

Measurement of quality of life in asthmatic children aged less than 5 years

Childhood asthma is one of the most common chronic disorders with high prevalence and morbidity resulting in significant personal, familial, and social consequences in children. In India also, prevalence of childhood asthma is constantly increasing over last two decades [1]. Asthma in children under 5 years of age requires a special attention as asthma at a younger age may affect pulmonary development adversely, resulting in reduced lung function later in life. Young children are also likely to experience more emergency department visits and re-admissions as compared to older asthmatics [2]. Studies have shown that early childhood wheezers and asthmatics have a poor quality of life (QOL) as compared to non-wheezers, and better asthma control has been positively linked to better QOL [3,4].

The assessment of symptoms and QOL are important aspects in the control of childhood asthma. Health-related quality of life (HRQOL) questionnaires can provide information on how chronic diseases interfere in the social, emotional, and physical domains of the patient from the perspective of the child and his family. Assessment of QOL in persistent wheezers may also help the clinician to understand and address many unaddressed or unidentified issues. It is also possible that poor scores on QOL evaluation may actually be pointing toward poor control of asthma in otherwise “seemingly controlled” asthmatic child or may indicate unattended co-morbid conditions or necessity for further evaluation.

Important characteristics of HRQOL questionnaires include age range, the language of validation, number of questions, administration mode, the evaluated period and fields, and the minimum clinically relevant difference [5]. Collecting patient-reported outcomes (PROs) from pediatric patients presents unique challenges, including identifying the age or developmental stage at which children can reliably and reproducibly report their health status. Therefore, healthcare providers must rely on the caregiver, child or both to gauge symptoms and disease effect on QOL. There are many internationally accepted specific instruments designed to assess HRQOL in children with asthma [6]. The most widely used and well-known of these is the pediatric asthma QOL questionnaire with standardized activities which has been translated and validated into over 20 languages. However, it is designed and validated for children ages 7 and above only as it is a self-reported questionnaires [6,7].

In younger children, the caregiver (i.e., proxy) perception of HRQOL and symptom level is a primary determinant of healthcare utilization. Proxy reporting of observable symptoms for patients who cannot respond for themselves is supported

by the US Food and Drug Administration’s PRO guidance [8]. Of approximately 20 pediatric asthma proxy reported outcome instruments, pediatric asthma caregiver diary, pediatric quality of life inventory (PedsQL) 3.0 asthma module asthma symptoms scale (PedsQL asthma symptoms scale), and test for respiratory and asthma control in kids were the frequently used instruments and were found to be suitable for use as end-points in pediatric asthma clinical trials [9-11].

In the current issue of Indian Journal of Child Health, Pherwani has published a pilot study assessing QOL in asthmatic children less than 5 years of age in urban setting using a self-constructed questionnaire. The questionnaire addresses 4 domains, i.e., clinical symptoms, environment factors, behavior and physical activity. The 18-item questionnaire contains easy to understand questions for reasonably educated parents. In her pilot study, the questionnaire has shown good internal consistency. Children with at least three attacks of asthma in the past year have scored significantly high as compared to controls, which reflect the impact on their QOL. The author also has defined thresholds to identify severity.

It is indeed a good initiative as no instrument is currently available to be used to assess the QOL of Indian children with asthma. Furthermore, none of the presently available and frequently used QOL questionnaire is validated to be used in the Indian setup. In past years, use of HRQOL tools in intervention and impact studies of asthma in children as well as the number of cultural adaptations of existing instruments has been increased considerably. Still, in last six years, there have been no publications on the development of new questionnaires. Therefore, this study can give a useful instrument if could prove to be valid and reliable. It must allow for the comparison of results with those performed in similar populations and should also have an appropriately adapted (validated) version to the local cultural context when created in a different language.

Of course, in the current study, the sample size is small; though, it is acceptably understood for a pilot study. Although parents’ perceptions of QOL can differ from those perceived by older children, parent’s opinions have to be accepted as a proxy for under-five children for obvious reasons [12,13]. Objective definition of population to undergo QOL evaluation with the instrument is also desirable, as diagnosis of asthma in under 5 children is mostly clinical and may vary with clinician to clinician, at least for some children falling in “grey zones.” Furthermore, some items in the questionnaire may also be affected by non-asthmatic conditions. Further studies with the application of the instrument into a larger sample size, in

different settings, in different regions and for parents with the different educational background will help to know the clinical usefulness and limitations of the tool.

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REFERENCES

1. Pal R, Dahal S, Pal S. Prevalence of bronchial asthma in Indian children. *Indian J Community Med.* 2009;34(4):310-6.
2. Akinbami LJ, Moorman JE, Garbe PL, Sondik EJ. Status of childhood asthma in the United States, 1980-2007. *Pediatrics.* 2009;123 Suppl 3:S131-45.
3. Hafkamp-de Groen E, Mohangoo AD, Landgraf JM, de Jongste JC, Duijts L, Moll HA, et al. The impact of preschool wheezing patterns on health-related quality of life at age 4 years. *Eur Respir J.* 2013;41(4):952-9.
4. Li Z, Huang IC, Thompson L, Tuli S, Huang SW, DeWalt D, et al. The relationships between asthma control, daytime sleepiness, and quality of life among children with asthma: A path analysis. *Sleep Med.* 2013;14(7):641-7.
5. Fayers PM, Machin D. Front Matter. In: Fayers PM, Machin D, editors. *Quality of Life: The Assessment, Analysis and Interpretation of Patient-Reported Outcomes.* 2nd ed. Chichester, UK: John Wiley and Sons, Ltd.; 2007.
6. Solans M, Pane S, Estrada MD, Serra-Sutton V, Berra S, Herdman M, et al. Health-related quality of life measurement in children and adolescents: A systematic review of generic and disease-specific instruments. *Value Health.* 2008;11(4):742-64.
7. Roncada C, Mattiello R, Pitrez PM, Sarria EE. Specific instruments to assess quality of life in children and adolescents with asthma. *J Pediatr (Rio J).* 2013;89(3):217-25.
8. US Department of Health and Human Services. Guidance for Industry. Patient-reported Outcome Measures: Use in Medical Product Development to Support Labeling Claims. December 2009. Available from: <http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/UCM193282.pdf>. [Last accessed on 2015 May 13].
9. Barrett A, Clark M, Demuro C, Esser D. Proxy-reported questionnaires for young children with asthma: A structured review. *Eur Respir J.* 2013;42(2):513-26.
10. Seid M, Limbers CA, Driscoll KA, Opiari-Arrigan LA, Gelhard LR, Varni JW. Reliability, validity, and responsiveness of the pediatric quality of life inventory (PedsQL) generic core scales and asthma symptoms scale in vulnerable children with asthma. *J Asthma.* 2010;47(2):170-7.
11. Murphy KR, Zeiger RS, Kosinski M, Chipps B, Mellon M, Schatz M, et al. Test for respiratory and asthma control in kids (TRACK): A caregiver-completed questionnaire for preschool-aged children. *J Allergy Clin Immunol.* 2009;123(4):833-9.
12. Burks ML, Brooks EG, Hill VL, Peters JI, Wood PR. Assessing proxy reports: Agreement between children with asthma and their caregivers on quality of life. *Ann Allergy Asthma Immunol.* 2013;111(1):14-9.
13. Silva CM, Barros L, Simões F. Health-related quality of life in paediatric asthma: Children's and parents' perspectives. *Psychol Health Med.* 2014:1-15.

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