# ASSESSMENT OF NURSES' KNOWLEDGE TOWARDS MANAGEMENT OF PATIENTS WITH HEART FAILURE

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**Abstract:**

**Objective:** aimed to assess nurses' knowledge concerning management of patients with heart failure and to find out the relationship between the nurses' knowledge and their demographic data(age, gender, residency, marital status, socio-economic status, years of experience, years of experience in the cardiac units, number of training courses in cardiac disease and level of education).

**Methodology**: a descriptive quantitative study is carried out at Al-Najaf City/Al-Najaf Al-Ashraf Health Directorate / Al-Sadder Medical City from 1st November, 2015 to 1st May, 2016. A non-probability (purposive) sample of (20) nurses, those who were working in the coronary care unit, medical ward and Al-Najaf Center for Heart Disease and Surgery. The data were collected through the utilization of the developed questionnaire, and it is consist two parts: **Part 1** Included socio-demographic data, and **Part 2** Include (40) items related to nurses' knowledge. Reliability of the questionnaire was determined through pilot study and validity determined through a panel of experts consist of (13) experts.

**Results**: revealed that majority of nurses had poor knowledge regarding management of heart failure. There was non-significant association between the nurses' knowledge toward management of patients with heart failure and their gender, residency, marital status, socio-economic status, years of experience in cardiac units and training sessions. The study result indicates that there was significant association between the overall nurses' knowledge toward management of patients with heart failure and their age, levels of education. Also there is highly significant relationship between the nurses' knowledge management of patients with heart failure and theirYears of work experience.

**Conclusion:** The researcher can conclude that the majority of the nurses had poor knowledge concerning management of patients with heart failure.

**Recommendation**: The study recommends that the health directorate should applycontinuous education activities to improve nurses' knowledge toward management of patients with heart failure and also to improve nurses' knowledge toward chronic disease..

**Key wards**: assessment, knowledge, nurses, heart failure.

### Introduction

Heart failure (HF) is a worldwide problem of the 21st century with increasing effect on healthcare systems [1]. The prevalence of HF is rising in both industrialized and developing countries [2]. According to the (American Heart Association) AHA, about 1 in 5 over age 40 years suffers from HF, about 4.9 million Americans are living with Congestive heart failure. Of these, 2.5 million are males and 2.4 million are females. Ten of every 1,000 people over age 65 years have this condition. There are about 400,000 new cases each year [3].

Other studies claimed that HF affecting over 5.7 million persons in the United States [3,4]. HF is a condition affect older adults, and has substantial effect on physical ability, quality of life, public health and the cost of healthcare. This can happen to many patients being readmitted to hospital every year, which cause a continuous growing burden of HF on the society [5, 6]. Moreover [7] emphasized that HF considered a major, growing public health problem with poor quality of life for HF patients when compared with different forms of cancer patient's quality of life.

Heart failure has a major impact on health outcomes. Mortality in severe heart failure is around 60% annually. 5 years mortality is 50-75% in all grades of HF in the UK, 4.9% of admissions due to HF may reach 120,000 admissions per year in the [8]. Repeated hospitalizations, which occur in 27– 47% of elderly patients within 3–6 months of initial discharge may be caused by potentially preventable factors, such as deviations from prescribed medication or diet, inadequate discharge-planning or follow-up, failing support systems and failure to seek medical attention promptly when worsening symptoms occur [7].

Many patients do not receive optimal treatment and care through a heart failure management program. Although it is generally accepted that multidisciplinary management and follow-up of heart failure patients are effective to improve patient adherence, reduce hospital readmissions and improve survival. Most heart failure management programs aim at optimization of both pharmacological and non-pharmacological management and include assessment and intervention of risks and co-morbidity, optimized medical management, device therapy (pacemaker, cardiac resynchronization therapy and implantable cardioverter defibrillator) education and self-care management, follow-up, access to health care and psychosocial [9]. For the last 20 years, there have been substantial advances in pharmacotherapy of heart failure [8].

### Methodology:

**Design of the Study:**

A descriptive quantitative study is carried out at Al-Najaf City/Al-Najaf Al-Ashraf Health Directorate / Al-Sadder Medical City from 1st November 2015 to 1st May 2016 in order to assess the nurses' knowledge concerning management of patients with heart failure.

**The Sample of the Study:**

A non-probability (purposive) sample of (20) nurses, those who were working in the coronary care unit, medical ward and Al-Najaf Center for Heart Disease and Surgery.

### The Study Instrument:

Questionnaires was designed and constructed by the researcher to measure the knowledge of nurses toward management of patients with heart failure. the questionnaires was constructed and composed of two parts **Part 1: demographic Characteristics:**This part is concerned with the collection of basic socio-demographic data which consisted of (10) items, include (age, gender, residency, marital status, socio-economic status, education level, years of experience, years of experience in the cardiac units [CCU- medical ward- AL-Najaf center for heart disease and surgery] and the number of training courses in cardiac disease). **Part II. nurses' knowledge toward management of patients with heart failure:** This knowledge test was composed of (40) multiple choice question.The test is covered with the relevant points from the major content of heart failure management.

**Data Collection:**

The data were collected through the utilization of the developed questionnaires and by means of structured self-report technique with the subjects. The data collection process has been performed from 16th February to 28th March 2016. Each subject spends approximately (20-25) minute to complete the reported.

**Data Analyses:** In order to achieve the early stated objectives, the data of the study were analyzed through the use of statistical package of social sciences (SPSS) version 19 through descriptive and inferential statistical analyses.

## Results

**Table (1): The observed frequencies and percentages of study sample according to socio-demographic data**

| Demographic Data | Groups | Freq. | % |
|---|---|---|---|
| Age / Years | 20-24 | 6 | 30 |
| | 25-29 | 10 | 50 |
| | 30-34 | 2 | 10 |
| | 35-39 | 1 | 5 |
| | 40 And More | 1 | 5 |
| Gender | Male | 12 | 60 |
| | Female | 8 | 40 |
| Residency | Rural | 3 | 15 |
| | Urban | 17 | 85 |
| Marital Status | Single | 10 | 50 |
| | Married | 10 | 50 |
| Socio-Economic Status | Satisfied | 12 | 60 |
| | Satisfied to Some Extent | 8 | 40 |
| Levels of Education | Nursing School | 3 | 15 |
| | Nursing Institute | 9 | 45 |
| | College | 8 | 40 |
| Years of Experience | 1-3 | 12 | 60 |
| | 4-6 | 3 | 15 |

Freq.: Frequency                No.: Number                    %: percentage
P Value: probability value      Ns: Non-significant            T value: t-test
Df: degree of freedom

Table (1) reveals that the high percentage of study sample at age groups (25-29) years, (50%). In addition, the table shows that the high percentages of study subject (60%) are males. Concerning residency, (85%) of the study samplelive is urban residency area. Regarding the marital status, half of the sample (50%) is single. The socio-economic status of the study sample is (60%) are satisfied. Regarding the level of education, the highest percentage (45%) of the study sample is graduated from nursing institute.

In regards to years of experience, the table shows that (60%) of the sample have (1-3) years of experience in nursing. In regards to years of experience in cardiac units, the results show that the majority of study sample (85%) have (1-3) years of experience in cardiac units, while (70%) of the sample have (1-2) training session regarding heart failure.

**Table (2): Nurses Responses of Study Group at Pre-Post Test Regarding to Educational Program Concerning Management of Patients with Heart Failure**

| List | Items | M.s. | Assessment |
|------|-------|------|------------|
| 1 | Heart is a muscular organ with four cavities which located in the central area between the lungs | 1.2 | weak |
| 2 | Muscular wall of the heart has three layers. And the inner layer of the heart called endocardium | 1.3 | weak |
| 3 | The heart consists of four chambers and the left ventricle is the strongest chamber in the heart | 1.3 | weak |
| 4 | The heart receive blood through the coronary arteries, which in turn get the blood throughaortic artery | 1.45 | weak |
| 5 | The real size of heart stroke could be measured by which of the following formula (the difference between the End Diastolic Volume and the remaining amount of blood in the ventricle size) | 1.1 | weak |
| 6 | Heart beat generated by SA node | 1.4 | weak |
| 7 | Multiplying heart rate in stroke volume representscardiac output | 1.7 | good |
| 8 | The bicuspid and tricuspid valve are atrioventricular valve | 1.25 | weak |
| 9 | Aortic artery arch sent blood directly to the main left coronary artery | 1.5 | good |
| 10 | The sac membrane that surround the heart is called pericardium membrane | 1.65 | good |
| 11 | Pericardial sac membrane composed of two layers | 1.4 | weak |
| 12 | Considered sinoatrial node, a group of cells in the upper part of the right atrium, natural origin normal electrical impulse | 1.7 | good |
| 13 | The normal rate of heart beating is 70 times / minute | 1.85 | good |

| 14 | The preparing the discharge plan by the nurse consider appropriate | 1.95 | good |
|---|---|---|---|
| 15 | The normal rate of sinoatrial node in adult is 60-100 beat / minute | 1.2 | weak |
| 16 | The rate of beats in the atrioventricular node is 40-60 beat / minute | 1.2 | weak |
| 17 | Intellectual or mental stress, tobacco, coffee and alcohol lead to acceleration heart rate | 1.3 | weak |
| 18 | One of the causes of heart failure is myocardial infarction | 1.65 | good |
| 19 | The one of the risk factors that leading to heart failure is smoking and alcohol | 1.7 | good |
| 20 | Nausea and cough is considered from the common signs and symptoms of heart failure | 1.6 | good |
| 21 | Reduction of renal perfusion due to heart failure leads to the release of renin hormone by the kidneys | 1.4 | weak |
| 22 | Kidney failure is considered as one of the complications of heart failure | 1.75 | good |
| 23 | Patient with heart failure will be advised with perform exercise for short intervals | 1.15 | weak |
| 24 | The right position for the patient with HF is raise the head side of the bed | 1.3 | weak |
| 25 | Patient with HF is advised to simple exercises gradually increased over several weeks | 1.3 | weak |
| 26 | Dietary restrictions for patients with heart failure are do not add salt and fat to foods | 1.9 | good |
| 27 | In case of weight gain of more than one kilogram during one day, this mean heart failure become more worse | 1.2 | weak |
| 28 | When the patient feels the start of deterioration and weakness in the leg or the lack of daily activity, then he /she must report to the doctor | 1.45 | weak |
| 29 | There is a correlation between practicing strong physical exercise with an increased risk of myocardial infarction and sudden death | 1.2 | weak |
| 30 | It will be better to perform moderate-intensity activity at least 30 minutes in most days of the week | 1.25 | weak |
| 31 | It will be preferred to perform exercise 3 times a week | 1.4 | weak |
| 32 | Physical training in rehabilitation sessions must be completed within one hour, with the inclusion of the warm-up and cool down sessions | 1.6 | good |
| 33 | Static Isometric exercises such as weightlifting and hand loads is with less benefit than aerobic exercise such as jogging, swimming for heart failure patients | 1.05 | weak |
| 34 | To prevent low blood pressure immediately after strong exercise, patient is advised walking for a short time | 1.05 | weak |

| 35 | Eating large amounts of fruits and vegetables, whole grains and low-fat dairy products is advised for patient with heart failure from | 1.6 | Pass |
|----|----|----|----|
| 36 | Patients with heart failure controlled can eat less than 2-3 grams of sodium per day | 1 | weak |
| 37 | Obesity leads to HF | 1.35 | weak |
| 38 | Heart failure patients are advised to back to work or main activity after the disease completely | 1.05 | weak |
| 39 | Heart failure patient should be allows for limited degree to use of oral medications and injections to help local erection | 1.3 | weak |
| 40 | Patients with HF are advised to take the diuretic medication at morning | 1.55 | good |

**Ms.: Mean of score (1.5)**

This table shows that most the study sample have been weak knowledge in (65%) of the items related to management of patients with heart failure.
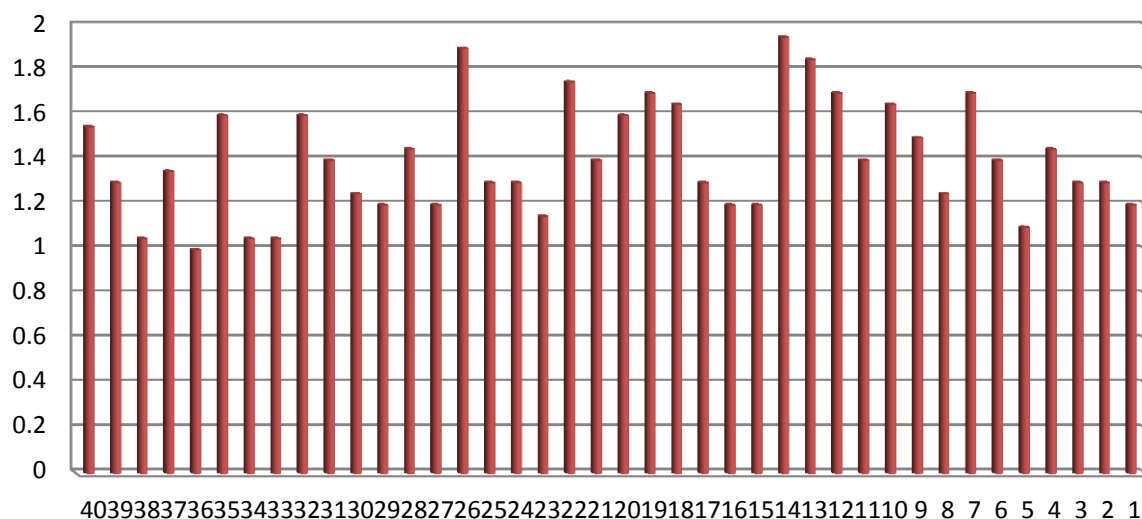


**Figure (1) Assessment of nurses' knowledge toward management of heart failure**

**Table (3): Relationship between Nurses Knowledge and their Demographic Data**

| Demographic Data | Rating | Nurses knowledge | | Significance |
|---|---|---|---|---|
| | | Pass | Fail | |
| Age / Years | 20-24 | 6 | 0 | Chi-Square (42.03 )D.F (4) P-Value (0.013) S |
| | 25-29 | 9 | 1 | |
| | 30-34 | 2 | 0 | |
| | 35-39 | 1 | 0 | |
| | 40 And More | 1 | 0 | |
| Gender | Male | 11 | 1 | Chi-Square (5.5) D.F (1) P-Value (0.47) Ns |
| | Female | 8 | 0 | |
| Residence | Rural | 2 | 1 | Chi-Square (5.1) D.F (1 ) P-Value (0.52) Ns |
| | Urban | 17 | 0 | |
| Marital Status | Single | 10 | 0 | Chi-Square (7.0 ) D.F (1 ) P-Value (0.32) Ns |
| | Married | 9 | 1 | |
| Socio-Economic Status | Satisfied | 11 | 1 | Chi-Square (7.7 ) D.F (1) P-Value (0.27 ) Ns |
| | Satisfied To Some Extent | 8 | 0 | |
| Levels of Education | Nursing School | 3 | 0 | Chi-Square (19.8 ) D.F (2) P-Value (0.04) S |
| | Institute | 9 | 0 | |
| | College | 7 | 1 | |
| Years of Experience | 1-3 | 11 | 1 | Chi-Square (83.6 ) D.F (3) P-Value (0.006) HS |
| | 4-6 | 3 | 0 | |
| | 7-9 | 2 | 0 | |
| | 10 And More | 3 | 0 | |
| Years of Experience in Cardiac Units | 1-3 | 16 | 1 | Chi-Square (40.8 ) D.F (2 ) P-Value (0.089) Ns |
| | 4-6 | 2 | 0 | |
| | 7-9 | 1 | 0 | |
| Training Sessions | No Training Sessions | 3 | 1 | Chi-Square (33.0 ) D.F (2 ) P-Value (0.10) Ns |
| | 1-2 | 14 | 0 | |
| | 3-4 | 2 | 0 | |

No.: Number      %: percentage Freq.: Frequency      NS.: non-significant
HS: High significant      S.: significant      P Value: probability value
Df: degree of freedom

Table (3)shows that there is no significant association between nurses knowledge and some variables in demographic data of the study sample, while the age of the sample shows there are significant association at P-value (0.013), also levels of education shows significant

association at P-value (0.04) with nurses knowledge. In addition, this table shows highly significant association between years of experience and nurses knowledge of study sample at P-value (0.006).

**Discussion:**

**Part-I: Discussion of Socio-Demographic Data of the study sample:**

Concerning their age, the majority of study sample are (25-29) years. This result match with the result of Azer (2011) who find in his study that the majority of the study subjects age were between (18-29) years old [10]. Also Aziz and Lafi (2011) in their study "evaluation of nurses' practices provided to the patients who undergo open heart surgery in Sulaimani center of heart diseases" stated that the majority of the sample age between (25-29) years old [11]. About the gender of the study subjects, the highest percentage were males which is in consistency with Hassan (2012) in his dissertation "Effectiveness of nursing education program on nurses knowledge and Practices toward Arrhythmia in Kirkuk's teaching hospitals" who mentioned that the male is dominant gender of study sample as he explains that males will be needed to work in cardiac units' as they can perform job that needs heavy work [12]. Relative to the residency, the present study shows that the majority of study sample is living in urban residential area that can be related to nurses prefer to live near their working places especially when they work in critical care units like cardiac units.

Regarding the marital status, the present study shows that half of the sample are married and the rest are single. Gázquez, et al., (2012), in their study "the effectiveness of an educational program in nursing in the self-care of patients with heart failure" who pointed in their study that the highest percent were married in intervention group (53.1%) while in control group the highest percent (66.7%) are single [13]. Concerning the socio-economic status, the highest percentage of study sample are satisfied. This result is due to nurses were single and do not need more expenses like for the married nurses who show they are satisfied for some extend High present of the study sample graduated from nursing institute. Many previous studies were in agreement with this result they found that the majority of study subjects in cardiac units are graduate from university and institute [12, 14, and 15]. Concerning the years of experiences, the result of present study revealed that the majority of nurses are between (1-3) years of experience. This result is supported by a study done by Hassan (2012), as his results indicated that the higher percentage of study sample are less than 5 years of experience [12].

Regarding to the years of experience in cardiac units, the present study shows that the study sample have between (1-3) years. This result agree with another study done by Younis, (2014), who pointed that most of the nurses in their study had (1-4) years of experience in medical and cardiac care unit [15]. About training sessions toward heart disease, the majority of the sample in study had (1-2) training sessions. This results come along with Hussein and Al-Ganmi (2013) in their study "assessment of nurses' knowledge concerning cardiogenic shock for patients' in cardiac care unit at Baghdad hospitals" they reveals that (8.0%) only were participating in training courses [16].

**Part-II: Discussion of the Nurses' Knowledge Concerning Management of Patient with Heart Failure:**

The results of the present study indicated that the study sample knowledge is deficit toward management of heart failure. Mahramus et al.,(2014), in their study "assessment of an educational intervention on nurses' knowledge and retention of heart failure self-care principles and the teach back method" they concluded their results by emphasizing that there is a deficit knowledge of nurses' about self-management for heart failure prior to participation in the educational intervention [17].

Also Garris (2014), in her study "nurses' knowledge related to heart failure essentials" she mentioned that there are varying difference between pretest and posttest as the study

sample nurses answering her questions showing that the mean percent in pretest is 72.8% and it became 89.5% in posttest, which shows an increase about 16.7% in most questions in posttest [18].

### Part-III: Discussion of Associations between Nurses Knowledge and their Socio-Demographic Data:

Concerning the result related to associations between Nurses Knowledge and their demographical in (Table 3). The present study reveals that there is no significant association between Nurses Knowledge and their demographic data in related to (gender, residency, marital status, socio-economic status, years of experience in cardiac units, and training sessions). The results of the present study are supported by other studies that indicated no significant difference between demographic data and nurses knowledge. [19, 11].

In regarding to age there is a significant association at p-value (0.013), This result is shown due to the scientific abilities in learning capabilities, which can be affected with advanced age, when the age increased the perception and holding a knowledge may be decrease .

There were significant association between nurses knowledge and their level of education at p-value ≥ 0.04. These finding agrees with a study of Younis, (2014), who stated that there is significant association between level of education and nurses' knowledge toward heart failure [15]. Also Hassan, (2012), mentioned that there is significant correlation between educational level and knowledge of nurses in medical wards [12].

Regarding the years of experience, the results of the present study indicated that a highly significant association between years of experience and nurses' knowledge at p-value (0.006). This results agreed with Knopp, (2009), who concluded that nurses will have less score (46.6%) during the first year of experience, and the nurses with (1-3) years of experience had (53.3%.) which considered as the second lowest average scores. The nurses who had (4-7) years of experience highest score (71.3%) [20]. Also Younis (2014), shows a significant association between years of experience in medical ward and coronary care unit with nurses' knowledge.

### Conclusions:

**According to the result of present study, the researcher can make the following conclusions:**

1. Most of nurses in cardiac units had knowledge deficit concerning management of patient with heart failure.
2. There were significant associated between the years of experience of nurses and their demographic data.

### Recommendations:

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

1. Encouraging nurses to be enrolled in training sessions and conference to improve their knowledge and keep them up to date toward heart failure.
2. Nurses need to be joining in special courses in order to improve their knowledge toward heart failure.
3. Health directorate should apply continuous education activities to improve nurses' knowledge toward chronic disease including heart failure.

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