Self-Care Strategies for Patients with Chronic Heart Failure to Managing Their Problems

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ABSTRACT

Background : Chronic heart failure (CHF) is a common chronic illness associated with substantial morbidity and mortality poor quality of life and frequent hospitalization .**Aim of the study :**was to determine self-care strategies used by patients for managing these problems, then proposed self-care strategies based on patients 'ability .**Design :**A descriptive exploratory research design was used .**Subjects :**A purposive sample of 100 patients with CHF admitted to cardiology clinic at Benha university hospital .**Data collection tool :**Interview questionnaire sheet .**Results :** Physiological problems related to respiratory system 100%, 100% %96& of patients experienced cough, bluish lips & cardiac asthma respectively, related to cardiovascular 100% %100 & of patients experienced hypertension & change in nail shape respectively, related to nervous system 98% %100& of patients experienced blurred vision & spend time till getting sleep respectively related to gastrointestinal system 100% %100 & of patients experienced nausea, vomiting & anorexia respectively, related to execratory system 92% of patients experienced urine incontinence, psychological problems 100% %98 & of patients experienced anxiety & depression respectively, social problems 98% of them had financial burden and more than half 66% of them had satisfactory level of self-care strategies .**Conclusion :**The problems experienced by the patients with CHF are: physiological problems related to different body systems respiratory, cardiovascular, nervous, gastrointestinal and execratory system in addition to the problems related to side effect of received treatment, psychological and social problems. Mean-while, more than half of them had satisfactory levels of self-care strategies for managing biopsychosocial problems experienced by such group of patients .**Recommendation :**There is a need for continuous educational programs for patients with CHF and their families about disease, and self-care strategies for managing their biopsychsocial problems.

Key words: Chronic heart failure, Self-care strategies, Managing problems, Suggested guidelines

Introduction

Chronic heart failure (CHF) is a disease caused by weakening of the heart muscle making it unable to pump a sufficient volume of blood to supply the body need for oxygen. Cardiovascular disease (CVD) such as hypertension, coronary artery disease and cardiomyopathy often lead to the onset of CHF causing both systolic and diastolic cardiac dysfunction. Nearly all patients with systolic dysfunction also present with some

degree of diastolic dysfunction, specifically impaired relaxation and loss of ventricular compliance **(Fontaine, 2013).**

The patients with CHF present difficult problems related to disease and its treatment received which including chest pain, shortness of breath, tachycardia, fatigue and activity intolerance **(Narsavage & Weaver, 2010).** Chest pain, shortness of breath and psychological disability experienced by CHF patients lead to compromised quality of life, also the patients confronts significant limitations in the performance of activities of daily living **(Skumlien et al., 2009).**

It was reported by **The World Health Organization (WHO), (2011)** that 17.3 million people died from CVD, over 80% of CVD deaths take place in low and middle-income countries and by 2030, almost 23.6 million people will die from CVD. In Egypt, number of patients with CHF is 1.4 million and the mortality rate among the patients with CHF is still high. It was around 1000 patients (approximately 11.7% in the general and central hospital, while CHF is an example of chronic and complex **(Statistics by country for congestive heart failure, 2013).**

It was defined by **WHO (2014),** defines self-care as activities of individual, families, and communities undertake with the intention of enhancing health, preventing disease, limiting illness, and restoring health. These activities are derived from knowledge and skills from the pool of both professional and lay experience that lead to improve quality of life (QOL) of patients with CHF.

When patients know self-care strategies that they used them for managing their problems is consider as a broad the therapeutic modality, its primary goal is to restore the patient to the highest possible level of independent function, rather than focusing slowly in reversing the disease process, in an attempt to improve disability

from disease and the quality of life **(Abdel-Atif, 2006).**

Factors known to influence heart failure self- care include experience with the illness, physical functioning, depression and anxiety, social support, daytime sleepiness, and attitudes such as confidence. The evidence to support a link between heart failure self- care and health outcomes is limited, but early evidence suggests that adequate self-care is associated with an improvement in health status, a decrease in the number and duration of hospitalizations **(Riegel & Dickson, 2013).**

Successful determine self-care strategies for managing their problems can help patients to become better educated and more involved in their own care through using self-care strategies to care for themselves aiming at recovery from illness and management of chronic illness. These self-care strategies also help patients to have a higher QOL, reduce visits to their physicians and have fewer psychosocial problems related to inactivity and a feeling of hopelessness **(Abdel-Salam, 2011)**.

Nursing interest in self-care may have started with Florence Nightingale, who stated, whenever the patient can do for himself, it is better **(Nightingale, 1969)**.

Orem based her theoretical framework on the identification of the patient's deficit in the area of self-care and the nurses' role in assisting patients to restore self-care ability. Self-care means that individuals take actions to care for themselves or change environmental conditions to enhance their own health through prevention, elimination, or alleviation of perceived problems. Self-care of patients with CHF depends on his/her knowledge and skills regarding disease and treatment regimen that affect directly on QOL **(Orem, 1995).**

Aim of the study

The aim of this study is to assess self-care strategies for patients with chronic heart failure to managing their problems through:

- Assessing the problems experienced by patients with chronic heart Failure as disease, and the problems related to treatment received.

- Determining the self- care strategies used by patients for managing their problems.

- Developing proposed self- care guidelines for managing problems to the patient with chronic heart failure.

Research question:-

To achieve the aim of this study the following research questions are formulated.

- What are the problems experienced by patients with chronic heart failure?

- What are the self-care strategies that the patients used in managing their problems?

- How can develop self-care guidelines for managing problems to the patients with chronic heart failure?

Subjects and Method

Research design:

The present study was descriptive exploratory research design

1- Technical design

The technical design include: the research setting, subjects tool used in data collection.

- **Research setting:**

The study was conducted in Cardiology Clinic at Benha University Hospital.

- **Subjects**:

The study was conducted on purposive subjects of one hundred patients with CHF.

Inclusion criteria:

The study sample was selected according to the following criteria:

- Adult patients aged 40-70 years.

- From both genders.

- Free from other chronic disease which may hinder his ability for self-care.

- Conscious & willing to participate in this study.

Exclusion criteria:

- Patients had hearing or visual deficit.

- Patients had psychological diseases.

- **Data Collection tools:**

Interview questionnaire was developed to collect data in this study:

- **Interview Questionnaire sheet:**

It was developed by the researcher in Arabic language after reviewing the related literature. It was divided into four parts:

First part: this part is concerned with:

- The socio-demographic characteristics of the patients including age, gender, marital status, level of education, occupation, working type, change nature of work after

disease, smoking history and housing condition.

• Patients medical history including the duration of the disease, characteristics of the chest pain, its precipitating factors, duration between pain attack and the patient need for analgesics.

Second part: This part was concerned with patients' level of knowledge

• It was used to assess patients' level of knowledge regarding CHF & smoking hazards (5 questions), proper nutrition (7 questions), proper physical exercise and patients' source of knowledge (5 questions).

The scoring system:

The total score of patients level of knowledge were (40) grades, distributed as the following: regarding knowledge about CHF& smoking hazards (20)grades, regarding proper nutrition (10) grades, regarding proper physical exercise and patients source of knowledge (16) grades. Each correct answer was scored (1) grade and (0) for don't answer or didn't know

Total score was evaluated as:

• ≥60% was considered satisfactory knowledge

• <60% was considered unsatisfactory knowledge

Third part: this part is concerned with biopsychosocial problems

It was used to assess biopsychosocial problems experienced the studied patients and it included physiological problems, psychological problems and social problems.

• Physiological problems:

It was concerned with the physiological problems that the studied patients experienced in relation to respiratory system (8 items), cardiovascular system (9 items), nervous system (6 items), gastrointestinal system (5 items) and execratory system (4 items). In addition to problems related to received treatment (20 items).

• Psychological problems:

It was concerned with the psychological problems that the studied patients experienced which included anxiety (4 items), depression (4 items), fear (2 items), praying problem (2 items), sexual problem (3 items) and others (2 items).

• Social problems:

It was concerned with the social problems that the studied patients experienced (4 items) and the problems that hinder patients' follow-up health condition (8 items).

The scoring system:

This part is consisted of two options: yes or no (Yes) means that the patients experienced this problems, while (no) means that the patients didn't experienced this problems

Fourth part: This part is concerned with the patients' self-care strategies used for managing their biosychosocial problems.

It was used to assess self-care strategies used by patients for managing their biosychosocial problems. It consisted of physiological problems (198 items), psychological problems (29 items) and social (5 items).

The scoring system:

For each problem the total score was calculated depending on the number of self-care strategies used for managing each of it. It consists of two options yes or no, yes mean that the patients use it while no mean the patients didn't use it, and distributed as the following; physiological problems (198 grades), psychological problems (29 grades) and social problems (5 grades). Give one score if patients use it and give zero if patients didn't use it.

Total score was evaluated as:

• ≥60% was considered satisfactory knowledge

• <60% was considered unsatisfactory knowledge

-The researcher established suggested self-care guidelines booklet for patients with CHF based on review of literature & the patients' needs.

Operational design:

The operational design included preparatory phase, tools validity & reliability, pilot study, ethical consideration, and field work.

• **The preparatory phase:**

It included reviewing of literature and theoretical knowledge of the various aspect of this issue in order to develop the data collection tool.

• **Content validity & reliability tests:**

To achieve the criteria of trustworthiness of the tools of data collection in this study, the tools were tested and evaluated for their face and content validity by seven experts from faculty members in the medical-surgical nursing field from faculty of nursing at Ain Shams University, Mansoura University and Benha University. The aim was to determine relevance, clarity, completeness, simplicity and minor modification were done accordingly. Expertise judgment regarding face validity of the study tools 80% agree with the items of questionnaire sheet while 20% of them agree with modification. All expertise (100%) had agreement regarding content validity of questionnaire sheet and it was objective, comprehensive, representative, in logical sequence, appropriate and clear. Cronbach Alpha reliability analysis for the study tools was (0.786) which indicates high total reliability of the study tools.

• **Pilot study:**

Testing for the selected tools was carried out before starting the data collection. It was done on a group of 10% (10 patients) of the total subjects (100 patients) to test the applicability of the tools. The patients subjects included in the pilot study were included in the sample. The tools were modified according to the results of pilot study.

Ethical considerations:

The ethical considerations in this study included the following:

• The research approval of protocol was obtained from scientific research ethical committee in faculty of nursing in Benha University before starting the study.

• The researcher clarified the objective and aim of the study to the patients included in the study.

• Patients were informed that they are allowed to choose to participate or not in the study and that they had the right to withdraw from the study at any time without given any reasons.

- **Field work:**

Data collection for this study was carried out to 100 patients with CHF disease who met the criteria and admitted at the Cardiology Clinic at Benha University Hospital. Data was collected by the researcher during morning in the period from March 2015 until August 2015.

It was necessary for the researcher to introduce himself and explain the purpose of the study for subjects included in the study. The researcher assured that the data collected and information will be confidential and would be used only to improve their health and the purpose of the study.

Data were collected by the researcher using a simplified Arabic language to be suitable for the patients. Each patient was interviewed individually and each interview took approximately 30-45 minutes for each patient.

- **Administrative design:**

To carry out the study, the necessary approval was obtained from director of coronary care unit at Benha University Hospital. A letter was issued to him from the faculty of nursing explaining the aim of the study in order to obtain permission and help.

- [**Statistical design:**

The data collected were tabulated and statistically analyzed to estimating the patients' level of knowledge regarding self-care strategies that they used them for managing their problems and to elicit some relation. The clinical data were recorded on a report form. These data were tabulated and analyzed using the computer program SPSS (Statistical package for social science) version 16 to evaluate the patient under the study. Appropriate statistically methods were applied (range, percentage, the arithmetic mean, standard deviation (SD) and chi square.

The observed difference, associated was considered as following:

P value <0.05 was considered statistically significant

P value >0.05 statistically insignificant

P value <0.01 was considered highly significant

Research questions answer:

- The problems experienced by the patients with CHF are: physiological problems related to different body systems (respiratory problems mainly cough, bluish lips and nails, cardiovascular problems mainly hypertension, change in nails shape and finger, nervous problems mainly insomnia, decrease in concentration level, gastrointestinal problem mainly anorexia, nausea and execratory system problems mainly urine incontinence.

- More than half of them had satisfactory levels of self-care strategies for managing physiological, psychological and social problems.

- Proposed self- care guidelines were developed for managing problems to the patient with chronic heart failure based on patients' needs.

Results

Table (1): This table shows that, the mean age of the patients in the study group was 59.16 ±5.4 and most of them were male, married and illiterate 58.0 %, 76.0 %, 50.0 % respectively. Regarding occupation, the result revealed that 38.0% of patients in the study group were working, and 68.4% of them need mental effort in their work, and 94.7% were changed their job mainly due to illness. Regarding housing condition, the result revealed that 76.0% & 88.0% of them live in first floor and had well ventilated housing.

Also, table (1) illustrated that 56% of the patients were residing far from the health care setting in which they received their treatment, while 37.9% of patients were active smokers and 94.4% of them were previously smokers.

Table (2): This table shows that in relation to duration of illness 52.0% of the patients were complained of this disease for more than 3 years ago. Regarding precipitating factors of chest pain, the result revealed that, 74.0% of the patients had chest pain due to stress and exertion. While in relation to severity of pain, it was found that, 98.0% had severe pain and about 54.0% of patients had pain daily. Regarding medication that patients take it for chest pain, the result found, 90.0% of them must get analgesics during the attack.

Figure (1): This figure illustrated that more than half of patients (54%) had satisfactory level of knowledge about CHFD, proper nutrition and physical exercise

Figure (2): This figure showed that 66% had total satisfactory level of self-care strategies.

Table (3): This table shows that there was highly statistically significant relation between total level of patients knowledge and their socio-demographic characteristics of the studied subjects as regard to age, working type and housing floor (X^2=3.04%, 13.5% &11.58% respectively) at p<0.001. And there was statistically significant relation between total level of knowledge and their socio-demographic characteristics as regard to educational level and humidity (t=6.63% & 4.72%) at p<0.05

Table (4): This table shows that there was highly statistically significant relation between total level of patients self-care strategies and their socio-demographic characteristics as regard age, educational level, working and distance between home and clinic (X^2=3.49%, 23.84%, 9.06 % &21.73% respectively) at p< 0.001. And there was statistically significant relation between total level of their self-care strategies and socio-demographic characteristics as regard the change of the work related to disease, smoking and second-hand smoker (X^2=5.57%, 4.17% & 6.26%) at p<0.05.

Table (5): This table shows that there was no statistically significant relation between total level of patients knowledge and their self-care strategies X^2=3.41 (P>0. 05)

Table (1): Frequency& percentage distribution of patients' socio-demographic characteristics (N=100).

Items	No (100)	%
Age		
mean ±SD	59.16 ±5.4	
Range	(48-68)	
Gender		
Male	58	58.0
Female	42	42.0
Marital state		
Married	76	76.0
Widowed	24	24.0
Education level		
High degree level	14	14.0
Intermediate level	36	36.0
Illiterate	50	50.0
Working		
Yes	38	38.0
No	62	62.0
Work type (38)		
Mental effort	26	68.4
Muscular effort	12	31.6
Change the work related to disease		
Yes	36	94.7
No	2	5.3
Housing floor		
Ground	4	4.0
First	76	76.0
Second	16	16.0
Third	4	4.0
Housing condition		
Good ventilation		
Yes	88	88.0
No	12	12.0
Humidity		
Yes	12	12.0
No	88	88.0
Distance between home and clinic		
Near to it	44	44.0
Far from it	56	56.0
Smoking (58 males)		
Active smokers	22	37.9
Not smokers	36	62.1
Previously smokers (36)		
Yes	34	94.4
Not smoker	2	5.6
Daily no of cigarettes		
<6	10	45.5
≥6	12	54.5
Second-hand smokers		
Yes	58	74.4
No	20	25.6

Table (2): Frequency& percentage distribution of patients' medical history (N=100).

Items	No (100)	%
Duration of illness		
<3years	48	48.0
≥3 years	52	52.0
Precipitating factor of pain		
Stress	74	74.0
Exertion	74	74.0
Sexual activity	46	46.0
Eating	30	30.0
No cause	38	38.0
Nature of pain		
Severe & can't tolerate it	98	98.0
Severe &can tolerate it	2	2.0
Simple	0	0.0
Duration between pain attacks		
Repeated/day	42	42.0
Daily	54	54.0
Not daily	4	4.0
Need analgesics		
Yes	90	90.0
No	10	10.0

Figure (1): Frequency & percentage distribution of total level of knowledge about CHFD, proper nutrition and physical exercise

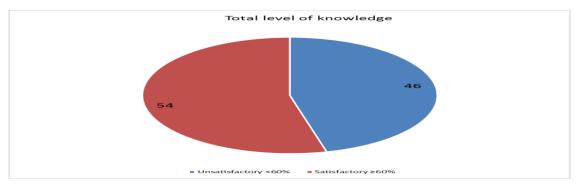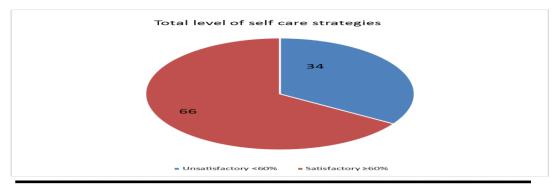**Figure (2):** Frequency& percentage distribution of total level of self-care among the patients under study

Table (3): Relation between total level of knowledge and socio-demographic characteristics among the patients under study

Items	Total level of Knowledge				Test of significance	
	Unsatisfactory		Satisfactory		test	P
Age mean ±SD	60.87±5.66		57.7±4.56		St t=3.04	0.003**
Gender						
Male	28	60.9	30	55.6	0.288	0.592
Female	18	39.1	24	44.4		
Marital state						
Married	38	82.6	38	70.4	2.04	0.153
Widowed	8	17.4	16	29.6		
Education level						
High degree level	2	4.3	12	22.2	6.63	0.036*
Intermediate level	18	39.1	18	33.3		
Illiterate	26	56.5	24	44.4		
Working						
Yes	14	30.4	24	44.4	2.07	0.150
No	32	69.6	30	55.6		
Work type						
Mental effort	4	28.6	22	91.7	^13.5	0.001**
Muscular effort	10	71.4	2	8.3		
Change the work related to disease						
Yes	14	100	22	91.7	^0.127	0.721
No	0	0.0	2	8.3		
Housing floor						
Ground	4	8.7	0	0.0	^11.58	0.003**
First	34	73.9	42	77.8		
Second	4	8.7	12	22.2		
Third	4	8.7	0	0.0		
Housing condition						
Good ventilation						
Yes	42	91.3	46	85.2	0.881	0.348
No	4	8.7	8	14.8		
Humidity						
Yes	2	4.3	10	18.5	4.72	0.03*
No	44	95.7	44	81.5		
Distance between home and clinic						
Near to it	22	47.8	22	40.7	0.506	0.477
Far from it	24	52.2	32	59.3		
Smoking (58 males)						
Active smokers	14	50.0	8	26.7	3.35	0.067
Not smokers	14	50.0	22	73.3		
Previously smokers						
Yes	10	83.3	22	91.7	^0.035	0.851
Not smoker	2	16.7	2	8.3		
Daily no of cigarettes						
<6	8	50.0	2	33.3	^0.048	0.83
≥6	8	50.0	4	66.7		
Second-hand smokers						
Yes	22	37.3	36	82.4	0.469	0.493
No	8	26.7	12	17.6	0.027	0.87

* (S) Statistical significant different (p<0.05)   ** (HS) highly statistical significant

Table (4): Relation between total level of self-care strategies and socio-demographic characteristics

Items	Total self-care				Test of significance	
	Unsatisfactory		Satisfactory		X^2 test	P
Age mean ±SD	61.65±5.23		57.88±5.06		St t=3.49	0.001**
Gender						
Male	20	58.8	38	57.6	0.014	0.905
Female	14	41.2	28	42.4		
Marital state						
Married	24	70.6	52	78.8	0.827	0.363
Widowed	10	29.4	14	21.2		
Education level						
High degree level	0	0.0	14	21.2	^23.84	0.001**
Intermediate level	6	17.6	30	45.5		
Illiterate	28	82.4	22	33.3		
Working						
Yes	6	17.6	32	48.5	9.06	0.003**
No	28	82.4	34	51.5		
Work type						
Mental effort	4	66.7	22	68.8	^0.0	1.0
Muscular effort	2	33.3	10	31.2		
Change the work related to disease						
Yes	4	66.7	32	100	^5.57	0.018*
No	2	33.3	0	0.0		
Housing floor						
Ground	2	5.9	2	3.0	^3.04	0.392
First	28	82.4	48	72.7		
Second	4	11.8	12	18.2		
Third	0	0.0	4	6.1		
Housing condition						
Good ventilation						
Yes	30	88.2	58	87.9	^0.0	1.0
No	4	11.8	8	12.1		
Humidity						
Yes	6	17.6	6	9.1	^0.851	0.356
No	28	82.4	60	90.9		
Distance between home and clinic						
Near to it	4	11.8	40	60.6	21.73	0.001**
Far from it	30	88.2	26	39.4		
Smoking (58 males)						
Active smokers	4	20.0	18	47.4	4.17	0.041*
Not smokers	16	80.0	20	52.6		
Previously smoker s						
Yes	14	87.5	18	90.0	^0.0	1.0
Not smoker	2	12.5	2	10.0		
Daily no of cigarettes						
<6	2	50.0	8	44.4	^0.125	0.724
≥6	2	50.0	10	55.6		
Second-hand smokers						
Yes	27	90.0	31	64.6	6.26	0.012*
No	3	10.0	17	35.4		

* (S) Statistical significant different (p<0.05)   ** (HS) Highly statistical significant

Discussion

Regarding the socio-demographic characteristics for patients in the study, result revealed that, ages of the patients were ranged (48-68) with a mean age 59.16 ±5.4. This finding is on line with that of **Mohamed, Hasseinen & Floss (2009)**, who studied quality of life for patients with CHFD in zagazig university hospitals and mentioned that more than three quarter of sample age ranged (56-65).

Another finding who reported by **American Heart society (2011)** is supported the current study and revealed that the CHFD is more common in person 40-55 years of age. This finding is also in accordance with **Nazeh (2012),** who studied patients with myocardial infarction factor affecting adherence to therapeutic regimen at Ain Shams University and founded that the majority of study subject were above 50 years. Similarly this result is agreement with **Ann (2011),** who studied at Oxford university press reported that prevalence greatly increases with advancing age. This indicates that chronic heart failure occurs with advanced age.

As regard to gender, the current study results revealed that more than half were males. This finding is on line with that of **Fathi (2014)**, who studied quality of life for patients with CHF at Benha University Hospital and reported that 59% of patients were males and 41% of patients were females. This finding is similar to that of **Mohamed, Hasseinen & Floss (2009),** who reported that more than three fifths were males and less than two fifth were females. This finding is also consistent with that of **Sandders, Ferland &Almazan (2009),** who studied in congestive heart failure at California state university and reported that (60%) males are affected more than (40%) females who suffer from CHF. This may be due to elevation of the incidence of CHF among males more than females.

In respect to the patients concerned knowledge about definition, manifestations and complication of CHF, the current study revealed that, the majority of them concerned with manifestation, while less than half didn't know definition and complication of CHFD. This result goes in the same line with **Columbia University Press (2009),** who found that the majority of patients were concerned about manifestation while the minority was concerned about definition and complications of CHFD. This may be due to the manifestation experienced by patients and they complain from it.

The current study revealed that, most of patients had knowledge about the hazards of smoking and how to quit of smoking. This result is in contrast to **Ghatts (2007),** who reported that the minority of patients were concerned about the hazards and how to quit smoking. This may be due to patients asking physician about the hazards of smoking.

In relation to patients' total level of knowledge results revealed that more than half had satisfactory level of total knowledge, this result is in congruent with **Ghattas (2007),** who found that the minority of the patient had satisfactory total knowledge. This may be due to the patients obtaining information from their physician.

Regarding total self-care strategies result revealed that more than half had satisfactory level total self-care strategies this result is incongruent with **Ghattas (2007),** who found that the minority of the patients had satisfactory level about knowledge of self-care strategies. This may be due to the patients made follow-up for their health status and asking physician for any problem that face them.

Regarding relation between total knowledge, socio demographic as regard age, work type, educational level, humidity and housing floor the result revealed that there is statistically significant. This means that total knowledge of the patient affected by age,

educational level, working type and social level this result goes in the same line with *Palec & Albert (2006),* who found the same results.

The current study revealed that there is highly statistically significant between total level of self-care strategies and socio demographic characteristics as regard age, educational level, working, distance between home and clinic. In my opinion this means that high educational level, working condition affecting on self-care strategies. This result goes in the same line with *Appel (2008),* who found that illiteracy stands as a first cause of unsatisfactory level of knowledge about self-care strategies among patients under study.

The current study revealed that there is no statistically significant relation between total level of patients' knowledge and their self-care strategies, this result supported by *Davis & Sherer (2008),* who found the same results. This explained that no relation between patients knowledge and their ability to using self-care strategies.

Conclusion

It was concluded from this study and research questions:

- The problems experienced by the patients with CHF are: physiological problems related to different body systems (respiratory problems mainly cough, bluish lips and nails, cardiovascular problems mainly hypertension, change in nails shape and finger, nervous problems mainly insomnia, decrease in concentration level, gastrointestinal problem mainly anorexia, nausea and execratory system problems mainly urine incontinence) in addition to the problems related to side effect of received treatment mainly fatigue, headache, blurred vision, psychological problems mainly anxiety, depression and social problems mainly loss of social role, financial burden,

affected social relationship. Mean-while more than half of them had satisfactory levels of self-care strategies for managing physiological, psychological and social problems. Proposed self-care guidelines were developed for managing problems to the patient with chronic heart failure based on their needs.

Recommendation

The results of this study projected the following recommendation:

- There is a need for continuous educational programs for patients with CHF and their families about disease, and self-care strategies for managing their biopsychsocial problems.

- The suggested self-care guidelines booklet established by the researcher for managing biopsychosocial problems experienced by patients with CHF should be available in out-patient cardiology clinic.

- Replication of study is needed on large sample and different hospital setting.

- Further study is needed to evaluate the reflection of health educational program about self-care strategies on out-come of patients with CHF.

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