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Assessment of Life Style of Patients with Heart Failure

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Abstract

Background: Heart failure (HF) is one of the most common causes of death and morbidity worldwide. Heart failure is difficult to treat because it has multiple causes and influenced by a wide range of patient genetic, lifestyle factors and co- morbidities. So, HF manifests, progresses, and responds to treatment differently in each individual. Aim: To assess the lifestyle of patients with heart failure. Settings: The study was conducted at the cardiac outpatient clinic at Makkah Hospital. Subjects: A convenience sample of 200, male and female patients diagnosed with heart failure for receiving treatment and follow up. Tools: two tools were used. Tool one: "Bio-socio-demographic and clinical data of patients with heart failure structured interview schedule". Tool two: "Life style of patient with heart failure structured interview schedule". Results: The study showed that there was positive statistically significant relation between age and overall life style of patients with heart failure were p (0.009). There was positive statistically significant relation between marital status and overall life style of patients with heart failure were p (<0.001). However, there was negative statistically significant relation between monthly income (from patients' point of view) and overall life style of patients with heart failure, who had unhealthy lifestyle were p (0.005). Conclusion: It found that,48% of the studied subjects with heart failure were unhealthy life style. Recommendations: Educational program should be developed and implemented for patients and their families relate to healthy life style modifications such as smoking cessation, alcohol consumption, dietary habits, drugs intake, adequate rest and physical activity, proper ways to coping with stress, elimination patterns, modifying of sexual activity and conducting follow up as scheduled by physician.

Key words: *Heart failure, lifestyle.*

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Introduction

Heart failure (HF) is a medical disordercaused by the heart's inability to adequately pump enough blood throughout the body. When heart failure develops, the body organs are unable to receive oxygen and nutrition-rich blood, resulting in organ failure, body weakness, and feelings of shortness of breath (Bloom et al., 2017).Heartfailure is a global pandemic health problem that affects at least 26 million people worldwide. Despite significant advances in therapies and prevention, mortality and morbidity are still high, as well as quality of life remains low (Savarese & Lund, 2017).

The cost of HF healthcare is high and will rise sharply as the population ages. Heartfailure is a leading cause of hospitalization in adult patients. Nearly 80% of HF costs are dueto hospitalizations and readmissions, which have negative effects on all aspects. As well as increasing costs of the healthcare system that reduce services, treatment, and care plans thatare provided for patients with heart failure , decrease patients' quality of life (QOL) , affecting social, economic, and physical aspects, including increased incidence ofillness, reduced desire to take medications, and more importantly, increased desire to end life(Lesyuk et al., 2018).

According to the Global Burden of Disease, there are an estimated 17 major etiologies for HF. More than two-thirds of all instances of HF are caused by one of four conditions: rheumatic heart disease, ischemic heart disease, chronic obstructive pulmonary disease and hypertension (Ziaeian & Fonarow,2016). Heart failure is a clinical syndrome withcommon symptoms (such as shortness of breath,swelling of the ankles, and fatigue) and signs (such as increased jugular venous pressure, pulmonary crackles, and peripheral edema)caused by a structural and/or functional cardiac anomaly result in decreased cardiac output and/or increased intra-cardiac pressures under stress or at rest (Kurmani & Squire, 2017).

The main goals of treating heart failure patients are to improve their symptoms and quality of life. Reduce hospitalization associated with heart failure because frequenthospitalization signals disease progression and an increased risk of mortality. The management of patients with heart failure is frequently multi-factorial and may involve drug therapies, the implantation of medical devices, and cardiac transplantation. (Yancy et al., 2016).

Early detection of heart failure and goodmanagement are considered an essential part of medical treatment. Most patients with heart failure revealed a lack of knowledge about the causes, signs and symptoms, risk factors, and complications of heart failure, so they require close attention and care during their treatment.Poor management may have an impact on thetreatment plan and decrease the quality of lifeof patients with heart failure(Wen et al., 2017).

The nurse plays a critical role in the management of heart failure patients. They recognize patients with suspected heart failure evaluate and monitor common symptoms and indicators. Moreover, nurses play a pivotal role in education patient with heart failure and their families. Nurse provideself-care and lifestyle recommendations(including smoking, diet, consumption of alcohol, managing the effective use of pharmacological and device therapies, stress management, exercise, and follow up) (Riley et al., 2016).

These lifestyles modifications include: adhering to a recommended medication regimen; detecting signs and symptoms of worsening HF; making dietary changes and implementing a personalized exercise program.To engage in self-care, people with HF and their support systems must acquire knowledgeand skills specific to the health problem as wellas the various pharmacologic therapies, devices, and non-pharmacologic interventionsthat are considered part of overall HF disease management. The goal of these activities is to enhance patient's quality of life and raise theirchances of surviving. Thus, nurse should assesslifestyle of patients with heart failure(Rasmusson et al., 2015).

Aims of the Study

This study aims to assess the lifestyle of patients with heart failure.

Research question

What is the life style of patients with heart failure?

Materials and Method

Materials

Design: A descriptive research design was used to conduct this study.

Settings: This study was conducted at the cardiac outpatient clinic at Makkah Hospital, Saudi Arabia.

Subjects: A convenient sample of 200 adult patients diagnosed with HF (age 18-60 years) who are scheduled for follow up to the cardiac outpatient clinic was included in this study. The sample size was calculated using power analysis (Epi-info) program based on the following parameters: population size = 400 patients in (2020), expected frequency =50%, acceptance error =5%, confidence coefficient =95%, minimum sample size=196 conscious and able to communicate verbally, willing to participate in the study, free from other associated diseases or complications of heart failure as pericardial effusion and renal impairment.

Tools: In order to collect the necessary data for the study two tools were used:

Tool one: "Bio-socio-demographic and clinical data of patients with heart failure Structured Interview Schedule". This tool was developed by the researcherbased on review of recent relevant literature to assess the heart failure patients' bio-socio-demographic and clinical data it consists of two parts:

Part I: Patients' bio-socio- demographic characteristics: This part was used to collect patient's personal data as: age, gender, educational level, residence area, marital status, occupation and monthly income.

Part II: Clinical Data: This part was used to collect patient's clinical data as: current health problem, chief complaints, associated diseases, years of being diagnosed with heart failure (Duration of illness), familyhistory of chronic diseases, previous hospitalization due to disease or other disease, medication taken and laboratoryinvestigations.

Tool two: Life style of patient with heart failure structured interview schedule: This tool was developed by the researcher based on relevant literature review(Al-Rawashdeh et al., 2017; Alkan &Nural, 2017; Alosco et al., 2016; Shahbaz& Hemmati-Maslakpak, 2017; Vongmany et al., 2016; Vromen et al., 2016)to assess heart failure patients life style .This tool was composed of nine domains related to heart failure patients life style: Smoking: includingthree items, Alcohol consumption: includingone item, Drug usage for heart failure or other chronic disease: including seven itemslike take correct dose of medication, correct time, didn't use of over the counter medications, didn't stop taking of medications without telling the physician when patient feel better and symptom of disease is under control, Dietary patterns: include 21 items like type of food, frequency,quantity, number of meals, amount of fluid, sodium, fruits and vegetables, Physical activity& rest: include nine items like walking outsideof house, gardening, ways of transportation, measuring BP and pulse before and after exercise, Stress management: include nine items like deep breathing exercise , meditation and relaxation technique, recreational activities and hobbies likereading a book, watching TV, Eliminationpatterns: include five items for example using of laxative, use bed side commode instead of bed pan, check daily bowel and urinary function, follow nursing advice to relief constipation and eating a lot of fiber to avoid straining during defecation, Sexual activity: include five items for example taking

period of rest before and after sexual intercourse, use side to side position, avoid sexual activity in extreme hot or cold temperature, and Follow up: include seven items as following the medical instructions, carrying out ordered laboratory tests, executing ordered diagnostic procedure and reporting about any new signs and symptoms.

A total of 67 statements were phrasedin a form of (Yes) or (No in order to assess patients' heart failure lifestyle, eachcorresponding answer was scored as (1) and any either answer missed or incorrect wasscored as (0).The total scores will be converted to percentage from (0 -100) with higher scores indicating more healthy life style. Each patients score level was categorized with percentage as the following:healthy lifestyle range from 75-100%, fair lifestyle range from 50≤74%, unhealthy lifestyle less than 50%

Method

Approval of the Research EthicsCommittee, was obtained. The study tools were tested for content validity by 5 experts in the field of medical surgical nursing and 5 cardiac consultants. According to the jury opinion, the necessary modifications were done accordingly. A pilot study was carried out on 10% of the study sample in order to test the clarity and applicability of theresearch tools. Reliability of the tools was tested using Cronbach's Alpha test. Thereliability coefficient was 0.886 which is acceptable. Data was collected by the researchers during the period from January2022 to June 2022.

Ethical considerations:

Written informed consent was obtained from patient after explaining the aim of the study, Privacy of the study participants was asserted, confidentiality of collected data was asserted, the patient was informed that his or her participation in the study is voluntary and he or she can withdraw at any time and his orher withdrawal will not affect the care he or she receives at the hospital.

Statistical Analysis

The collected data were organized, statistically analyzed and tabulated by using the statistical package for social studies(SPSS) Version 20.0. Qualitative data were described using number and percent.

Results

Table 1 noticed that more than half of the studied subjects (65.5%) were in the age group from (50-60) years. The table revealed that (66.5%) of the studied subjects were married, and more than half (53.5%) of them residence from urban area. Approximately (51.5%) of the studied subjects had insufficient income (from patient point of view) to fulfill daily requirements. Regarding educational level, it was revealed that illiterate patients constituted the highest percentage about one-quarter (29.0%). In relation to occupation showed that the majority (29.5%) of the studied female patients were housewife.

Socio-demographic data	Patients with heart failure (n = 200)	
	No.	%
Age group (years)		
• 18 –	10	5.0
• 30 –	14	7.0
• 40 –	45	22.5
• 50 – 60	131	65.5

Gender		
• Male	127	63.5
• Female	73	36.5
Residence		
• Urban area	107	53.5
• Rural area	93	46.5
Marital status		
• Single	10	5.0
• Married	133	66.5
• Divorced / separated	15	7.5
• Widowed	42	21.0
Education		
• Illiterate	58	29.0
• Read & write	46	23.0
• primary education	48	24.0
• Secondary education	23	11.5
• University education	22	11.0
• Post Graduate education	3	1.5
Occupation		
• Employer	45	22.5
• Manual workers	25	12.5
• Retired	33	16.5
• Housewife	59	29.5
• Not working	38	19.0
Monthly income (from patient point of view)		
• Sufficient	97	48.5
• Insufficient	103	51.5

Table 2 showed that, patients were independent in relation to their activity of daily living, specifically eating, dressing, grooming, toileting and bathing they were(89.0, 82.0, 79.5, 68.5, 71.5) respectively.

Activities of daily living.	Dependent		Need help		Independent	
	No.	%	No.	%	No.	%
▪ Eating	6	3.0	16	8.0	178	89.0
▪ Dressing	11	5.5	25	12.5	164	82.0
▪ Grooming	9	4.5	32	16.0	159	79.5

▪ Toileting	17	8.5	46	23.0	137	68.5
▪ Bathing	16	8.0	41	20.5	143	71.5

Table 3 shows that, the highest percentage of alcohol intake had overall healthy life style (87.0).While the less percentage was related to smoking (9.0).Highest percentage of overall unhealthy life style were sexual activity and follow up, they contributed (57%, 65%) respectively. The table demonstrated that, the overall life style of patients with heart failure wasunhealthy (48.0).

Heart failure patients' life style domain	Overall life style of patients with heart failure					
	Healthy		Fairly		Unhealthy	
	No	%	No	%	No	%
1. Smoking	18	9.0	97	48.5	85	42.5
2. Alcohol intake	174	87.0	0	0.0	26	13.0
3. Drug intake	54	27.0	81	40.5	65	32.5
4. Dietary intake	28	14.0	128	64.0	44	22.0
5. Rest and physical activity	53	26.5	83	41.5	64	32.0
6. Stress management	26	13.0	89	44.5	85	42.5
7. Elimination patterns	61	30.5	68	34.0	71	35.5
8. Sexual activity	34	17.0	52	26.0	114	57.0
9. Follow up	25	12.5	45	22.5	130	65.0
Overall	26	13.0	78	39.0	96	48.0

Table 4 reveals that there was positive relation between age and overall life style of patients with heart failure were p (0.009). There was positive relation between marital status and overall life style of patients with heart failure were p(<0.001). However, there was negative relation between monthly income (from patients' point of view and overall life style of patients with heart failure were p (0.005).There is no relation between area of residence. Although, there is no significant relation related to gender life style, it found that male patients were have had higher percentage.

Biosociodemographic characteristics	Overall life style of patients with heart failure						X^2	P
	Healthy(n = 26)		Fair (n = 78)		Unhealthy (n = 96)			
	No	%	No	%	No	%		
Age(years):								
- 18-	1	3.8	7	9.0	2	2.1		
- 30-	4	15.4	4	5.1	6	6.3		$MC_{p=}$
- 40	6	23.1	9	11.5	30	31.3	15.963*	0.009*
- 50-60	15	57.7	58	74.4	58	60.4		
Gender:								
- Male	19	73.1	43	55.1	65	67.7		

- Female	7	26.9	35	44.9	31	32.3	4.121	0.127
Residence:								
- Urban area	15	57.7	44	56.4	48	50.0		
- Rural area	11	42.3	34	43.6	48	50.0	0.922	0.631
Marital Status:								
- Single	0	0.0	9	11.5	1	1.0		
- Married	26	100.0	20	25.6	87	90.6		MC_p
- Divorced	0	0.0	14	17.9	1	1.0	97.542*	<0.001*
- Widow	0	0.0	35	44.9	7	7.3		
Educational Level:								
- Illiterate	6	23.1	27	34.6	25	26.0		
- Read & write	5	19.2	19	24.4	22	22.9		
- primary education	9	34.6	12	15.4	27	28.1		
- Secondary education	5	19.2	7	9.0	11	11.5	10.825	MC_p=
- University education	1	3.8	12	15.4	9	9.4		0.333
- Postgraduate education	0	0.0	1	1.3	2	2.1		
Occupation:								
- Employer	6	23.1	18	23.1	21	21.9		
- Workers	5	19.2	8	10.3	12	12.5		
- Retired	6	23.1	9	11.5	18	18.8		MC_p=
- Housewife	8	30.8	25	32.1	26	27.1	8.485	0.387
- Not working	1	3.8	18	23.1	19	19.8		
Monthly Income (from patients' point of view)								
Enough	19	73.1	41	52.6	37	38.5		
Not Enough	7	26.9	37	47.4	59	61.5	10.615*	0.005*

Discussion

Cardiovascular diseases (CVDs) are the first cause of death, Heart Failure (HF) is considered one of the most commoncardiovascular diseases that can leads to death globally. Heart failure causes negative change in the patient's lifestyle which leadsto low quality of patient's life and frequent hospital admission. Positive change in the patient's lifestyle patterns play a significant role in prevention and treatment of heart failure (van Oort et al., 2020).

The main findings of the current studyrevealed that: highest percentage of the studied subjects were aged from 50-60 years old. These findings may be related to the increased and chances of having HF after age of 50 years due to presence of risk factors suchas hypertension, diabetes mellitus,hyperlipidemia that may be leading causes to increased susceptibility of heart failure. Moreover, with ageing the heart valves thicken and become

stiffer which affect valve conditions therefore sings and symptom of HFbecome to appear. The findings were in the same line with Cajita et al. (2016) who demonstrated that higher incidence of heart failure increase with age of more than 50 yearsold. The results of the present study showed that, there is statically significant relation between overall life style and age (p=0.009).

Concerning gender, the results of thepresent study revealed that the highest percentage of the studied subjects weremales. These findings were in the same line with Cediel et al. (2020) who showed that men had higher rates of cardiac deaths bydeveloping macro-vascular coronary artery disease and myocardial infarction as compared to women that predisposed micro- vascular dysfunction and endothelial inflammation. Contrary to Bozkurt and Khalaf (2017)who found that, heart failure with preserved ejection fraction is morecommon and accounts for at least half HF cases in women than in men .Moreover, women tend to have HF at an older age compared to men. The researcher view is that, these findings may be related to male gender are less adaptive physiologically, behaviorally, and emotionally with stressful events which contribute to increased risk for cardiac heart disease. Moreover, more than one half of them were cigarette smokers

In relation to residence area, the findingsof the present study showed that, more than half of the studied subjects were from urban area. In this context, (Cardiovascular Qualityand Outcomes Journal Report, 2018)reported that, risks of HF increased in urban area due to occupation and housing patterns. In addition, some people in urban areamay not be under estimating their health education to seek health services when feel sickness or experience sings and symptom of disease. Contrary of being from rural areainterfering with access to health care facilitiesand leads to lack of awareness of heart failurewarning signs, lack of health insurance. Theseresults were reported by Holstiege et al. (2019)who showed that rural population has a higher probability of heart failure, hypertension and ischemic heart disease than urban population .

As regards marital status, the results of thepresent study revealed that the highest percentages of the studied subjects were married. These results were matched with Watkins et al. (2013) who showed that marriedstatus was associated with HF patients as a high-risk population due to increase family responsibilities that increase their stress which isconsidered major risk factors for developing heart failure disease. Contrary toSenturk et al.(2021) who noticed that marital contributions can potentially result in better clinical outcomesin HF because of social, emotional, financial support and assistance in medication adherence.The results of the current study showed that, there is statically significant relation between overall life style and marital status (p=0.001).

Concerning educational level, it has been noticed that, more than one –quarter of the studied subjects were illiterate or read &write. These findings were in the same line with Barbareschi et al. (2011)who reported that, lower education in HF patients isassociated with high level of anxiety, limitingphysical activities and increased risk ofhospitalization. Moreover, these findings were not in the same line withJacobson et al.(2018) who found that, majority of participants had completed a primary education due to poor self-management, which may lead to not understanding the instructions of discharge plan.

Concerning occupation, the findings of the present study revealed that, more than one –quarter of the studied subjects were female theyare all housewife above 50 years. These results were in the same line with Wong et al. (2018)who explained that, most housewife patients were more likely to havehypertension and valvular heart disease, diastolic dysfunction that consider major risk factors and etiologies for developing HF. These findings might be related to that, housewife working for long hours in theirhouse (24/7), most of them had low educationallevel, decrease adaptability to the disease, which maybe worsening clinical outcomes.Contrary to Desai and Stevenson (2012)who stated that, manual work among male patientsincreasing their risk of HF because of psychological and economical factors that consider independent predictors of HF patients' deterioration which in turn, limit

commitment an adherence to health self-care measures related to HF.

Regarding monthly income (from patients' point of view), the findings of the present study revealed that, more than half of thestudied subjects had insufficient income to fulfilltheir daily requirements. This may be related totheir type of occupation with low income,increasing costs of medications which result innegative health outcomes. Moreover, chronic HF patients need lifelong medical follow up. These results were supported by Callender etal. (2014)who showed that, more than half of patients with heart failure experience financial problems. It could be due to continuous increasein cost burden of HF disease associated with economic inflation and costly treatment withouthealth insurance coverage. The results of the current study showed that, there is statically significant relation between overall life style and monthly income ($p=0.005$).

Concerning family history andassociated disease, the findings of the presentstudy revealed that, the highest percentage of the studied subjects had a positive family history of hypertension and/or DM as well as hyperlipidemia. These results were in same line withGeorgiopoulou et al. (2012) whoreported that, more than three quarter of HF patients had chronic disease such as hypertension and diabetes mellitus combined with heart failure. Additionally, the familymembers who are sharing the same living circumstances which may lead to heart failureand unhealthy lifestyle such as smoking, non-adherence with therapeutic regiment includinglack of stress management strategies

In relation to activity of daily living, thepresent study revealed that highest percentagewere independently to ADL. This might be dueto dignity. These results were in the same line withPiepoli et al. (2011) who showed that, patients who experience active daily physical activity behaviors decrease progression of the disease reduce risk of mortality and hospitalizations and improves quality of life. Moreover,Niklasson et al. (2022) who showed that, limitations in physical activity associated with impair health-related quality of life. Thereis positive relationship between regular physicalactivity and health of HF patients by decreasingincidence of hypertension, reduce risk of the adverse effect of lipid profile eventually that leading to reduce HF mortality.

highest percentage of alcohol intake had overall healthy life style. This might be due to the compliance with religious principleamong Arab population, While the less percentage was related to smoking.

Conclusion

Based upon the findings of the current study, it could be concluded that the overall life style of the studied subjects with heart failure was unhealthy, there was statically significant relation between age, marital status, monthly income and overall life style of patients with heart failure. There was no statically significant relation regarding gender, residence area, level of education, occupation and overall life style of patients with heart failure.

Recommendations

In line with the findings of the study,the following recommendations are made:

Educational program should be developed and implemented for patients and their families relate to healthy life style modifications such as smoking cessation, alcohol consumption, dietary habits, drugs intake, adequate rest and physical activity, proper ways to coping with stress, elimination patterns, modifying of sexual activity and conducting follow up as scheduled by physician.

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