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Improving Care of Patients With Asthma Through Staff Education

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College of Health Sciences

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Nicholas Moscatelli

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Walden University

Abstract

Improving Care of Patients With Asthma Through Staff Education

By

Nicholas Moscatelli

MS, Pace University, 2013

BS, Chamberlain University, 2013

Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

May 2020

Abstract

Chronic asthma is a health epidemic and an increasing problem in the pediatric population. The purpose of this project was to raise nursing staff awareness of symptom recognition, treatment protocols, preventive measures, and detrimental effects of asthma for children. Adult learning theory provided the framework to support the staff education program on asthma. The project site stakeholders and the DNP student identified educational opportunities to assist staff in meeting caregiver needs, improving symptom recognition, and improving asthma outcomes. Prior to presentation of the educational program to the clinic nursing staff, it was reviewed by an expert panel including the clinic medical director, a pediatric pulmonologist, the clinic nursing director, and a pediatric nurse practitioner. The panel strongly agreed the educational program increased their knowledge of asthma and was applicable to the clinical setting and nursing staff. Six licensed RNs in the clinic participated in the asthma education program. The program was evaluated using a 5-point Likert-type questionnaire. Participants strongly agreed that the content of the asthma education program increased their knowledge, ability to identify early warning signs, and overall confidence in their clinical practice. By raising awareness of the asthma epidemic in children throughout the local communities, health care providers can make a difference in pediatric health related to asthma care, and may improve patient outcomes through caregiver knowledge to educate asthmatic children and their families.

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Section 1: Nature of the Project

Introduction

Childhood asthma is a nationwide epidemic with a large impact on health care. Asthma rates in the pediatric population are on the rise, leading to many long-term consequences. The health care provider is responsible to educate both patients and parents on the detrimental effects of asthma, as well as current treatment options, tips for early recognition, and preventative measures. For the health care provider to intervene, it is important that they first become educated to recognize causes of asthma, current treatment protocols, symptom management, and proper medication administration. By understanding and mastering the education associated with childhood asthma, nurses and other health care providers can educate parents and pediatric patients on the best ways to recognize and treat this chronic problem.

Problem Statement

Asthma is a long-term chronic disease affecting 25 million people, 6 million of which are children, in the United States (Allergy and Asthma Foundation of America, 2018). Asthma is the most common chronic condition amongst children, currently affecting an estimated 6.1 million children under 18 years, of which 3.5 million suffered from an asthma attack or episode in 2016 (American Lung Association, 2017). Childhood asthma is a health epidemic that is raising concern for the current and future health care system. Chronic asthma in the pediatric population is on the rise and has become a large public health issue over the past decade. Chronic childhood asthma also places a financial burden on the caregivers of the patient. According to the Centers for Disease Control and

Prevention (2013), parents' loss of productivity from asthma-related work absences and primary care office visits was estimated at a cost of 719 million annually. Socially, patients with asthma suffer from the unpredictable nature of the disease and live in a state of daily fear. The limitations presented by an asthma diagnosis not only affect the patient but can also have an impact on the lives of their families.

Medical providers in an outpatient clinic in the northeastern United States have noted an increase in visits for children with asthma with parents and have verbalized a lack of knowledge regarding asthma symptom recognition. Over the last two years, this outpatient clinic experienced a 60% increase in asthma diagnosis in their pediatric population (Outpatient Clinic, personal communication, May date, 2017). Also, the medical providers of the outpatient clinic have reported difficulty recognizing the signs and symptoms of asthma exacerbation and have noted a lack of time to educate parents regarding their asthmatic children (personal communication, May date, 2017).

Purpose Statement

The purpose of this project was to raise nursing staff awareness of the symptom recognition, treatment protocols, preventative measures, and detrimental effects of asthma for children. Staff education has the potential to assist nursing staff to recognize symptoms earlier and allow for intervention. Education and improved understanding of associated risk factors for asthma may assist health care providers in educating parents of asthmatic children in the clinic regarding the best ways to fight this disease using evidence-based practice (EBP) guidelines.

Poorly controlled asthma in the pediatric population, which can be related to the lack of symptom recognition and knowledge deficit, demonstrates a gap in practice that can be improved through education. Implementation of an asthma education program focusing on evidence-based guidelines and created for the nursing staff at the outpatient clinic may allow the staff to educate patients and parents and improve symptom recognition and treatment outcomes. The practice-focused question was the following: Will an asthma education program for nursing staff improve nurses' knowledge, skills, and confidence in asthma sign and symptom recognition; causes of asthma; current treatment protocols; symptom management; and proper medication administration?

The goal of this project was to educate clinic nursing staff regarding childhood asthma. The education program included the major health risks associated with childhood asthma, the side effects of asthma medications, and the long-term effects of this disease if left uncontrolled. These long-term effects include sleep deprivation, diabetes, hypertension, weight gain, depression, respiratory illness, growth delay in children, and a higher risk for learning disabilities (American Lung Association, 2019). An education program for nursing clinic staff had the potential to benefit parents and children with asthma, thereby promoting social change for patients, their families, and nursing staff. The benefits of an education program may include earlier symptom recognition and treatment, better symptom management, and a decrease in asthma exacerbations. The education program may also improve the long-term health of asthmatic children. A better understanding of asthma and symptomology may lead to a decrease in the number of school days missed for the patient and a decrease the number of work days missed for the

parent. Overall, an education program had the potential to improve the skills, confidence, and knowledge for all participants and lead to an improvement in asthma outcomes.

Nature of the Doctoral Project

The doctoral project was conducted in an outpatient clinic located in the northeastern part United States. This outpatient clinic provides treatment for pediatric, adolescent, adult, and geriatric patients and accepts self-payers, private insurance, and Medicare and Medicaid. In this clinic, there are two medical providers, six nurses, and three ancillary staff members. This clinic serves a multicultural population of patients ranging in age from birth to 100 years. The medical staff supported this project with a wealth of resources and experience to design a successful asthma education program.

Sources of evidence for this doctoral project were generated through a comprehensive literature search using databases such as EBSCO database, CINAHL, Cochrane Library, and Ovid. Key search terms included *asthma*, *childhood asthma*, and *education*. Additional databases for evidence-based guidelines on asthma included the New York State Department of Health, the Centers for Disease Control and Prevention (2018), nonprofit asthma organizations, and peer-reviewed journal articles published within the last 5 years. Peer-reviewed journals used were written in English and included qualitative and quantitative research. Literature was reviewed for relevant teaching material and content that addressed the goals of the educational program. After review of the literature, survey evaluations, and EBP guidelines on asthma, I began developing the staff education program. The comprehensive literature review included terms such as

nurse led asthma education programs, *asthma and pediatric population*, and *asthma outcomes*.

Significance

The prevalence of childhood asthma is on the rise in the United States, giving way too many undesirable health complications. Asthma is a controllable health problem that has spiraled out of control, particularly in the U.S. pediatric population (CDC, 2018). By educating nursing staff on the local and national level, this asthma epidemic may be reduced, optimizing childhood health and ensure a promising future. This project had the support of the stakeholders in the practice setting. The stakeholders included the nursing staff, medical providers, medical director, office manager, and administrative assistants. Leadership from the organization was involved in defining the staff education goals and learning objectives of the educational program based on data shared by the medical director.

Summary

Childhood asthma is a health problem requiring intervention and family education to better manage patient symptoms. The purpose of this project was to educate the nursing staff at a local clinic on childhood asthma. Section 1 included the practice problem, purpose of the project, and significance to nursing. Section 2 includes a review of nursing and learning theories relevant to this staff education program and nursing practice, a description of local background and context, and the role of the DNP student.

Section 2: Background and Context

Introduction

The approach chosen for this DNP project was a staff education project guided by the Walden DNP Staff Education Manual. This section includes a description of the theory used to guide the project and the background and context for the development of an education project on asthma, a problem affecting over 6 million children in the United States.

Concept, Models, and Theories

The theory selected to support the staff education program was the adult learning theory. According to the adult learning theory, the more that adult educators are familiar with the knowledge base, the more effective their practice can be to the needs of adult learners (Teaching Excellence in Adult Literacy, 2011). According to the adult learning theory (Teaching Excellence in Adult Literacy, 2011), adults are motivated to learn as they experience needs and interests that learning will satisfy. Adults' orientation to learning is life centered; therefore, the appropriate bases for organizing learning are life situations, not subjects (Teaching Excellence in Adult Literacy, 2011). Experience is the richest source for adults' learning, and the student's experience counts for as much as the teacher's knowledge (Teaching Excellence in Adult Literacy, 2011). Adults have a deep need to be self-directing; therefore, the teacher engages in inquiry with the student rather than serving as an oracle of knowledge (Teaching Excellence in Adult Literacy, 2011).

When I considered theories of education of adult health care learners, the adult learning theory appeared to be the correct choice for nursing staff and asthma education.

When adult learning theory is considered in coordination with health education, the theory can be used to understand a change in behavior and a positive outcome for health care providers and patients. When creating an education program for nursing staff in a health care facility, I considered the experience of the staff member, the motivation for learning, and the complexity of the information. According to Knowles (1973), adults bring experiences with them into the learning process, and these experiences influence how they retain information. To create a positive and successful learning experience for the nursing staff, I provided an atmosphere of thinking that allowed the adult learner to be successful. The adult learning theory demonstrates how education can help make a meaningful and positive change to daily life. Adult learning theory also provides a collaborative and supportive experience that allows the learner to create realistic goals that can lead to a meaningful health care change (Knowles, 1973). Adult learning theory includes the realization that not all adults learn the same way and that everyone brings their own wealth of knowledge to any learning experience. Effective education must be able to reach all adult types and provide them with the tools they need to build a foundation for better health (Knowles, 1973).

Relevance to Nursing Practice

Asthma and Quality of Life

According to the Scullion (2018), "nurses play a vital role in helping patients to decide and learn how to take the many specific actions needed to control asthma" (p. 76). Asthma is one of the common noncommunicable diseases. Asthma affects around 339 million people in all regions of the world. Asthma causes a high global burden of death

and disability, with around 1,000 people dying each day from asthma, and is in the top 20 causes of years of life lived with disability (Global Asthma report, 2018). However, many people, especially those in low- and middle-income countries, are unable to access the quality-assured essential asthma medicines and care they need (Global Asthma Report, 2018). Educating nurses on a community and national level may result in reducing this epidemic. Education is one of the key elements in combating a nationwide epidemic such as asthma in the pediatric population. Nurses are the first line of education for the patient population, and improving asthma outcomes begins with the education of nurses.

According to the Global Asthma Report (2018), health care providers on a national level must encourage patient advocacy to improve asthma outcomes, support the government in developing asthma guidelines that are adapted to the national situation, and actively participate in improving asthma programs by assisting in improving correct inhaler technique and adherence to treatment. Many barriers exist within nursing practice in relation to asthma. There is an apparent gap in practice and understanding that exists when the patient is diagnosed as an asthmatic. A lack of knowledge exists in the understanding of the asthma diagnosis, symptom recognition, triggers, and proper management. On a broader level, the issue of childhood asthma and the need for nursing education begins with the lack of access to health care in low socioeconomic areas. Without a reliable health care provider or educational resources, asthmatics rely on emergency departments for their care but have no primary care provider for continuous care. Through education of staff nurses and creation of a strong network of asthma-educated providers, the patient population at risk may begin to receive the care they need.

Financial Implications of Asthma

According to the Centers for Disease Control and Prevention (2018), asthma accounts for 1.7 million emergency department (ED) visits yearly, making it one of the top 20 reasons for ED visits. Unnecessary trips to the emergency room can be costly. On average, every asthma-related trip to the ED costs $1,502. According to the Allergy and Asthma Foundation of America (2019), providing asthma education to nursing staff, including how to avoid asthma triggers, proper asthma management, creation of a personalized action plan, and taking medication appropriately, will help to reduce the patient's trips to the ED. The Center for Disease Controls and Prevention (2018) found that from 2010 to 2016 the use of asthma action plans increased, and the number of hospitalizations decreased. During the past 10 years, asthma-related hospitalizations decreased from 10% to 5% (CDC, 2018).

Asthma Control and Symptoms

Achieving and maintaining asthma control requires providing appropriate medication, addressing environmental factors that worsen symptoms, helping patients learn self-management skills, and long-term monitoring to assess control and adjust therapy accordingly (National Lung and Heart Institute, 2019). Proper education and removal of environmental factors is important for asthma management. Symptoms of asthma exacerbation include wheezing, shortness of breath, cough, and chest tightness. Environmental factors include dust, pet dander, pollen, and cigarette smoke (National Lung and Heart Institute, 2019).

Risk Factors

In some children, unmanaged asthma can cause dangerous asthma attacks. There are many risk factors that exist that may lead to an exacerbation of asthma. These factors include exposure to tobacco, hay fever, pollen, exercise, and cold weather (National Lung and Heart Institute, 2019). Common childhood asthma signs and symptoms include frequent respiratory infections, frequent coughing, a whistling or wheezing sound when breathing out, dyspnea, chest congestion, chest tightness, and fatigue (Mayo Clinic, 2019). Alternative risk factors for the development of asthma in children can also be genetic, related to family history, and based on location. These factors include a history of family allergies and asthma, low birth weight, and growing up in a low-income urban environment (American Academy of Allergy Asthma and Immunology, 2019).

Early Intervention

Standard practices that have been used to address this gap in practice include interventions targeting asthma aimed at prevention; however, practices should also focus on symptom recognition and prompt treatment of emergent consequences of asthma. Early intervention seems to be the critical factor that determines the severity of outcome of asthma-related complications and successful treatment for children. Asthma is a chronic inflammatory disorder of the airways characterized by infiltration of mast cells, eosinophils, and T-helper cell type 2. In childhood asthma, the lungs and airways become inflamed when exposed to certain triggers, such as inhaling pollen or catching a cold or other respiratory infection (Giacco, Firinu, Bjermer, & Carsen, 2015). Childhood asthma can cause bothersome daily symptoms that interfere with play, sports, school, and sleep.

Some children have symptoms only when exercising or playing a sport. This is called exercise-induced bronchospasm (Giacco, et. al., 2015).

Childhood asthma, like asthma in adults, cannot be cured, but with the right medications and treatment plan, asthma symptoms can be controlled. With early intervention and proper treatment, long-term damage to the child's growing lungs can be prevented (American Academy of Allergy Asthma and Immunology, 2019). Nonpharmacological measures that may improve quality of life and reduce symptoms in asthmatic people should be attempted, particularly in children. These measures include avoidance of exposure to environmental tobacco smoke or cessation of smoking among adolescents, avoidance of food or drug triggers in people sensitive to them, and avoidance of indoor and/or outdoor pollution and irritants (American Academy of Allergy Asthma and Immunology, 2019). Weight loss programs for obese children and healthy eating strategies should be taught to patients and their families (Giacco et al., 2015).

Asthma Guidelines

The management of asthma exacerbations and the disease control are major concerns for clinical practice, and guidelines have been established by experts in the field to prevent and treat asthma. The guidelines for treating childhood asthma are based on age-specific therapies and are proposed in steps according to clinical severity and level of disease control. If control is not achieved within 3 months, a step-up in medication should be considered; if control is achieved after 3 months, a stepping down may be considered (Tesse, Borelli, Mongelli, Mastrovilli, & Cardinale, 2018). The most used drug classes of

asthma medications are beta-2 adrenergic agonists, corticosteroids, and leukotriene modifiers; nonpharmacological measures that may improve a patient's quality of life should also be attempted (Tesse et. al., 2018).

According to the guidelines for treating asthma, medications used for rapid relief of short-term asthma exacerbations are the initial step of treatment. Initial treatment is as-needed inhaled short-acting beta2-agonists (SABAs) alone, commonly salbutamol. SABAs are used for acute relief of asthma symptoms, mainly in patients with occasional daytime symptoms and with normal lung function. Medications for long-term asthma care symptom control are inhaled corticosteroids (ICS). For long-term asthma control in children, a maintenance treatment with therapeutic doses of ICS in addition to as-needed SABA should be considered (Tesse et. al., 2018).. Regular low-dose ICS improves asthma symptoms and lung function, decreases need for additional medication, and decreases hospital admission (Tesse et. al., 2018).

Controlling Asthma Through Education

When dealing with an asthmatic, it is essential to create a strong educational foundation for the patient and their family members. According to the National Lung and Heart Institute (2019), it is important to teach patients how to manage their asthma and to reinforce the importance of asthma recognition and proper treatment of exacerbations at each medical visit. Other essential aspects of patient education include proper inhaler technique, understanding the difference between long-term control and quick-relief medication, avoidance of environmental factors that worsen asthma, development of a

written asthma action plan in partnership with patient and family, and encouraging family involvement to provide support (National Lung and Heart Institute, 2019).

Proper Use of Asthma Medication

Teaching proper medication administration, such as correct use of metered dose inhalers, is important for asthmatic patients to combat asthma symptoms and uncontrolled asthma exacerbations that may lead to hospitalization. A metered-dose inhaler is a small device filled with medicine. The inhaler delivers a certain amount of medicine through the mouth and into the lungs (American Academy of Physicians, 2019). To obtain the maximum effectiveness of metered dose inhalers, the patient must be educated on proper use of the inhaler: Remove the cap and hold the inhaler upright, stand or sit up straight, shake the inhaler, tilt head back slightly and breathe all the way out, place the inhaler in your mouth, press down on the inhaler quickly to release the medicine as you start to breathe in slowly, breathe in slowly for 3 to 5 seconds, hold your breath for 10 seconds to allow medicine to go deeply into your lungs, breathe out slowly, and wait a minute prior to taking a second puff (American Academy of Physicians, 2019).

Asthma and Social Issues

Through education and understanding of asthma symptoms and management, patients and their families will have a greater level of confidence and decrease their level of stress. Children will be able to participate socially and not feel as though they are different from other children. Children with asthma will be able to perform activities of daily life without having to worry that their asthma will negatively affect them . The

limitations presented by an asthma diagnosis not only affect the patient but can also have an impact on the lives of their families (Tesse et. al., 2018).

Asthma impairs patients' well-being and can significantly interfere with the ability to undertake normal daily activities. Many parents limit their asthmatic children's physical and social activities because they are worried about their children's safety (Merkel, 2013). Limiting physical activities like sports participation can cost kids exercise, healthy habits, and opportunities for social interaction and growth, which can isolate them from other kids and make them feel alone (Merkel, 2013). According to Merkel (2013), asthmatic children frequently mentioned being bullied or ignored because of their limited physical capacities, especially during physical education at school, and they felt less confident in the formation of teams; the asthmatic children also felt they were less likely to be chosen. One important social outcome for the current project was to improve the everyday lives of the asthmatic patient population by creating a safe and stress-free atmosphere for them to participate.

An education program on asthma may have a major effect on care by expressing the importance of early symptom recognition and proper management of care. Successful asthma education programs have RN-certified asthma educators who cover the basics of childhood asthma, instruction on asthma devices, types of medications used for asthma patients, asthma triggers and how to avoid them, and having an asthma action plan (National Lung and Heart Institute, 2019). The reason for the creation of a nursing staff asthma education program was to improve overall outcomes within this patient

population. Without proper direction, asthma will continue to be a detriment to the lives of young people and will impede their ability to live a normal healthy life.

Asthma Management

For the management of asthma to be successful, a patient-centered approach to care must be integrated and involve all member of the health care team. Medical providers involved in the patient's care should provide and reinforce education about asthma and create a network of support for this patient population. Medical providers should also stress the importance of a yearly flu shot for asthmatic patients. Medical providers should also consider prescribing allergen immunotherapy for persistent asthma with a connection between symptoms and exposure to an allergen to which the patient is sensitive. Also, treatment of patient comorbidities must be considered when treating asthma (National Lung and Heart Institute, 2019). These comorbidities include gastroesophageal reflux, obesity, obstructive sleep apnea, rhinitis, and depression (National Lung and Heart Institute, 2019).

Background and Context

The burden of asthma affects the patients, their families, and society in terms of lost work and school, lessened quality of life, and avoidable emergency department visits, hospitalizations, and deaths. Improved scientific understanding of asthma has led to significant improvements in asthma care. The positive social outcome for this project is an overall improvement to the daily lives for the families and the asthmatic patients within the community that the practice is located. The medical providers of the outpatient clinic report difficulty recognizing the signs and symptoms of asthma exacerbation and

note a lack of time to educate the parents of the asthmatic children (NE US, Outpatient clinic, personal communication, May 2017). Medical providers in the outpatient clinic have noted an increase in visits for children with asthma with parents verbalizing a lack of knowledge regarding asthma symptom recognition. Over the last two years, this outpatient clinic, has noted a sixty percent increase in asthma diagnosis within their pediatric population (NE US, Outpatient clinic, personal communication, May 2017). Poorly controlled asthma within the pediatric population, which can be related to the lack of symptom recognition and knowledge deficit amongst parents, demonstrates a gap in practice that can be improved through education. An educational pamphlet was handed out and a power point presentation was created for the nursing staff, patients, and family members explaining the proper mechanism of treatment, and how to recognize and treat an asthma exacerbation. A pre and post evaluation questionnaire was given to the nursing staff participating in the educational course. The pre and post evaluation questionnaire results were evaluated using a five point Likert scale survey type questionnaire.

The location and demographics of this outpatient clinic are within a low socioeconomic area with limited access to healthcare. New patients and their families within this outpatient clinic that come in for asthma treatment and acute exacerbations report that they primarily have been using the emergency department for their child's asthma care (NE US, Outpatient clinic, personal communication, May 2017). According to the Asthma and Allergy Foundation of America (2019), Asthma can be very hard on families living in poverty. A large amount of families that come to this primary care clinic are poverty-stricken and have a limited ability to support themselves financially

and have a limited amount of free time to take care of their familial health. A lot of patients continually miss appointments due to parental work issues and lack of transportation to the clinic. Communication between patient, family, and provider include hardships faced by these families and their worry about paying for basic needs like housing, clothing, food, the cost of medications, and guidelines on recommendations to support psycho-social needs. Essential communication between nursing staff and patient will also include risk factors, signs and symptoms of exacerbation, and the need for environmental changes to improve health and decrease exacerbations.

Strategic Vision and Mission

This primary care clinic in the North East part of the United States currently employs six registered nurses with a minimum of five years' experience. Each nurse currently has their bachelor's degree or are in the process of achieving their degree within the next six months. Both the nursing staff and patient population within the clinic verbalized a lack of understanding about pediatric asthma symptoms and proper management modalities. Poor recognition of symptoms and the inability to treat an asthma exacerbation effectively may increase the amount of time this clinic's patient population will spend within an emergency room. The lack of knowledge of both the clinic nursing staff and the patient population has the potential to increase the number of work and school days missed. The basic needs of the clinic nurses and patient population were resolved with the creation of an asthma education program and with the creation of an asthma support system.

The medical practice is dedicated to a vision of working within a collaborative approach, so the surrounding community can strive to have a healthy lifestyle and easy access to care. The practice aims to create one of the healthiest communities in America, working with nurses, physicians, community leaders and patients to both treat and educate the patient population. The priorities and long-term goals of the community practice will abenefit the patients and improve outcomes within the community first but will also aim to improve treatments and modalities on a national scale (NE US, Outpatient clinic, personal communication, May 2017).

Role of the DNP Student

The role of the Doctor of Nursing Practice Student was to translate research into practice, perform education, and support stakeholders. The student acted in a leadership role and coordinated the study from beginning to end. The DNP essentials that framed my role as a Doctor of Nursing Practice student were: Essential VI: Inter-Professional Collaboration for Improving Patient and Population Health Outcomes, and Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health. In regard to Essential VI, my role as the Doctor of Nursing Practice student helped coordinate a panel of medical experts in the field of pediatric asthma in order to build an education program for the nursing staff, the patient, and their families. It was my role to establish an interdisciplinary team that built a successful educational program and provided a support system for all involved stakeholders.

Regarding Essential VII, during my role as the Doctor of Nursing Practice student within this clinical outpatient practice, I created an asthma education program for the

nursing staff. To create a successful program, I established the foundation of the educational program based on the most up to date evidence-based research. I aimed to identify the areas of asthma education that the nursing staff verbalized as their desired educational needs in to asthma. Also, I used a pre-post education questionnaire to measure knowledge before and after the educational program. The questionnaire used a Likert type scale to measure the understanding of the nurses for asthma treatment, symptom recognition of asthma, and proper management of care. Also, by establishing a successful education program that is easily repeatable for future educators, the hope would be to improve asthma knowledge and care not just on a local level but across the nation.

My motivation for this doctoral project was to establish a way for these patients to achieve asthma treatment and management of care through nursing staff education in an area that is lacking primary care providers. On a personal level, my motivation for this Doctoral project was to become an expert within the field of pediatric asthma.

Section 3: Collection and Analysis of Evidence

Introduction

Data compiled by New York State indicated a lack of parental knowledge as the gap in practice that directly impacts the number of asthmatic children in New York (Centers for Disease Control and Prevention, 2016). In an effort to address this gap in practice, New York State provided grants totaling $18 million to schools and community-based medical practices to increase awareness, improve prevention, and facilitate better symptom control through education (Centers for Disease Control and Prevention, 2018). Poorly controlled asthma in the pediatric population demonstrates a gap in practice that can be improved through education. Implementation of an asthma education program focusing on evidence-based guidelines and created for the nursing staff at the outpatient clinic may allow the staff to educate patients and parents and improve symptom recognition and treatment outcomes.

Practice-Focused Question

Will an asthma education program for nursing staff improve nurses' knowledge, skills, and confidence in asthma sign and symptom recognition; causes of asthma; current treatment protocols; symptom management; and proper medication administration?

Sources of Evidence

Sources of evidence for this doctoral project were generated through a comprehensive literature search using databases such as EBSCO, CINAHL, Cochrane Library, and Ovid. Additional databases for evidence-based guidelines on asthma

included the New York State Department of Health, the Centers for Disease Control and Prevention, nonprofit asthma organizations, and peer-reviewed journal articles published within the last 5 years. Peer-reviewed journals used were written in English and included qualitative and quantitative research. The comprehensive literature review included search terms such as *nurse led asthma education programs*, *asthma and pediatric population*, and *asthma outcomes*. The educational content was supported by current sources of evidence. Section 3 includes a discussion of procedural steps to address the practice problem and staff education on asthma.

Analysis and Synthesis

Asthma control and early recognition of symptoms is a Healthy People 2020 (2016) goal, and according to their data, asthma education has demonstrated efficacy in symptom control and decreasing the overall cost associated with the disease. The approach chosen for this DNP project was a staff education project guided by the Walden DNP Staff Education Manual. Leadership from the organization was involved in defining the staff education goals and learning objectives of the educational program based on data shared by the medical director. Literature was reviewed for relevant teaching material and content that addressed the goals of the educational program.

The literature and the EBP guidelines on asthma guided the development of the staff education program (see Appendix D). A theoretical framework based on nursing theory and adult education was chosen to support the project. A participant education evaluation form questionnaire using a 5-point Likert scale from strongly agree to strongly disagree was used to evaluate the program (see Appendix C). Prior to the program being

provided to the clinic staff, a panel of expert medical providers convened to review the project and evaluate the content (see Appendix A). After receiving the expert panel evaluation, I made modifications prior to the staff presentation.

The second phase of implementation involved the nursing staff participation in the program. Six staff nurses were invited to participate in the educational program. Participation in the program was voluntary. A preevaluation was given to the clinic staff prior to the educational course to evaluate their level of asthma knowledge (see Appendix B). After the education program, the participants were asked to complete an evaluation of their learning using an anonymous questionnaire related to program learning objectives. Results were communicated to the organizational leadership and program stakeholders through a systematic presentation and synthesis of the educational program findings. Data were presented to the stakeholders using descriptive statistics with graphical representation.

Protections

Prior to initiation of the project, the site agreement form was signed by the clinic administrator. Walden University's Institutional Review Board (IRB) approval was also obtained. The panel of experts and clinic staff were invited to participate in the educational program presentation. The Consent for Anonymous Questionnaire was provided to the participants, including the panel of experts, prior to initiation of the educational program. Each participant received the same support and asthma education, and participation was voluntary. Confidentiality and anonymity were maintained.

Participant questionnaires were deidentified and placed in a manila envelope at the end of the program

Summary

The project focused on establishing an asthma education program for nursing staff. The goal of the project was for staff to receive current education on asthma, which could be applied to teach parents of children with asthma. The educational program took place within the family practice clinic. Section 3 included the steps in the project design, experts and staff participation, IRB approval, and participant protections and project implementation. Section 4 includes the findings and recommendations.

Section 4: Findings and Recommendations

Introduction

Childhood asthma is becoming a nationwide epidemic with a large impact on health care. Asthma rates in the pediatric population are on the rise, leading to many long-term consequences. Prior to the DNP project, the project site clinic lacked an asthma educational program. The DNP project included evidence-based recommendations and guidelines to increase the nursing staff's knowledge. For this project, an education program was designed and implemented for the nursing staff at the clinical site. In Section 4 I discuss project findings and recommendations, and strengths and limitations of the study. The purpose of the project was to raise nursing staff awareness of symptom recognition, treatment protocols, preventive measures for children, and detrimental effects of asthma.

Findings and Implications

Expert Panel

After obtaining Walden IRB approval (# 02-26-20-0631336), I presented the asthma education program to the panel of experts. The experts on the panel included the medical director of the clinic, a pediatric pulmonologist, the nursing director of the clinic, and a pediatric nurse practitioner. The expert panel ($N = 4$) was given a questionnaire to evaluate the asthma education presentation for staff members (see Appendix A). Each member was asked to rate their extent of agreement from 1 (strongly disagree) to 5 (strongly agree) and to provide possible changes or comments in regard to the education

program. After the data were collected from the expert medical panel, changes were made to the presentation based on their suggestions.

Table 1 presents the data from the expert panel questionnaire. The data showed that all experts answered strongly agreed for Question 1 indicating that the content helped to provide a better understanding of asthma. The data showed that three experts answered strongly agree and one expert answered agree for Question 2 indicating that the content furthered their knowledge. The data showed that all experts answered strongly agree for Question 3 indicating that the content was consistent with the objectives for the educational course. The data showed that three experts answered strongly agree and one expert answered agree for Question 4 indicating that the learned information was applicable to the clinical setting. The data showed that all experts answered strongly agree for Question 5 indicating that all the objectives of the educational program were met and the desired goals were achieved. The data showed that all experts answered strongly agree for Question 6 indicating that the content was easy to read and comprehend for learning. The data showed that all experts answered strongly agree for Question 7 indicating that the educational data were well organized. The data showed that three experts answered strongly agree and one expert answered agree for Question 8 indicating that the learned information was well organized and illustrated the educational concepts well. The data showed that all experts answered strongly agree for Question 9 indicating that the educational material learned and received during the educational session would be used in the future. The data showed that all experts answered strongly

agree for Question 10 indicating that the educational data and teaching strategies were well organized and appropriate for the materials.

Table 1

*Expert Panel Results (*N = *4)*

	SA *n* (%)	A *n* (%)	N *n* (%)	D *n* (%)	SD *n* (%)
Q 1	4 (100)				
Q 2	3 (75)	1(25			
Q 3	4 (100)				
Q 4	3 (75)	1 (25)			
Q 5	4 (100)				
Q 6	4 (100)				
Q 7	4 (100)				
Q 8	3 (75)	1 (25)			
Q 9	4 (100)				
Q 10	4 (100)				

Note. SA = strongly agree, A = agree, N = neither agree nor disagree, D = disagree, SD = strongly disagree.

Question 11

Question 11 was an open-ended question asking for program comments and recommendations. Three of the four participants wrote comments in the free-text area. I read all comments and identified themes. The general themes of the comments were to include a staff nurse in the expert panel to provide me with feedback on the learning experience. The second theme was an expansion of the hands-on portion of the learning. Third, a theme emerged suggesting that other providers besides clinic nurses should participate in the program. The expert panel participant remarks and recommendations included the following:

- Provide a hands-on learning experience for the participants, including review of proper inhaler usage and medication administration.
- Consider inclusion of a staff member who will be receiving the education or a parent during the planning process to get their take on the education program. For the staff education and future parent education, stress the importance of early asthma recognition, continuing education, and having an asthma support system.
- Include other medical providers in the educational program to have a further positive effect on asthma care.

All of the suggestions made by the expert panel were addressed. A hands-on aspect of the educational program was included during the staff-nursing program. During the current education program, emphasis was placed on the early recognition of asthma symptoms. Also, a support system was implemented at the conclusion of the program, for which the staff nurses volunteered. This support system is being used to help the families in the practice who are struggling with asthma. For future research and for implementation at other clinic sites, it is recommended that a staff nurse be included in the expert panel to provide recommendations for education and staff learning.

Staff Participants

The staff of clinic RNs were given an asthma education preevaluation survey. There were six RNs who participated in the program. After the presurvey, the asthma education presentation began. The presentation included a PowerPoint, an interactive session with asthma supplies, a discussion, and a question-and-answer period. After the

question-and-answer period, time was allotted in which the participants could share their difficulties with understanding asthma and share any challenges that they may have faced with asthma in the clinic. The session lasted approximately 60 minutes and was followed by the administration of an anonymous survey. The surveys were collected by the medical director of the clinic and were returned to me after the in-services were complete.

Participants Preevaluation

Table 2 presents the data from the Clinic RN preevaluation questionnaire (see Appendix B). Prior to beginning the educational plan, I explained that this program was created to provide knowledge on asthma education to meet patient and staff needs. Appendix B was used as a preevaluation and assessment form for participants to gauge their responsiveness regarding what was most important to them about a presentation and to make sure I met all aspects of the presentation. All six of the RNs in the clinic participated in the education session and completed both questionnaires. According to the total participant ($N = 6$) responses, 100% agreed or strongly agreed that an asthma education course would be beneficial to improving their knowledge about asthma and would like to participate in the program.

The data showed that four clinic RNs answered strongly agree and two answered agree for Question 1 indicating that the content and topic would be interesting and would help to provide a better understanding of asthma. The data showed that six nurses answered strongly agree for Question 2 indicating that the content of an asthma education program would further their knowledge. The data showed that five nurses answered

strongly agree and one nurse answered agree for Question 3 indicating that they were familiar with the content of the course. The data showed that four nurses answered strongly agree and two nurses answered agree for Question 4 indicating that the content would be related to their current job. The data showed that all the nurses answered strongly agree for Question 5 indicating that the objectives should meet the desired goals. The data showed that all the nurses answered strongly agree for Question 6 indicating that the room should be conducive to learning. The data showed that all the nurses answered strongly agree for Question 7 indicating that the content should stimulate idea exchange. The data showed that all the nurses answered strongly agree for Question 8 indicating that the learned information should be well organized and should illustrate the educational concepts well. The data showed that all the nurses answered strongly agree for Question 9 indicating that the educational material, including a hands-on experience, would be beneficial to learning. The data showed that all the nurses answered strongly agree for Question 10 indicating that the instructor's mastery of the topic was important. The data showed that all the nurses answered strongly agree for Question 11 indicating that the method used to present the material needs to hold the learner's attention. The data showed that all the nurses answered strongly agree for Question 12 indicating that the presenter's responsiveness to concerns and questions would be beneficial to the learning experience.

Table 2

*Clinic Nurse Preevaluation Results (*N = *6)*

	SA *n* (%)	A *n* (%)	N *n* (%)	D *n* (%)	SD *n* (%)
Q 1	4 (67)	2 (33)			
Q 2	6 (100)				
Q 3	5 (83)	1(17)			
Q 4	4 (67)	2 (33)			
Q 5	5 (83)	1(17)			
Q 6	6 (100)				
Q 7	6 (100)				
Q 8	6 (75)				
Q 9	6 (100)				
Q 10	6 (100)				
Q 11	6 (100)				
Q 12	6 (100)				

Note. SA = strongly agree, A = agree, N = neither agree nor disagree, D = disagree, SD = strongly disagree.

Participants Post-Evaluation

After the program was completed, the six participants were provided the Post Program Evaluation (see Appendix C). Table 3 presents the data from the Clinic RNs post-education evaluation questionnaire. According to data from the participant (*N* = 6) responses, 100% agreed or strongly agreed that an asthma education course was beneficial to improving their knowledge about asthma and that the course would lead to improved asthma outcomes.

The data showed that all the clinic RNs answered strongly agree for Question 1 indicating that the content and topic were interesting and sufficient on asthma management for patients. The data showed that all nurses answered strongly agree for Question 2 indicating that the content of an asthma education program would further their

knowledge. The data showed that all nurses answered strongly agree for Question 3 indicating that the content of the course was consistent with the course objectives. The data showed that all nurses answered strongly agree for Question 4 indicating that the content would be related to their current job and applicable to the clinical setting. The data showed that all nurses answered strongly agree for Question 5 indicating that the guidelines and recommendations for pediatric asthma management were identified, and the objectives and goals of the course were met. The data showed that all nurses answered strongly agree for Question 6 indicating that the course was able to identify the biggest concerns among staff and patients regarding asthma and provide possible resolutions. The data showed that all nurses answered strongly agree for Question 7 indicating that the content described the proper treatment methods of acute asthma exacerbation. The data showed that all nurses answered strongly agree for Question 8 indicating that the learned information should be well organized and should illustrate the educational concepts well. The data showed that all nurses answered strongly agree for Question 9 indicating that the educational material, including a hands-on experience, would be beneficial to learning. The data showed that all nurses answered strongly agree for Question 10 indicating that the instructor had mastery of the topic and that the list of symptoms associated with acute asthma exacerbation were discussed, as well as the importance of having an asthma action plan (see Table 3).

Table 3

*Clinic RNs Post-Evaluation Results (*N = *6)*

	SA *n* (%)	A *n* (%)	N *n* (%)	D *n* (%)	SD *n* (%)
Q 1	6 (100)				
Q 2	6 (100)				
Q 3	6 (100)				
Q 4	6 (100)				
Q 5	6 (100)				
Q 6	6 (100)				
Q 7	6 (100)				
Q 8	6 (100)				

Note. SA = strongly agree, A = agree, N = neither agree nor disagree, D = disagree, SD = strongly disagree.

Recommendations

The nursing staff should perform the initial assessment of the patient and provide the discharge documents at the health care facility. Nursing staff are also responsible for coordinating future care and education and supporting the needs of family members. The project's focus to provide staff education came from the project site's leadership assessment that an opportunity existed to provide more patient- and family-centered care in the context of supporting the family caregivers of asthma patients in the acute clinic setting. The data in the evaluation indicated the project provided more knowledge and strategies to identify and meet the caregiver needs for asthma patients. One of the recommendations was to incorporate this training into the training of new staff members and to have a yearly refresher course with new EBP presented to the clinic staff. Another recommendation was to create a support group that meets once weekly to provide education and support to family members of asthmatic children in the community. The

support group will be staffed by the RNs at the clinic for 1 hour each week and will be on a voluntary rotating basis during the staff's regular work shift. The support group will be held during regular business hours and will provide a place for patients to ask questions about asthma and learn hands-on with inhalers and peak flow meters. Providing training to the clinic RNs and management to better meet family caregiver needs and to recognize asthma symptoms early may result in better patient outcomes. Using the principles of the adult learning experience was key to the success of the project and may allow for future projects to be successful.

Strengths and Limitations

This staff education project's primary strength was the evaluation results. The results indicated that the educational program was successful, and the participants gained knowledge of asthma and the associated skills. The primary limitation of the project was the sample size; only six staff members participated and attended the educational sessions, which were offered on a single day. Additionally, the project was conducted in a single medical facility. Even though the outcome of the project was positive, there was a small sample and results may vary in a larger sample. Due to the small sample size, results of this project cannot be generalized to other populations. After graduation, I will follow up with the clinic and staff to assess whether the knowledge was retained, and I will recommend a follow-up course every 6 months.

Section 5: Dissemination Plan and Self-Evaluation

Introduction

The final phase of the DNP project is the dissemination of findings. This section includes a self-reflection and analysis and a review of the dissemination plan of the project's results and their use in medical clinics, hospitals, and professional training programs. This asthma education program may empower health care professionals in the clinic and allow them to take an active role in the community and in their practice with patients who are dealing with this disease process. The education of the nursing staff may increase their ability to educate parents, thereby decreasing asthma rates and improving outcomes.

Dissemination

The first step in disseminating my project findings is an in-person evaluation of the clinic's statistical progress in regard to asthma exacerbation cases that come to the clinic for treatment at the quarterly leadership meeting. The participants at the quarterly leadership meeting include the medical director, nurse manager, and one elected representative of the clinic RN staff. The leadership meeting will include discussion of how the office can promote family-centered care and educational programs in the facility and throughout the community. By providing a framework of education for the clinic RNs and recommending refresher courses, I will attempt to better identify the support the clinic RN staff needs regarding how this program can help the asthmatic patient population and the community. To promote continuing education, I will provide the staff with access to the educational asthma PowerPoint presentation and educational handouts,

and I will create a poster for staff members who were not able to attend the educational session.

Self-Analysis

Practitioner

I chose this project for personal reasons. As a child, I dealt with asthma but was lucky to have a mother who was a nurse and a father who was a physician. I remember being in emergency rooms and in my father's office as I dealt with my symptoms and seeing other children in severe crisis with acute asthma exacerbations. As an adult, I have witnessed firsthand the devastating effects of asthma on children coming into the emergency department and the looks of stress among the caregivers waiting for their children's symptoms to resolve. Based on these experiences, I have made it my goal to improve the asthma recognition and treatment process and educate the nursing staff because they work directly and consistently with the asthmatic patients and their caregivers.

Scholar

Through the use of EBP and current asthma research, my goal in this project was to educate the clinic RNs, who in turn will educate the patients in the facility and create a positive impact in the community. Health care providers have a responsibility to continue to educate themselves to provide their patients with the best possible medical care. I was able to achieve the scholarly goals I set for myself with this doctoral project.

Project Leader

Reflecting on my time as a DNP student and throughout this project, I observed a great deal of growth and learning as a person and health care provider. The time I spent researching in the clinic taught me how to work as a member of a large interdisciplinary team to accomplish the same goal. Prior to this project, I felt I needed to know everything regarding my patient's care and would never depend on the expertise of others. At the end of this project, I have learned that asking for help is Ok, and in the long run this will be more beneficial to the patient's outcome and to my growth as a provider.

Summary

The findings of this DNP project support the use of a PowerPoint education program as a tool to increase knowledge among nursing staff regarding asthma treatment. Based on this project's findings, a standardized educational program about childhood asthma may be beneficial to other clinics and medical organizations to increase knowledge for nursing staff, parents, caregivers, asthmatic children, and communities to improve asthma outcomes. Further studies will be needed to evaluate the program's utility in affecting clinical behavior change and improving patient outcomes. The format of this education program may be adapted for other settings based on time limitations, scarcity of resources, and financial limitations.

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Appendix A: Expert Panel Evaluation Form

As an expert panel member, please assist in the evaluation of this presentation. Please circle the number beside each statement that best reflects the extent of your agreement. Thank you.

Strongly Disagree – 1, Disagree - 2, Neutral - 3, Agree – 4, Strongly Agree - 5

Content

1. The content was sufficient in the topic of asthma..... 1 2 3 4 5

2. The content extended my knowledge of the topic..... 1 2 3 4 5

3. The content was consistent with the objectives..... 1 2 3 4 5

4.The information learned was applicable to clinical setting..... 1 2 3 4 5

5. Objectives were consistent with purpose/goals of activity..... 1 2 3 4 5

6. Information was easy to read and comprehend for learning.... 1 2 3 4 5

Instructional Methods

1. The instructional material was well organized..... 1 2 3 4 5

2. The instructional methods illustrated the concepts well..... 1 2 3 4 5

3. The handout materials given are likely to be used as a

future reference..... 1 2 3 4 5

4. The teaching strategies were appropriate for the activity..... 1 2 3 4 5

Please provide your recommendations to improve the program content and presentation:

Appendix B: Participant Education Preevaluation Form

As a learner please assist in the evaluation of this presentation. Please circle the number beside each statement that best reflects the extent of your agreement. Thank you.

Strongly Disagree – 1, Disagree-2, Neutral 3, Agree – 4, Strongly Agree 5

Content

1. The content was interesting to me..... 1 2 3 4 5

2. The content extended my knowledge of the topic..... 1 2 3 4 5

3. The content was consistent with the objectives..... 1 2 3 4 5

4. The content was related to my job..... 1 2 3 4 5

5. Objectives were consistent with purpose/goals of activity..... 1 2 3 4 5

Setting

1. The room was conducive to learning..... 1 2 3 4 5

2. The learning environment stimulated idea exchange..... 1 2 3 4 5

3. Facility was appropriate for the activity..... 1 2 3 4 5

Faculty/Presenter Effectiveness

1. The presentation was clear and to the point..... 1 2 3 4 5

2. The presenter demonstrated mastery of the topic..... 1 2 3 4 5

3. The method used to present the material held my attention..... 1 2 3 4 5

4. The presenter was responsive to participant concerns..... 1 2 3 4 5

Appendix C: Participant Education Post Evaluation Form

Instructional Methods

1. The instructional material was well organized..... 1 2 3 4 5

2. The instructional methods illustrated the concepts well..... 1 2 3 4 5

3. The handout materials given are likely to be used as a

future reference..... 1 2 3 4 5

4. The teaching strategies were appropriate for the activity..... 1 2 3 4 5

Learner Achievement of Objectives

1. Identified the guidelines and recommendations for pediatric asthma management, symptom recognition, and proper treatment
…….. 1 2 3 4 5

2. Identify the biggest concerns amongst providers and patients/families dealing with

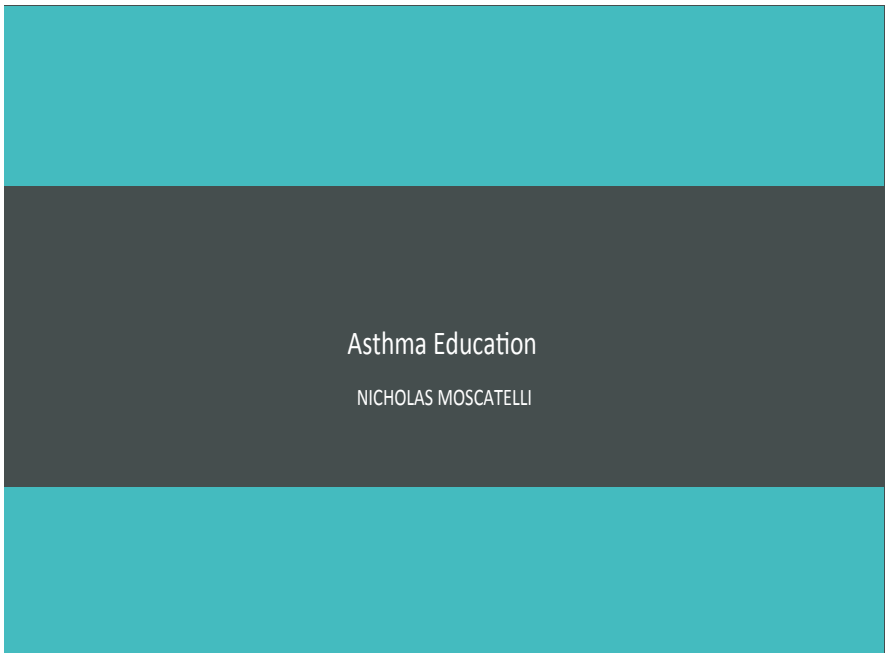
pediatric asthma……..…… 1 2 3 4 5

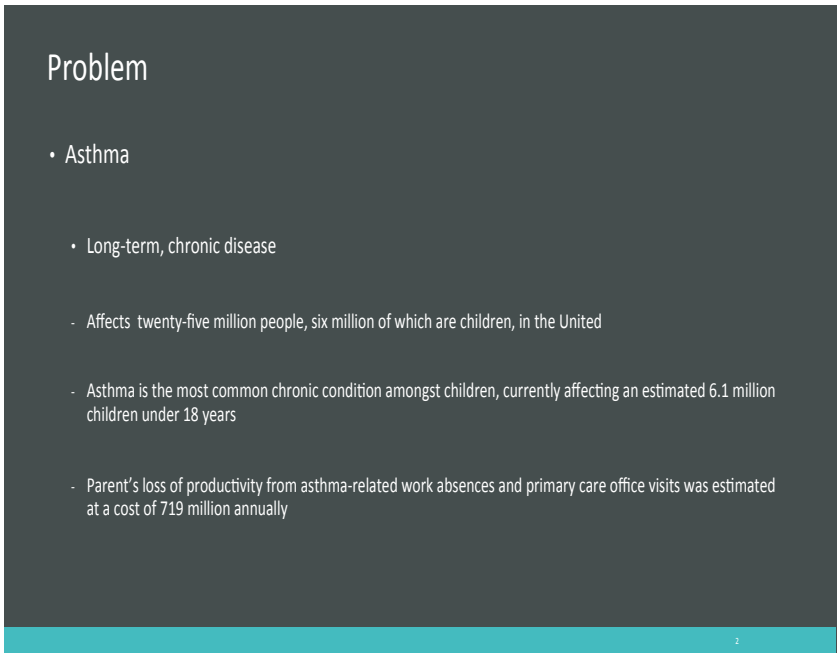
3. Described the difference between proper treatment methods during an acute asthma exacerbation versus daily asthma treatment
……..... 1 2 3 4 5

4. List the symptoms associated with acute asthma exacerbation and discussed the importance of an asthma action plan
…….…..…. 1 2 3 4 5

Comments:

Appendix D: Staff Asthma Education Program

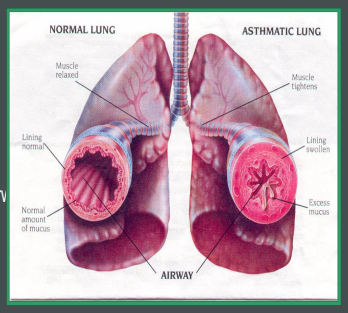




What is Asthma??

AIRWAYS BECOME SMALLER OR NARROWER, DUE TO:

- Underlying inflammation or swelling
- Increased mucus production and
- Contraction of muscles around the airv bronchospasm



What Happens in Asthma

- Airways narrow, reducing the air flow
- Harder to move air in and out of the lungs
- Coughing, wheezing, and difficulty breathing

Diagnosing Asthma

A HEALTHCARE PROFESSIONAL MAKES AN ASTHMA DIAGNOSIS AFTER:

- Taking a complete history and Performing a Physical Exam
- -listen to patient lungs. Listen for wheezing or whistling which could indicate inflammation. Listen for cough on inspiration or expiration of air.
- Look in the nose and throat for swelling/drainage/redness and signs of inflammation
- Past Medical and Surgical History, Patient allergies, and Family History
- Inspection, Palpation, Percussion, and Auscultation. Evaluation of a body to determine it's state of health. Physical exam usually starts at the head and proceeds to the toes.

- Assessment with a pulmonary function test

- PFT and spirometry results require comparison between an individual's measured value and the reference value. If the FVC and the FEV1 are within 80% of the reference value, the results are considered normal. The normal value for the FEV1/ FVC ratio is 70% (and 65% in persons older than age 65).

Asthma Exacerbation

May Occur after:

Tobacco Smoke

Exercise

Cold Weather

Allergens

Pet dander

URI/Colds

Asthma Symptoms

INCLUDE:

- Coughing
- Wheezing
- Chest tightness
- Shortness of breath
- Excessive fatigue

Asthma Triggers: Allergens

Allergens:

- Animal dander from feathered or furry pets
- Cockroach droppings
- Dust mites
- Molds
- Pollen

Asthma Management

- Managing asthma is a team effort
- Effective communication, medicines, and monitoring are the key components to success
- Every patient with asthma should have an asthma action plan
- An asthma action plan is a written plan that you create with your child's doctor to help control your child's asthma.
- The goal of an asthma action plan is to reduce or prevent flare-ups and emergency department visits.

Medication Management

- Also called Long Acting Beta Antagonists or "LABA"
- Prevent lung inflammation, but will *not* help during an asthma attack
- Improves asthma symptoms by increasing airflow through the lungs and relaxing smooth muscle

Asthma Attacks

IF ONE OR MORE OF THE FOLLOWING SYMPTOMS ARE PRESENT THE PATIENT IS HAVING AN ASTHMA ATTACK:

- Coughing or wheezing
- Difficulty breathing, shortness of breath
- Difficulty in talking and walking due to shortness of breath
- Chest tightness
- IF patient experiencing these symptoms, a peak flow meter should be used as well as a rescue inhaler.

Medication Management

- Sometimes called “rescue medicines”
  -Short Acting Beta Antagonists (SABA)
- Relax the muscles around the airways and decrease the narrowing of the airways
- Provide immediate relief lasting several hours
- Used to treat asthma attacks

When to Use Inhalers

-You should use your rescue inhaler when you first start to notice your asthma symptoms. Once asthma symptoms become intense, you could be experiencing an asthma attack.

- Use when wheezing is present, tightness in chest, coughing or with shortness of breath
- works quickly to relieve the symptoms of an asthma attack.
- Your rescue inhalers should relieve your symptoms in 15 to 20 minutes. The effects of the medication typically last between four and six hours.
- In addition to relieving the symptoms of an asthma attack, a rescue inhaler can be used prior to a strenuous workout to help prevent an asthma attack from occurring.

Medication Management -Inhaler Use

- Put the **inhaler** in your mouth.
- Press down on the inhaler quickly to release the medicine as you start to breathe in slowly.
- Breathe in slowly for 3 to 5 seconds.
- Hold your breath for 10 seconds to allow medicine to go deeply into your lungs

Peak Flow Meters

- Portable hand-held devices that measure how well air moves out of the airways
- Valuable tool used to communicate the severity of an episode
- Peak flow reading less than 80% of the personal best is a call for action

Peak Flow Meter Usage

- take peak flow readings: Twice a day for two to three weeks when asthma is in good control. At the same time in the morning and in the early evening.
- Using a peak flow meter can also help you and your child's doctor
- decide if the Asthma Action Plan is working well , decide when to add or stop medicine, and decide when to seek emergency care
- To use a peak flow meter your child should follow these steps:

  Place the marker at the bottom of the scale. Take a deep breath while standing or sitting

  Put the meter in the mouth and close the lips around the mouthpiece.

  Blow out as hard and as fast as possible.

  Don't cough or huff into the peak flow meter, as this will give a false reading.

  Write down the number from the meter. And Repeat steps two more time

  Write the best (highest) of the 3 numbers in your child's peak flow diary

Fighting Asthma

WHAT CAN WE DO?

- **Environmental Changes for Asthmatics in Home**
  - Eliminate smoking
  - **Eliminate pollutants**
  - Reduce exposure include staying indoors
  - keeping windows and doors close
  - using air conditioning and high-efficiency particulate arrestor (HEPA) air filters

Fighting Asthma

WHAT CAN WE DO?

- **Educate ourselves on recognition of asthma signs and symptoms and proper usage of medication**
- **Be Prepared**
- **We must work as a team to stop this childhood epidemic**
- **Communication and education are key to beating Asthma!!!**

Fighting Asthma

WHEN TO CALL DOCTOR OR GO TO ER

Early recognition of s/s is key

-Severe shortness of breath, chest tightness or pain, and coughing or wheezing

-Low peak expiratory flow (PEF) readings

- Symptoms that fail to respond to use of a quick-acting (rescue) inhaler

Fighting Asthma

GOALS FOR SUCCESSFUL ASTHMA MANAGEMENT

- Achieve and maintain control of asthma symptoms.
- Maintain normal activity levels, including exercise.
- Maintain pulmonary function
- Prevent asthma exacerbations.
- Avoid adverse effects from asthma medications.

As Staff What Can You Do?

- LEARN ABOUT ASTHMA RISK FACTORS AND HOW TO RECOGNIZE AND RESPOND TO ASTHMA ATTACK WARNING SIGNS
- IDENTIFY THE CHILD'S PERSONAL ASTHMA TRIGGERS AND REDUCE OR REMOVE THEM.
- PREPARE THE CHILD TO PREVENT ASTHMA ATTACKS IN EXTREME SITUATIONS WHERE KNOWN ASTHMA TRIGGERS CANNOT BE AVOIDED, SUCH AS ON AIR QUALITY ALERT DAYS
- DISCUSS ALLERGY TESTING AND FOLLOW UP TO MAKE SURE THE CHILD IS VACCINATED FOR THE FLU EVERY YEAR.
- EDUCATE EVERYONE WHO PLAYS A ROLE IN THE CHILD'S LIFE ABOUT ASTHMA AND MAKE SURE THEY PROVIDE AN ASTHMA-FRIENDLY ENVIRONMENT.

Staff Understanding and Asthma Management .

ENGAGE THE CHILD IN LEARNING ABOUT ASTHMA

TEACH THE CHILD HOW TO AVOID COMMON INDOOR AND OUTDOOR ASTHMA TRIGGERS.

TEACH THE CHILD TO RECOGNIZE HIS ASTHMA ATTACK WARNING SIGNS

HELP THE CHILD UNDERSTAND THE IMPORTANCE OF PROPER ASTHMA MANAGEMENT