

# Care for people with Asthma: an integrative review

Cuidados para pessoa com Asma: revisão integrativa

Atención a personas con Asma: una revisión integradora

## RESUMO

**Objetivo:** fornecer conhecimento sobre a asma, seus gatilhos e os cuidados necessários para melhorar a qualidade de vida. **Metodologia:** a pesquisa realizada é uma revisão integrativa nas bases BVS, LILACS, MEDLINE, BDNF, PUBMED e SciELO. Foram utilizadas palavras-chave baseadas em Descritores em Ciências da Saúde (DeCS), combinadas por meio de pesquisas utilizando o operador booleano "AND" nos idiomas português, inglês e espanhol. **Resultados:** o estudo analisou artigos sobre asma e doenças respiratórias; pesquisados a origem, idioma, desenho do estudo, qualidade metodológica e objetivos. O cuidado da asma envolve uma abordagem holística que inclui diagnóstico preciso, tratamento farmacológico e não farmacológico, prevenção de complicações, educação dos pacientes e atenção multidisciplinar. O controle dos fatores ambientais também desempenha um papel importante na gestão eficaz dessa condição respiratória. **Conclusão:** educação, tratamento, prevenção e colaboração entre pacientes, profissionais de saúde e políticas públicas são essenciais no manejo da asma.

**DESCRIPTORES:** Educação em saúde, Cuidados, Asma, Tecnologia em Saúde, Tecnologia Aplicada aos Cuidados de Saúde.

## ABSTRACT

**Objective:** to provide knowledge about asthma, its triggers and the care needed to improve quality of life. **Methodology:** the research carried out is an integrative review in the VHL, LILACS, MEDLINE, BDNF, PUBMED and SciELO databases. **Keywords** based on Health Sciences Descriptors (DeCS) were used, combined through searches using the Boolean operator "AND" in Portuguese, English and Spanish. **Results:** the study analyzed articles on asthma and respiratory diseases; the origin, language, study design, methodological quality and objectives were researched. Asthma care involves a holistic approach that includes accurate diagnosis, pharmacological and non-pharmacological treatment, prevention of complications, patient education and multidisciplinary care. Controlling environmental factors also plays an important role in effectively managing this respiratory condition. **Conclusion:** education, treatment, prevention and collaboration between patients, health professionals and public policies are essential in the management of asthma.

**DESCRIPTORS:** Health Education, Care, Asthma, Health Technology, Technology Applied to Health Care.

## RESUMEN

**Objetivo:** proporcionar conocimientos sobre el asma, sus desencadenantes y los cuidados necesarios para mejorar la calidad de vida. **Metodología:** la investigación realizada es una revisión integradora de las bases de datos BVS, LILACS, MEDLINE, BDNF, PUBMED y SciELO. Se utilizaron palabras clave basadas en los Descriptores en Ciencias de la Salud (DeCS), combinadas a través de búsquedas utilizando el operador booleano "AND" en portugués, inglés y español. **Resultados:** Se analizaron artículos sobre asma y enfermedades respiratorias; se investigó el origen, el idioma, el diseño del estudio, la calidad metodológica y los objetivos. El cuidado del asma implica un enfoque holístico que incluye el diagnóstico preciso, el tratamiento farmacológico y no farmacológico, la prevención de complicaciones, la educación del paciente y la atención multidisciplinar. El control de los factores ambientales también desempeña un papel importante en el tratamiento eficaz de esta afección respiratoria. **Conclusión:** Educación, tratamiento, prevención y colaboración entre pacientes, profesionales de la salud y políticas públicas son esenciales en el manejo del asma.

**DESCRIPTORES:** Educación Sanitaria, Cuidados, Asma, Tecnología Sanitaria, Tecnología Aplicada a los Cuidados de Salud.

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## INTRODUCTION

**A**sthma is a chronic airway disease that causes recurrent episodes of wheezing, shortness of breath, chest tightness and coughing, usually at night or in the morning. This occurs due to chronic inflammation in the airways, developing into airflow and hyperresponsiveness. Factors such as allergens, irritants, viral infections and climate changes can develop symptoms. 1 Diagnosis is based on symptoms and assessment of variables such as nocturnal worsening and response to medications. 2

Asthmatic attacks can be serious and require hospital treatment, and the number of hospitalizations in recent years has seen a significant drop caused by the COVID-19 pandemic. 3 Diagnosis involves the presence of typical symptoms, their variability and response to irritants or allergens, as well as tests such as spirometry to assess the reversibility of airflow. 2

Treatments include controller medications, relievers and complement therapies, while non-drug approaches include physiotherapy, diet and exer-

cise, with swimming recommended. 4,5 Asthma treatment requires continuous care, as there is no cure. The aim of this study is to provide knowledge about asthma, its triggers and the care needed to improve quality of life.

## METHOD

This is an integrative review. This research method has six distinct phases: identification of the theme or questioning of the integrative review; sampling or literature search; categorization of studies; evaluation of studies included in the integrative review; interpretation of results; and synthesis of knowledge evidenced in the articles. 6

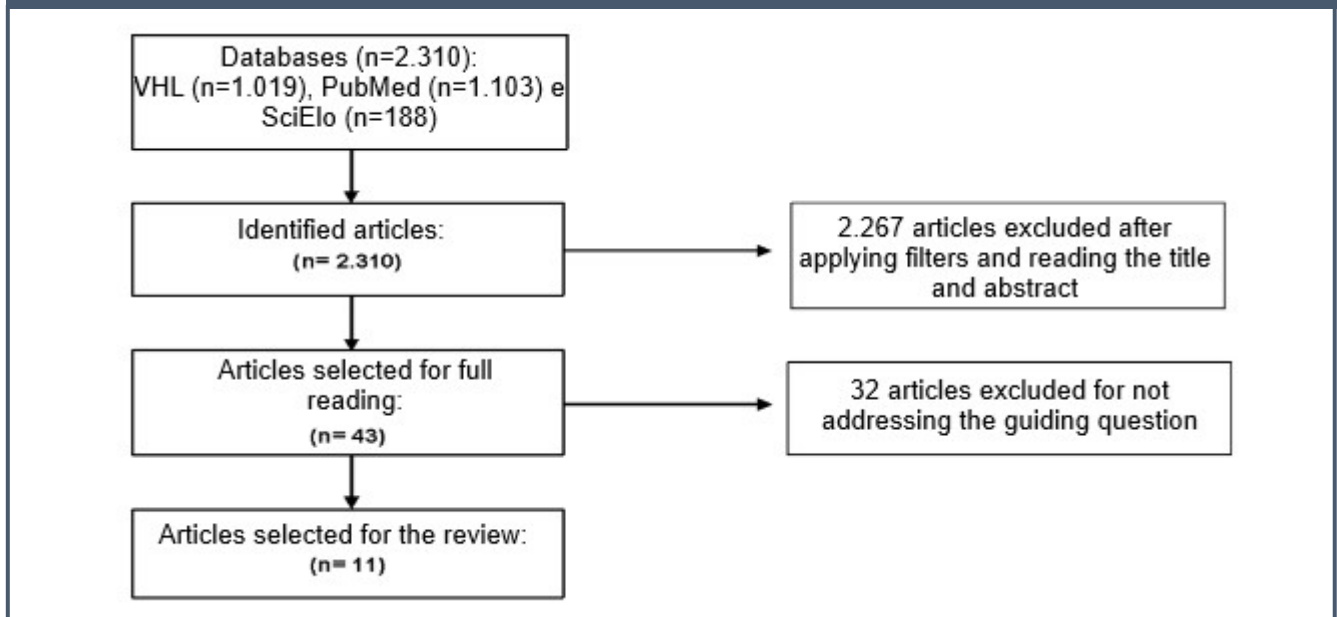
The research began with the guiding question: "What precautions should be taken by a person with asthma?". Articles were selected from the following databases: Virtual Health Library (VHL), which integrates the Latin American and Caribbean Literature in Health Sciences (LILACS), Medical Literature Analysis And Retrieval System Online (MEDLINE), Nursing Database (BDENF), Medical Lite-

rature Analysis and Retrieval System Online (PUBMED) and the Scientific Electronic Library Online (SciELO). Keywords based on Health Sciences Descriptors (DeCS) were used: "Asma" (Asthma/ Asma), "Cuidados de Enfermagem" (Nursing Care/ Cuidado de Enfermeira) e "Doenças Respiratórias" (Respiratory Diseases/ Enfermedades Respiratorias). They were combined in advanced searches using the Boolean operator "AND" in Portuguese, English and Spanish.

The inclusion criteria involved the theme of asthma/respiratory disease care, online availability, scientific articles, in the last 10 years, complete in English, Spanish or Portuguese. Editorials, reviews, letters, reflective studies, event annals and duplicate publications were excluded.

After the research carried out by crossing the descriptors, a sample of 2,310 publications was obtained. Of this total, 2,299 were excluded after applying filters, inclusion criteria, reading the title and abstract and for not answering the guiding question. There was no duplication of selected articles.

Figure 1 – Flowchart of the selection process of articles selected for the study



Source: Own Author, 2023

Thus, 11 publications were selected that constituted the sample for this stage of the study. The selected studies were evaluated for methodological rigor using the CASP instrument, with broad questions divided into sections and scoring items. Items were scored with 1 for "yes" and no score for "no", with a maximum of 10 points. 7 After data collection, there was an analysis to interpret the results, comparing the themes of the review articles with theoretical knowledge.

## RESULTS AND DISCUSSIONS

The study analyzed a selection of articles on asthma and respiratory diseases, focusing on origin, language, types of study, methodological quality and research objectives, as shown in table 1. The majority of articles have a Latin origin, especially from Brazil (54.5%), with participation from Mexico, Ecuador, Cuba and Argentina (9.1% each). The predominance of Portuguese and Spanish languages (36.4% each) reflects the concentration of publications from Latin America. The temporality

of publications shows that the majority of articles (81.8%) are less than five years old, highlighting the scarcity of older studies. Regarding study types, clinical practice guidelines represent the majority (54.5%), followed by cross-sectional studies (36.4%) and a diagnostic study (9.1%). The assessment of methodological quality, using the CASP instrument, indicates that the majority of articles obtained a maximum score (54.5%), with some scores of 7 (18.2%), 6 (18.2%) and 9 (9.1%). Regarding the objectives of the studies, the majority address asthma as the main topic (72.7%). Two studies focused on chronic obstructive pulmonary disease (COPD) (18.2%), while one dealt with respiratory diseases in general (9.1%).

Asthma is a widely accepted topic in research due to the essential care that must be taken to properly manage this condition. These studies highlight the importance of a comprehensive approach, involving not only the correct administration of medications, but also the adoption of healthy habits, such as exercise and adequate nutrition. Furthermore, it is essential to provide clear

information and precise guidance on the correct use of inhalation devices, in order to ensure better management of symptoms and more effective control of the disease.<sup>8</sup>

In short, care for people with asthma, including appropriate treatment and attention to the conditions for the persistence of symptoms, are topics widely discussed in research due to the significant impact of this condition on the health and quality of life of people affected.

Studies define asthma as a chronic inflammatory disease of the airways, characterized by airflow obstruction, constriction, mucus plugs, and inflammation. It is a treatable disease that affects all age groups and has a high prevalence, morbidity and mortality worldwide.<sup>1,9</sup>

It is characterized by respiratory symptoms such as wheezing, shortness of breath, chest tightness, coughing, especially at night or in the morning, and nighttime awakenings. These can vary in terms of duration and intensity and are associated with a decreasing variable in airflow when exhaling.<sup>10,11</sup>

# Revisão Integrativa EN

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**Table 1 - Distribution of articles searched in databases according to country of origin, language, year of publication, type of study and level of evidence, São Luís - MA, Brazil, 2023**

VARIABLE	N°	%
<b>Country of origin</b>		
Brazil	6	54,5
Mexico	1	9,1
Ecuador	1	9,1
Cuba	1	9,1
Argentina	1	9,1
Switzerland	1	9,1
<b>Language</b>		
English	3	27,2
Portuguese	4	36,4
Spanish	4	36,4
<b>Year of publication of the study</b>		
More than 5 years	2	18,2
Less than 5 years	9	81,8
<b>Type of study</b>		
Diagnostic Study	1	9,1
Clinical Practice Guide	6	54,5
Cross-sectional	4	36,4
<b>Level of evidence of the study</b>		
6	2	18,2
7	2	18,2
9	1	9,1
10	6	54,5
<b>Main theme</b>		
Asthma	8	72,7
COPD	2	18,2
Respiratory diseases	1	9,1
Total	11	100

Source: Own Author, 2023

Studies highlight that the risk of developing asthma is influenced by both individual and environmental factors. Individual factors include immune response, childhood viral tolerance, and exposure to tobacco and pollutants. On the other hand, environmental factors include: geographic location, socioeconomic and cultural conditions. It is important to consider that the mechanism by which these environmental factors influence asthma is multifaceted.<sup>1</sup>

The diagnosis is clinical and functional and requires clinical analysis, physical examination and pulmonary function tests to confirm airflow limitation. This helps categorize asthma to target treatment based on control, risk, severity and phenotype to individualize the best treatment.<sup>11,12</sup>

Spirometry is a crucial diagnostic test, evaluating lung function by measuring parameters such as forced expiratory volume in one second (FEV1), forced vital capacity (FVC) and FEV1/FVC ratio. For diagnosis, reductions in FEV1/FVC are observed, with values below 0.80 in adults, in addition to an increase in FEV1 after administration of a bronchodilator. Ideally, people undergoing spirometry should not be under the influence of bronchodilator medications. Prior rest and abstaining from smoking are recommended, while fasting is not generally necessary, but certain foods should be avoided a few hours before the exam.<sup>10,13</sup>

An important but neglected aspect is the classification of asthma. It is carried out after at least one month of follow-up and takes into account the treatment necessary to control the symptoms and exacerbations of the disease. In intermittent asthma, symptoms occur up to twice a week without limitation. In mild persistent, symptoms occur more than twice a week, normal activities, with attacks twice a year. Persistently, daily symptoms, nocturnal awakenings and reserve, with more frequent attacks. In severe persistent, daily symptoms, permanent phy-

sical restrictions and frequent attacks.<sup>1</sup>

Another topic emphasized in the studies is treatment, which aims to alleviate and control symptoms, allowing people to resume their activities and exercise without restrictions. Furthermore, the aim is to reduce the risk of serious crises, hospitalizations, emergency care and deaths, as well as to reduce the risk of changes in lung function in the long term. It can be performed both pharmacologically and non-pharmacologically. In the pharmacological approach, inhalation devices stand out, which act directly on the airways and require significantly lower doses than medications administered orally.<sup>14</sup>

The main medications are bronchodilators and corticosteroids. The first group includes  $\beta$ 2-agonists, which induce muscle relaxation and bronchodilation. There are short-acting and rapid-acting  $\beta$ 2-agonists (SABAs), such as salbutamol and terbutaline, and long-acting  $\beta$ 2-agonists (LABAs), which are divided into three groups: those with rapid and prolonged action, with effect for more than 12 hours, such as formoterol; those with slow and prolonged action, such as salmeterol; and those with fast and ultra-long action, lasting more than 24 hours, such as vilanterol.<sup>13</sup>

Inhaled corticosteroids (ICS) are the main anti-inflammatory medications in treatment and control. Its therapeutic effect is comprehensive, reducing exacerbations when used continuously. Inhalation devices are essential for treating respiratory diseases, allowing direct administration of the medication into the airways and relieving symptoms quickly. It is crucial to provide comprehensive guidance on recent medications and ongoing educational training to actively engage patients in the treatment process.<sup>13,15,16</sup>

In non-pharmacological management, a comprehensive approach is crucial. This includes assessing psychosocial and emotional factors of the patient and their family, providing education

about the disease, controlling the environment by advising smoking cessation, and reducing exposure to allergens. Encouraging regular physical activity and providing guidance on the treatment of exercise-induced bronchoconstriction is important. Influenza and pneumococcal vaccines are recommended, as are COVID-19 vaccines.<sup>10</sup>

Knowledge of the conditions that lead to the persistence of disease symptoms is decisive for effective treatment. Factors such as lack of adherence to treatment, socioeconomic issues, educational level, ethnicity and age of the patient can contribute to the persistence of symptoms. In the case of medications and usage regimen, difficulties in the correct use of inhalation devices, lack of understanding of instructions, forgetfulness, mistaken perception of the need for treatment, among others, can affect effectiveness. Problems with access to consultations and medications, costs, dissatisfaction with the healthcare team and cultural issues also influence. It is vital to address such issues to ensure effective asthma control by providing clear information, appropriate healthcare services and support in the correct use of inhaler devices.<sup>11,15</sup>

Additionally, environmental factors contribute to flare-ups, such as exposure to indoor allergens and irritants. Inadequate ventilation in modern buildings, pollutants accumulated indoors, and changes in temperature and humidity can also worsen asthma symptoms.<sup>17</sup>

Effective care for people with asthma involves taking measures to prevent future complications and improve their quality of life. Adherence to treatment, especially the correct use of inhaled medication, is essential for therapeutic success. Proper inhalation technique ensures the effectiveness of the medication in the lower airways, maximizing bioavailability and minimizing unwanted systemic effects.<sup>14</sup> Practicing physical exercise, especially water activities, is beneficial for improving cardiopulmonary fitness, reducing symp-

toms and exacerbations, and the use of medications, although precautions are needed to avoid exercise-induced bronchospasm.<sup>8</sup>

Actions to control allergens are also recommended, where measures include humidity reduction, regular cleaning of bedding and cloth objects, air filtration and acaricides. Frequent cleaning of air conditioning ducts and pets is also important. Additionally, avoiding rugs, thick curtains, and furry blankets and removing bookshelves and open boxes in the bedroom can reduce exposure to allergens.<sup>17,13</sup>

Patient education plays a crucial role

in correctly adhering to treatment, improving inhalation technique and adherence. Review of inhalation technique and adherence should be performed at each medical appointment.<sup>12</sup> Specific public health programs for asthma, with reference centers, easier access to medicines and professional training, can significantly reduce the number of hospitalizations due to the disease<sup>9</sup>.

## CONCLUSION

The research emphasizes the crucial importance of asthma as a topic of study due to the need for comprehensive

care. A multidisciplinary approach that involves education, pharmacological and non-pharmacological treatment, as well as attention to the persistence of symptoms, is essential to improve the quality of life of people affected by asthma. Effective care involves preventing complications, patient education, and adherence to treatment. Through a collaboration between patients, healthcare professionals and public health policies, it is possible to reduce the impact of asthma and promote the well-being of those affected.

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