

## Review Article

# Allergic rhinitis in India: an overview

D. Chandrika\*

Department of Otorhinolaryngology, SDM medical college, Dharwad, Karnataka, India

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**\*Correspondence:**

Dr. D. Chandrika,

E-mail: [chandrikad1508@gmail.com](mailto:chandrikad1508@gmail.com)

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### ABSTRACT

Prevalence of allergic diseases including asthma, rhinitis, anaphylaxis, food, drug or insect allergy, is rising worldwide affecting about 10-25% of population being one of the top ten reasons for visit to primary care physicians. Though it often adversely affects the quality of life; in India allergic rhinitis is often regarded as trivial disease and patients fail to attribute the ill health to its symptoms. In study on children with allergic rhinitis nasal symptoms and rhinoconjunctivitis were present and there was consistent rise in its prevalence. Proportion of blockers is higher compared to sneeze runners. Nasal obstruction was the most common symptom and blockers had significantly more sensitization to polyvalent house dust, house dust mites and fungi, whereas sneeze-runners had more sensitization to pollens, asthma was the most common comorbid condition present, In majority of children had one or more comorbidity, allergic rhinitis adversely affected behaviour, work performance and life style of patients.

**Keywords:** Allergic rhinitis, India, Allergic rhinoconjunctivitis, Pollen, Sneeze runners

### INTRODUCTION

The prevalence of allergic diseases including asthma, rhinitis, anaphylaxis, food, drug or insect allergy, is rising worldwide.<sup>1</sup> Allergic rhinitis is one of most common allergic diseases worldwide, affecting about 10-25% of population. It is one of the top ten reasons for visit to primary care physicians.<sup>2</sup>

### ALLERGIC RHINITIS BURDEN

The burden of allergic rhinitis is enormous, constituting about 55% of all allergies.<sup>3</sup> About 20-30% of Indian population suffers from at least one allergic diseases.<sup>3</sup> Reported incidence of allergic rhinitis in India also ranges between 20% and 30%.<sup>4</sup> Studies have shown that prevalence of allergic rhinitis has been increasing in India over past few years. According to study of International study of asthma and allergies in childhood (ISSAC) phase 1 (1998), in India nasal symptoms alone were present in 12.5% children in 6-7 years age group and 18.6% in 13-

14 years age group, while allergic rhinoconjunctivitis was observed in 3.3% and 5.6% children, respectively as shown in Figure 1.

However in ISSAC phase 3 (2009) study, prevalence of nasal symptoms increased to 12.9% and 23.6% in 6-7 and 13-14 year age groups, respectively, while that of allergic rhinoconjunctivitis increased to 3.9 and 10.4% respectively as shown in Figure 2.

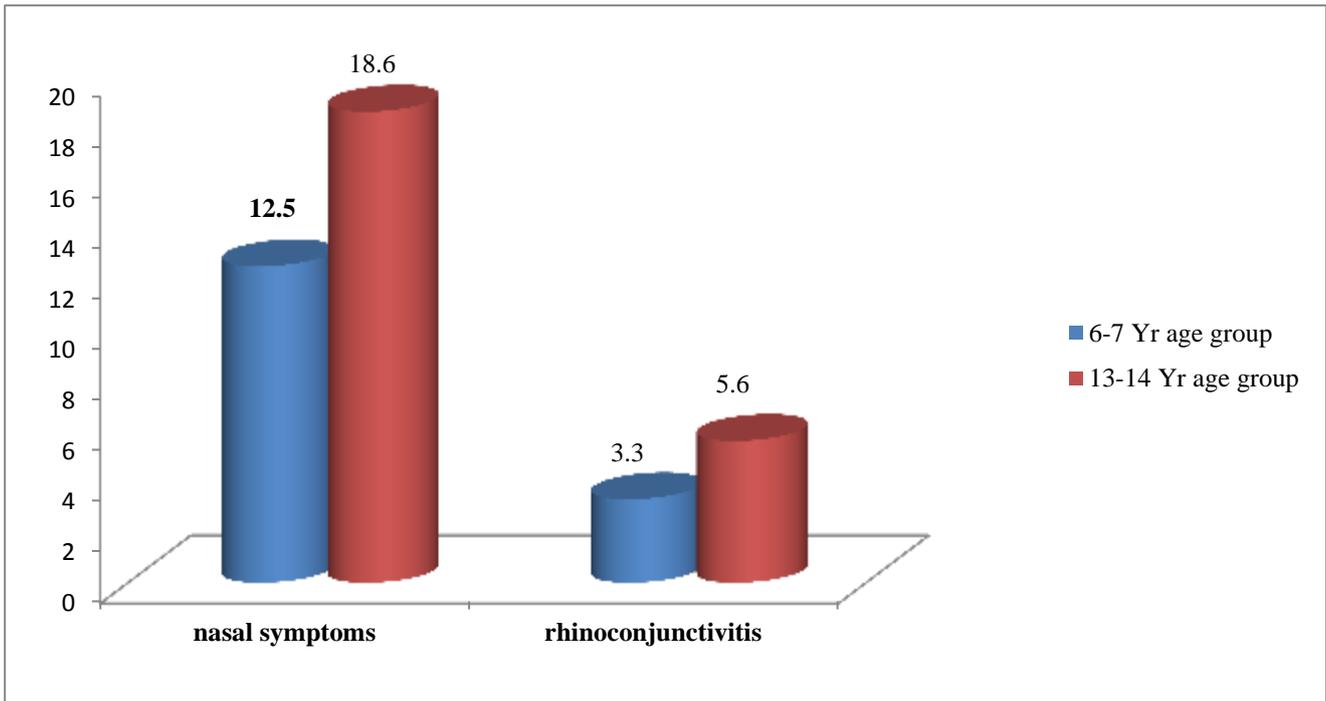
Similar findings are documented in a recently published study from Mysore. There has been a consistently rising trend of allergic rhinitis in children (6-14 years old) over period of 15 years from 1998 to 2013 as given in Figure 3.

### SYMPTOMS OF ALLERGIC RHINITIS

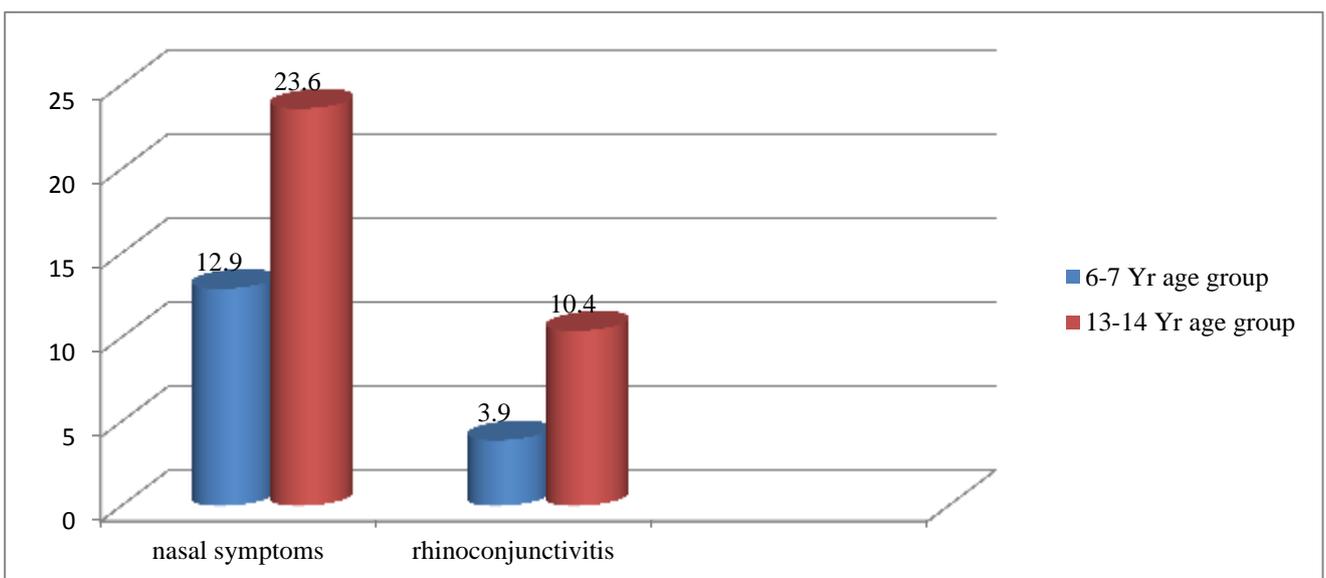
Allergic rhinitis is often classified as sneeze runners and blockers because of their distinct clinical profile and need of a different treatment approach. In patients who are

predominantly sneezers and runners, the main symptoms are sneezing, anterior rhinorrhea and itchy nose and eyes. On the other hand, blockers have nasal congestion as predominant symptom, wherein nasal blockage and thick mucus can lead to post nasal drip and breathlessness.<sup>2</sup> In recent study, Deb and colleagues screened 548 Indian adults with allergic rhinitis and showed that the proportion of blockers is significantly higher compared to sneeze runners as shown in Figure 4. On classifying patients according to ARIA guideline, moderate to severe

persistent allergic rhinitis was most common type of allergic rhinitis and was prevalent in nearly one third of patients as given in Figure 5. Similarly, a questionnaire based survey among 2300 school children from Jaipur aged 4-18 years showed nasal obstruction to be the most common symptom. The commonest symptoms of allergic rhinitis are shown in Figure 6. Among the children with allergic rhinitis, 35.6% experienced intermittent symptoms while 64.3% had persistent disease.<sup>8</sup>



**Figure 1: Burden of allergic rhinitis.**



**Figure 2: Burden of allergic rhinitis.**

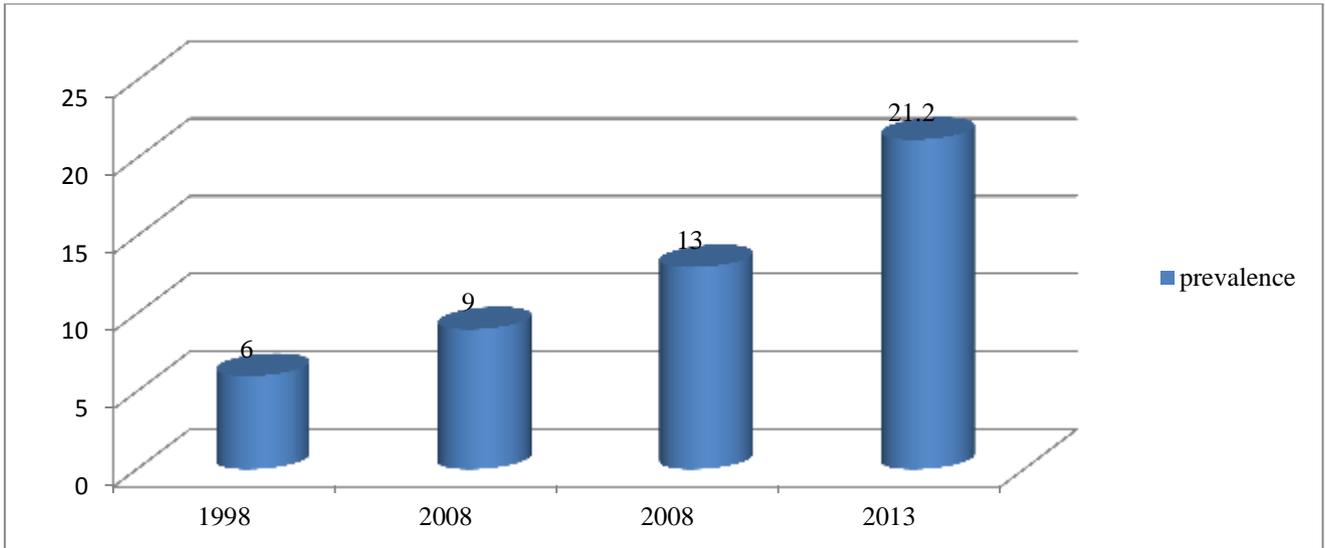


Figure 3: Prevalence of allergic rhinitis.

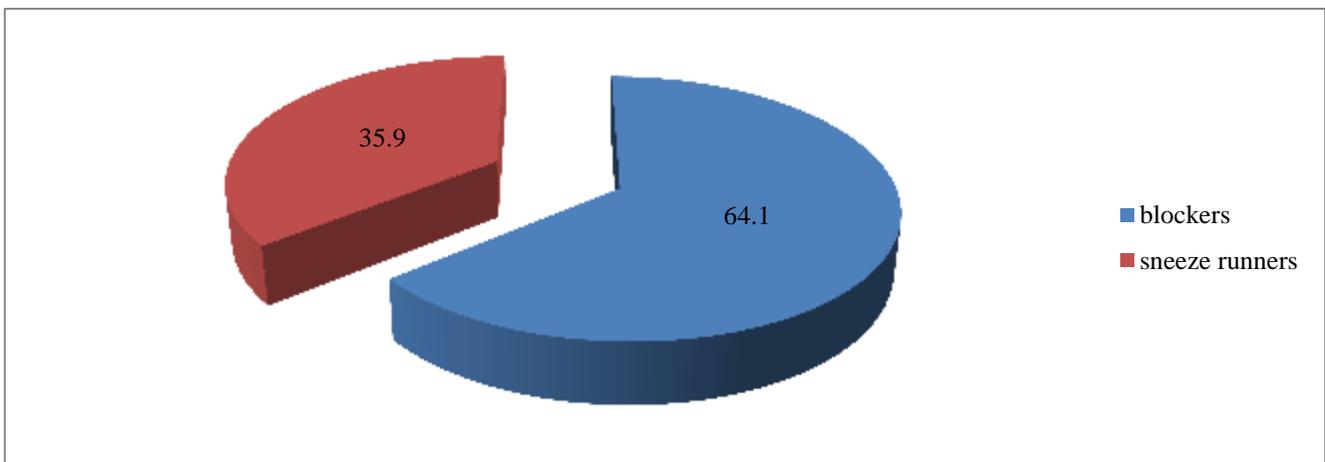


Figure 4: Symptom distribution in allergic rhinitis.

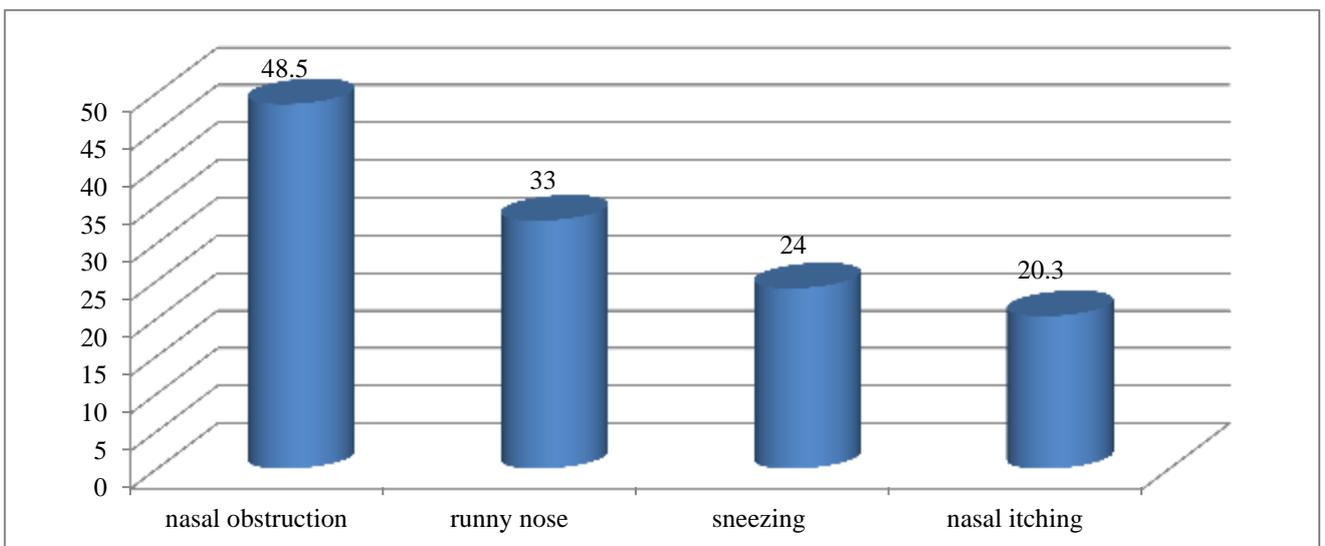
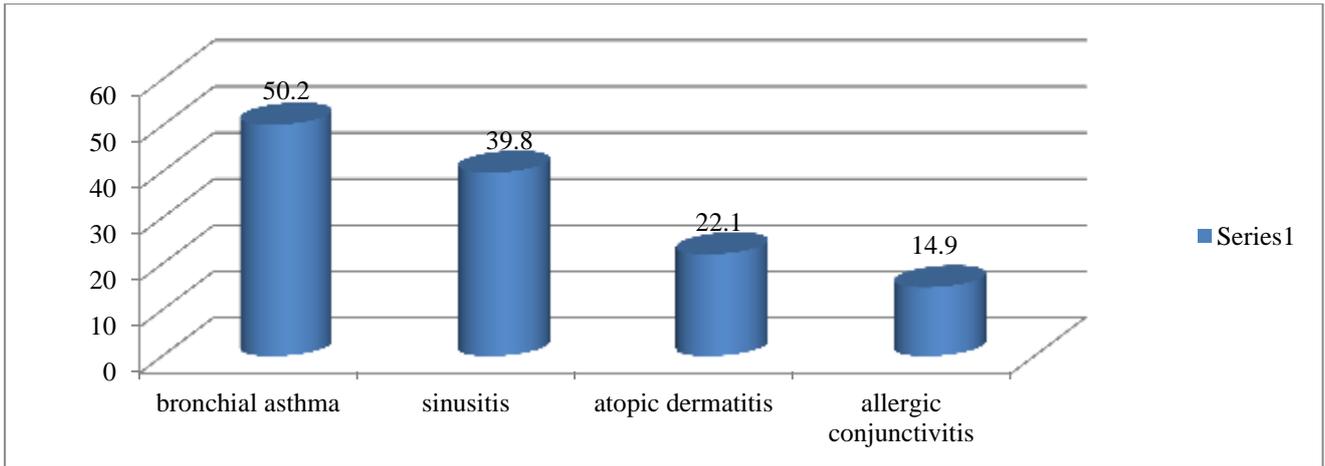
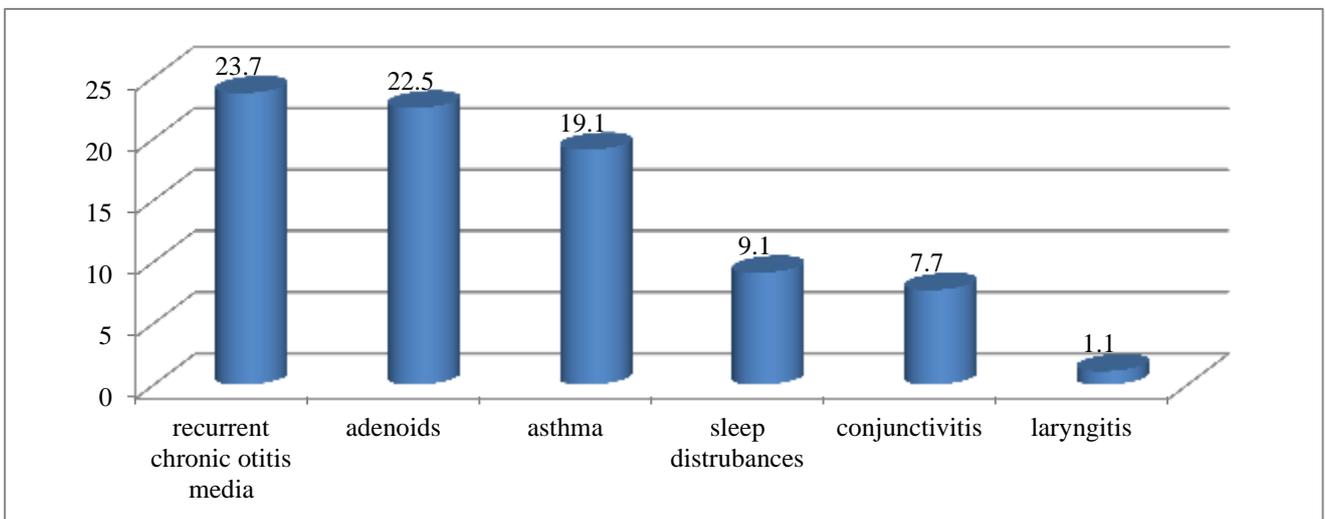


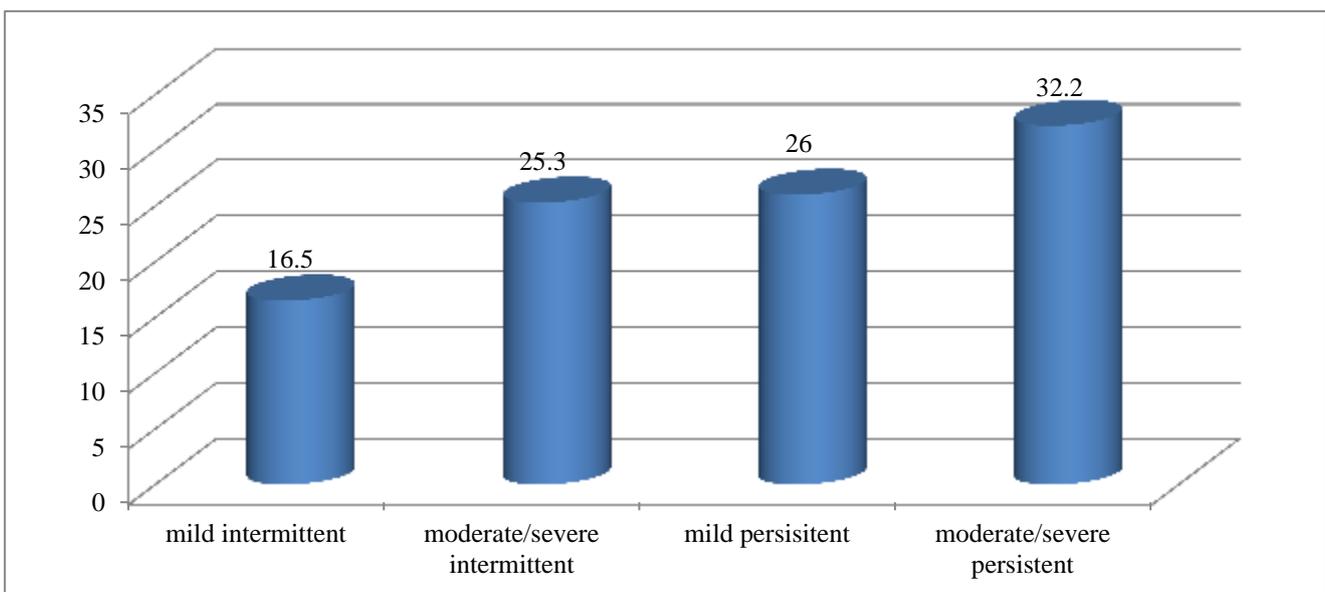
Figure 5: Contribution of symptoms in allergic rhinitis.



**Figure 6: Comorbid conditions of allergic rhinitis.**



**Figure 7: Comorbid conditions of allergic rhinitis.**



**Figure 8: Severity of symptoms in allergic rhinitis.**

## COMMON ALLERGENS

Allergic rhinitis is frequently caused by exposure to perennial or seasonal allergens present in the indoor and outdoor environment, the most common ones being:

Pollens (grass, trees, weeds), house dust mites, pets, molds.<sup>9</sup> The study by Deb et al showed that blockers had significantly more sensitization to polyvalent house dust, house dust mites and fungi, whereas sneezers-runners had more sensitization to pollens as given in Table 1.<sup>2</sup>

**Table 1: Common allergens.**

Allergens	Sneeze runners	Blockers	P value
	n (%)	n (%)	
<b>Polyvalent house dust</b>	66 (39.8)	159 (53.7)	0.006
<b>Pollens</b>	128 (77.1)	71 (24.0)	<0.001
<b>House dust mites</b>	27 (16.3)	85 (28.7)	0.004
<b>Fungi</b>	22 (13.2)	116 (39.2)	<0.001
<b>Danders</b>	18(10.8)	48 (16.2)	0.146
<b>Insects</b>	27 (16.3)	62 (20.9)	0.28
<b>Food</b>	30 (18.1)	67 (22.6)	0.307

## COMMON COMORBIDITIES IN ALLERGIC RHINITIS

Allergic rhinitis is associated with number of comorbid conditions such as asthma, sinusitis, otitis media, atopic dermatitis and nasal polyps.<sup>10</sup> In the study by Deb et al asthma was the most common comorbid condition, present in almost half of patients as given in Figure 7.<sup>2</sup> In children with allergic rhinitis majority of children had one or more comorbidity (58.1%), whereas 22% children had 2 or more comorbidities. A total of 41.9% had no comorbid condition.<sup>11</sup> The prevalence of different comorbidities is shown in Figure 8.

## QUALITY OF LIFE IN ALLERGIC RHINITIS

Though it often adversely affects the quality of life; in India allergic rhinitis is often regarded as trivial disease and patients fail to attribute the ill health to symptoms of allergic rhinitis.<sup>1</sup> Allergic rhinitis has negative impact on quality of life. Allergic rhinitis can affect the physical, psychological and social aspects and impact work productivity. A study involving 34 Indian patients with allergic rhinitis showed that allergic rhinitis adversely affected behaviour, work performance and life style of patients. Further allergic rhinitis caused hindrance at work due to repeated blowing of nose and need to rub eyes and nose.<sup>12</sup>

## CONCLUSION

In India 20-30% of the population suffers from allergic rhinitis and/or other allergic diseases, prevalence being increasing over past many years. Allergic rhinitis patients can be classified as sneeze runners and blockers. The most common symptoms being sneezing, running nose, nasal itching and nasal obstruction. Allergens commonly implicated are pollens, house dust mites, pets and molds. Allergic rhinitis is associated with number of co morbid conditions such as asthma, sinusitis, otitis media, atopic dermatitis, conjunctivitis and nasal polyps. Allergic rhinitis adversely affects quality of life of patient.

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