IMPACT OF ISCHEMIC HEART DISEASE ON PATIENT FUNCTIONAL STATUS

Mohammed Hakim Shamran Al-Hchaim, M.Sc.

Abstract:

Objective: aimed to determine anginal patient functional status, to determine myocardial infraction patient's functional status, to find out the impact of Angina on patients functional status, to find out the impact of myocardial infraction on patient functional status and finally to find a correlation of impact of (angina and myocardial infraction) on patient functional status.

Methodology: a descriptive study was carried out through the present study in order to achieve the early stated objectives. The study was begun from January , 1st , 2018 to April, 10th , 2018. The study is conducted in Al-Najaf City/Al-Najaf Al-Ashraf Health Directorate / Al-Sadder Medical City in cardiac units (CCU, Medical ward and Al-Najaf Center for Heart Disease and Surgery). A non-probability (Convenience) sample of forty (40) patients with Ischemic Heart Disease, were included in the present study. The data was collected on structured questionnaire designed specifically for this study, and it is consist of two parts: Part 1 Included Socio-demographic characteristics and clinical data, and Part 2 Include (Functional status). Validity of the study instrument is conducted through a panel of experts who have years of experience in nursing field. Data analysis by using descriptive statistics (percentage, frequency & mean of score) and inferential statistics (Chi-Square and Standard deviation).

Results: the study show that the myocardial infarction and angina has affect on patient physical activity and no significant statistical difference (p value = 0.9) was recorded between MI and angina according to the mean of the overall assessment of functional status .

Conclusion: The researcher can conclude that the MI is more effective than Angina on patient physical activity and patients who are live in residential urban area are more likely to be affected by IHD than rural area.

Recommendation: The study recommends that Instructional program to the patients with IHD care to improve quality of health and health oriented mass media approach should be employed to increase population knowledge and awareness toward ischemic heart disease.

Key wards: Impact, Ischemic Heart Disease, patient, Functional status.

Introduction

Ischemic Heart Disease (IHD) remains in front of heart diseases that can affects many people in the world, in many of developing it is deemed major cause of morbidity and mortality, approximately 42% of total mortalities are related to IHD. Cardiovascular disease including IHD, considered the leading cause of death and affects many women and men, especially in the industrialized countries, (Al-Jubouri, 2012)

The ischemic heart disease is a disease that have spread throughout the world and are considered to be the main cause of dysfunction of the daily patient, in this case there will be an important point to confirm that the patient must adhere to the appropriate treatment to reduce the morbidity and mortality related to Ischemic heart disease. In addition, the IHD is responsible for an impairment of the patient's quality of life and disturbs life process. For this the treatment options refers as the most important thing that the patients must be adhere to it in order to reduce the morbidity and mortality associated with the IHD. These options may include life style changes, pharmacological treatment, catheter based therapy, and surgery. (Thames, 2004). The Patients who be out of initial coronary episode have five to seven times the episode of patients with similar risk factors, but without overt coronary heart diseases (CHD). Improvements in diet, physical activity and other lifestyle measures can reduce heart related diseases risk such as premature death, reduce the need for interventional procedures, and improve quality of life of patients with existing IHD (Ngiap-Chuan, et. al., 2011).

Most, especially older people live with IHD, the health functional status is most important outcome measure to be focused on, especially after hospitalization with (MI) or invasive procedures. Health related Functional status can be considered as a measure of the outcomes of medical technology and diseases control by patients, clinicians, and society alike. Although there is no internationally acceptable definition of health related Functional status, there is a collective agreement that it is a multifaceted foundation with physiological, psychological, emotional, and social components (Gravely-Witte, et al., 2007). Ischemic Heart Disease (IHD) considered basic health problem and cause of death in worldwide. With the aging population and increasing continue life rate of acute MI, overall burden of chronic IHD is on the rise. It has been reported that for every recognized heart attack there are 30 cases of chronic IHD. Chronic stable angina can be considered the primary and distinctive marker of IHD in about 60% of cases (Ahmad, et. al. 2009).

In a world view, considered that IHD is a major cause of death. But in later years it has become an increasing cause in the developing world as well (Bengtsson, 2011). In addition, the mortality caused by cardiovascular diseases have reached about 17.5 million in 2005. The WHO admitted that if appropriate measures are not taken for patient with cardiovascular disease, approximately 20 million people will die from cardiovascular disease every year. According to the WHO, in 1999 there were 7.1 million deaths from cardiovascular disease globally. In 2001 there were 7.2 million deaths from heart disease. In addition that WHO predicts 11.1 million deaths from coronary heart disease in 2020. And there are reports from WHO has shown that is heart disease and stroke kill 17 million persons every year. It is expected that IHD mortality rates will double from 1990 to 2020,

with approximately 82% of the increase attributable to the developing world (Nahapetyan, 2007). In Iraq, IHD is increase every year as a health problem. In 1989, 9487 of patients was admitted to Iraqi hospitals, and in 2010 this number has been doubled to 19963 patients (AL-Bayati, 2014). Al-Sadder Medical City and Al-Najaf Center for Heart Diseases and Surgery record many numbers of patients who were admitted 3319 in 2011; in 2012 the number was 5434, and about 2450 in 2013. 25.23% is the rate of mortality for the heart diseases in 2011, this rate has been decreased to 14.48% in 2012; while in 2013 the rate was 33.68% (Al-Sadder Medical City, Statistical Department, 2014).

Methodology:
Design of the Study:

A descriptive study was carried out through the present study in order to achieve the early stated objectives. The study was began from January , 1st , 2018 to April, 10th , 2018.

The Sample of the Study:

A non-probability (Convenience) sample of forty (40) patients with IHD who are admitted to the Cardiac care ward at Al-Najaf Al-Ashraf Health Directorate of Al-Sadder Medical City (CCU, Medical ward and Al-Najaf Center for Heart Disease and Surgery), were included in the present study .

Setting of the Study :

The study is conducted in Al-Najaf City/Al-Najaf Al-Ashraf Health Directorate / (CCU, Medical ward and Al-Najaf Center for Heart Disease and Surgery).

The Study Instrument:

An assessment tool used to assess the Impact of IHD on patient functional status. The final study instrument consisted of two parts as the following:

Part I: Demographic characteristics:

This part is concerned with the collection of basic socio-demographic data, this part include (age, gender, residency, marital status, education level, socio-economic status, occupation status, diagnosis, duration of disease, Number of previous hospitalizations and smoking).

Part II- Functional status:

comprised of (5) domain including (physical function, psychological function, social/ role function, social activity and quality of interaction).

Data Collection:

The data was collected on structured performa designed specifically for this study and by means of structured interview technique with the subjects who were individually interviewed in the cardiac units by the using of English version of the questionnaire and they were interviewed in a similar way, in the same place, by the same questionnaire for all those subjects who were included in the study sample.

Data Analyses:

In order to achieve the early stated objectives, the data of the study were analyzed through the use of statistical package of social sciences (SPSS) version 19 through descriptive and inferential statistical analyses. The statistical data was analyzed by using descriptive statistics (Frequency, Percentage and Mean of score) and inferential statistics (Chi-Square and Standard deviation).

Ethical Consideration:

This is one of most essential principles before collecting the data, to protect the patient's values and dignity. The researcher obtained this permission from the Ethical committee at the Faculty of nursing / UOK. The researcher promised to keep the patient's information confidential, and use these data for this study only then he explained the purpose of this study to each participant without affecting the routine visiting and care. In addition to above the researcher told each participant that this is an involuntary work, and they can leave any time even the interview process is not completed.

Results

Table (1): Statistical distribution of Anginal patients group by their Socio Demographic Data

Items	Sub-groups	Study group Total = 50	
		Frequency	Percentage
Age / Years	38-55	7	35
	56-73	9	45
	74-91	4	20
Gender	Male	11	55.0
	Female	9	45.0
Marital Status	married	19	95.0
	Unmarried	0	0.0
	Divorced	1	5.0
Residency	Urban	11	55.0
	Rural	9	45.0
Level of education	Illiterate	10	50.0
	read and write	5	25.0
	Primary school	2	10.0
	Secondary school	0	0.0
	College & Postgraduate	3	15.0
Occupation Status	Governmental Employee	2	10.0
	Private Job	1	5.0
	Retired	4	20.0
	House Maker	6	30.0
	Jobless	7	35.0
Economic Status	adequate	4	20.0
	Adequate to Some Extent	12	60.0
	Inadequate	4	20.0

Table (1) shows statistical distribution of patients group by their socio-demographic data, it explains that the majority of the patients subgroup are : patients with ages between (56-73) years old (45%), male patients (55%), married patients (95%), those who live urban residents (55%), those who are illiterate (50%), and finally those with moderate (adequate to some extent) economic status (46%).

Table (2): Statistical distribution of Anginal patients group by their clinical Data

Items	Sub-groups	Study group Total = 50	
		Frequency	Percentage
Duration of the disease	≤ 10	17	85
	> 10	3	15
No. of previous hospitalizations	1-5	11	55
	≥ 6	9	45
No. of Cigarettes per day	0	6	30
	10-30	7	35
	> 30	7	35
Duration of smoking	0	6	30
	18-39	9	45
	≥ 40	5	25

Table (2) shows statistical distribution and differences among patients groups by their clinical data, it explains that the majority of the patients subgroup are : patients with no duration of the disease equal or less than 10 years (85%), patients that had hospitalizations for 1-5 times (55%) . patients that had duration of smoking between 18-39 years (45%).

Table (3): Descriptive Statistics of overall assessment for functional status of patient with Angina

Physical domain's items	M.S.	S.D.	R.S. %	Ass.
Physical Function	1.67	0.33	55.74	Pass
Social activity	1.80	0.11	60	Pass
Quality of Interaction	2.16	0.42	72.08	Failure
Psychological Function	2.08	0.18	69.16	Failure
Social / Role Function	1.96	0.29	65.27	Pass
Global Mean of Score	1.93	0.27	64.45	Pass

Table (3) shows the descriptive Statistics of overall assessment for functional status of patient with Angina, the statistical assessment considers any item (pass) when the mean of score is below than the cut-off point for the mean of score (cut-off point = 2) . Physical function, social activity, social/role function, and global mean of score where reported as (pass).

Table (4): Statistical distribution of MI group by their Socio-Demographic Data

Items	Sub-groups	Study group Total = 50	
		Frequency	**Percentage**
Age / Years	40-58	7	35.0
	59-77	12	60.0
	78-96	1	5.0
Gender	Male	12	60.0
	Female	8	40.0
Marital Status	married	20	100.0
	Unmarried	0	0.0
	Divorced	0	0.0
Residency	Urban	17	85.0
	Rural	3	15.0
Levels of Education	Illiterate	5	25.0
	read and write	3	15.0
	Primary school	7	35.0
	Secondary school	3	15.0
	College & Postgraduate	2	10.0
Occupation Status	Governmental Employee	3	15.0
	Private Job	0	0.0
	Retired	3	15.0
	House Maker	8	40.0
	Jobless	6	30.0
Economic Status	adequate	5	25.0
	Adequate to Some Extent	14	70.0
	Inadequate	1	5.0

Table (4) shows statistical distribution of patients group by their socio-demographic data, it explains that the majority of the patients subgroup are : patients with ages between (59-77) years old (60%), male patients (60%), married patients (100%), those who live urban residents (85%), those who are house maker (40%), and finally those with moderate (adequate to some extent) economic status (70%).

Table (5): Statistical distribution of MI group by their clinical data

Items	Sub-groups	Study group Total = 50	
		Frequency	**Percentage**
Duration of the disease	≤ 1	5	25
	2-9	11	55
	≥ 10	4	20
No. of previous hospitalizations	1-2	15	75
	3-6	5	25
No. of Cigarettes per day	0	8	40
	10-30	7	35
	> 30	5	25
Duration of smoking	0	6	25
	1-15	6	30
	> 15	8	40

Table (3.4) shows statistical distribution and differences among patients groups by their clinical data, it explains that the majority of the patients subgroup are : patients with no duration of the disease (2-9) years (55%), patients that had hospitalizations for 1-2 times (75%) , and patients that are smokers (40%).

Table (6): Descriptive Statistics of overall assessment for functional status of patient with MI

Physical domain's items	M.S.	S.D.	R.S. %	Ass.
Physical Function	1.62	0.26	53.89	Pass
Social activity	2.00	0.11	66.67	Failure
Quality of Interaction	2.18	0.28	72.50	Failure
Psychological Function	2.00	0.05	66.67	Failure
Social / Role Function	1.95	0.31	65.00	Pass
Global Mean of Score	1.95	0.20	64.94	Pass

Table (3.15) shows the descriptive Statistics of overall assessment for functional status of patient with Angina, the statistical assessment considers any item (pass) when the mean of score is below than the cut-off point for the mean of score (cut-off point = 2). Physical function, social/role function, and global mean of score where reported as (pass).

Table (7): Differences between MI and angina according to the mean of the overall assessment of functional status

MI (Mean ±SD)	Angina (Mean ±SD)	P value
1.95 ± 0.2	1.93 ± 0.2	0.9

According to table (3.16) no significant statistical difference (p value = 0.9) was recorded between MI and angina according to the mean of the overall assessment of functional status.

Discussion:
Part-I: Discussion of the socio-demographic and clinical data related to the Anginal and Myocardial infraction Patients:

The results of study shows the majority of the patients who are at age group(56-73) . About the gender of the study subject , the highest percentage were male. Regarding the marital status this result match with the result of (Spertus, *et.al*., 2005) they mentioned that The mean age of participants was 59 years. Also the result agree with (Pilote, *et. al*., 2005) in his study " Better Functional Status in American Than Canadian Patients With Heart Disease: An Effect of Medical Care?" mention the patient age (60) years and high percentage of study sample were male.

The present study shows that all them are married except one are divorced. Relative to the residency , the present study shows that the majority of the study sample is living in urban residential area High present of the study sample are illiterate up to half . this result supported by (Vincent, et al., 2004) stated that the majority of study sample are married and graduated from primary school.

About the occupational status were the jobless are most common. This result match with the result of by (Vincent, et al., 2004) They conclude high percentage of study subjects not working about (77.1%). In addition to the duration of disease , the higher percentage for those who suffering from the disease for 10 years or less. which is inconsistency with (Alonso, et. al., 1997) stated that the patient infected by IHD for more than (10) years. Relative to the number of previous hospitalizations , the higher percentage are for those who are admitted to the hospital from one to five times previously. The result of this study supported by (Holland, et. al., 2010) they mentioned that the patients were readmitted to hospital at least once during the follow-up period.

Part-II: Discussion the Functional Status of Patients with Angina:

The result that shows in this present study that in this study sample the patient with Angina have passed with three of five (Physical Function, Social activity, Social / Role Function).while fail in to items (Quality of Interaction, Psychological Function). They come along with (Vincent, et. al., 2004) stated that was significantly higher than correlation with physical limitation, angina frequency, or angina stability (r=.11 to .15; Po.0001 for comparison between correlations).

Part-III: Discussion the Functional Status of Patients with MI:

The result that shows in this present study that in this study sample the patient with MI have passed with two of five items (Physical Function , Social / Role Function), while fail with three items (Social activity, Quality of Interaction, Psychological Function). This result match with (Sleeper, et. al., 2005) in their study shows the transition rates from functional class at two weeks after discharge to one-year post-MI. Similar proportions of patients improved in both treatment groups (22% in IMS and 15% in ERV group), but fewer patients remained stable (44 %vs. 71%) and more patients worsened (34% vs. 15%) in the IMS group.

Conclusions:

According to the result of present study, the researcher concluded that MI patients is more effect than Angina on physical activity. Patients who are live in residential urban area are more likely to be affected by IHD than rural area. The study conclude that the most of angina and MI patients are smoker.

Recommendations:

Base on the result of the present study the researcher recommended are following:

1. Instructional program to the patients with IHD to improve quality of health.

2. An intensive comprehensive wide population-based (national level) studies could be conducted to assess the factors which affect the functional status after the IHDs, with a suitable solutions for these factors to improve the patients functional status.

3. Health oriented mass media approach should be employed to increase population knowledge and awareness toward ischemic heart disease.

4. Establishment of special policies deal with the monitoring and managing the problems that are associated with the patients' functional status.

References:

1. Ahmad, U., Saleheen, D., Zaidi, M., Rasheed, A., Hakeem, A., Murtaza, M., ... & Yaqoob, Z. (2009). The Pakistan Risk of Myocardial Infarction Study: a resource for the study of genetic, lifestyle and other determinants of myocardial infarction in South Asia. European journal of epidemiology, 24(6), 329-338.

2. AL-Bayati, D.: Assessment of Factors Affecting on Patients' Adherence to Therapeutic Recommendations after Ischemic Heart Diseases in Al-Najaf City, Unpublished thesis, College of Nursing, University of Baghdad, 2014, p. 19.

3. Al-Jubouri, M.: Assessment of Stressful Life Events of Adult Patients with Ischemic Heart Disease in Baghdad City. Published Thesis, University of Baghdad, College of Nursing, p.p. 2-11.

4. Alonso, J.; Brotonsf, P.; Solerf, J.: Measuring functional status of chronic coronary patients: European Heart Journal (1997) 18, 414-419.

5. Al-Sadder Medical City, Statistical Department, 2014.

6. Bengtsson, I. (2011). Psychosocial and stress-related aspects on Ischemic Heart Disease. Institute of Medicine. Department of Molecular and Clinical Medicine.

7. Gravely-Witte, S., De Gucht, V., Heiser, W., Grace, S. L., & Van Elderen, T. (2007). The impact of angina and cardiac history on health-related quality of life and depression in coronary heart disease patients. Chronic illness, 3(1), 66-76.

8. Halsey, H. N. (2008). Investigating a parent implemented early literacy intervention: Effects of dialogic reading using alphabet books on the alphabet skills, phonological awareness, and oral language of preschool children. University of Massachusetts Amherst.

9. Holland, R.; Rechel, B.; Stepien, K.; Brooksby, I.: Patients' Self-Assessed Functional Status in Heart Failure by New York Heart Association Class: A Prognostic Predictor of Hospitalizations, Quality of Life and Death: Journal of Cardiac Failure Vol. 16 No. 2 February 2010: 150-156.

10. Nahapetyan, A.: Factors after Coronary Artery Bypass Surgery (CABG) and Adherence to Medication and Lifestyle Changes in Armenia (A cross-sectional study), College of Health Sciences American University of Armenia Yerevan, Armenia, 2007, p.:1.

11. National Agricultural Library, Glossary (2014).

12. Ngiap-Chuan, T., Wei, S., & Seng-Lian, C. (2011). Lifestyle modifications of patients with coronary heart disease on follow up in public primary care center in Singapore: assessment of perception and behavior. The. Singapore family physician, 173(1), 67-72.

13. Pilote, L.; Bourassa, M.; Bacon, C.; Bost, J.; Detre, K.: Better Functional Status in American Than Canadian Patients With Heart Disease: An Effect of Medical Care?; J Am CoU Cardiol 2005; 26:1115-20.

14. Sleeper, L.; Ramanathan, K.; Picard, M.; LeJemtel, T.; White, H.; Dzavik, V.; Tormey, D.: Functional Status and Quality of Life After Emergency Revascularization for Cardiogenic Shock Complicating Acute Myocardial Infarction: Journal of the American College of Cardiology Vol. 46, No. 2, 2005: ISSN 0735-1097/05/$30.00.

15. Spertus, J. A., Jennifer A. Winder, Bs, Timothy A. Dewhurst, Facc T Richard A. Deyo, M, Janice Prodzlnski, Ba,Mary Mcdonell, Ms,* Stephan D. Fihn, Md, (2005). Development and Evaluation I?f the Seattle Angina Questionnaire: A New Functional Status Measure for Coronary Artery Disease. American College of Cardiology, 25:333-41).

16. Spertus, J. A., Sedlis, S. P., Hartigan, P. M., Teo, K. K., Maron, D. J., Mancini, G. J., ... & Dada, M. (2015). Effect of PCI on long-term survival in patients with stable ischemic heart disease. New England Journal of Medicine, 373(20), 1937-1946.

17. Stedman, M. R., Kesselheim, A. S., Misono, A. S., Lee, J. L., Brookhart, M. A., Choudhry, N. K., & Shrank, W. H. (2008). Clinical equivalence of generic and brand-name drugs used in cardiovascular disease: a systematic review and meta-analysis. Jama, 300(21), 2514-2526.

18. Taylor, R.; Lillis, C.; Mone, L; Lynn, P.: Fundamental of Nursing , Seventh Edition, Lippincott Company, U.S.A., 2011, p. Glossary G-15.

19. Thames, M.; Sease, D; Damian, A: Ischemic Heart Diseases: an Overview. Adanced Studies in Medicine., 2004, 4(10), p.p. 794-802.

20. Vincent S.; Reiber, G.; Diehr, P.; Burman, M.; McDonell, M.; Fihn, S.: Functional Status and Patient Satisfaction (A Comparison of Ischemic Heart Disease, Obstructive Lung Disease, and Diabetes Mellitus) :Health Services Research and Development Center of Excellence, VA Puget Sound Health Care System, Seattle, WA, USA; 2004; 452-459.