Impact of a Health Educational Program on Patients Knowledge regarding Heart Failure

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Abstract

Background: Heart failure(HF) is an imjaor cause of morbidity and mortality, especially in ageing people more than 65 years old. Heart failure (HF) affects and kills a large number of peoples, the nurses educating of Heart Failure patients about better quality of life ,risk factors, diagnosis as well as and treatment of their diseases.

Objectives: The study objective are to assess patient knowledge before and after implementation of health educational program.

Methodology: A quasi-experimental study with the application of pre and post-test approach for both study and control group at Hawler Teaching Hospital, Rizgary Teaching Hospital and East Emergency Hospital on patient with heart failure. Non probability purposive sample size of (400) heart failure patient chosen to include in the study. An educational program is designed as a result of the patients need assessment and from reviewing the relative scientific literature, previous studies and through the researcher experiences. The content of the program is evaluated by experts in different field, the researcher construct questionnaire interview form for the purpose of data collection, the questionnaire compromise from 2 parts, part one socio-demographic variables and part two patients knowledge. The validity of the program are achieved by panel of (24) experts. Reliability of the tools was determined through the application of (test – retest) approach obtained through evaluating (20) patients. Statistical data analysis achieved through descriptive statistical as well as data analysis and inferential data analysis.

Results: Results revealed that studied group socio-demographic variables (SDCv.) had reported no significant differences at P>0.05, except in age groups, and levels of education, which represented significant different in at least at P<0.05, rather than most of studied group's individuals distribution concerning age, and levels of education are very similar. There is highly significant differences at P<0.01 are accounted a long (Pre – Post) periods in cases group. There is highly significant differences at P<0.01 are accounted regarding (Pre – Post) periods in control group. Regarding the study Global main domains a long (Pre – Post) periods in case - control groups, the result show represents improvements on the global means of score for samples regarding their knowledge about heart failure.

Conclusion: According to the results, it could be conclude that patients knowledge improved due to applying of suggested educational program, and the educational program could be generalize.

Keywords: Education; Heart failure; Mortality; Knowledge

Introduction

Heart failure(HF) is a state in which the heart muscle is unable to pump enough blood throughout the body or impotent to prevent blood from "backing up" into the lungs When the heart does not supply correctly there is not enough blood circulating through the body to meet the metabolic demands of the body [1]. The deficit blood supply to the body lead to subsequent incompetent e supply of oxygen to the tissues and symptoms such as fatigue or activity intolerance appear as well as developing shortness of breath Heart failure (HF) is a major public health problem In the world with a significant load of disease on population and the individual, this burden of disease can be measured in terms of mortality, readmission rate, and healthcare costs. Repeated HF hospitalization is a burden on the healthcare system and adversely impacts long-term patient outcomes [2-4]. The most causes of heart failure are cardiomyopathy, hypertension, heart valve disease, coronary artery disease, congenital heart disease and alcohol consumption [5]. The most symptoms are shortness of breathing, frequent cough, swollen extremities, abdominal selling, fatigue, dizziness and sudden death [6,7]. Risk factors for heart failure patient may be divided into two classifications; compliant and non- compliant risk factors. Compliant risk factors are those that an person can correct it, including high serum cholesterol level, a diet high in saturated

fat, obesity, physical inactive, hypertension, cigarette smoking, and alcohol consumption. And non-Compliant risk factors are those that an individual can't change, such as age, gender, ethnicity and heredity [8]. Heart failure is usually managed with style of lives changing and medicines, eating habits changes to maintain ideal weight, diminish salt intake, appropriate exercise, smoking cessation, reducing and alcohol consumption [9,10]. Investigation have shown that approximately half patients who readmite to hospital could be stoped if HF patients were compliant to their managment regimen, and meet symptom monitoring [11]. Clients as well as their caretakers, level of knowledge is significantly related to their level of adherence to recommended care regimens [12,13]. Patients knowledge is an essential component for the treatment of their disease [14]. HF requires a strong focus on the education of patients and their families to improve their knowledge on self-care and compliance [15,16]. Studies checking HF patients' knowledge and the outcomes of patient education recorded that health literacy was associated with higher HF knowledge and patients' demographics such as younger age and higher educational level [17].

Objectives of the study

The study objective are to assess patient knowledge before and after implementation of health educational program.

Methodology

A quasi-experimental study has been carried out through the present study with the application of pre and post-test approach for both study and control group, The study were conducted at Intensive care unit (ICU) and Medical Ward at Hawler Teaching Hospital, Rizgary Teaching Hospital and East Emergency Hospital on patient with heart failure. Non probability purposive sample size of (400) heart failure patient chosen to include in the study. The samples were divided in to two group; (200) patient as a study group were exposed to the educational program and the other (200) patients are not exposed to the educational program, considered as the control group. The two group has the same demographic characteristic. The educational program is designed as a result of the patients need assessment and from reviewing the relative scientific literature, previous studies and through the researcher experiences. The content of the program is evaluated by experts in different field, revision is made on the content of the program from based of these experts recommendation and suggestions. To evaluate the effectiveness of the educational program on patient knowledge, the researcher construct questionnaire interview form for the purpose of data collection, it is content Two parts, which is: Part One Socio-demographic data which concern with the collection of basic Socio-demographic data from heart failure patients. by interview questionnaire sheet, It is composed of six items which include patients age, gender, level of education, occupation, marital status and residential area. And part two patients knowledge which composed from six domains : General information about heart failure(10) items, risk factors of HF(10)items, Causes of HF(5)items, clinical Manifestation of HF(8)items, diagnosis of HF(4) items and management of HF(4)items. The content validity of the program and study instrument are determined by panel of (24) experts, Who have between (17-36) years experiences in their fields to investigate the content of educational program and questionnaire about heart failure. Reliability of the questionnaire (tools) was determined through the use of (test – retest) approach obtained through evaluating (20) patients selected from hospitals above with interval period of two weeks. The result of reliability coefficient was (0.91) for patients knowledge related to heart failure. The statistical data analysis approaches were used in order to analyze and assess the results of the study under application of the statistical package (SPSS) ver. (22.0):

- Descriptive data analysis: Frequencies, percentages, Mean of score (MS), Standard Deviation (SD), Relative Sufficiency (RS%), as well as scoring scales of twocategories, such that (Yes, and NO)and are responding with integer numbers (1, and 0) respectively.

- Inferential data analysis: Alpha Cronbach (α) , The Independent-Samples t-test, Matched Paired-Samples t-test (MP t-test),Analysis of Covariance (ANCOVA) testing, Pearson's correlation coefficient.

Results

Table 1 Distribution of the studied groups according to Socio-Demographical Characteristics (SDCv).

SDCv.	Groups Classes	Study No.	%	Control No.	%	C.S. P-value
Age Groups	< 65	8	4	0	0	C.C.=0.195 P=0.015 (S)
	65 – 69	23	11.5	32	16	
	70 – 74	45	22.5	64	32	
	75 – 79	64	32	58	29.9	
	80 – 84	38	19	33	16.5	
	85 – 89	14	7	9	4.5	
	90 >	8	4	4	2	

	Mean ± SD	76.68 ± 6.67		75.44 ± 6.32		
Gender	Male	105	52.5	104	52	C.C.=0.005
	Female	95	47.5	96	48	P=0.920 (NS)
Levels of Education	Illiterate	101	50.5	139	69.5	C.C.=0.227 P=0.001 (HS)
	Read and write	31	15.5	15	7.5	
	Primary	16	8	14	7	
	Intermediate	13	6.5	11	5.5	
	Preparatory	11	5.5	12	6	
	Institute graduate	11	5.5	4	2	
	College graduate	17	8.5	5	2.5	
Occupation Before disease	Employed	33	16.5	24	12	C.C.=0.137 P=0.107 (NS)
	Unemployed	33	16.5	42	21	
	House wife	78	39	93	46.5	
	Self- employed	23	11.5	22	11	
	Retired	33	16.5	19	9.5	
Occupation After disease	Returned to work	12	6	13	6.5	C.C.=0.010 P=0.836 (NS)
	Out of work	188	94	187	93.5	
Marital Status	Married	134	67	132	66	C.C.=0.011 P=0.832 (NS)
	Widowed	66	33	68	34	
Residential Area	Urban	179	89.5	185	92.5	C.C.=0.052 P=0.295 (NS)
	Rural	21	10.5	15	7.5	

(*) HS: Highly Sig. at P<0.01; NS: Non Sig. at P>0.05; Testing based on a contingency coefficient (C.C.) test.

Table 2 Descriptive Statistics and testing significant of knowledge sub main domains at pre period in (case and control) groups.

SDCv.	Groups Classes	Study No.	%	Control No.	%	C.S. P-value
Age Groups	< 65	8	4	0	0	C.C.=0.195 P=0.015 (S)
	65 – 69	23	12	32	16	
	70 – 74	45	23	64	32	
	75 – 79	64	32	58	30	
	80 – 84	38	19	33	17	
	85 – 89	14	7	9	4.5	
	90 >	8	4	4	2	
	Mean ± SD	76.68 ± 6.67		75.44 ± 6.32		
Gender	Male	105	53	104	52	C.C.=0.005 P=0.920 (NS)
	Female	95	48	96	48	
Levels of Education	Illiterate	101	51	139	70	C.C.=0.227 P=0.001 (HS)
	Read and write	31	16	15	7.5	
	Primary	16	8	14	7	
	Intermediate	13	6.5	11	5.5	

4	Preparatory	11	5.5	12	6	
	Institute graduate	11	5.5	4	2	
	College graduate	17	8.5	5	2.5	
Occupation Before disease	Employed	33	17	24	12	C.C.=0.137 P=0.107 (NS)
	Unemployed	33	17	42	21	
	House wife	78	39	93	47	
	Self- employed	23	12	22	11	
	Retired	33	17	19	9.5	
Occupation After disease	Returned to work	12	6	13	6.5	C.C.=0.010 P=0.836 (NS)
	Out of work	188	94	187	94	
Marital Status	Married	134	67	132	66	C.C.=0.011 P=0.832 (NS)
	Widowed	66	33	68	34	
Residential Area	Urban	179	90	185	93	C.C.=0.052 P=0.295 (NS)
	Rural	21	11	15	7.5	
(*) HS: Highly Sig. at P<0.01; NS: Non Sig. at P>0.05; Testing based on a contingency coefficient (C.C.) test.						

Table 3 Descriptive Statistics and testing significant of studied Sub Main Domains at Post Period in (case and control) groups.

Groups Statistics (Post X Post)								
Grand Main Domains			Group	No.	GMS	SD	SE	t-test	P-value
Knowledge related to Heart Failure	General Information about Heart Failure		Case	200	0.8	0.13	0.01	11.32	0
			Control	200	0.6	0.15	0.01		HS
	Risk factors of Heart Failure		Case	200	0.6	0.16	0.01	19.72	0
			Control	200	0.3	0.21	0.02		HS
	Causes of Heart Failure		Case	200	0.7	0.19	0.01	13.43	0
			Control	200	0.4	0.22	0.02		HS
	Clinical Manifestation of Heart Failure		Case	200	0.9	0.12	0.01	13.69	0
			Control	200	0.7	0.16	0.01		HS
	Diagnosis of Heart Failure		Case	200	0.8	0.25	0.02	10.54	0
			Control	200	0.5	0.33	0.02		HS
	Management of Heart Failure		Case	200	0.7	0.26	0.02	11.42	0
			Control	200	0.4	0.25	0.02		HS
			Case	200	0.7	0.09	0.01	24.44	0

		Control	200	0.5	0.13	0.01	HS

(*) HS: Highly Sig. at P<0.01; NS: Non Sig. at P>0.05; Testing based on two independent t - test.

Table 4 Descriptive Statistics and testing significant of studied Global main domains a long (Pre - Post) periods in case - control groups.

Groups	Global Main Domains	Period	No.	GMS	SD	SE	MP t-test	P-value	C.S.
Case		Pre	200	0.43	0.1	0.01	-46.4	0	HS
	Knowledge related to Heart Failure	Post	200	0.74	0.1	0.01			
Control		Pre	200	0.42	0.1	0.01	-7.92	0	HS
	Knowledge related to Heart Failure	Post	200	0.48	0.1	0.01			

(*) HS: Highly Sig. at P<0.01; Testing based on Matched Paired t - test.
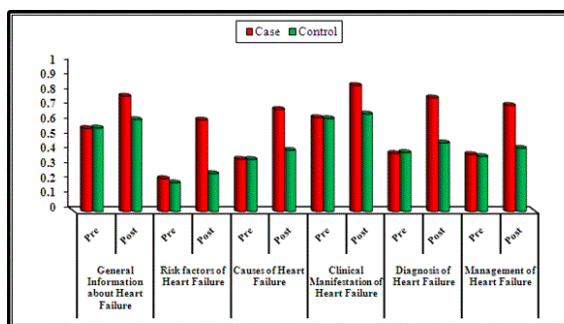

Figure 1 Grand means of score for Knowledge of patients with Heart Failure along Pre-Post Periods for the Studied Groups.

Discussions

Respect to subjects of studied (SDCv.) in Table (1), results shows that studied (SDCv.) in studied groups had recorded no significant differences at P>0.05, except in age groups, and levels of education, which represented significant different in at least at P<0.05, rather than most of studied group's individuals distribution concerning age, and levels of education are very similar. For summarizing preceding results in Table (2), and due to an overall assessments, it could be conclude that suggested educational program could be applicable for case group, since the absence of significant differences between the two groups regarding knowledge of heart failure. Results showed in Table (4) shows improvements on the global means of score for knowledge of patients with heart failure respectively. In order to achieve a qualitative addition in the analysis of the results, and to documented statistics that can be adopted for standard purposes in subsequent studies, the method of explorer (Stem-Leaf) are applied.

Conclusions

According to the results, it could be conclude that patients knowledge improved due to applying of suggested educational program, and the educational program could be generalize.

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