

# Current views of pediatric asthma

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**Abstract.** – Childhood asthma is influenced by multiple factors including genetic, socio-economic, socio demographic and environmental factors. The symptoms of childhood asthma are observed to be variable. Some studies reported that asthma prevalence is disproportionately high among socially disadvantaged children. On the other hand, some reports found weak or no association between social disadvantage and childhood asthma. Recent literature showed that growth of health-related quality of life (HRQOL) instruments in the management of childhood asthma. The present review article would discuss the current views and the latest developments in the field of pediatric asthma.

*Key Words:*

HRQOL, Pediatric asthma, Environmental factors.

## Introduction

Asthma is one of the most frequently reported pediatric chronic disorders<sup>1,2</sup>. Asthma is the prime focus of various clinical and public health interventions as it is responsible for rising pediatric mortality rates and associated health care costs<sup>3,4</sup>. Childhood asthma is related to many physical health conditions (e.g. wheezing, sleep disturbances) and psychosocial health conditions (e.g. peer relationships, communication, positive mood). These might cause significant decrease in the standards of the health related quality of life (HRQOL) of the children and their caregivers<sup>5-8</sup>. The proper identification of asthma symptoms could help to improve child's lives on an individual basis. Using this information in clinical trials and on a health policy level is the objective of HRQOL research. During the past decade, the use of HRQOL as an essential outcome measure of childhood asthma treatment and management has increased<sup>5</sup>. Measurements of HRQOL could be utilized for the evaluation of the impact as well as the progression of asthma. Several earlier studies observed that wheezing

was associated with poor HRQOL<sup>9-11</sup>. However, these studies used a cross-sectional design that made it impossible to explore the relative impact of wheezing patterns during preschool age. Further, preschool children lacked the cognitive abilities to complete the HRQOL questionnaires by themselves. Moreover, earlier studies also revealed that HRQOL could be assessed among preschool children with asthma symptoms using proxy-reported data<sup>10,11</sup>. The public health burden of childhood asthma warrants evaluation of the instruments most commonly used to measure HRQOL in children and their caregivers. Further, Cortina et al<sup>12</sup> concluded that pediatric patients observed with poor HRQOL need more clinical measures.

## *Preschool Asthma Symptoms and Tobacco Smoke Exposure*

Current research in the field of asthma is primarily aimed to improve the health and HRQOL through the prevention of asthma symptoms<sup>13</sup>. Previous studies identified positive outcomes associated with public health worker-delivered interventions, including decreased asthma symptoms. The systematic assessment of preschool asthma symptoms by well-child professionals is now prioritized and is considered essential in the routine well-child care setting. Well-child professionals could play an important role in the systematic assessment of preschool asthma symptoms in the general population, risk assessment of asthma in pediatric patients, proper monitoring and counseling of children at high risk of asthma.

## *Prognosis of Childhood Asthma Symptoms*

Asthma is defined by its clinical, physiological, and pathological characteristics. In early childhood, no recognized gold standard method of diagnosis is available. Moreover, the asthma diagnosis is often preceded by asthma symptoms such as wheezing, shortness of breath and cough, but asthma symptoms in preschool children are

non-specific<sup>14</sup>. Therefore, it is quite difficult to determine the fate of asthma-like symptoms in preschool children. So, a risk score estimating prediction model is essential for the estimation of the risk of developing asthma at school age in the children with asthma symptoms in preschool years. Further, this approach could be a gold standard approach in near future. Several studies previously developed a prediction model or asthma<sup>15-18</sup>. The PIAMA (Prevention and Incidence of Asthma and Mite Allergy) risk score has proved its ability to predict asthma from children as young as 7 to 18 years of age<sup>16</sup>. Prediction models are mathematical models based on available patient data. The PIAMA risk score predicts the probability of developing asthma at school age among preschool children at the time when they first present with suggestive symptoms. The PIAMA risk score might be a suitable risk score or use in well-child care. So, the above tool has abilities to support the communication between well-child care professionals and parents of children at risk of developing asthma.

#### **HRQOL Instruments and Childhood Asthma**

Several feasible, reliable and validated pediatric HRQOL questionnaires are standardized and available to measure HRQOL in asthmatic children<sup>19</sup>. Both generic and asthma-specific questionnaires are used to measure HRQOL in school-aged children. Generic HRQOL questionnaires intend to measure all dimensions of health-related quality of life. Asthma-specific HRQOL questionnaires focus on those dimensions that are likely to be affected by asthma disease or treatment. The prominent asthma-specific HRQOL questionnaires are the Pediatric Asthma Quality of Life Questionnaire (PAQLQ)<sup>20</sup>. If children are unable to report their own experience reliably, parents are appropriate sources of information pertaining to HRQOL. Bousquet et al<sup>21</sup> suggested that fathers might be better proxy reporters than mothers. The correlation between child and parent reported quality of life improves with increasing age of the child. The PAQLQ is the most frequently used disease-specific HRQOL instrument with regard to childhood asthma. The PAQLQ could also contribute in research studies by focusing on the further betterment of protocols by comparing earlier findings. However, using the existing HRQOL instruments is associated with limitations too. Annett et al<sup>22</sup> reported disagreement between distinct HRQOL questionnaires

on components of asthma-specific HRQOL, as only some components of the asthma symptoms domain are parts of questionnaires. Furthermore, according to Van den Bemt et al<sup>23</sup> not all essential components of asthma-specific RQOL are part of existing asthma-specific RQOL questionnaires. Carr and Higginson<sup>24</sup> concluded that standardized RQOL questionnaires have limited ability to capture the HRQOL of individual asthma patients. So, the most appropriate approach to measure HRQOL in asthmatic children is to use a combination of parental and self-reports of both generic and asthma-specific HRQOL by validated questionnaires.

#### **Conclusions**

Various instruments in the form of questionnaires' are being developed to pick the disease at an early stage in pediatric patients for the better therapeutic management of pediatric asthma. As of now, combination approach of using both parental and self-reports of generic as well as asthma specific HRQOL is showing promising results. However, there is still a scope of betterment in this instrument that we will see in the near future.

#### **Conflict of Interest**

The Authors declare that they have no conflict of interests.

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