

Clinical evaluation of asthmatic children and adolescents: relevance of interdisciplinary attention**Avaliação clínica de crianças e adolescentes asmáticos: relevância da atenção interdisciplinar**

Karina Machado Siqueira¹, Geovanna Lísio Pereira², André Luiz Bittencourt³, Camila Silva Colodino⁴,
Isabela Cristine Ferreira Fernandes⁵, Maria Alves Barbosa⁶

¹ Nurse. Ph.D in Nursing. Associate Professor of the Nursing Faculty (FEN) at Universidade Federal de Goiás (UFG). Goiânia, GO, Brazil. E-mail: karinams.fen@gmail.com.

² Nurse. Student of the Residency in Multi-professional Health, Maternal Infant field, at the Clinical Hospital of Universidade Federal de Goiás (UFG). Goiânia, GO, Brazil. E-mail: geovanna_liscio@hotmail.com.

³ Nurse. Nurse at the Sempre Saúde Company. Goiânia, GO, Brazil. E-mail: bitencourtandre@hotmail.com.

⁴ Nurse. Student of the Residency Program of Nursing Oncology from the Fight Against Cancer Association in Goiás. Goiânia, GO, Brazil. E-mail: mila.silva6@hotmail.com.

⁵ Nurse, Master in Nursing. Student of the Nursing Graduate Program, Doctoral level, Nursing Faculty (FEN) at Universidade Federal de Goiás (UFG). Assistant Professor at Universidade Federal de Tocantins. Palmas, TO, Brazil. E-mail: isabela_cristine@hotmail.com.

⁶ Nurse. Ph.D in Nursing. Associate Professor at the Nursing Faculty (FEN) at Universidade Federal de Goiás (UFG). Goiânia, GO, Brazil. E-mail: maria.malves@gmail.com.

ABSTRACT

Descriptive, retrospective study, aimed to evaluate clinical conditions of asthmatic children and adolescents at the beginning of treatment and after six months of accompaniment by a multi-professional team, focused on interdisciplinary attention. A research developed in a reference ambulatory for tertiary attention of infant asthma, in Goiânia, Goiás, Brazil. Data was collected from 101 medical records from January and March 2013. Children and adolescents were predominantly male (70,3%), aged between two and five years (31,7%) and clinically classified as moderated persistent asthma (47,6%). After following them for six months, it was seen that most (64,4%) obtained total or partial control of the disease, reduction of all symptoms identified in the first consultation and presented high adherence to the proposed pharmacological treatment (70,3%). Interdisciplinary attention can result in improved clinical control and contribute to advances in assistance quality to asthmatic children and adolescents.

Descriptors: Asthma; Child; Adolescent; Comprehensive Health Care; Pediatric Nursing.

RESUMO

Estudo descritivo, retrospectivo, que objetivou avaliar as condições clínicas de crianças e adolescentes com asma, ao iniciarem o tratamento e após seis meses de acompanhamento por equipe multiprofissional, com foco na atenção interdisciplinar. Pesquisa desenvolvida em ambulatório de referência terciária para a atenção à asma infantil, em Goiânia, Goiás, Brasil. Foram coletados dados de 101 prontuários entre janeiro e março de 2013. As crianças e adolescentes eram predominantemente do sexo masculino (70,3%), com idade entre dois e cinco anos (31,7%) e classificadas como casos de asma persistente moderada (47,6%). Após o acompanhamento durante seis meses, verificou-se que a maioria (64,4%) obteve controle total ou parcial da doença, redução de todos os sintomas identificados na primeira consulta e apresentaram alta adesão ao tratamento farmacológico proposto (70,3%). A atenção interdisciplinar pode resultar na melhoria do manejo clínico e contribuir para o avanço na qualidade da assistência a crianças e adolescentes asmáticos.

Descritores: Asma; Criança; Adolescente; Assistência Integral à Saúde; Enfermagem Pediátrica.

INTRODUCTION

Chronic diseases, especially asthma, can affect infant health and refers to an adaptation and modification of habits, causing a profound impact in the child, adolescent and their families.

Asthma is considered a chronic respiratory disease more prevalent in children and adolescents and characterized by hyper-responsivity of airways, leading to whizzing, dyspnea, chest tightness and coughing episodes, particularly at night or early morning. These episodes are a consequence of intrapulmonary air flux obstruction, being generalized and variable, spontaneously reversible or with treatment⁽¹⁾.

It is a potentially severe condition, and its prevalence have been increasing worldwide, and it is a global health problem⁽¹⁻²⁾. In the last decades, although the advances in the pathophysiology and treatment, its morbidity and mortality have been growing worldwide⁽³⁾. In 2011, 160.000 hospitalizations were registered by DATASUS, positioning asthma as the fourth cause of hospitalizations⁽⁴⁾. The mean rate of mortality in the country between 1998 and 2007 was 1,52/100.000 inhabitants (variation, 0,85-1,72/100.000 inhabitants), with stability in the temporal tendency of this period⁽¹⁾.

The disease generates significant charges in terms of health, proportionally increasing with its severity, it also generates important losses in social dynamics, especially referring to productivity losses, less participation in the family life and risk of social exclusion^(1-2,5).

Facing the epidemiological and social relevance of asthma, discussions about attention to asthma patients have been expanded. In Brazil, in 1999, discussions were initiated for public policies and the National Plan of Asthma Control (PNCA) was created. From this plan's guidance, diverse programs of control and attention to asthma were created and consolidated in the country⁽⁵⁻⁶⁾.

Because it is a chronic condition that needs complex and prolonged treatment, children and adolescents with asthma need to be adequately followed by a multi-professional team and with involvement of their

caregivers. For asthma control, besides the adequate pharmacologic treatment, the child, adolescent and their families need to have knowledge about the disease, triggering factors, signals and exacerbation symptoms, besides safety in medication use⁽⁷⁻⁸⁾.

Therefore, asthma has an important impact in the life of patients, their families and in the health system. Although there is no cure, the adequate management based in the partnership between the professional-patient-family can result in the disease control^(1,3). Although questions related to the disease pathophysiology, triggering factors and pharmacological treatment are well established and discussed between specialists, aspects related to multi-professional attention and results of the interdisciplinary work aimed to the care of asthmatic children and adolescents, still need to be better understood.

In this context, the importance of health professionals in the interdisciplinary attention for those children and adolescents is noted. Interdisciplinarity is understood here as integrated action and inter-related to different health professionals, who look for establishing totality in a complex, multiple and heterogeneous knowledge field⁽⁹⁾. This integrated action, based on the knowledge of different disciplines can collaborate to deal with the disease and become fundamental so that patient and caregiver reach an adequate and effective level of conscience and behavior change regarding the problem.

With these considerations, this study aimed to evaluate clinical conditions of children and adolescents with asthma before and after six months being followed by multi-professionals, based on interdisciplinary attention, and promoted in a reference tertiary ambulatory, specialized in infant asthma.

This study is justified by the possibility to aggregate new knowledge, and by broadening the discussion regarding interdisciplinary attention in the care for asthmatic children and adolescents. The continuous dialogue between different knowledge fields, in a shared and interactive way, can facilitate professional

engagements and the promotion of a humanized assistance, contributing to the evaluation of existing actions and the establishment of new multi-professional attention strategies qualified in the infant asthma context.

METHODS

Retrospective, descriptive and quantitative study, document based, conducted by analysis of available information in medical records of children and adolescents attended in a reference ambulatory for infant asthma. The ambulatory was located in a large hospital, in the city of Goiânia –Goiás, Brazil. The service integrates the tertiary care network called Catavento – Asthma Control Program in Goiânia and also offers attention to other municipalities in Goiás state. The option to elect this place was attributed to its knowledge and reference to offer interdisciplinary attention to asthmatic children and adolescents.

The interdisciplinary attention of the referred ambulatory happens through integrated actions between professionals of different fields. Professionals, residents and academics from nursing, speech therapy, medicine, nutrition and social services are involved in the team. Individual consultations to attend the integral health of children, adolescents and caregivers, as well as, health education group activities are performed. Regardless of its specificities, all professionals are attentive to diverse physical, emotional, social and environmental aspects that can directly or indirectly influence the management and living with asthma. Actions are integrated and discussed between diverse multi-professional team members that also try to avoid care fragmentation, giving value and respecting contributions of each profession. Interdisciplinarity is present in this integration and in the intensity of exchanges and communications between professionals.

The records of children and adolescents with asthma were included considering those aged between zero and 18, who initiated accompaniment with the multi-

professional team between the months of January of 2010 and July of 2012, and kept being attended at the same service during the six months following the first consultation. Thus, 141 records referred to the proposed period were requested, and 119 were located by the institution' archive service. After analysis, 18 records were excluded, due to inexistence of the return record after six months of follow-up. Thus, we included 101 records in this study.

Data collection was performed during the period of January and March of 2013, by three trained research assistants. All ethical aspects were observed following the Brazilian legislation⁽¹⁰⁾. The study was submitted to the Ethics in Human Medical and Animal Research Committee from the Clinical Hospital from Universidade Federal de Goiás - CEP/HC/UFG and approved under the protocol number 119/2010.

Data were collected in an instrument contemplating demographical and clinical aspects, including asthma classification, symptoms, pharmacological treatment and level of disease control. All these information were in consultation records standardized by the service and filled by the multi-professional team responsible for the consult. The records selected for data collection referred to the first consult and return after accompaniment of six months.

Records of consults used by professionals during ambulatory attendance and filed in the medical records, contained information about integral health of the child or adolescent, as well as, specific data about diagnosis and asthma management, with recommendations of national and international guidelines⁽¹⁻³⁾.

Data analysis was conducted by two researchers, independently. Data entry and editing were done with assistance of a software and descriptively analyzed.

RESULTS

The analysis of records performed by the multi-professional team during the first consultation with children and adolescents, allowed identification of

demographic characteristics and asthma classification, at the beginning of the specialized ambulatory accompaniment.

(31,7%), from interior cities of Goiás state (55,5%) and classified as moderate persistent asthma cases (47,6%), as demonstrated in Table 1.

The study population was predominantly composed by males (70,3%), aged between two and five years

- Table 1:** Demographic and clinical characteristics of children and adolescents with asthma at the beginning of specialized ambulatory accompaniment between the months of January of 2010 and July of 2012.
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Demographic and clinical characteristics	N = 101	%
Gender		
Male	71	70,3
Female	30	29,7
Age		
< Two years	10	9,9
Two to five years	32	31,7
Five to nine years	30	29,7
10 - 15 years	29	28,7
Origin		
Capital	37	36,6
Interior cities	56	55,5
Not informed	08	7,9
Asthma classification		
Wheezing	09	8,9
Intermittent	06	5,9
Mild persistent	09	8,9
Moderate persistent	48	47,6
Severe persistent	10	9,9
Not informed	19	18,8

It is important to note that although the ambulatory in the study attends adolescents until 18 years of age, the frequency of patients over 15 years was null during the study period.

According to registries from the first appointment, it was found 78 (77,2%) in needed urgent/emergency services due to asthma exacerbation, and from those, 74 (73,3%) were hospitalized due to asthmatic crisis. However, only 33 (32,7%) children and adolescents

received some treatment for asthma before being conducted to the reference service.

In relation to the observed symptoms, most frequent were: cough, dyspnea, wheezing, tight chest, postnasal drip, sneezes, nasal and eye itching and watery rhinorrhea. Table 2 presents the frequency of symptoms identified in the first appointment and in the return after six months.

Table 2. Symptoms presented by children and adolescents with asthma during the first appointment and after six months of multi-professional accompaniment in specialized service. Goiânia, GO, Brazil, 2013.

Symptoms	First appointment		Return (after six months)	
	N=101	%	N=101	%
Cough	71	70,3	48	47,5
Dyspnea	75	74,2	38	37,6
Wheezing	53	52,5	17	16,8
Tight chest	04	3,96	01	0,9
Postnasal drip	12	11,9	0,0	0,0
Sneezes	66	65,3	17	16,8
Nasal itching	64	63,3	18	17,8
Watery rhinorrhea	59	58,4	15	14,8
Eye itching	41	40,5	04	3,9

After six months of multi-professional accompaniment, we verified 57 (56,4%) children and adolescents presenting at least one asthmatic crisis, 30 (29,7%) did not presented and 14 (13,9%) did not know, as they did not identified the asthmatic crisis symptoms. Within those who had asthmatic crisis or disease exacerbations, we identified that most (59,6%) could relate the crisis to some past event.

One aspect evaluated in the return, was the level of actual asthma control. Within the studied cases, most of them presented some disease control after the accompaniment period, being 22 (21,8%) cases with totally controlled asthma, 43 (42,6%) with partially controlled asthma, six (5,9%) with non-controlled asthma. However, in 29 (28,7%) cases, there was no registry of this evaluation.

Regarding adherence to pharmacological treatment, we identified that after six months, 71 (70,3%) children and adolescents were using some specific medication for asthma treatment, following professional recommended orientations.

Among those who adhered to treatment with specific medication, inhalation was most used and 51 (71,8%) were using a specific pressurized inhaler, also known as metered aerosol or spray. Besides this one, it was also registered the used of dry powder inhaler in 14 (19,7%) cases in which medication was presented in capsules for inhalation. Only six (8,5%) children and adolescents used medication in another kind of presentation.

Among children and adolescents who also reported medication presented as pressurized inhaler, 97 (96%) indicated using spacers attached to the device.

DISCUSSION

Asthma is considered a global health problem. The impact on patients and families' lives, as well as in healthcare systems is evident. Studies regarding this theme demonstrate the importance of an integral care for asthmatic children and adolescents^(1,3,6). However, to adopt an interdisciplinary approach to attend the patient

to obtain better results regarding the disease management and clinical response consists in an important challenge for health professionals from this area.

Attention services to this population need to be prepared to receive their demands and the way of caring can significantly reflect on the expected clinical response.

Chronic diseases, in special asthma have complex treatments requiring active participation of patients and caregivers. Chronicity reflects adaptation and changes in life habits, causing a profound impact in the patient, his family and in society^(7,11). Lack of control lead to recurrent use of emergency services and frequent need of hospitalizations causing a large burden for the children, as absence in school days, and for parents, as absence at work^(3,7-8).

The higher asthma incidence in male children and adolescents is expected, for considering a smaller size in airways in this group at birth⁽¹²⁾. At adult age, the numbers are inverse and the incidence is higher among women⁽¹²⁻¹³⁾.

In most cases, asthma symptoms are presented earlier and the search for specialized service happens during the first clinical presentations of the disease. This reinforce the higher recurrent use of specialized and urgent services among children and adolescents^(3,14).

It is noteworthy that symptoms' identification and early correlation with asthma can cause more effective interventions, avoiding complications related to the disease. Thus, professionals involved in all levels of healthcare complexity, should be attentive to symptoms characterizing asthma, offering adequate or referring children to specialized services.

Among the 101 children and adolescents, majority (55,5%) comes from interior cities of Goiás state. This fact highlights the importance of the specialized ambulatory service, as it is a regional reference. However, becomes indispensable the creation and broadening of programs aiming to treat asthma and capability of professionals acting at interior cities, avoiding the transportation of

those patients and the overload in services in capital cities.

Asthma classification is an important conduct to manage the disease. It considers the frequency of asthmatic crises, symptomatology, actual treatment, the history and clinical exams⁽¹⁵⁻¹⁶⁾. These factors contribute to a better precision in classification, allowing resolute interventions through more efficient therapeutic schemes, besides being useful as comparative parameter to assess the proposed treatment plan^(1,12).

Performing the treatment is another important parameter for the disease assessment. It is noted that few children and adolescents are treated with some specific medication or of continuous use before being directed to reference services^(5,8). This demonstrates that asthmatics are commonly treated only during exacerbation of symptoms. The contact with a health professional ends up happening, generally at urgency/emergency care only, when the asthmatic crisis is critical and hospitalization can be needed to alleviate symptoms.

In this context, it is important to note health professionals' role at primary care⁽¹⁷⁾, who need to be able to identify, guide and follow patients and their caregivers. These multi-professional actions go from recognizing cases until conscience about asthma impact as chronic disease during childhood and adolescence.

Health education becomes indispensable so that asthmatic and their caregivers understand the need to relate and identify crisis' triggering factors, correct use of medication and symptoms signals. The recognition of an asthmatic crisis symptomatology, is characterized by intense expiratory dyspnea and wheezing, and it is fundamental for interventions to be resolute^(1,16).

The main symptoms presented by asthmatic children and adolescents during attendance in specialized services were cough, dyspnea and wheezing^(1,13,18). It should be highlighted that for asthma management, identification of symptoms and triggering factors are essential, as well as, adherence and the correct use of medications^(1,3,18).

Although 56,4% of children and adolescents presented some asthmatic crisis after six months of treatment, in the actual evaluation for asthma control, the majority (64,4%) presented totally or partially controlled asthma. In the study's service, the evaluation of actual control is done using information relative to the last four weeks with the *Asthma Control Test* – ACT⁽¹⁶⁾.

Another relevant factor was that majority of children and adolescents who presented crises (59,6%), the own patient or family member was able to report the triggering factors. The development of this ability to identify factors that exacerbate symptoms is essential for the disease management⁽²⁻³⁾. The disease exacerbation can be related to financial difficulties in acquiring medications, to better adapt the home environment, or even by the frequent contact with a smoker family member⁽¹⁹⁻²⁰⁾.

Beyond the actual asthma control, adherence to specific medication therapy for the disease was something noticed in our study, as most children and adolescents (70,3%) were using some medication after the six months of follow-up and inhalation was the most used way.

The asthma medication treatment is performed through control and alleviation medications. Control medications are those with anti-inflammatory action, inhaling corticosteroids and, as alleviation medication, the bronchodilators. The choice of individual or associated use is related to disease severity^(3,7-8).

Inhaling medications are the most efficient, as they are directly sent to the airways, reducing losses, increasing the drug local concentration and decreasing systemic side effects. However, the incorrect use of these devices can contribute for lack of therapeutic success⁽²¹⁻²²⁾.

Among the causes for incorrect use, the spray used directly in the mouth is observed. This type of medication should be used with spacers, so that a higher medication efficacy is achieved⁽²³⁾. During crises or exacerbations, the bronchodilator attached to spacers provides a quick

reversion of the induced bronchial spasm in the asthmatic crisis than that achieved by the dry powder inhaler⁽²²⁻²³⁾.

In this context, the multi-professional team can act in collaboration with patients and families in a sense to establish effectiveness of pharmacological and non-pharmacological treatments for this disease^(3,7,18,22).

Where this study was conducted, professional action can propose and surpass a model that privileges individual work of a professional category, promoting planning, discussion and execution of shared actions. Thus, interdisciplinary action constitutes a permanent action that seems to be impacting for asthmatic children and adolescents and their families.

Interdisciplinarity is a collaboration that needs to be advertised to improve integration and communication among professionals, guaranteeing that benefits from this bond surpass theory and, in fact, benefits the population⁽²⁴⁻²⁵⁾.

Interdisciplinary action implicates in reflection-action-reflection⁽⁹⁾. This constant constructing, deconstructing and reconstructing can collaborate for professional actions towards children and adolescents with chronic diseases, including those who live with asthma.

The broad vision of different categories of professionals can contribute to evaluation and management of asthma in children and adolescents, especially in guidance related to treatment adherence, correct use of medications, environment control of allergens and irritants, identification and establishment of conducts related to action plans during asthma crises or exacerbation.

CONCLUSION

There is a growing advertisement of studies for clinical and environmental evaluation of asthmatic children and adolescents. This tendency occurs due to the impact of chronic diseases in patients and families routines and, especially those who need more attention from health professionals. In addition, epidemiological

and social aspects reinforce this propensity. However, interdisciplinary attention for disease management has been little explored.

The ambulatory selected for this study is a reference in attention to asthmatic children and adolescents and adopt multi-disciplinary attention as work methodology. It is an interesting model, as the conduction of actions is performed intentionally to promote professional unity for same objectives, the adequate asthma management and health promotion of children and adolescents.

In this study, we observed that after the multi-professional and interdisciplinary accompaniment, children and adolescents presented clinical improvement. With attention to symptoms reduction, better control level of the actual disease and adherence to the continuous use of specific medications for asthma treatment. Therefore, qualified assistance seemed to favor the disease management, inferring that multi-professional team intervention had a positive impact.

The establishment of new qualified assistance strategies to asthmatic children and adolescents should happen in all levels of health attention, especially in primary care. Actions for the adequate disease management in this level of attention can effectively collaborate with the reduction of losses in infant health, decrease in the overload of secondary and tertiary attention services, as well as, reduction of costs related to emergency attention and asthma related hospitalizations.

Given the complexity of factors involved in asthma treatment for children and adolescents, the creation of a multi-professional team that acts integrally, can be fundamental to assure adequate attention to this population. Development of interdisciplinary actions can contribute to overcome fragmented care, to favor the health professional commitment and promote specialized quality of service, allowing a broad scope that contemplates not only clinical needs, but also social and educational aspects of patients.

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