

Assessment of Congestive Heart Failure Patients Knowledge and Compliance in Kirkuk

تقييم معارف والتزام مرضى عجز القلب الإحتقاني في مدينة كركوك

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الخلاصة :-

خلفية البحث :- يعتبر مرض عجز القلب لإحتقاني من الأمراض التي ترتبط بالدرجة الأساس بالعمر و يصيب في الغالب الأشخاص الذين تتجاوز اعمارهم ٦٠ سنة. ويسبب في موت الكثير من الناس. وتعليم المرضى من قبل الملاك التمريضي حول تشخيص وعلاج عجز القلب الإحتقاني يقلل من تكرار دخول المريض الى المستشفى مما يساعد في تحسين نوعية حياة المرضى

الهدف: تهدف الدراسة الحالية هو تقييم معارف والتزام المرضى المصابين بعجز القلب الإحتقاني في مدينة كركوك بالإضافة إلى إيجاد العلاقة بين معارف والتزام المرضى مع بعض الخصائص الديموغرافية مثل العمر، الجنس، المستوى التعليمي والسكن..

المنهجية: أجريت الدراسة الوصفية في ثلاث مستشفيات داخل مدينة كركوك (مستشفى آزادي التعليمي و مستشفى كركوك العام و مستشفى دافوق العام) للمدة من ١ حزيران ٢٠١٢ و لغاية ٣١ تموز ٢٠١٣ ولتحقيق أهداف الدراسة اختيرت عينة غرضية غير احتمالية مكونة من (٧٥) مريضاً مشخصين بعجز القلب الإحتقاني من الرافدين في ردهات الباطنية و وحدات الإنعاش القلبي في مستشفى آزادي التعليمي و مستشفى كركوك العام و مستشفى دافوق العام في محافظة كركوك. ولغرض جمع المعلومات صممت استمارة استبيان تتكون من (54) فقرة. واستخدم مقياس يتألف من ثلاث مستويات للإجابة: (3) نعم، والرقم (2) غير متأكد، والرقم (1) يعني كلا. وتم تحديد مصداقية المحتوى من خلال عرض الاستبيان على (8) خبراء و شملت الاستبانة على الخصائص الديموغرافية (6) فقرة؛ ومعارف المرضى (36) فقرة (و التزام المرضى (9) فقرة) وبطريقة المقابلة الشخصية مع عينة البحث جمعت المعلومات وباستخدام التحليل الوصفي (التوزيع التكراري، النسبة المئوية) كذلك التحليل الاستنتاجي (مربع كاي).

النتائج: من خلال تحليل البيانات تبين أن (٥٦%) من المرضى هم من الفئة (أكثر من ٥١سنة) و(٦١%) كانوا من الذكور، و (٣٧%) من المرضى مستواهم الدراسي دون الدراسة الثانوية و كان (٦٠%) من المتزوجين و (٧٠%) منهم متقاعدين، و(٧٢%) من المرضى يعانون من أمراض مزمنة و كذلك (٧٢%) من المرضى يتعاطون الأدوية ونسبة (٥٣%) منهم غير مدخنين.
الاستنتاجات: أظهرت الدراسة أن غالبية المرضى كانت معارفهم ضعيفة حول المرض والتزامهم كان ضعيفاً لتقليل أعباء المرض عليهم ضعيفة.
التوصيات: أوصت الدراسة بزيادة الثقافة الصحية للمجتمع وإجراء دراسات أخرى حول أمراض القلب

Abstract

Background: Heart failure is an increasing cause of morbidity and mortality, especially in people aged above 65 years. Year after year, heart failure (HF) affects and kills an increasingly large number of people, the nurses educating of Heart Failure patients about diagnosis and treatment of their diseases have fewer hospital re-admissions and a better quality of life

Aim of the study:- In order to assessment patients knowledge and compliance with congestive heart failure in Kirkuk city. as well as to find out the relationship between patients knowledge and some as age and gender, residence, educational level.

Methodology A descriptive study of a quantitative design was conducted in Kirkuk hospitals(Kirkuk general hospital, Azadi teaching hospital and Dakuk hospital) throughout the period from 1st of June 2012 to 31st of July 2013. A non-probability (purposive) sample of (75) patients who admitted to Cardiac care units and ward of internal medicine at (Kirkuk general hospital, Azadi teaching hospital and Dakuk hospital). In order to collect the study information, a questionnaire was constructed. The questionnaire which contain of (54) items. Demographic data include (9) items, knowledge of the Patients include (36) items, practice of the Patients include (9) items. 3-likert scale option was used in the rating scale as: (3) for yes, (2) for uncertain, and (1) for no. Content validity was determined by presenting the questionnaire to a panel of (10) experts. Frequencies and percentage were used to describe and to analyze the data the present study and inferential statistical data analysis (chi-square).

Results The findings of the study indicate that a high percentage 56% of patients was from four age group (51- and more) years. Its also appears that more than half (61%) of patients was male. With regard to their educational level, a high percentage (37%) from less than secondary school. The data indicate that (60%) were married. It had been noted that the majority of patients (70%) were retired. As for address, it is obvious that a high percentage (62%) of the patients were from the city. The data indicates that the most of these patients (72%) were had chronic diseases. The data analysis revealed that a high percentage (72%) of the patients were use medications. Its also appears that (53%) were no smoking.

Conclusions : A socio demographic characteristic tends to have clearly effect on the knowledge of the patients and nursing staff, also the study concluded high percentage from patients have poor knowledge and practice about disease, while nurses staff have poor knowledge and need to update about congestive heart failure.

Recommendation According to the results of the study, the study recommended the following items, concentrates should be on the health education for our society who may be had risk factors to heart diseases, more studies conducting about heart disease.

Keywords:- Heart failure, practice, Knowledge.

Introduction:

Heart failure (HF) is a syndrome characterized by high mortality , frequent hospitalization , poor quality of life , and multiple comorbidities ,as a result , heart failure management inevitably involves both a multidimensional assessment process and a complex therapeutic regimen. Heart failure develops over time as the heart's pumping action grows weaker. The condition can affect the right side of the heart only, or it can affect both sides of the heart. Most cases involve both sides of the heart. Right-side heart failure occurs if the heart can't pump enough blood to the lungs to pick up oxygen. Left-side heart failure occurs if the heart can't pump enough oxygen-rich blood to the rest of the body. Right-side heart failure may cause fluid to build up in the feet, ankles, legs, liver, abdomen, and the veins in the neck. Right-side and left-side heart failure also may cause shortness of breath and fatigue (tiredness).The leading causes of heart failure are diseases that damage the heart. Examples include coronary heart disease (CHD), high blood pressure, and diabetes⁽¹⁾

Heart failure is a condition in which the heart is unable to adequately pump blood throughout the body or unable to prevent blood from "backing up" into the lungs. When the heart does not pump correctly there is not enough blood circulating through the body to meet the metabolic demands of the body. The inadequate supply of blood to the body results in a subsequent inadequate supply of oxygen to the tissues and symptoms such as fatigue or activity intolerance appear. Additionally, when the blood backs up into the lungs symptoms such as shortness of breath develop⁽²⁾.

Heart failure (HF) is an epidemic. Five million people were diagnosed with the disease in 2006 and 550,000 new cases are being reported each year. HF is associated with a decreased quality of life and high mortality rate. It also accounts for 12-15 million office visits and 6.5 million hospital stays each year. Although there is no known cure for HF, understanding the disease and guidelines put forth by the American Heart Association as well as the Heart Failure Society of America, has been shown to decrease mortality, increase quality of life, and decrease hospital admissions⁽³⁾. When the heart does not pump correctly there is not enough blood circulating through the body to meet the metabolic demands of the body. The inadequate supply of blood to the body results in a subsequent inadequate supply of oxygen to the tissues and symptoms such as fatigue or activity intolerance appear. Additionally, when the blood backs up into the lungs symptoms such as shortness of breath develop⁽⁴⁾

Objectives of the study:

- 1- To assess the patients knowledge regarding to Congestive Heart Failure in Kirkuk city.
- 2- To identify the patient's compliance to reduce the burden of Congestive Heart Failure in Kirkuk city.
- 3- To find out the relationship between patients knowledge compliance with age , gender , residence , educational level .

Methodology:-

To achieve the objectives of the study quantitative design (descriptive study) was conducted on congestive heart failure patients between period from 1st of June 2012 to 31st of July 2013. To assess congestive heart failure patients knowledge and compliance. The study was conducted in Kirkuk general hospital, (Azadi teaching hospital and Dakuk hospitals). A purposive sample consisted of (75) patients who were admitted in to hospitals in Kirkuk city definitely diagnosed with Congestive heart failure on adult patients who were attended to these hospitals. Through extensive review of relevant literature, a questionnaires was constructed for reach purpose of the study the data was collected by using personal and interview technique. Overall items included in the questionnaire were (54) items. A panel of (8) experts was involved in the determination of the questionnaire content validity. The questionnaire consists of three parts, demographic data which is composed of (9)

items such as (age, gender, level of education, occupation, marital status, chronic disease, treatment history and smoking history) , patients knowledge which comprised of (36) items. That classified as (general information about heart failure, risk factors, signs and symptoms and treatment of heart failure), patients Compliance which is composed of (9) items. The data were collected through the utilization of constructed questionnaire, interview technique with the patients with congestive heart failure in cardiac care unit and internal medicine wards in Kirkuk, Dakuk and Azady teaching hospitals. The data Was collected between 17th of July , 2012 up to the 24th December , 2012.. All items were measured by using 3-likert scale option were used in the rating scale as Yes (3) , uncertain (2) and No (1). Data were analyzed by using descriptive statistics, which include frequency and percentages, were computed. and inferential statistics (chi-square test, t test and anova), data are prepared, organized and entered into the computer file; Statistical Package for Social Science (SPSS) version (17) is used for data analysis at (P.value \leq 0.05).

Results:

Table (1) Socio demographic characteristic of the patients

Variables	No.	%
Age		
20-30 year	-----	-----
31-40 year	12	16%
41-50 year	21	28%
51- and more	42	56%
Total	75	100%
Gender		
Male	46	61.30%
Female	29	38.70%
Total	75	100%
Education level		
No reading No writing	27	36%
Reading and writing	28	37.40%
Secondary	12	16%
Institute and high	8	10.60%
Total	75	100%
Marital status		
Single	Single	2.70%
Married	Married	60%
Divorced	Divorced	9.30%
Widow	Widow	28%
Total	75	100%
Job		
Employee	16	21.40%
Free work	6	8%
Retired	53	70.60%
Total	75	100%
Educational levels		
Unable to read and write	27	27
read and write	28	28
Primary school	12	12
Intermediate school	8	8
Total	75	100%
Address		
Urban	47	62.70%
Rural	28	37.30%
Total	75	100%

F= Frequency ; % = Percentage

Table (1) shows that the highest percentage (56%) of study sample at age group (51 and more) , while the lowest percentage (12%) their ages ranged from (31-40) years, (61%) of the study sample were males , (37 %) of study sample were less than secondary school , (60%) of the study sample were married , (70%) of the study sample were retired and (62%) of the study sample were from urban.

Table (2): Mean of Scores for Patents Knowledge items regarding CHF

No	Items	No		Un certain		Yes		MS	Severity
		F	%	F	%	F	%		
1	Heart failure is a condition in which the heart can't pump enough blood to meet the body's needs	42	56.0	20	26.7	13	17.3	1.6	LS
2	Heart failure is a serious condition that requires medical care	19	25.3	31	41.3	25	33.3	2.08	MS
3	Heart failure causes early death if not treated	27	36.0	27	36.0	21	28.0	1.9	LS
4	Heart failure may cause fluid to build up in the feet, ankles, legs, liver, abdomen, and the veins in the neck.	1	1.3	42	56.0	32	42.7	2.4	MS
5	Heart failure is an increasing cause of morbidity and mortality, especially in people aged above 65 years	40	53.3	17	22.7	18	24.0	1.7	LS

Obs. X^2 =67.365 DF=8 Crit. X^2 = 15.51

χ^2 obs. = Chi-square Observed ; df= Degree of freedom ; χ^2 crit. = Chi-square critical;

The findings of table 2 shows that the mean of scores for items of knowledge regarding heart failure the table reveals that the mean of score was moderate significant in items (2- Heart failure is a serious condition that requires medical care and 4- Heart failure may cause fluid to build up in the feet, ankles, legs, liver, abdomen, and the veins in the neck) and low significant in items (1-Heart failure is a condition in which the heart can't pump enough blood to meet the body's needs , 3-Heart failure causes early death if not treated and 3- Heart failure is an increasing cause of morbidity and mortality, especially in people aged above 65 years)

Table (3): Mean of Scores For Patients Knowledge regarding Risk Factors of heart failure

No	Items	No		Un certain		Yes		MS	Severity
		F	%	F	%	F	%		
1	Developmental age	25	33.3	14	18.7	36	48.0	2.1	MS
2	Smoking and sedentary living	15	20.0	14	18.7	46	61.3	2.4	MS
3	Excessive dietary intake of sodium	18	24.0	12	16.0	45	60.0	2.3	MS
4	Anemia and hyperthyroid disease	31	41.3	12	16.0	32	42.7	2.0	MS
5	Chronic alcohol abuse	29	38.7	18	24.0	28	37.3	1.9	LS
6	Diabetes mellitus	20	26.7	10	13.3	45	60.0	2.3	MS
7	Hypertension	13	17.3	7	9.3	55	73.3	2.5	HS
8	Psychiatric conditions	23	30.7	14	18.7	38	50.7	2.2	MS
9	Obesity	26	34.7	8	10.7	41	54.7	2.2	MS
10	Kidney disease	23	30.7	18	24.0	34	45.3	2.1	MS

Obs. $X^2 = 37.898$

DF= 18

Crit. $X^2 = 28.8$

χ^2 obs. = Chi-square Observed ; df= Degree of freedom ; χ^2 crit. = Chi-square critical;

The findings of table 3 shows that the mean of scores for patients knowledge regarding to Risk factors of heart the table reveals that the mean of score was moderate significant in items (1-Developmental age ,2- Smoking and sedentary living ,3- Excessive dietary intake of sodium , 4- Anemia and hyperthyroid disease , 6-Diabetes mellitus , 7- Hypertension ,8- Psychiatric conditions, 9- Obesity 10 Kidney disease and low significant in items 5- Chronic alcohol abuse .

Table (4): Mean of Scores for Patients Compliance with heart failure

No	Items	Yes		Un certain		No		MS	Severity
		F	%	F	%	F	%		
1	Do you stop from work and take rest when pain is begin ?	26	34.7	25	33.3	24	32.0	1.9	LS
2	Do you take your drugs when pain is begin ?	15	20.0	17	22.7	43	57.3	2.3	MS
3	Do you eat small, frequent meals	15	20.0	23	30.7	37	49.3	2.2	MS
4	Do you work regular activities	24	32.0	19	25.3	32	42.7	2.1	MS
5	Do you Go to doctors regularity	23	30.7	16	21.3	36	48.0	2.1	MS
6	Do you restrict fluid and sodium with heart disease	40	53.3	25	33.3	10	13.3	1.6	LS
7	Do you Away from salt and fatty food	40	53.3	20	26.7	15	20.0	1.6	LS
8	Do you changed your food with your disease	32	42.7	21	28.0	22	29.3	1.8	LS
9	Do you quite from smoking and alcohol	37	49.3	22	29.3	16	21.3	1.7	LS

Obs. $X^2 = 71.337$

DF= 16

Crit. $X^2 = 26.30$

χ^2 obs. = Chi-square Observed; df= Degree of freedom; χ^2 crit. = Chi-square critical;

The findings of table 4 shows that the mean of scores for patients compliance regarding to heart failure the table reveals that the mean of score was highly significant in items (2, 3,4,5) (2- Do you take your drugs when pain is begin , 3- Do you eat small, frequent meals ,4- Do you work regular activities ,5- Do you Go to doctors regularity) and low significant in items (1- Do you stop from work and take rest when pain is begin , 6- Do you restrict fluid and sodium with heart disease , 7- Do you Away from salt and fatty food , 8- Do you changed your food with your disease , and 9- Do you quite from smoking and alcohol)

Table (5) Statistical differences Between patients knowledge and their age groups

Categories	S.O.V	SS	MS	F. obs	Significany P≤0.05
General information about heart failure	Between Groups	81.797	40.898	23.9	S
	Within Groups	122.870	1.707		
	Total	204.667			
Signs and symptoms of heart failure	Between Groups	131.563	65.781	6.00	0.004 S
	Within Groups	788.384	10.950		
	Total	919.947			
Risk factors of heart failure	Between Groups	271.396	135.698	3.25	0.045 S
	Within Groups	3005.591	41.744		
	Total	3276.987			
Treatment of heart failure	Between Groups	262.928	131.464	2.50	0.088 S
	Within Groups	3772.859	52.401		
	Total	4035.787			

Categories	S.O.V	SS	MS	F. obs	Significany P≤0.05
Patients compliance about heart failure	Between Groups	10.703	5.352	0.501	0.608
	Within Groups	768.443	10.673		
	Total	779.147			NS

F critical = 2.4

Df= 74

Table (5) This table shows that there were significant differences between General information , Signs and symptoms , Risk factors , Treatment of heart failure patients and their age at P value ≤ 0.05 .

Table (6) Table (5) Statistical differences Between patients knowledge and their age groups education level .

Categories	S.O.V	SS	MS	F. Obs	Significany P≤0.05
General information about heart failure	Between Groups	58.322	19.441	9.432	0.000 S
	Within Groups	146.344	2.061		
	Total	204.667			
Signs and symptoms of heart failure	Between Groups	107.692	35.897	3.138	0.031 S
	Within Groups	812.254	11.440		
	Total	919.947			
Risk factors of heart failure	Between Groups	137.785	45.928	1.039	0.381 NS
	Within Groups	3139.201	44.214		
	Total	3276.987			
Treatment of heart failure	Between Groups	24.671	8.224	0.146	0.932 NS
	Within Groups	4011.115	56.495		
	Total	4035.787			
Patients compliance about heart failure	Between Groups	3.643	1.214	0.111	0.953 NS
	Within Groups	775.504	10.923		
	Total	779.147			

F critical =2.4 Df= 74

Table (6) This table shows that there were significant differences between General information and Signs and symptoms while non significant for Risk factors , Treatment and patients compliance with heart failure and their education level at P value ≤ 0.05

Discussion:-

the present study revealed that the high percentage of patients were of (56%) at age(51-and more) years. The present study is in disagreement with the study conducted about the risk factor of heart failure who found 16.8 % from patients between 51-and more⁽⁵⁾ . The result of table (1) show that heart failure is more common in males and constitute (61.31%). Because men may be more susceptible to the process of heart muscle-cell remodeling, a damaging effect of hypertension and lead to heart failure ⁽⁶⁾. In the Framingham Study, incidence in males was 2.3_1000 and only 1.4_1000 in females⁽⁷⁾ With regard to the educational level It is obvious from the table that most of the patients were able to read and write and constitute about (37.40%), the reason of this marked proportion is that lack of social knowledge. The findings presented high percentage of patients was married and constitute (60%) It appears from the table the majority of the patients was retired and consist (70.60%). With regard to their address (62.70%) of the patients was from urban area .The explanation may be that the faraway of the town narrowed down the numbers for visiting the hospital in the city.

Regarding the general information about heart failure and compliance the findings reveals that the mean of score was moderate significant level in items (2-Heart failure is a serious condition that requires medical care and 4- Heart failure may cause fluid to build up in the feet, ankles, legs, liver, abdomen, and the veins in the neck) and low significant level in items (1-Heart failure is a condition in which the heart can't pump enough blood to meet the body's needs , 3-Heart failure causes early death if not treated and 3- Heart failure is an increasing cause of morbidity and mortality, especially in people aged above 65 years) .

Wilson (2007) mentioned that Heart failure patients who are educated in their diagnosis and treatment have fewer hospital re-admissions and a better quality of life. For this reason, the importance of heart failure education should not be overlooked. According to the American Heart Association (AHA), the education topics include diet and nutrition, activity restrictions and recommendations, smoking cessation, alcoholic intake limitations, medication therapy, and signs and symptoms of worsening HF. Because of the complexity and importance of such education, it is vital that the nurses educating HF patients know and understand this material well⁽⁸⁾.

Albert et al. (2002) state that in order for effective education to take place the educator needs an optimum knowledge base of fundamental HF education guidelines. If the patients fail to understand these guidelines and how to implement such changes, they will not be able to effectively participate in their care when outside a care facility. When patients do not participate in their care or disregard the guidelines, it is likely to lead to hospital re-admission or death⁽⁹⁾

Koelling et al.,(2005) state that Ineffective education for heart failure patients plays a significant role on why patients fail to adhere to the specified guidelines and continue to be readmitted, but it is not known to what extent⁽¹⁰⁾ .

The findings of the study show the mean of scores for items of **Risk factors of heart failure** the table reveals that the mean of score This table indicates that the mean of score was moderate significant in items was moderate significant in items (1-Developmental age ,2- Smoking and sedentary living ,3- Excessive dietary intake of sodium , 4- Anemia and hyperthyroid disease , 6-Diabetes mellitus , 7- Hypertension ,8- Psychiatric conditions, 9- Obesity 10 Kidney disease and low significant in items 5- Chronic alcohol abuse .

Diet and nutrition changes are included in the guidelines to managing heart failure. One change involves decreasing the amount of sodium intake. The average American consumes between four to six grams of sodium daily; heart failure patients must decrease their intake to two to three grams daily Along with sodium restriction, many people also need to restrict their fluid intake to less than two liters per day ⁽¹¹⁾ .

Alcohol has been shown to increase blood pressure causing hypertension and cardiomyopathy. Alcoholic cardiomyopathy is a condition in which the heart enlarges and the muscles become thin due to excessive alcohol intake. As the muscles thin and weaken, the heart is not able to pump efficiently and can lead to heart failure cigarette smoking also contributes to heart failure in that the smoke contains toxins that, when inhaled, cause plaque to form in the coronary arteries and leads to coronary artery disease (CAD), which is one of the leading causes of heart failure⁽¹²⁾ .

The findings of the study show the mean of scores for items of **Patients Practice about heart failure** the table reveals that the mean of score was highly significant in items (2, 3,4,5) and low significant in items (1, 6 , 7, 8, 9)

Albert et al. (2002) ⁽¹³⁾. found that only 43.3% of patients weighed themselves on a daily basis. She also states that patients who are unaware of the importance of taking daily weights are less likely to relay such information to their physicians or make necessary changes at home .(table 4)

Study performed by Koelling et al. (2005) ⁽¹⁴⁾ Education related to medication management is another guideline and should include proper use and dosaging instructions as prescribed by the healthcare provider. In a patients exposed to a heart failure education program prior to discharge showed increased compliance rates for taking their HF-related medications.

Limiting alcohol consumption and abstaining from smoking cigarettes is also included in HF education because the consumption of alcoholic beverages and smoking cigarettes may contribute to heart failure⁽¹¹⁾.

Dietary guidelines for persons with heart failure include a low sodium diet and, at times, fluid restrictions. When heart failure occurs the pumping action of the heart is inhibited and cardiac output decreases. As the cardiac output decreases there is a subsequent reduction in renal perfusion through the complex rennin-angiotensin aldosterone system; this causes the kidneys to hold onto sodium, which then causes the body to retain water in order to maintain a strict osmotic balance⁽¹⁵⁾.

The findings of the study show there were significant differences between General information, Signs and symptoms, Risk factors, Treatment of heart failure patients and their age at P value ≤ 0.05 except for patients practice (table 5).

According to the National Heart, Lung, and Blood Institute (NHLBI)⁽¹⁶⁾, the survival rate in men with heart failure is even less than in women. Eighty percent of men less than 65 years of age will die within eight years from HF, while only 70% of women less than 65 years of age will die within eight years from HF.

Heart failure can affect anyone at any age, it is predominantly seen in the geriatric population. It is primarily a disease of the elderly and is the most common discharge diagnosis in persons over 65 years, with the number of elderly being diagnosed with HF increasing since 1979. Currently, HF affects 6-10% of persons 65 years and older. The increase in life expectancy may be one explanation for the increase in incidence of patients with HF⁽¹⁷⁾.

The findings of the study show that there were significant differences between General information and signs and symptoms while non significant for Risk factors, Treatment and patients practice with heart failure and their age at P value ≤ 0.05 (table 6)

In (2003) conducted study about effects of education and support on self-care and resource utilization in patients with heart failure and conclude the planned education and support by a nurse results in an increase in patients' self-care behaviors and that effects of patient's knowledge⁽¹⁸⁾.

Conclusions

Most of them were more than fifty two years and most of patients were male, large number of patients were read and write, high percentage of the heart failure patients were married with regard to occupation most of the patients were retired and most of them were from urban area. Also the study finding congestive heart failure patients has inadequate knowledge regarding general information about congestive heart failure. Regarding treatment of congestive, the result shows that congestive heart failure patients in compliance with heart failure. The results show that there is highly significant relation between age and General information and Signs and symptoms while non significant for Risk factors, Treatment and patients compliance with heart failure and their age.

Recommendation

- 1- Concentrates should be on the health education for our society who may be had risk factors to heart diseases.
- 2- Constructing an educational program should be designed by nurses to increase people knowledge about etiology, signs and symptom and treatment of heart failure patients.
- 5- Establishing new centers for caring of patients with heart disease.
- 6- Increasing the number of nursing teams to deal with patients with heart disease because suspecting increasing number of patients affected in future.
- 7- Further study has to be conducted in all Kirkuk region

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