Assessment of Patients' Adherence to Therapeutic Recommendations after Ischemic Heart Diseases in Al-Najaf City

تقييم التزام المرضى بالتوصيات العلاجية بعد الاصابة بامراض القلب الناتجة عن قلة التروية في مدينة النجف

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الخلاصة:
خلفية البحث : تستمر أمراض القلب لتصبح مشكلة صحية عالمية، و تؤثر على ملايين الأشخاص في العالم. و كذلك تؤثر أمراض القلب على الأشخاص في جميع الأعمار و هي ليست أمراض تصيب كبار السن فقط
الهدف: تهدف الدراسة الحالية إلى تقييم التزام المرضى بالتوصيات العلاجية بعد الإصابة بأمراض القلب الناتجة عن قلة التروية. وإيجاد العلاقة بين الخصائص الشخصية والسريرية للمرضى مع مستوى التزام المريض بالتوصيات العلاجية.
المنهجية: أجريت دراسة وصفية في مدينة الصدر الطبية / مركز النجف لأمراض و جراحة القلب في محافظة النجف، للفترة من الخامس من حزيران، ٢٠١٤ ولغاية العاشر من نيسان، ٢٠١٤. اختيرت عينة غير احتمالية "غرضيه" تكونت من (١٠٢) مريض يعاني من أمراض القلب الناتجة عن قلة التروية (الذبحة الصدرية و الجلطة القلبية). وجمعت المعلومات من خلال استخدام الاستبانة المكونة من ثلاثة أجزاء تكون الجزء الأول من البيانات الشخصية و السريرية للمرضى. والجزء الثاني شمل نموذج التزام المرضى بالتوصيات العلاجية. تم وصف و تحليل البيانات باستخدام الإحصاء الوصفي والاستنباطي.
النتائج : أظهرت نتائج الدراسة إن المرضى اللذين يعانون من أمراض القلب الناتجة عن قلة التروية ملتزمين بصورة متوسطة بالتوصيات العلاجية .و هنالك علاقة ذات دلالة إحصائية للإقامة، الجنس، و الحالة المهنية للمرضى على مدى التزامهم بالتوصيات العلاجية.
الاستنتاج: هنالك ضعف بالتزام المرضى بالتوصيات العلاجية.
التوصيات:العمل على إقامة دراسات مكثفة و شاملة لتقييم التزام المرضى بالتوصيات العلاجية و العوامل المؤثرة على مدى التزامهم، و إيجاد حلول مناسبة لتلك العوامل لتحسين مستوى التزام المرضى.

ABSTRACT
Background: Cardiovascular diseases (CVD) continue to become a global health problem, and affect a millions of people worldwide. Also the cardiovascular diseases affect people at all ages and it's not just a disease of elderly.
Objectives To assess of patients adherence to therapeutic recommendations after ischemic heart diseases. And to find out the association between the patients' demographic and clinical data and their adherence to therapeutic recommendations.
Methodology descriptive Study is carried out in Al-Najaf Health Directorate / Al-Sadder Medical City/ Al-Najaf Center for Heart Diseases and Surgery, from June, 5th, 2013 to April, 10th, 2014. A non-probability (purposive sample) of (102) patients with ischemic heart diseases (angina and myocardial infarction), were included in the study. The data are collected through the use of a questionnaire, which consists of three parts one includes Socio-demographic and clinical data form, part two, includes patients adherence to therapeutic recommendations form. The data were described statistically and analyzed through use of the descriptive and inferential statistical analysis approaches.
Results The study results show that the patients with ischemic heart diseases are fairly adhere to therapeutic recommendations. And there is a significant relationship of the residency, gender, and the patients occupational status on their adherence to therapeutic recommendations.
Conclusion, There is a deficient in the patients' adherence to therapeutic recommendations.
Recommendations, An intensive comprehensive studies could be conducted to assess the patients adherence to therapeutic recommendations and the factors that may affect such adherence, with a suitable solutions for these factors to improve the level of patients adherence.
Key wards: assessment, patients adherence, ischemic heart diseases

INTRODUCTION:

Cardiovascular diseases (CVD) continue to become a global health problem, and affect a millions of people worldwide. Also the cardiovascular diseases affect people at all

ages and it's not just a disease of elderly. Also the ischemic heart disease (IHD) still a most important group of heart diseases that affect a millions of people worldwide, and its considerable the main cause of morbidity and mortality in many of developing countries. approximately 42% of total mortalities are related to IHD. In the industrialized countries, cardiovascular disease including IHD, is the leading cause of death and affects as many women as men [(1)].

Patients who survive the initial coronary event have five to seven times the event rate of patients with similar risk factors but without overt CHD. Improvements in diet, physical activity and other lifestyle measures can decrease absolute cardiovascular risk such as premature death, reduce the need for interventional procedures and improve quality of life of patients with existing CHD [(2)].

World Health Organization (WHO), focused on the fact that the efficacious treatment not always enough to keep optimal outcomes. In addition to the efficacious treatment the patients' adherence to that treatment is an important thing that will keep an optimal outcomes. Ischemic heart diseases required not only for the medications to improve the patients' health status, but also required a life style modifications, and follow up. And all of these aspect are required to keep an optimal outcomes and improve the patients' health status, as well as, reduce the numbers of morbidity and mortality. Also the patients adherence can reduce the cost and burden of health care services among families and the health care setting. Furthermore, many patients' may render that treatment is not effective, but the basic problem that make the treatment is not effective is the patients not adherence to that treatment. In addition the adherence to life style modifications can keep a healthy benefits even at the risk factors level. All the modifiable risk factors can be eliminated through the patients adherence to therapeutic recommendations, as well as, controlling the onset, prognosis, and the outcomes of the illness [(3,4)].

The problem of non-adherence to therapeutic recommendations remains a challenge for the medical professions and social scientists. Their efforts to explain and improve patient adherence often appear to be ineffective. Although successful adherence interventions do exist, half of interventions seem to fail and adherence theories lack sufficient explaining power. As a result of the widespread problem of adherence, substantial numbers of patients do not get the maximum benefit of medical treatment, resulting in poor health outcomes, lower quality of life and increased health care costs. In spite of many advances made in adherence research, non-adherence rates have remained nearly unchanged in the last decades [(5)].

Rate of adherence is usually reported as the percentage of the prescribed doses of the medication actually taken by the patient over a specified period [(6)].

The extent of non-adherence varies widely, and in different studies it has been recorded as low as 10 percent and as high as 92% [(7)]. Extensive review of the literature reveal that in developed countries adherence to therapies averages 50% [(8)].

Jin, et.al. (2008), believe that the patients with health problems may focus on specific needs which reflex their point of view or concern. So, the health care staff try through their different roles to provide the patients with their needs, i.e. these needs are refer the desired outcomes. The ultimate goal of any intervention is to achieve these desired outcomes, and to improve the patients' stability. These outcomes might not be achieved unless the patients adhere to the therapeutic recommendations [(9)].

Also the patients with chronic diseases may face some difficulties if they want to adhere to therapeutic recommendations. These difficulties may interfere with the patients therapeutic regimen, and may cause a less optimal outcomes and a less control over the disease process. In addition, the poor adherence is the primary reason to lessen the therapeutic benefits. when the therapeutic benefits are not achieved they will affect the patients' health status, and their quality of life. Furthermore, the poor adherence may affect the distribution of

the health care services and health care resources, and increases the morbidity and mortality rates. Together, these direct consequences impair the ability of health care systems around the world to achieve population health goals [4];[10].

METHODOLOGY:

Study Design

A Descriptive Study is carried out in Al-Najaf Health Directorate / Al-Sadder Medical City/ Al-Najaf Center for Heart Diseases and Surgery, from June, 5th, 2013 to April, 10th, 2014.

Study Sample

A non-probability (purposive sample) of (102) patients diagnosed medically as an ischemic heart disease patients (angina and myocardial infarction) by the cardiologist in the Al-Najaf Center for Heart Diseases and Surgery.

Instrument

An assessment tool was based on the previous literature and developed by the researcher to assess the patients adherence to therapeutic recommendations after ischemic heart diseases. The final study instrument consisting of three parts:

(1) Socio-demographic and Clinical data form
(2) Patients adherence to therapeutic recommendations form.

Data Collection

The data were collected through the utilization of the developed questionnaire and by means of structured interview technique with the subjects who are individually interviewed, and they are interviewed in a similar way, by the same questionnaire.

Ethical Considerations

The researcher obtained a legal governmental agreements before conducting the study, also the objectives are explained clearly to the study participants and the participation was voluntarily.

Data Analysis

In order to achieve the early stated objectives, the data of the study are analyzed through the use of statistical package of social sciences (SPSS) version 16 through descriptive and inferential statistical analyses.

RESULTS :

Table (1) Distribution of the Study Sample by their Demographic Data with a Comparison Significant

Demographic Data	Groups	Freq.	Percent	Valid Percent	C.S. P-value
Residency	Rural	24	23.5	23.5	Binomial test P = 0.000 HS
	Urban	78	76.5	76.5	
Gender	Male	63	61.8	61.8	Binomial test P = 0.022 S
	Female	39	38.2	38.2	
Age Groups/ years	<= 38	2	2	2	χ^2= 77.314 P = 0.000 HS
	39 - 51	25	24.5	24.5	
	52 - 64	52	51	51	
	65 - 77	17	16.7	16.7	
	78+	6	5.9	5.9	
Mean ± SD		57.96 ± 10.987 yrs.			
Marital Status	Married	91	89.2	89.2	χ^2= 2.260 P = 0.000 HS
	Widow	9	8.8	8.8	
	Divorced	1	1	1	
	Separate	1	1	1	
Level of Education	Illiterate	10	9.8	9.8	χ^2= 19.059 P = 0.004 HS
	Able to Read and Write	19	18.6	18.6	
	Primary School Graduated	28	27.5	27.5	
	Intermediate School Graduated	14	13.7	13.7	
	Secondary School Graduated	11	10.8	10.8	
	Institute	11	10.8	10.8	
	College and Post Graduated	9	8.8	8.8	
Occupational Status	Governmental	25	24.5	24.5	χ2= 8.196 P = 0.085 NS
	Private	22	21.6	21.6	
	Retired	17	16.7	16.7	
	House Wife	27	26.5	26.5	
	Jobless	11	10.8	10.8	

n (102); Non-significant at p-value more than 0.05; S, significant at p-value less than 0.05; HS, highly significant at p-value less than 0.01

Table (1) indicates that the majority of the study sample are living in urban residential area (76.5%) of the completely sample. also shows that the more of the study subjects (61.8%) are males. In addition, the dominant age group of the study sample is within the (52-64) years (51%) with mean and standard deviation equal to 57.96 and 10.987 respectively. In regarding to the subjects marital status, the majority of the study sample are married (89.2%). Also in regarding to the subjects levels of education, the results show that the more of the study sample are primary school graduated (13.7%), and (26.5%) of them are housewife's.

Furthermore, this table also shows the comparison significant levels, which related to each of the patients demographic data as a high significant comparison level at p-value equal to 0.000 for the patients' residency, age groups, marital status, and levels of education. In addition, the patients' gender presents with a significant level of comparison significant, at p-value equal to 0.022. While the patients occupational status presents with a non-significant level of comparison significant, at p-value ≥ 0.05.

Table (2): Distribution of the Study Sample by their Clinical Data with a Comparison Significant

Clinical Data	Groups	Freq.	Percent	Valid Percent	C.S.(*) P-Value
Diagnosis	Angina	57	55.88	55.88	Binomial Test P = 0.276 NS
	Myocardiac Infarction	45	44.11	44.11	
Duration / Years	<= 1.00	54	52.9	52.9	χ^2= 117.21 P = 0.000 HS
	1.01 - 4.50	39	38.2	38.2	
	4.51 - 8.00	5	4.9	4.9	
	8.01 - 11.50	3	2.9	2.9	
	11.51+	1	1	1	
Receiving of Health Education	Yes	75	73.5	73.5	Binomial Test P = 0.000 HS
	No	27	26.5	26.5	
Sources of the Received Health Education	Physician	44	43.1	43.1	χ^2= 1.77 P = 0.000 HS
	Nurse	8	7.8	7.8	
	Medical Journals	5	4.9	4.9	
	Not Receiving Health Education	27	26.5	26.5	
	Physician and Nurse	9	8.8	8.8	
	Physician and Television	2	2	2	
	Nurse and Medical Journals	3	2.9	2.9	
	Physician, Nurse, and Medical Journals	1	1	1	
	Physician, Nurse, and Television	2	2	2	
	Physician, Television, and Internet	1	1	1	
Number of Previous Hospitalization	1	19	18.6	18.6	χ^2= 167.02 P = 0.000 HS
	2	71	69.6	69.6	
	3	9	8.8	8.8	
	4	2	2	2	
	5	1	1	1	

n (102), Non-significant at p-value more than 0.05; S, significant at p-value less than 0.05; HS, highly significant at p-value less than 0.01

Table (2) shows that the more than half of the study sample are suffering from angina (55.88%). In addition to that and in regarding to the duration of disease, the higher percentage is one year and less (52.9%). In regarding to the receiving of health education about the therapeutic recommendations, the results show that the majority of the study subjects are received health education (73.5%). Furthermore, most of the study sample (43.1%), they recieved the health education by the physician.

Relative to the number of previous hospitalization, most of the study subjects (69.6%) are admitted to the hospitals two times previously.

Furthermore, this table also shows the comparison significant levels, which are related to each of the patients clinical data. A high significant comparison level at p-value equal to 0.000 for all the patients clinical data except for the patients diagnosis, the level of comparison are a non-significant, at p-value ≥ 0.05.

Table (3): Assessment of the Patients' Adherence to Therapeutic Recommendation

Patients' Adherence Main Domains	Rating	Frequency	Percent.	M.S	S.D	Sig.	Assessment
	Poor	2	2				
Dietary Recommendations	Fair	59	57.8	2.09	0.77	S	Fair
	Good	41	40.2				
	Poor	3	2.9				
Healthy Behaviors	Fair	40	39.3	2.09	0.79	S	Fair
	Good	59	57.8				
	Good	9	8.8				
Medications	Fair	30	29.4	1.67	0.3	S	Fair
	Poor	63	61.8				
	Poor	1	1				
Follow Up	Fair	100	98	2.19	0.8	S	Fair
	Good	1	1				
	Poor	3	2.9				
Overall assessment for the patients' adherence	Fair	52	51.0	2.05	0.78	S	Fair
	Good	47	46.1				

n (102); S (significant at M.S 1.67-2.33)

Table (3) indicates that the patients' responses are fair at all the studied domains. Furthermore, the overall assessment for the patients' adherence to therapeutic recommendations is fair.

Table(4): Association between the Patients' Demographical Data with their Overall Adherence to Therapeutic Recommendations

Demographic Characteristics	Rating	Overall Patients' Adherence			C.C.	df	Sig.
		Poor	Fair	Good			
Residency	Rural	3	18	3	0.317	2	χ^2= 11.382 P = 0.003 HS
	Urban	0	57	21			
Gender	Male	2	53	8	0.309	2	χ^2= 10.762 P = 0.005 HS
	Female	1	22	16			
Age / Years	<= 38	0	2	0	0.241	8	C.C.= 6.302 P = 0.613 NS
	39 - 51	1	15	9			
	52 - 64	2	42	8			
	65 - 77	0	12	5			
	78+	0	4	2			
Marital Status	Married	3	67	21	0.119	6	χ^2= 1.457 P = 0.962 NS
	Widow	0	6	3			
	Divorced	0	1	0			
	Separate	0	1	0			
Level of Education	Illiterate	0	9	1	0.372	12	χ^2= ١٦.٣٦٢ P = 0.175 NS
	Able to Read and Write	2	13	4			
	Primary School Graduated	1	22	5			
	Intermediate School Graduated	0	11	3			
	Secondary School Graduated	0	10	1			
	Institute	0	5	6			
	College and Post Graduated	0	5	4			
Occupational Status	Governmental	0	16	9	0.418	8	χ^2= 21.639 P = 0.006 HS
	Private	0	21	1			
	Retired	0	14	3			
	House Wife	1	16	10			
	Jobless	2	8	1			

NS: Non-Sig. at P>0.05, HS: high significant at p-value less than 0.01.

The study results indicate that there is a high significant association between the overall patients' adherence to therapeutic recommendations with their residency, gender, and occupational status, at p-value less than 0.01. Add to this, there is a non-significant association with their age groups, marital status, and level of education at p-value more than 0.05.

DISCUSSION:

The results of the present study show that the majority of the sample living at urban residential area, and the remaining are living in the rural ones. In addition, these result comes

because of the ischemic heart diseases that refer to a modern scourge of industrialized society. Moreover, the ischemic heart diseases may increase in incidence among those persons in urban residential area, than in those from rural [11,12]. Also those persons in rural residential area often experience a physical exercises every day as compared with those in urban, that make them less risky to get ischemic heart diseases. Furthermore, the individuals in rural residential areas, are more prone to get ischemic heart diseases due to the risk factors that are more focused in urban than in rural areas such as the psychological stress.

Regarding to the study subjects gender, the results indicate, that the higher percentage of the study sample are males. This result comes along with the fact that the gender differences in the broad scope of health and illness have been the subject of extensive investigation, and are also currently gaining more attention in nursing. Women and men emphasize different aspects of their lives when evaluating their level of quality of life and life satisfaction. This will lead to the fact that the ischemic heart disease are more common in men than in women [12,13].

Regarding to the sample age groups, the study results indicate that the higher percentage of the study sample are within (52 - 64) years old. These results are supported with many scientific facts, which report that the risk for ischemic heart diseases increase as the individuals' age increase. This fact is related to many factors: one of them, is that individuals with advanced age are less attendance to perform regular physical exercise and this related to the physical impairment of the ageism phenomenon. The risk for hypertension and diabetes mellitus increase as the patients age increase. Which will participate in increasing the incidence of ischemic heart diseases in those people with an advanced age [14]. Also the Iestra and others [15], state that the ischemic heart disease (e.g. myocardial infarction (MI) or angina pectoris (AP)), constitutes a large percentage of the secondary prevention groups. And this group is characterized by older age (80%) are older than 50 years) and a minority of women (30%). The difference between the male and female in regarding to the incidence rate among different kinds of diseases, refers to many factors such as physiological, psychological factors, that put men more as vulnerable to get ischemic heart disease than female. But these differences will decrease as the female age becomes more advanced.

Regarding to marital status, the majority of study sample are married. This result is agreed with Bisiriyu (2008) [16], He finds that the highest percentage is for married patients. In addition, it's clear that the patients in the same age are often married when compared with those with early age groups. Also those patients are part of the east population, those population often marry early, as compared with other people from other cultures.

Concerning the educational levels, the higher percentage are for those who are graduated from primary schools. This result agrees with Lee and Mittelstaedt (2009) [17], all of them find that the majority of the study subjects are secondary school graduated.

Regarding occupational status, the highest percentage is for the housewives followed by the employed patients. These results come because most of the females are of advanced age who prefer to work in their houses because of the alteration in the physical status. While for the employee this result is supported with Bisiriyu (2008) [16], the results indicate that the highest percentage are for employee patients.

In regard to the diagnosis, the results indicate that the higher percentage are for angina. This result is supported with the Brown et. al., (2008) [18], the results indicate that the higher percentage are for patients those who are suffering from angina.

In addition to the duration of disease, the higher percentage are for those who are suffering from the disease for one year and less. Concerning the receiving of health education about the therapeutic recommendations, the results show that the majority of the study subjects are received health education. And the physician is the major source of the received health education.

Relative to the number of previous hospitalization, the higher percentage are for those who are admitted to the hospital two times previously.

These results come because the patients who are admitted to the hospital are often from those with a new suffering, and the more stable patients are being adapted with their cases, and often depend on the therapeutic regimen without the need to be admitted to the hospital unless it is indicated. In addition, the new suffering patients need to be educate about the disease and the therapeutic regimen. It is known in Iraqi hospitals and in light of the job prescription published by the ministry of health, that the physician is the person who conveys the first meeting with patients, and provides the health education to the patients.

Also Rippe, et., al.(2007) [19] mention that Health Care Workers, in general, and physicians, in particular, occupy positions of enormous influence in helping patients take positive lifestyle actions to lower their risk of CHD. Physician recommendations to make changes in behaviors such as adherence to medical regimens, improving diet, and stopping cigarette smoking10 have all been demonstrated to play a very important role.

Numerous studies have shown that the public perceives physicians as an extremely reliable and credible source of advice and information regarding health behaviors. Unfortunately, physicians often underestimate their role as health counselors. The average adult in the United States visits a physician's office more than 5 times per year. It has been estimated that physicians come in contact with more than 75% of adults in the United States in any given year. Furthermore, when patients come into a clinical setting, they are typically seeking improvement in their health. This provides further motivation for patients to adopt behaviors recommended by physicians. The study results show that the final assessment of the patients adherence to therapeutic recommendations is fair.

These results mean that there is a deficient in the patients adherence to the therapeutic recommendations after ischemic heart diseases. And this defect present clearly thrugh the patients responses to the different studied domains. The major non a dherence present through the patients responses to the medications domain. while the minor non adherence presented through the patients responses to the dietary recommendations, and the follow up domains. This results are supported with the Bisiriyu (2008) [16], whose study results indicate that the level of patients' adherence to medications and the lifestyle change are only 62.6% and 48% respectively. Also the WHO reports that the patients adherence to therapeutic recommendations is a major and an important issue worldwide, and the problem of non-adherence among patients with chronic diseases is an important thing that all the health staff must be focused in.

The study results show that there is a significant effect of the patient's residency, gender, and occupational status on their adherence to therapeutic recommendations. While there is a non significant effect due to their age groups, marital status, level of education, and all the studied clinical data variables. These study results are supported with the Desai and Choudhry (2013) [20], the results of their study indicate that there is a significant effect of the patients gender on their adherence to the recommendations provided by the health care providers. Levesque, et.al., (2012) [21], find that there is a non significant effect of the patients' level of education, marital status, and their clinical data, on their adherence to therapeutic recommendations.

CONCLUSIONS:

The study concluded that the ischemic heart disease most common occurs among persons in urban residential area than in those in rural. And in male more than in females. The disease most occurs in patients with advanced age. The patients with IHDs take a good opportunity to receiving a health education regarding the therapeutic recommendations by the

physician. The patients have less opportunity to continue their education, There is a deficient in the patients' adherence to therapeutic recommendations. And the demographic data have a significant impact on the patients adherence.

RECOMMENDATIONS:

1- The researchers recommend An intensive comprehensive wide population-based studies could be conducted to assess the patients adherence to therapeutic recommendations after the IHDs, with a suitable solutions for the adherence affecting factors to improve the level of patients adherence.
2- A health education programs should be implemented to increase the patients knowledge about the importance of adherence and the factors that may affect their adherence and the possible solutions for this problem.
3- Reinforcement should be employed, for example at home visits, visits to the outpatients clinic or by telephone can help patients to cope with their therapeutic regimen. Prevention of confusion: prevention of confusion about seemingly contradictory recommendations must be part of the educational plan for ischemic heart disease patients in order to improve their adherence.

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