

# Barriers to asthma management



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- Renate Jimerson, Pat LeBlanc, & Centrella Stacks

## Asthma

Asthma, the most common chronic illness of childhood, is an inflammatory disease characterized by hyper responsiveness of the airways to stimuli and reversible airway obstruction (Janson, 1998). According to the American Lung Association (ALA) it affects between 6.7 and 9.6 million U. S. children under the age of 18, American Lung Association (ALA) (as cited in Toole 2013).

Asthma is the most common chronic childhood disease with increasing prevalence from 31.4 per 1000 population in 1980 to 54.6 per 1000 population in 2000 despite the advances in asthma pathophysiology understanding and treatment (Tsakiris, Iordanidou, Paraskakis, Talskidis, Rigas, Zimeras, Katsardis, & Chatzimichael, 2013).

Although there have been new medications and medical advances, asthma is a significant cause of a morbidity, school absenteeism, parent lost work days, emergency department (ED) visits, and hospitalizations for children all over the world. Brown, Gallagher, Fowler, & Wales; Martinez; Mattke, Martorell, Sharma, Malveaux, & Lurie (as cited in Toole 2013). Looking into the causes of school absenteeism, it has been found that asthma is the most frequent cause, according to Doull et al., “55% of school students and 55% of asthmatic students missed school days due to respiratory symptoms.” Attendance and the limitation of daily activities are both used as indicators of asthma control level in children. Increased absenteeism interrupts learning processes and participation in daily activities.

Unfortunately “ In a study that specifically focused on parents’ report of receiving written self-management tools from pediatric primary care physicians, Cabana et al. (8) found that only about 30% of parents reported receiving these tools known to facilitate children’s medical adherence.” (Orrell-Valente, Jones, Manasse, Thyne, Shenkin, & Cabana (2011).

An initial literature review was done to gain information about what barriers impact medication compliance with school age children. Using different keywords: children, medication compliance, asthma, cost, education, barriers and impact of noncompliance; were used in the CINAHL database, Google Search, and the Simmons Library to locate information on the subject. Further searches were conducted to refine the topic, from medication compliance with school age children to a more specific topic of medication compliance and asthmatic children.

Identifying asthma as the main subject allowed for us to move in a more specific direction. Our next pursuit was in identifying and categorizing the different barriers, determining the major and minor subjects and listing them under specific categories. “ No one risk factor is responsible for asthma morbidity; rather a plethora of factors contribute to the high prevalence, which vary dramatically among children with asthma (Clark, Mitchell, & Rand, 2009). Asthma risk factors include living in poverty in the inner-city, being uninsured or Medicaid enrolled, and being African American or Hispanic (Akinbami, Moorman, Garbe, & Sondik, 2009; Bloomer et al., 2009; Gerald et al.; Liu & Pearlman, 2009; Mattke et al., 2009; Smith, 2009) (Toole, 2013 p 115).”

“ In 2005, 9% of children under the age of 14 years were diagnosed with asthma and the prevalence of asthma was found to be highest in this age group (Center for Disease Control and Prevention, Control and Prevention, 2006).” (Kamps, J. L., Rapoff, M. A., Roberts, M. C., Varela, R. E. Barnard, M., Olson, N., 2008 p. 206).

Critiquing the research articles that were found has led to three major barriers in asthma management. The first barrier is in cost. Subcategories of cost include insurance availability, income, and socio economic levels. The second is culture. Subcategories of culture include language barriers, legal status, traditions and use of alternative medicine. The last is education. Subcategories of education include health literacy, education level, reading and comprehension abilities, information provided and follow up.

Barriers that impact and interfere with the management of asthma in children are varied. The outcome of ineffective management are increase cost, hospitalizations, improper use of medication and death. Health care providers need to ensure that the patient and parent or guardian understand the proper use of medication, the disease process and associated risk for misuse of medication. Using these categories, a literature review will be a guide in determining the best practice for improving outcomes, decreasing cost, and developing a plan to ensure cooperation between parents, children and the health care provider.

Asthma management requires a multi-faceted approach, including an effective educational component (Ambulatory Pediatrics, 2006). Poor patient outcomes have been associated with a lack of patient and parent compliance

with the patient's individualized treatment plan. There are a number of possible factors that may play a role in patients' and parents' noncompliance. They include financial and cultural barriers, and parents' and patients' misconception about the disease process and the importance of treatment (Cleveland, 2013). The trends reported in a recent study indicated that asthma education to parents positively impacts asthma-related outcomes in children (Kielb, Lin, & Hwang, 2007). In this small sample, there was a decrease in asthma-related sick visits post-education.

Asthma cost are increasing and responsible for a higher percentage of the total health care cost for treatment. Increasing and changing copayment are leading to more emergency room visits and hospitalizations. The cost of these are not as visible as the direct cost of an inhaler medications. So the need for educating on all the cost of asthma are important.

In the article “ Outpatient Management of Asthma in Children” by Andre Schultz and Andrew C. Martin, they discuss the roles of the provider in the diagnosis and treatment of asthma in children. This article determined that one of the critical areas is non adherence to treatment. Having a plan in place is important as well as continued follow up, avoidance of triggers, and use of medication. Non adherence to medication is impacted by the several factors. Socioeconomic status plays a large role in adherence to medication. Data obtained shows that lower adherence is reported in children at a higher rate from low income families.

Perception of cost and the discussion between the Practitioner and patients is important. Determining how the client feels about the medication,

treatment plan and chronic disease is important. This will help to facilitate the response to care. The perception of the cost of medication on the client will play a significant role. Not discussing these important facts with the clients may lead to non-compliance. (Patel, M. R., Coffman, J. M., Tseng, Chien-Wen, Clark, N. M. and Cabana, M. D.).

In a quasi-experimental study done in 2010, they compared participants in a control and intervention group in regards to adherence to medication, healthcare cost and resource utilization. The determined intervention consisted of 2 components. One an average reduction in copayment and the second was mailing educational material for asthma management.

Adherence was determine by the medication available during the duration of therapy and total supply of medication divided by the duration of therapy.

When refills overlapped, it was assumed that the client consumed all medications. Healthcare resource was determined by office visits, hospitalizations, emergency room visit, short acting beta-agonist canisters and oral corticosteroid prescriptions. Cost were defined as total amount paid for visits, hospitalizations, emergency room visits, and prescription drugs.

Overall cost were determined during the twelve month follow up period.

Monthly cost were used rather than total cost during the study period. This study showed improved adherence to controller medication which translated into reduced medical cost and increased prescription cost. Although there were an increase in prescription cost the overall expenditure decreased. This study determined that increasing copayments will create a financial barrier to medication adherence. (D'Souza, A., Rahnama, R., Regan, T., Common, B., & Burch, S. (2010).

Understanding that noncompliance to medication comes from the perspective of the client. In children, parents are the main administrators of medication. A link between the socioeconomics, cultural values, education and use of medication has been shown to produce a negative effect on adherence. This effect is not a single factor but many factors grouped together to provide a complete picture. Clearly identifying the factors that influence compliance with clients will ensure a more effective management in children with asthma.

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