ABSTRACT

Objective: To study the correlation between Body Mass Index (BMI) and Peak expiratory flow rate (PEFR) in school-going children.

Background: In various studies, obesity has been observed to be associated with asthma and loss of weight associated with improvement in respiratory symptoms; thus, we undertook to study the influence of BMI on PEFR.

Methods: 510 healthy school-children aged between 8 and 15 years were recruited into the study, excluding those with past or present asthma, respiratory infection and systemic illness. Age, weight, height and PEFR were measured and a questionnaire filled. Statistical analysis was done to study the factors influencing PEFR using simple and multiple regression analysis.

Results: Age, gender, weight, height, BMI and exposure to mosquito repellent had a significant influence on PEFR by simple regression analysis (p<0.05). Correlation coefficients for age, weight, height and BMI with relation to PEFR were 0.52, 0.46, 0.59 and 0.17 respectively. Using multiple regression analysis, it was demonstrated that the effect of BMI on PEFR was not seen (p>0.05) when other factors including age, gender and exposure to mosquito repellent were controlled for. However, age, weight, height and exposure to mosquito repellent had a significant influence on PEFR, even after controlling for other variables (p<0.05). BMI, in its extremes, has no significant influence on PEFR.

Conclusion: BMI has a weak positive relationship with PEFR, but this is not seen when controlling for other factors. Age, weight and height have a positive influence, whereas exposure to mosquito repellent has a negative influence on PEFR. In its extremes, BMI has no significant influence on PEFR.

Keywords: Peak expiratory flow rate, Body mass index, Anthropometric, Nutritional status.