Review Article

Journal of Biomedical Engineering & Innovations

Safety and Self-Care for Asthma: Measures To Reduce Hospitalizations and Educational Promotion in the COVID-19 Pandemic Scenario

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Submitted : 7 May 2022 ; Published : 25 May 2022

Abstract

Asthma is a major cause of hospitalizations for specific conditions in primary care, especially in children under 5 years of age. Thus, it is noticeable that individual and family responsibility for self-care, in association with Primary Health Care professionals, is necessary to reduce hospitalizations for asthma. Hospitalizations for asthma can be avoided through comprehensive and multidisciplinary care, using strategies such as environmental control and health education. In addition, the importance of improving lifestyle for asthmatic patients is emphasized, especially in relation to passive smoking in this pediatric age group. Finally, the reduction in hospitalizations and asthma problems are relevant not only for the health of these children, but also for school learning and to avoid saturation of the hospital health network, especially during the COVID-19 pandemic period.

Keywords: Asthma; Education; Child.

Introduction

Asthma is a disease characterized by chronic inflammation associated with bronchial hyperresponsiveness and variable airflow limitation, being reversible spontaneously or with the use of bronchodilators [Dias et al., 2020]. It is defined by the history of respiratory symptoms, such as wheezing, dyspnea, retrosternal chest tightness and cough, which vary with time and intensity. In addition, it is a heterogeneous and complex disease, with high morbidity and high use of health resources [2].

In Brazil, asthma occupies the third highest financial cost of the Unified Health System (SUS), even with the drop in the number of hospitalizations, due to greater access to treatments [Dias et al., 2020]. In addition, asthma, together with pneumonia and gastroenteritis, constitutes the most important causes of preventable hospitalizations in children under 5 years of age, treatable at the primary level of health care [Pedraza & Araujo, 2017]. The age group that presented the most hospitalizations for asthma was 0-4 years, followed by 5-9 and of 10-14[Dias et al., 2020]. This leads to higher costs to the economy as a result of hospitalizations and educational deficits due to school absenteeism [Sarinho et al., 2019].

In the United States, asthma is the most common chronic lung disease and affects about 8% of adults, or approximately 20 million people. In addition, it is observed that asthma is significantly more prevalent in women (10.4%) than in men (6.2%), in people below the poverty line (11.8%) and in ethnic or minorities. racially, especially among blacks (10.2%) and Puerto Rican Hispanics (14.9%).

According to the National Heart, Lung, and. Blood Institute, a varied set of factors favor and interact in the exacerbation of asthma. These are factors linked to the characteristics of individuals, lifestyles and related to the environment, such as viral infections of the lower respiratory tract (IVTRI), contact with indoor and outdoor allergens and weather changes. Regarding the climate, the reduction in precipitation and the increase in relative humidity are associated (5% of significance) with the increase in hospitalization rates for asthma [Dias et al., 2020]. Other factors that influence the response to asthma treatment are lack of adherence, misdiagnosis, use of drugs that may decrease the response to treatment (non-steroidal anti-inflammatory drugs and β-blockers), exposure to passive smoking and other comorbidities [2].

Climatic variations can exert a strong influence on asthma symptoms. In winter, reduced air temperature can compromise lung function in patients with asthma and induce bronchospasm. In addition, periods with fewer hours of sunshine and more rain lead to increased indoor humidity, fungal proliferation, crowding of residents and viral transmissibility. In spring, the period of plant pollination, the concentration of circulating allergen spores is higher. All this can induce an asthma attack and increase the susceptibility of predisposed individuals [Dias et al., 2020].

Thus, as measures to reduce crises and, consequently, hospitalizations for asthma, we have: Preventive interventions, such as education, correct management of signs and symptoms, and monitoring of severe cases in epidemic periods; health actions, such as timely access to medication and respiratory physiotherapy; and other strategies such as environmental control of the residence and its surroundings, and improvement of the social condition [Dias et al., 2020].

Goals

Health education of the target audience, children aged 2 to 12 years (preschoolers and schoolchildren) with asthma and their families, to reduce the saturation of the health system due to hospitalizations, especially in the current pandemic scenario. In addition, avoid school absenteeism in this age group due to asthma attacks.

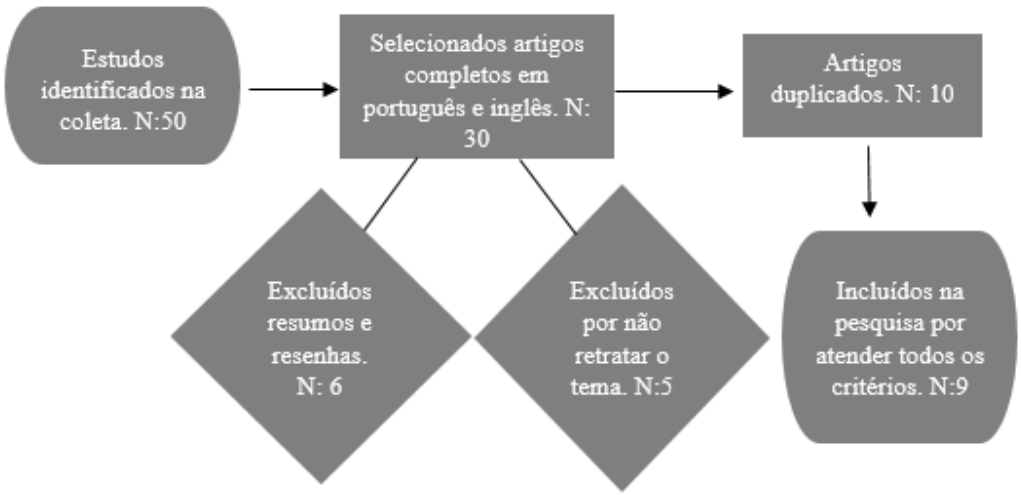

Figure1: Flowchart of data collection steps

Source: Authors (2021).

Methodology

Systematic review of articles from 2015 to 2020 on Google Scholar, Pubmed, Scielo and Lilacs platforms. Systematic review articles and research articles in Portuguese and English were used.

Discussion

The data collection strategy used by the authors, and the details of each stage of the research according to identification, selection, acceptance and inclusion, will be presented in the flowchart below.

In view of the results obtained about the research carried out through the search strategy, the authors pointed out focuses to better describe the evidence found in the research. Table 1 presents the articles worked in detail, based on the author, title and year.

Author	Title	yes
Dias et al.	Influence of climate on hospitalizations for asthma in children and adolescents living in Belo Horizonte, Minas Gerais, Brazil.	2020
Pizzichini et al.	Recommendations for the management of asthma from the Brazilian Society of Pulmonology and Tisiology.	2020
Sarinho *et al.*	Practical update guide – prevention of allergic diseases.	2018
Pedraza & Araújo.	Hospitalizations of Brazilian children under five years of age: a systematic review of the literature.	2017
Cardoso *et al.*	Asthma impact in Brazil: longitudinal analysis of data extracted from a Brazilian government database.	2017
Souza *et al.*	Adherence to the Suspirar Program in the Primary Health Care Units in the city of Juiz de Fora.	2015
Caruso *et al.*	Diagnostic methods for assessing inspiratory and expiratory muscle strength.	2015
Stelmach *et al.*	Comparison between objective measures of smoking and self-reported smoking in patients with asthma or COPD: are our patients telling the truth?	2015
Matsunaga *et al.*	Assessment of quality of life according to the level of asthma control and severity in children and adolescents.	2015

Table 1: Articles concerning the study

Source: Authors (2021).

Table 2 presents the articles in detail according to their authorship and objectives.

Author	Goal
Dias *et al.*	To evaluate the influence of climatic factors on hospitalizations for asthma and viral infections of the lower respiratory tract (IVTRI).
Pizzichini *et al.*	To undertake a critical review of recent evidence on the pharmacological treatment of asthma and to prepare this set of recommendations, a treatment guide adapted for use in Brazil.
Sarinho *et al.*	Present in the form of questions and answers an update text on various allergic diseases in childhood.
Pedraza & Araújo.	Present in the form of questions and answers an update text on various allergic diseases in childhood.
Cardoso *et al.*	To present official longitudinal data on the impact of asthma in Brazil between 2008 and 2013.
Souza *et al.*	To analyze the adhesion of the Primary Health Care Units of Juiz de Fora (UAPS) to the Suspirar Program.
Caruso *et al.*	To describe the advantages, disadvantages, measurement procedures and clinical applicability of the main diagnostic methods for the assessment of ventilatory muscle strength.
Stelmach *et al.*	To assess the difference between self-reported smoking and smoking determined by the use of objective measures in an outpatient clinic for respiratory diseases.
Matsunaga *et al.*	To assess quality of life according to the level of asthma control and severity in children and adolescents.

Table 2: Articles concerning the study

Source: Authors (2021).

The importance of working on constructive methods and implementing health education programs to control asthma has already been represented in several scientific works across the country. In addition, it was characterized as effective in preventing hospitalizations in the Hospital sector and pointing out numerous other benefits [CARDOSO et al., 2017].

Primary Care (AB), due to its capillarity and performance in the ascribed territory, can be used in the implementation of an effective and continuous health education process, achieving results that are favorable to the reduction of hospitalization for asthma. In order to reach this goal, and before assigning prophylactic responsibilities to the community in which the patients are inserted, it is necessary to work together and attribute the fact that each individual and family is responsible for their self-care, together with the professionals of the Primary Health Care (PHC).

Preventive interventions, such as, for example, the correct practice of health promotion, which addresses signs and symptoms and promotes effective monitoring of all cases, are important strategies implemented in the UBS. In addition, they have as a consequence the awareness of the population about prophylaxis, promotion of comprehensive and multidisciplinary care, information about environmental control practices in the residence and its contours, and promotion of improvements in the social condition of the patient [Dias et al., 2020]. The user's perception that it is part of the care process, together with the community, is essential for adherence to educational health actions, and aims to encourage self-care, prevention and reduction of diseases caused by respiratory tract diseases.

It is necessary to combat risk factors that can become aggravating in asthmatic patients and educate the family on what needs to be avoided in the family environment, such as smoking. Asthmatic patients associated with the condition of passive smoking tend to present worsening of symptoms, and, consequently, have a decline in lung function and in the effectiveness of the therapeutic regimen offered. Therefore, it is important to value and improve the quality of life of the asthmatic patient.8 In addition, studies show that asthma control is entirely related to the improvement of lifestyle, and consequently, there are fewer losses in social life and thus avoiding losses in school learning [MATSUNAGA, 2015].

Regarding the research carried out, it was found that asthma is among the main causes of hospitalizations for conditions sensitive to Primary Care (ICSAP), and children under five are the most susceptible to this disease. However, PHC has low technological density resources based on activities such as immunization and antibiotic therapy, which avoid hospitalizations and, consequently, the saturation of secondary and tertiary care. The implementation of an activity in PHC to monitor respiratory muscle strength becomes a great attribute for the diagnosis of respiratory complications [Pedraza & Araujo, 2017]. Activities such as the use of the Vacuometer, a device used to measure inspiratory and expiratory muscle strength, is easy to implement, for be economically viable and easily performed by a qualified professional. In addition, it results in a significant maximal inspiratory pressure (Plmax) measurement, which can be applied in the clinic as a diagnostic method for asthma disorders, for example, dyspnea [CARUSO et al.,2015].

There are numerous educational actions in health, which are one of the pillars of primary care. However, many end up not being effective because, most of the time, such actions are developed without the participation of the community, so that it does not assume the leading role of its care. This lack of autonomy impacts the adherence and effectiveness of the proposed prophylactic and curative methods. Most of the time, such actions are carried out without the participation of the community, so that it does not assume the leading role in its care. This lack of autonomy impacts the adherence and effectiveness of the proposed prophylactic and curative methods.

Hospital admissions due to asthma are a negative outcome in the quality of life of patients and in the public health system, according to DATASUS data. In Brazil, in 2017, there were more than 120,000 hospitalizations, and, only with the action of national health policies, from the development of health education activities and programs that facilitated patients' access to medicines, such as Salbutamol and Beclomethasone, a reduction of 36% of cases was achieved [CARDOSO et al., 2017].

By specifying health education to prevent asthma and reduce bed occupancy, the community needs to know, in addition to promotion and prevention, the different levels of care and where each point of the Health Care Network (RAS) operates. Understanding and knowledge about the management of asthma is not only done in hospital beds, but it is extremely important that it is worked on in Basic Health Units (BHU). One of the strategies that can be used is lectures at the UBS itself, in schools, in community associations and in commercial establishments. The probability of success of the asthma prevention program increases when there is also effective participation and accountability of the community. Community devices are little explored and can be an opportunity to multiply information, with the help of community leaders, to achieve the Program's coverage target and the effectiveness of actions to prevent hospitalizations and educational losses.

It is up to health professionals to successfully carry out prophylactic and curative activities, in order to provide mainly quality of life and prevent patients from moving to tertiary sectors, with problems that could be solved in PHC. Concreting that comprehensive and humanized care is the basis for creating the professional and patient bond.

Conclusion

This study is relevant as it provides knowledge about health practices that can be implemented for the prophylaxis of childhood asthma, providing knowledge acquired through literary reviews. In addition, it is observed that complications interfere with school education and saturate secondary and tertiary Hospitalization Units, and the importance of health promotion actions in primary care units was highlighted.

The need for health professionals to be trained to provide adequate treatment and holistic care to these patients is highlighted, mitigating and combating the main triggering factors of disease complications.

Finally, it is important to carry out future studies in order to expand scientific production on this very relevant topic, being a very important contribution to improve the quality of life of patients.

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