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Anxiety and depression among patients with Bronchial asthma, chronic obstructive pulmonary disease and diffuse parenchymatous lung diseases

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Abstract

Background: Psychosocial stressors, such as death of a spouse or divorce are closely related to relapses and aggravations of respiratory disease pointing to a link between psychological factors and chronic pulmonary disease. Patients with chronic obstructive pulmonary disease (COPD) cannot cope adequately with everyday needs. This inadequacy may lead to heightened anxiety and depression, which in turn may worsen the everyday inadequacy. It has been reported that this is probably a factor that leads bronchial asthma (BA) and COPD patients to frequent hospital admissions, lower treatment adherence and even intensive care unit hospitalizations**.**

Study objectives: to assess anxiety and depressive symptoms among a sample of Egyptian patients with chronic obstructive pulmonary disease (COPD), bronchial asthma (BA), and diffuse parenchymatous lung diseases (DPLD).

Subjects & methods: A cross-sectional study conducted over a one year period on a sample of 258 Egyptian patients with chronic breathing disorders who attending the outpatient chest clinic at Al-Zahraa University Hospital. All patients diagnosed as having COPD, BA or DPLD were enrolled into the study. Anxiety and depression were assessed by using the Hospital anxiety and depression scale (HADS) and the Beck Depression Inventory (BDI).

Results: Psychiatric disorders were most prevalent among DPLD cases (80.0%), followed by COPD patients (74.0%), while BA group showed the least reported cases (38.8%) with psychiatric disorders, with a statistically significant difference among the studied groups (P-value < 0.05).Depression was prevalent among 60.1% (155/258) of the studied cases, of them 23.2% had severe depression, followed by 38.7 % had moderate depression and 38.1% had mild depression. DPLD cases had the highest proportion of severe depression (31.8), COPD cases had the highest proportion of moderate depression (52.4) and BA group had the highest proportion of mild depression (68.4%), with a statistically significant difference among the studied groups (P-value < 0.05).**Conclusion:** results of this study revealed that mixed anxiety depression disorders, depression and anxiety were common co-morbidities among the studied sample of the Egyptian patients with DPLD, COPD and those with BA. **Recommendations:** physicians should take into consideration the assessment of psychiatric co-morbidities among cases with DPLD, COPD and BA.

Key words: Chronic breathing disorders, COPD, bronchial asthma, anxiety; anxiety disorders; depression; depressive disorder; lung diseases.

Abbreviations: COPD: Chronic obstructive pulmonary diseases, HADS: Hospital anxiety and depression scale, HRCT: High resolution computed tomography, BDI: Beck Depression Inventory.

Introduction

Chronic disease increases co-morbidity with anxiety and depression, apparently leads to increased use of health services, approximately twice as often as in patients with no psychological burden. The presence of depression or anxiety compounds the emotional and physical effects of breathing disorders. Depressed patients with a chronic medical illness are usually sicker than their counterparts and have lower treatment adherence**.** Medical costs are significantly higher for patients with chronic medical illness with major depression than those with chronic illness alone**.** Failure to manage such mental health problems increases the probability of patients' suffering from complications, even lethal complications ***(Moussas et al., 2008).***

Pulmonary functionality in patients with pulmonary disease in particular may be severely impaired due to chronic psychogenic and somatic pain, frequent hospital admissions, as well as physiological dependency from medical and nursing personnel ***(Moussas et al., 2008).***Patients with chronic airway diseases often experience depression and anxiety; however a little information is available regarding these conditions ***(Regier et al., 1998).***COPD is a disease with multiple co-morbidities. The most common and least-treated co-morbidities of COPD are anxiety and depression ***(Mikkelsen et al., 2004).***

Anxiety is defined as an apprehensive anticipation of danger or stressful situations associated with an excessive feeling of dysphoria or somatic symptoms of tension***(Hill et al., 2008).***

Also, anxiety is associated with a feeling of apprehension, uncertainty, and fear without an apparent stimulus that is accompanied by physiological changes like tachycardia, sweating, and tremor ***(*Masi *et. al, 2004)***.

Depression is a condition in which a person feels discouraged, sad, hopeless, unmotivated, or disinterested in life in general. When these feelings last for a short period of time, it may be a case of "the blues" but when these feelings last for more than two weeks and interfere with daily activities such as taking care of family, spending time with friends, or going to work or school, it's likely a major depressive episode ***(Ryu et al., 2010)***.

Many of the somatic symptoms of a major depression could overlap the symptoms caused by severe COPD. Depression has been found to be associated with fatigue, shortness of breath, and disability among patients with heart disease or COPD, even after adjusting for the severity of illness. Therefore, sustained depressed mood and marked loss of pleasure in life should not be attributed to lung disease alone ***(Maurer et al., 2008)***.

Several studies have been found a relationship between asthma and psychological disturbance. One review of literature describes an increased prevalence of psychological co-morbidity in asthmatic adults and another research suggests that anxiety and depression are more common in patients with moderate to severe asthma than in the general population ***(Panicker et al., 2008)***.Persons with asthma who suffer from

symptoms such as dyspnea and nocturnal awakening are at increased risk for psychological distress and depression. Also, several psychological and emotional factors have been noted to be associated with poor asthma control, severe asthma attacks and asthma mortality ***(Centanni et al., 2000).***

Feldman et al. (2005) reported a high rate (65%) of psychiatric disorders like mood changes and anxiety among high-risk inner-city asthmatic patients and recommended that psychiatric disorders should be taken into consideration when treating asthma. Also, **Rabe *et al. (2007)*** suggested that new COPD patients should have a detailed medical history including an "assessment of feelings of depression or anxiety." Similarly, primary care guidelines recommend screening for mental health problems**.**

Aim of the work

The objective of this study was to assess anxiety and depressive symptoms among a sample of Egyptian patients with chronic obstructive pulmonary disease (COPD), bronchial asthma (BA) and diffuse parenchymatous lung diseases (DPLD).

Subjects and method

A cross-sectional study conducted over a one year period on a sample of 258 Egyptian patients with chronic breathing disorders attending the outpatient chest clinic at Al-Zahraa university hospital.

The sample included 258 patients, 127(49.2%) were males and 131(50.8%) were females. They received care at the outpatient chest clinic at Al-Zahraa university hospital. The patients were recruited to the study according to their diagnosis, 100 (38.7%) patients were diagnosed as having COPD, 98 (38.0%) having BA, and 60 (23.3%) having DPLD.

Patients having history of depression or any chronic illness other than the chronic chest diseases (like malignancy, diabetes mellitus, and coronary artery disease, renal or hepatic diseases) were excluded from the study.

Subjects were divided into three groups:

1. **COPD Group:** Included 100 patients with symptoms of chronic airflow obstruction and fulfilled lung function test criteria as set out by ***(GOLD; 2011).***All patients had forced expiratory volume in first second/ forced vital capacity (FEV_1/ FVC) < 70%. They had an increase in FEV_1< 200 mL, or < 12% of baseline value 20 minutes after 2 puffs of inhaled salbutamol (100 µg) given via a metered-dose inhaler.
2. **BA Group:** Included 98 patients diagnosed from history, obstructive ventilatory pattern of ventilatory function tests and the post bronchodilator response more than 12% improvement of FEV_1.
3. **DPLD Group:** Included 60 patients with DPLD diagnosed from history (exposure to risk factor, dry cough, and gradual progressive dyspnea), High resolution computed tomography (HRCT) chest showed ground glass appearance, fibro-nodular infiltration, and traction bronchiectasis. Ventilatory function tests and diffusions showed restrictive pattern with impaired carbon monoxide diffusing capacity.

All patients' were subjected to complete history taking (including age, gender, residence, occupation, marital status, level of education and

the duration of illness),complete clinical examination and pulmonary function tests.

Assessment of Depressive symptoms was carried out for all patients by a psychiatrist using the Beck Depression Inventory (BDI), which is widely used, and has been standardized and used in the Arabic population previously. The BDI is one of the most popular depression rating scales, includes 21 items graded from 0-3. The inner coherence reliability is high and the re-test reliability ranges from 0.48- 0.86 for clinical groups and 0.60- 0.90 for non-clinical population. Its validity in relation to an external criterion for depression, such as clinical diagnosis, is considered to be satisfactory ***(Beck and Steer 1987).***The presence of depression was considered with BDI scores > 13)**.**

Also, the patients were assessed for anxiety by a psychiatrist using the Hamilton anxiety scales. The scale consists of 15 items. The scale is considered as having a high inner coherence reliability and validity compared to clinical diagnosis ***(Shear et al., 2001*)**.

Statistical analysis was done using the SPSS program version 17.0, chi-square test(X^2) was used with qualitative data (presented as frequencies and percentages) and the ANOVA (F) test was used for quantitative data (presented as mean ± SD), to assess differences between the studied groups as regard the presence of anxiety and the depressive symptoms. Statistical significance was considered at P- Value ≤ 0.05.

Ethical consideration: all participants were informed about the study and gave their informed consent prior to the study.

Results

The studied sample included 258 patients with chronic breathing disorder, 127(49.2%) were males and 131(50.8%) were females.

Psychiatric assessment done for the studied 258 patients revealed that 160 (62.0 %) of them had psychiatric disorders compared to 98 (38.0%) of cases had not psychiatric disorders. Among those with psychiatric disorders113 (43.8%) cases had Mixed anxiety-depression disorders, 42 (16.3%) cases had depression and 5 (1.9%) cases had anxiety.

The mean age of the studied patients was 55.1 ± 7.3 for COPD group, 48.3 ± 12.6 years for DPLD group and 38.4 ± 11.7 for BA group. Women were more represented than men among the DPLD and BA groups; while the opposite is present among the COPD group.

More than half (56.5%) of the studied sample was from urban areas, compared to 41.5% were from rural areas. As regard level of education 32.9% of the studied patients were illiterate , 34.5% were highly educated and 32.6% of them had a less than high education with a statistical significant difference among the studied groups (P = 0.001).

Considering the duration of illness, there was a significant difference among the studied groups, it was longer among the BA and COPD groups (16.5 ± 9.1, 15.8 ± 8.5 years) respectively compared to 11.6 ± 6.5 years among DPLD group, (P=0.001) (Table 1). Other sociodemographic characteristics of the studied groups were represented in (Table 1).

According to the type of chest diseases, psychiatric disorders were most prevalent among DPLD cases (80.0%) (distributed as 60.0% had mixed anxiety-depression disorders, 13.3 % had depression and 6.7% had anxiety), followed by COPD patients as 74.0% had psychiatric disorders (of them 52.0% had mixed-anxiety depression disorders, 21.0% had depression and only 1.0% had anxiety). On the other hand BA group showed the least reported cases (38.8%) with psychiatric disorders (of them 25.5 % had mixed anxiety-depression disorders followed by 13.3% had depression and none of them had anxiety), these differences among the studied groups were statistically significant (P-value = 0.000)(table1&3) .

Considering the grade of depression, it was found that60.1% (155/258) of the studied cases had depression, of them 23.2% with severe depression (31.8% within DPLD group followed by 24.7% within COPD group and 10.5% within BA group), followed by 38.7 % with moderate depression (52.4% of COPD group,31.8% of DPLD group and 21.0% of BA group), and 38.1% with mild depression(68.4% of BA group, 36.4% of DPLD group and 23.3% of the COPD group).As noticed DPLD cases had the highest proportion of severe depression (31.8%) and COPD cases the highest proportion of moderate depression (52.4%) and BA group had the highest proportion of Mild depression(68.4%).These differences among the studied groups were statistically significant (P-value = 0.000)(table 4).

According to the level of education, depression was more common among highly educated patients (38.1%) followed by (35.5%) among those with less than high education and 26.2% among illiterate patients. However; anxiety and mixed anxiety-depression disorders were more common among illiterate patients(60.0% & 44.2%) respectively (P-value = 0.001) (table 2).In relation to marital status, the results revealed that, the highest percentages of depression (71.5%),mixed anxiety-depression disorders (64.6) and all cases with anxiety were among married patients. This is followed by widowed and divorced patients, while single patients were the least affected, these differences were statistically significant (P-value = 0.04) (table 2).

As regard the working condition, we found that manual workers had the highest percentages of anxiety (60.0%), depression (40.55%) and the mixed anxiety-depression disorders (36.3%), in comparison to other work categories. Also, house wives reported a higher percentage of mixed anxiety-depression disorders (26.5%) than among the employee and the non-working groups (22.1% & 15.0%) respectively. However, employee had a higher percentage of depression (31.0%) than among house wives (23.8%) and non working groups (4.7%), these differences showed no statistical significant difference (P= 0.4) (table2).

Considering the residence of patients, we found that mixed anxiety-depression disorders and depression (56.6% & 52.4% respectively) were more reported among cases living in urban areas, except for anxiety which was more among cases living in rural areas(60.0%),P-value was not significant (table2).

Table (1): Sociodemographic characteristics of the studied groups

Items / Groups	COPD No.= 100 (38.7)	BA No.=98 (38.0)	DPLD No.= 60 (23.3)	Total No.=258 (100.0)	Sig. test & P-value
Age (years) Mean ± SD	55.1 ± 7. 3	38.4 ± 11.7	48.3 ± 12.6	47.1 ± 12.7	F-test = 63.5 P = 0.000*
Sex					
Male	72 (72.0)	31 (31.6)	24 (40.0)	127 (49.2)	Chi-square(X^2)=34.9 P- value = 0.000*
Female	28 (28.0)	67(68.4)	36 (60.0)	131(50.8)	
Duration of illness (yrs) Mean ± SD	15.8 ± 8.5	16.5 ± 9.1	11.6 ± 6.5	15.1 ± 8.5	F-test = 7.0 P = 0.001*
Residence					
Urban	55 (55.0)	62 (63.3)	34 (56.7)	151 (58.5)	Chi-square(X^2)= 1.5 P- value = 0.4
Rural	45 (45.0)	36 (36.7)	26 (43.3)	107 (41.5)	
Marital status					
Single	2 (2.0)	21 (21.4)	5 (8.3)	28 (10.9)	
Married	68 (68.0)	65 (66.3)	45 (75.0)	178 (69.0)	Chi-square(X^2)= 26.7 P- value =0.000*
Divorced	9 (9.0)	4 (4.1)	2 (3.3)	15 (5.8)	
Widow	21 (21.0)	8 (8.2)	8 (13.3)	37 (14.3)	
Educational level					
Illiterate	41(41.0)	24 (24.5)	20 (33.3)	85 (32.9)	Chi-square(X^2) = 12.3 P-value = 0.01*
Less than high education	33 (33.0)	28 (28.6)	23 (38.4)	84 (32.6)	
High college	26 (26.0)	46 (46.9)	17(28.3)	89 (34.5)	
Occupation					
Working	75 (75.0)	60 (61.2)	30 (50.0)	165 (64.0)	Chi-square(X^2) =10.7 P-value = 0.005*
Not working	25 (25.0)	38 (38.8)	30 (50.0)	93 (36.0)	
Psychiatric assessment					
Cases with Psychiatric disorders	74 (74.0)	38 (38.8)	48 (80.0)	160 (62.0)	Chi-square(X^2) =36.8 P-value = 0.000*
Cases without Psychiatric disorders	26 (26.0)	60 (61.2)	12 (20.0)	98 (38.0)	

*P-Value ≤ 0.05 is considered significant

Table (2): Distribution of psychiatric disorders among the studied groups as regard to sociodemographic characteristics

Type of disease / Items	Cases with Psychiatric disorders no. = 160 (62.0%)			Cases without Psychiatric disorders no. = 98 (38.0%)	Total no. = 258	Sig. test & P- value
	Depression no. = 42	Anxiety no. = 5	Mixed anxiety- depression disorders no. = 113			
	No. %	No. %	No. %	No. %	No. %	
Sex						
Male	21 (50.0)	4 (80.0)	52 (46.0)	50 (51.0)	127 (49.2)	Chi-square(X^2) = 2.5 P-value = 0.4
Female	21 (50.0)	1 (20.0)	61 (54.0)	48 (49.0)	131 (50.8)	
Residence						
Urban	22 (52.4)	2 (40.0)	64 (56.6)	63 (64.3)	151 (58.5)	Chi-square(X^2)= 2.8 P-value = 0.4
Rural	20 (47.6)	3 (60.0)	49 (43.4)	35 (35.7)	107 (41.5)	
Occupation						
House wife	10 (23.8)	1(20.0)	30 (26.5)	24 (24.5)	65 (25.1)	Chi-square(X^2) = 8.4 P-value = 0. 4
Manual worker	17 (40.5)	3 (60.0)	41 (36.3)	36 (36.7)	97 (37.6)	
Employee	13 (31.0)	0 (0.0)	25 (22.1)	30 (30.6)	68 (26.4)	
Non-working	2 (4.7)	1 (20.0)	17 (15.0)	8 (8.2)	28 (10.9)	
Marital status						
Single	3 (7.1)	0 (0.0)	8 (7.0)	17 (17.3)	28 (10.9)	Chi-square(X^2)= 17.6 P-value = 0.04*
Married	30 (71.5)	5 (100.0)	73 (64.6)	70 (71.5)	178 (69.0)	
Divorced	4 (9.5)	0 (0.0)	9 (8.0)	2 (2.0)	15 (5.8)	
Widow	5 (11.9)	0 (0.0)	23 (20.4)	9 (9.2)	37 (14.3)	
Level of education						
Illiterate	11 (26.2)	3 (60.0)	50 (44.2)	21 (21.4)	85 (32.9)	Chi-square(X^2)= 22.9 P-value = 0.001*
Less than high education	15 (35.7)	1 (20.0)	39 (34.5)	29 (29.6)	84 (32.6)	
High college	16 (38.1)	1 (20.0)	24 (21.2)	48 (49.0)	89 (34.5)	

*P-Value ≤ 0.05 is considered significant

Table (3):Distribution of psychiatric disorders among the studied patient groups

Groups / Items	COPD No.=100	BA No. = 98	DPLD No.= 60	Total No.=258	Sig. test & P-value
	No. (%)	No. (%)	No. (%)	No. (%)	
Depression	21 (21.0)	13(13.3)	8 (13.3)	42(16.3)	Chi-square (X^2) = 46.9 P- value = 0.00*
Anxiety	1 (1.0)	0 (0.0)	4 (6.7)	5 (1.9)	
Mixed anxiety-depression disorders	52 (52.0)	25(25.5)	36 (60.0)	113(43.8)	
Non diseased	26 (26.0)	60(61.2)	12 (20.0)	98 (38.0)	

* P-Value ≤ 0.05 is considered significant

Table (4): Distribution of cases with depression among the studied groups according to grade of depression

Groups / Items	COPD No.= 100	BA No. = 98	DPLD No.= 60	Total no.=258	Sig. test & P-value
	No. (%)	No. (%)	No. (%)	No. (%)	
Depression	**73 (73.0)**	**38 (38.8)**	**44 (73.3)**	**155(60.1)**	Chi-square (X^2) = 24.5 P-value = 0.00*
Mild	17 (23.3)	26 (68.4)	16 (36.4)	59 (38.1)	
Moderate	38 (52.4)	8 (21.0)	14 (31.8)	60 (38.7)	
Severe	18 (24.7)	4 (10.5)	14 (31.8)	36 (23.2)	

* P-Value ≤ 0.05 is considered significant

Discussion

In the previous years there has been a growing interest in the relationship between chronic pain and depression **Lin et al. (2005).**

The prevalence of panic disorder and major depression in COPD patients were markedly increased compared to the general population. In spite of that, the pathogenetic mechanisms of these diseases remain unclear; the psychological and organic factors seem to play a role. Meanwhile, the clinical and social implications are severe and the concurrent psychiatric disorders may lead to increased morbidity and impaired quality of life. Furthermore, the risk of missing the proper diagnosis and treatment of a concurrent psychiatric co-morbidities is evident when COPD patients are treated in medical clinics ***(Mikkelsen et al., 2004).***

Patients with chronic breathing disorders often experience depression and anxiety, but little information is available regarding Egyptian patients with these conditions. Chronic respiratory diseases such as COPD and BA entail serious subjective difficulties, chronic psychogenic and pain, frequent hospital admissions, hospital dependency and dependency on oxygen. This metaphorically suffocating disease status may explain the high percentage of depression among COPD and BA patients in this study, which was higher than the percentage reported in studies conducted on patients at general hospitals ***(Moussas et al., 2008).***

In this work the mean age among the studied group was 55.1 ± 7.3 for COPD cases, 48.3 ± 12.6for DPLD, cases and 38.4 ± 11.7 for BA cases. It is clear that patients with

COPD were older than those with DPLD and BA (table1).Similarly ***Moussas et al. (2008*)** and **Sajal, (2010)** found that, the mean age of their patients to be more or less the same (54.08 ± 16.60&61.7±9.6 years) respectively and also, COPD patients were older.

In the present work depression affected males and females equally, where are anxiety was found to be more common in males and mixed disorders were more common among females, with no statistical difference between them, P-value = 0.47(table 2). Different results had been reported by ***Moussas et al. (2008)*** who reported that depression and anxiety were more common in females than males (55.6% vs. 44% and 33.3 % vs. 21.8% respectively). This difference may be related to different sociodemographic factors.

The current study revealed that, patients with BA had a longer duration of disease (16.5 ± 9.1) followed by COPD (15.8 ± 8.5) patients and the shortest duration of illness was among DPLD patients (11.6 ± 6.5), with a significant difference (P=0.001)(table 1).These findings were contradicting with ***Moussas et al.(2008)***,as they reported the mean duration of illness was to be 8.78 ± 9.14 years, with the COPD patients had more years of illness compared to those with BA and TB.

Findings, of the present work revealed that, psychiatric disorders were more prevalent among urban residents than rural residence, with no statistical difference (P-value = 0.4)(table 2). These findings were similar to that reported by ***Rimington et al. (2001)*** who documented that the symptoms of depression and anxiety were higher among inner city patients.

Moreover, there is significant difference in distribution of depression and anxiety when it is related to educational level with the educated patients appearing more affected than the illiterate (P= 0.008). These findings were similar to ***Lin et al. (2005)*** who studied the effects of income and education on the relationship between COPD and depression and concluded that the association appears to be stronger among highly educated patients than those less educated**.**

In the present work psychiatric disorders were more prevalent (80.0%) among DPLD cases (60.0% had mixed anxiety-depression disorders, 13.3 % had depression and 6.7% had anxiety), followed by 74.0% of COPD patients as (52.0% with mixed anxiety-depression disorders, depression among 21.0% and only 1.0% with anxiety).On the other hand BA group showed the least reported cases (38.8%) with psychiatric disorders (25.5 % with mixed anxiety-depression disorders followed by 13.3% with depression and none of them had anxiety), these differences were statistically significant (P = 0.000) (table 3).

Moreover, according to grades of depression DPLD cases had the highest proportion of severe depression (31.8%), and COPD cases had the highest proportion of

moderate depression (52.4%) whereas BA had the highest proportion of mild depression (68.4%), with a statistically significant differences a (P=0.000)(table4). Similarly ***Hill et al. (2008)*** reported presence of depression among COPD patients as feeling of depression may be precipitated by the loss and grief associated with the disability of COPD. Also, anxiety and depression are associated with dyspnoea, fatigue and altered sleep, all of which also occur in COPD. Where are factors that could contribute to smoking among cases with chronic breathing disorders like nicotine addiction may predispose to anxiety and depressive disorders.

Additionally, ***Sajal, (2011)*** reported depression among COPD patients to be 72% and ***Solano et al., (2006)*** reported it to range from37% - 71% among COPD patients. Also, ***Yohannes, (2005)*** found that depression affects approximately 40% of patients with COPD and is largely untreated and ***Lin et al (2005)*** documented that people with COPD had twice the prevalence of depression compared to those without COPD.

According to grads of depression, ***Moussas et al. (2008)*** reported more or less similar findings of depression grades among patients with BA, COPD and tuberculosis, as they found 49.2% of their patients having moderate to severe depression and patients with COPD had the higher depression scores, followed by patients with BA, whereas patients with TB had the lowest depression scores. They explained their findings by that COPD and BA are chronic diseases with severe subjective difficulties, dependency on medical and nursing personnel and dependency on oxygen.

Kunik et al. (2005)as they studied persons with chronic breathing disorder for depression and anxiety and found that 65% of patients were positive for depression and anxiety, 10% were positive for anxiety only, and 5% were positive for depression only. This difference probably reflects the variety of scales and methods used to measure such symptoms as they assessed depression and anxiety by different test (PRIME-MD Screening test). Also, ***Di Marco et al. (2006)*** reported that anxiety and depression were prevalent even in patients with moderate COPD.

Ryu et al. (2010) reported that patients with COPD and bronchiactasis had higher BDI scores and were more likely than controls to experience depression. The state-anxiety scores of the patients were higher than those of the controls. Among all patients, 22% presented with concomitant depression and state-anxiety, and 25% demonstrated depression and trait-anxiety. Depression was positively correlated with both state-anxiety and trait-anxiety. In addition, they also found that patients with COPD obtained the highest depression scores, followed by patients with bronchiactasis, and then by those with bronchial asthma, in decreasing order. The BDI scores and frequency of depression for the healthy controls and the patients with

bronchial asthma did not differ significantly. Depression was identified in 55% of the patients with COPD, 55% of those with bronchiactasis, 41% of those with bronchial asthma, and 30% of the healthy controls. In a subgroup analysis of patients with COPD, high frequency of depression was correlated with increased disease severity according to the GOLD stages. Their study also found a higher prevalence of depression among patients with chronic airway lung diseases than among those in the healthy control group, but found no significant difference with respect to the frequency of anxiety, even though the scores for anxiety symptoms were higher among the patients with chronic airway lung diseases than among the controls.

Lisette *et al.* (2009) reported that patients with COPD are more likely to have depression than patients with Diabetes mellitus and control subjects without chronic conditions. Moreover, **Panicker *et al.* (2008)** reported a significantly large proportion (69%) of BA patients were found to be psychologically distressed, compared to 24% among controls (P = 0.001).

Also, previous studies ***Dyer et al. (1999)*** and ***Bonsignore et al. (2001)*** revealed that younger and elderly patients with asthma suffered from psychological depression. In addition ***Adams et al. (2004)*** documented that psychological distress and decreased feelings were common among asthmatics. In another study by ***Manucoso et al. (2000)*** nearly 50% of BA patients were found to suffer from clinically significant depressive symptoms and it was attributed to the stress of having a chronic illness. Similarly, ***Vila et al. (1998)*** reported depressive symptoms among youth with moderate-to-severe persistent asthma, while **Ortega *et al.* (2003)** found that, asthma has been associated with presence of an anxiety disorder among children and adolescents.

On the contrary, ***Janson et al. (1994)*** reported that there was no evidence that patients with diagnosed bronchial asthma had more anxiety and depression than those without. Also, ***Goldbeck et al. (2010)*** studied the prevalence of anxiety and depression symptoms among German patients with cystic fibrosis and conclude that 20.6% of cystic fibrosis patients had high anxiety scores; only 9.6% had symptoms of depression and 6.7% of the patients reported both anxiety and depression scores. They attribute this difference to the younger age of the studied patients from 12 years through adulthood.

To the best of our knowledge, there were no clinical studies in literature studying the psychological status of DPLD patients and they were not evaluated previously. Accordingly, we could not compare findings of DPLD patients with the results of previous researches.

Conclusion

The results of this study revealed that mixed anxiety-depression disorders, depression and anxiety were common co-

morbidities among cases with DPLD, COPD and those with BA. Among patients of the studied sample, these findings could be related to the chronic course of these diseases, limited activity of patients, dependency on medication or other personnel. In addition to other sociodemographic factors, like gender, residence, marital status, educational level and occupation that considered as confounding factors. Accordingly these results indicate the valuable role and the essential need for psychological assessment of patients with chronic breathing disorders, in order to support proper management (diagnosis and treatment).

Recommendations

Physicians should take into consideration the presence of psychiatric co-morbidities among cases with chronic breathing disorder especially DPLD, COPD and BA. This may be through using simple and quick validated questionnaires during the visits of patients to the out-patient clinic or by referring patients to psychiatrists for early and proper diagnosis that will be helpful in appropriate treatment.

Further research studies are needed and recommended to be conducted on a larger sample of patients from different centers in order to confirm the relationship between psychological status and the respiratory symptoms, as well as to study the prevalence of depression and anxiety among Egyptian patients with chronic pulmonary diseases and to address the impact, of anxiety and depression on the management of COPD, BA and DPLD patients.

In addition to the previous, further studies are needed to determine the overall effect of antidepressant drugs on the course of disease among those patients and to study the correlation between severity of depression and anxiety scores, as well as the degree of airflow obstruction among COPD and BA cases or the degree of diffusion impairment among DPLD cases.

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القلق والاكتئاب فىمرضى الربو الشعبي والسدة الرئوية المزمنة و التليف الرئوي المستفيض

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الخلفية: تزداد الإصابة بالقلق و الاكتئاب و اضطرابات المزاج في المرضى الذين يعانون من امراض طبية عضوية مزمنة. و عادة كلما زادت خطورة الأمراض الجسدية كلما كانت مصحوبة باضطرابات نفسية متغيرة الشدة. أن المرضى المصابون بالاكتئاب مَع مرض طبي مُزمن يعانون أكثر مِنْ نظرائِهم كما أنهم اقل التزاما بتناول العلاج. بالإضافة الى أن التكلفة الطبية تكون مرتفعةجداً للمرضى المصابين بالاكتئاب المصاحب للأمراض الطبية العضوية المزمنة مِنْ أولئك المصابون بالأمراض المزمنة فقط. كما ان الفشل في معالجة مثل هذه المشاكلِ النفسية تَزيدُ معاناة المرضى مِنْ المضاعفات، مع احتمال تعرضهم لمضاعفات قاتلة.

أهداف الدراسة : تقييّمَ القلقَ والاكتئاب في مرضى السدة الرئوية المزمنِة والربو الشعبي و التليف الرئوي المستفيض.

المرضى و الطرق :دراسة مقطعية أجريت خلال سنة واحدة على عيّنة مِنْ 258 مريضِ مصرى مصابيين بِاضطراباتِ التنفّس المُزمنةِ التي استلزمت العنايةَ و المتابعة في العيادةِ الخارجية لقسم الأمراض الصدريةِ بمستشفى الزهراء الجامعي –جامعةِ الأزهر. و قد تضمنت هذه الدراسة كُلّ المرضى الذين كانوا يعانون من سدة رئوية مزمنة و ربو شعبي و تليف رئوي بصرف النّظر عن شدَّةَ المرضِ كما انهم جميعا أعربوا عن موافقتهم للمشاركة في الدراسة. تم تقييم القلق و الاكتئاب باستخدام

Hospital anxiety and depression scale (HADS) and the Beck Depression Inventory (BDI).

النَتائِج :وجد ان الإضطرابات النفسية كَانتْ سائدة جداً بين حالاتِ التليف الرئوى بنسبة 80% و74 % من مرضى السدة الرئوية المزمنة بينما أظهرت مجموعة الربو الشعبى أقل الحالات اصابة (38.8 %) بالإضطراباتِ النفسية مع وجود فروق ذات دلالة احصائية بين المجموعات(P< 0.05). الأكتئاب كان منتشر بين 60,1% من الحالات المدروسة (258/155) . منهم 23.2 % كَانَ عِنْدَهُم كآبةُ حادّةُ، و 38.7% كَانَ عِنْدَهُم كآبةُ معتدلةُ و38.1 % كَانَ عِنْدَهُم كآبةُ بسيطة. حالات التليف الرئوى كَانَ عِنْدَهم النسبةُ الأعلى للكآبةِ الحادّةِ (31.8)، حالات السدة الرئوية المزمنة كَانَ عِنْدَها النسبةُ الأعلى للكآبةِ المعتدلةِ (52.4) ومجموعة الربو الشعبى كَانَ عِنْدَها النسبةُ الأعلى للكآبةِ البسيطة (68.4 %)، مَع وجود دلالة احصائية للأختلاف بين المجموعاتِ المدروسةِ (P< 0.05).

الخاتمة:اثبتت هذه الدراسة أن الاكتئاب والقلق منفردين أو مجتمعين هى اضطرابات نفسية شائعة بين العيّنةِ المدروسةِ منِ المرضى المصريين المصابون بالأمراضِ الرئويةِ المزمنة وهى التليف الرئوي المستفيض و السدة الرئوية المزمنة والربو الشعبى.

التوصيات:الأطباء يَجِبُ أَنْ يَأْخذوا فى الاعتبار تقييمَ الاضطرابات النفسية للحالاتِ التى تعانى من التليف الرئوي المستفيض و السدة الرئوية المزمنة والربو الشعبى