The effect of environmental change and allergy history on the development of asthma among children in East Africa continent: Systematic review and meta-analysis

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Abstract (300 word limit)

Abstract

Background: Numerous studies report that the prevalence of asthma among children in east Africa is high. And asthma significantly associated environmental and allergy exposures. However, the results were inconsistent and inconclusive in east Africa region, requiring a systematic review and meta-analysis to recognize the burden in general.

Objective: The objective of this review is to synthesis evidence on prevalence of asthma among children, and a environmental change and allergy history on the development of Childhood Asthma in East Africa.

Methods: PubMed, Cochrane Library, Google Scholar, SCOPUS, Web of Science, and Grey literature were searched to identity eligible articles through Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines. The extracted data were edited, cleaned, and checked for completeness in a Microsoft excel sheet, and then exported into STATA 17 for further analysis. The forest plots and the I2 statistic were used to quantify heterogeneity. Additionally, Publication bias was assessed using Egger test and funnel plots. Furthermore, sensitivity analysis was assessed the pooled effect size influenced by single study on the overall estimation.

Result: This meta-analysis included 13 articles with a total of 3432 children with Asthma. The pooled prevalence of asthma among children in East Africa was found to be 19.6 % (95%CI; 17.1-22.3). Moreover, the effect of environmental and allergy exposure on the development of Childhood Asthma in East Africa region were found to be 18.1 ng/ml (95%CI; 14.0- 22.2) and 26.8 ng/ml (95%CI; 22.5-35.2).

The pooled prevalence of asthma before < 2017 and after 2017 were found to be 18.1 ng/ml (95%CI; 14.0- 22.2) and 26.8 ng/ml (95%CI 22.5-35.2 respectively. Additionally, the pooled prevalence of asthma by sample size < 2017 and 2017 were found to be 18.1 ng/ml (95%CI; 14.0- 22.2) and 26.8 ng/ml (95%CI 22.5-35.2 respectively.

Conclusion: The prevalence of childhood asthma East Africa was found to be high. Environmental and allergy exposure were found to be a significant factor for the development of Childhood Asthma. Hence, early detection and prevention of environmental and allergy exposure is crucial to reduce the childhood asthma occurrences and exacerbation.

Photograph



Image

Recent Publications (minimum 5)

1. Estimate the burden of malnutrition among children with cerebral palsy in Sub- Saharan Africa: a systematic review with meta-analysis.
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4. The shadow challenges to improve the state essential newborn care practices in healthcare providers: evidence from a multicenter cross-sectional study in Ethiopia:
5. The effect of timely initiation of complementary feeding and vitamin A supplementation on acute malnutrition among children aged 6–59 months attending Hamusit Health Centre, Northwest Ethiopia, 2021: A cross-sectional study
6. Estimation of lifetime survival and predictors of mortality among TB with HIV co-infected children after test and treat strategies launched in Northwest, Ethiopia, 2021; a multicenter historical follow-up study:

I am an enthusiastic Ethiopian senior lecturer and researcher specializing in children, neonate, and maternal health. My dedication to continuous learning enables me to provide high-quality, evidence-based education to my students. As part of my position, I have a range of tasks includes writing grant proposals, mentoring MSc and BSc students in their research projects, conducting research, publishing articles, participating in research committees, establishing collaborations, presenting findings at conferences, providing clinical services, offering training on statistical models and study designs, and reviewing and providing feedback for esteemed academic journals. I have 80 published articles, with 15 as the principal investigator author. All articles were published in reputable journals indexed in pub-MED, SCOPUS, or MEDLINE. Among them, 55 were in Q1 journals, 14 in Q2 journals, and 11 in Q3 journals

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