Impact of Coronary Artery Bypass Graft Surgery upon Patient's Physical Aspects related to Coronary Artery Diseases at Baghdad Cardiac Centers

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Abstract: *As a result of increasing incidence of coronary artery diseases (CAD), the use of coronary artery bypass graft surgery (CABG) has increased. But it still remains that CABG surgery is not a cure for CAD. Many factors are considered to effect the physical aspect in patient's life as an impact of the surgery.*

Objective: *The study aims to assess the patient's physical aspects related to coronary artery diseases and to find out the relationship between patients' physical aspects and their certain demographic characteristics such as (age, gender, marital status, and smoking).*

Methodology: *A descriptive analytical study was conducted on Non-probability (purposive sample) of (100) patients who had done a coronary artery bypass graft surgery in one of Baghdad cardiac centers (Ibn Al-Bitar specialized center for cardiac surgery and Iraqi center for heart diseases). A questionnaire was used as a tool of data collection for the period of 22th March to 10th May 2015. Descriptive statistical analyses were used to analyze the data.*

Results : *The results of the study indicated that (68%) of the study sample were male, their advance age ≤ 60 years (36%), living in rural areas (69%), smokers (80%), approximately (72%) of study sample presented with a history of chronic disease (diabetes mellitus and hypertension), and more than (74%) of the study sample had developed moderate complications that required a (4-6) day period in surgical ward.*

Conclusions: *There was a significant association between patient's physical aspect and some socio-demographic characteristics (age, marital status, level of education, occupation, and smoking).*

Recommendations: *The study recommended that current strategies used to prevent this problem may not be as effective as previously thought and new approaches are needed to minimize these effects. There is a need to find the suitable CABG model that helps improve patient's general health and minimize the restricts in his physical activity post-operatively. Designating and distributing a booklet to all patients undergoing CABG surgery filled with instructions pre and post-operative cardiac rehabilitation are recommended.*

Keywords: *CABG, Cardiac, Impact, Patient, Physical aspect.*

I. Introduction

Among the recent past three decades, the treatment of choice for Patients with CAD - either there was one occluded vessel or a multi-vessel occlusion- has gone extraordinary changes positively. This is related to the advances technologies in the field of percutaneous coronary intervention (PCI) and coronary artery bypass grafting[1]. CABG surgery has proved its efficacy over the years in aspects of improving patient's survival and by improving patient's quality of life in terms of pain-free survival[2]. In addition, There are many general agreements that CABG surgery improves the prognosis of early post-surgical years in patients with three main coronary vessels stenosis or those patients with symptomatic left main coronary artery stenosis; however, this feature in CABG surgery won't be significant after 10- 12 years[3, 4].

II. Methodology

A descriptive Analytical study was carried out upon patients who had done a coronary artery bypass graft surgery in one of Baghdad cardiac centers. Study implemented for the period of October 21th, 2014 to July 30th , 2015. Data collection was gathered by questionnaire format, and interview with the patient. The period of data collection for both centers was about two months. The research study was conducted in two cardiac centers in Baghdad governorate which include Ibn Al-Bitar specialized center for cardiac surgery and Iraqi center for heart diseases. Adult patients who were coming to follow-up in the listed centers were selected as study sample. A questionnaire was used as a tool of data collection to fulfill with objective of the study and consisted of three parts, including demographic characteristics, patient's medical and surgical history, and domains concerned with physical aspects. A pilot study was carried out between the 8th March to 17th March 2015, on (10) patients who had done a coronary artery bypass graft surgery in one of Baghdad cardiac centers to determine the

reliability of the questionnaire and content validity was carried out through the 28 experts. Descriptive and inferential statistical analyses were used to analyze the data.

III.   Results
Table (1) : Distribution of the Sample (100 Patients) According to Their Demographic Characteristics

Variables Age Groups	Frequency	Percent	Cumulative Percent
20- 29 years	9	9	9
30- 39 years	18	18	27
40- 49 years	15	15	42
50- 59 years	22	22	64
60 years or more	36	36	100
Gender	**Frequency**	**Percent**	**Cumulative Percent**
Male	68	68	68
Female	32	32	100
Environment	**Frequency**	**Percent**	**Cumulative Percent**
Modern area	31	31	31
Rural area	69	69	100
Marital Status	**Frequency**	**Percent**	**Cumulative Percent**
Single	7	7	7
Married	57	57	64
Divorced	13	13	77
Widowed	29	29	100
Educational Level	**Frequency**	**Percent**	**Cumulative Percent**
No read and write	2	2	2
Read and write	5	5	7
Elementary graduate	22	22	29
Middle graduate	23	23	52
High School graduate	19	19	71
Institute or college graduate	29	29	100
Occupation	**Frequency**	**Percent**	**Cumulative Percent**
Student	10	10	10
Employer	30	30	40
Free jobs	16	16	56
Retired	13	13	69
Housewife	16	16	85
No job	15	15	100
Monthly income	**Frequency**	**Percent**	**Cumulative Percent**
Enough	48	48	48
Not enough	52	52	100
Smoking	**Frequency**	**Percent**	**Cumulative Percent**
Yes	80	80	80
No	20	20	100

Table (1) showed that the majority of patients were male (68%) while (32%) were female. The highest percentage of the patients (36%) was within the age group (60 years and more) and (69%) was living in a rural areas.

The highest percentage of the patients (57%) was married and (29%) graduated from an institute or college.

The highest percentage of the patients (30%) was working as employers and (52%) was receiving not enough monthly salaries. Regarding the smoking patients (80%) were smokers and (20%) of patients were nonsmokers.

Table (2) : Distribution of the Sample (100 Patients) According to Their Medical and Surgical History

Variables Diagnosis of disease	Frequency	Percent	Cumulative Percent
Less than 1 year	6	6	6
1- 5 years	60	60	66
6- 10 years	27	27	93
More than 10 years	7	7	100
No. of Blocked Arteries	**Frequency**	**Percent**	**Cumulative Percent**
1 artery	6	6	6

2 arteries	41	41	47
3 arteries	23	23	70
4 arteries	30	30	100
Operation Time	**Frequency**	**Percent**	**Cumulative Percent**
Less than 3 months	10	10	10
3- 6 months	60	60	70
More than 6 months	30	30	100
ICU Staying Period	**Frequency**	**Percent**	**Cumulative Percent**
1- 3 days	22	22	22
4- 6 days	77	77	99
7- 9 days	1	1	100
10 days and more	0	0	100
Surgical Ward Staying Period	**Frequency**	**Percent**	**Cumulative Percent**
1- 3 days	3	3	3
4- 6 days	74	74	77
7- 9 days	20	20	97
10 days and more	3	3	100
Presence of Chronic Disease	**Frequency**	**Percent**	**Cumulative Percent**
Yes	72	72	72
No	28	28	100

Table (2) showed that highest percentage of patients (60%) was diagnosed with coronary artery disease before (1- 5) years and (41%) of patients was having (2) blocked arteries before doing CABG surgery

Regarding the time where CABG surgery was done; the highest percentage of the patients (60%) was (3- 6 moths) post-operative.

The highest percentage of the patients (77%) stayed for (4- 6 days) in the ICU and (74%) of patients stayed for (4- 6) days in the surgical ward.

Table (2) also shows that the majority of patients (72%) were having a certain chronic disease while (28%) of patients weren't having any chronic disease.

Table (3) : Distribution of the Chronic Diseases for the Study Sample

Variables	Groups	Frequency	Percent	Cumulative Percent
Presence of chronic disease	**Yes**	72	72	72
	No	28	28	100
Diabetes Mellitus	**Yes**	47	47	47
	No	53	53	100
Hypertension	**Yes**	45	45	45
	No	55	55	100
Asthma	**Yes**	14	14	14
	No	86	86	100
Rheumatoid arthritis	**Yes**	23	23	23
	No	77	77	100

It appears from table (3) that the highest percentage of patients (72%) was having a certain chronic disease. While the majority of patients (53%) wasn't having Diabetes Mellitus, (55%) of patients wasn't having hypertension, (86%) of patients presented without asthma, and (77%) of patients wasn't complaining from rheumatoid arthritis.

Statistically, table (3) revealed that the lowest percentages for each listed chronic disease (47%, 45%, 14%, and 23%) was having one or more of the mentioned chronic disease.

Table (4) : Association Between Patient's Age Groups and Their Physical Aspects

Physical Aspects / Age Groups	High	Moderate	Low	TOTAL
20- 29 years	0	3	6	9
30- 39 years	11	6	1	18
40- 49 years	9	4	2	15
50- 59 years	16	5	1	22
60 years or more	29	5	2	36
TOTAL	**65**	**23**	**12**	**100**
χ^2 Obs. = 35.456 , df = 8 , P ≤ 0.05 , χ^2 Crit. = 15.507				

χ^2 Obs. = Observed Chi-Square, df= degree of freedom, P= probability, χ^2 Crit.= Chi-Square critical

Table (4) showed that there is a strong significant relationship between age groups and physical aspects for patients with coronary artery diseases who recovered from CABG surgery.

Table (5) : Association Between Patients' Gender and Their Physical Aspects

Physical Aspects / Gender	High	Moderate	Low	TOTAL
Male	84	14	6	68
Female	17	9	6	32
TOTAL	65	23	12	100
χ^2 Obs. = 3.345 , df = 2 , P ≤ 0.05 , χ^2 Crit. = 5.991				

χ^2 Obs. = Observed Chi-Square, df= degree of freedom, P= probability, χ^2 Crit.= Chi-Square critical

Table (5) showed that there is no significant relationship between patients' gender and their physical aspects.

Table (6) : Association Between Patients' Marital Status and Their Physical Aspects

Physical Aspects / Marital Status	High	Moderate	Low	TOTAL
Single	2	1	4	7
Married	38	15	4	57
Divorced	10	2	1	13
Widowed	15	5	3	23
TOTAL	65	23	12	100
χ^2 Obs. = 15.874 , df = 6 , P ≤ 0.05 , χ^2 Crit. = 12.592				

χ^2 Obs. = Observed Chi-Square, **df**= degree of freedom, **P**= probability, **χ^2 Crit.=** Chi-Square critical

Table (6) showed that there is a moderate significant relationship between patients' marital status and their physical aspects.

Table (7) : Association Between Patients' Occupation and Their Physical Aspects

Physical Aspects / Occupation	High	Moderate	Low	TOTAL
Student	1	7	2	10
Employer	18	9	3	30
Free Jobs	12	1	3	16
Retired	10	3	0	13
Housewife	10	2	4	16
Jobless	14	1	0	15
TOTAL	65	23	12	100
χ^2 Obs. = 28.724 , df = 10 , P ≤ 0.05 , χ^2 Crit. = 18.307				

χ^2 Obs. = Observed Chi-Square, df= degree of freedom, P= probability, χ^2 Crit.= Chi-Square critical

Table (7) showed that there is a strong significant relationship between patients' occupation and their physical aspects.

Table (8) : Association Between Smoking Patients and Their Physical Aspects

Physical Aspects / Smoking	High	Moderate	Low	TOTAL
Yes	57	15	8	80
No	8	8	4	20
TOTAL	65	23	12	100
χ^2 Obs. = 6.878 , df = 2 , P ≤ 0.05 , χ^2 Crit. = 5.991				

χ^2 Obs. = Observed Chi-Square, df= degree of freedom, P= probability, χ^2 Crit.= Chi-Square critical

Table (8) showed that there is a moderate significant relationship between patients who smokes cigarettes and their physical aspects

Table (9) : Association Between Patient's Surgical Ward Lying Period and Their Physical Aspects

Physical Aspects / Surgical Ward	High	Moderate	Low	TOTAL
1- 3 days	1	1	1	3
4- 6 days	50	19	5	74
7- 9 days	13	1	6	20
10 days or more	1	2	0	3
TOTAL	65	23	12	100
χ^2 Obs. = 15.268 , df = 6 , P ≤ 0.05 , χ^2 Crit. = 12.592				

χ^2 Obs. = Observed Chi-Square, df= degree of freedom, P= probability, χ^2 Crit.= Chi-Square critical

Table (9) showed that there is a moderate significant relationship between the patient's surgical ward lying period and their physical aspects

Table (10) : Association Between Presence of Chronic Disease in patients and Their Physical Aspects

Physical Aspects / Chronic Disease	High	Moderate	Low	TOTAL
Yes	55	12	5	72
No	10	11	7	28
TOTAL	65	23	12	100
χ^2 Obs. = 15.093 , df = 2 , P ≤ 0.05 , χ^2 Crit. = 5.991				

χ^2 Obs. = Observed Chi-Square, df= degree of freedom, P= probability, χ^2 Crit.= Chi-Square critical

Table (10) showed that there is a strong significant relationship between presence of chronic diseases and patient's physical aspects.

IV. Discussion

Discussion of the Socio-demographic Characteristics of Studied Sample (Table 1) :

Through the data analysis of distribution of the socio-demographic variables, (Table 1) reveals that most of the sample were males (68%). This result was similar to the result of a study done by Pertti who showed that (79.1%) of patients were males. But this result disagrees with Smeltzer who stated that women have higher incidence of coronary artery disease and are more exposed to CABG surgery[5, 6].

The highest proportion (36%) of the sample is within the age group (60 years or more). This result disagrees with a study done by Pertti who indicate that (56.9%) of the sample were less than 65 years old[7].

Regarding environment areas where the sample lives, approximately (69%) of the study sample lived in a rural areas. This disagrees with Apostolakis who found that (70%) were living in modern areas. Nevertheless, this result agrees with satisfied reports from Iraqi MOH, (2014) report which claims that more than (73%) of cardiac patients are from rural areas[8, 9].

According to patients marital status, approximately (57%) of patients were married. This result is similar to two other studies, the first is Kari who showed that (68.4%) of study sample were married, and the other is Noha who found that (84.2%) of the sample were married[10, 11].

Another aspect to be discussed is the educational level, the results revealed that the majority (29%) of the sample graduated from an institute or college. This finding disagrees with a study done by Hasan who found that highest proportion (55.9%) of patients was unable to read and write[12].

Regarding the occupation, the study demonstrated that the majority proportion (30%) were employers. These findings supported by a study done by Palmatier who found that (54.8%) of study sample were employed; on the other hand the above findings disagree with Kari whose study found that (45%) of sample were either retired or jobless[10, 13].

One more important variable was researched, the patient's monthly income, results showed that (52%) of study sample were presented with low income, not enough paid salary. This result was supported by a study done by Abbas who found that (87.8%) of patients were in a low economic status. This also agrees with Nateghian who reported that patients with low economic status are at risk of coronary artery disease[14, 15].

One of the most dangerous well known risk factors for cardiac health problems is smoking. Concerning that , the results of this study escorted that (80%) of the study samples were smokers, This finding

agrees with Abbas who found that (80%) of patients were also smokers. But this result disagrees with Helen where the findings uncovered that approximately (88%) of sample were not smokers[14, 16].

Discussion of the Medical and Surgical History of Studied Sample (Table 2 and 3) :

Through the data analysis of the distribution of the sample according to their medical and surgical history, (Table 2) reveals that the majority proportion (60%) were diagnosed with coronary artery disease 1-5 years before CABG surgery. These findings disagree with Smeltzer who stated that majority of CAD (60%) are diagnosed with CAD in about 3-5 years before CABG surgery[6].

According to the number of blocked vessels, the results showed that majority proportion (41%) of study sample have two blocked vessels. This result agrees with Palmatier who found that (41.9 %) of sample were having two blocked arteries[13].

Regarding the time where CABG operation was done before gathering the studied sample, this study showed that majority of sample (60%) were within a period of 3-6 months post CABG. This result is supported by a study by Pertti who selected approximately (70%) of study sample with a period less than 6 months after CABG surgery[7].

According to the period of staying in ICU unit, the results revealed that the majority of sample (77%) stayed for 4-6 days in ICU unit. This result disagrees with Vlodaver who stated that ICU staying period after a successful CABG surgery ranges from 2-4 days[3].

On the other hand, another variable was discussed; the period of staying in surgical ward, the results showed that the majority of sample (74%) stayed for 4-6 days in surgical wards. This result agrees with Kari who found that (60%) of sample stayed for 4-7 days in the surgical ward after CABG surgery[10]. These findings are presented as a result of postoperative complication in the studied sample.

Regarding the presence of chronic disease, the result reveals that the majority proportion (72%) were having a certain chronic disease. This result agrees with Zingone who found that (73.4%) of the study sample were having certain chronic disease[17].

Through the data analysis of the distribution of chronic disease among study sample, (Table 3) reveals that concerning diabetes mellitus, the results showed that (53%) of patients are not diabetic. These findings agree with a study done by Krane who found that (76.8%) of studied patients were non-diabetics. But this result disagree with study done by Abbas who found that (59.4%) of studied sample were diabetic[14, 18].

Regarding hypertension, the results showed that (55%) were not having hypertension. These results are similar to results revealed by Ghanta who found that (69.7%) of the patients were having hypertension. But these findings disagree with a study done by Abdul-Wahhab who found that only (22%) of study sample were having hypertension[19, 20].

Concerning chronic diseases, another variables were researched; these variables are presence of asthma and rheumatoid arthritis. The results revealed that high proportion (86% and 77%) of patients were not suffering from these chronic diseases. This suggests that there is no significance for the occurrence of coronary artery disease in patients with asthma or rheumatoid arthritis.

Discussion of Association Between Patient's Physical Aspects and Their Demographic Data (Tables 4-10):

Age : The data analysis of Table (4) shows that there was a strong significant relationship between patient's physical aspects and their age at ($P \leq 0.05$), when analyzed by Chi-square test. This result agrees with Kara whose results showed that there was a significant relationship at ($P \leq 0.05$) and that it was centered within age group 40- 50 years old[21].

Gender : Table (5) indicates that there was no significant relationship between patient's physical aspect and their gender at ($P \leq 0.05$). This result disagrees with a study done by William who found that there is a strong significant relationship between patient's physical aspect and their gender at ($P \leq 0.05$) [22]. This result comes up with a fact that males are more prone to develop CAD than females due to personal habits like smoking, excessive alcohol consuming, and increased stress levels.

Marital Status : The findings in Table (6) revealed that there was a moderate significant relationship between patient's physical aspect and their marital status at ($P \leq 0.05$). This result supported by Nissinen who found that there is significant relationship between patient's physical aspect and their marital status at ($P \leq 0.05$) and that married patients are prone to be more careful in regaining their physical activity than single ones[23].

Occupation : The results of data analysis as presented in Table (7) indicate that there is a strong significant relationship between patient's physical aspect and their occupation at ($P \leq 0.05$). This result agrees with Kari who found that there was a significant relationship between patient's physical aspect and their level of education

at ($P \leq 0.02$). On the other hand, this result disagree with a study done by Abbas where his results revealed no significance at all[10, 24].

Another study done by Gupta who found that socioeconomic status indicators; level of education , income, and occupation are associated with CAD risk factors[25].

Smoking : Table (8) indicates that there was a moderate significant relationship between patient's physical aspect and smoking at ($P \leq 0.05$). This result disagrees with a study done by Nissinen who found there was no relationship at all, because majority of his study sample (80%) were non-smokers[23].

Other studies done by Anima and Moosavi come up with a result that the risk for coronary artery disease and need for PCI or CABG increases with smoking[26, 27].

Surgical Ward Lying Period : Table (9) showed that there is a moderate significant relationship between patient's physical aspect and the period of surgical ward lying at ($P \leq 0.05$), when analyzed by Chi-square. These results disagree with Kurlansky who found that there is no relationship between patient's physical aspect and the period of surgical ward lying at ($P \leq 0.05$) and his study also revealed that the patients length period at surgical ward are until his complications verified to be absolutely not threatening[28]. In this study most of patient develop moderate complications after CABG surgery and that led to increase the surgical ward period to (4-7) days post ICU recovery.

Chronic Disease : The results presented in table (10) reveals that there was a strong significant relationship between patient's physical aspect and the presence of chronic disease at ($P \leq 0.05$). This finding supported by Kazanori who found that there was a moderate significant relationship between patient's physical aspect and the presence of chronic disease such as diabetes mellitus and hypertension and coronary vascular disease at ($P \leq 0.02$) [29].

V. Conclusion

There was a significant association between patient's physical aspect and some socio-demographic characteristics (age, marital status, level of education, occupation, and smoking). There was a significant association between patient's physical aspect and some variables of medical and surgical history (surgical ward lying period and presence of chronic disease).

VI. Recommendations

The study recommended that current strategies used to prevent this problem may not be as effective as previously thought and new approaches are needed to minimize these effects. There is a need to find the suitable CABG model that helps improve patient's general health and minimize the restricts in his physical activity post-operatively. Designating and distributing a booklet to all patients undergoing CABG surgery filled with instructions pre and post-operative cardiac rehabilitation are recommended.

References

[1]. Ong ATL, and Serruys PW. : Complete Revascularization; Coronary Artery Bypass Graft Surgery Versus Percutaneous Coronary Intervention, Circulation Research, 114(1), 2006, 249- 255.
[2]. Levine G N., Cardiology Secrets (Philadelphia, Mosby Inc., 2010).
[3]. Voldaver Z., Robert FW., and Daniel J G., Coronary Heart Disease: Clinical Pathological, Imaging and Molecular Profiles (New York, Springer Companies, 2012.
[4]. Hawkes A L., Nowak M., and Speare R. : Outcomes of Coronary Artery Bypass Graft Surgery, Vascular Health and Risk Management Journal, 2(4), 2006, 477-484.
[5]. Pertti Loponen, Micheal Luther, Juha Nissinen. et al.,: EuroSCORE Predicts Health-related Quality of Life After Coronary Artery Bypass Grafting, Interactive Cardiovascular and Thoracic Surgery Journal, 7(1), 2008, 564- 568.
[6]. Smeltzer S C., Bare B., and Hinkle J L. et al., Brunner and Suddarth's Textbook of Medical - Surgical Nursing(Philadelphia, Lippincott Williams and Wilkins Company, 2010).
[7]. Pertti Loponen, Micael Luther, Jan-Ola Wistbaka, et al., : Quality of life during 18 months after coronary artery bypass grafting, European Journal of Cardio-thoracic Surgery, 32(1), 2007, 77-82.
[8]. Apostalakis E, Merkouris A, Pistolas D, et al., : Quality of Life After Coronary Artery Bypass Syrgery in Male Patients: 1- Year Follow-Up, ICU's and Nursing web Journal, 27(1), 2007 1-17.
[9]. Ministry of Health (MOH), Iraq; vital and health statistics department , Statistics for Iraqi hospitals and Health Centers, 2014.
[10]. Kari Hanne Gjeiilo, Alexander Wahba, Pal Klepstad, et al.,: Survival and Quality of Life in an Elderly Cardiac Surgery Population: 5-year follow-up, European Journal of Cardio-thoracic Surgery, 44(10), 2013, 182-188.
[11]. Noha El Baz, Berrie M, Jitse P., et al., : Coronary artery bypass graft (CABG) surgery patients in a clinical pathway gained less in health-related quality of life as compared with patients who undergo CABG in a conventional-care plan, Journal of Evaluation in Clinical Practice, 15(1), 2009, 498- 505.
[12]. Hasan SH. Hakemia : The Impact of Nursing Intervention on the Physical and Psychological Status in Patients Undergoing Pacemaker Implantation, doctoral diss., College of Nursing, University of Baghdad, IRQ, 2006.
[13]. Palmatier D. Andrew : The functioning of patients and partners after the coronary artery bypass graft surgery process: examining the patient's psychosocial and physical adjustment, doctoral diss., Drexel university, Philadelphia, USA, 2008.

[14]. Abbas B. Mohammed : Assessment of Stressful Life Events of Adult Patients with Ischemic Heart Disease in Baghdad City, master thesis, College of Nursing, University of Baghdad, IRQ, 2012.

[15]. Nateghian, S. : Mental Health and Stressful Life Events in Coronary Heart Disease Patients and non- patients, Iranian Journal of Psychiatry, 3(2), 2008, 71- 74.

[16]. Helén Sjoland , Kenneth Caidahl , Ingela Wiklund , et al., : Impact of Coronary Bypass Grafting on Various Aspects of Quality of Life, European journal of Cardio-thoracic Surgery, 12(1), 1997, 612- 619.

[17]. Zingone b, Gatti G, Rauber E, et al., : Early and Late Outcomes of Cardiac Surgery in Octogenarians, Annual Journal of Thoracic Surgery, 87(1), 2009, 71- 78.

[18]. Krane M, Voss B, Hiebinger A, et al., : Twenty Years of Cardiac Surgery in Patients aged 80 Years and Older: Risks and Benefits, Annual Journal of Thoracic Surgery, 91(1), 2011, 506- 513.

[19]. Ghanta RK, Shekar PS, McGurk S, et al., : Long-Term Survival and Quality of Life Justify Cardiac Surgery in the Very Elderly Patient, Annual Journal of Thoracic Surgery, 92(1), 2011, 851-857.

[20]. Abdul-Wahhab M. Musaab : Functional Status of Patient Post Coronary Artery Bypass Graft Surgery at Cardiac Centers and Hospital in Baghdad City, master thesis, College of Nursing, University of Baghdad, IRQ, 2013.

[21]. Kara I, Kolksal G, Aydin G., : The Quality of Life After Cardiac Surgery in Octogenarians and Evaluation of its Early and Mid-term Results, Anadolu Kardiyol Derg Journal, 12(1), 2012, 352-358.

[22]. William L. Haskell : Physical Activity and Public health: Updated Recommendation for Adults from American College of Sports Medicine and American Heart Association, Med-Sci Sports Exercise Journal, 39(8), 2007, 1423- 1434.

[23]. Nissinen J, Wistbaka JO, Loponen P, et al., : Coronary artery bypass surgery in octogenarians: long-term outcome can be better than expected, Annual Journal of Thoracic Surgery, 89(4), 2010, 1119- 1124.

[24]. Abbas K. Yass : Assessment of Quality of Life for Patients with Myocardial Infarction, master thesis, College of Nursing, University of Baghdad, IRQ, 2007.

[25]. Gupta R., : Emerging Importance of Social and Psychological Factors in Coronary Heart Disease, South Asian Journal of Preventive Cardiology, 1(1), 2004, 57.

[26]. Anima, H., Subhashis S., Sankar HR. et al., : Life Events as Risk Factors for Myocardial Infarction; A case control Study in Kolkata, India, Journal of Health, Population and Nutrition, 23(1), 2005, 135- 136.

[27]. Moosavi, M., Eslami O., Bagloo Sh., : and Birashk B. : Mental Strain, More Important Than Stressful Life Events in Myocardial Infarction, Acta Medica Iranica Journal, 42(2), 2004, 125- 130.

[28]. Kurlansky PA, Williams DB, Traad EA., et al., : Eighteen years follow-up Demonstrates Prolonged Survival and Enhanced Quality of Life for Octogenarians After Coronary Artery Bypass Grafting, Journal of Thoracic Cardiovascular Surgery, 141(1), 2011, 394-399.

[29]. Kazanori Y., Mashaiko M., Takaaki S., et al., : Complications in Patients Undergoing Coronary Artery Bypass Grafting, Annual Journal of Thoracic Surgery, 11(1), 2005, 25- 28.