

# Asthma control amongst adolescents living in communities exposed to high levels of air pollution in South Africa

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This study reveals a significant **discrepancy** between **perceived** and **actual asthma control** among adolescents.

## Introduction:

- Effective asthma management relies on maintaining asthma control.
- Inadequate control increases the likelihood of severe asthma attacks, a concern especially significant in areas with high air pollution exposure.
- The relationship between asthma control and malaria-endemic areas using Indoor Residual Spraying is unexplored.

The aim of the study was to assess asthma control among adolescents living in Malaria-endemic areas subjected to IRS

## Methods:

- The Asthma Control Test (ACT) questionnaire was administered in a panel study of 116 adolescents who had reported doctor-diagnosed asthma during the International Study of Asthma and Allergies in Childhood (ISAAC) Cross-sectional study.
- A statistical software STATA 17 was used to analyze the data.
- Descriptive statistics, such as frequencies and percentages, were used to summarize data as appropriate.

## Results:

- A total of 116 adolescents were included in the study.
- In this study, 34% of the participants had scores of 0-15 (very poorly controlled asthma), 47.4% had scores of 16- 20 (poorly controlled asthma) and 18% had scores of 21- 25 (well controlled asthma).
- Thus, 31% of the participants perceived their asthma as completely controlled, where in actual scores, only 18.1% had well controlled asthma.

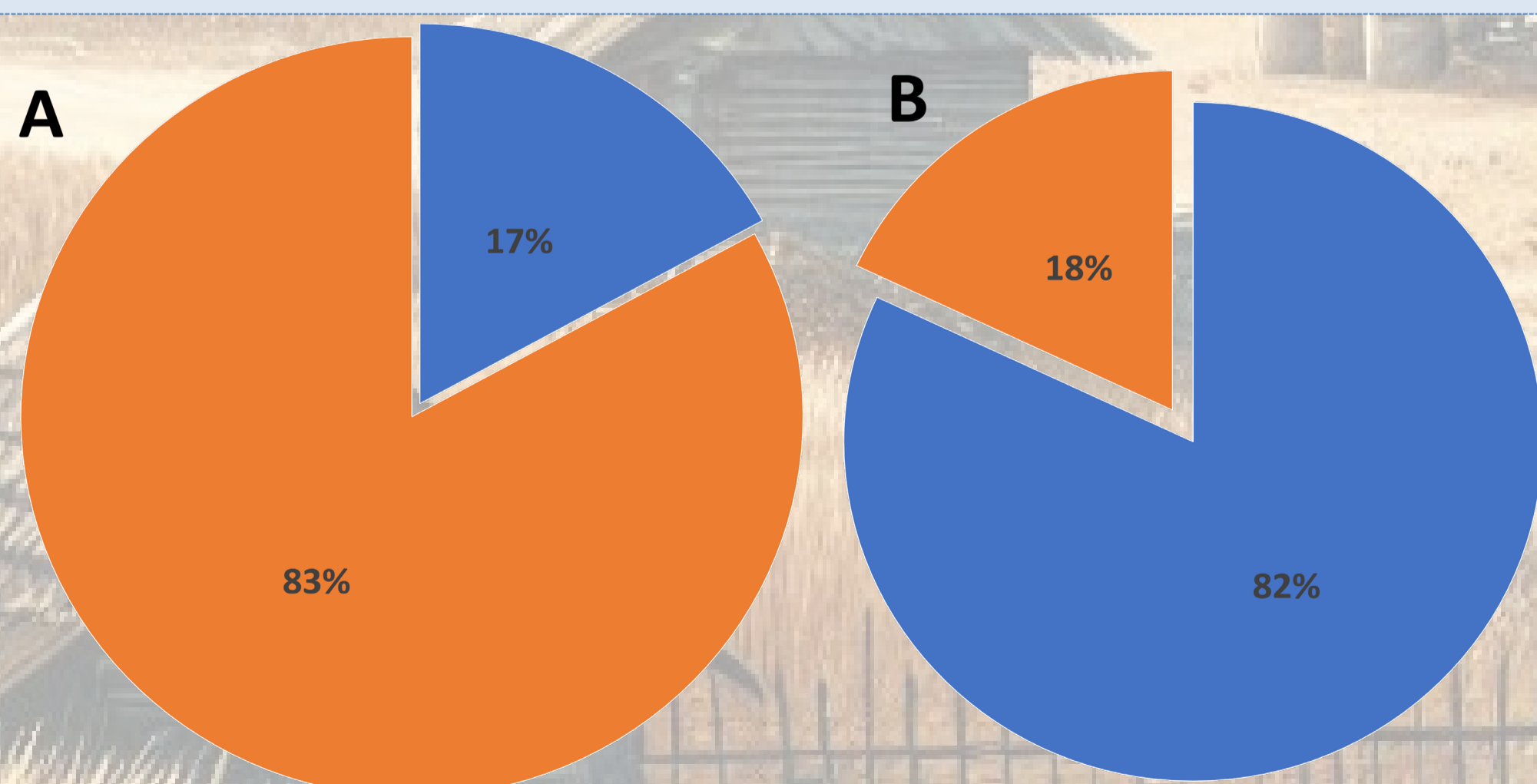


Figure 1: : Self-reported asthma control among adolescents [n=116] during the past 4 weeks (1A) and Test scores of asthma control test (Not controlled  $\leq 20$ , Controlled  $\geq 21$ ) (1B)

Table 1: Table 1: Descriptive statistics of asthma control among adolescents during the past 4 weeks (n =116)

Question	All the time	Most of the time	Some of the time	A little of the time	None of the time
In the past 4 weeks, how much of the time did your asthma keep you from getting as much done at work, school or at home?	18 (15.5%)	21 (18.1%)	20 (17.2%)	30 (25.9%)	27 (23.3%)
Question	More than once a day	Once a day	3-6 times a week	Once or twice a week	Not at all
During the past 4 weeks, how often have you had shortness of breath?	8 (6.9%)	24 (20.7%)	53 (45.7%)	17 (14.7%)	14 (12.1%)
Question	4 or nights in a week	2-3 nights in a week	Once a week	Once or twice a week	Not at all
During the past 4 weeks, how often did asthma symptoms (wheezing, coughing, and shortness of breath, chest tightness or pain) wake you up at night or earlier than usual in the morning?	3 (2.6%)	11 (9.5%)	22 (19%)	46 (39.7%)	34 (29.3%)
Question	4 or more times a day	1 or 2 times a day	2 or 3 times a week	Once a week or less	Not at all
During the past 4 weeks, how often have you used your rescue inhaler and nebulizer medication (such as albuterol)?	16 (13.8%)	17 (14.7%)	4 (3.4%)	33 (28.4%)	46 (39.7%)

## Discussion and Conclusions:

- This study reveals a discrepancy between perceived and actual asthma control among adolescents in Malaria-endemic areas using IRS.
- Only 18.1% achieving well-controlled asthma.
- These findings underscore the need for enhanced asthma education.
- Additionally, management strategies in these high-risk environments to improve health outcomes.