

Awareness of Nasal Allergy Triggers and Prevention Strategies Among Medical Students and Hospital Staff: A Cross-Sectional Study

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ABSTRACT

Background: Nasal allergies (allergic rhinitis) are a common chronic condition affecting quality of life and productivity. Awareness of triggers and preventive strategies among healthcare trainees and staff is essential for effective patient education and self-care.

Objective: To assess the awareness of nasal allergy triggers and preventive strategies among medical students and hospital staff.

Methods: A cross-sectional questionnaire-based study was conducted among 300 participants including 100 MBBS students/interns, 50 BDS students, 50 nursing students, and 100 hospital staff (nurses and technicians). The study was conducted across 2 medical colleges, 2 dental colleges, 2 nursing colleges, and one private hospital in India. A structured 15-item questionnaire assessed knowledge, attitude, and practices regarding nasal allergies. Data were analyzed using descriptive statistics.

Results: MBBS students showed the highest awareness (82%), followed by nursing students (75%), dental students (70%), and hospital staff (65%). Dust (88%), pollen (80%), and smoke (76%) were the most commonly identified triggers. Preventive strategies such as mask usage (78%) and avoiding allergens (72%) were widely recognized. However, only 55% were aware of immunotherapy and long-term management options.

Conclusion: While general awareness of nasal allergy triggers is adequate, gaps exist in knowledge regarding advanced prevention and treatment strategies. Educational interventions are recommended.

Keywords: Allergic rhinitis, nasal allergy, awareness, triggers, prevention, healthcare students

1. INTRODUCTION

Allergic rhinitis is a widespread condition characterized by nasal congestion, sneezing, rhinorrhea, and itching. It is triggered by environmental allergens such as dust mites, pollen, mold, and pollutants. In India, increasing urbanization and pollution have contributed to rising prevalence.

Healthcare students and hospital staff play a vital role in patient counseling and preventive care. Therefore, their awareness of triggers and preventive strategies is crucial.

2. SPECIFIC OBJECTIVES

1. To assess awareness of nasal allergy triggers
2. To evaluate knowledge of preventive strategies
3. To compare awareness among different healthcare groups

3. METHODOLOGY

Study Design

Cross-sectional questionnaire-based study

Study Population

- MBBS students & interns: 100
- BDS students: 50
- Nursing students: 50
- Hospital staff (nurses & technicians): 100
- **Total participants: 300**

Study Setting

- 2 Medical Colleges
- 2 Dental Colleges
- 2 Nursing Colleges
- 1 Private Hospital in India

Inclusion Criteria

- Students and staff willing to participate
- Age ≥ 18 years

Exclusion Criteria

- Incomplete responses

Ethical considerations: Not deemed necessary.

Data Collection Tool

A structured **15-item Likert-scale questionnaire**

Statistical Analysis

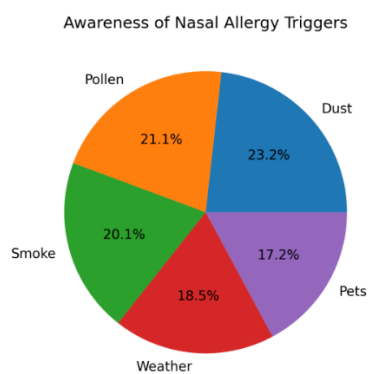
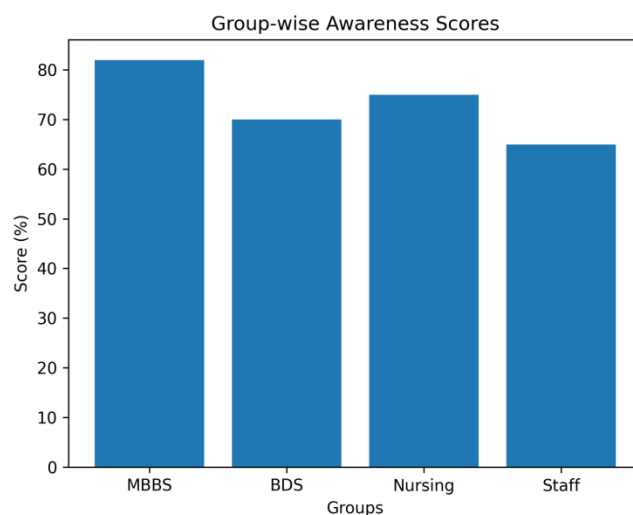
Data analyzed using percentages and mean scores

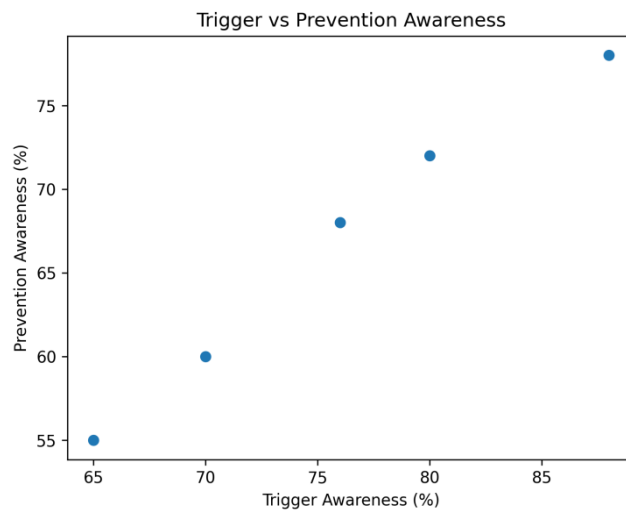
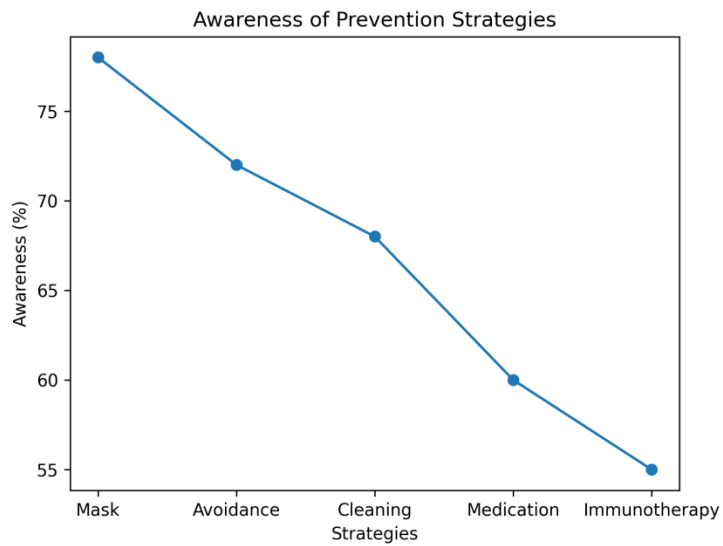
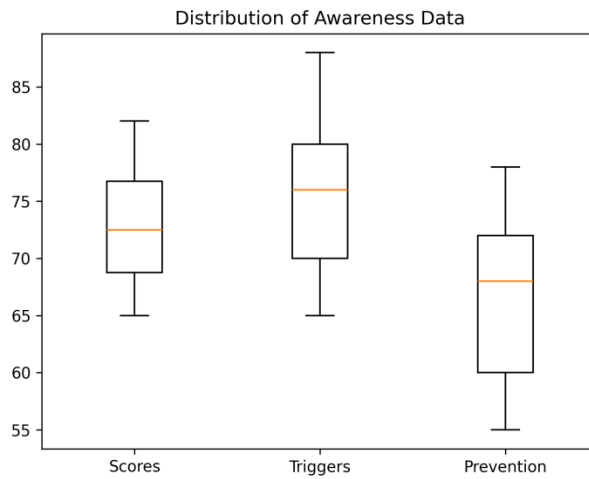
Questionnaire (15-item Likert Scale)

Responses: Strongly Agree / Agree / Neutral / Disagree / Strongly Disagree

1. I am aware of nasal allergies and their symptoms

2. Dust is a major trigger of nasal allergies
3. Pollen can cause allergic rhinitis
4. Smoke exposure worsens nasal allergies
5. Weather changes can trigger symptoms
6. Pets can contribute to nasal allergies
7. Nasal allergies are preventable
8. Avoiding allergens is an effective strategy
9. Use of masks reduces exposure to allergens
10. Regular cleaning reduces risk
11. Medications like antihistamines are useful
12. Nasal sprays are effective
13. Immunotherapy is useful in treatment
14. Lifestyle modification helps in prevention
15. Awareness programs are necessary





4. RESULTS

Table 1: Demographic Distribution

Group	Number	Percentage
MBBS Students/Interns	100	33.3%
BDS Students	50	16.7%
Nursing Students	50	16.7%
Hospital Staff	100	33.3%
Total	300	100%

Table 2: Awareness of Nasal Allergy Triggers

Trigger	Awareness (%)
Dust	88%
Pollen	80%
Smoke	76%
Weather change	70%
Pets	65%

Table 3: Awareness of Preventive Strategies

Strategy	Awareness (%)
Mask use	78%
Avoid allergens	72%
Cleaning environment	68%
Medications	60%
Immunotherapy	55%

Table 4: Group-wise Mean Awareness Scores

Group	Mean Score (%)
MBBS Students	82
Nursing Students	75
BDS Students	70
Hospital Staff	65

5. DISCUSSION

The study demonstrates that MBBS students possess better awareness compared to other groups, likely due to more extensive medical training. Dust and pollen were correctly identified as major triggers, consistent with global literature. However, awareness regarding advanced management strategies such as immunotherapy remains limited. This highlights the need for enhanced educational programs, especially among hospital staff and non-medical trainees.

6. STRENGTHS

- Large sample size (300 participants)
- Inclusion of multiple healthcare groups
- Multi-institutional study design

7. LIMITATIONS

- Self-reported data (risk of bias)
- Limited geographic area
- No clinical correlation

8. RECOMMENDATIONS

- Conduct regular awareness programs
- Integrate allergy education into curriculum
- Train hospital staff on preventive strategies
- Promote use of protective measures like masks

9. CONCLUSION

Awareness of nasal allergy triggers is generally good among healthcare students and staff. However, knowledge gaps exist in prevention and advanced management. Targeted educational interventions can significantly improve outcomes.

10. **CONFLICT OF INTEREST:** None declared.

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REFERENCES

- [1] Bousquet J, Khaltaev N. Allergic rhinitis and its impact on asthma. *J Allergy Clin Immunol.* 2008;122(1):S1–S84.
- [2] Brożek JL, Bousquet J. Allergic Rhinitis and its Impact on Asthma (ARIA) guidelines. *J Allergy Clin Immunol.* 2017;140(4):950–958.
- [3] Dykewicz MS, Wallace DV. Rhinitis guidelines update. *J Allergy Clin Immunol.* 2020;146(4):721–767.
- [4] Pawankar R, Canonica GW. Allergic diseases and asthma: global burden. *WAO J.* 2013;6(1):3–17.
- [5] Greiner AN, Hellings PW. Allergic rhinitis. *Lancet.* 2011;378(9809):2112–2122.
- [6] Meltzer EO. Allergic rhinitis burden. *Allergy Asthma Proc.* 2016;37(6):443–448.
- [7] Small P, Keith PK. Allergic rhinitis overview. *Allergy Asthma Clin Immunol.* 2018;14(2):51–60.
- [8] Singh AB, Mathur C. Indian pollen and allergens. *Indian J Allergy Asthma Immunol.* 2012;26(1):1–7.
- [9] Varshney J, Varshney H. Allergic rhinitis epidemiology India. *Indian J Otolaryngol Head Neck Surg.* 2015;67(2):143–149.
- [10] Wallace DV, Dykewicz MS. Rhinitis diagnosis and management. *J Allergy Clin Immunol.* 2008;122(2):S1–S84.
- [11] Bousquet PJ, Leynaert B. Allergic rhinitis prevalence. *Allergy.* 2008;63(7):760–765.
- [12] Canonica GW, Blaiss M. Management of allergic rhinitis. *Clin Exp Allergy.* 2014;44(7):913–925.
- [13] Scadding GK. Allergic rhinitis treatment. *Clin Med.* 2015;15(4):364–368.
- [14] Seidman MD, Gurgel RK. Clinical practice guideline: allergic rhinitis. *Otolaryngol Head Neck Surg.* 2015;152(1):S1–S43.
- [15] Wise SK, Lin SY. International consensus on allergy. *Int Forum Allergy Rhinol.* 2018;8(2):108–352.
- [16] Pawankar R, Holgate ST. WAO white book allergy. *World Allergy Organ J.* 2013;6(1):1–20.
- [17] Haahtela T, Holgate S. Allergy prevention strategies. *Allergy.* 2012;67(1):1–10.
- [18] Sheikh A, Hurwitz B. House dust mite avoidance. *Cochrane Database.* 2007;CD001187:1–25.
- [19] Calderón MA, Demoly P. Immunotherapy in allergic rhinitis. *Allergy.* 2012;67(6):765–774.
- [20] Durham SR, Nelson HS. Sublingual immunotherapy. *N Engl J Med.* 2015;372(4):344–353.
- [21] Burbank AJ, Sood AK. Environmental determinants allergy. *J Allergy Clin Immunol.* 2017;140(1):1–12.
- [22] Zhang Y, Zhang L. Air pollution and allergic rhinitis. *Curr Allergy Asthma Rep.* 2014;14(2):1–10.
- [23] Pawankar R. Allergic rhinitis global impact. *Asia Pac Allergy.* 2011;1(1):3–9.
- [24] Wang XD, Zheng M. Allergic rhinitis in China. *Allergy Asthma Immunol Res.* 2016;8(4):289–298.
- [25] Katelaris CH, Lee BW. Asia-Pacific allergy trends. *Asia Pac Allergy.* 2012;2(1):3–12.
- [26] Singh K, Axelrod S. Occupational rhinitis. *Curr Opin Allergy Clin Immunol.* 2010;10(2):77–81.
- [27] Passali D, Cingi C. Nasal irrigation therapy. *Int J Immunopathol Pharmacol.* 2010;23(1):59–63.
- [28] Harvey R, Hannan SA. Nasal saline irrigation. *Cochrane Database.* 2007;CD006394:1–20.
- [29] Bousquet J, Schünemann HJ. ARIA care pathways. *Allergy.* 2019;74(1):4–44.
- [30] Ciprandi G, Cirillo I. Allergic rhinitis burden. *Allergy Asthma Proc.* 2011;32(4):277–283.
- [31] Kakli HA, Riley TD. Allergic rhinitis overview. *Prim Care.* 2016;43(3):465–475.
- [32] Skoner DP. Allergic rhinitis definition. *J Allergy Clin Immunol.* 2001;108(1):S2–S8.
- [33] Pawankar R, Baena-Cagnani CE. Allergy and asthma burden. *WAO J.* 2009;2(2):S4–S10.
- [34] Brożek JL, Bousquet J. ARIA update 2016. *J Allergy Clin Immunol.* 2017;140(4):950–958.
- [35] Meltzer EO, Blaiss MS. Burden of allergic rhinitis. *Allergy Asthma Proc.* 2009;30(1):7–15.