

## Review article

### Impacts of Allergic Rhinitis in Social Communication, Quality of Life and Behaviours of the Patients

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#### Abstract

**Objectives:** Allergic Rhinitis (AR) is a chronic inflammatory disease characterized by nasal itching, sneezing, rhinorrhea, and nasal obstruction. In this review article, the communication problems in AR patients will be discussed.

**Methods:** With the detailed literature survey, allergic rhinitis; and its effect on Quality of Life (QoL), work life and social communication were presented.

**Results:** Nasal congestion is the most prominent symptom in AR. It is associated with sleep-disordered breathing. In allergic rhinitis patients, nasal congestion and runny nose were the most bothering symptoms. The other problems were fatigue (46%), concentration difficulty (32%), and decrease in productivity (23%). The patient's quality of life, school/work performance and social interaction were negatively affected by AR. It also creates financial burden. Effective treatment of nasal symptoms may decrease the burden of illness and improve patient productivity and QoL in AR.

**Conclusion:** AR affects social communication of the patients. Sleep problems and runny nose cause problems at work and decrease in quality of lives of the patients. Decreased work performance increased the economic burden of the AR. If patients were informed for the disease and treated appropriately; runny nose, sneezing, headache and sleep problems will be reduced. In this way, socially isolated live of allergic rhinitis patients will be prevented.

**Keywords:** Allergic rhinitis; Communication; Social

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#### Introduction

Allergic Rhinitis (AR) is a chronic inflammatory disease. It is characterized with nasal itching, sneezing, rhinorrhea, and nasal obstruction. Approximately 43% of AR is seasonal; and 56% is perennial. Seasonal allergies got worse during the spring and fall. Nasal congestion was ranked as the most common symptom experienced by patients daily or on most days during the worst month for nasal allergies. Nasal congestion was the most bothering symptom of AR [1].

Nasal allergy affects productivity, leads to missed workdays, and has a negative effect on patient Quality of Life (QoL). Symptoms of AR are bothersome and effective treatment options for nasal symptoms of AR may decrease the burden of illness. Therefore, patient productivity and quality of life improve [1].

AR affects between 10 to 30 percent adults and more than 40% of children worldwide. It negatively affects the patient's QoL, school/work performance and social interaction. It also creates financial burden [2].

Lack of treatment and nonadherence to treatment increase the treatment costs. Evidence-based guidelines for prevention and treatment is important for both patients and physicians [3].

#### Allergic Rhinitis

In AR patients, there are inflammatory infiltrate made up of eosinophils, T cells, mast cells and basophils, which release several mediators, chemokines and cytokines (histamine and cysteinyl-leukotrienes). Regulation of the local and systemic IgE synthesis occur [4]. The nose becomes primed and hyper-reactive on repeated exposure to the allergen [2].

AR requires a long term-treatment. In half of the patients with AR, symptoms are present for more than 4 months and in 20% of the patients symptoms are present over 9 months [5,6]. AR significantly affects-social participation and quality of life of the patients [5,6].

Outdoor and indoor allergens, the most common of which are pollens, dust mites, molds and insects may initiate the allergic response. The symptoms are sneezing, runny or stuffy nose, teary eyes and itchy nose, throat or skin [7].

Nasal congestion is associated with sleep-disordered breathing in AR. It affects mental health, psychiatric disorders, depression and anxiety. Additionally, sleep-disordered breathing in childhood and adolescence is associated with increased disorders of learning performance, behavior, and attention [5,6].

#### Allergic rhinitis and quality of life

AR also has negative impact on patients' QoL. A total of 80% of the patients suffer from being tired frequently (44%) or sometimes (36%) related allergy problems. They felt miserable or irritable during the allergy season [8].

Meltzer et al., [9] investigated quality of life in patients with AR [9]. A total of 1,065 subjects with nasal/ocular symptoms were selected from a sample of 15,000 households. Short Form 36

health survey questionnaire (SF-36) and Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ) were applied. The results were compared to the results of healthy control subjects. In seven items of SF-36 and in all items of RQLQ, statistically significant differences were detected between the AR group and the control group. Both physical and mental health status were adversely affected by rhinitis [9].

AR may be existed with asthma in the same patients. QoL of the patients is related to the severity of asthma [10,11]. Women had more severe rhinitis than men, as suggested by the finding that the proportion of women with allergic rhinitis that experienced both seasonal and perennial symptoms was higher than that for men [11].

### Allergic rhinitis and problems at work

Daytime symptoms, sleep disturbances, mood problems may affect the daily work and productivity [12]. Valovirta et al., reported that nearly half of the patients of a total of 3562 participants had experienced difficulty at work [6,13].

Lamb et al., reported that based on the self-reports of 8267 patients more than half of the employees experienced AR symptoms lasting for 52.5 days. When they experienced symptoms they were unproductive for 2.3 h per workday. They had lost an average of 3.6 workdays due to AR symptoms [6,14]. AR results in 3.5 million lost workdays and 2 million lost schooldays annually in USA due to bothersome side effects [5,6].

Annual cost of allergic rhinitis range from dollars US 2-5 billion. Cost of the disease increase due to the indirect costs, such as reduced productivity [15].

### Allergic rhinitis and social communication

**Communication:** Communication is a learned skill. Most people are born with the physical ability to talk, not all can communicate well unless they make special efforts to develop and refine this skill further. Communication process is actually a complex process. Communication has been defined as the act of giving, receiving or exchanging information, ideas and opinions so that the message is completely understood by both parties [16].

In some diseases, nonverbal assessment of shame may be crucial. Feelings of shame can be destructive, and the nondisclosure that follows from shame can disrupt accurate reporting of medical and psychological symptoms and couples' communication [17].

**Communication problems in allergic rhinitis:** Activity and social participation of the patients with AR have been impaired. AR is an important social problem. The total burden of AR also is not only related with physical and social functioning but also with its comorbidities and financial aspects [5].

Besides the nasal congestion and runny nose; the other problems were fatigue (46%), poor concentration (32%), and reduced productivity (23%) in AR patients [18]. In AR patients, self-adjusting their treatment regimen of over-the-counter and prescription medications because of lack of efficacy, deterioration of efficacy, lack of 24-hour relief, and bothersome side effects increased both economic costs and problems to the patient [5]. In 64% of the patients, AR was classified as intermittent and in 36% as persistent. Persistent rhinitis caused more discomfort than intermittent rhinitis. In the 49% of the patients with mild and/or intermittent AR were overtreated, whereas about 30% of those with moderate/severe persistent rhinitis were undertreated [19].

The treatment of allergic rhinitis consists of allergen avoidance, pharmacotherapy and immunotherapy [20]. Pharmacologic therapies for AR that specifically reduce inflammatory cells and mediators and therefore nasal congestion and other symptoms-should also improve sleep quality and overall Quality of Life (QoL). Intranasal corticosteroids are the current mainstay of therapy for AR. Results of a number of clinical trials demonstrate that INS effectively reduces nasal congestion and ocular symptoms, improve sleep quality, and decrease daytime somnolence. Intranasal corticosteroids have also proved to be effective in reducing symptoms of acute rhinosinusitis and nasal polyposis, both of which also negatively impact on sleep quality. Intranasal corticosteroids are considered safe due to their low systemic bioavailability [21]. Whereas, long-lasting treatments, preventive measures from allergic agents and health problems related to AR such as headache, runny nose, sneezing, etc., affect patients' daily life, work life and quality of lives negatively.

It can be said that there is impaired psychological wellness and to perceive impaired cognitive functioning. They make more effort into sustaining performance, resulting in earlier exhaustion; and psychological wellness is affected negatively. Symptoms appear that may either be caused by or lead to, a reduction in cognitive functioning, e.g., the reduced ability to concentrate or remember. There are also reduced productivity, fatigue, a worn-out feeling, frustration, unrest, irritability and stress [22].

AR has a significant effect on patient's daily lives. Higher prevalence, long-lasting symptoms, impairment of sleep, mood and QoL etc., interact with psychological wellness which is considerably important for a healthy social life. Higher medical costs related to AR also have socioeconomic consequences [6].

Koinis-Mitchell et al., [23] reported that Poorer AR control also was related to more sleep problems. Poor sleep hygiene also heightened the association between poor asthma control and sleep problems. Chang et al., [24] also stated that sleep problems were higher in AR patients. Preschoolers with atopic dermatitis who had treatment for the last 12 months had higher attention problem and attention-deficit/hyperactivity disorder scores. Sleep problems were more severe in moderate to severe atopic dermatitis compared to control and mild atopic dermatitis groups. The severity of sleep problems correlated positively with the percentage of eosinophils in peripheral blood. They concluded that psychological and behavioural problems differed among the three major allergic diseases, weaker association for asthma and stronger association for AR and atopic dermatitis.

AR is seen more frequently than asthma [25,26]. It is associated with impairments in how patients function physically, emotionally, and socially and with difficulties at work or school [9,26-31]. The symptoms of rhinorrhea, nasal congestion, and sneezing are annoying, but there are also non-nasal troublesome symptoms that are headache, thirst, and disturbed sleep [27]. Learning is impaired in children, and some adults report a decrease in productivity and concentration [28].

AR affects the patient emotions and patients felt tired, irritable and embarrassed [5]. There is also an interaction between AR and mood disorders [32]. It was reported that AR was associated with anxiety symptoms, depressive syndromes and even with suicide [33].

Patients' understanding of disease may be strengthened by health information resources such as online Patient Education Materials

(PEMs). However, online PEMs are often beyond the reading level recommended for comprehension [34,35].

Especially rhinorrhea, nasal congestion and headache affect patients physically and emotionally. Patients QoL, sleep schedule and work performance may be affected negatively. All of these may affect social communication of the patients with AR.

## Conclusion

AR affects social communication of the patients. Sleep problems and runny nose cause problems at work and decrease in quality of lives of the patients. Decreased work performance increased the economic burden of the AR. If patients given the necessary information about the disease in time; and diseases (AR) were treated appropriately; runny nose, sneezing, headache and sleep problems will be reduced. In this way, socially isolated live of AR patients will be prevented.

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