








# Student experience in the development of a care plan for children with asthma and pneumonia

*Vivência discente na elaboração de um plano de cuidados para criança com asma e pneumonia*

*Experiencia del alumno en la elaboración de un plan de cuidados para niños con asma y neumonía*

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## Abstract

**Objective:** To report the experience of nursing students in developing a care plan for children with asthma and pneumonia based on Orem's Theory of Self-Care, taking into account the description of the socioeconomic and health conditions of these children. **Method:** Experience report study conducted in a municipal pediatric reference hospital, from September to October 2019. The pedagogical practice allowed for extended discussions based on the scientific literature and the Theory of Self-Care. **Results:** Seven nursing diagnoses were identified, as well as a description of the children's socioeconomic and health conditions, proposed interventions, and expected outcomes, characterizing a care plan involved in the practice of the Nursing Process. **Final considerations:** The lived experience provided to the students, deepening in the dynamics of the Nursing Process and the pathologies, development of critical sense, theoretical-practical articulation, and recognition of the nurse's role in the process of care.

**Descriptors:** Child health; Pediatric nursing; Asthma; Pneumonia; Self-care

## Resumo

**Objetivo:** Relatar a vivência de discentes de enfermagem, na elaboração de um plano de cuidados para criança com asma e pneumonia baseado na Teoria do Autocuidado de Orem, levando em consideração a descrição das condições socioeconômicas e de saúde dessas crianças. **Método:** Estudo do tipo relato de experiência realizado em um hospital municipal de referência pediátrica, no período de setembro a outubro de 2019. A prática pedagógica permitiu discussões ampliadas, com base na literatura científica e na Teoria do Autocuidado. **Resultados:** Foram identificados sete diagnósticos de enfermagem, descrição das condições socioeconômicas e de saúde das crianças, propostas de intervenções, além de resultados esperados, caracterizando um plano de cuidados envolto na prática do Processo de Enfermagem. **Considerações finais:** A experiência vivenciada proporcionou aos discentes, aprofundamento na dinâmica do Processo de Enfermagem e das patologias, desenvolvimento do senso crítico, articulação teórico-prática, e reconhecimento da atuação do enfermeiro no processo do cuidado.

**Descritores:** Saúde da criança; Enfermagem pediátrica; Asma; Pneumonia; Autocuidado

## Resumen

**Objetivo:** Reportar la experiencia de estudiantes de enfermería en la elaboración de plan de cuidados para niños con asma y neumonía basado en la Teoría del Autocuidado de Orem, considerando la descripción de su condiciones socioeconómicas y salud. **Método:** Estudio de informe de experiencia realizado en hospital pediátrico municipal de referencia, de septiembre a octubre de 2019. La práctica pedagógica permitió ampliar debates basados en literatura científica y en la Teoría del Autocuidado. **Resultados:** Se identificaron siete diagnósticos de enfermedad, descripción de las condiciones socioeconómicas y de salud de los niños, propuestas de intervención, además de los resultados esperados, caracterizando un plan de cuidados en la práctica del Proceso de Enfermedad. **Consideraciones finales:** La experiencia vivida proporcionó a los estudiantes una profundización en la dinámica del Proceso de Enfermería y las patologías, desarrollo del sentido crítico, articulación teórico-práctica y reconocimiento del papel de la enfermera en el proceso de atención.

**Descriptoros:** Salud infantil; Enfermería pediátrica; Asma; Neumonía; Autocuidado

## How to cite this article:

Costa MSB, Silva MMLC, Lima MRS, Berenguer MLR, Melo MG, Costa MM, Costa VC. Student experience in the development of a care plan for children with asthma and pneumonia. Rev. Enferm. Digit. Cuid. Promoção Saúde. 2022;7:01-09. DOI:<https://doi.org/10.5935/2446-5682.20220032>

Submission date: 04/19/2020. Approval date: 05/16/2022.

## INTRODUCTION

According to the World Health Organization, 235 million people worldwide suffer from asthma<sup>(1)</sup>, and its prevalence is increasing in various countries, especially among children, constituting the most common chronic disease of childhood. Brazil, a middle-income country of continental size, is one of the countries with the highest prevalence of asthma among children, with high rates of severe asthma<sup>(2)</sup>.

Asthma can be defined as a chronic disease characterized by recurrent episodes of shortness of breath and wheezing. Factors that can trigger or worsen symptoms include viral infections, exposure to home or occupational allergens, cigarette smoke, exercise, and stress, as well as lack of adherence to treatment and incorrect inhaler technique<sup>(1)</sup>.

Symptoms may occur continuously or intermittently and tend to worsen at night and in the morning. They cause limitation of daily activities, loss of workdays for parents, loss of school days for the child, and exacerbations that may require emergency care, including hospitalization and risk of death<sup>(1)</sup>.

Asthma can be treated effectively, and most patients are able to achieve control of their disease, thus avoiding the respiratory symptoms that limit their activities and living a productive life. In addition, proper treatment helps preserve lung function and reduces the risk of severe exacerbations<sup>(1)</sup>.

The use of the practice of self-monitoring, self-management or self-monitoring is a reality in the management of many chronic diseases, such as asthma. The goal of a self-management guide, with a defined asthma control action plan, is to help the patient and/or their caregiver take early action to prevent or reduce the severity of an asthma attack. A written asthma action plan consists of a set of instructions that help the patient or caregiver recognize worsening asthma and tells them what to do in response to changes that occur<sup>(3)</sup>.

Lung diseases are the medical specialty that pneumology studies. Among them we can highlight those that are risk factors for pneumonia such as chronic obstructive pulmonary disease (COPD), which is one of the main causes of morbidity and mortality in the world, asthma which is a public health problem, presenting inflammation and reversible obstruction of the airways, among others<sup>(4)</sup>. Pneumonia is an infection that settles in the lungs, double organs located one on each side of the rib cage.

It can affect the region of the lung alveoli where the terminal branches of the bronchi and sometimes the alveolar interstices flow<sup>(5)</sup>.

People at risk for pneumonia need to be advised by health care professionals on ways of prevention, including appropriate treatment of chronic diseases such as asthma, vaccination, and environmental measures (for example, reducing indoor air pollution is recommended)<sup>(6)</sup>.

As the nurse is one of these health professionals, fundamental in both the care and prevention of complications of people with asthma, the Nursing Process (NP) is an essential scientific tool for the nurse's care practice, considering that it is an important planning and organization tool that enables, optimizes, and guides the decisions and actions of nursing care<sup>(7)</sup>.

Thus, it can be seen that the use of theoretical and technical foundations from training to professional practice allows for the development of clinical skills and competencies, in addition to critical thinking, giving assistance a greater scientific rigor. The judgment about human needs and the elaboration of a care plan based on specific problems, taking into account the individuality of each one, provide interventions of greater quality and effectiveness<sup>(7)</sup>.

The guidance of health professionals with a view to the practice of effective self-care, helps in the structural and functional integrity of the human being, even contributing to its development. Being an indispensable component for a quality life, representing the ability of people to take care of themselves<sup>(8)</sup>.

In her Theory of Self-Care, there being a self-care deficit, Dorothea Orem divides the way people are helped by nursing according to their needs. The individual who is unable to perform self-care, being dependent on other individuals to assist him/her in these actions, is classified as fully compensatory. Individuals who are able to perform self-care but need guidance and assistance from nursing in the performance, support, and education are classified as partially compensatory. In children, depending on their age and degree of complexity of learning, the classification is focused on the inability of parents and/or guardians<sup>(8,9)</sup>.

From this perspective, this study aimed to report the experience of nursing students in developing a care plan for children with asthma and pneumonia based on Orem's Theory of Self-Care, taking into account the description of the socioeconomic and health conditions of these children.

## METHODS

This is an experience report on the experience of nursing students in developing a care plan for children with asthma and pneumonia based on Orem's Theory of Self-Care, taking into account the description of the socioeconomic and health conditions of these children.

The present study was conducted during the pediatrics hospital practice of nursing students of the 5th module of the Nossa Senhora das Graças Nursing School of the University of Pernambuco, in the months of September and October 2019, in a municipal pediatric referral hospital. The hospital provides emergency care and hospitalization for children and adolescents under 14 years of age by spontaneous demand and via bed regulation. It has 48 inpatient beds distributed in eight wards with six beds each.

Through the teaching of a pedagogical practice that encourages students to deepen theoretical concepts and relate them to the signs and symptoms of various diseases that affect children who are hospitalized, as well as associate the disease with the biopsychosocial, cultural, and financial context in which the child is inserted, it was possible to have an expanded discussion about asthma associated with pneumonia, based on scientific literature and Orem's Theory of Self-Care.

To support the elaboration of the care plan, extended discussions of clinical cases of children diagnosed with asthma who were hospitalized due to respiratory infection, pneumonia, as well as research in the "Biblioteca Virtual de Saúde" (BVS) and search for articles in the "Bases de Dados da Enfermagem" (BDENF) and in the Scientific Electronic Library Online (SCIELO) were performed using the descriptors Child Health, Pediatric Nursing, Asthma, Pneumonia and Self-Care, using the Boolean operator AND.

The data obtained were analyzed qualitatively generating information that enabled the description of the socioeconomic and health conditions of the children, the identification of nursing diagnoses and the proposal of interventions using NANDA I Nursing Diagnoses<sup>(10)</sup>, Nursing Interventions Classification (NIC)<sup>(11)</sup> and Nursing Outcomes Classification (NOC)<sup>(12)</sup>.

Since this is an experience report of the authors, the study does not require review and approval by the Research Ethics Committee, even so, all ethical precepts were respected in accordance with Resolution n. 510/2016<sup>(13)</sup> of the National

Health Council of the Ministry of Health on research involving human beings.

## RESULTS

### Socioeconomic and health conditions

Most children with asthma hospitalized for pneumonia come from low-income families, who receive assistance from government social programs such as the "Bolsa-Família" and have a family history of asthma. They come from Recife and the metropolitan region, and live in houses with running water, electricity, and garbage collection, located in streets with basic sanitation.

The diagnosis of asthma often leads them to the emergency room due to respiratory difficulty, and few are followed up as outpatients for asthma control. Asthma is usually treated with a bronchodilator, salbutamol, an inhaled corticosteroid, beclomethasone, and an antiallergic, dexchlorpheniramine maleate, on a daily basis.

The main complaints of children with asthma and pneumonia are dyspnea, fever, productive cough, and oxygen saturation around 93% on room air. Chest X-ray is the imaging test of choice for confirming the diagnosis of pneumonia. And the CBC test shows changes in WBCs. Once the diagnosis of pneumonia is made in children with asthma, the prescribed treatment includes antibiotics, intravenous corticosteroids, and bronchodilators through nebulization or using a spacer at intervals that vary according to the severity of the child. Venturi mask oxygen therapy is also commonly used when oxygen saturation is below 93% as measured by pulse oximetry, and it can be offered in fractions of 25%, 31%, 35%, 40%, and 50% oxygen, according to the child's clinical evaluation.

The general condition, level of consciousness and orientation, activity, as well as communication through dialogue are important parameters that assess cerebral oxygenation. Inspection of the skin for early identification of pallor and cyanosis, evaluation of the respiratory pattern in its frequency, symmetry, and expansibility, and investigation of the presence of intercostal and subcostal drains and retraction of the sternal furcula are indicators of the severity of the respiratory disorder. Pulmonary auscultation evaluates the normality of vesicular murmurs and if there is the presence of adventitious noises such as wheezing, rales, for example.

Sleep and rest are usually impaired because of dyspnea. Hyaline or yellowish nasal secretions and a productive cough are present. Tachycardia is usually present, secondary to bronchodilator use.

Oral diet is well tolerated by most children, but those unable to feed orally are given a nasogastric tube diet. In the abdominal evaluation, the abdomen is usually flaccid, painful on superficial and deep palpation, and hydroaereal sounds are present. Bladder and bowel eliminations described unchanged. A peripheral venous access makes injectable medications possible.

Hospital discharge depends on clinical improvement, and antibiotic treatment can be completed orally at home and asthma control medications maintained.

### Nursing care plan

A nursing care plan was drawn up, based on Orem’s Theory of Self-Care, from the Systematization of Nursing Care (SNC)<sup>(14)</sup>, correlating the health conditions of the children and the socioeconomic and environmental factors they experienced.

Thus, seven nursing diagnoses were identified according to NANDA I<sup>(10)</sup>. Thus, it is possible to propose interventions focused on the child’s needs, relating them to the need and intensity of nursing practice, using the Nursing Interventions Classification<sup>(11)</sup> and Classification of Nursing Outcomes<sup>(12)</sup>, as follows:

**Table 1.** Nursing care plan for child with asthma hospitalized for pneumonia, Recife, 2019.

NURSING DIAGNOSTICS	EXPECTED RESULTS	NURSING INTERVENTIONS
Ineffective breathing pattern characterized by dyspnea and evidenced by respiratory muscle fatigue.	Preserve satisfactory breathing pattern and asthma control.	<ul style="list-style-type: none"> <li>- Evaluate by inspection, presence of intercostal draught, subcostal draught, retraction of the sternal furcula, nose wing beat, every 2 hours.</li> <li>- Perform pulmonary auscultation to evaluate vesicular murmurs and identify adventitious sounds every 2 hours.</li> <li>- Check oxygen saturation with the use of a pulse oximeter every 2 hours.</li> <li>- Immediately communicate changes in the breathing pattern.</li> <li>- Monitor the child’s general condition and vital signs every 6 hours.</li> </ul>
Ineffective airway clearance related to excessive amount of secretion evidenced by nasal obstruction.	Maintain patent airways.	<ul style="list-style-type: none"> <li>- Perform and/or guide nasal lavage with saline solution:                             <ol style="list-style-type: none"> <li>1. fill the syringe with about 5 to 10 ml of saline solution;</li> <li>2. Position the child in Fowler’s position, with the body leaning forward and the head slightly tilted to the side of the nostril to be washed. Instruct the child to breathe through the mouth;</li> <li>3. Position the syringe at the entrance of one nostril and press until the serum flows out the other nostril;</li> <li>4. Repeat step 3 in the other nostril;</li> <li>5. Repeat nasal lavage 3 to 4 times in each nostril, depending on the need;</li> <li>6. To finish the nasal wash, you should blow your nose after the procedure, to remove as much secretion as possible.</li> </ol> </li> </ul>

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<p>Impaired gas exchange related to asthma and the presence of secretions in the lung parenchyma, evidenced by abnormal breathing pattern and dyspnea.</p>	<p>Control asthma and effectively treat respiratory infection with reduction of secretions.</p>	<ul style="list-style-type: none"> <li>- Guide the correct use of inhalation devices for asthma control medications:</li> <li>With Spacer:                         <ol style="list-style-type: none"> <li>1. Remove the mouthpiece cap by squeezing the sides and check that the inside and outside of the mouthpiece are clean;</li> <li>2. Shake the inhaler well, in an upright position for 10 seconds;</li> <li>3. Attach the mouthpiece to the spacer and place the mask of the spacer on the child's face covering mouth and nose;</li> <li>4. Hold the inhaler in a vertical position between the index fingers and thumb, with the thumb positioned at the base, below the mouthpiece. And trigger the jet. Count 10 seconds;</li> <li>5. Remove the spacer from the child's face and repeat steps 2 to 4, according to the number of jets prescribed by the physician.</li> </ol> </li> <li>NOTE: check the amount of medication in the inhaler every shift.</li> <li>With Nebulizer:                         <ol style="list-style-type: none"> <li>1. Place 3 ml of saline solution at 0.9% in the nebulizer reservoir and add the quantity of drops of the prescribed medication. Close the reservoir and attach the mask;</li> <li>2. Position the child, preferably in Fowler's position;</li> <li>4. Place the mask on the child's face covering nose and mouth;</li> <li>5. Connect the extender to the flow meter and set the oxygen to 6 liters, check if the mist comes out of the inhaler;</li> <li>6. Instruct the child to breathe calmly until the content of the reservoir is finished.</li> </ol> </li> <li>NOTE: administer inhalation medication at the intervals prescribed by the physician.</li> <li>- Administer intravenous antibiotic therapy at the intervals prescribed by the doctor.</li> <li>- Administer endovenous corticoid at the time intervals prescribed by the physician.</li> <li>NOTE: At each administration of intravenous medication, test the patency of the peripheral venous access and watch for signs of inflammation.</li> <li>- Perform venous access exchange according to the service routine.</li> <li>- Check the administered medications and make nursing notes in the child's chart.</li> <li>- Administer continuous oxygen therapy, by Venturi mask according to medical prescription.</li> <li>- Advise relative bed rest to avoid increased oxygen consumption.</li> </ul>
<p>Acute pain related to expressive behavior and activity changes.</p>	<p>Improvement of chest pain.</p>	<ul style="list-style-type: none"> <li>- Assess pain intensity or discomfort when performing breathing movements using pain scales, for example, the Visual Analog Scale (VAS).</li> <li>- Administer analgesics for pain relief at time intervals prescribed by the physician.</li> <li>- Encourage pain distraction strategies together with the child's mother and/or caregiver, for example, watching favorite TV programs and videos, storytelling, reading, drawing, playing with a favorite toy, among others.</li> </ul>
<p>Activity intolerance</p>	<p>Perform activities appropriate to the child's age without causing respiratory discomfort.</p>	<ul style="list-style-type: none"> <li>- Guide the therapeutic plan prescribed by the physician and nursing staff for asthma control and pneumonia treatment.</li> <li>- Guide the performance of activities compatible with the child's clinical condition and age group.</li> <li>- Guide the identification of signs that worsen respiratory discomfort during the child's physical activities.</li> </ul>

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related to imbalance between oxygen supply and demand and evidenced by dyspnea and discomfort on exertion.	Provide a home environment free of allergenic substances, favoring asthma control and a reduction in the frequency of exacerbation attacks.	<ul style="list-style-type: none"> <li>- Educate the child, parents and/or guardians about factors that trigger asthma exacerbation, for example: excessive mold and dust, dust mites that gather on clothes and sheets, humid places, excessive smoke, animal hair, irritating substances such as paint, etc.</li> <li>- You should be advised to clean the rooms of your house daily to control dust and mold so that inhalation does not progressively occur.</li> </ul>
Risk of asthma exacerbation related to repeated exposure to environmental substances that produce allergens and increase hypersensitivity.	Perform self-care for asthma control, compatible with the child's age group.	<ul style="list-style-type: none"> <li>- Enable greater independence in asthma control by monitoring the treatment with an inhalation device (pump).</li> <li>- Give orientation regarding the correct use of inhaler devices, the administration of medications and cleaning of the spacer (wash the inside only with water and let it dry, without passing towels or cloths, so that no residues are left on the inside)</li> <li>- Instruct about the importance of the habit of brushing your teeth or rinsing your mouth, without swallowing, after inhaling the medication, in order to prevent traces of the medication from accumulating on the mucosa.</li> <li>- Instruct them to avoid places and materials that can trigger asthma exacerbation, as well as to practice good hygiene and cleanliness of their belongings.</li> <li>- Emphasize the importance of updating the vaccination calendar, since she has a chronic disease, in order to avoid possible attacks. Vaccinations such as influenza, pneumococcal conjugate vaccines.</li> </ul>

Source: prepared by the authors.

## DISCUSSION

Nursing care guided by the Nursing Process, with a practice based on scientific evidence, provides quality and effectiveness to the assistance, by organizing an approach that identifies the child's needs, together with those of the family, and implements the necessary care to the identified situation<sup>(15)</sup>.

In this study, through the use of the first stage of the nursing process (data collection), relevant information was obtained that led to the description of the socioeconomic and health conditions of children affected by asthma and pneumonia, and also to the identification of nursing diagnoses congruent with the condition.

Nursing diagnoses provide the basis for selecting appropriate nursing interventions and care for each situation in order to achieve outcomes for which the nurse is responsible<sup>(10)</sup>. Through the identification of the seven nursing diagnoses, it was possible to design a care plan focused on children with asthma hospitalized for pneumonia with the interventions and expected outcomes to be evaluated.

Acute respiratory infections (ARI) in childhood are of concern worldwide. These can express themselves in an Ineffective Breathing Pattern

characterized by dyspnea and evidenced by respiratory muscle fatigue, most children have four to six ARIs per year, mainly in urban areas<sup>(16)</sup>.

Pneumonia is an inflammatory disease that affects the lung parenchyma and can be acute or chronic. It is an infection that settles in the lungs and can be classified as: bronchopneumonia when it affects the alveoli and bronchi or lobar pneumonia when it is caused within the intra-alveolar space. The group of pathogens that stand out as the main cause are bacteria, but in other cases we can also find fungi, protozoa, and viruses.<sup>(17)</sup>

In 2010, the 10-valent pneumococcal vaccine (PCV10) was implemented in the Brazilian vaccination calendar. Thus, with the incorporation of this vaccination in the Brazilian National Immunization Program (PNI), a reduction in pneumococcal diseases, such as meningitis and community-acquired pneumonias (CAP), as well as in colonization of the oropharynx and nasal mucosa by *Streptococcus pneumoniae*<sup>(16)</sup>, which can cause ineffective airway clearance related to excessive amount of secretion evidenced by nasal obstruction. Considering the protective effect of immunization, it is important that health professionals guide self-care for mothers and/or guardians and update the vaccination schedule of the child.

The cases of pneumonia in childhood that are of interest from the point of view of mortality are, in general, community-acquired pneumonia. As the name implies, these are diseases that affect previously healthy children who have been developing normal activities for their age, until they are affected by the acute presentation, of greater or lesser severity, of CAP<sup>(5)</sup>.

Studies show that, regarding the health demands of children with respiratory diseases, risk factors such as pollutants, passive smoking, socioeconomic factor and schooling have been found<sup>(18)</sup>.

It is recommended as preventive strategies to respiratory infections, among others, to encourage vaccination, not expose the child to environments with cigarette smoke or dust. Furthermore, vaccines stimulate the child's immune system, increasing their defenses and protecting them from respiratory diseases, including those resulting from hypersensitivity situations such as asthma, for example<sup>(5)</sup>.

The main pathophysiological characteristic of asthma is bronchial inflammation, resulting from a complex spectrum of interactions between inflammatory cells, mediators, and structural cells of the airways. The inflammatory reaction eventually obstructs and interferes with bronchial permeability, resulting in impaired gas exchange related to asthma and the presence of secretions in the lung parenchyma, evidenced by abnormal breathing pattern and dyspnea. Inflammation is present in all asthmatic patients, including those with recent onset asthma, in mild forms of the disease, and even among the asymptomatic. Chronic inflammation is associated with hyperresponsiveness of the airways that leads to recurrent episodes of wheezing, dyspnea, chest oppression, and cough, particularly at night or early in the morning<sup>(3)</sup>.

The inflammatory reaction that occurs in asthma results in a deficit in gas exchange in the lung parenchyma<sup>(3)</sup>. The imbalance between supply and demand of oxygen related to asthma occurs in children when they perform activities that require more oxygen than their body can provide. This oxygen deficiency generates respiratory discomfort and dyspnea, leading the child to be unable to perform the desired activity. Thus, activity intolerance related to the imbalance between supply and demand of oxygen and evidenced by dyspnea and discomfort on exertion is present in the life of the child with asthma, being a limiting factor in their daily activities.

The major risk factors for asthma exacerbation related to repeated exposure to environmental substances that produce allergens and increase the body's hypersensitivity, are a combination of genetic predisposition with environmental exposure to inhalation of substances and particles that can cause allergic reactions or irritate the airways, such as: internal allergens (e.g. dust mites in the home, bedding, carpets, pollution), external allergens such as tobacco smoke, chemical irritants, air pollution, cold air, extreme emotional arousal such as anger or fear, and physical exercise<sup>(3)</sup>. In view of this, it is essential that parents or guardians are properly guided regarding the importance of greater frequency in cleaning the environment in which they live, along with emphasizing the importance of avoiding as much as possible exposure to allergens or triggering factors of asthma exacerbation.

Orem's Theory of Self-Care is based on the idea that individuals, when capable, should take care of themselves. When there are incapacities or limitations, the nurse's work in the care process comes into play. For children, this care is necessary when parents and/or guardians are unable to interfere in this process. Individuals need continuous and deliberate interaction between themselves and their surroundings for self-care and survival. Orem thus offers a strategy for the development of self-care skills<sup>(8)</sup>. Self-care is defined as the practice of activities performed by the individual, family and community for health maintenance and disease prevention. Beliefs, social and cultural background, personal characteristics, and the relationship between health professionals and individuals are some of the factors that influence self-care behaviors, believing that these components are interconnected, establishing the human being and the environment as a single unit<sup>(9)</sup>.

Shortness of breath, common in asthmatic attacks, is a limiting factor in the child's life, because during their periods of hospitalization, they need to be absent from school<sup>(1)</sup>. Besides the possibility in the occurrence of acute pain related to expressive behavior and activity alterations, which must be evaluated for the child's well-being. For this reason, many children, especially the most severe cases, have delayed school years, difficulty learning and socializing with other children, not only because of the periods of absence from school, but also due to the limitations of activities caused by the disease.

When it comes to children with asthma and pneumonia, it is valid to emphasize their association with the Theory of Self-Care due to the fact that respiratory disorders interfere with daily activities, it becomes necessary to identify which external factors influence health problems and the care that can be performed by the child itself for his/her well-being<sup>(9)</sup>. Care such as: performing anaerobic physical activities regularly, eating healthily, respecting the limits of one's own body, among other forms of care and attitudes that can improve their daily lives. The child must be motivated by a responsible adult to achieve improvement and control of his health condition. They need to be taught to practice self-care. For this to happen, it is necessary that they know and adapt to the limitations of their age.

Health education exercised by nursing is essential for proper and possible self-care for the child by providing adequate and stimulating information for the development of the child's health<sup>(8)</sup>. Health education strategies, both for patients and their caregivers, play a fundamental role in reducing exacerbations and crises and optimizing therapy<sup>(19)</sup>. The social and cultural aspects in which they are inserted must be considered, so that the nursing professional can guide a care plan that fits their life situation, as well as orientations for the performance of self-care skills and the roles of parents and/or guardians, thus reducing the morbidity and mortality of the disease.

They should maintain attitudes and habits that will not harm the improvement of the child's health status, give preference to living in environments that stimulate the child's health<sup>(6)</sup> and should encourage activities so that the child itself has autonomy to perform self-care, taking into account its age group, there may be need for adult supervision, for example, in the administration of medications.

The child, according to his/her age group, should learn how to properly administer his/her asthma medication with the nebulizer, a bronchodilator commonly known as "asthma pump". In addition, it is of utmost importance that parents and/or guardians are aware of the information that permeates the treatment and care of the child with asthma, being able to identify when an asthma attack occurs and to take measures to avoid possible aggravations in the environment in which the child lives to keep asthma under control<sup>(3)</sup>.

It is necessary that the child has willingness to improve self-care characterized by showing the desire to increase health independence, so

that healthy habits and activities in daily life are performed more independently. Orem's theory emphasizes that in children it is necessary to turn to the ability and knowledge of parents and/or guardians to encourage the child's self-care, and thus nursing guides and supports both parents and child, performing health education<sup>(9)</sup>.

The child and his family members should report that they have knowledge about the child's disease, its treatment and warning signs of exacerbation crisis. The nursing professional must educate, guide, and inform in the care process, using media that are appropriate to the target audience to facilitate understanding and dissemination of content dynamically, examples include lectures, theater with children's characters, and pamphlets and folders, which allow children, parents and/or guardians to access information at any time, and it is also important to adapt to the target audience.

## **FINAL CONSIDERATIONS**

The experience of a stimulating educational practice experienced by the nursing students provided an in-depth knowledge of the pathologies involved, asthma and pneumonia, and their clinical signs. It was also observed the relevance of understanding the biopsychosocial, cultural, and financial context of the child and the family in order to draw Nursing Diagnoses and propose feasible interventions for the reestablishment of health, in addition to encouraging self-care compatible with the child's age group.

Since in order to prescribe a care plan, as well as to provide adequate nursing care, it is necessary to draw nursing diagnoses compatible with the cases experienced, it was possible to build a care plan for children with asthma and pneumonia, which allowed the students to develop a critical sense by articulating Orem's Self-Care theory with the practice of the Nursing Process.

The inclusion of the undergraduate students in hospital practice scenarios brought the theoretical context closer to professional practice and enabled the recognition of the nurse's role, based on the systematization of nursing care, as a researcher and facilitator of the care process, by developing interventions based on and supported by health education with guidelines that were effective for the target audience.

As a limitation of this study, because it is an experience report, it was not possible to put into practice the care plan developed.



## AUTHORS' CONTRIBUTION

**Statistical Analysis, Data Collection, Conceptualization, Research, Methodology, Writing - Preparation of the original, Writing - Review and Editing, Visualization:** Martha Sthefanie Borba Costa, Maryha Mayara Lima Cunegundes da Silva, Maria Roberta Silva Lima, Maria Luiza Rodrigues Berenguer, Maria Gabriella de Melo, Mariana Milena da Costa

**Statistical Analysis, Data Collection, Conceptualization, Resource Management, Project Management, Investigation, Methodology, Writing - Original Preparation, Writing - Review and Editing, Supervision, Validation, Visualization:** Vânia Chagas da Costa

All authors approved the final version of the text.

**Conflict of interest:** the authors have declared that there is no conflict of interest.

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## ASSOCIATE EDITOR

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