

Suboptimal asthma control and associated factors in ambulatory care: protocol of a systematic review of Malaysian studies

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ADMINISTRATIVE INFORMATION

Support - IMU University.
Review Stage at time of this submission - Preliminary searches.
Conflicts of interest - None declared.
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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 18 March 2025 and was last updated on 11 July 2026.

INTRODUCTION

Review question / Objective What is the status of asthma control amongst the children, adolescents and adults with asthma in Malaysian ambulatory care and what are the associated factors suboptimal asthma control?

Rationale This study aims to document the prevalence of suboptimal asthma control and its associated factors. These data will assist future interventional studies for this health problem in Malaysia.

Condition being studied Suboptimal asthma control refers to a situation where asthma symptoms are not adequately managed despite treatment. This can include frequent symptoms, limitations in daily activities, and the need for rescue medications more often than recommended.

METHODS

Search strategy We plan to search bibliographic databases for Malaysian studies that evaluated

asthma control using a validated rating scales and other outcome measures. Bibliographic search using combinations of these terms: Asthma and Malaysia. All publications published between 1 January 2000 to 31 December 2025 will be included.

Participant or population Children, adolescents and adults with bronchial asthma followed up in Malaysian ambulatory care.

Intervention None.

Comparator None.

Study designs to be included Cross-sectional studies or baseline data of cohort studies.

Eligibility criteria (a) Study participants are children or adolescents or adults; (b) Studies conducted in Malaysia; (c) Studies conducted in ambulatory care settings (public or private clinics); (d) Studies reporting asthma control using validated scales (such as: GINA criteria, Asthma Control Test, Asthma Control Questionnaire) or other outcome measures related to asthma (e.g.,

over-reliance on short-acting bronchodilator, use of oral steroids, emergency department visit, hospitalization, exercise or physical activity limitation, school absenteeism, sickness absence).

Information sources An extensive literature search will be carried out on two electronic databases (PubMed, Scopus), and supplemented by a Google Scholar search.

Main outcome(s) Suboptimal asthma control. In GINA criteria, partly controlled and uncontrolled will be merged as suboptimal control. In Asthma Control Test, score <20 is considered as suboptimal control. In Asthma Control Question, score <1 is considered as suboptimal control.

Additional outcome(s) Suboptimal asthma control. In GINA criteria, partly controlled and uncontrolled will be merged as suboptimal control. In Asthma Control Test, score <20 is considered as suboptimal control. In Asthma Control Question, score <1 is considered as suboptimal control. Additional outcome(s): Other outcome indicative of suboptimal asthma control are: (1) Over-reliance on short-acting bronchodilator (oral or inhaled): used inhaled beta-agonist ≥ 3 times per week or required ≥ 3 canisters of beta-agonist inhalers per year; (2) Use of oral steroids ≥ 2 per year; (3) Emergency department visits due to acute asthma at least once a year; (4) Hospitalizations due to acute asthma at least once a year; (5) Exercise or physical activity limitation based on self-report; (6) School absenteeism or sickness absence due to acute asthma at least once a year.

Data management References retrieved will be processed using citation manager Endnote 20. Relevant data (number of participants with and without suboptimal asthma control) in the included studies will be extracted by a pair of investigators independently, to minimize potential bias and error as well as to resolve any disagreements.

Quality assessment / Risk of bias analysis The studies identified will then be assessed for methodological validity using JBI critical appraisal checklists for cross-sectional studies and cohort studies.

Strategy of data synthesis Prevalence data of suboptimal asthma control for children, adolescent and adult asthma patients will be extracted. Meta-analysis will be performed using MedCalc and JASP (Jeffreys's Amazing Statistics Program).

Subgroup analysis Age groups (children age 6-12 years, adolescent age 13-18 years and adults age

≥ 18 years, older adults ≥ 60 years), if data are available.

Sensitivity analysis Sensitivity analysis will be conducted to investigate high heterogeneity.

Language restriction None.

Country(ies) involved Malaysia.

Other relevant information This systematic review will be prepared following PRISMA guidelines.

Keywords Adolescent; Adult; Asthma; asthma control; Child; Malaysia; Meta-Analysis.

Dissemination plans Publication of manuscript in a journal.

Contributions of each author

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