

Research Paper

## A Hospital Based Cross Sectional Study of Depression among Asthmatic Patients in MNR Medical College and Hospital, Hyderabad

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### ABSTRACT

**Introduction:** Bronchial asthma is a serious global health problem with significant health care costs, loss of productivity and reduced participation in family life. Global prevalence of bronchial asthma ranges from 1% to 18% of population in different countries. There has been a marked increase in the prevalence of bronchial asthma in India over the last two decades. Major depressive disorder is the most common mood disorder with a life-time prevalence in general population estimated to be close to 20%. Depression is a debilitating disease that can cause severe functional impairment and emotional anguish. It is associated with significant income loss, absenteeism from work and increased health-care burden. **Materials and Methods:** The Study Sample was of Convenience. It was a Descriptive Study All consecutive adult patients, aged 18-64 yrs., registering for the first time in the Department of Respiratory Medicine with respiratory symptoms suggestive of airway disease were assessed using spirometry. Cases that fulfilled standard spirometric criteria for the diagnosis of asthma entered step two of the case selection process. Patients with features of COPD and/ or history of smoking were excluded at this stage. All asthmatic patients selected through step one underwent comprehensive systemic examination and laboratory investigations (Haematology, Biochemistry) to exclude comorbid general medical conditions such as diabetes mellitus, hypertension, thyroid dysfunction, etc. All asthmatic patients without co-morbid general medical conditions were taken up for assessment of depression using PHQ-9, which is a screening tool for depression and later diagnosis of depression was confirmed using ICD-10 criteria. Statistic was only descriptive analysis. **Results:** In the sample of 170 asthma patients, 150 patients had depressive disorders (Total prevalence- 58%; 17%- mild, 23%- moderate, 13%- moderately severe, 4%- severe depression). Majority of them being married, belonging to rural background and of lower- and upper-lower income. Female population having predominance. Mean age group being 30 for males and 35 for females. **Conclusion:** The study suggests that patients with asthma have high prevalence of depression. The results indicate the need to screen all asthma patients for depression and other psychiatric comorbidities and treat them appropriately to improve their quality of life.

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Received: February 6, 2019; Revision Received: March 14, 2019; Accepted: March 18, 2019

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**Keywords:** Comorbidities, Bronchial Asthma, Depression, Quality of Life.

**B**ronchial asthma is a serious global health problem with significant health care costs, loss of productivity and reduced participation in family life.<sup>1</sup> Global prevalence of bronchial asthma ranges from 1% to 18% of population in different countries.<sup>1</sup> There has been a marked increase in the prevalence of bronchial asthma in India over the last two decades.<sup>2,3</sup> Major depressive disorder is the most common mood disorder with a life-time prevalence in general population estimated to be close to 20%.<sup>4,5</sup> Depression is a debilitating disease that can cause severe functional impairment and emotional anguish. It is associated with significant income loss, absenteeism from work and increased health-care burden.

Asthma patients tend to have higher levels of stress and negative emotions such as panic, fear, irritability, depression and bipolar disorders.<sup>6</sup> Recent reviews have found that depressive symptoms are more common in asthma patients than the general population. Nearly, 50% of asthma patients have depressive symptoms.<sup>7</sup>

Symptoms of asthma and depression tend to overlap, specific symptoms of asthma may be linked to depression due to their effect on the individual's quality of life or due to asthmatic symptoms themselves.<sup>8</sup> Dyspnoea, waking at night with asthma and morning symptoms of asthma have a significant relation with depression.<sup>9</sup> Most of the patients have a positive Centre for Epidemiologic Studies Depression Scale (CESD-SF) screen, which is attributable mostly to a somatic sleep symptom that overlaps with asthma symptoms. The Geriatric Depression Scale (GDS) was more consistent with physician's reports of depressive disorders.<sup>10</sup> The association between asthma, depressive and anxiety symptoms may reflect effects of common factors rather than a direct causal link. Depression can lead to a sense of hopelessness that erodes adherence and other health-promoting behaviour. Cognitive biases are evident in depression even after recovery from an acute episode, but are not found in never depressed patients with asthma. Depression has a high risk for poor adherence to asthma therapy after discharge.<sup>11,12</sup>

### **MATERIALS AND METHODS**

This study was conducted in the Department of Respiratory medicine, Psychiatry ward of MNR Medical College and Hospital, Hyderabad from October 2017 to September 2018.

**Inclusion Criteria:** Patients aged 18 - 64 yrs., registering at the Department of Respiratory Medicine for the first time with a diagnosis of asthma subsequently confirmed through spirometry at the Department of Respiratory Medicine.

#### **Exclusion Criteria:**

1. Patients with other co-morbid general medical conditions (hypertension, diabetes mellitus, etc.).
2. Patients who have received psychiatric treatment elsewhere and are on treatment currently.
3. Patients who cannot perform spirometry.
4. Presence of Chronic Obstructive Pulmonary Disease (COPD).
5. Smokers.
6. Severely ill patients unable to co-operate for psychiatric evaluation.
7. Patients who are not under steroids as the main form of treatment since steroids-induced depression will alter the results of the study.

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The Study Sample was of Convenience. It was a Descriptive Study All consecutive adult patients, aged 18-64 yrs., registering for the first time in the Department of Respiratory Medicine with respiratory symptoms suggestive of airway disease were assessed using spirometry. Cases that fulfilled standard spirometric criteria for the diagnosis of asthma entered step two of the case selection process. Patients with features of COPD and/ or history of smoking were excluded at this stage. All asthmatic patients selected through step one underwent comprehensive systemic examination and laboratory investigations (Haematology, Biochemistry) to exclude comorbid general medical conditions such as diabetes mellitus, hypertension, thyroid dysfunction, etc. All asthmatic patients without co-morbid general medical conditions were taken up for assessment of depression using PHQ-9, which is a screening tool for depression and later diagnosis of depression was confirmed using ICD-10 criteria. Statistic was only descriptive analysis.

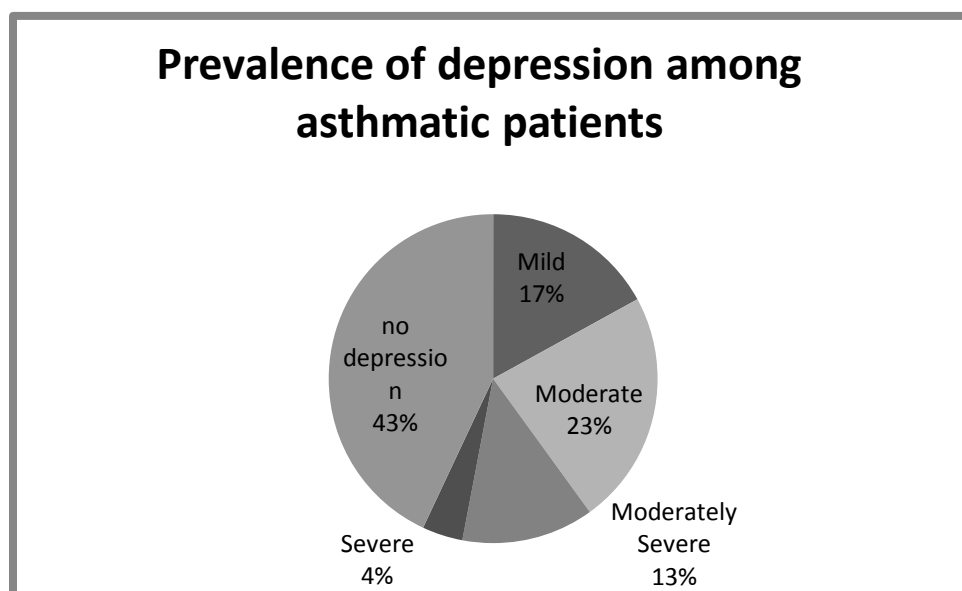
**RESULTS**

A total of 150 adult asthma patients participated in the study. Their median age was 33 years (range: 18-65). Of the participants, 26.7% were male and 73.3% were female with corresponding median (mean) ages of 30 (35.9) and 35 (37.3) years respectively (Figure 1). Both the median (95% confidence intervals about median overlap for genders) and mean (Student’s t-test for independent samples, p= 0.69) ages do not differ significantly between genders. The study sample showed female preponderance and male-to-female ratio was 1: 1.5.

S.No	Characteristics	N: 150	
1	Age (Years)	40.9±14.8	
2	Male	26.7	40
3	Female	73.3	110
4	Single	16.66	25
5	Married	53.33	80
6	Widowed	30	45
7	Upper	6.66	10
8	Upper Middle	1.33	2
9	Middle, Lower Middle	32	48
10	Lower, upper lower	40	60
11	Lower	20	30
12	Rural	57.33	86
13	Urban	42.66	64

**Table 1: Socio demographic characteristics of Asthmatic patients**

170 asthmatic patients registered initially for the study, 150 had depressive disorders giving an overall prevalence of 58% with 17%, 23, 13 and 4% had mild, moderate, moderately severe and severe degree of depressions respectively (Figure 1).



*Figure 1: Prevalence of depression among asthmatic patients*

## **DISCUSSION**

The study sample showed female preponderance and male-to-female ratio was 1:1.5. This is comparable to several other studies, where female asthmatic patients were more than males. The majority of the participants belonged to lower- and upper-lower socioeconomic class followed by middle- and lower-middle socioeconomic class. This was similar to other study, which indicated that most of the study population belonging to lower income group. A large proportion of the study participants were from rural area compared to those from urban area.<sup>13,14,15</sup>

Majority (n=150) of the asthmatic patients registered initially for the study had depressive disorders giving an overall prevalence of 58%; 17%, 23%, 14% and 4% had mild, moderate, moderately severe and severe degree of depressions respectively. This can be compared to similar studies, which reported high prevalence of depression among asthmatics. A study by Yakar reported mild depression in 27% of asthmatics, moderate depression in 9% of asthmatics and severe depression in 7% of asthmatics.<sup>16,17</sup> The prevalence rate varied from 8% to 55.01%. A multinational study by Adrian Loerbroks et al has found that the prevalence of depression in asthma patients to be on an average of 8.4% and Asia in specific is 7.1%.<sup>18</sup> Another study by Javier de Miguel Díez found 9% prevalence of depression. A study conducted in Egypt found prevalence of 13.3%.<sup>19</sup> The prevalence in Indian studies ranged from 13.2% by Bharat Bhushan Sharma to 65% by Misra et al. Contradicting this, a review of literature done by Opolski reported mixed results as to whether persons with asthma are more likely to be depressed than those without asthma.<sup>20</sup>

## **CONCLUSION**

The study suggests that patients with asthma have high prevalence of depression. The results indicate the need to screen all asthma patients for depression and other psychiatric comorbidities and treat them appropriately to improve their quality of life.

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***Acknowledgements***

The author(s) profoundly appreciate all the people who have successfully contributed in ensuring this paper in place. Their contributions are acknowledged however their names cannot be mentioned.

***Conflict of Interest***

The authors carefully declare this paper to bear not conflict of interests

**How to cite this article:** S. Reddy & Akavaram. V (2019). A Hospital Based Cross Sectional Study of Depression among Asthmatic Patients in MNR Medical College and Hospital, Hyderabad. *International Journal of Indian Psychology*, 7(1), 756-761. DIP:18.01.082/20190701, DOI:10.25215/0701.082