

Assessment of Anxiety and Depression among Heart Failure Patients at King Faisal Cardiac Center, King Khalid Hospital, Jeddah

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Abstract

Background: Cardiovascular diseases are extremely common in Saudi Arabia. Depression and anxiety is highly prevalent in patients with heart failure disease and heralds adverse cardiovascular outcomes and increased health care costs. The aim is to assess the occurrence and severity level of anxiety and depression among heart failure patients.

Methods: A Cross sectional correlational survey design was used to recruit 60 heart failure patients from King Faisal cardiac center at King Khalid hospital Jeddah. The Arabic version of Beck Anxiety Inventory (BAI) and Zung self-rating depression scale were adopted and used to collect data. The results revealed that only (15%) of the study population have mild degree of depression while the majority 78.9% have moderate level of anxiety compared by 10.0% have severe level of anxiety. The study results showed a 23.52% of severe anxiety among patients who were diagnosed with heart failure 6-20 years ago and female, who had higher educational level and history of heart failure are at risk for depression and anxiety more than male patients.

Conclusion: Anxiety and depression comorbid with heart failure patients with different degree starting from mild to severe level of anxiety and only mild level of depression was reported among study population. Female gender, duration of illness and previous history of heart failure and psychiatric illness have an association with the severity of depression and anxiety with apparent significant difference among study population. Therefore, awareness training program targeting patients to help them detect depression and anxiety manifestations that may affect them either because of their long life chronic disease or dependency feeling on their families. Moreover, providing heart failure patients with psychosocial and Liaison psychiatric services to support patients' mental health problems through referral or follow up.

Keywords: Anxiety; Assessment; Comorbid; Depression; Heart failure

Background

Cardiovascular diseases are extremely common in Saudi Arabia due to the many risk factors such as sedentary lifestyle, tobacco use, and unhealthy fast diet. Accordingly, the number of cardiac patients is increasing as it was reported by latest WHO 2014 [1] statistics which claim that around 46% of the total deaths in 2014 in Saudi Arabia was caused by cardiovascular diseases compared with 42%, in 2010. Heart failure is one of the familiar types of cardiovascular diseases which are manageable but incurable, as the muscles of the heart won't be able to produce enough blood to meet the demands of the body. Consequently, patients that suffer from heart failure are more prevalent to develop psychological problems such as depression and anxiety than most of the population as claimed by Rutledge et al. [2]. The prevalence rates range from 11% to 25% in outpatients and 35% to 70% in hospitalized patients. Although, it is associated with unfortunate outcomes that require many treatments including cognitive-behaviour therapy and pharmacological treatment.

Depressive symptoms are described as loss of interest in daily life activities and extremely low mood. It is also accompanied by many

physical symptoms that could interfere with daily activities including low appetite, disturbances in sleep, inability to concentrate, and low self-esteem. Such symptoms may be present without the existence of clinical psychotic depression [3]. On the other hand, anxiety is an excessive fear and worrying without a known cause and it is frequently comorbid with depression because high levels of anxiety could possibly be associated with high levels of depression with or without the presence of heart failure. Also, patients with heart failure reported that they were anxious and overthinking about their future, the uncertainty nature of heart failure, and the high chances of hospital readmissions. Furthermore, in case of co-existence of depressive symptoms and anxiety in patients with heart failure this could result in an increased risk of long hospitalization, poor quality of life, and greater risk of developing myocardial infarction [4].

According to literature, the impact of anxiety and depression is pervasive and can reduce patients' ability to cope with physical symptoms and adhere to medical treatment. The combination of depression and/or anxiety with a chronic medical illness also leads to increased risk of mortality, worsening of quality of life, functional disability, and increased health care utilization and cost [5,6].

Even though, studies were conducted about the association of heart failure, depression, and anxiety, the results of each study varied from

the other in regard to the prevalence and the incidence rate. Polikandrioti et al. [7] results' showed that among the examined subjects, 24.7% of patients were found to have moderate levels of anxiety and 32.6% have high levels. Furthermore, it was evidenced that 17.4% of the total sample had minor depression and 24.2% have major depression. In regard to the psychosocial factors, they discovered that married patients are 59% more likely to have decreased chances of depression. On the other hand, according to Cully et al. [5] not only depression and anxiety but many other different psychological disorders could lead to heart failure, as evidenced by a retrospective cohort study in which they followed up many patients diagnosed with different psychological disorders including depression, not otherwise specified anxiety disorders (NOSAD), generalized anxiety disorder, and PTSD.

Additionally, during the follow-up 4.7% of subjects developed heart failure which convey that depression, anxiety, and heart failure are comorbid and there's a chance that each one will lead to the other [4]. Furthermore, in a prospective study done by Suzuki et al. [8] it was reported that out of the 221 heart failure patients that were voluntarily participating in the study, 13% of them had depression alone while 36% had anxiety alone and 21% had both of depression and anxiety. Moreover, a cross-sectional survey study in heart failure outpatient clinic conducted by Dekker et al. [3] found that one-third of 556 patients had both anxiety and depressive symptoms, and they concluded that the more the severity of depression the more it is associated with higher level of anxiety.

According to Lossnitzer et al. [9] in a prospective study they discovered an overall 12.9% incident rate of depression; there were 7.3% participants with minor depression and 5.6% with major depression. Moreover, most of the participants developed depression after 12 months of having heart failure. In the same vein, an observational study by Aggelopoulou et al. [10] reported that psychosocial factors such as: (low level of education, older age, multiple admissions, and low economic status) are affecting the overall quality of life and triggering the incidence of depression and anxiety with heart failure disease.

Research Aim

The main aim of the current study was to assess the occurrence and severity level of anxiety and depressive symptoms among patients with heart failure. More specifically the study is looking at:

- Assess the patients for the presence of anxiety and depression as it was measured with Beck inventory anxiety scale and Zung rating depression scale.
- Identify the severity level of depression and anxiety symptoms.
- Find the correlation between patients' demographic characteristics and their depressive and anxiety symptoms severity level.

Research Questions

The current study was trying to answer the following questions

- What are the symptoms and severity level of anxiety among heart failure patients?
- What are the symptoms and severity level of depression among heart failure patients?
- Is there any association between anxiety and depression and patients' demographic characteristics?

Significance of the Study

Comorbidity of anxiety and depression in heart failure patients can lead to reduced quality of life, long hospitalization, and increased mortality rate. Neither of pharmacological treatment or cognitive behaviour therapy has shown significant improvement in outcomes for heart failure patients that suffer from anxiety and depression. In the setting of the current study, many people experience lack of awareness or lack of insight toward their medical diseases and the possibility of comorbid mental disorders or failure of some clinicians to clearly diagnose the mental disorders due to overlap of manifestation of depression and anxiety with cardiac disease. This could lead to multiple unfortunate outcomes such as, worsening of the patient's condition. Additionally, the study is considered significant because there are little studies which elaborated regarding the correlations between heart failure, depression, and anxiety in Saudi Arabia. At the same time, this study will help in determining the occurrence and severity level of anxiety and depressive symptoms among patients with heart failure and it will highlight the necessity of integration of other psychological interventions which could treat the psychological problems accompanied with heart failure and affecting the patient response to treatment.

Methodology

Research design

A descriptive Cross sectional correlational survey design was used because it is less time consuming, costs effective, and easier to manage. Moreover, Cross sectional surveys facilitate the collection of large amount of data in limited time frame [11].

Research setting

The participants of the study were recruited from inpatient and outpatient King Faisal Cardiac Center affiliated to National Guard Health Affairs, Saudi Arabia. The center consists of 6 wards including CCU, Cath lab, CW, ACICU, MCICU and cardiac OR. The studied population were recruited by using a convenient sampling technique.

Study population

The data collection was done during one month as all heart failure patients who their age was 18 and above was contacted and agrees to participate in the current study. Patients were recruited from inpatient wards and outpatients clinic of King Faisal Cardiac Center-Jeddah.

Sample size

60 patients were recruited for the purpose of study by using a non-probability convenient sampling technique. The sample size was chosen first according to the King Faisal Cardiac Center statistics in which they claimed that they receive around 80 heart failure patients per month and secondly the time frame of data collection for this study is 4 weeks which makes 60 patients more applicable to be recruited.

Data Collection Tools

Tools of the study

The tools of the current study are consisted of 3 parts as following:

Part I: Sociodemographic and personal tool that ask studied population about their age, sex, residence area, for how long the patient diagnosed with heart failure, educational level, occupation, smoking habit, and comorbidity of other medical disease or psychiatric disorders, genetic factors for heart failure and any mental disorders.

Part II: Beck Anxiety Inventory (BAI): A self-administered Arabic version of the BAI tool was adopted and used to measure anxiety briefly while focusing on somatic symptoms which were developed to discriminate anxiety from depression. The BAI is a 21 self-report questionnaire which will be used to assess symptoms of anxiety including restlessness and nervousness. The scale is rated on a Likert scale from 0 to 3 based on the severity of symptoms.

Score interpretation: Scoring was easily determined by adding each score in each item which ranges from 0 to 63. As 0-9 indicates normal or no anxiety; 10-18 mild to moderate anxiety; 19-29, moderate to severe anxiety; 30-63 severe anxiety. This questionnaire required 5-10 minutes in order to complete it.

Part III (Zung Self-Rating Depression Scale): Depression was assessed by adopting and using the Arabic version of the Zung Self-Rating Depression Scale. The scale consists of 20 items that measure severity of depression easily and in brief way to the participants and it will help in obtaining more accurate data. The Zung Self-Rating Depression Scale is a self-report questionnaire that interprets the results based on scoring in each category in the scale. The Zung Self-Rating Depression Scale interpretation is accomplished by summing up each category's score to obtain the total score. As below 50 indicates within normal range, no psychopathology; 50-59 presence of minimal to mild depression; 60-69 presence of moderate to marked depression; 70 and over indicates presence of severe to extreme depression.

Reliability and validity

1st scale: Beck Anxiety Inventory (BAI): The Reliability of the Arabic version of the BAI tool was tested before by Al-Issa, et al. [12] as Cronbach=0.92. The test-retest reliability (1 week)=0.75. Additionally, the validity of the same tool was tested. The BAI was correlated with the Hamilton Anxiety Rating Scale moderately (0.51) and translated into Arabic by Al-Issa [12].

2nd scale: Zung self-rating depression scale: The Arabic version of the Zung Self-Rating Depression Scale was adopted in the current study. The original English questionnaire, the kappa measurement of agreement was 0.652 (95% confidence interval 0.571–0.732). While, the translation was done by professional translators with five years of experience in medical setting translation and the accuracy of the translation was verified by the Translation Service in King Faisal Specialist Hospital and Research Center [13].

Data Collection Process

The King Faisal Cardiac Center, National guard health affairs, Saudi Arabia, Jeddah was contacted by KAIMRC and IRB letter of data collection approval. Data were collected by distributing the previously mentioned tools to heart failure patients which are personal data sheet, Arabic version of Beck anxiety and Zung depression self-administrated scales. An explanation of the study's purpose was provided to the patients. Patients were informed that their participation is voluntary and they can withdraw at any time. Data collection was done within one month by using convenience sampling technique, 15-20 patients were recruited /week.

Ethical Considerations

An official approval was obtained from the Research Committee at CON-J and IRP was received from KAIMRC for data collection. The studied population were informed about the purpose of the study, and that their participation is voluntary and they can withdraw from the study at any time. A written consent was obtained from all heart failure patients. Anonymity was ensured by using identification codes on the questionnaires for easily analysis and maintenance of patients' confidentiality.

Data Management and Analysis Plan

The data was coded and analysed using SPSS version 22. Data was presented using descriptive statistics for discrete variables in the form of frequencies and percentages, and for interval and ratio variables in the form of means and standard deviations. Participants' sociodemographic and severity of symptoms was analysed using regression analysis and pearson correlation.

Regression analysis is used to detect predictors of the dependent variable. Significance level for both tests is less than 0.05.

Findings

Table 1 shows the demographic characteristics of the participant of the current study. More than half (58.3%) of the sample are male compared with 41.7% are female their mean age is 60.57 ± 18.301 . More than two third of (70%) and (73.3%) live in Jeddah and unemployed respectively. Additionally, 40% of the participants are in elementary level of education and 70% were non-smokers compared with 30% been on fire for 2 years to 40 years. As regard to the length of been diagnosed with heart failure 56.66% were received diagnosis since 1 year to 20 years and 98.3% quit smoking after diagnosis compared with only (1.7%) still smoking 25 cigarettes/day. Moreover, the table showed that 48.3% had history of hypertension while majority of the sample (93.3%) had no psychiatric diagnosis or disorders and no family history of both heart failure and mental disorders.

Table 2 represents the symptoms of anxiety and its level of severity among study participants. Among these common symptoms, 35.0% suffered from inability to relax in a moderate level compared by 11.7% had severe level. 33.3% of the participants suffering from pounding racing heart in moderate degree compared by 23.3% in sever degree while 30% suffering from moderate level of difficulty to take breathing compared by only 18.3% had severe level. Moreover, 25% of the participants had fear of losing their control moderately while 23% felt tingling and numbness and 21% had fear of dying compared by 8.3% and 13.3% in the sever level of anxiety respectively.

Table 3 shows the distribution of the study sample on the symptoms of depression and its severity level. Among these common symptoms, 20.0% of the participants complained from severely form of getting tired for no reason while 35.0% of them have it some of the time. 30.0% of the participants complained from having trouble sleeping through the night all of the time and suffered from feeling downhearted, blue, and sad some of the time while 38.3% didn't complain from it. 38.3% have the same symptom but only some of the time. Additionally, 43.3% of participants complained of having restlessness and can't keep still while 6.7% complained from it all of the time. In relation to item "I feel that others would be better off if I were dead" 11.7% of them answered some of the time while 6.7% complained from it good part of the time.

Variables	Frequency	%	M ± SD
Age			
· 18-40 years	11	18.33%	60.57 ± 18.301
· 41-60 years	15	25.00%	
· Above 60	34	56.66%	
Gender			
· Female	25	41.70%	
· Male	35	58.30%	
Residence area			
· Outside Jeddah	18	30%	
· Inside Jeddah	42	70%	
How long were you diagnosed with heart failure?			
· 1 week-1 month.	7	11.66%	
· 2 months-12 months	16	26.66%	
· ≥ 1 year-5 years	17	28.33%	
· 6 years-20 years	17	28.33%	
· ≥ 20 years	3	5.00%	
Educational level			
· Elementary	24	40%	
· Middle school	12	20%	
· High school	11	18.30%	
· University	10	16.70%	
· - Post graduate	3	5.00%	
Occupation			
· unemployed	44	73.30%	
· nonacademic	10	16.70%	
· academic	6	10.00%	
Were you smoking before you were diagnosed with heart failure?			
· No	42	70%	68.77 ± 85.046
· Yes	18	30%	
If the answer is yes, for how long were you a smoker? (n=18)			
2 Y-20 Y	14	23.33%	
≥ 20 Y	4	6.66%	
Still smoking?			
- no	59	98.30%	
- yes	1	1.70%	

If the answer is yes, how many cigarettes do you smoke per day?	25		0.42 ± 3.227
Medical history of other chronic diseases			
· Others	1	1.70%	
· Thyroids 'disease	4	6.70%	
· Diabetes mellitus	16	26.70%	
· Hypertension	29	48.30%	
· None	10	16.70%	
Past history of psychiatric disorder			
· No	56	93.30%	
· Yes	4	6.70%	
Past history of psychiatric diagnosis			
· Anxiety	1	1.70%	
· Depression	3	5.00%	
· none	56	93.30%	
Family history of heart failure			
· No	50	83.30%	
· Yes	10	16.70%	
Family history of psychiatric disorder			
· No	56	93.30%	
· Yes	4	6.70%	

Table 1: Distribution of study participants according to their demographic characteristics (n=60).

Severely it bothered me a lot	Moderately it wasn't pleasant at times	Mildly but it didn't bother me	Not at all (0)	Items of Anxiety
8.30%	23.30%	21.70%	46.70%	Numbness or tingling
10.00%	18.30%	35.00%	36.70%	Feeling hot
5.00%	18.30%	25.00%	51.70%	Wobbliness in legs
11.70%	35.00%	20.00%	33.30%	Unable to relax
18.30%	21.70%	35.00%	25.00%	Fear of worst happening
5.00%	23.30%	23.30%	48.30%	Dizzy or lightheaded
23.30%	33.30%	23.30%	20.00%	Heart pounding/racing
13.30%	20.00%	25%	41.70%	Unsteady
11.70%	16.70%	30%	41.70%	Terrified or afraid
8.30%	21.70%	28.30%	41.70%	Nervous
6.70%	15.00%	21.70%	56.70%	Feeling of choking
3.30%	10.00%	33.30%	53.30%	Hands trembling
1.70%	13.30%	30.00%	55.00%	Shaky/unsteady

0.00%	25.00%	23.30%	51.70%	Fear of losing control
18.30%	30.00%	30.00%	21.70%	Difficulty in breathing
13.30%	21.70%	25.00%	40.00%	Fear of dying
5.00%	11.70%	20%	63.30%	Scared
6.70%	15.00%	32%	46.70%	Indigestion
1.70%	15.00%	26.70%	56.70%	Faint / lightheaded
1.70%	8.30%	26.70%	63.30%	Face flushed
13.30%	13.30%	33.30%	40.00%	Hot/cold sweats

Table 2: Distribution of the study population on the anxiety level of severity according to beck anxiety inventory scale (n=60).

Items of depression	None or a little of the time	Some of the time	Good part of the time	Most or all of the time
I feel downhearted, blue and sad	5.00%	15.00%	41.70%	38.30%
Morning is when I feel best	16.70%	28.30%	40.00%	15.00%
I have crying spells or feel like it	0.00%	6.70%	28.30%	65.00%
I have trouble sleeping through the night	30	11.70%	38.30%	20.00%
I eat as much as I used to	31.70%	18.30%	33.30%	16.70%
I enjoy looking at, talking to and being with attractive women/men	8.30%	13.30%	31.70%	46.70%
I notice that I am losing weight	10.00%	5.00%	36.70%	48.30%
I have trouble with constipation	16.70%	3.30%	23.30%	56.70%
My heart beats faster than usual	11.70%	20.00%	38.30%	30.00%
I get tired for no reason	20.00%	21.70%	35.00%	23.30%
My mind is as clear as it used to be	6.70%	23.30%	28.30%	31.70%
I find it easy to do the things I used to do	18.30%	28.30%	28.30%	25.00%
I am restless and can't keep still	6.70%	23.30%	43.30%	26.70%
I feel hopeful about the future	16.70%	30.00%	41.70%	11.70%
I am more irritable than usual	1.70%	15.00%	28.30%	55.00%
I find it easy to make decisions	26.70%	23.30%	43.30%	6.70%
I find that I am useful and needed	36.70%	35.00%	16.70%	11.70%
My life is pretty full	31.70%	28.30%	28.30%	11.70%
I feel that others would be better off if I were dead	1.70%	6.70%	11.70%	80.00%
I still enjoy the things I used to do	28.30%	20.00%	30.00%	21.70%

Table 3: Distribution of the study population on depressive symptoms severity according to Zung self-rating depression scale (n=60).

Table 4 shows the correlation between the severity of depression and anxiety in relation to patients' personal characteristics. Most of the subjects personal data have no significant correlation with the severity level of depression $P < 0.05$. However, for anxiety scale the regression analysis didn't show any predictor of risk personal data of the study subjects except for the duration of heart failure diagnosis and smoking

history as both of them had significant relationship with the anxiety level as $t = (1.70) P = (0.095)$ and $(-1.685) P = (0.099)$ respectively.

Table 5 presented that, there a significant correlation between coexistence of depression and anxiety scale $r = 0.372$ and $p = 0.003$.

Table 6 displayed that, participants' age, period of heart failure diagnosis and number of cigarette have negative relationship in relation to the participants depression $r = -0.053$, -0.005 and -0.094 with

no significant statistical difference ($p \leq 0.01$). While with anxiety scale there is a positive correlation $r = 0.049$, 0.313 and 0.140 respectively with no significant difference as ($P \leq 0.01$).

No.	Item	Depression scale		Anxiety scale	
		T	P	T	P
1	Age	0.485	0.63	-0.205	0.839
2	Gender	-1.243	0.22	-0.292	0.772
3	Residence	0.174	0.863	-0.93	0.357
4	How long were you diagnosed with heart failure	0.578	0.566	1.708	0.095
5	Education	0.547	0.587	-0.084	0.934
6	Occupation	1.176	0.246	0.423	0.674
7	Were your smoking before you were misdiagnosed with heart failure	0.03	0.976	-1.685	0.099
8	Yes for how long	0.467	0.643	1.634	0.109
9	Number of cigarettes	-0.328	0.744	1.376	0.176
10	Chronic disease	-0.511	0.612	0.569	0.572
11	Psychiatric disorder	0.591	0.557	-0.4	0.691
12	Psych diagnosis	0.65	0.519	-0.483	0.631
13	Family history heart failure	1.679	0.1	1.239	0.222
14	Family history psychiatric disorder	-1.424	0.161	0.228	0.82

Table 4: Relationship between anxiety and depression scale and demographic variables.

		Anxiety scale	Depression scale
Anxiety	Pearson Correlation	1	0.372**
	Sig. (2-tailed)		0.003
	N	60	60
Depression	Pearson Correlation	0.372**	1
	Sig. (2-tailed)	0.003	
	N	60	60

Table 5: Correlation of co-existence of depression and anxiety symptoms among study participants (n=60).

No.	Scale	Age		Period of heart failure diagnosis		Cigarettes number	
		r	P value	r	P value	r	P value
1	Anxiety	0.049	0.709	0.313*	0.015	0.14	0.285
2	Depression	-0.053	0.69	-0.005	0.969	-0.094	0.477

Table 6: Correlations between participants' age, duration of heart failure diagnosis, No. of cigarettes and anxiety and depression scales (n=60).

Discussion

The current study aimed to assess the presence and the severity level of anxiety and depressive symptoms among heart failure patients attending King Faisal cardiac center, Jeddah, Saudi Arabia. The results of the current study concluded that, anxiety and depressive symptoms were prevalent among studied congestive heart failure patients. As regard to the severity of the symptoms, 15% of CHF patients are suffering from mild depression as their score ranged 50-59 according to Zung depression scale while, 10.0% affected with severe anxiety disorders their score was 30-63 according to Beck anxiety inventory. According to DSM5, a depressed mood caused by substances (such as drugs, alcohol, medications) is not considered a major depressive disorder, nor is one which is caused by a general medical condition such as heart or cardiac diseases. Accordingly, the current study results revealed that only (15.0%) of the study participants have mild degree of depression while, the majority (78.9%) have moderate level of anxiety compared by (10.0%) suffering from severe level of anxiety. This result is congruent with Pogossova et al. [14], who reported that, in a subgroup of more than 7000 patients from 24 European countries, they reevaluated the prevalence of depressive and anxious symptoms, their associations with other risk factors, such as presence of past psychiatric illness, chronic medical diseases and family history of heart failure. Their findings reproduce the higher prevalence of depressive and anxious symptoms which similarly detected in the results of the current study. Ad earth of evidence based researches reported that, anxiety and depression are common among patients with HF [15-17]. The prevalence rates of anxiety and depression in patients with HF are

4-5 times more than that in the general population. The prevalence rate of anxiety in patients with HF ranged between 11% and 70%, and the prevalence rate for depression ranged between 9% and 96.1%. In fact, the difference in the prevalence rates which was reported among studies is due to different assessment methods, the definition and categorization of anxiety and depression, and the severity of the cases included in each study. Moreover, some signs and symptoms of HF (i.e., insomnia, fatigue, and loss of appetite) are shared with depression and anxiety [18].

Accordingly, the interpretation of our findings could be explained as anxiety has somatic manifestations such as palpitation, sweating tiredness and continuous feeling of tension and inability to sleep while, the majority 85% (Figure 1) of the studied population were within normal it might be related to lack of awareness of the studied population with the manifestations of depression. In addition to, the overlap of symptoms in psychiatric disorders and cardiac disease which may cause confusion specially with the presence of somatic symptoms that correspond with depression or anxiety and cardiac disease, even clinicians may have difficulty determining which symptoms are related to cardiac disease and which to psychiatric illness. Therefore, it is important to determine whether any depression- or anxiety-specific symptoms are present. Similarly, a qualitative study was conducted by Dekker et al. [3] and reported that, the patients always assume that somatic symptoms such as tiredness, inability to sleep well at night and losing interest in their hobbies is because of their heart failure and not depression.

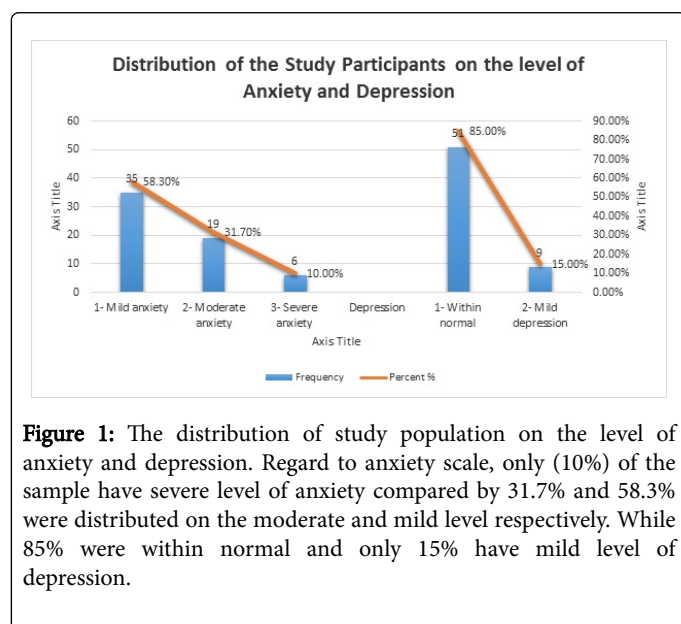


Figure 1: The distribution of study population on the level of anxiety and depression. Regarding anxiety scale, only (10%) of the sample have severe level of anxiety compared by 31.7% and 58.3% were distributed on the moderate and mild level respectively. While 85% were within normal and only 15% have mild level of depression.

As regard to the coexistence of depression and anxiety in study population, 16.7% were suffering from severe level of anxiety and mild level of depression with a significant correlation between presence of depressive and anxiety symptoms among HF patients. This result is similarly obtained by Dekker et al. [19] who found in their cross sectional survey that, the severity level of anxiety increased, with a corresponding increase in the severity of depressive symptoms suggesting a possible dose-response relationship between anxiety and depressive symptoms in patients with HF. Accordingly, Kessler et al. [20] reported that anxiety disorders, commonly comorbid with depression and affecting the heart failure patients by negative way including the increased rate of hospital readmission and may increase

the risk of myocardial infarction [21]. Moreover, it affects the quality of health related life [22] and consumes greater health services [22]. On the other hand, whether this comorbidity might increase the risk for HF incident or they are independent to the effects of depression the mechanism is still unknown.

As regard to the correlation between the sociodemographic characteristics and presence of symptoms of depression and anxiety, the results of the study revealed that level of education is significantly affect the severity of depression. In the same vein, Hussain et al. [23] reported from their cross sectional study that the prevalence of depression is increased among university graduate (54.8%) and post graduates (47.4%). Moreover, gender is among the risk factors as only female, who had higher educational level and history of heart failure are at risk for depression and anxiety more than male patients. Similarly, in a study done to assess whether anxiety or depression affecting more male or female, they found that depressive and anxious symptoms were assessed in 31% of women and 20% of men, they found that anxious symptoms were 39% of women and 22% of men. Rutledge et al. [2] in their study reported that, the aggregated prevalence for women is higher than for men, with 32.7% (range 11-67%) of women being depressed compared with 26.1% (7-63%) of men.

According to the results of the present study, the longer the disease duration, the higher the probability of a patient being depressed. The study results showed a 23.52% of severe anxiety among patients who were diagnosed with heart failure 6-20 years ago. Polikandrioti et al. [7] stated in their study that the patients' with longer hospitalization are at higher risk of developing severe anxiety and that it is associated with poor heart failure prognosis.

Moreover, in the current study, we included past psychiatric history in participants' demographic data and the results showed that, all heart failure patients who were previously diagnosed with anxiety reported with severe level of anxiety. In addition, the studied population who were previously diagnosed with depression, 33.3% of them have severe level of anxiety with no significant difference due to very small number (6.7) only of studied population had psychiatric disorders in their personal history.

Conclusion

The current study concluded that anxiety and depression were prevalent among studied heart failure patients with different degree starting from mild to severe level of anxiety and only mild level of depression was reported among study population. Female were more affected with depression and anxiety. Moreover, the current study indicated that, the longer the duration of illness the more the severity of depression and anxiety symptoms. Additionally, demographic data such as, the presences of family history of HF, psychiatric illness and to be admitted to inpatient cardiac ward had a positive correlation with the severity of depression and anxiety among heart failure patients.

Recommendations

- According to the findings of the current and recommendations given by some of the studied population it is recommended, to enhance awareness about heart failure patients' mental health problems and recognize their mental health concerns to enhance adaptation and decrease patients' risk of subsequent HF exacerbations or other cardiac events.

- Routine assessment of depression and anxiety by using short-term approaches such as anxiety management training and Cognitive Behavioral Therapy (CBT) interventions developed specifically for depression and anxiety as, it can assist patients to identify cognitive and bodily cues of the onset of anxiety and depression.
- HF patients can be taught to develop responses that can result in the reduction or elimination of symptoms.
- Teaching relaxation and cognitive coping skills such as cognitive restructuring of negative cognitions can be helpful and empowering to patients adapting to HF of the most
- It is critical for the clinicians to evaluate patients both medically and psychiatrically (using DSM-5 diagnostic criteria) to ensure that there is a true psychiatric disorder diagnosis and that underlying medical disorders are not misdiagnosed. However, it is important to keep in mind that, the benefits of screening are largely determined by the availability of mental health resources to assess and treat patients with positive screening results.
- Moreover, providing the cardiology department in the setting of the current study with psychosocial services and activating the use of Liaison psychiatric services to support patients' mental health problems through referral or follow up.

Future Research

An important area for future research is elucidating the mechanisms, physiological or behavioural, by which anxiety and depression cause poorer outcomes. Research in this area is important to help clinicians determine the best ways to manage HF patients. Other work is needed that, focuses on the role of mental health treatments for the medically ill and on increasing the resources essential for application of evidence-based mental health treatments.

Study Limitations

Despite, the current study highlights the coexistence of depression and anxiety among heart failure patients, one limitation was present of a small sample size due to the cardiac center policy as outpatient only for one day/week and number of admission 4-8 HF patient /day. Additionally, the sampling in the study was convenient and this limits the generalizability of the study's findings as well.

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References

1. World Health Organization (2014) Saudi Arabia.
2. Rutledge T, Reis VA, Link SE (2006) Depression in heart failure: A meta-analytic review of prevalence, intervention effects and associations with clinical outcomes. *J Am Coll Cardiol* 48: 1527-1537.
3. Dekker R (2015) Patient Perspective about depressive symptoms in heart failure: A review of the qualitative literature. *J Cardiovasc Nurs Journal* 29: 1-20.

4. Garfield LD, Scherrer JF, Hauptman PJ, Freedland KE, Chrusciel T, et al. (2015) Association of anxiety disorders and depression with incident heart failure. *Psychosom Med* 76: 128-136.
5. Cully JA, Graham DP, Stanley MA (2006) Quality of life in patients with chronic obstructive pulmonary disease and comorbid anxiety or depression. *Psychosomatics* 47: 312-319.
6. Serafini G, Pompili M, Innamorati M (2010) The impact of anxiety, depression and suicidality on quality of life and functional status of patients with congestive heart failure and hypertension: An observational cross-sectional study. *Prim Care Companion J Clin Psychiatry* 12: 6.
7. Polikandrioti M, Goudevenos J, Michalis L, Koutelkos J, Kyristi H, et al. (2015) Factors associated with depression and anxiety of hospitalized patients with heart failure. *Hellenic J Cardiol* 56: 26-35.
8. Suzuki T, Shiga T, Kuwahara K, Kobayashi S, Suzuki S, et al. (2014) Impact of clustered depression and anxiety on mortality and rehospitalization in patients with heart failure. *J Cardiol* 64: 456-462.
9. Lossnitzer N, Herzog W, Stork S, Wild B, Tasch T, et al. (2012) Incidence rates and predictors of major and minor depression in patients with heart failure. *Int J Cardiol* 167: 502-507.
10. Aggelopoulou Z, Fotos NV, Chatziefstratiou AA, Giakoumidakis K, Elefsiniotis I (2017) The level of anxiety, depression and quality of life among patients with heart failure in Greece. *Appl Nurs Res* 34: 52-56.
11. LoBiondo-Wood G, Haber J (2010) Nursing research: Methods and critical appraisal for evidence-based practice. (7th edn), St. Louis: Mosby Elsevier.
12. Al-Issa I, Al Zubaidi A, Bakal D, Fung TS (2000) Beck anxiety inventory symptoms in Arab college students. *Arab Journal of Psychiatry* 11: 41-47.
13. Kirkby R, Al Saif A, Mohamed G (2005) Validation of an Arabic translation of the Zung self-rating depression scale. *Ann Saudi Med* 25: 205-208.
14. Pogoseva N, Kotseva K, De Bacquer D (2017) Psychosocial risk factors in relation to other cardiovascular risk factors in coronary heart disease: Results from the EUROASPIRE IV survey. A registry from the European Society of Cardiology. *Eur J Prev Cardiol* 24: 1371-1380.
15. Uchmanowicz I, Gobbens RJ (2015) The relationship between frailty, anxiety and depression, and health-related quality of life in elderly patients with heart failure. *Clin Interv Aging* 10: 1595-1600.
16. Isaksen K, Munk PS, Giske R, Larsen AI (2016) Effects of aerobic interval training on measures of anxiety, depression and quality of life in patients with ischaemic heart failure and an implantable cardioverter defibrillator: A prospective non-randomized trial. *J Rehabil Med* 48: 300-306.
17. Eisele M, Blozik E, Stork S, Trader JM, Herrmann-Lingen C, et al. (2013) Recognition of depression and anxiety and their association with quality of life, hospitalization and mortality in primary care patients with heart failure – study protocol of a longitudinal observation study. *BMC Fam Pract* 14: 180.
18. MacMahon KM, Lip GY (2002) Psychological factors in heart failure: A review of the literature. *Arch Intern Med* 162: 509-516.
19. Dekker RL, Lennie TA, Doering LV, Chung ML, Wu JR, et al. (2015) Coexisting anxiety and depressive symptoms in patients with heart failure. *Eur J Cardiovasc Nurs* 13: 168-176.
20. Kessler RC, Berglund P, Demler O, Jin R, Koretz D, et al. (2003) The epidemiology of major depressive disorder. Results from the National Comorbidity Survey Replication (NCS-R). *JAMA* 289: 3095-3105.
21. Volz A, Schmid JP, Zwahlen M, Kohls S, Saner H (2011) Predictors of readmission and health related quality of life in patients with chronic heart failure: A comparison of different psychosocial aspects. *J Behav Med* 34: 13-22.
22. Cully JA, Jimenez DE, Ledoux TA, Deswal A (2009) Recognition and treatment of depression and anxiety symptoms in heart failure. *Prim Care Companion J Clin Psychiatry* 11: 103-109.
23. Hussain T, Shu L, Cheng X, Sosorburam T, Adjil A, et al. (2011) Depression among congestive heart failure patients: results of a survey from central China. *J Pak Med Stud* 38: 42.