Original Article

Anxiety and Depression as Emotional Problems in Patients with Chronic Heart, Kidney and Respiratory Disorders

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Abstract

Background: Psychiatric comorbidities are quite common in people with chronic diseases, which negatively influence the quality of life of patients.
Objective: Our study was conducted to evaluate the emotional status of patients receiving inpatient treatment for chronic heart, kidney and respiratory tract diseases and to identify the factors associated with anxiety and depression.
Setting: 301 patients with a known psychiatric disease, hospitalized in the chest, cardiology and nephrology clinic between 2014 and 2016, were included in the study.
Methodology: Data were collected face to face interview. Socio-demographic characteristics of the patients were recorded. Emotional status was determined by the "Hospital Anxiety and Depression Scale (HAD)" consisting of 14 questions filled out by the patient himself.
Results: The anxiety rate was 52.2% and the depression rate was 81.7% in all patients. There was the anxiety in 66% of patients with respiratory disease, in 46.6% of patients with heart disease and in 44.3% of patients with renal disease. The difference between groups was statistically significant (= 0.027). Depression was found to be 89.7% in cardiac patients, 86.6% in respiratory patients and 65.9% in renal patients, and there was no statistically significant difference between the groups ($p < 0.001$). The relationship between emotional status and sociodemographic characteristics was examined, and no difference was found in terms of gender, marital status, working status and education level. There was a significant positive correlation between age and depression scores ($r = 0.173$, $p = 0.003$).
Conclusion: We report that psychiatric comorbidities such as depression, anxiety as well as respiratory, heart and kidney diseases can also negatively affect the treatment process of patients and may alleviate somatic diseases. For this reason, it may be useful to provide psychosocial support as well as treatment of such chronic diseases.

Keywords: Chronic Diseases, anxiety, depression, emotional status.

Introduction

Chronic diseases have begun to be often observed with advances in technology and treatment, as well as an increase in the length of life. Chronic diseases continue to affect life, mentally, socially, physically and psychologically, sInce they cannot be treated quickly (Baumeister et al.2005; Stromberg et al., 2006; Franzen et al. 2006)

In individuals with chronic illness; difficulties in fulfilling expected roles in the family and society, limitation of social activities, increased dependence on others and social isolation have increased the likelihood of anxiety and depression (Grau Martin et al. 2003; Egede 2007). According to the literature, the prevalence of anxiety and psychological disorders among patients with chronic respiratory disease (CRD), chronic heart disease (CHD) and chronic renal failure (CRF) is estimated at the level of 21–81% (Baumeister et al. 2005; Trzcinska et al. 2012; Aydemir et al. 2015).

The individual negativities also affect the quality of life. Chronic diseases may develop chronic

somatic symptoms, impaired emotional states requiring holistic treatment approach.

The aim of the study was to determine the effect of sociodemographic factors and the frequency of anxiety and depression in patients with chronic respiratory, heart and renal diseases.

Methodology

Design and sample

A cross-sectional survey was established to evaluate and compare the prevalence of anxiety and depression in patients with COPD, asthma, chronic heart failure (CHF), and chronic renal failure (CRF). The consecutive 301 patients, who were diagnosed with chronic asthma (according to the Global Initiative for Asthma (GINA) criteria) and chronic COPD (according to the Global initiative for Chronic Obstructive Lung Disease (GOLD) criteria), chronic CHF (New York Heart Class II-IV, with ejection fraction of <40 % on transthoracic echocardiography) and CRF (individuals who have undergone hemodialysis for at least 6 months) in Sakarya University Hospital (Turkey) in March 2014-2016 period and who have not received an antidepressant and any anxiolytic drugs in last one year were included in the study. The patients who were receiving a therapy for the psychiatric disease or with another chronic disorder (i.e. diabetes, malignancy, rheumatologic and neurologic diseases) that could affect emotional states were excluded from the study. The patients who provided informed consent were included in the study, and the questionnaire form evaluating the demographic characteristics was filled out by all patients.

Main Outcome Measures

The emotional states were assessed by using the Hospital Anxiety and Depression (HAD) scale which was developed in 1983 by the Zigmond and Snaith (1983). Its validity and reliability were tested by the same researchers. It includes the subscales of anxiety and depression. This scale consisted of a total of 14 questions: 7 of them investigate the symptoms of depression, and another 7 investigate the symptoms of anxiety.

The answers were taken by a four-point Likert type scale. The scale consists of scores between 0 (best) and 3 (worst). The purpose of the scale is not to diagnose, but to identify the risk group by scanning anxiety and depression in patients in a short time. The scale can also be used in the follow up of changes in the patient's emotional state. Although the scale uses the word "hospital", it can also be used in every health establishment including outpatient polyclinics.

The aim was to minimize the impact of the existing somatic disease on the HAD scale results. Therefore, it does not contain any physical signs. In the scale, the score of "0-1" was accepted as normal, "2" was accepted as at the borderline symptomatic, and "3" was accepted as having marked symptoms. This scale has been proven to be a useful evaluation tool and the score range provides results minimizing false-positive and false-negative data. Scores obtained from the scale were not affected by the presence of somatic disease. The HAD scale was compared to the other scales, it was found to be adequate to detect anxiety and depression in patients with somatic diseases.

Turkish adaptation study of HAD scale was made by Aydemir et al. (1997). According to this study, for the anxiety sub-scale cut-off score was found as 10 and more, and the depression subscale cut-off score was found as 7 and more.

The results showed that the limit value for anxiety was 10 or higher while for depression was 7 or higher. It was reported that an anxiety score which is greater than 10 can be classified as HAD-A (+), under 10 as HAD-A (−), and patients having depression scores over 7 can be classified as HAD-D (+), while under 7 as HAD-D (−). HAD is preferred because it does not contain any issue related to the physical state.

In the scale reliability studies, Cronbach's alpha coefficient was found to be 0.732, and in our study, Cronbach's alpha coefficient was 0.637, which shows the reliability of the present study.

Data Analysis

The obtained data were evaluated through t-test, correlation test, chi-square and Mann Whitney u test, also frequency, mean, standard errors were calculated for both independent and dependent groups in SPSS program.

Ethical Considerations

The study was approved by the Ethics Committee. Informed consent was obtained from all participants, in addition, the study was approved by the Ethics Committee of the Faculty of Medicine, Sakarya University.

Limitations of the Study

The study population consists of only the State Hospitals Association in the city centre of Sakarya. Therefore these study results cannot be generalised.

Results

The study included 301 patients with CRD (n=97), CHD (n=116) and CRF (n=88). The demographic data of patients are given in table 1. Majority of the participated to the study were above 52 years or older, female (n=198), not working (, n=243) and participants had disease experience of 5 years (Table 1).

Anxiety score was found as 9.5 for CHD, 9.0 for CRF and 10.6 for CRD. There was a significant difference between the groups (p=0,027). Depression score was found as 9.5 for CHD, 9.4 for CRF and 8.5 for CRD, also the significant difference between the groups was found (p<0,001)(Table 2).

Table 1: Distribution of Socio-Demographic Characteristics of Individuals

	TOTAL n:301	**CRD n:97**	**CHD n:116**	**CRF n:88**
Age mean±SD (min/max)	52.75 ± 18.24 (18/90)	55.23±10.40 (18/90)	55.37±14.67 (21/85)	46.56±18.67 (18/83)
Gender male/female	103/198	41 /56	56/60	6/82
married/single	176/125	67/30	86/30	23/65
Working yes/no	58/243	18/79	29/87	11/77
Educational status				
Illiterate/ Primary School/ High school	135/116/50	27/49/21	46/47/23	62/20/6
Disease duration (year)	5.98±5	7.65±6.9	4.33±4	6.30±5

CRD: Chronic respiratory disease; CHD: Chronic heart disease; CRF: Chronic renal failure

Table 2: The comparison of anxiety and depression score according to diseases

	TOTAL (n:301)	**CRD (n:97)**	**CHD (n:116)**	**CRF (n:88)**	**p value**
HAD-A Score	9.71±3.8	10.6±3.5	9.5±3.3	9.0±4.5	**0.027**
Anxiety n/%	157/52.2	64/66	54/46.6	39/44.3	**0,004**
HAD-D Score	9.14±3.5	9.39±2.97	9.50±2.81	8.45±4.68	**<0.014**
Depression n/%	246/81.7	84/86.6	104/89.7	58/65.9	**<0,001**

HAD-A: Hospital Anxiety Depression Scales Anxiety score; HAD-D: Hospital Anxiety Depression Scales Depression score, CRD: Chronic respiratory disease; CHD: Chronic heart disease; CRF: Chronic renal failure

Table 3: The relationship between socio-demographic characteristics and anxiety-depression scores

		HAD A score	p value	HAD D score	p value
Gender	Male	9.74±3.6	0.93	9.32±2.7	0.53
	Female	9.7±3.9		9.05±3.9	
Age	<50	9.61±3.8	0.71	8.62±3.8	**0.035**
	>50	9.77±3.8		9.50±3.3	
Marital status	Married	9.93±4.0	0.38	8.80±4.3	0.16
	Single	9.55±3.7		9.38±2.9	
Disease duration	<5	9.79±3.5	0.68	9.03±3.4	0.55
	>5	9.61±4.1		9.28±3.7	
Working	Yes	9.46±3.1	0.58	8.64±3.2	0.22
	No	9.77±3.9		9.26±3.5	
Education level	Illiterate	9.64±4.0		9.18±4.0	
	Primary School	9.50±3.9	0.26	9.17±3.1	0.38
	High school	10.38±3.1		8.96±4.9	

Table 4: The mean anxiety and depression scores and correlations with age and disease duration

		r	p
Age	anxiety	0.03	0.5
	depression	0.173	**0.003**
Disease duration	anxiety	0.04	0.447
	depression	0.06	0.254

It was found that anxiety score was 52.2% (n=157) and depression score was 81.7% (n=246). It was observed that the highest anxiety score was in the CRD patients (66.6%), then CHD (46.6%) and CRF (44.3%) patients, and there was the statistically significant difference between the groups (p=0,004). It was revealed that the highest depression score was in the CHD patients (%89.7), followed by CRD (%86.6) and CRF (65.9%) patients and a significant difference between disease groups was also found (p<0,001)(Table 2).

There was a positive correlation between age and depression, that is, depression score increased with age (r=0.173, p=0.003). The mean depression score for the age below 50 years was 8.6 and for over 50 years was 9.5, and the difference between the groups was significant (p = 0.035). There was no correlation between age and mean anxiety score (r=0.03, p=0.5)(Table 3,4).

There was no significant difference between anxiety and depression scores in terms of gender, marital status, education level, working status and disease duration (Table3). There was no correlation between disease duration and mood disorders (Table 4).

Discussion

Physiological disorders such as pain, dyspnea, fatigue, insomnia, which may occur in chronic diseases, restrict the daily activities of an individual to a great extent, and their lives are adversely affected due to frequent hospitalizations. Degraded quality of life and limited physical activity cause loneliness and failure to meet their own needs or fulfill their family duties, resulting in mental problems such as anxiety and depression (Abu-Shakra 2016; Williams et al. 2009; Hacihasanoglu, et al. 2010).

In the present study, the anxiety and depression rates were 52.2% and 81.7%, in patients with chronic diseases, respectively. Anxiety and depression were reported in previous studies at very different rates depending on the used method, the differences in the patient population, and the severity of the diseases (Yohannes et al. 2006; Wang et al. 2006; Grau et al. 2003; Elbi Mete 2008; Dickens 2008). Patients with respiratory diseases may have a persistent or shortened breathing difficulty, a tendency on restricted effort capacity, a high incidence of sudden deaths (in cardiac patients) and an increased fear of death, anxiety and depression scores, while patients with regular dialysis are more likely to have contact with other patients during dialysis, which may have contributed to their reduced anxiety and depression scores.

It is known that the age-related chronic diseases also increase the susceptibility to anxiety and depression symptoms (Hacihasanoglu et al 2010;30). In our study, it was seen that depression was in relation to the mean age, resulting in a significant difference ($p = 0.003$), but it did not correlate with anxiety. Depression was significantly higher in the patients over 50 years of age. Yildiz et al. (2016) found a correlation between age and depression in their study of COPD patients, but they did not find an association between age and anxiety as in our study. The effect of long disease duration on anxiety and depression scores was examined, no significant difference was found between the duration of illness and HAD scale scores. Although the length of the illness is thought to affect the emotional state even worse, there may be cases that the patients accept the illness over the years, learn to live with it and get used to it. In the initial stages of the illness, the feeling of future uncertainty and prejudice can negatively affect the psychological state. In individuals with a deteriorated disease, the obvious symptoms may cause a more negative effect. In contrast to our study, there were studies where the duration of diseases extended, and the signs of cohabitation, behavioral reactions, anxiety, and depression were observed (Ozkan 1993; Cam & Saka 2009; Ince et al.,2005).

The relationship between gender and anxiety as well as depression scores was examined in the present study and no significant difference was found. Janson et al., reported that the incidence of emotional disorders in women was higher (Jonsan et al.1998). Similarly, it was reported that the mean anxiety score of women was higher than that of males (Hacihasanoglu et al., 2010; Gilmour 2008; Grau et al. 2003). Biological structure, mental characteristics, personality structure, the way of coping with problems, social and cultural position make a woman susceptible to depression. However, this tendency in the normal population can appear more in disease existence.

In our study, there was no relationship between education status, working status, marital status and mood disorders. Same results are also revealed in previous studies. Uskul et al. (2006) found no relationship between the anxiety, depression scores, and the gender, marital status, educational status, income level, occupation, duration of hospitalization and duration of illness of the patients in the chest diseases clinic. Anar et al. (2012) also found parallel results to our findings and found no difference in terms of gender, working status, marital status, anxiety and depression status. Similarly, in the study of Atacanli & Dilbaz (2001), there was no relationship between sociodemographic factors and depression. Sociodemographic features are associated with depression, the coexistence of chronic physical disease and coexisting depression in the normal population, which can be interpreted that socio-demographic differences play an important role.

Conclusion

Psychiatric comorbidities are quite common in patients with chronic somatic disorders. In the present study, depression, and anxiety were

related to asthma, COPD, heart and kidney diseases, which can also significantly affect the treatment process of patients and may further alleviate their somatic disease. For this reason, it may be useful to provide psychosocial support besides the treatment of patients with this type of chronic illness, especially for the health workers who are in close relationship with patients. In the light of these results, we would like to investigate the presence of depression in routine controls especially in the chronic heart and respiratory patients and evaluate the two patient groups together to improve their quality of life and to improve the effectiveness of treatment.

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