

# Content validation of an educational booklet for asthma control and management in children

*Validação de conteúdo de cartilha educativa para controle e manejo da asma em crianças*

*Validación del contenido del folleto educativo para el control y manejo del asma en niños*

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## How to cite this article:

Lima KF, Gomes ALA, Melo ESJ, Vasconcelos FX, Sousa JL, Martins MC, et al. Content validation of an educational booklet for asthma control and management in children.

Rev Bras Enferm. 2021;74(Suppl 5):e20200353.

<https://doi.org/10.1590/0034-7167-2020-0353>

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EDITOR IN CHIEF: Antonio José de Almeida Filho

ASSOCIATE EDITOR: Marcos Brandão

**Submission:** 04-26-2020    **Approval:** 01-25-2021

## ABSTRACT

**Objective:** to validate the content and appearance of the educational booklet “You can control your child’s asthma - let’s learn together?” with parents and caregivers of children with asthma. **Methods:** this is a methodological study, carried out with 34 mothers and caregivers of children, from two to 10 years old, diagnosed with asthma. The educational booklet validation was performed using Content Validity Index (CVI) and assessment of comprehension, attractiveness, self-efficacy, persuasion, and cultural acceptance domains.

**Results:** the booklet was considered clear (99.8%) and relevant (100%), with a global CVI of 0.99. Domain assessment proved to be an easy-to-understand tool, culturally appropriate, attractive, with persuasive power and promoting self-efficacy. **Conclusion:** the booklet is valid and adequate for promoting the self-efficacy of parents and caregivers in childhood asthma control and management, potentially scalable to other realities of outpatient care.

**Descriptors:** Asthma; Self Efficacy; Validation Study; Educational Technology; Health Promotion.

## RESUMO

**Objetivo:** validar o conteúdo e a aparência da cartilha educativa “Você é capaz de controlar a asma da sua criança - vamos aprender juntos?” junto a pais e cuidadores de crianças com asma. **Métodos:** estudo metodológico, realizado com 34 mães e cuidadoras de crianças, de dois a 10 anos de idade, com diagnóstico de asma. A validação da cartilha educativa foi realizada a partir do Índice de Validade de Conteúdo (IVC) e da avaliação dos domínios compreensão, atratividade, autoeficácia, persuasão e aceitação cultural. **Resultados:** a cartilha foi considerada clara (99,8%) e relevante (100%), com IVC global de 0,99. A avaliação dos domínios evidenciou ser uma ferramenta de fácil compreensão, adequada culturalmente, atrativa, com poder de persuasão e de promover autoeficácia. **Conclusão:** a cartilha é válida e adequada para promoção da autoeficácia de pais e cuidadores no controle e manejo da asma infantil, potencialmente escalável a outras realidades de atendimento ambulatorial.

**Descritores:** Asma; Autoeficácia; Estudo de Validação; Tecnologia Educacional; Promoção da Saúde.

## RESUMEN

**Objetivo:** validar el contenido y la apariencia del folleto educativo “Puedes controlar el asma de tu hijo, ¿vamos a aprender juntos?” con los padres y cuidadores de niños con asma.

**Métodos:** estudio metodológico, realizado con 34 madres y cuidadoras de niños, de 2 a 10 años, diagnosticados de asma. La validación del cuadernillo educativo se realizó mediante el Índice de Validez de Contenido (IVC) y la evaluación de los dominios comprensión, atractivo, autoeficacia, persuasión y aceptación cultural. **Resultados:** el folleto se consideró claro (99,8%) y relevante (100%), con un IVC global de 0,99. La evaluación de los dominios resultó ser una herramienta fácil de entender, culturalmente apropiada, atractiva, con el poder de persuadir y promover la autoeficacia. **Conclusión:** el folleto es válido y adecuado para promover la autoeficacia de los padres y cuidadores en el control y manejo del asma infantil, potencialmente escalable a otras realidades de la atención ambulatoria.

**Descriptor:** Asma; Autoeficacia; Estudio de Validación; Tecnología Educacional; Promoción de la Salud.

## INTRODUCTION

Asthma is a chronic respiratory disease that globally affects more than 300 million people, from childhood to adulthood, with increasing prevalence and morbidity in developing countries<sup>(1)</sup>.

In Brazil, a study based on data extracted from the Department of Informatics of the Unified Health System (DATASUS - *Departamento de Informática do Sistema Único de Saúde*) found 120,000 annual hospitalizations for asthma. Between 2008 and 2013, there was a reduction of 10% and 36% in the absolute number of deaths and hospitalizations due to asthma, respectively; however, the mortality rate in hospitalized patients increased by approximately 25%<sup>(2)</sup>. Deaths by asthma are considered relatively rare, however of great importance, because they are, in most cases, preventable through early diagnosis and appropriate treatment<sup>(1)</sup>.

In the context of children's health, asthma remains the chronic respiratory disease with the highest prevalence and impact on childhood. Achieving and maintaining control requires continuous treatment, with a broad and multidisciplinary approach, including health education interventions targeted at children and families<sup>(3)</sup>, because the knowledge and attitude of parents and caregivers in relation to childhood asthma control and management effectively influence good management, with a consequent reduction in morbidity and mortality<sup>(4)</sup>. However, it is known that only access to adequate information does not guarantee the promotion of children's health, and it is also necessary that parents and caregivers have self-efficacy to feel able to incorporate appropriate practices in their daily lives<sup>(5)</sup>.

Self-efficacy is related to individuals' belief regarding their own abilities to successfully perform an intended action<sup>(6)</sup>, which may influence the decision to adopt behaviors, the effort that will be employed in carrying out actions that result in effective management of asthma and other chronic diseases and how long it will persist in the face of obstacles that may arise<sup>(6-7)</sup>. Moreover, high levels of self-efficacy can improve therapeutic adherence, lead to better clinical results, reduce aggravation processes and generate short, medium and long-term benefits for the patient, family and health system, even in the face of adverse conditions<sup>(8)</sup>.

When considering that the use of technological resources contributes to the success of health education, the feasibility of using an educational booklet is highlighted, as it is an instrument that can reinforce verbal guidelines, serve as a guide at home, for instance, in case doubts and difficulties in handling. It should be noted that, searching national and international literature, through the Brazilian Library of Dissertations and Theses (BDTD - *Biblioteca Brasileira de Dissertações e Teses*) and the PubMed, Scopus, CINAHL, EMBASE and Cuiden databases, no educational booklet identified based on self-efficacy for childhood asthma control and management. Thus, the booklet entitled "*You can control your child's asthma - let's learn together?*"<sup>(9)</sup> was designed and validated by judges, aiming at helping parents and caregivers of children with asthma to promote self-efficacy in childhood asthma control and management.

Therefore, it was considered relevant to validate the educational technology, with parents and caregivers of children with asthma, to verify their suggestions so that the material was as close as possible to their realities, with clear and understandable language so that the technology could be able to meet its

needs; after all, all educational material needs to be accessible and attractive to the target audience, being, therefore, essential that it be submitted to such assessment<sup>(10)</sup>.

## OBJECTIVE

To validate the content and appearance of the educational booklet "*You can control your child's asthma - let's learn together?*" with parents and caregivers of children with asthma.

## METHODS

### Ethical aspects

The study was approved by the Research Ethics Committee of *Universidade Federal do Ceará* (UFC), according to Opinion 1.846.995, following the ethical principles of research involving human beings, according to Resolution 466/2012<sup>(11)</sup>.

### Study design, place, and period

This is a methodological study, with content validation and appearance of the educational booklet entitled "*You can control your child's asthma - let's learn together?*", Developed from June to August 2018 in a Primary Health Care Unit (PHCU), which has regular care and a greater number of children registered in the Comprehensive Care Program for Children and Adults with Asthma (PROAICA - *Programa de Atenção Integral à Criança e Adulto com Asma*) in the city of Fortaleza, Ceará, Brazil.

### Population or sample, inclusion and exclusion criteria

The sample size was defined by convenience, respecting the recommendations of authors who advise a number of 25 to 50 subjects for the validation of technologies/instruments<sup>(12)</sup>. Thus, 34 parents and caregivers of children with asthma participated in the study, without any refusal from those who were invited and who met the selection criteria.

Inclusion criteria were being a father and/or caregiver of a child between two and 10 years old, with a medical diagnosis of asthma, registered in PROAICA. The classification of children according to the World Health Organization (WHO) was adopted. Adults who do not know how to read, with a medical diagnosis related to cognitive impairment that would make communication impossible, reading the booklet and responding to the instrument were excluded.

### Study protocol

The booklet was built according to the recommendations for the design of educational materials<sup>(10,13)</sup> and the practical guides *Simply Put*<sup>(14)</sup>, *Guide to Creating and Evaluating Patient Materials*<sup>(15)</sup> and *Federal Plain Language Guidelines*<sup>(16)</sup>, aiming to promote the self-efficacy of parents and caregivers for childhood asthma control and management.

Technology addressed the themes: asthma definition; symptomatology; prevention of triggers that trigger symptoms or exacerbate crises; importance of health services for asthma

control; indication of the use of medications; crisis management at home and need to seek emergency services; use of inhaled medication; care to prevent adverse events, such as oral hygiene; expectations of results for achieving and maintaining asthma control and improving quality of life.

The booklet's content was based on the Self-Efficacy and Their Child's Level of Asthma Control Scale, Brazilian version<sup>(7)</sup>, on Theory of Self-efficacy<sup>(6)</sup> and on clinical guidelines regarding asthma control parameters<sup>(17-19)</sup>.

The technology was previously validated by content judges (with teaching and assistance experience) and technical judges (with experience in design, communication and education), which presented a global Content Validity Index (CVI), with regard to relevance theoretical, 0.93 by both content judges and technicians. The final version was completed with 40 pages, containing cover, pre- and post-textual elements. The last pages were dedicated to a review so that parents and caregivers could exercise and establish essential points for an effective asthma management, record consultations and complications and use an illustrated action plan that can be completed by health professionals together with those responsible for child care<sup>(9)</sup>.

Data collection took place in two stages. In the first stage, parents and caregivers who were waiting for the routine consultation of PROAICA at PHCU and agreed to participate in the research were invited to go to a private room and start reading the booklet individually, with an average duration of 15 minutes. The researcher was present at this moment to answer any questions that might arise.

The second stage took place sequentially, consisting of the application of the Doak, Doak and Root adapted questionnaire<sup>(10)</sup>, composed of three parts: 1) sociodemographic characterization; 2) domain assessment: attractiveness, related to the way of displaying the information; self-efficacy, referring to the ability to develop confidence to perform the care proposed in the booklet; cultural acceptability, which concerns adequacy of educational material to the reality of the target population; persuasion, which concerns a healthy behavior promotion; understanding, through aid of images; 3) Individual assessment of each booklet page, through a checklist, which allowed the assessment of clarity and relevance with two answer options, yes or no, and the degree of relevance, which was investigated using a Likert-type scale, with four answer options: (1) irrelevant, (2) not relevant, (3) really relevant, and (4) very relevant. Moreover, there was a space for participants to make observations and suggestions for each page of the booklet.

Data analysis was performed in the Statistical Package for the Social Sciences (SPSS, version 20, license 10101131007). The value of CVI for each page and, later, of the complete material, was calculated from relevance classification, which varied from -1 to +1. The item with agreement among participants equal to or greater than 0.8<sup>(20)</sup> was considered valid. A score of +1 was assigned to pages with relevance rating 3 or 4 according to the Likert scale used<sup>(21)</sup>. The global CVI analysis was performed based on the average CVI assigned to each page. To calculate the 95% confidence interval (CI), the binomial distribution was used, so that  $p \text{ value} > 0.8$  confirms the adequacy of the educational material prepared.

The participants' response regarding clarity and relevance was used to validate appearance, considering agreement equal to or greater than 75%<sup>(22)</sup>. Understanding, attractiveness, self-efficacy, cultural acceptability and persuasion were organized in absolute values and percentage, which are presented in a descriptive way and discussed according to literature.

## RESULTS

Thirty-four fathers and caregivers were part of the validation of the booklet's second version, all female, being 25 mothers, 06 grandparents and 03 aunts aged between 18 and 60 years (average of 34.6 years). The participants were from Fortaleza, 22 (64.7%) finished high school, with an average study time of 9.5 years. Most performed household activities ( $n=21$ , 61.7%) and lived with a partner ( $n=23$ , 67.6%). The average number of family members was 4.1 people, and the family income ranged from R\$300.00 (about 54.5 US dollars) to R\$3,500.00 (about 636 US dollars), with an average of R\$1,113.00 (about 202 US dollars).

Assessment of the clarity of each page showed agreement between the participants from 97% to 100%, with an average of 99.8%. The pages referring to "Presentation" and "Concept of asthma triggers and how to recognize them" were assessed with 97% agreement. The others obtained an excellent assessment, reaching 100% agreement. Relevance was another aspect assessed that obtained excellent concordance index for reaching 100% on all pages.

From the classification of relevance attributed to each page, individual CVI was calculated, which ranged from 0.97 to 1.00. The pages that present the subjects "Main asthma triggers" and "Care with changes in the weather and exposure to cigarette smoke" obtained CVI of 0.97, and all other pages, CVI equal to 1.0. The material presented a global CVI of 0.99, higher than the established limit of 0.8, necessary to consider the material as valid and adequate, indicating a high level of agreement among participants (Table 1).

Regarding the domains of understanding, attractiveness, cultural acceptability and persuasion, the participants, in total ( $n=34$ , 100%), assessed the technology positively. They reported understanding the content and demonstrated having absorbed the knowledge related to asthma by being able to verbally reproduce information presented throughout the booklet. Good attractiveness was perceived by the interest in completing the material reading, which was also reinforced by verbal report. Cultural acceptability was confirmed by verbalization of parents and caregivers about the recognition of their own reality in scenes or images present in the booklet. They were predisposed to perform activities described in the material that would help in asthma control and management, expressing the booklet's persuasive power.

In the self-efficacy domain, most mothers and caregivers ( $n=32$ , 94.1%) claim to believe they are able to follow what the booklet proposes and consider that the booklet has the necessary information to make them feel confident in controlling childhood asthma ( $n=33$ , 97.0%) (Table 2).

The subjects in the booklet considered essential for childhood asthma control and management, according to mothers

and caregivers participating in the study, were factors that can trigger or exacerbate asthma symptoms (triggers) (n=23, 67.6%), prevention triggers (n=22, 64.7%), recognition of the need to use medication (n=18, 52.9%) and instructions on inhalation (n=12, 35.3%) (Figure 1). Still, 91.2% (n=31) stated that there is no need for additional information in the booklet.

Only three participants (N=3, 8.8%) suggested changes or additions to the booklet, namely: information on first aid in cases of severe crisis; exposure of content on dye allergy as a trigger for crisis exacerbation; advice on keeping your child always dressed for the cold. However, these suggestions were not accepted because they are not part of the scope of the booklet.

**Table 1** – Agreement of mothers and caregivers regarding the relevance of the content covered on each page of the booklet, Fortaleza, Ceará, Brazil, 2018

Pages/Subjects	n°	%	CVI*	95% CI **	p
Cover	34	100	1	0.89 - 1.00	1
Presentation	34	100	1	0.89 - 1.00	1
Presentation of the characters and context of the story	34	100	1	0.89 - 1.00	1
Asthma concept	34	100	1	0.89 - 1.00	1
Main symptoms of asthma	34	100	1	0.89 - 1.00	1
Concept of asthma triggers and how to recognize them	34	100	1	0.89 - 1.00	1
Main asthma triggers	33	97.05	0.97	0.84 - 0.99	0.99
Recommendations for reducing triggers	34	100	1	0.89 - 1.00	1
Home care	34	100	1	0.89 - 1.00	1
Care of clothes, pollen, and animals	34	100	1	0.89 - 1.00	1
Care about changes in the weather and exposure to cigarette smoke	33	97.05	0.97	0.84 - 0.99	0.99
Garbage care	34	100	1	0.89 - 1.00	1
Reinforcement of self-efficacy regarding the prevention of triggers	34	100	1	0.89 - 1.00	1
Importance of health services	34	100	1	0.89 - 1.00	1
Importance of vaccination	34	100	1	0.89 - 1.00	1
Recognition of the need to use medication	34	100	1	0.89 - 1.00	1
Action plan	34	100	1	0.89 - 1.00	1
Recognition of the need to take children to an emergency care	34	100	1	0.89 - 1.00	1
Inhaler use	34	100	1	0.89 - 1.00	1
Instructions for using inhalers with spacers and masks (Part I)	34	100	1	0.89 - 1.00	1
Instructions for using inhalers with spacers and masks (Part II)	34	100	1	0.89 - 1.00	1
Instructions for using inhalers with spacers only (Part I)	34	100	1	0.89 - 1.00	1
Instructions for using inhalers with spacers only (Part II)	34	100	1	0.89 - 1.00	1
Care of oral hygiene after using medication	34	100	1	0.89 - 1.00	1
Oral hygiene instructions	34	100	1	0.89 - 1.00	1
Expected outcome: controlled asthma	34	100	1	0.89 - 1.00	1
Result expectation: practice of physical activities	34	100	1	0.89 - 1.00	1
Expected outcome: school attendance and good sleep	34	100	1	0.89 - 1.00	1
Result expectation: improved quality of life	34	100	1	0.89 - 1.00	1
Checklist for asthma control	34	100	1	0.89 - 1.00	1
Child consultation records	34	100	1	0.89 - 1.00	1
Medication records	34	100	1	0.89 - 1.00	1
Action plan follow-up record	34	100	1	0.89 - 1.00	1
Record of complications	34	100	1	0.89 - 1.00	1
Total			0.99		

Note: n=34; \*Content Validity Index; \*\*95% Confidence Interval based on binomial test.

**Table 2** – Description of the responses of mothers and caregivers in the self-efficacy domain and of subjects cited as essential for asthma control, Fortaleza, Ceará, Brazil, 2018

	n	%
Assessment of mothers and caregivers about self-efficacy beliefs in the booklet		
Belief in the ability to follow what the booklet demonstrates	32	94.1
They consider that the booklet presents the necessary information to make them feel confident in controlling their children's asthma	33	97.0
Believes that the presence of a health professional is necessary to present and/or explain the booklet so that they feel confident in following the information	0	0
Essential issues present in the booklet cited by mothers and caregivers for childhood asthma control and management		
Factors that can trigger or exacerbate asthma symptoms (triggers)	23	67.6
Trigger prevention	22	64.7
Recognition of the need to use medication	18	52.9
Inhalation technique instructions	12	35.3
Oral hygiene after using inhaled corticosteroids	2	5.9
Outcome expectations for controlled childhood asthma	2	5.9
Asthma definition	1	2.9
Importance of monitoring by a health professional	1	2.9
Recognition of the need to take the child to an emergency care	1	2.9



**Figure 1** – Cover and content illustration of “You can control your child’s asthma – let’s learn together?”

## DISCUSSION

Researches carried out in northeastern Brazil to validate the Self-Efficacy and Their Child’s Level of Asthma Control Scale showed sociodemographic profiles of parents and caregivers of children with asthma similar to those of this study. The main similarities referred to participants’ low educational level, low family income, occupation, and sex<sup>(7-8)</sup>. These characteristics reflect a reflection of part of the Brazilian population, with disadvantaged economic and educational conditions. The booklet validation in this scenario conditions the assumption that educational technologies with content and appearance that are clear and understandable by this stratum of the population are also adequate for people with better economic and educational conditions.

Validation with the target population has been carried out in the process of preparing educational materials. Validation makes it possible to verify that ideas are being transmitted in a clear, objective and appropriate way for the application of material in daily life, ensuring effective understanding and avoiding dubious interpretations that motivate inappropriate actions by those who use technology<sup>(5,23)</sup>.

In this process, participants are also encouraged to make suggestions about the material’s content. The first recommendation given by the mothers and caregivers participating in the study referred to the addition of guidelines for carrying out first aid at home, in the case of a severe acute crisis. However, in the topic of the educational booklet entitled “Know when the asthma crisis needs to be treated in an emergency care”, signs of seriousness are presented; it was emphasized that, in cases where the signs persist, even after the target population has followed all the action plan guidelines prescribed by the doctor, the health service should be sought immediately. Thus, it is considered that care beyond those described in the booklet requires knowledge, skills, materials, instruments that are commonly not available at home, such as intubation and ventilation, use of tools and equipment (pulse oximeter), intravenous medications, due to this, were not accepted<sup>(1)</sup>.

Another suggestion was in relation to the insertion of information about foods with dyes as a factor that can trigger symptoms or exacerbate crises. However, this has not been accepted, because, although it is established that acute exacerbations of asthma symptoms can be caused by allergens and irritants, such

as mites, animal hair, pest excrement, such as cockroach, among others<sup>(1)</sup>, in the In the case of food, it is known that there is a strong association between food allergy and asthma, but this interaction is still under investigation<sup>(24)</sup> and is rarely a trigger for triggering symptoms, even though it is considered a risk factor for mortality<sup>(1)</sup>. A cross-sectional study, conducted in the Netherlands, with children and adolescents with asthma, when analyzing the disease control predictors associated with atopic comorbidities, including food allergy, allergic rhinitis and atopic dermatitis, found no association with uncontrolled asthma<sup>(25)</sup>.

The third suggestion was related to the addition of guidelines on how to keep the child protected from the cold with clothing. Changes in the weather are known to trigger or exacerbate asthma symptoms<sup>(26)</sup>. However, this recommendation was not accepted, because in Brazil, there is an intense climatic diversity, with cities with very high temperatures and others much colder so that, as the booklet was built to be applicable throughout the country, such recommendation could exclude certain climatic realities. Thus, it was decided to approach this theme emphasizing the need for special care, such as avoiding exposure of children to extreme temperatures, considering that other climatic associations and environmental conditions, such as storms, low humidity, high levels of air pollution are the cause of exacerbation or onset of asthma symptoms in children<sup>(1)</sup>.

In addition to content and appearance validation, it was considered necessary to assess the aforementioned domains, as the inclusion of these properties in the assessment process allows to verify the adequacy of health instructions for the target population<sup>(10,23)</sup>. In the self-efficacy domain, the participants reported feeling able to follow the guidelines and care proposed in the booklet; it was suggested that reading the material enables the development of motivation and confidence to successfully undertake actions or behaviors that can improve health<sup>(10)</sup>, promoting the self-efficacy of parents and caregivers for asthma management and control.

A cross-sectional study, conducted in southeastern Spain, analyzed the association between the quality of life of children with asthma and their caregivers, with self-efficacy in managing the disease, finding that high levels of self-efficacy are associated with better quality of life for children and relatives. Moreover, it concluded that parental self-efficacy impacts asthma morbidity indicators<sup>(27)</sup>.

Regarding the booklet’s content, the subjects highlighted by the target population are really considered essential for asthma control, as ratified by national<sup>(18)</sup> and international guidelines<sup>(1)</sup>. Trigger prevention/control is among these issues. An intervention study, carried out in the United States, carried out an educational activity to control triggers in the homes of 41 families of children who had the highest number of hospitalizations related to asthma, showing improvement in children’s sleep pattern, reduction in the use of rescue medication, improvement in the stress levels of children and their caregivers and decrease in hospital visits<sup>(28)</sup>.

Another subject considered essential by the participants was how to recognize the need for the use of medication to relieve or rescue the crisis by children. It should be noted that the booklet includes the main signs of exacerbation of asthma symptoms and the individual action plan as a key instrument to recognize levels of control and acute exacerbations of asthma.

An experimental study, carried out in New York, USA, found that the use of low-level health literacy action plans, designed to guide caregivers of children with persistent asthma, helped health professionals to use clearer principles of communication than those who used the standard plan; in addition, they highlighted key aspects, such as knowing how to recognize the symptoms for the use of rescue medication, making continuous use of controlled medication and adherence to spacer use<sup>(29)</sup>.

Inhalation was also highlighted as essential, corroborating scientific evidence that states that the proper use of inhaled medications requires correct handling of inhalers coupled to spacers. The absence of this handling is the main cause of the lack of success in controlling the disease, being associated with more visits to the emergency service<sup>(30)</sup>. In view of this, the educational booklet presents a step by step of how to use inhalers coupled to spacers and inhalers coupled to spacers and masks. Additionally, it highlights that when there is no spacer, caregivers can request guidance from a health professional to build a handmade spacer, considering that its effectiveness has already been proven<sup>(31)</sup>.

Printed health technologies, such as booklet, can modify daily habits, as long as they present clear information, satisfy the needs of parents and caregivers of children with asthma and show the benefits of following the care addressed<sup>(32)</sup>. Therefore, the validation step is necessary so that the target population, when following the proposed guidelines, can achieve positive results with regard to health promotion<sup>(33)</sup>, especially for children with asthma.

### Study limitations

The study carried out presented limitations regarding data collection, since a minimum time for asthma diagnosis for inclusion in the sample was not established. Furthermore, it took place in only one Brazilian Primary Health Care Unit, which may be restricted to the cultural issue of individuals from other locations in the country. It should also be noted that the educational booklet did not address dry powder inhalers.

### Contributions to nursing

The use of *"You can control your child's asthma - let's learn together?"* can assist health professionals, especially nurses, in carrying out educational interventions to promote self-efficacy in childhood asthma control and management. In addition to serving as support to reinforce the guidance of professionals to parents and caregivers of children with asthma at home, as it is a technology that is easy to understand, it requires few resources for its use and already comes with a place to register an individualized care plan a every child. Furthermore, the study awakens that, given the relevance of asthma at the national and global levels, it is a theme that must be addressed in depth in nursing education as well as signaling the relevance of specific public policies for the public living with this disease.

### CONCLUSION

*"You can control your child's asthma - let's learn together?"* was considered an instrument with valid content and adequate appearance, endorsing its use in promoting the self-efficacy of parents and caregivers in childhood asthma control and management.

Validation with the target population showed a global CVI equal to 0.99, which indicates an excellent level of agreement between the participants. Furthermore, it was a fundamental step to avoid inaccurate results in terms of understanding, persuasion, attractiveness, self-efficacy, and cultural acceptance. The assessment carried out indicated increased motivation and confidence to adopt behaviors that educational technology proposes.

The booklet validated here is potentially scalable to other realities of outpatient care for children with asthma and in teaching, research and extension settings. As it is a brief and easy-to-read instrument, it is suggested to be disseminated for use by health professionals and managers of the Unified Health System (*Sistema Único de Saúde*), at local, regional and national level, aiming at wide use so that, associated with other measures assistance, may have a positive impact on the parameters of childhood asthma control.

### FUNDING

This study was financed by Brazilian National Council for Scientific and Technological Development (CNPq - *Conselho Nacional de Desenvolvimento Científico e Tecnológico*).

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