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STATISTICAL ANALYSIS OF FACTORS INFLUENCE ON RESPIRATORY HEALTH OF SCHOOL CHILDREN IN KANDY

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This study was designed to determine the association of factors influencing the respiratory-health related symptoms among children attending schools in high traffic intensity areas of Kandy.

From the responses received on the respiratory health aspect through the questionnaire, a developed health indicator (HI) was used to categorize the students in to four levels (Health level 1 (HI, 0.75 – 1), Health level 2 (HI, 0.5 - 0.75), Health level 3 (HI, 0.5-0.25), and the Health level 4 (HI, 0-0.25)). Analysis showed that the percentage of healthy village school children (72.92%) is higher than the percentage of healthy city school children (41.20%). Comparison of the percentages of the two student groups in health level 2 shows that the percentage of city school students is higher (51.76%) than the percentage of village school students (41.20%). Comparison of the percentages of the two student groups in health level 3 shows that percentage of city school children are higher (7.04%) than the percentage of village school children (3.75%). In the city, the students who are being affected by respiratory related problems are higher.

Multiple correspondence analysis (based on the point distance) revealed that respiratory-related ill health of health level 2 and 3 were highly correlated with students affected by traffic block, mode of travel (bus or van), having sick brothers and sisters at home , black smoke at home environment, exposure to cigarette smoke, and mosquito coil usage at home, distance from home/boarding.

Logistic regression analysis was used to compute odds ratios of adverse effect. The city school children had significantly more respiratory symptoms (cough, skin irritations, headaches/eye irritations, breathing difficulties, sneezing) and disease (colds, dust allergy, Phlegm even without a flue) when compared with the village school children. On the other hand dry cough, breathing difficulties and wheezing symptoms were more prevalent in the village school children. Wheezing appears to be a family problem of those living in the rural community where as it has affected the city school children once they started schooling.

Ordinal Logistic model was fitted to predict the respiratory health status of a student of the said age group by using the most significant combination of factors which were identified by the principal component analysis. This model could be used for predict the probability of a student falling in to the each health level given the confounding factors.

Keywords: *Air pollution; Kandy; respiratory health; students; Traffic intensity*