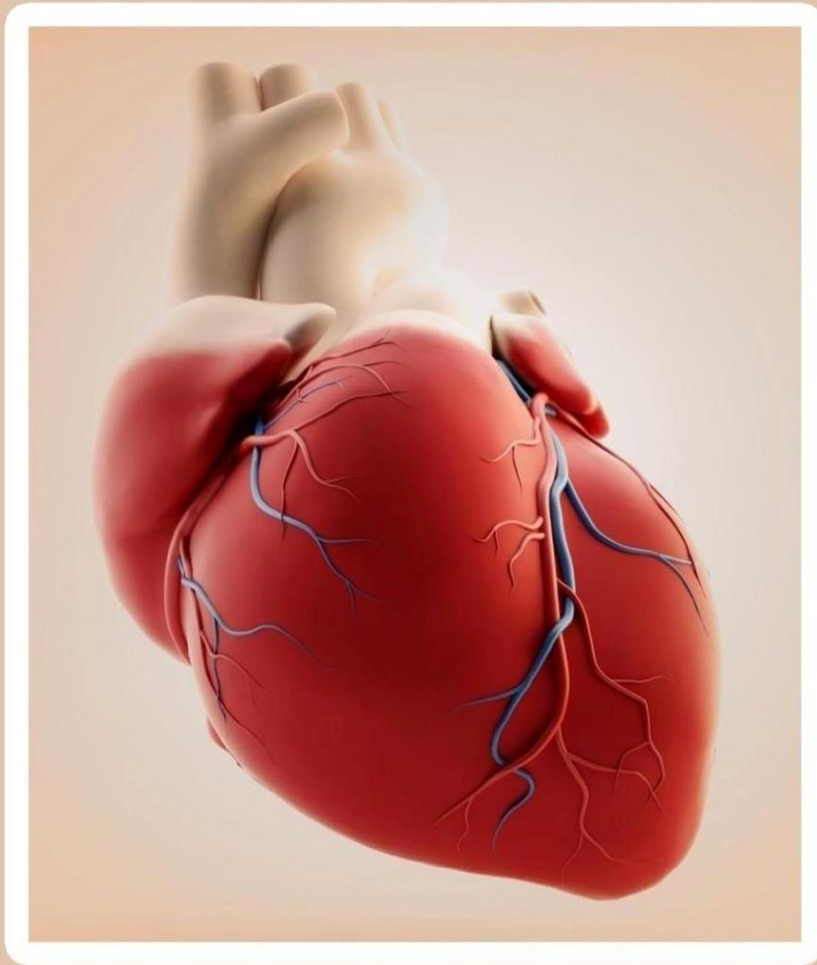
Encouraged to express their feelings	65
Recommend exactly do what instructional booklet and DVD included	57
Control wound healing in the incision site	52
Making back and shoulder massage	43
Take a deep breath, coughing and extremity exercises	32
What to do for feeling better emotionally in the house	28
Do shoulder and arm exercises	21
Self care control	19
Checking in terms of lower extremity Odem	17
Help to walk in the house	17
Sleep position on your back	13

^{a:} These initiatives included drinking a lot of water and listening a light music, take the diet that is high rich with fiber, have a dark room, a comfortable bed, a few walk before sleep, and have a elevated under feet at bedtime, take a warm shower, reading books, watching TV, according to booklet and DVD.

APPENDIX-10. Education program Booklet and DVD (page 142-170)

You and your heart

Educational Booklet for open heart surgery patients
(Coronary Arteriy Bypass Graft)



supervised by:
Ass.Prof. Dr.. Mevlüde KARADAĞ
Prepared By: Rebhi Bsharat

Introduction

Welcome in the heart surgery center in Palestine. This booklet has been designed to provide CABG patients with the information they need to know about CABG surgery in order to enhance their quality of life after surgery. This booklet includes all necessary information that starts from prevention and avoid complications before surgery until rehabilitation after surgery. It is designed to equip you with knowledge to understand your heart and coronary artery diseases and what CABG surgery is. Additionally, it will equip you with the skills to maintain your heart health. We realize and understand that this time can be a stressful time for you and for your family. So, this booklet will provide you and your family with all possible answers to your questions to improve your quality of life which is the ultimate goal of our educational program.

Rebhi Bsharat

PhD Candidate Nursing Surgery /Gazi University: Ankara, Turkey

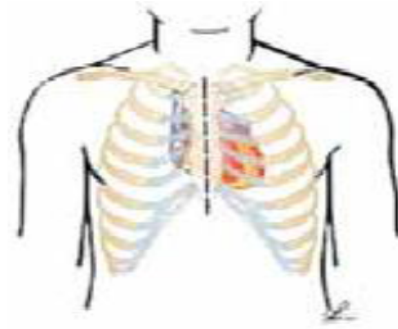
0599117727 0597331199

ribheb@yahoo.com

Part I

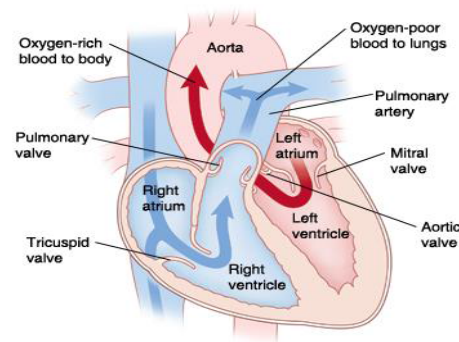
Understanding The Heart:

To help you understand your cardiac procedure, you first need to know something about the normal functioning of the heart. The heart is a muscle, located in the left central area of your chest behind the **sternum** (breastbone) and ribs. It is about the size of an adult's closed fist and weighs less than a pound. There are four chambers in the heart, two on the right and two on the left. The upper two chambers are called **atria** and the lower two chambers are called **ventricles**.



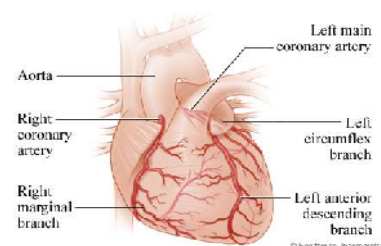
Blood circulation of the heart:

The main function of the heart is to pump blood to the body. More specifically it acts as two separate pumps. The right side of the heart pumps blood to the lungs, where the blood receives oxygen. The left side of the heart pumps oxygen rich blood to the entire body through the **aorta**.



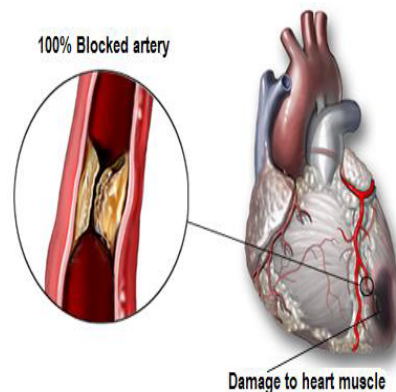
Coronary Arteries:

The heart, along with the rest of the body, must have oxygen to do its job. The special blood vessels that supply the heart with oxygen-rich blood are called **coronary arteries**. They are located on the surface of the heart. There are two primary coronary arteries, the left and the right. Each of these arteries has smaller branches that also work to supply the heart with oxygen.



Coronary artery disease:

Coronary Artery Disease (CAD) is the narrowing or a blockage in the coronary arteries. When narrowing occurs, the heart is not able to receive enough oxygenated blood. The lack of oxygenated blood may cause the individual to experience chest pain (**angina pectoris**). This pain usually occurs when the heart's oxygen demand is greater than the oxygen supply as in times of physical or emotional stress. As an artery continues to narrow, blood supplies to the heart muscle becomes less and less sufficient causing more chest pain. If the artery becomes completely closed or too narrow to supply enough oxygenated blood to the heart muscle this is known as a heart attack or *myocardial infarction*.



Coronary Artery Disease Risk Factors:

The exact causes of heart disease are unknown; however, certain risk factors have been identified. A risk factor is a condition or habit that will increase a person's chance of having a heart attack. During your hospitalization, you will receive information about reducing and controlling your personal risk factors. Some risk factors can be modified, treated or controlled, and some cannot. The more risk factors a person has the greater the chance of developing coronary heart disease. By identifying these factors and taking active steps to reduce the number and/or severity, you help lower the risk of developing or worsening coronary artery disease.

Risk Factors that cannot be changed:

- **Age:** About 4 out of 5 people who die of coronary heart disease are 65 years of age or older
- **Male Gender:** Men at a younger age, have a greater risk of heart attacks than women do.
- **Heredity and Race:** You are at greater risk if your grandparents, parents or siblings have heart disease

Risk Factors Can Be changed:

Modifying risk factors is a challenge, and is most successful when you have a plan.

- **Tobacco:** Smokers have more than twice the risk of having a heart attack and developing coronary heart disease than non-smokers.
- **High Blood Pressure:** High blood pressure puts more stress on the linings of the arteries and forces the heart to work harder.
- **High Cholesterol:** As your blood cholesterol levels increase so does your risk for coronary heart disease.
- **Physical Inactivity:** Regular exercise is important in preventing coronary heart disease, like walking.
- **Obesity and Overweight:** Excess weight increases strain on the heart, raises blood pressure, increases blood cholesterol levels, and increases the risk of developing diabetes
- **Diabetes:** Diabetes greatly increases the risk of developing cardiovascular disease. Uncontrolled blood sugar (glucose) levels seriously increase the risk.
- **Stress:** Some scientists have noted a relationship between coronary heart disease and excess, unmanaged stress.

Symptoms of Coronary Artery Disease:

- **Chest pain (angina).** you may feel pressure or tightness in your chest, as if someone were standing on your chest. The pain, referred to as angina, is usually triggered by physical or emotional stress.
- **Shortness of breath.** If your heart can't pump enough blood to meet your body's needs, you may develop shortness of breath or extreme fatigue with exertion.
- **Heart attack.** A completely blocked coronary artery may cause a heart attack. The classic signs and symptoms of a heart attack include crushing pressure in your chest and pain in your shoulder or arm, sometimes with shortness of breath and sweating.



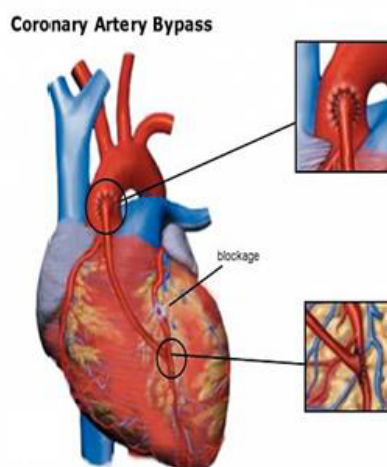
Part II: Surgical treatment

Your doctors have determined what treatments are best for your condition. You may be anticipating coronary artery bypass (CABG) surgery

Coronary artery bypass

Coronary Artery Bypass, a surgical procedure designed to restore circulation to the heart, will relieve or lessen the symptoms of coronary artery disease and improve the function of your heart. In this operation, a segment of artery or vein is attached to the aorta and then attached below the blockage in to the coronary artery. This allows the blood to be taken directly from the aorta through the bypass, around the blocked coronary artery, which allows blood to flow to the heart muscle. One or more bypass grafts may be used depending upon the number of diseased arteries. You may have two incisions from your surgery, one in the midline of your chest and other small incision(s) on the leg from which the vein graft was removed. A special instrument called an endoscope is used to remove the vein from your leg.

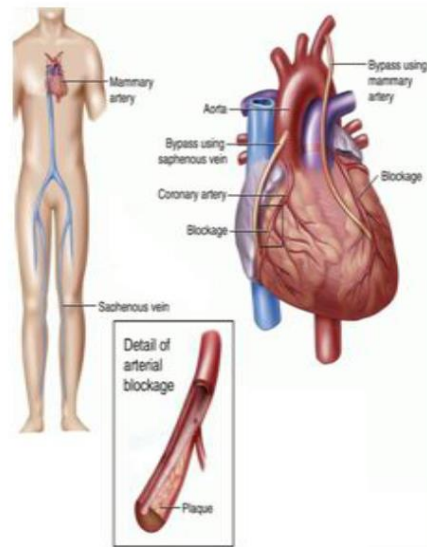
In addition to the segment of vein removed from the leg, the **Internal Thoracic Artery** (Mammary Artery) or the **Radial Artery** may be used as a bypass grafts. The Mammary Artery lies beneath the breastbone, along the inside of the chest wall. The radial artery is located in your forearm. Your body can easily compensate when these blood vessels are removed.



Coronary artery bypass surgery:

Coronary artery bypass graft surgery (CABG) is a procedure used to treat coronary artery disease in certain circumstances.

Bypass surgery is a common and successful way to improve the health of people with CHD. It usually takes between three and six hours.



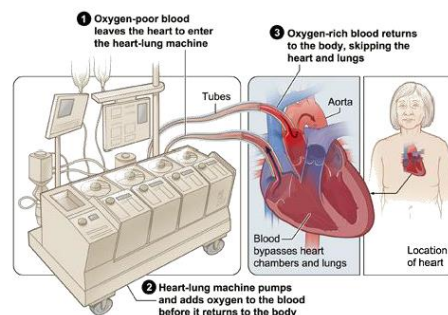
Heart-lung machine:

A device used in open heart surgery to support the body during the surgical procedure while the heart is stopped. The heart-lung machine is often referred to as the "pump", and does the work of the heart and lungs during the operation.

At the end of the operation, the surgeon gradually allows the patient's heart to resume its normal function, and the heart-lung machine is "weaned off".

The surgery: Conventional CABG is performed while the patient is under general anesthesia (completely asleep with medication).

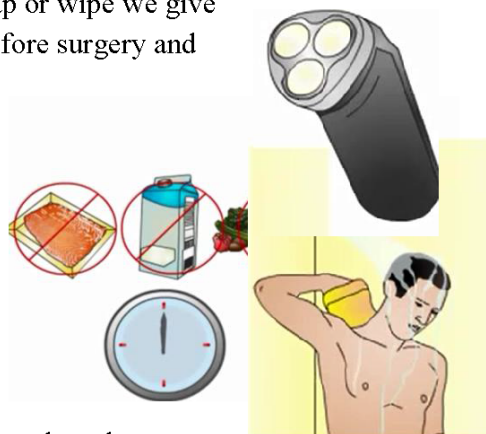
The surgery generally takes three to six hours.



Part III : Preoperative preparation

Introduction

- Before your heart surgery you will receive extensive education by the doctors, and nurses about how to prepare for surgery. You will be given written instructions from nurses. If you have any questions or concerns please do not hesitate to ask .
- **Please do not smoke.** If you smoke, make sure that your surgeon is aware. You will be asked to stop smoking permanently at least 4 week prior to surgery. Because increase heart rate , excessive lung secretion.
- Stop the aspirin from 5-7 days before surgery. One factor that increases the risk of postoperative bleeding is exposure to aspirin in the week before surgery. However, some patients should continue aspirin therapy before CABG to maintain its beneficial effect. Plavix (clopidogrel) and ibuprofen are generally discontinued for several days prior to coronary surgery. Patients taking warfarin (Coumadin) should speak with their surgeon about how and when to stop it before surgery
- 6 units of blood will be prepared, in case there is a need for it. Your family members can donate.
- You will be admitted to the hospital one or two days before surgery.
- Blood tests, ECG, chest X-Ray, physical assessment will be do for you.
- Do not put your dentures or partial in your mouth once you have used themouthwash. All jewelry must be removed including wedding bands. This is due to theamount of swelling that is normal after cardiac surgery. Cutting the rings off may benecessary due to swelling if they are not removed
- To minimize bacteria we ask you to take two showers with a specialgerm killing soap or wipe. If you cannot take a shower you should scrub your chest,arms and legs with the special soap or wipe we give you. One shower will be the evening before surgery and the second using new scrubs or wipes will be the morning of the surgery.
- No Shaving chest, arms or legs!
Shaving your skin with a razor blade canactually increase your risk of infection. We will prepare your skin by removingthe hair with a special clipper.
- Mouthwash, germs live in your mouth too! We will give you a specialmouthwash to swish and spit out the evening before surgery and morning of surgery.



- Do not eat or drink anything after midnight. To keep your stomach empty. Do not eat any food, this is for your safety. This helps assure an empty stomach for general anesthesia. You may be allowed to take some medications. Your doctor or nurse will tell you which medications you may take.
- You must sign the consent form

Instructions the day before surgery:

One of the most important factors that will speed your recovery is your ability to breathe deeply and cough effectively. Anesthesia, discomfort, and prolonged bed rest often lead to poor lung expansion, causing secretions to collect, or pool, in your lungs. By doing the exercises (deep breathing and coughing) every one or two hours, you will promote lung expansion and clear your air passages. Coughing removes any secretions in your lungs and air passages.



Deep breath and cough:

Practice each step as you read the instructions.

1. Take a slow, deep breath in through your nose. Slowly blow the air out through your mouth. You can tell you are taking a deep breath when you place your hand on your chest and you can feel your chest rise and fall as you take the air in and blow it out.



2. Take ten deep breaths.

3. During the last deep breath, hold the air in and then, tightening the muscles in your chest and abdomen (stomach), cough to let the air out. To be effective, the cough must come from your chest, not your throat. If you cough as though you are clearing your throat, you are not coughing correctly. Ask your nurse if you are coughing correctly.

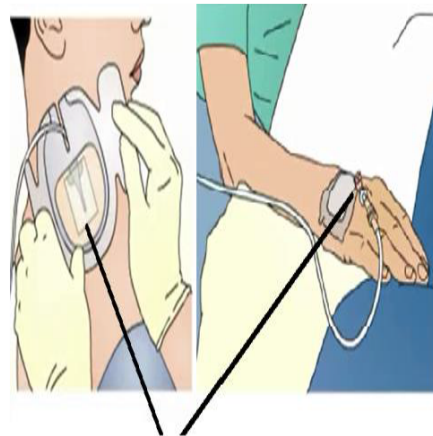
You should do these exercises at least every hour after your surgery. Your nurse will be there to remind you and help you.



The morning of surgery Day of operation:

Nurses will check your file through a check list all jewelry must be removed including wedding band. Remove all prostheses such as contact lenses, wigs and dentures.

- You will be asked to remove your clothing and will be given a gown to wear.
- You will be asked to empty your bladder prior to the procedure.
- An intravenous (IV) line will be started in your arm or hand. Additional catheters will be inserted in your neck and wrist to monitor the status of your heart and blood pressure, as well as for obtaining blood samples. Alternate sites for the additional catheters include the subclavian (under the collarbone) area and the groin.
- You will be positioned on the operating table, lying on your back.
- The anesthesiologist will continuously monitor your heart rate, blood pressure, breathing, and blood oxygen level during the surgery. Once you are sedated, a breathing tube will be inserted into your throat and into your trachea (breathing tube) to provide oxygen to your lungs, and you will be connected to a ventilator, which will breathe for you during the surgery.
- A catheter will be inserted into your bladder to drain urine.
- The skin over the surgical site will be cleansed with an antiseptic solution.
- Once all the tubes and monitors are in place, incisions may be made in one or both of your legs or one of your wrists to obtain a section of vein to be used for grafts.



In the operation room:

- After anesthesia. The operation is usually performed through a mid-sternal incision
- The sternum will be pushed back together and sewn together with small wires.
- The skin over the sternum will be sewn back together.

- Tubes will be inserted into your chest to drain blood and other fluids from around the heart. These tubes will be connected to a suction device to keep fluids pulled away from the heart.
- A tube will be inserted through your mouth or nose into your stomach to drain stomach fluids.

A sterile bandage or dressing will be applied.



Postoperative

• Splinting your incision

Practicing your coughing and deep breathing exercises before your surgery will not be painful. However, following your surgery you may find the exercises uncomfortable. In order to lessen the normal postoperative discomfort, you should *splint* your chest incision. Splinting will help support your chest incision and relieve the strain on your sternum that is caused by coughing.

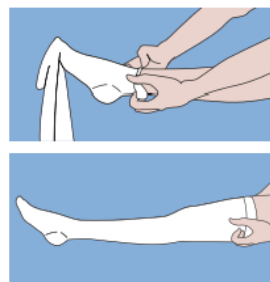
To splint your incision, place your arms on a small pillow or pad across your chest incision, as though you were giving yourself a hug. Now perform your deep breathing and coughing exercises.

Splinting your incision and taking the pain reliever (analgesic) your doctor has ordered for you will help you be more effective in removing secretions from your lungs.

• Assisting your circulation

Here are two important measures that promote circulation from your legs to your heart and help to prevent blood clots from forming (DVT or deep vein thrombosis).

1. Your doctor will order white elastic stockings for you to wear. These stockings help the blood flow back to your heart and prevent blood from pooling in the veins of your legs



2. Perform this simple exercise while you are in bed following your surgery. Move your feet up and down (as though you are pushing down on your car's gas Pedal, then releasing the pedal) 10 to 15 times every hour or so, or as often as you think of it. The pumping action of the muscles in your legs keeps the blood flowing through the veins of your legs to your heart and prevents the pooling of blood in your legs. Practice this exercise now.

• Activity

Early activity following heart surgery has been shown to improve the speed of recovery, lessen the complication rate, and make patients feel better overall. You should expect that early activity will begin as soon as a few hours after surgery. This may simply be accomplished by sitting on the edge of the bed. You will be assisted to begin early activity by the specialized nurses in the intensive care

Unit. If you have had coronary artery bypass surgery you may be assisted out of the bed in the evening of the day of surgery. For all other surgeries, you can expect to be out of bed and walking the first morning after surgery. The physical therapist will visit you daily to assist you in progressive activity.

- **Fatigue**

Fatigue is very common after heart surgery. Even simple activities such as showering or walking may make you tired. It is important to organize your day to include rest periods and periods of activity.

ICU :The immediate postoperative period:

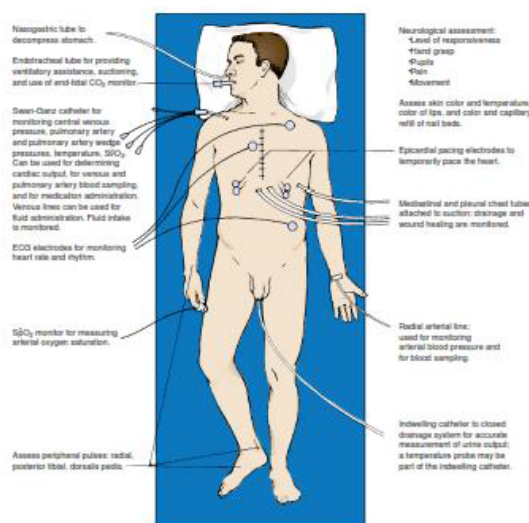
After operation you will be transfer to ICU. Doctor will insert some tube and catheters in/on your body as temporary

* **Endo Tracheal Tube/ Mechanical Ventilator** : The endotracheal tube passes through your mouth or nose into your trachea (windpipe)and is attached to a mechanical ventilator (respirator). The tube is usually removed 6 to 12hours after surgery or when the intensive care unit team feels you are ready to have the tube removed. Your nurse and will provide a way to communicate with you during this time.

* **Mediastinal Tubes:** Generally, you will have one or two tubes in your chest. Often these tubes are removed the morning following surgery, but sometimes one drainage tube remains for 2 or 3 days.

* **Urinary catheter:** to measure output of urine and remove after two days.

* **Arterial line:** to obtain blood sample, to measure arterial blood pressure. And remove after two days.



Management of some problems in the early postoperative period.

* **Visiting:** Because of the special needs of patients who have had cardiac surgery, visiting hours must be restricted in the CVICU. In general, one or two close family members may visit after 4h from operation. Visits should last about two to five minutes. And according to agency police. Don't enter children in the CVICU .

* **Pain:** incision pain differentiated from the angina pain, hospital environment, positioning after surgery that lead to pain. In case you have pain inform your nurse sooner rather than Later, he will give you analgesic.

* **Bowel elimination:** after surgery you might fell some in your bowel elimination habits. The nurse will give you some laxative drug.

* **Mood Changes:** During the postoperative recovery, you may experience mood swings such as depression or even confusion at times. This is normal and fairly common, as a result of the stress of surgery and your body's response to the stress. It is important to talk about your feelings with your nurse or physician.

* **Activity:** After the breathing tube is removed, your nurse will help you sit on the edge of the bed and dangle your legs over the side. You may experience dizziness or lightheadedness when you initially sit up on the edge of the bed. This experience is fairly common and quite normal after surgery. If you have had coronary artery surgery you will be assisted out of bed to the chair in the evening of surgery. The next morning, you will begin to walk (ambulate) with the assistance of your nurse. The physical therapist will also evaluate your ability to walk and move. Eachday in the hospital, the amount of time you spend walking will increase.

Post-operative complication:

- **Bleeding:** Approximately 30 percent of patients require a blood transfusion after CABG. Patients with heavy bleeding that requires reoperation often need multiple blood transfusions and stay longer in the intensive care unit and hospital. Only about 2 percent of people require surgery to stop excessive bleeding.
- **Myocardial infarction:** occurs in 2% with probably rather more cases of diffuse myocardial damage.
- **Pulmonary problem:** Pleural effusions. These are common after CABG,

occurring in up to 90 percent of patients. They are usually small and do not require treatment.

- **Renal failure:** A temporary decrease in kidney function occurs in approximately 5 to 10 percent of patients undergoing CABG.
- **Tachyarrhythmias:** temporary rapid, and/or irregular heart rhythms may occur after CABG. Atrial fibrillation, an abnormal rhythm of the heart, occurs in up to 40 percent of cases but can be controlled with medications. Atrial fibrillation after CABG is usually temporary; if persistent, patients may require longer-term treatment.
- **Infection:** The surgical sites involved in CABG can become infected after the surgery.
- **Sternal wound:** Infection of the chest incision (called the sternal wound) occurs in approximately 1 percent of patients. It usually develops by seven to nine days after surgery.
- **Leg wounds:** Leg wounds develop complications after saphenous vein graft harvesting in approximately 5 percent of patients.
- **Neurologic complications:** Neurologic complications include stroke, postoperative delirium, short-term and long-term cognitive changes, and depression. The incidence is approximately 2 to 4 percent.

Transfer to the post cardiac surgery unit:

When your health condition becomes stable, you will be moved to general ward, where the CVP line , Foleys catheter will be removed

- At the beginning the nurse help you to wake until you can walk by your self
- Vital signs you will be obtained 6 time a day
- The nurse help you to move from the bed if you need .



Activity and exercise:

The care on this unit focuses on clearing your lungs of mucus and increasing your activity level. To clear your lungs, your nurse help you to use of the incentive spirometer. While you are awake, we will instruct you to use the incentive spirometer Every hour.

Sitting up and moving your arms and shoulders often can help To relieve soreness in your arms and chest. It is important that you cough and do deep breathing exercises after bypass surgery. This will help you to recover more quickly and will reduce

your risk of chest infections, pneumonia and fever. Activity progresses from sitting in the chair, to helping with your bath, to taking short walks in the hallway, to climbing stairs.

What will happen in general ward.

* **Legs swelling:** If the large vein (saphenous vein) is removed from your leg for bypass grafts, it will take time for alternate (collateral) circulation to form. It is important to keep your legs elevated while you are sitting.

This will reduce swelling (edema) and therefore prevent pressure on your leg incisions. You may also wear special stockings. Remember not to cross your legs, as this may cause circulation to slow down. To prevent blood clots from forming in your legs, we may give you injections of heparin in your abdomen while you are in the hospital.

* **Pain:** While you recover after surgery, you may feel pain, pressure or burning sensation in your chest, especially at the incision site and while the chest tubes are in place. You also may feel pain when the chest tubes are removed and you start moving around, sitting up, cough.

You should tell your nurse as soon as you feel pain or discomfort before it becomes too severe. Also ask for pain medication before getting out of bed, walking, or doing breathing exercises if these activities worsen the pain. Don't hesitate to ask for pain medication, because it is harder to ease pain once it has started hang or walking.

* **Constipation:** most often happen. and to reduce the constipation effect you can do the following :

- 1- Be active and wake regularly.
- 2- You should take the diet that is high rich with fiber.
- 3- You should drink a lot of water.

* **Sleep:** You may experience many different feelings that can be due to lack of sleep, Oftentimes, you may feel restless and have trouble sleeping at night.

* **Appetite:** So poor due to decreased activity and medication, your appetite will be suppressed. We will encourage you to eat as much as you can and supplement your diet with high-calorie shakes. It is important to supply your body with protein-rich foods for wound healing at this time. If you want to speak to a dietitian, please tell your nurse.

* **Shower or bath:** You may shower when you are off the bedside monitor and on telemetry as long as you are not having any problems with your blood pressure or heart rate. The shower stream should not go directly on your incisions. Use mild

soap. Showering is permitted, but do not take a bath.

* **Relaxation techniques** : it normal to feel anxious before and after surgery ,control of breath is one of the techniques that is done by the following :

- 1- Site in comfortable position in quit place
- 2- Imagine you are in a safe place.
- 3- Breath slowly and quietly throw your nose, while you count to four and keep your breath for few seconds then exhale the breath from your mouth while you count to four. While breathing relax your muscle. Repeat the breathing exercise from 6 to 10.

Period of hospitalization:

Ready for discharge: Everyone progresses at his/her own rate. You may begin to think about going home when you see that your activity is increasing and your suture lines are healing well. The usual length of hospital stay is four to seven days. To be discharged, you must:

- Have stable vital signs and a stable heart rhythm.
- Be weaned off oxygen with good oxygen levels.
- Be able to walk and be steady on your feet.
- Have blood lab results within normal range and have no signs or symptoms of infection
- Be able to tolerate regular food and have a bowel movement.

Part IV: Discharge Instructions After Heart Surgery

*** Healthy eating**

Most people have a poor appetite and feel full after a few bites of food. It is essential to eat for healing and strength. Many people say having smaller portions and eating more frequently is helpful. Follow a low-fat, low cholesterol, low sodium diet. Most important at this time is choosing



foods low in sodium along with a well balanced diet. Most people begin Phase II cardiac rehab in about 6 weeks, which will offer further guidance and support.

- Meal preparation: You may prepare or clean up, as tolerated. If you tire you should stop and rest.
- Follow a heart healthy diet: Low in fat, sodium and cholesterol, and limited concentrated sweets.
- Low sodium: Less than 2400 milligrams per day (1 teaspoon salt = 2400 mg).
- Limit caffeine intake to two cups a day. No limit to decaf products.
- Foods for healing: Eat fruits, vegetables, dairy and protein each day.
- Please refer to the nutrition pages in section V of this booklet for more information.



Nutrition for a strong heart eat a variety of food daily

- Fruits and vegetables
- Breads, cereals, and other whole grain products
- Dairy products such as milk, yogurt and cheeses
- Meats, poultry, fish, eggs and protein sources such as dried peas and beans

Control your weight

Weight control contributes to good overall health, lowers your chance of heart disease and some cancers, and keeps your energy level up.

Limit fat, saturated fat and cholesterol

- Choose lean meat, fish, poultry and vegetables for protein
- Keep egg yolks and organ meats to a minimum
- Reduce your intake of butter, cream, margarine, shortening, coconut oil, palm oil and foods made from such products
- Trim excess fat off meat
- Broil, bake, poach or boil rather than fry

Eat food rich in complex carbohydrates and fiber

Good sources include fruits, vegetables, whole-grain breads and pastas, rice, nuts, beans and peas.

Use sugar in moderation

- Cut down on candy, ice cream, soda, cookies and cake
- Use caution with honey, brown sugar, raw sugar and maple syrup. Though they are more 'natural' than white cane sugar, they are still sugar
- Check food labels for sugar names such as sucrose, glucose, dextrose, lactose or fructose

Avoid too much salt (Sodium)

- Learn to appreciate the natural, unsalted flavors of foods
- Decrease or omit the amount of salt if called for in a recipe
- Remove salt shakers and salt containing seasonings from the dinner table

Drink alcohol only in moderation

Alcohol may trigger hot flashes in menopausal women, prevent proper absorption of calcium, cause liver damage, and be a risk factor in several cancers. DO NOT consume any alcohol while on narcotic medications such as pain pills like Vicodin.

Activity: plan exercise time into your day

- Do not exceed a 20-minute walk without your doctor's okay.

- May add a few extra walks if you can tolerate it. Avoid doing too much; avoid fatigue. May do a little less on days you feel very tired (you still need

To do 3 walks of fewer minutes).

- Rest 20 minutes before and after walking.
- Walk indoors, outside if above 32 degrees (use scarf over nose/mouth), in malls, gyms.
- Walk at a pace that feels fairly easy. While you are walking, you should be able to talk to someone without huffing and puffing.
- Wait at least 1 hour after a meal before you go walking.
- You may use up to 3 lb. Hand weights to strengthen upper body.



General guidelines for exercise

Week #1: walk 3-5 minutes continuously 3-4 times daily

Week #2: walk 6-10 minute continuously 3 times daily

Week #3: Walk 11-15 minutes continuously 2 times daily

Your heart beats faster when you exercise. After heart surgery, there are temporary limits as to how much exercise is okay. The



following signs will tell you that you are either walking too fast, going too far, or doing too much:

- Short of breath
- Very tired/weak
- Sweaty
- Nauseated
- Dizzy
- Heart feels like it is beating fast

If you feel any of the above, sit down and rest until the symptoms pass. If your symptoms do not go away within 15 minutes, call your doctor.

Sexual life:

The thought of resuming sexual activity can be stressful to you and your partner. Fear of hurting one's heart, feeling unattractive, inability to relax, and lack of interest is quite common. Talking openly with each other about your thoughts and emotions is important.



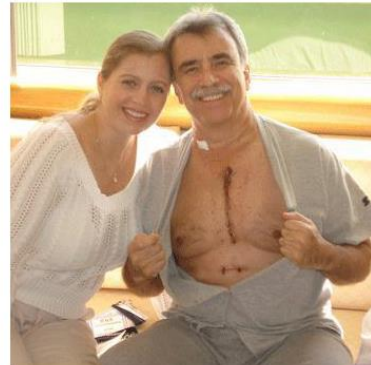
You may resume sexual activity in a couple of weeks or when you feel ready. The best time is when you feel well rested and free from stress. Avoid positions that put pressure on your breast bone or are uncomfortable. When you are able to walk up 2 flights of stairs without stopping or walk about a half mile at a brisk pace, your heart will be able to tolerate the energy spent during intercourse. If you are unable to do these activities without getting short of breath or fatigued, discuss this with your doctor before resuming sexual activity. Avoid intercourse after meals, exercise, or if you feel stressed.

Some medications, and emotions such as anxiety or depression may interfere with sexual arousal or performance. If you have any concerns, discuss them with your doctor.

Incision care:

Your incision sites are easy to care for:

- The antimicrobial dressing (clear dressing) is intended to stay on for 7 days. You will receive an instruction sheet on its care and removal.
- Wash incisions daily. Brief showers (no tub baths until incision fully healed) using an antibacterial soap. Do not rub the incision with a washcloth until the scabs are gone and skin is healed.
- No dressings are needed unless there is drainage.
- Do not apply ointments, oils, creams, salves, lotions, or powder to your incisions.
- Itching, tightness and/or numbness along the incision are normal.
- Lump at top of chest incisions goes down in about 3-4 months.



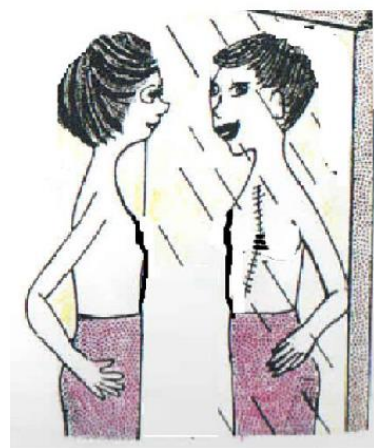
Be aware of signs of infection that may include:

- Temperature of 38C° or greater
- Chills
- Increase in opening of the incision
- Increased redness, swelling, or warmth around the incision.
- Increased drainage (clear, pinkish, yellowish drainage is normal unless it greatly increases)
- Pus or foul odor

If you notice any of these signs of infection, call your doctor.

Stitches (sutures) be in:

Most of your stitches will be internal and dissolve in time. In some circumstances, you may have staples holding the skin together. The nurse will remove these staples with minimal discomfort when the surgeon determines that they are ready to be removed. If these staples need to remain after you go home, a visiting nurse will



remove them with orders from your surgeon. You may have small paper strips (steri-strips) applied to the chest and leg incisions for additional support. These gradually peel and should be removed one week after being discharged home. You may also have small chest tube sutures on the upper part of your abdomen. The visiting nurse will remove these sutures with minimal discomfort seven to 10 days following surgery. We will give you directions upon discharge from the hospital. Some surgeons also use a surgical glue to seal the incision. This does not need to be removed and will wear off gradually.

Breath exercise

Continue to use your incentive spirometer 10 times every 2 hours while you are awake. Splint your incision with a pillow or blanket and cough at least 2-3 times after using the spirometer. You may need to elevate yourself to breathe easier and sleep better. You can do this by using extra pillows, placing some pillows under the mattress at the head of the bed, or using a recliner.



Medication

Medication is an important part of your treatment. You will be given a list of medication and prescriptions on the day you go home from the hospital. Know the names of your medications, their doses, their purpose, how often to take them and their side effects. Keep a schedule of your medications and take them at the same time every day. Do not stop or change your medications unless you talk to your doctor first. Check with your doctor and/or pharmacist before using any over-the-counter medications as they could change the effect of your prescription medications.

Driving and Traveling

Due to the healing of the breastbone, weakness, fatigue and general discomfort, you should not try to



Drive for at least four to six weeks after your surgery. However, you can be a passenger in a car.

Travel: You can travel by air and car when you feel well enough.

- Always wear a seat belt.
- To help prevent blood clots, avoid sitting for long periods. Get up and walk at least every hour.
- If you return home from the hospital by air, arrange to use a wheelchair at both ends of your flight.
- Your sternal wires will not trigger airport security devices.



Climb stairs

For the first week or so, plan your day so that you only do the stair climbing that is necessary (approximately once in the morning and once in the evening). Take your time and go slowly. If you become tired, short of breath or dizzy while stair climbing, sit down on the step and rest. You should tell the physical therapist before discharge that you have stairs to climb at home. This will enable the therapist to include this activity in your exercise program while you are in the hospital.



Sleep and rest:

Avoid sleeping during the day except for an hour nap if needed. If you sleep too much during the day,

You will be unable to sleep at night. This can set up a pattern of sleepless nights and tired days.

Most people are back to their regular routines in three to four months after surgery



- 4- If you cannot sleep it is better to read a book , listen to music , or watch TV.
- 5- During the first and second week after surgery, it is recommended to take some analgesics before going to bed .
- 6- Sleep position should be on your back .

Bathing and shower :

- 1- If the stitches are not removed ,
the water must fall only in your back .
- 2- If the stitches are removed, you
can take a shower for no more than 10
minutes.
- 3- Water temperature should be
warm.
- 4- You can use soap to clean the
site of operation, but don't scratch the



wound until complete healing.

Chest ache

For a few weeks after surgery, you may feel a generalized soreness, especially in your shoulders and back. This often comes from muscles being stretched during surgery. You may use a heating pad at home if desired. Remember, it takes six weeks to three months for you to fully recover; it is a gradual process. You are sent home with a mild narcotic to help with the pain/discomfort you feel. After one to two weeks, you should no longer need the narcotic. Instead, you may use acetaminophen to relieve the generalized soreness in your shoulders, back and breastbone. If your surgeon used the mammary artery for a bypass graft, you may feel pain along the left side of the incision. This will gradually improve over several weeks, but you may have some residual numbness in the skin for several months.

Constipation: most often happen. Usually during the first and second week , it affect the healing of sternum , and to reduce the constipation effect you can do the following :

- 1- Be active and wake regularly.
- 2- You should take the diet that is high rich with fiber
- 3- You should drink a lot of water.

Smoking and alcohol:

Without cigarette smoking, your lungs are cleaner. Your blood carries more oxygen. Your heart does not suffer from the toxic effects of inhaling cigarette smoke. Make an effort to stop smoking from now on. Ask people not to smoke in front of you. Alcohol must be stopped, because exhaust the heart muscle.



Return to work

The standard answer is about three months after your surgery, but it varies with the type of surgery, hospital course and type of work. Your doctor will discuss this with you before your discharge home or when you return to the clinic for your follow-up visit.



Appointment

Before you leave hospital, your doctor will make follow-up appointments for you to discuss your medicines, wound care and physical activity with them. Your cardiologist will continue to oversee your general heart health. Your first outpatient appointment will usually be four to six weeks after you leave hospital. You will see your surgeon, or a member of your medical team. They will check your wound and general progress, and you may also have an X-ray at this time.



General notes

Call your physician if :

- Fever of 38C° or higher.
- You have chills.
- If your incisions have increased redness, swelling, warmth, a change in Drainage (i.e. Pus), any new or increased pain level. You feel a clicking or grating sensation in your chest.
- Pulse rate greater than 30 beats in 15 seconds (120 beats per minute), if It becomes irregular, or you feel your heart racing or skipping.
- You experience unexplained shortness of breath, worsening chest pain or discomfort.
- Constantly lightheaded or dizzy.
- You are feeling worse instead of better.
- Weight gain of 5 pounds or more within one week, or three pounds in One day.
- Blood in stool or urine.
- You are experiencing any *NEW* pain.

A new way of life

It is now up to you to take care of your heart and your health. You may be able to live a healthier life by changing your lifestyle.

- Healthy eating
- Losing/controlling your weight
- Regular exercise
- Controlling blood pressure
- Controlling cholesterol
- Controlling blood glucose levels (if diabetic)
- Finding better ways to deal with stress
- Dealing with depression

- Quitting smoking/nicotine
- Taking medications as prescribed by your doctor

Cardiac Surgery Map To Recovery

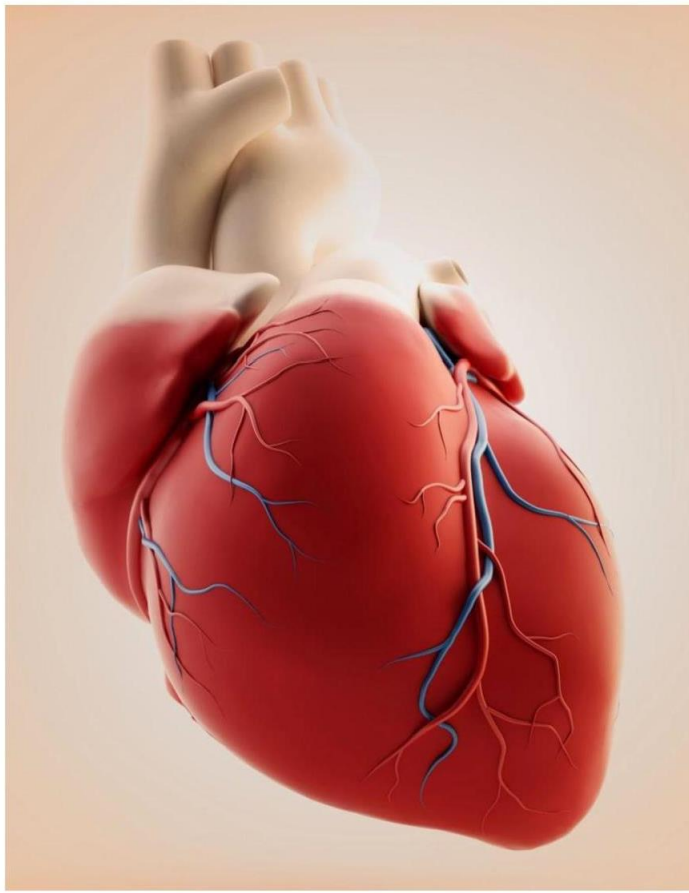
Before surgery	ICU STAY	Day 1
• Stop smoking • Stop aspirin drug • Prepare 6 unit of blood. • Hair removal by electric machine. • Prepare the sit of operation . • Keep NPO after Mid night • Prepare the patient according the check list. • Instruct the patient to take deep breath, relive pain , practice exercises,	• Breathing tube Remove. • Cough andBreathe deep • Every hour • Sips of clearLiquids • Out of bed toChair • Nurse will takeOut all lines and urine catheter • During the nightOr early next AM	• Sit in chair for allsMeal. • Eat low sodiumDiet. • Walk at least 2 x day Walk toBathroom. • Wean OFF Oxygen Cough andBreath DeepEvery hour. Use IncentiveSpirometer 10 x / hour • Visit fromNutritionist & PhysicalTherapist • Chest tubesRemoved Begin reviewOf dischargeInstructionBooklet. • May takeShower

Day 2	Day 3	Home
Repeat day 1	Repeat day2	Read all instruction and
• Plus more Walking!! At least 3 x day participate in Cardiac exercise Program.	• Plus continue • Increase Walking • Transfer to general word • Review Discharge Folder: Medications, activity limits, incision care, home, recovery, diet.	implement it • Walking • FinalReview of Discharge • Instructions • medications • diet • activity • return to work • bathing • sex • wound care • drive and traveling • stare clamping • Reduce pain • constipation • if occur this symptoms to Call m.d. • CompleteDischarge • Paperwork • The work return after 2-3 month .

APPENDIX-11. Arabic Education Program Booklet and DVD (page 171-198)

أنت وقلبك

الدليل التعليمي لمرضى عمليات القلب المفتوح
(ترقيع الشرايين)



إشراف بروفيسور مساعد د. مولودة كرادني
إعداد: ربحي بشارات

أنت وقلبك

الدليل التعليمي لرضى عمليات القلب المفتوح
(ترقيع الشرايين)

إعداد: ربحي بشارات

المحتويات :

1.....	• تقديم
.....	الجزء الاول : التعرف على القلب
2.....	• تشريح القلب" ما هو القلب وماهي مكوناته "
3.....	• الدورة الدموية للقلب
3.....	• كيف ينبض القلب
.....	• الشرايين التاجية
3.....	• أمراض الشرايين التاجية
.....	• عوامل الخطورة لأمراض القلب
3.....	
.....	الجزء الثاني : العلاج الجراحي لشرايين القلب
4.....	• أعراض مرض الشرايين التاجي
.....	• جراحة ترقيع الشرايين التاجية : ما هو المقصود
4.....	• بجراحة القلب المفتوح : أنواع الأوعية الدموية المختلفة لترقيع الشرايين التاجية
.....	
.....	الجزء الثالث : معلومات حول العملية الجراحية لشرايين القلب
5.....	• الإستعداد للعملية الجراحية
.....	• تعليمات قبل العملية الجراحية
.....	• تعليمات في يوم العملية الجراحية
6.....	• في غرفة العمليات الجراحية
.....	• مضاعفات ما بعد العمليات الجراحية
.....	• الخروج من الرعاية المركزة والانتقال إلى الغرفة العادية
.....	• ما هو المتوقع أثناء وجودك بالغرفة العادية بعد الجراحة
7.....	• فترة مكوثك في المستشفى
.....	

الجزء الرابع : فترة النقاهة في المنزل بعد جراحة القلب المفتوح

- 15..... الغذاء بعد العودة الى المنزل
- 16..... التمارين الرياضية
- 17..... العلاقة الزوجية
- 17..... رعاية الجرح ورعاية عظمة القص
- 18..... تمارين الرئة
- 19..... الادوية
- 19..... القيادة وركوب السيارة
- 20..... استعمال الدراج
- 20..... الزيارات والعلاقات الاجتماعية
- 20..... الراحة والنوم
- 20..... الاستحمام
- 22..... تخفيف الألم
- 22..... الإمساك
- 22..... التدخين و الكحول
- 23..... العودة الى العمل
- 23..... مراجعة الطبيب
- 23..... ملاحظات عامة
- 24..... خارطة العملية الجراحية للقلب المفتوح
- 24..... المراجع
- 25.....
- 27.....

تقديم

أهلاً بكم في مراكز جراحة القلب في فلسطين، لقد تم اعداد هذا الكتيب لتزويد المرضى بالمعلومات عن عملية زراعة الشرايين التاجية " عملية القلب المفتوح "و ذلك بهدف تحسين جودة الحياة بعد إجراء العملية الجراحية. فهو يحتوي على معلومات تبدأ من الوقاية و منع المضاعفات قبل العملية الجراحية حتى إعادة التأهيل ما بعد العملية الجراحية للقلب المفتوح، و سيساعدك هذا الكتيب للتعرف على عمل القلب و الأمراض المرتبطة به ويزودك الكتيب بمعلومات عن عملية القلب و يوفر لك و لعائلتك الإجابة عن تساؤلاتكم لأننا نعرف أن هذا الوقت صعب عليكم على عائلتك.

يحتوي هذا الكتيب على جزئين: الجزء الأول يحتوي على معلومات كيفية زراعة الشرايين و التحضيرات ما قبل العملية داخل المستشفى، والجزء الثاني يحتوي على معلومات ما بعد العملية في المستشفى و في مرحلة الإفاقة و عند الخروج إلى البيت.

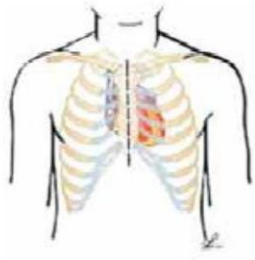
ربحي بشارات

مرشح لنيلدرجة الدكتوراه في تخصص ترميض الجراحة والعناية المكثفة/ جامعة غازي: أنقرة- تركيا

05991177270597331199

ribheb@yahoo.com

الجزء الأول: التعرف على القلب:

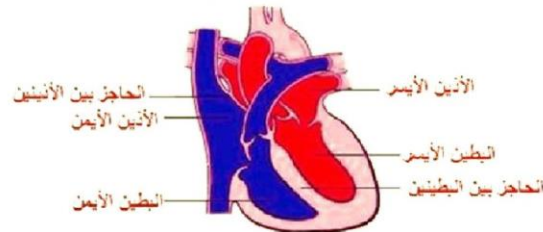


- القلب هو أقوى عضلة في الجسم.
- يقع القلب في وسط تجويف الصدر ومهمته: تزويد أجهزة الجسم والأنسجة بالدم.
- يبدأ القلب أول نبضة خلال الأسبوع الثامن عشر من الحمل.
- قلبك حوالي حجم قبضة يدك و يرتكز قليلا إلى يسار الوسط تحت الصدر أو عظمة القص.

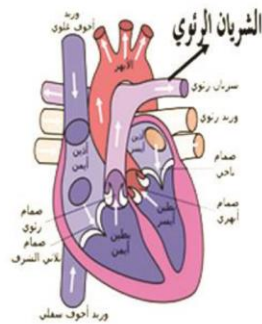
مكونات القلب:

- يتكون القلب من أربع غرف وتسمى الغرفتان العلويتان بالأذنين وهي بمثابة خزانات وتسمى الغرف السفلية بالبطينين وهي تعمل كمضخات للدم.
- يحتوي القلب على أربعة صمامات وهي الصمام التاجي، الأبهري، وثلاثي الشرفات والرئوي.
- يخرج إثنان من الشرايين الهامة من القلب وهي الشريان الأبهري والشريان الرئوي.
- يصب إثنان من الأوردة الهامة في الأذين الأيمن وهما الوريد الأجوف العلوي والوريد الأجوف السفلي.
- يصب الأوردة الرئوية في الأذين الأيسر.

الشكل التشريحي للقلب



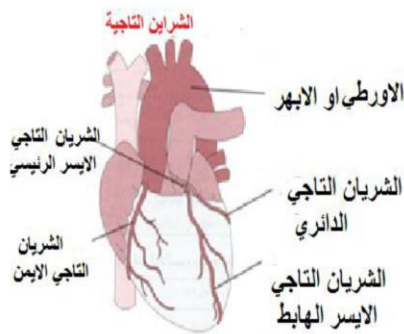
الدورة الدموية:



- يضخ البطين الأيمن الدم عبر الصمام الرئوي إلى الشريان الرئوي. يحمل الشريان الرئوي الدم غير المؤكسد (أزرق اللون) إلى الرئتين.
- تزيل الرئتان ثاني أكسيد الكربون من الدم، وفي الوقت نفسه تضيف الأكسجين إلى الدم. ليصبح الدم مؤكسداً (أحمر فاتح) الآن.
- يمر الدم المؤكسد (أحمر فاتح) القادم حديثاً إلى الأوردة الرئوية، والتي تحمل الدم المؤكسد إلى القلب.
- عودة الدم من خلال إفراغ الأوردة الرئوية في الأذين الأيسر. يتدفق الدم عبر الصمام التاجي إلى البطين الأيسر، والصمام التاجي هو صمام باتجاه واحد، ولا يسمح بتدفق الدم إلى الوراء.
- يتم دفع الدم من خلال الصمام الأبهر إلى الشريان الأبهر، وهو الشريان الرئيس في الجسم، وأكبر قليلاً من الإبهام.
- يتفرع الشريان الأبهر إلى الكثير من الشرايين الصغيرة التي تمتد الدم إلى جميع أعضاء الجسم بما فيها القلب.

الجزء الثاني: العلاج الجراحي لشرايين القلب:

الشرايين التاجية:

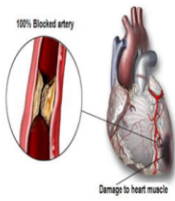


- يحتاج القلب باعتباره عضواً في الجسم، إلى إمدادات الدم.
- الشرايين التاجية هي الشرايين الأولى التي تنشأ من الشريان الأبهر، تلك هي الشرايين التي تزود الدم إلى عضلة القلب.
- تنقسم الشرايين التاجية إلى فرعين: الشريان التاجي الأيسر والشريان التاجي الأيمن.

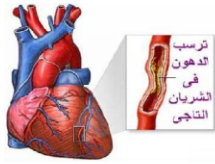
- الشريان التاجي الأيسر ينقسم إلى فرعين رئيسيين وهما: الشريان الأمامي اليساري النازل والشريان المنعطف.
- يمد الشريان الأمامي اليساري الحاجز بين البطينين بالدم كما يعطي الشرايين القطرية التي تغذي جزءاً من جدار البطين الأيسر.
- يغذي الشريان المنعطف جزءاً آخر من البطين الأيسر.
- الشريان التاجي الأيمن يعطي الدم إلى معظم أجزاء البطين الأيمن.
- ينتهي الشريان التاجي الأيمن بالشريان الخلفي النازل الذي يعطي الدم لجزء من الحاجز بين البطينين.

أمراض الشرايين التاجية:

- يحدث مرض الشريان التاجي عندما تصبح الشرايين التي تزود عضلة القلب بالدم متصلبة ومتضيقة. يعود هذا إلى تراكم الكوليسترول ومواد أخرى. ومع نمو أو زيادة هذا التراكم، فإن كمية الدم التي تتمكن من المرور في الشريان تتناقص تدريجياً، وهذا ما يجعل عضلة القلب عاجزة عن الحصول على حاجتها من الدم أو الأكسجين، مما قد يسبب الألم الصدري، وهو ما يسمى الذبحة أو النوبة القلبية أو الخناق. تحدث معظم النوبات القلبية عندما توقف جلطة دموية تزويد القلب بالدم بشكل مفاجئ، مسببة ضرراً في القلب.



عوامل الخطورة لأمراض الشرايين:



هناك عوامل خطورة رئيسية في حياة البشر وهي نوعان : لا يمكن تعديلها، ويمكن تعديلها. ووجود أي منهما عند شخص ما يعني زيادة احتمالات تعرضه لأمراض القلب والأوعية الدموية الخطيرة أكثر من غيره ممن ليس لديهم:

أ. العوامل التي لا يمكن تعديلها، وهي:

1. العمر و الشيخوخة: عادة مع ازدياد العمر، حيث ترتفع نسبة احتمالات الإصابة بأمراض القلب والشرايين مع تقدم العمر. من 65 فأكثر
2. الوراثة: وله علاقة بالجينات، وجود تاريخ مرضي بالعائلة لأمراض القلب والأوعية الدموية
3. الجنس (الجنس): الرجال الذكور أعلى من الإناث لاحتتمالية الإصابة بأمراض القلب
4. العرق للإنسان: الناس ذو البشرة البيضاء أكثر احتمالية الإصابة من ذوي البشرة السوداء

ب. العوامل التي يمكن أن نعدلها في حياتنا وهي:

1. ارتفاع مستويات الكوليسترول منخفض الكثافة (الضار) في الدم مقابل تدني مستويات الكوليسترول مرتفع الكثافة (الحميد).
2. الإصابة بداء السكري، مع عدم الانتظام في العلاج، والتحكم في مستوى السكر في الدم عند المعدل الطبيعي.

3. ارتفاع ضغط الدم، مع عدم الانتظام في تناول الأدوية الخافضة للضغط.
4. السمنة، خاصة في منطقة محيط البطن.
5. اتباع نمط الحياة المتسم بالكسل والخمول وعدم مزاولة الرياضة.
6. التدخين، فمن الحقائق المعروفة أن التدخين المتواصل يفاقم أمراض القلب على الأمد البعيد، لكن الأبحاث الحديثة تثبت أن هناك مخاطر للتدخين على الأمد القريب أيضاً، وهي زيادة احتمال الإصابة بأمراض القلب.
7. التوتر: من أعباء الحياة " الناس الذين يعانون زيادة في التوتر يصبحون أكثر تدخيناً، زيادة في الضغط، أو زيادة في الأكل.

الجزء الثاني: العلاج الجراحي لشرايين القلب:

أعراض مرض الشريان التاجي:

• الذبحة الصدرية:

1. آلام في الصدر وهي تأتي من جهد بدني، والمشي صعوداً والجري والنشاط الجنسي، أو الجهد المبذول في هضم الطعام وتناول وجبة ثقيلة.
2. عادة ما يكون الألم وكأنه ضغط في الصدر.
3. هناك شعور من عدم الراحة وراء عظم القص، وينتشر في بعض الأحيان إلى الكتفين، والرقبة، والفك.

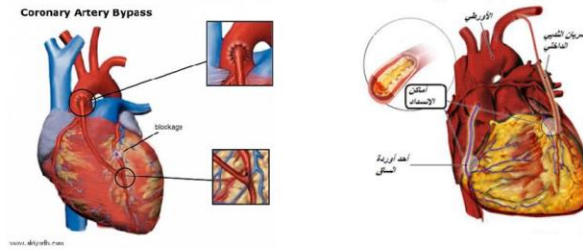
• نوبة قلبية:

1. اسم لاحتشاء عضلة القلب أو موت عضلة القلب.
2. على الرغم من أن النوبات القلبية يمكن أن تحدث في أي عمر، فهي أكثر شيوعاً بين سني ثلاثين و أربع وأربعين سنة.
3. تتسم الأزمات القلبية أحياناً بالغموض حتى أن المريض قد لا يعرف أن لديه أزمة قلبية.
4. شعور بالاختناق أو الضغط.
5. آلام مطولة غير عادية في وسط الصدر، قد تنتشر في الكتف الأيسر وأسفل الذراع الأيسر أو ما يصل للرقبة أو الفك.
6. التسبب عرقاً.
7. ضيق شديد في التنفس.
8. الغثيان أو القيئ.
9. الإغماء في بعض الأحيان.



جراحة ترقيع الشرايين التاجية:

تتلخص العملية في أخذ قطعة من الوريد، وعادة الوريد الصافني من الفخذ واستخدامها ليُسمح للدم بتجاوز الانسداد في الشريان كما يمكن أيضا استخدام الشريان الثديي الداخلي. هذا الشريان يقع داخل الجزء الأمامي من الصدر. هناك شريان على كل جانب من الصدر. يتم تحرير النهاية السفلى من هذا الشريان وتخطيط في الشريان التاجي وراء الانسداد. وهكذا يتم إعادة توجيه الدم في الشرايين التاجية. يمكن استخدام الشرايين الأخرى مثل الشريان الكعبري والشريان المعدي. ويمكن أن تجرى جراحة ترقيع الشرايين التاجية بتقنية القلب المفتوح (الأكثر شيوعا والأكثر أمانا) أو القلب النابض (استخداماً محدوداً - ليس في جميع المرضى - أقل أمانا)

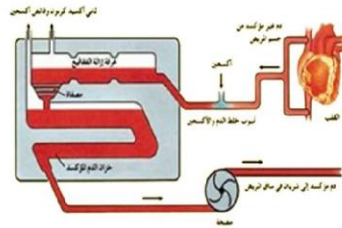


تعريف بجراحة القلب المفتوح:

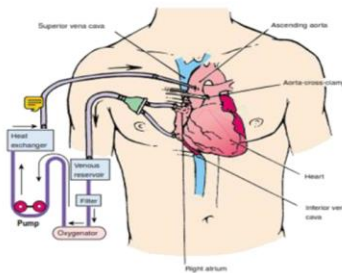
جراحة القلب المفتوح : هي أى عملية في القلب تستخدم فيها ماكينة القلب والرئة الصناعية .

ماكينة القلب والرئة الصناعية: هي جهاز يستخدم في جراحة القلب المفتوح لدعم الجسم أثناء العملية الجراحية خلال توقف القلب .

وغالبا ما يشار الى ماكينة القلب والرئة الصناعية باسم "المضخة"، و هي تقوم بعمل القلب والرئتين أثناء توقف القلب في العملية. ماكينة القلب والرئة الصناعية تتكون من خزان ينقل الدم من الجسم.



ثم يتم ضخ هذا الدم عن طريق الماكينة من خلال مؤكسد يعمل على إزالة غاز ثاني أكسيد الكربون وإضافة الأوكسجين ثم يضخ الدم المؤكسد مرة أخرى إلى الجسم.



يتم توصيل جهاز القلب والرئة للمريض من خلال سلسلة من الأنابيب التي يضعها الفريق الجراحي .

في نهاية العملية، يفصل الجراح قلب المريض من ماكينة القلب والرئة الصناعية تدريجياً لاستئناف وظيفته الطبيعية.

الجزء الثالث: معلومات حول العملية الجراحية لشرابين القلب

الاستعداد ما قبل العملية الجراحية:



الحلاقة والحمام
قبل العملية



- إذا كنت تدخن، يجب أن تتوقف في ثلاثين يوماً على الأقل قبل العملية، فالتدخين يضيق الشرايين التاجية، وينتج إفرازات زائدة في الرئتين، ويرفع ضغط الدم ويزيد من معدل ضربات القلب ويزيد من احتمال حصول مضاعفات بعد الجراحة إذا كنت لا تزال تدخن.
- أدوية سيولة الدم مثل الاسبرين، ينبغي أن توقف أسبوعاً قبل الجراحة
- قبل الجراحة، سوف يتم تحضير الدم لاستخدامه إذا دعت الحاجة، وجراح القلب الخاص بك سوف يحدد كمية الدم المطلوبة. ويجوز لأعضاء العائلة والأصدقاء التبرع بالدم أيضاً إذا استوفوا معايير التبرع.
- سيتم إدخالك إلى المستشفى في اليوم السابق للجراحة، وسوف تخضع لاختبارات الدم وعمل صور الأشعة، وسيتم فحصك طبياً من قبل أعضاء فريق جراحة القلب والتخدير.
- تحضير الجلد لمنع وقوع العدوى.
- لتقليل عدد المكروبات ننصح بحمامين الأول حمام بالصابون قبل العملية و الثاني ممكن استخدام مادة مطهرة مثل البولادين خصوصاً مكان العملية.
- عمل حلاقة لمكان العملية في ماكينة كهربائية و عدم استخدام الشفرات لا تضع كريمات او مرطبات على الجلد.
- يتم عمل تنظيف للفم صباح يوم العملية
- حتى منتصف الليل في اليوم السابق للجراحة، بإمكانك أن تأكل وتشرب كالمعتاد. بعد منتصف الليل، لا تأكل أو تشرب أي شيء.. يساعد هذا على خفض أي شعور بالغثيان و القيء المرتبطين مع التخدير. إذا كنت تأخذ أية أدوية، لا تستخدم سوى كمية صغيرة من الماء.
- يتم توقيعك على نموذج الموافقة على العملية.

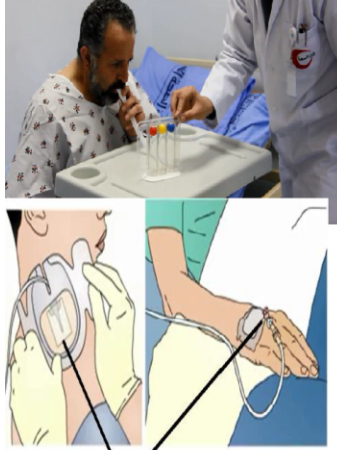
تعليمات قبل يوم العملية:



تمارين الرئة: كيفية أخذ نفس عميق قبل العملية لتطبيقه بعد العملية، يتم جلوس المريض في السرير أو على الكرسي، ويرفع الأكتاف إلى الأعلى و من ثم يبدأ بإخراج كمية الهواء من الرئة وبعدها يأخذ النفس من الجهاز ببطء ويتم حبسه لفترة وجيزة ثم يتم إخراج النفس من الفم. عادة بعد الانتهاء من العملية و إزالة أنبوب التنفس يبقى قليل من السوائل و البلغم في داخل الرئة و هذا يحتاج الى جهد من المريض نفسه لإزالته من خلال الخطوات التالية:

1. يتم وضع اليدين مكان الجرح أو يتم وضع مخدة صغيرة
2. يتم أخذ النفس ببطء من خلال الأنف وإخراجه من الفم.
3. يجب أخذ نفس عميق عشر مرات
4. يجب أن تحبس النفس الأخير قليلاً، و من ثم أن تسعل من الرئة وليس من الحلق لازالة البلغم المتبقي

كلما أزلت البلغم تحسن التنفس عندك و قلّ الألم و يجب عمله كل ساعة بمساعدة التمريض



القسطرة الوريدية في اليد والرقير

معلومات في يوم

الجراحة:

يتم متابعة الملف من قبل التمريض " من خلال ورقة قائمة تفقدية من خلال ازالة المواد الإصطناعية " مثل الأسنان، العدسات اللاصقة، الذهب، الخواتم،-----" يتم نزع الملابس كافة و ارتداء مريول المستشفى،



الانتقال الى غرفة العمليات

• سوف يتم نقلك إلى غرفة إعداد بجانب غرفة العمليات الجراحية ساعة واحدة قبل الجراحة، هنا سيقوم فريق التخدير بإدخال خط الوريد في يدك، بعد ذلك يتم حقن مخدر موضعي في الجلد في العنق، ويتم إدخال قسطرة وريدية أكبر في الوريد الوداجي للرقبة . ثم يتم وضع قسطرة أخرى في أحد الشرايين بحيث يمكن رصد ضغط الدم الشرياني ويمكن استخلاص عينات من الدم للتحقق من مستوى الأوكسجين في الدم الشرياني. يتم عادة وضع هذه القسطرة في إحدى شرايين المعصم، وغالبا الشريان الكعبري.

في غرفة العمليات:

- بعد التخدير يتم فتح الصدر للمريض من خلال عظم القص و الذي يحتاج من ستة الى ثمانية أسابيع للالتئام الكامل.
- يتم ربط عظم القص بعد العملية في سلك و يبقى في الجسم، أما الجلد الخارجي فتتم خياطته في خيط أو كلبسات قابلة للإزالة بعد أسبوع من العملية.



ما بعد العملية الجراحية:



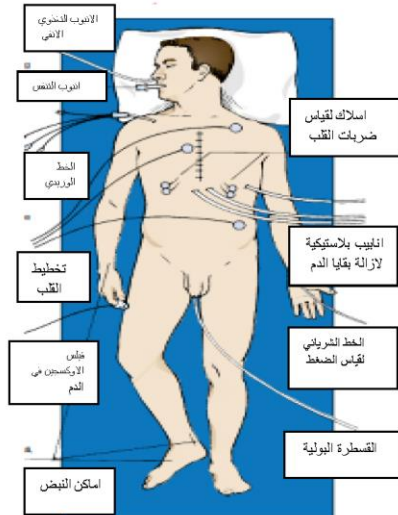
- * **تثبيت وحماية الجرح:** يجب وضع اليدين على مكان الجرح عند السعال و الحركة في داخل السرير و عند القيام خارج السرير و ذلك لتقليل الألم و منع فتق في الجرح
- تمارين رياضية لتنشيط الدورة الدموية: وذلك بهدف منع الخثرات الدموية في القدمين. قبل العملية يجب أن تقوم ببعض التمارين الرياضية للقدمين؛ سحب القدمين إلى الأعلى والأسفل من 10 الى 15 مرة، و كيفية والاستدارة في السرير لزيادة الدورة الدموية ومنع التخثرات الوريدية، وما بعد العملية يجب أيضا ارتداء جرابات مطاطية.

- * **النشاطات:** أن تخرج من السرير مبكراً يعني أن تتعافى مبكراً، و تقلل من المضاعفات و تعطيك شعوراً أفضل. قبل النزول من السرير يجب الجلوس لمدة دقيقة و عند الشعور بالغثيان أو دوخة نقوم بإبلاغ الممرض و من ثم الوقوف.

- * **الإعياء:** بعد العملية تشعر بإعياء و تعب يتلاشى في كل يوم مع النشاطات و الحمام الدافئ.

- بعد الخروج مباشرة من غرفة العمليات: الرعاية في غرفة العناية المركزة
- تستغرق الجراحة حوالي ثلاث إلى خمس ساعات و هذا يعتمد على نوع العملية وعدد الشرايين، فبعد الجراحة يتم نقلك إلى الرعاية المركزة .

- أثناء وجودك بالرعاية المركزة سيتم ملاحظة حالتك بدقة، عند الإفاقة من مفعول المخدر لا تنزعج فسوف تكون



متصلاً بأجهزة كثيرة وأسلاك وأنابيب، وهذا وضع طبيعي أثناء وجودك في الرعاية المركزة. في البداية لن تستطيع الكلام لوجود أنبوب داخل الحلق والذي يساعدك على التنفس. عندما تستعيد قدرتك على التنفس يتم إزالة هذا الأنبوب ويمكنك الكلام بعد ذلك.

أثناء وجودك في الرعاية المركزة ستجد الآتي:

1. أجهزة ورید تخرج من الذراع والرقبة.
 2. قسطرة بول لحساب كمية البول.
 3. أنابيب بلاستيكية تخرج من الصدر لإزالة بواقي الدم بعد العملية.
 4. أسلاك لتنظيم ضربات القلب.
 5. خط شرياني لقياس الضغط مباشرة و سحب الدم .
- ستتراوح مدة بقاءك بالرعاية المركزة حوالي ٢٤ – ٤٨ ساعة. يمكن لأقربائك مثل الزوجة والأولاد زيارتك أثناء وجودك بالرعاية المركزة.
- يكون المريض على جهاز التنفس الاصطناعي مع وجود أنبوب للمساعدة على التنفس، وهذا يحتاج آلية اتصال مع الممرضين و الطاقم الصحي من خلال الإشارة والكتابة على الورق .
- بعد 12- إلى 24 ساعة سوف يتم إزالة الأنبوب و يوضع المريض على العلاج التنفسي من خلال قناع على الوجه حتى تتحسن حالة المريض .

في العناية المكثفة:

- * **الأكل و الشهية:** بعد العملية عادة لا يرغب المريض في الأكل و تعود الرغبة بعد عدة أيام . يبدأ المريض بتناول السوائل تدريجياً و من ثم يستطيع الغذاء بعد النزول من السرير .
- * **الأنابيب البلاستيكية لازالة الدم المتبقي :** يتم ازالته بعد 24 الى 72 ساعة .
- * **القسطرة البولية :** يتم ازالته بعد يومين أو أكثر و حسب حالة المريض .
- * **الخط الشرياني:** وهو موجود لسحب الدم والتعرف على غازات الدم، و قياس ضغط لدم للمريض . يتم إزالته بعد يوم أو يومين وحسب الحاجة .
- * **بالنسبة لزيارة المريض :** بعد العملية مباشرة تمنع الزيارة ويمكن بعد أربع ساعات من العملية أن يقوم أحد الأقارب بزيارته و لمدة دقيقتين، و حسب السياسة المتبعة في المؤسسة لمواعيد الزيارة يمنع الأطفال من دخول العناية المكثفة .
- * **الألم بعد العملية :** نتيجة للجرح و البيئة المحيطة والوضعية داخل السرير يكون الألم، لهذا يجب إبلاغ الممرض عن الألم وأي درجة من درجات الألم، ويجب أخذ مسكنات الألم لتستطيع القيام بالتمارين الأخرى و السعال .
- * **عملية إخراج الفضلات :** بعد العملية تتغير عادات الإخراج عند الشعور بالرغبة أبلغ التمريض، ويمكن أن تأخذ بعض المليينات .
- * **المزاج :** تقلب المزاج، وفقدان التركيز والإضطرابات البصرية شائعة بعد جراحة ترقيع الشرايين التاجية وتتحسن عادة خلال الأسابيع التالية للجراحة

*** النشاط في غرفة العناية المركزة :** بعد ازالة انبوب التنفس سيساعدك الممرض للجلوس على حافة السرير، قد تشعر في دوخة او غثيان و هذا امر طبيعي بعد العملية،و في الصباح سيساعدك الممرض على السير خارج السرير . وذلك لمنع مضاعفات الرئة أو الخثرات الدموية في الرجلين لا بدّ من المشي و الحركة،سيتم مساعدتك أيضاً للمشي لمسافات قصيرة مرتين الى ثلاث يوماً.

مضاعفات ما بعد العملية الجراحية:

عادة يتحدث الجراح مع المريض عن مضاعفات العملية وعن المخاطر التي يمكن أن تحصل و ما هي النتائج الإيجابية للمريض و المخاطر تكمن حسب تاريخ المريض ووجود أمراض مزمنة، مثل مرض السكري الذي يقلل من التأم الجرح و غيرها كما هي الحال مع جميع الجراحات فإن جراحة ترقيع الشرايين التاجية لديها بعض المخاطر، على الرغم من أنّ أعلى مستويات الممارسة الجراحية فمعظم الناس لن تحدث لديهم أي مضاعفات و لكن إذا حدثت مضاعفات فعادة ما تكون مؤقتة، ومع ذلك، قد تكون آثار بعض المضاعفات دائمة، و قد تهدد الحياة. وهذه بعض من المضاعفات الشائعة:

***النزيف الزائد بعد الجراحة:**

يحدث عادة في اليوم الأول بعد الجراحة. حوالي 30% من المرضى يحتاجون الى نقل دم، و فقط 2% تحتاج إلى العودة إلى غرفة العمليات لوقف النزيف.

*** أزمة قلبية:** يمكن أن تحدث فوراً بعد الجراحة ونسبته 2% . وهذا يمكن أن يكون بسبب انسداد أحد الأوردة المستخدمة.

*** قصور الجهاز التنفسي أو الالتهاب الرئوي:** قد يحدث قصور في الجهاز التنفسي أو الالتهاب الرئوي الذي قد يتطلب العلاج لفترات محدودة بما في ذلك استخدام جهاز التنفس الصناعي .

*** الفشل الكلوي:** هذا أكثر احتمالاً في المرضى الذين لديهم قدر من الفشل الكلوي أو ضعف في وظيفة القلب لفترات طويلة قبل الجراحة.

*** عدم انتظام ضربات القلب أو عدم انتظام النبض:** شائعة الى حد ما بعد جراحة القلب. حوالي 20% إلى 30% من مرضى عدم انتظام ضربات القلب الأذيني يعانون من الرجفان الأذيني أحياناً أو الرفرفة الأذينية.

كما قد ينبض البطينان أسرع من المعتاد. معظم هذه الاضطرابات عادة ليست خطيرة ولكن قد تتطلب العلاج بالأدوية. ويمكن وقف معظم الأدوية الإضافية المقررة لعلاج عدم انتظام ضربات القلب خلال شهر بعد الجراحة.

* **عدوى في عظمة الصدر أو عظمة القص:** هذه العدوى تتطلب العلاج بالمضادات الحيوية القوية لفترة محدودة وأحياناً تحتاج إلى تدخل جراحي.

* **العدوى والالتهاب في جروح الساق أو اليدين التي تؤخذ منها الرقع:** العدوى تشفى عادة مع الغيار المتكرر واستخدام المضادات الحيوية ويمكن معالجتها بالعيادات الخارجية إن لم تكن شديدة.

* **السكتة الدماغية:** قد تحدث في حوالي 1-2% من المرضى، أحياناً قد يصاب المريض بالغيبوبة، ولحسن الحظ، أن معظم الجلطات بسيطة، ومعظم المرضى الذين لديهم مشكلة في النطق أو وجود ضعف في الذراع أو الساق يتحسنون كلياً أو نسبياً ..

الخروج من الرعاية المركزة والانتقال إلى الغرفة العادية:

بعد تأكد الفريق الطبي من استقرار حالتك الصحية في الرعاية المركزة، سيتم نقلك إلى غرفتك العادية حيث سيتم الآتي:

- قياس ملاحظاتك الحيوية مثل ضغط الدم والنبض كل ست ساعات.
- إزالة معظم الأنابيب والكانيولات " الخطوط الوريدية".
- سيتم مساعدتك للقيام من الفراش إلى الكرسي لتناول الوجبات.

الحركة والتمارين:

بعد انتقالك إلى الغرفة يمكنك السير في ممرات القسم، أطلب المساعدة حتى تتمكن من المشي منفرداً، وحاول زيادة المسافة التي تمشيها كل يوم تدريجياً فسيساعدك المشي على التعافي سريعاً حيث



إنه يحسن تدفق الدم إلى القلب، الرئتين، الأمعاء والعضلات. أما التمرينات بعد الخروج من غرفة العناية المكثفة فيجب مراعاة ما يلي : عدم رفع الأكتاف للأعلى، عدم ثني الخصرة إلى اليمين والشمال، وعدم وضع الأيدي فوق الرأس.

* **تمرينات التنفس:** هذه التمرينات هامة جداً، ويجب أن تتنفس بعمق وتقوم بالسعال لإخراج أي إفرازات داخل الرئتين، أثناء السعال ضع الوسادة على صدرك للحفاظ على عظمة الصدر. سيتم إعطاءك جهاز لمساعدتك

على تمرينات التنفس التي يجب أن تمارسها عشر مرات في الساعة على الأقل.

المتوقع أثناء وجودك بالغرفة العادية بعد الجراحة:

* **الانتفاخ في القدمين :** اذا تم إزالة الوريد الصافن من القدمين سوف يحدث تورم نتيجة قلة دوران الدم لفترة قليلة و هذا أمر طبيعي خصوصاً في القدم والكاحل، لهذا يجب رفع القدمين عند الجلوس ويمكن الضغط على مكان الجرح ويمكن ارتداء جواريب خاصة، يجب عدم وضع القدمين في حالة تقاطع لأنها تقلل من دوران الدم، إعمل تمارين الساق والكاحل، والمشى بين الحين والآخر، و تجنب ارتداء الملابس الضيقة.

* **الألم:** سوف تشعر ببعض الآلام حول جرح الصدر والأرجل والذراع. سيكون هناك بعض الآلام أيضاً في الكتف والظهر، سيتم إعطاؤك مسكنات للألم، لا تحاول أن تكون شجاعاً وتقوم بتحمل الألم! دائماً أطلب المسكنات لو زاد الألم وقبل ممارسة المشى أيضاً.

* **الوجبات الغذائية :** ستبدأ ببعض السوائل ثم التدرج إلى وجبة كاملة صحية للقلب. الأكل سوف يكون خارج السرير

* **الشهية للطعام:** ستكون شهيتك للطعام منخفضة في الفترة الأولى، وهذا طبيعي وقد يمتد هذا الأمر إلى أسبوعين.

* **الامساك:** يكون الامساك شائعاً في الفترة الأولى، فيجب تناول واحد ونصف لتر من الماء يومياً ما لم يحدد الطبيب غير ذلك. يساعد المشى أيضاً على تفادي الامساك. أطلب المليينات من الطبيب إذا استدعى الأمر.

* **النوم والطاقة:** ستشعر ببعض الضعف واضطرابات في النوم في الفترة الأولى، لذا يمكنك طلب بعض المهدئات إذا استلزم الأمر ذلك. الاستحمام: يمكن الاستحمام خارج السرير بعد التأكد من أن ضربات القلب أصبحت منتظمة .

* **تمرينات الاسترخاء:** الشعور بالقلق قبل وبعد جراحة القلب المفتوح هو شعور طبيعي، إحدى تمرينات الاسترخاء والتي يجب أن تتدرب عليها قبل الجراحة حتى تتمكن من ممارستها بعد الجراحة هي تمرينات التحكم في التنفس. عندما تتعلم هذا التمرين يمكنك ممارسته في أي وقت. لممارسة تمرين التحكم في التنفس للاسترخاء قم بالآتي:

١. تواجد بمكان هادئ واجلس جلسة مريحة.
٢. أغلق عينيك و تخيل نفسك في مكان تشعر فيه بالأمان.

٣. تنفس ببطئ وهدوء من خلال الأنف وأنت تعد في سرك إلى رقم ٤، أمسك النفس لمدة ثواني قليلة ثم أخرجه من الفم وأنت تعد في سرك إلى رقم ٤. أثناء التنفس اجعل عضلاتك تسترخي
٥. أعد التمرين من ستة إلى عشر مرات.

مدة مكوثك في المستشفى:

يستمر وجودك في المستشفى من 4 إلى 7 أيام و عادة بعد :

- 1- التأكد من التئام الجرح:
- 2- التأكد من انتظام العلامات الحيوية.
- 3- عدم أخذ مساعدات الأوكسجين .
- 4- قادر على المشي لوحده.
- 5- أن تكون نتائج المختبر ضمن الطبيعي.
- 6- عدم وجود علامات عدوى.
- 7- تأخذ وجبات الغذاء بانتظام.

الجزء الرابع: فترة النقاهة في المنزل بعد جراحة القلب المفتوح:

***الغذاء بعد العودة الى المنزل :**

- ❖ الغذاء يجب أن يكون صحياً والإكثار من البروتينات للمساعدة على التام الجرح و قليل الاملاح والدهون، و قليل الحلويات
- ❖ تناول القهوة ليس أكثر من فنجانين يومياً، عدم تناول الكحوليات لأنها تمنع امتصاص الكالسيوم وتؤثر على الكبد،
- ❖ إن اتباع الحمية السليمة والمتوازنة من أفضل الطرق التي تؤدي الى تماثل سريع للشفاء، والحمية السليمة في تلك التي تحتوي على أقل الكميات من الملح، الدهون، والكوليسترول والإكثار من الفواكه و خصوصا الموز وتناول الخضروات الطازجة، و البروتينات يوميا " اللحوم البيضاء و الحمراء بدون دهون، سمك و بيض و الابتعاد عن صفار البيض و التقليل من الزبدة و القشطة و المكرين و عدم تناول المقالي "



أنواع الأطعمة الملائمة له:

أ-الملح: على المريض الحد من الأطعمة المالحة، وعدم إضافة الملح الى الطعام والتعويض عنه بالليمون من أجل مذاق جيد .

ب-الدهون والكوليسترول: عدم استعمال الزيوت الحيوانية والإستعاضة بدل عنها بالزيوت النباتية والتقليل من مستوى الكوليسترول في الدم هو أحد طرق الوقاية وعلاج أمراض القلب، لذلك يجب الإستهناء عن المقالي والتعويض عنها بالسلق أو الشوي



* اجعل قائمة مشتريات الغذاء تتضمن ما هو مفيد لقلبك و مذاق جيد، للوقاية من مرض الشرايين والمحافظة على الشرايين الجديدة من الإندساد يجب عليك تغيير نظامك الغذائي والتقيد بالأطعمة الآتية :
أ- أطعمة قليلة الدهون وغنية بالألياف: فواكه طازجة أو مجففة، خضار طازجة، خبز القمح .

ب- الألبان ومشتقاتها قليلة الدهون: الحليب واللبن خالي أو قليل الدسم، الأجبان خالية الدسم، الجبنة النابلسية غير منصوح بها لدسامتها واحتوائها على الملح، من الممنوعات أيضاً السمن البلدي، الكبد.

ج- أطعمة غنية بالبروتين وقليلة الدهون: دجاج منزوع الجلد، شرائح من لحم البقر أو الخاروف الحمراء، ننصح بتناول الأسماك.

د- الحبوب الجافة بأنواعها: العدس، الفاصولياء، الحمص .

ذ- يمكنك تناول البيض وعدم الإكثار منه، يمكنك تناول زيت الزيتون الطبيعي، العسل من المنتجات الطبيعية المفيدة للجسم لمن يخلو من داء السكر.

دور التمارين الرياضية في فترة النقاهة:



ممارسة التمارين الرياضية بانتظام أمر حيوي إذا كنت تريد التعافي تماماً. وممارسة التمارين الرياضية بانتظام تحسن الحياة عموماً. و يبدأ زيادة النشاط الحركي، كل يوم يبدأ المشي في الصباح كالاتي:

- الأسبوع الأول: 3- 5 دقائق 3 مرات في يوم.
- الأسبوع الثاني: 6-10 دقائق 3 مرات في يوم.
- الأسبوع الثالث: 11- 15 دقيقة 3 مرات في اليوم.
- الأسبوع الرابع: يمكن زيادة النشاط الى 20 دقيقة.

عدم القيام بالنشاط بعد الاكل مباشرة و بعد ساعة على الأقل

* إذا شعرت بالألم فوق الصدر أو مكان الجرح أو صعوبة في التنفس أو دوخة أو غثيان فعليك التوقف فوراً لمدة 15 دقيقة، وإذا لم يزل الألم أبلغ الطبيب مباشرة



* عدم رفع أي شيء أو رفع أكثر من 5 كيلو أو محاولة فتح علبة مثلاً، عدم القفز،
 * الأنشطة البدنية مثل المشي وركوب الدراجات، والسباحة هي نوع من ممارسة التمارين الرياضية
 تسمى الأنشطة الهوائية، الأنشطة الهوائية هي أطول في المدة لكن منخفضة الشدة
 * الأنشطة الهوائية المنتظمة تساعد القلب على ضخ الدم مع أقل جهد، تساعد على خفض ضغط الدم،
 وخفض مستويات الكوليسترول، وتساعد على تخفيف الوزن والتحكم في نسبة السكر في الدم، وتوفير
 الشعور بالراحة.

العلاقة الزوجية:

- كثير من المرضى وأزواجهم يشعرون بالتوتر بشأن استئناف النشاط الجنسي بعد جراحة القلب.
- كمية الطاقة التي تحتاج إليها لأداء الجماع مع الزوج أو الزوجة يشبه صعود حوالي واحد أو اثنين من الطوابق أو المشي نحو 1 كم بوتيرة سريعة. إذا كان لا يمكن تنفيذ هذه الأنشطة دون أن تتعب أو تشعر بضيق في التنفس، انتظر وقتاً إضافياً للنقاهة قبل استئناف النشاط الجنسي .
- خلال الأسابيع الستة إلى الثمانية الأولى، استخدم الأوضاع الجنسية التي تقلل من الضغط أو الوزن على الصدر أو الشد على الذراعين والصدر.
- نضع في اعتبارنا أنّ العلاقة الزوجية لها جانب جسدي وعاطفي
- التحدث بصراحة مع شريك حياتك
- السماح لعودة تدريجية للنشاط الجنسي
- ممارسة العلاقة الزوجية عندما تكون في حالة راحة جسدية
- اجعل توقعاتك واقعية -- قد تستغرق العودة وقتاً طويلاً للعودة إلى حياة جنسية نشطة
- عدم الممارسة بعد الغذاء مباشرة
- سوف تعود قريباً أنت وشريك حياتك إلى علاقة مُرضية نفسية وجسدية .
- القلق من جانب أي من الشريكين، وكذلك بعض الأدوية قد تتداخل مع الإثارة الجنسية أو الأداء .
- ناقش أي صعوبات مع طبيبك.



رعاية الجرح:

سوف يقال لك كيفية رعاية الجرح قبل مغادرة المستشفى، فمن المهم القيام بما يلي:

- إبقاء الجرح نظيفاً وجافاً و لمدة سبعة أيام ومن ثم يتم إزالة الخيوط.
- استخدام الصابون والماء فقط لتنظيف المنطقة



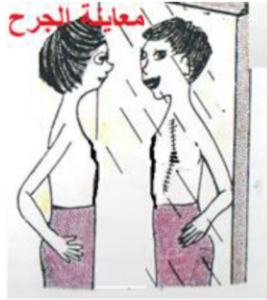
- بعد الخروج لا تحتاج الى غيار على الجرح
- لا تقم بتطبيق المراهم والزيوت أو ضمادات الجرح إلا اذا صرح بذلك على وجه التحديد.
- يمكن أن يكون هناك حكة أو نممة مكان الجرح أو حول الجرح وهذا طبيعي.
- اتباع نظام غذائي صحي للمساعدة على الشفاء.

اتصل بطبيبك إذا ظهرت علامات العدوى على الجرح، وهي:

1. زيادة الإفرازات من الجرح
2. زيادة فتح خط الجرح
3. احمرار أو دفئ حول الجرح
4. زيادة درجة حرارة الجسم (أكثر من 38 درجة مئوية)
5. إذا كان لديك مرض السكر ومستويات السكر في الدم بدأت تختلف أكثر من المعتاد

رعاية عظمة القص:

يتم في معظم حالات جراحة القلب، فتح عظمة القص بالمنشار. يتم تقريب عظمة القص باستخدام أسلاك الحديد، لذا فالتئام عظمة القص يستغرق 6 إلى 8 أسابيع. لا تفعل ما يلي:



1. رفع أكثر من 5، 2-5 كغم
2. دفع أو سحب باب ثقل، أو فتح غطاء الزجاج عالقاً.
3. الضغط في وجود الإمساك
4. الاستلقاء على البطن.
5. دفع أو سحب بيد واحدة.
6. القيام بأعمال المنزلية الثقيلة، الكنس، والتعامل مع الغسيل.
7. استخدام يدك للوقوف على كرسي. استخدام ساقيك للدفع.

تمارين الرئة:

مرات كل ساعتين لمدة اسبوع
مرات بعد استخدام الجهاز



إبقِ على تمارين التنفس للرئتين 10
استمخدة للسعال مرتين الى ثلاث
التنفيسي.

الأدوية:



- قد تحتاج الأدوية بعد الجراحة، لذا فالطبيب سوف يقول لك ما اذا كنت بحاجة لهذه الأدوية حتى التعافي من عملية جراحة القلب أو مدى الحياة.
- تأكد من فهم أسماء الأدوية الخاصة بك، لماذا تستخدم، وكم مرة تأخذها في اليوم الواحد.
- فقط خذ الأدوية التي توصف عند خروجك من المستشفى.
- تحدث إلى طبيبك قبل مواصلة أية أدوية كنت تأخذها قبل الجراحة .
- تحدث مع طبيبك قبل تناول أي أدوية أخرى أو أي مكملات الغذائية، بما في ذلك مسكنات الألم وأدوية السعال أو البرد .
- قد تكون بعض الأدوية دون وصفة طبية لها تأثير على الأدوية الخاصة بك مما قد يسبب آثاراً جانبية.



القيادة وركوب السيارة:

- الفريق الطبي سوف يخبرك متى قد تستأنف القيادة. هذا يحدث عادة بعد نحو ستة إلى ثمانية أسابيع من إجراء الجراحة بعد التئام عظمة القص و تحسن ردود الفعل الحركية و الحسية.
- خلال هذا الوقت، يمكنك ركوب السيارة كأحد الركاب .
- إذا كنت تأخذ الرحلات الطويلة خلال الأسابيع الثمانية الأولى بعد الجراحة، قف كل ساعة وامش لمدة 5 إلى 10 دقائق.
- يمكن قيادة السيارة بعد العملية بثلاثة إلى أربعة أسابيع و ذلك للأسباب التالية: قلة التركيز بعد العملية مع وجود بعض الألم . القدرة المحدودة لحركة الاكتاف و الأذرع و القدمين. تؤدي القيادة الى دوران منطقة الصدر مما يؤدي العملية.



1. متى يمكنني السفر في الطائرة أو القطار؟ نقترح أن يكون السفر محدوداً في الأسابيع القليلة الأولى بعد عملية القلب المفتوح. نحن نفضل، إذا أمكن، أن يتابع المريض حالته من قبل جراح القلب وطبيب القلب قبل السفر لمسافات طويلة، ولكن الغالبية العظمى من المرضى لدينا يمكنهم السفر قريباً جداً.

العودة إلى المنزل واستعمال الدرج:

- بعد الأسبوع الأول يجب العمل على تسلق الدرج مرتين في اليوم صباحاً و مساءً.
- يمكنك صعود السلالم.
- لا تتسرع ! تذكر أنك تأخذ مزيداً من الطاقة لتسلق الدرج مقارنة بالمشي .



- إذا شعرت بتعب أو ضيق في التنفس أثناء الصعود، توقف، اتخذ قسط من الراحة، واستمر بعد ذلك استخدام الدرابزين لتحقيق التوازن و ليس للجذب

بالنسبة للزيارات والعلاقات الاجتماعية:

- بعد عملية القلب المفتوح يتأثر جهاز المناعة عند المريض ويكون عرضه أكثر للأمراض المعدية من الشخص العادي، لذا ننصح بما يلي:
1. عدم مكوث الزائرين لفترات طويلة.
 2. تخصيص غرفة ثانية غير غرفة المريض والابتعاد عن القبل والإحتضان

الراحة والنوم:

- الحصول على قسط كاف من الراحة هو المهم .
- في الأسبوع الأول أو الثاني في المنزل، تأخذ قيلولة لمدة ساعة تقريباً في الصباح وبعد الظهر. عندما تتحسن، سوف تحتاج وقتاً أقل للراحة.
- تستطيع أن تأخذ المسكنات كل 4-5 ساعات حسب الحاجة. من الأفضل أن تأخذ المسكنات قبل فترات الراحة أو أي نشاط بدني.
- الألم يختلف من شخص لآخر. قد تحتاج إلى أخذ المسكنات فقط لبضعة أيام أو ما يصل إلى أسابيع قليلة.
- مشاكل النوم شائعة 1-6 أشهر بعد الجراحة. ربما تعاني من : صعوبة البدء في النوم - صعوبة البقاء نائماً - كوابيس - النوم الكثير

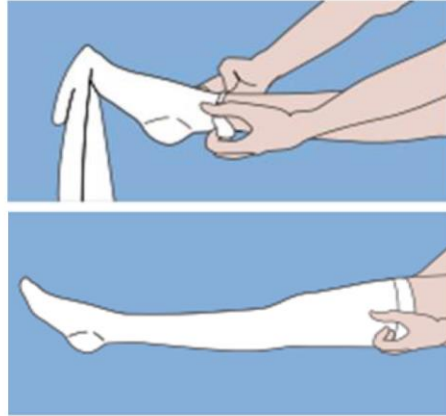
لمساعدتك على النوم حاول:

1. الذهاب إلى الفراش في الوقت نفسه كل ليلة والاستيقاظ في الوقت نفسه كل صباح.
 2. أخذ قيلولة فقط 1/2 -- 1 ساعة مرة أو مرتين في اليوم.
 3. السير / ممارسة الرياضة البدنية كل يوم في الصباح وبعد الظهر.
 4. أخذ شيء لالكم قبل أن تذهب إلى الفراش خاصة في الأسبوع الأول والثاني بعد الجراحة.
 5. إذا كنت لا تستطيع النوم، فإخرج من السرير وقرأ كتاباً، أو شاهد التلفزيون أو استمع إلى الموسيقى .
 6. الاتصال بطبيبك لوصف المهدئات
- حتى يتسنى لجرحك الالتئام والتحام عظم القص (في وسط الصدر) يحتاج الى فترة زمنية وقدرها حوالي الشهر بعد العملية لذا ننصح بما يلي:

- النوم على الظهر كما كنتم تنامون في المشفى وذلك لتخفيف الضغط الجانبي على الصدر.
- للنهوض من السرير نرجو منكم طلب المساعدة من شخص آخر أو وضع مشد على حافة السرير والنهوض بمساعدته. عند الجلوس على الكنية نرجو رفع أرجلكم فوق كرسي لتبقى بمحاذاة الجسم.

العناية بجرح الرجل و ارتداء الجوارب:

يجب اختيار الحجم المناسب، وعدم استعمالها من قبل افراد العائلة، وعند الحمام والنوم يجب ازالتها، وغسيل القدم كل يومين على الاقل، و عند الارتداء عدم استخدام المرطبات او الكريمات.



الاستحمام:



- إذا كان الجرح يتمثل إلى الشفاء وجافاً، يمكنك الاستحمام السريع في مدة لا تزيد عن 10 دقائق.
- إذا كان لديك الغرز في صدرك، قف مع ظهرك إلى الدوش
- يجب أن تكون درجة حرارة الماء دافئة -- ليست ساخنة جداً أو باردة.
- لتنظيف موقع الجرح: استخدم الصابون العادي، ولا تستخدم الصابون المعطر.. لا تستخدم نوع جديد من الصابون أثناء التعافي من الجراحة، ضع الماء والصابون على يدك واغسل الجرح صعوداً وهبوطاً، لا تحك الجرح باستخدام منشفة حتى تختفي القشور ويتعافى الجلد بشكل تام .

تخفيف الألم:

- في البداية، قد يكون لديك بعض عدم الراحة في العضلات أو جرح الصدر خلال النشاط. قد يكون لديك بعض الحكة، وضيق و / أو تنميل على طول الجرح وهذا أمر طبيعي بعد الجراحة. وينبغي أن لا يكون لديك ألم في الصدر يشبه ما كان قبل الجراحة .
- سوف تحصل على وصفة طبية لعلاج الألم قبل أن تغادر المستشفى.
- إذا كنت خضعت لجراحة لتغيير شرايين التاجية، قد يكون لديك مزيد من الألم في الساقين إذا تم استخدام الوريد الصافى. المشي، والأنشطة اليومية، و مرور الوقت يساعد في تخفيف عدم الراحة في الساق.
- الألم يبقى لعدة اسابيع و خصوصا عند الكتف، و هذا يأتي من مكان الجرح، وفي حال استعمال شريان الثدي يبقى الألم لمدة أطول من حال استعمال الوريد الصافى.
- مكالمة الطبيب إذا كان عظمة القص تتحرك أو تشعر بصوت التفرقع.

الإمساك:

- الإمساك قد يحدث مدة أسبوع إلى أسبوعين بعد الجراحة، الضغط أثناء التبرز يمكن أن يؤثر على التئام عظمة القص وعلى قلبك. للتخفيف من الإمساك:
- كن نشيطا -- المشي والقيام بتمارين.
- أكل الأطعمة الغنية بالألياف مثل: الفول والعدس والبازلاء، الفواكه الطازجة والمجففة و الخضراوات -- ولا سيما إذا توكّل القشرة
- شرب الكثير من السوائل خصوصا الماء ما لم يتم إخبارك بغير ذلك.
- الاتصال بطبيبك لوصف المليينات

التدخين والقهوة والكحول:



يجب التوقف عن التدخين بأشكاله كافة بعد العملية والتقليل من شرب القهوة و عدم تناول الكحوليات لأنها ترهق عضلة القلب و كذلك تزيد من عملها و هي من العوامل التي تسبب أمراض القلب

العودة إلى العمل:



- يمكنك العودة إلى العمل غرضون شهرين إلى ثلاثة أشهر بعد الجراحة.
- بالإمكان الذهاب الى مكان العمل لفترات قصيرة 2-3 ساعات خلال فترة النهار والحرص على عدم الجلوس في غرف مكتظة بالناس أو المدخنين وعدم الإنفعال والتعب والإجهاد خلال العمل .

مراجعة الطبيب:



1. عادة ما ندعو مرضانا لزيارتنا بعد أسبوع أو عشرة أيام من العملية ويعطى موعد بذلك * و يمكن زيارة الطبيب بعد 3- إلى 4 اسابيع من تاريخ الخروج.
2. الرجاء احضار ورقة الخروج وتقرير العملية والأدوية المستخدمة وآخر صورة أشعة عند حضوركم الى المشفى
3. الرجاء البقاء على الإتصال الدائم مع طبيبك والإستفسار عن أي طارئ أو أعراض تلم بكم.

ملاحظات عامة:

في حال حصل معك الامور التالية يجب مراجعة الطبيب مباشرة:

1. الارتفاع الكثير في درجة الحرارة من 38 مئوية
2. إذا شعرت بقشعريرة
3. إذا وجد على الجرح احمرار، انتفاخ، إفرازات، وآلام في الجرح
4. إذا شعرت في صعوبة في التنفس أو قصر في التنفس.
5. إذا شعرت أنك لا تتحسن أبان الوضع الصحي أسوأ.
6. إذا شعرت بدوخة أو بألم في الرأس.
7. إذا شعرت بارتفاع في الوزن بمعدل 2 كغم في اليوم أو 5 كغم في الأسبوع.
8. دم في الاخراج.
9. أي آلام جديدة لم تمر عليك من قبل.

تلفون الطوارئ _____

اسم الطبيب: _____ تلفونه: _____

خارطة العملية الجراحية للقلب المفتوح:

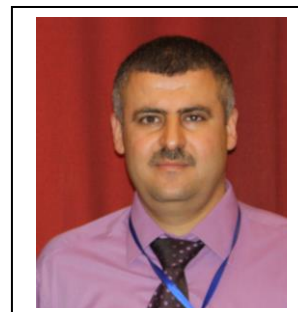
اليوم الاول بعد العملية	يوم العملية	قبل العملية في يوم
• ازالة انبوبة التنفس. • الحركة خارج السرير. • اخذ حمام من قبل التمريض. • البدء بتناول السوائل البقاء في غرفة العناية المكثفة.	• تحضير المريض حسب القائمة التفقدية. • الانتقال الى غرفة العمليات.	الاستعدادات : • الاقلاع عن التدخين. • التوقف عن الادوية المميعة لدم. • تحضير الدم وعمل فحوصات مخبرية. • حلاقة الشعر مكان العملية. • تطهير سطح الجلد للعملية. • التوقف عن الطعام قبل يوم العملية. • تعليمات " تمارين الرئة و التنفس و حماية الجرح عند السعال، تمارين الدورة الدموية.

اليوم الثاني بعد العملية	اليوم الثالث والرابع بعد العملية	فترة النقاهة
• الخروج من السرير و المشي عدة خطوات. • إزالة بعض الانابيب لجمع السوائل. • البدء بالاكل العادي.	• الحركة خارج السرير مع بعض التمارين. • إمكانية الانتقال الى القسم العادي. • اليوم الخامس الى السابع البدء بتعليمات الخروج.	• الغذاء الصحي. • التمارين الرياضية. • العلاقة الزوجية بعد 6-8 اسابيع من العملية. • تمارين الرئة والتنفس. • استعمال الادوية حسب التعليمات الطبية. • قيادة السيارة بعد 6-8 اسابيع من العملية. • استعمال الدرج. • كيفية الاستحمام. • التعامل مع الالم. • التعامل مع الامساك. • الاقلاع عن التدخين و المشروبات الروحية. • العودة للعمل بعد 3 شهور من العملية. • المتابعة في حالات الطوارئ.

CURRICULUM VITAE

Personal Information

Name : Rebhi Bsharat
 Nationality : Palestinian
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 E-mail : ribheb@yahoo.com



Education

Degree	Education Unit	Date of graduation
PhD:	Student in Gazi University / Health Sciences Institute, Surgical Nusing	Till now
Master of Science	Health Sciences Institute, Public Health – Track "Community Mental Health	2003
License	Baghdad University, School of Nursing	1998
High school	Al-Tawjehi	1993

Work experience

Year	Location	Task
2007-present	Modern Univercity College	Position: Head Division
2000-2007	Modern Univercity College	Position: Teaching Stafe
2013- present:	Palestine Medical Complex	Quality and Patient Safety at Palestine Medical
2010 - 2011	Special Surgery Wing, which include the following departments (Cardiac Surgery, Neurosurgery, kidney transplant, ENT surgery).	Complex from Postion: Head Nurse

2006-2009	Nursing Supervisor at Ramallah Hospital from 2006 to 2009.	Position: Head Division
1999-2005	At Ramallah hospital in the following words: * Surgical Word for one year from 1999 to 2000. * Cardiac Surgery” I C U” from 2000 to 2005.	Position: Staff Nurse

Foreign Language

Turkish, English

Hobby

Sport, reading, playing chess



GAZİLİ OLMAK AYRICALIKTIR..