

Epidemiology of Allergic Rhinitis in 13–14-Year-Old Adolescents from Anuradhapura, Sri Lanka: An Analytical Cross-Sectional Study

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Background: Allergic rhinitis is often underrecognized and untreated despite its high prevalence and significant impact on the quality of life in a crucial period of physical, emotional, and social development.

Objective: To describe the prevalence, associated factors, and temporal variation of allergic rhinitis, among adolescents aged 13-14 from the Anuradhapura municipal council area, Sri Lanka.

Methods: An analytical cross-sectional study was conducted in thirty-two grade eight classes in six government secondary schools in the Anuradhapura municipal council area in 2023. The sample was randomly selected via multistage sampling and the validated and translated International Study of Asthma and Allergy in Childhood questionnaire was used to assess the prevalence and associated factors of allergic rhinitis.

Results: The study sample consisted of 1029 adolescents with 528(51.3%) males and 501(48.7%) females. Allergic rhinitis symptoms were reported within the past 12 months in 266 (25.9%; 95%CI 23.2-28.6), and at least once in their lifetime in 387 (37.6%; 95%CI 34.6-40.6), while eye symptoms were reported in 142 adolescents (13.8%; 95%CI 11.8-16.0). Nasal symptoms interrupted daily activities in 18.9% (n=195; 95%CI 16.6-21.5), with moderate-to-severe interference in 20.3% (n=54; 95%CI 15.6-25.6). Severe asthma ($p < 0.01$, adjusted-OR 5.75; 95%CI 3.79-8.72), sleeping on a rubber-mixed-coir mattress (adjusted-OR 1.61; 95%CI 0.95-2.74) and engaging in play 4-6 times per week (adjusted-OR 1.50; 95%CI 0.98-2.29) were independently associated with allergic rhinitis. From October to February, nasal symptoms occurred more frequently, with monthly precipitation significantly influencing their temporal variation ($\beta = 26.16$, $p = 0.003$).

Conclusion: Current allergic rhinitis affected more than a quarter of the adolescents while exacerbation of symptoms aligned with a temporal pattern predictable from monthly precipitation. Severe asthma, sleeping on a rubber-mixed-coir mattress, and engaging in play 4-6 times per week were independently associated with allergic rhinitis, which should inform targeted exacerbation prevention measures.

Keywords: Allergic rhinitis, Adolescent Health, Epidemiology