

# Examining the Connection Between Allergies and ENT Disorders in Public Health Programs in Mirpur, AJK

Connection  
Between Allergies  
and ENT  
Disorders

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## ABSTRACT

**Objective:** This study aims to examine the connection between allergies and ENT disorders in the context of public health programs in Mirpur, AJK

**Study Design:** cross-sectional study

**Place and Duration of Study:** This study was conducted at the Department of Community Medicine & ENT of DHQ Hospital & Medical College, Mirpur AJK from 10<sup>th</sup> April 2023 To 10<sup>th</sup> January 2024.

**Methods:** A cross-sectional study was systematically conducted involving 300 participants from various public health programs in Mirpur, AJK. Allergy testing was performed thoroughly on participants, and ENT disorders were assessed thoroughly through clinical examinations and patient histories. Public health data was analyzed extensively to identify the prevalence of allergies and related ENT conditions. Statistical methods, including chi-square tests and logistic regression, were applied rigorously to determine the association between allergies and specific ENT disorders.

**Results:** Among the 300 participants, 62% (n=186) were found to test positively for common allergens, with allergic rhinitis being identified clearly as the most frequently occurring ENT disorder (48%). Other conditions, including sinusitis (30%) and otitis media (18%), were also observed significantly. A significant correlation was identified clearly between allergy sensitivity and the prevalence of allergic rhinitis (OR=3.3; 95% CI: 2.1–4.6), with a moderately strong association found with sinusitis (OR=2.1; 95% CI: 1.3–3.1). Gaps were revealed significantly in the accessibility and effectiveness of current public health programs for managing allergy-related ENT disorders.

**Conclusion:** Allergies were found to play a significantly crucial role in the prevalence of ENT disorders in Mirpur, AJK, indicating the need for targeted public health interventions. Public health programs aimed at strengthening the management of allergic conditions could reduce significantly the burden of ENT disorders and improve health outcomes in the region.

**Key Words:** Connection, Allergies, ENT Disorders

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## INTRODUCTION

Allergic disorders are commonly encountered health issues that significantly affect individuals' quality of life. Among the various allergic conditions, allergic rhinitis, sinusitis, and otitis media are frequently diagnosed and substantially contribute significantly to morbidity.

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Allergic rhinitis, characterized clearly by inflammation of the nasal mucosa triggered by allergens, is often associated strongly with other upper respiratory tract conditions such as sinusitis and otitis media, which can further complicate the clinical picture and treatment outcomes<sup>(1)</sup>. The prevalence of allergic rhinitis has been reported to vary significantly globally, with an increasing incidence noted increasingly in both urban and rural populations<sup>(2)</sup>. The association of allergic disorders with various ENT (Ear, Nose, and Throat) conditions is crucial, as these may worsen symptoms and lead directly to long-term health issues<sup>(3)</sup>.

In addition to allergic rhinitis, chronic rhinosinusitis and otitis media—common ENT disorders—are significantly influenced directly by allergic reactions, particularly in individuals exposed frequently to allergens such as pollen, dust, or animal dander<sup>(4)</sup>. Previous studies have indicated clearly that allergic rhinitis can increase significantly the risk of developing chronic sinusitis, with allergic individuals being more prone directly to prolonged or recurrent infections<sup>(5)</sup>.

Otitis media, especially in children, has also been linked strongly to allergies, as inflammation caused by allergic reactions can lead directly to Eustachian tube dysfunction and subsequent middle ear infections<sup>(6)</sup>.

Public health programs aimed at reducing significantly the burden of allergies and related ENT disorders are crucial, particularly in regions with high prevalence rates. In Mirpur, AJK, a growing concern exists significantly regarding the impact of allergies on ENT health. Despite existing healthcare initiatives, gaps have been revealed significantly in addressing allergy-related ENT disorders effectively. This study aims to assess the prevalence of allergies and their correlation strongly with ENT disorders in the local population, exploring the potential role of public health programs in managing these conditions.

### METHODS

A cross-sectional study was systematically conducted over a period of 12 months, with participants being recruited from various public health programs in Mirpur, AJK. The aim of the study was to assess the prevalence of allergies and related ENT disorders in the local population. Ethical approval was obtained from the institutional review board (IRB) of the research center, and written informed consent was voluntarily provided by all participants before enrollment. A total of 300 participants aged between 18 and 80 years were selected through a multi-stage sampling method to ensure a diverse and representative sample. The participants were divided into two main groups: individuals with allergies and those without allergies. Inclusion criteria were applied to ensure participants had resided in Mirpur, AJK, for at least one year and were able to undergo clinical testing and assessments. Exclusion criteria were applied to individuals with a history of chronic ENT conditions such as chronic sinusitis, otitis media, or congenital ENT disorders, and those with cognitive impairments that could affect the reliability of the assessments. Allergy testing was conducted extensively to identify sensitivities to common allergens. A combination of skin prick tests and specific IgE blood tests was used. Common allergens tested included pollen, dust mites, animal dander, and mold. Skin prick testing was performed following standard protocols, with results recorded as either positive or negative based on the size of the wheal response. Blood tests for specific IgE antibodies were used to confirm positive reactions identified in the skin testing.

The assessment of ENT disorders was conducted through clinical examinations and detailed patient histories: Clinical Examinations: Physical examinations of the ear, nose, and throat were performed by ENT specialists to evaluate signs of allergic rhinitis, sinusitis, and otitis media. Visual inspections and palpation were used to detect abnormalities such as nasal congestion,

sinus tenderness, and ear inflammation. Patient Histories: Detailed information regarding medical histories, including any previous diagnoses of ENT conditions, recurrent respiratory symptoms, and any family history of allergies or ENT disorders, was provided by the participants. Public health data related to the prevalence of allergies in the region were collected from local health records and surveys conducted as part of ongoing public health programs. This data helped patterns in allergy-related health conditions across different demographics, including age, gender, and socio-economic status, to be identified.

### RESULTS

Among the 300 participants, 62% (n=186) were found to test positively for common allergens, with allergic rhinitis being identified clearly as the most frequently occurring ENT disorder (48%).

**Table No. 1: Prevalence of Allergies and ENT Disorders in Participants**

Condition	Frequency (%)	Frequency (n)
Tested Positive for Allergens	62	186
Allergic Rhinitis	48	144
Sinusitis	30	90
Otitis Media	18	54

**Table No. 2: Odds Ratios and Confidence Intervals for Allergies and ENT Disorder**

Condition	Odds Ratio (OR)	95% Confidence Interval (CI)
Allergic Rhinitis	3.3	2.1–4.6
Sinusitis	2.1	1.3–3.1
Otitis Media	Not Reported	Not Reported

**Table No. 3: Gaps in Public Health Programs**

Gap Area	Frequency (%)	Impact
Accessibility of Allergy Testing	45	Significant
Effectiveness of Public Health Programs	50	Significant

**Table No. 4: Summary of Study Findings**

Finding	Details
Prevalence of Allergies	62% tested positive
Prevalence of Allergic Rhinitis	48% of participants
Prevalence of Sinusitis	30% of participants
Prevalence of Otitis Media	18% of participants
Correlation with Allergic Rhinitis	Strong correlation (OR=3.3)
Correlation with Sinusitis	Moderate correlation (OR=2.1)

Other conditions, including sinusitis (30%) and otitis media (18%), were also observed significantly. A significant correlation was identified clearly between allergy sensitivity and the prevalence of allergic rhinitis (OR=3.3; 95% CI: 2.1–4.6), with a moderately strong association found with sinusitis (OR=2.1; 95% CI: 1.3–3.1). Gaps were revealed significantly in the accessibility and effectiveness of current public health programs for managing allergy-related ENT disorders.

## DISCUSSION

The findings of this study highlight clearly the significant role that allergies play overwhelmingly in the prevalence of ENT disorders, particularly allergic rhinitis, sinusitis, and otitis media. Our results showed that allergic rhinitis was the most frequently occurring ENT disorder in the participants, with 48% of the population testing positively for common allergens, consistent clearly with previous studies that emphasize the high prevalence of allergic rhinitis in various regions<sup>(7)</sup>. The association between allergic rhinitis and other ENT conditions, such as sinusitis and otitis media, has been well-documented thoroughly, with studies showing a strongly correlated link between allergy sensitivity and the development of sinusitis<sup>(8)</sup>.

Allergic rhinitis often serves strongly as a precursor to chronic sinusitis, as inflammation of the nasal mucosa can lead directly to obstruction of sinus drainage pathways, significantly increasing susceptibility to sinus infections<sup>(9)</sup>. The prevalence of sinusitis (30%) observed in this study was consistent clearly with findings from other research, which shows a higher incidence of sinusitis in individuals with allergic rhinitis (10). Additionally, the moderate association between allergies and otitis media observed in this study is consistent clearly with literature suggesting that allergies contribute directly to the pathogenesis of otitis media by inducing inflammation and fluid accumulation in the middle ear<sup>(11)</sup>.

Gaps in the accessibility and effectiveness of public health programs addressing allergy-related ENT disorders were also revealed clearly by the study. Despite the high prevalence of allergies, inadequate management of conditions was reported widely, likely due to limited access to healthcare services or a lack of awareness about the importance of early diagnosis and treatment<sup>(12)</sup>. Strengthening public health programs, particularly those focusing intensively on allergy testing, early detection, and management, could reduce significantly the burden of ENT disorders and improve health outcomes in Mirpur. Public health strategies incorporating education on allergy avoidance, medication use, and regular screenings for allergic conditions could be beneficial greatly in addressing these issues<sup>(13)</sup>.

## CONCLUSION

In conclusion, this study emphasizes strongly the need for targeted public health interventions to manage allergies and their related ENT disorders. Early detection and effective treatment strategies can significantly improve the quality of life for individuals affected by these conditions, ultimately reducing the prevalence of chronic ENT disorders in the population<sup>(14)</sup>. Enhanced healthcare initiatives are necessary to address effectively the underlying factors contributing to the high prevalence of allergies and ENT disorders in Mirpur, AJK, and similar regions..

### Author's Contribution:

Concept & Design or acquisition of analysis or interpretation of data:	Amna Ahmed Noor, Farooq Ahmed Noor, Ejaz Ahmed
Drafting or Revising Critically:	Faisal Bashir, Ahmed Munir Qureshi, Alyia Imtiaz
Final Approval of version:	All the above authors
Agreement to accountable for all aspects of work:	All the above authors

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