Abstract

Asthma has been identified as a leading cause of functional impairment especially among children and adolescents despite major therapeutic advancements. The magnitude of prevalence and cost of the disease have made asthma a priority concern among public health authorities across the world. Adolescents with asthma suffer not only due to the chronic and intermittent nature of the illness and but also by its management strategies. Research on asthma among adolescents is necessary to monitor disease trends, to identify factors associated with it. It is also important to evaluate how asthma affects the quality of life.

The present study was carried out to determine the prevalence and correlates of asthma among 12- 14 year old school children and also to assess the impact of asthma on their quality of life (QOL). The study had two components; translation and validation of instruments on general and asthma specific quality of life and a cross sectional study to determine the prevalence and correlates of asthma. A case control design was used to assess the correlates of asthma and the association of asthma and atopy was examined using skin prick testing.

The validation study revealed that the Sinhala version of the PedsQL^{TM} Generic core scale and Asthma module have adequate validity and reliability to assess general and asthma specific QOL among school children in early adolescence in Sri Lanka.

The prevalence study was carried out among 1483 school children of 12-14 year age group in the district of Gampaha. A stratified multistage cluster sampling method was applied in selecting the study population. A self administered questionnaire was used to collect data on prevalence and QOL. Questions on asthma screening were adopted from the ISAAC tool and the QOL was assessed using the validated PedsQL tools.

The reported prevalence rates for current wheezing, ever wheezing, current asthma and physician diagnosed asthma were 16.7%, 19.4%, 10.7% and 14.5% respectively.

One hundred and fifty eight students, identified as having current asthma were enrolled for the case control study with two healthy controls per case from the same class. The study identified that being an only child (OR=4.2, 95%CI: 1.7-9.9); being the first born (OR=2.6 95% CI: 1.3-5.2); presence of allergic rhinitis (OR=2.7, 95% CI: 1.6-4.6) ; family history of asthma (OR= 1.8, 95% CI: 1.1-3.2) ; family history of allergic rhinitis (OR= 1.9, 95% CI: 1.1-3.2); family history of eczema (OR= 1.8, 95% CI: 1.0-3.2) and exposure to in-utero tobacco smoke (OR= 2.0, 95% CI: 1.06-3.7) as predictors of current asthma in this study sample. The skin prick testing, done with 61 current asthma cases-healthy sibling pairs revealed that adolescents with asthma show 9.3 times risk of atopy and have significant atopy towards cockroach (OR=5.3, 95% CI: 2.2-12.6), house dust mite (OR= 13.0, 95% CI: 3.08-54.7) and blomia (OR = 11.5, 95% CI: 2.71-48.7).

The assessment of general QOL among school children revealed that 17% of students were having poor QOL. Living with persons other than parents (OR=2.8, 95%CI: 1.5-5.3); studying in a type 2 (lower category) school (OR= 1.9, 95% CI: 1.2-3.0); presence of allergic rhinitis (OR=1.8, 95% CI: 1.3-2.5); presence of other allergies (OR=1.7, 95%CI: p1.2-2.5); presence of current asthma (OR=1.7, 95% CI: 1.1-2.7); poor academic performance (OR=0.98, 95%CI: 0.97-0.99); poor school attendance (OR=0.99, 95%CI: 0.98-0.99) and increasing BMI (OR=1.06, 95% CI: 1.02-1.1) are found to be predictors of poor general QOL after accounting for confounding.

The students with current asthma were found to have significantly lower general HRQOL in all dimensions compared to their healthy colleagues. The presence of allergic rhinitis was significantly associated with poor asthma QOL. The students who perceived that their asthma was under control and those who were on regular treatment had better asthma specific QOL. There were significant correlations between the academic performance, school absenteeism due to illness and general QOL with asthma specific QOL scores.

The st~~u~~dy highlights the importance of asthma as a common non communicable disease prevalent among adolescents and it impact on the quality of life. The data from the study can be utilized to sensitize stakeholders on asthma prevalence, correlates, and its impact on adolescent QOL and to educate the general public, patients and parents on modifiable risk

factors. The study highlights the need to sensitize clinicians about the importance of measuring QOL in routine asthma management as a outcome measure. Translation and validation of the PedsQL battery of tools provides an opportunity for its use in clinical practice since the ultimate goal of treatment, is to improve the QOL of patients.