Barriers in Asthma Care for Pediatric Patients in Primary Care

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ABSTRACT

Introduction: There are many barriers to treating children with asthma. Barriers limit access with subsequent disturbances in quality outcomes. This study explored the difference in quality outcomes, utilization outcomes, parental knowledge, and barriers to care between children who had controlled versus uncontrolled asthma.

Method: Data were analyzed between two intact groups of caregivers of children with asthma. Caregivers in both groups completed the Asthma Knowledge Test and the Asthma Barrier Questionnaire.

Results: Caregivers (n = 62) were primarily mothers (85.5%). Children with uncontrolled asthma missed 33.3% more days of school. The caregivers of the children with controlled asthma answered more questions on the Asthma Knowledge Test correctly and had a lower score on the Asthma Barrier Questionnaire.

Discussion: Asthma control is essential. By identifying barriers to care, health care providers can build an action care plan to individualize each patient's needs. J Pediatr Health Care. (2015) *29*, 70-79.

KEY WORDS

Pediatric asthma, caregivers, barriers, knowledge

Asthma is a disease that affects millions of children every day. Asthma is often defined as a chronic inflammatory disease of the airways "that can be life threatening" (Rance, 2008, p. 256). It is a complex disease with a variety of recurring symptoms that include bronchial hyper-responsiveness, airflow obstruction, and an underlying inflammatory process (National Heart, Lung, and Blood Institute [NHLBI], 2007). Since 1999, children between the ages of 5 to 17 years have had the highest incidence of asthma, causing limitations of activity and representing one of the most common chronic illnesses of childhood (NHLBI, 2007).

Asthma is the most common chronic disease in childhood (World Health Organization, 2013). Almost 7 million children (10% of the U.S. population) younger than 18 years have asthma (Viswanathan et al., 2011). Asthma accounts for half a million hospitalizations each year and is the leading diagnosis for children 1 to 17 years of age (Bloom, Cohen, & Freeman, 2009). African American and Puerto Rican children have higher hospitalization and mortality rates associated with asthma than do children of other races or ethnic backgrounds (Bloom et al., 2009). African American children have a 60% increase in prevalence rate, a 250% increase in hospitalization rate, a 260% increase in emergency department (ED) visit rate, and a 500% increase in death rate compared with White children (Centers for Disease Control and Prevention [CDC], 2014). Inner-city living conditions typically are crowded and less sanitary, which creates greater exposure to allergens and an increased risk of developing asthma (Warman, Johnson Silver, & Wood, 2009).

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Asthma directly costs the United States $19.7 billion each year, with the largest single expenditure of $6.2 billion annually attributed to prescription medication cost (American Lung Association [ALA], 2012). Asthma is the third leading cause of hospitalizations in children younger than 15 years (ALA, 2012) and is responsible for 12.8 million lost school days and 14.5 million lost work days each year (ALA, 2012).

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Asthma is a major childhood disability and places a significant burden on children and their families. Appropriate asthma management enables children and their families to enjoy quality of life. However, asthma is underdiagnosed and undertreated, which leads to a burden for children and families by restricting activities and mobility. Availability of treatment plans and disease management guidelines have failed to reduce the incidence of uncontrolled or inadequately controlled asthma within the pediatric population (Chapman, 2008). Uncontrolled asthma can lead to increased morbidity and mortality, impaired quality of life, and increased absenteeism from work and school (ALA, 2012). Seid (2008) demonstrated an inverse relationship between parental knowledge related to asthma self-care and the incidence of uncontrolled asthma. Additionally, there are many potential barriers in treating children with asthma. Barriers limit access with subsequent disturbances in quality outcomes (Bryant-Stephens & Li, 2004.) It is unknown which of the following barriers is the leading barrier: family resources, access to health care services, cost, or following the proper NHLBI guidelines for care.

In 2007, the National Asthma Education Prevention Plan (NAEPP) issued the third Expert Panel Report (EPR-3), a set of evidence-based clinical practice guidelines that incorporated the best practices for people with asthma to control their disease and provide guidance in asthma management for clinicians (NHLBI, 2007). The overarching goals of the NAEPP guidelines are to (a) improve the quality of care and asthma outcomes, (b) close the disparity gap for quality asthma care, (c) enhance early disease recognition, and (d) promote principles of patient-centered care (NHLBI, 2007).

After a survey was completed by 202 inner-city primary care providers, Wisnivesky and colleagues (2008) found that adherence to the NAEPP guidelines was 62% for inhaled corticosteroid (ICS) use, 9% for asthma action plan use, and 10% for allergy testing. The most common adherence barrier for health care providers was a lack of outcome expectancy and poor provider self-efficacy (Wisnivesky et al., 2008).

The EPR-3 recommended that patients be encouraged to use self-assessment tools (NHLBI, 2007). Assessing asthma control can help the provider evaluate both current status and identify patients at risk for future health impairment. The Asthma Control Test (ACT) is a validated instrument that categorizes the degree of disease control (NHLBI, 2007). The ACT is a five-item questionnaire, administered in the provider's office, that evaluates patient-report shortness of breath, asthma control, use of rescue medication, productivity at school, and nighttime awakenings due to asthma symptoms (Nathan et al., 2004). The childhood asthma control test (C-ACT) is used for children ages 4 to 11 years (NHLBI, 2007). The C-ACT has seven questions (three are completed by the child's parent and four are completed by the child and parent together) that produce a score from 0 to 27. The NAEPP uses the ACT score to categorize degree of disease control. A score of 20 or more indicates well-controlled asthma; a score of 16 through 19 indicates not well-controlled asthma; and a score of 15 or lower indicates poorly controlled asthma (NHLBI, 2007). Findings show if the patient has a score lower than 20 on the ACT or C-ACT, this score indicates poor control, and if there is a correlation with a low forced expiratory volume in the first second (FEV1), a change may be needed in the patient's therapy (Rance, 2011).

The Asthma Knowledge Quiz was used in a community education program for parents in the inner city of Philadelphia. The Asthma Knowledge Quiz is a 16-item multiple choice test of the participants' content knowledge about asthma management (Bryant-Stevens & Li, 2004). It includes four main topics: asthma symptoms, triggers, prevention, and appropriate use of devices and medications (Bryant-Stevens & Li, 2004). A study validating the Asthma Knowledge Quiz demonstrated the correlation between the parents with high and low knowledge level and the level of disease of the child. A low score on the Asthma Knowledge Quiz yielded a child with uncontrolled asthma (Rodriquez Martinez & Sossa, 2005).

Despite the best effort of health care providers, children with asthma are especially vulnerable to barriers. The role of barriers such as pragmatics (e.g., transportation, taking time off work, and office hours), health knowledge and beliefs, and negative expectations of care (Seid, Sobo, Gelhard, & Vami, 2004) have made their marks in health care. In one study of inner-city children with asthma, parents reported a long wait, insurance, rude staff, and inability to pay for medications as barriers in optimal asthma care (Seid et al., 2004). Primary care providers serve as the "gatekeepers" in eliminating these barriers for their patients. Primary care providers need to work together with the patient to help improve quality outcomes, which can only be done through open communication. A recent study indicated that poor outcomes are often due to a cascade