

## **ABSTRACT**

Environmental Tobacco Smoke (ETS) is a widespread pollutant despite the growing awareness of its adverse effects on human health. It has been recognised as a health hazard, and children are especially vulnerable. This study was conducted to analyze the factors associated with Children's Tobacco Smoke (IS) exposure in different socioeconomic conditions and to measure cotinine concentration in their urine and saliva samples. A sample of 300 children aged 8 to 13 years and their parents were randomly surveyed in three Union Councils of District Lahore focusing lower, middle and upper socioeconomic classes (SECs). A semi-structured questionnaire was designed to collect information about children's tobacco smoke exposure both inside and outside their homes. Descriptive analysis showed that 81.3% of children were living with an active smoker. Out of 66.7%, 20.3%, 24.3% and 22% children of low, middle and high income groups were exposed to IS in their homes, respectively. In children exposed to TS, redness of eyes 55.7%, cough 68%, running nose 62.3%, wheezing 24.7% and chest tightness 16% were found as the symptoms of Respiratory tract infections (RTI). Analysis of Variance and Binomial logistic regression were used to analyze the socio-economic determinants of children passive smoking exposure and RTIs. Logit Model showed no statistical significance among children's TS exposure and different socio-economic classes; however association was found by ANOVA. However, both methods had imparted significant results for RTIs. Cotinine, the major metabolite of nicotine was used to evaluate children's passive inhalation of TS. Urine and saliva samples were collected from exposed and non exposed children, and were analyzed by High Performance Liquid Chromatography (HPLC) with ultraviolet radiations (HPLC/UV) to quantify cotinine at 260 nm absorbance. The HPLC flow rate was 1 ml/min and retention time of cotinine was found to be 3.4 min. Cotinine was found in urine samples range 158 ng/ml to 191 ng/ml as compared to saliva with range 142 to 191 ng/ml. Although, minimum difference was found in cotinine level among different SECs. Results of the study showed that children's exposure to ETS remains a major public health concern, requiring immediate steps to control this menace. Efforts should be made to convince parents and general public to not to smoke in close proximity of children by informing them the threats of passive smoking to young children. Effective enforcement of anti-smoking law is also needed to curtail children's ETS exposure.