Quality of Life for Old age Patients with Heart Failure at Assiut City Hospitals- Egypt

Tasneem A. Shoulkamy[1], Rabaa H. Hassanen[2] and Hanan A. Abo zaid[1].

[1]Gerontological Nursing Department, Faculty of Nursing, Assiut University, Egypt
[2]Family and Community Health Nursing Department, Faculty of Nursing, Assiut University, Egypt
rabaa_hasanen@yahoo.com

Abstract: **Background**: Quality of life (QOL) is the over-all well-being of persons and societies, outlining negative and positive structures of life. Heart failure is accompanied by bad quality of life, frequent entry to hospitals, high health costs and quick death**. Study aim:** Evaluate the quality of life for heart failure old age patients attending cardiac outpatient clinics in Assiut city Hospitals. **Patients and methods:** A descriptive research design was conducted. The total sample size was 280 old age patients who were taken by quota sample from 3 hospitals at Assiut City- Egypt. Two tools were used: the first tool was an interview questionnaire and the second tool were older people's quality of life scale (OPQOL). **Results:** it was found that 59.3% of elderly patients were male with mean age ± SD was 65.10 ± 6.12, the highest mean scores were leisure and activities 20.71±2.28, followed by social relationship, home and neighborhood, life overall, financial circumstance, psychological and emotional well-being and independence while the lowest mean scores were general health domains 8.36±2.07. **Conclusion:** Heart failure has a significant effect on the QOL of old age patients; poor QOL is associated with poor knowledge about disease of heart failure. **Recommendations:** Health educational programs for old age patients about how to improve QOL through maintain of optimal health, physical activity, healthy dietary habits**,** independency, stress management techniques, healthy sleep behavior, recreation, improve social relation, and life style.

1. Introduction

Aging is a vital part of all human societies reflecting the biological changes that occur and also reflecting the cultural and societal conventions. Aging is known to be one of the risk factors for most human diseases (**Agarwal & Baur, 2011)**. **World population ageing, 2015** mentioned that "all over the world, the total number of elderly people is 901 million in 2015 (12.3%) and is expected to increase to 1.4 billion (16.5 %) in 2030. By 2050, the international number of elderly people will be more than the double number of elderly people in 2015, approximately 2.1 billion". In eastern Mediterranean region the number of old adult people was 26.8 million representing 5.8% of the total population in 2000. In 2050, this percent will increase to become 15% of total population (**Al Shaali & Al Jaziri, 2014)**. In Egypt, the number of elderly people was 6.27% in 2006. In 2015, it was 6.9% and it will increase to be 9.2 % in 2021. By 2050, it is expected to become 20.8% of the over-all population in Egypt. **(Sweed, 2016)**.

Age changes occur in every person but not in the same level. Heart experiences weakness with aging. Many alterations occur in cardiac system with getting aged. They involve elasticity loss, decline heart driving ability; cardiac valves become fibrotic and decrease myocardial cells. All these changes increase the danger of heart diseases. **(Alama, 2017)**.

With aging, there are lots of changes in the building and the function of cardiovascular system that lead to changes in cardiovascular working which in turn increases the risk of cardiovascular illness. Some researches clarify that aging makes great modifications in the cardiovascular system that increase risk cardiovascular illness **(Alama, 2017)**.

Heart failure is that the main cardiovascular diseases in elderly people and one among the most vital reasons of disability that limits a patient's activity. This disability reflects in turn on activity of daily living, life style and quality of life of olde age people. **(Saccomann et al., 2011**).

The number of people suffering from heart failure is about 6.5 million in 2011-2014 **(American Heart Association's, 2017)**. However, there is no published data about heart failure in Egypt. In 2003, The National Heart Institute of Egypt found that Systolic heart failure patients required frequent re-admission and had a mortality rate of 17.6% versus 11.3% for diastolic HF patients, with a mean age 60 years and 63 years respectively **(El –Badawy & El-Hefnawy, 2013).**

Heart failure affects quality of life more greatly than many other chronic diseases **(Jaarsma et al., 2010).** Concept of QOL is very wide and multi-dimensional. Regarding to the W.H.O, it is the perception of the individuals' position in life,

expectation, standards and concerns **(Pernombuco et al, 2012)** Quality of life (QOL) is: "a conscious cognitive judgment of satisfaction with one's life" or "an overall general well-being that comprises objective descriptors and subjective evaluations of physical, material, social, and emotional well-being together with the extent of personal development and purposeful activity, all weighted by a personal set of values" **(Karimi & Brazier,2016)**.

QOL dimensions includes: Life overall, Health, social relationships, independence, control over life, freedom, home and neighborhood, emotional, financial circumstances, leisure and activities, religion and culture **(Bowling,2009).**

The nurse has a significant role in enhancing the status of heart failure patients. There are many roles that a nurse does to enhance the patient's outcome. A nurse gives directions to patients about daily activity living and how to improve the quality of life **(Pi & Hu, 2016)**.

Significance of the study: Heart failure is the main general health issue in the world. Around 80% of elderly people were complain from this disease **(Díez-Villanueva & Alfonso, 2016)**. Heart failure ratio in developed countries varies from 1-3% increasing to 10% or more in people aged 75 years or older (**Sahle et al.,2016).** Assessing people's quality of life as they become elder adults developed a big importance over the latest years, as rising life expectancy **(Saccomann, et al., 2010)**.

Aim of the study:

Evaluate the quality of life for heart failure old age patients who are attending to the outpatient cardiac clinics in Assiut city hospitals

Research question:

1. What is the quality of life among old age patients with heart failure in Assiut city hospitals?

2. Is there a relation between heart failure old age patient's knowledge and quality of life?

3. what is the relation between the quality of life and the sociodemographic data among old age patients with heart failure?

2. Patients and Method

Research design;

A descriptive research design was used.

Setting:

This study was carried out in three cardiology outpatient clinics at Assiut city hospitals. Assiut city consist of 4 hospitals named Assiut University Hospital, El Mabara Hospital, Assiut General Hospital (El- Shmala) and El -Eman General Hospital. The present study was carried out in three outpatient cardiology clinics in three hospitals only, which are Assiut university hospital, Assiut general hospital (El-Shmala) and El-Eman general hospital. El Mabara

hospital was excluded because its administration rejected to participate in the study.

Sampling:

Total number of this study consisted of 280 patients selected from the previous mentioned setting. Quota sample for all old age with heart failure disease (male/female) was used. The whole number of patients in all Assiut city hospitals is approximately 1020 patients per year. The flow rate of patients per month in these hospitals as Assiut university hospital was (30) patients per month, Assiut general hospital (20) patients per month and El Eman general hospital (15) patients per month). By using software EPI /Info, version 3, 3 with 95 % confidence interval (CI), the estimated sample size was found to be 280 patients. It was divided as the following: Assiut university hospital 129 (46.1%), Assiut general hospital 86(30.7%) and 65 (23.2%) from El- Eman general hospital.

Exclusion criteria:

1. Heart failure patient who aged less than 60 years old.

2- Patients not able to communicate with the researchers.

Two study tools were used for data collection after reviewing relevant literature. Tool I: An Interview Structured Questionnaire was developed for data collection, it included three parts. The First part includes the sociodemographic characteristics as, age, sex**,** residence, marital status, income, occupation, and level of education…..etc **(Abdeltwab scale, 2012).** The Second Part includes history (past & present) such as smoking and presence of chronic diseases, e.g. renal disease, diabetes, and hypertension,……etc **(Walker et al., 2014)**. The Third Part includes the patient's knowledge about heart failure such as its definition, signs & symptoms, risk factors, medication and management of disease **(Walker et al., 2014)**. The total scoring for knowledge was 36 grads. A correct response scored 1 grade and incorrect response scored zero. The score of each item was summed-up and then converted into percent score (Poor= score< 60%, satisfactory= score 60-80%, good= score >80%).

Tool II:

Older People's Quality of Life scale (OPQOL) **(Bowling, 2009).** It is a scale that consists of 35- item QOL measure. It was 5-point Likert scales from Strongly Agree to Strongly Disagree (1=strongly disagree; 2=disagree, 3=neutral, 4=agree and 5= strongly agree). Total QOL scoring was 175grads. The scale ranges from 35 to 175, with 35 items, representing: life overall (4 items represented 20 grads), health (4 items represented 20 grads), social relationships and social activities (5 items represented 25 grads), independence, (4 items represented 20 grads), home and neighborhood (4 items represented

20 grads), psychological and emotional wellbeing (4 items represented 20 grads), financial circumstances (4 items represented 20 grads), leisure and activities (6 items represented 30 grads). The Scale had two levels (low and high). The total score was 100 % grads. The person who obtained less than 60% (105) grads was considered low QOL and who scored more than 60% (105) grads was considered high QOL.

Ethical consideration:

Obtaining an official letter of approval from the Dean of the Faculty of Nursing, Assiut University to the Director of outpatient cardiac clinics at Assiut University Hospital, Director of Assiut General Hospital (Al Shamala) and Director of Al-Eman General Hospital. The letter involved a permit to conduct the study, an clarification of its purpose and the nature of the study. Confidential information and oral consent of old age patients to participate in the study. The patient has the moral right to approve or refuse to share in the study; the purpose of the study was explained to the patients prior to data collection.

Pilot study:

Pilot study was conducted prior starting of data collection on 10% of old age patients to test the clarity, feasibility of the interview form and estimate the time needed to fill it. This sample was excluded from the total sample. The necessary adjustments were done and final form were developed and used in data collection.

Validity of the sheet:

The sheet was reviewed by (5 experts), from Community Health Nursing Department and Gerontological Nursing staff at Assiut University to assess and evaluate the sheet items to secure validity of the sheet. Modifications were done according to the experts committee directions. **Reliability** was analyzed by Cronbach's alpha; the value was 0.900.

Data Collection:

The study started in 1st of February 2017 and end at 30 of August 2017; data were collected from Assiut university hospital, Assiut general hospital (El-shamla) and El Eman general hospital for seven months. The researcher collected data three days per week, 4 hours each day from 9 am to 1 pm and the average number which was interviewed was 3-4 old age patients per day. The researchers were clear up the purpose and nature of the study to each old age patient who agreed to share in the study. Each patient was individually interviewed. The approximate time spent during the filling of the sheet was around from half to three quarter of hour.

Statistical analysis:

Data was tabulated and analyzed by SPSS software (version 18). Data were presented in the form of frequencies and percentages or means ± standard deviations. Quantitative variables were compared with

Independent samples t- test and qualitative variables were compared with chi-square test to determine the significance.

3. Results:

Table (1) illustrated that 56.4% of studied sample aged from 60-65 years old with the mean age 65.10 ± 6.12. This table also, shows that 59.3% and 73.2%, 98.2% respectively of the studied patients were male, live in the rural area and living with their family. Also, this table reveals that 42.5%, 37.5%, 65.4%, and 64.6 % respectively were illiterate, house wife, from a middle social class and practicing of daily activities living while, 1.4% of them were divorced.

Table (1): Frequency of studied old age patients according to their socio demographic data

Items	No. (n= 280)	%
Age: (years)		
60 - < 65	158	56.4
65 - < 70	64	22.9
≥ 70	58	20.7
Mean ± SD (Range)	65.10 ± 6.12 (60.0 – 93.0)	
Sex:		
Male	166	59.3
Female	114	40.7
Patient education:		
Illiterate	119	42.5
Read & write	47	16.8
Primary school	34	12.1
Preparatory school	34	12.1
Secondary school	32	11.4
University	14	5.0
Marital status:		
Single	5	1.8
Married	161	57.5
Widow	110	39.3
Divorced	4	1.4
Current Occupation:		
Not working after retirement	58	20.7
Worker	9	3.2
Farmer	54	19.3
Free business	26	9.3
Skilled worker	28	10.0
Housewife	105	37.5
Residence:		
Rural	205	73.2
Urban	75	26.8
Living with:		
Alon	5	1.8
With her family	275	98.2
Social class		
Low	46	16.4
Middle	183	65.4
High	51	18.2
Practicing daily activities living:		
Yes	181	64.6
No	99	35.4

Figure (1) illustrated that 6.15 of studied patients were smokers while 17.1% had diabetes mellites and 28.6% of them had high blood pressure.

Figure (2) reflects that 56.1% of studied patients had poor knowledge's scores, while11.4% of them had good knowledge's scores.

Table (2) shows that the highest mean scores was 20.71 ± 2.28, 17.35 ± 2.32 and 16.80 ± 2.36 respectively in leisure and activities, social relationships and home and neighborhood domains, while the lowest mean scores were10.34 ± 2.02, 10.33 ± 2.06 and 8.36 ± 2.07 in psychological, independence and health domains.

Figure (3) illustrates the positive statistical significant association between QOL domains and knowledge r= o.325 and P=0.000.
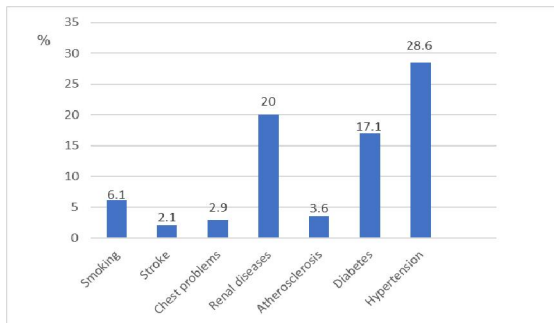
Figure (1): History of chronic diseases & smoking among elderly patient with heart failure
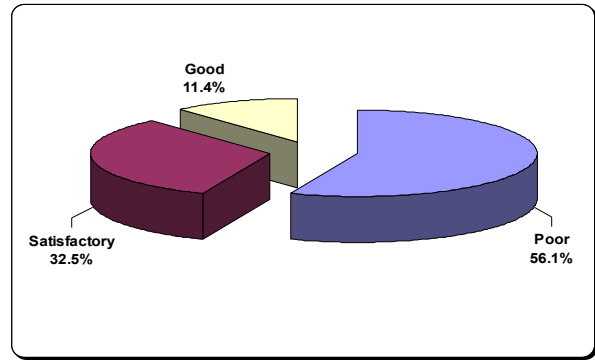
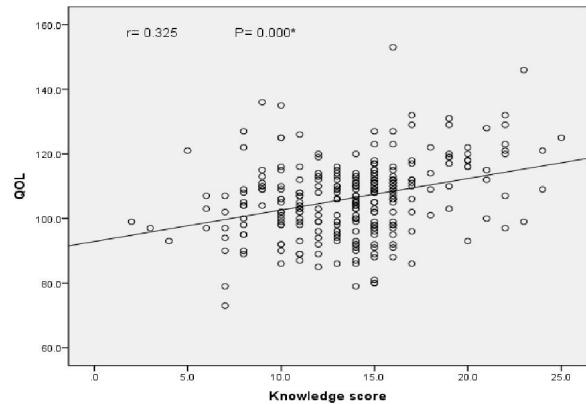**Figure (2): Total elderly patient's knowledge scores about heart failure**

Figure (3): correlation between total knowledge scores and total QOL scores among heart failure studied old age patients.

Table (2): Quality of life domains among studied elderly patients with heart failure

Items	Max. scores	Mean ± SD	Range
Life overall	20	11.30 ± 2.10	7.0 - 16.0
Health	20	8.36 ± 2.07	4.0 - 16.0
Social relationships	25	17.35 ± 2.32	8.0 - 23.0
Independence	20	10.33 ± 2.06	5.0 - 20.0
Home and neighborhood	20	16.80 ± 2.36	10.0 - 20.0
Psychological and emotional well-being	20	10.34 ± 2.02	4.0 - 20.0
Financial circumstances	20	11.11 ± 2.78	7.0 - 20.0
Leisure and activities	30	20.71 ± 2.28	15.0 - 30.0

Table (3): Relation between socio demographic data and total QOL sores among studied heart failure old age patients.

Items	QOL Mean ± Sd	P-value
Age: (years)		
60 - < 65	110.31±10.71	
65 - < 70	105.44±10.37	0.000*
≥ 70	96.31±9.15	
Sex		
Male	107.83±11.08	
Female	104.7±12.16	0.008*
Patient education:		
Illiterate	103.36±11.41	0.000*

Items	QOL Mean ± Sd	P-value
Read and write	102.85±10.42	
Primary school	106.91±8.10	
Preparatory school	107.15±6.95	
Secondary school	114.84±13.46	
University	119.71±11.51	
Residence Rural Urban	104.98±11.27 109.91±12.01	**0.002***
Social class Low Middle High	99.17±9.36 105.44±10.40 115.78±12.01	**0.000***
Practicing daily activities of living **Yes** **No**	108.94 ± 10.98 101.45 ± 11.44	**0.000***

* **There is significant difference - Significant at P < 0.05**

Table (4): Relation between chronic diseases, disease duration and total scores of QOL among studied old age patients.

Items	Quality of life	P - value
	Mean ±SD	
Hypertension:		
Yes	108.15 ±11.86	**0.092**
No	105.56 ±11.52	
Diabetes:		
Yes	109.35 ±10.98	**0.046***
No	105.66 ±11.72	
Renal diseases:		
Yes	100.45 ±11.33	**0.000***
No	107.76 ±11.30	
Duration of disease (years)		
< 2	107.93 ±10.38	
2 – 4	106.58 ±9.25	**0.141**
> 4	104.49 ±14.69	

* **There is significant difference - Significant at P < 0.05**

Table (3) cleared that significant difference between all items of socio demographic data (age, sex, patient education, residence, social class, and practicing of daily activities living) and QOL domains P= 0.000, 0.008, 0.000, 0.002, 0.000 and 0.000 respectively.

Table (4) illustrated that there is a significant relation between renal diseases, diabetes mellites and quality of life at P= 0.000 and 0.046 respectively.

4. Discussion
Witham et al., 2012 mentioned that "Heart failure is the most and main reason of disability and declined quality of life in elderly persons". It is not only influenced ill persons' QOL, but also influenced the persons who care to them **(cambpell et al., 2015).**

Study aim: To evaluate the quality of life for heart failure old age patients who are attending to the outpatient cardiac clinics in Assiut city hospitals.

The current study clear that the mean age of studied patients was 65.10 ± 6.12 years. This result is an agreement with another study conducted by **Ogbemudia and Asekhame J., (2016)** and **Chen and Chen (2017)** who illustrated that the mean age was74±7.33years and 70.87± 8.39 years respectively.

This study reflected that around three fifth of studied old age patients were male, which indicates that heart failure was more common among males than females. Similar findings were reported by **AL-khadher & Fadl-Elmula (2015), Hoekstra et al. (2013) and Mbakwem et al. (2013)** who noticed that men were more likely than women to suffer from heart failure, and more than half of studied sample were males. This result may be because males usually smoke. The present study was in disagreement with **Chen and Chen (2017)** who reported that more than three fifths of the participants were females.

People who live in rural areas have a high incidence of cardiovascular disease compared with people who live urban areas. **(Nesbitt, et al 2014**). People in rural areas are usually underserved, with low medical team provider's source, big space to medical place, reduced physician mass with increase dependence on generalists, and increase medical team turnover **(Verdejo et al., 2015).** This study coincided with the previous statement which reflects that the about three quarter studied patients' lives with their families in rural areas. Furthermore, this study was in agreement with **Yu et al., (2016)** who reported that three quarter of participants lived with their families.

Regarding to the educational level, the present study clear that more than one tenth of participant had secondary education. This infer that the about three quarter of studied patients live in the rural areas. The present study disagreed with **Mbakwem et al. (2013) and Chen and Chen** (**2017**) who illustrated that around two fifths of participants had secondary education.

The present study illustrated that less than three fifth of studied patients were married and less than one fifths of them belong to the high social class. This result was in disagreement with **Chen and Chen** (**2017**) who found that the majority of participants were married and more than three fifths of them had sufficient income.

Based on the analysis, older adults with chronic diseases may suffer from various diseases that lead to poor control of movement and limit the performance of various activities. **DaCosta et al., 2012 and Leach et al., 2011.** The current study clear that less than two third of participant can do a dial activities living. This may be because the participants were collected from outpatient clinics where patients are clinically stable and independent, so they can come to outpatient clinics alone or with their relatives. Also, less than three quarters of them were from rural areas where there is usually a wide place and allows the patients to walk around to other places and visit the other family members, neighbors and friends. This result agrees with **Baernholdt, et al., (2012)** who found that most of studied sample stood or walked much during the day but could not carry or lift things frequently and also, with **Chen and Chen** (**2017**) who found that the majority of studied sample had complete physical function.

This study revealed that less than one tenth of the participants were smokers. This may be because males may stop smoking when they discover that they had heart failure and about two fifths of them were females and from rural community which is considered shame for female. This study is in contrast with **Hoekstra et al**. **(2013)** who illustrated that around one fifth of participants were smokers.

The current study revealed that more than one-quarter of studied patients had history of hypertension and less than one fifth of them had history of diabetes mellitus. This may be related to the elderly chronic illness as hypertension which increases the risk of heart failure. This result is in the same line with **Bui et.al, (2011)** who founded that one third of the participants had history of hypertension**,** while it is in disagreement with **Yu et al., (2016)** who clear that the most of studied sample had coronary heart diseases and less than half- of them had diabetes mellitus.

Also, this study is in contrast with **Elbadway & El Hefnawy (2013)** who illustrated more than one third of studied sample had cardio vascular diseases and more than one fifth of them had diabetes mellitus and with **Chen and Chen** (**2017**) who reported that more than two fifths of participant had history of hypertension and more than one fifth of them had history of diabetes mellitus.

Regarding the patients' knowledge about heart failure disease, it was founded that less than three fifth of studied patients had poor knowledge scores. These results may be due to about three quarters of the participant were from rural areas and more than two fifth of them were illiterate.

QOL effect on individual's physical and intellectual health is obvious and it is a process that affects the disease or its management from patients' viewpoint **(Yancy et al 2013 and Adebayo et al.,2018**). QOL is observed as a comprehensive concept as all aspects that connected to health condition in direct or indirect way. It reflects the individuals' intellectual and physical health in their activity of daily living. It is important to clear the connection between the QOL and functional activities of ill people as a result of the functional condition of heart failure patients appears to influence the domains of the QOL (physical, psychological, social, emotional, sexual, and mental well-being). (**Adebayo et al.,2018).**

Several studies were done by **(Comín-Colet et al., 2016, Yu et al., 2016, Ramos et al., 2014, Nesbitt, et al 2014, O'Connell**, **et al., 2011, Tung et al., 2014),** who founded that heart failure is strongly associated with a significant decrease in QOL among the older population. The present study reflects that the highest mean score domain was leisure and activities followed by social relationship, home and neighborhood, life overall, financial circumstances, psychological and emotional well-being, independence and the lowest mean score domain was health**.** The current study is in contrast with a study done by **Chen and Chen 2017** who shows the highest mean sore was environmental domain, with an average of 15.02±1.97, followed by the physiological health 14. 69 ± 2.37 and the social relation 14.35 ± 2.23, whereas the

psychological category scored the lowest, with an average of 14.21±SD 2.42. Moreover, in disagreement with Hassanen and El Shekteria 2015 who stated that the highest mean scores was environmental domain while the lowest was social relation.

On the other hand, it agrees with **Britz J., & Dunn K., (2010)** who reported that around one half of participants had poor general health, and with **Comín-Colet et al., (2016)** who found that participants had limitation in physical health, while it disagrees with **Chen and Chen** (**2017**) who found that participants had moderate or higher score of health dimension. This result is in agreement with **Saccomann, et al., (2010)** who found that patients presented higher scores in social function.

The current study also, showed that the highest mean score was home and neighborhood and this is because that most of studied patients were living with their families which reduces the feeling of loneness and social isolation and patients usually need to talk to their neighbors to vent their emotions and forget about the disease. Also, this study is in the same line with **Seto et al., (2011)** who illustrated that participants had moderate emotional dimension.

Regarding the relation between sociodemographic characteristics and total QOL mean scores, the present study showed that low QOL is increasing with age, female patients, low educational level, living in rural areas, low social class and long duration of disease with statistical significant difference except duration of disease. This study is similar to a study done by **Hoekstra et al. (2013)** who showed that low QOL is related to older age, female, duration of HF. While, it disagrees with **Erceg et al., (2013)** who found that no significant relation between health related QOL and age, gender, and patient education while agrees with the present study at items named house hold income.

The present study showed that there is no relation between hypertension disease and health domain. This result agrees with **Erceg et al., (2013)** who reported that, there is no relation between hypertension disease and health domain.

In patients with long-lasting disease, preceding research showed that better Activity of daily living roles improved greater QOL **(Chen and Chen 2017).** **Saccomann et al., (2011)** reported that patients with HF are associated with loss of the independence; they need to change their lifestyle because they cannot do some duties due to dyspnea, fatigue and edema. The present study agrees with the previous statement and illustrated that QOL was better among the studied patients who were able to do daily activities living.

Conclusion:

Heart failure has a significant effect on QOL of old age patients. It is associated with decreased health, psychological and emotional well-being, independence, financial circumstances. More than half of old age patients had poor knowledge about heart failure and its management and low educational level is associated with low independence domain.

Recommendations:

Increase elderly knowledge about heart failure (causes, risk factors, its management, and complications) by providing health educational programs through health classes in elderly clubs and different health agencies. Physical Examination for all people above the age of 50 years for early detection of heart failure disease. Old age people should be aware of the various types of services available in the community that help them to meet their needs as physical, psychological, social or spiritual services.

Health educational programs for old age patients about how to improve QOL through maintain optimal health, physical activity, healthy nutritional habits, independency, stress management techniques, sleep behavior, recreation, improve social relation, and life style.

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