Relationship between respiratory diseases of schoolchildren and tobacco smoke in Hong Kong and Sri Lanka

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Objectives of the Study

- To identify the most important risk factors for respiratory health problems in children.
- To determine whether there were any measurable differences in the respiratory health of children with various levels of air pollutants.
- To identify the impact of different indoor conditions on children's pulmonary health.

METHODOLOGY

Preparation

- An invitation letter will be written to school head explaining the purpose of the study
- A meeting will be arranged with responsible teachers to discuss practical aspects of the study

Respiratory Health Questionnaire

- Indoor environment conditions; respiratory health of children
- Travelling pattern and duration of children

Pulmonary Function Test

- Measure the Forced Vital Capacity (FVC) and Forced Expiratory Volume in 1 second (FEV1)

Respiratory Health Questionnaire

- Section A
  - Indoor Environment
    - Tobacco smoke, home dampness
- Section B
  - Respiratory Health
    - Lifetime prevalence of asthma
    - Lifetime prevalence of wheeze
- Logbook
  - Travelling pattern
  - Duration of school trips

Pulmonary Function Test

- Forced Vital Capacity (FVC)
  - the volume of air that can forcibly be blown out after full inspiration, measured in litres
- Forced Expiratory Volume in 1 second (FEV1)
  - the volume of air that can forcibly be blown out in one second

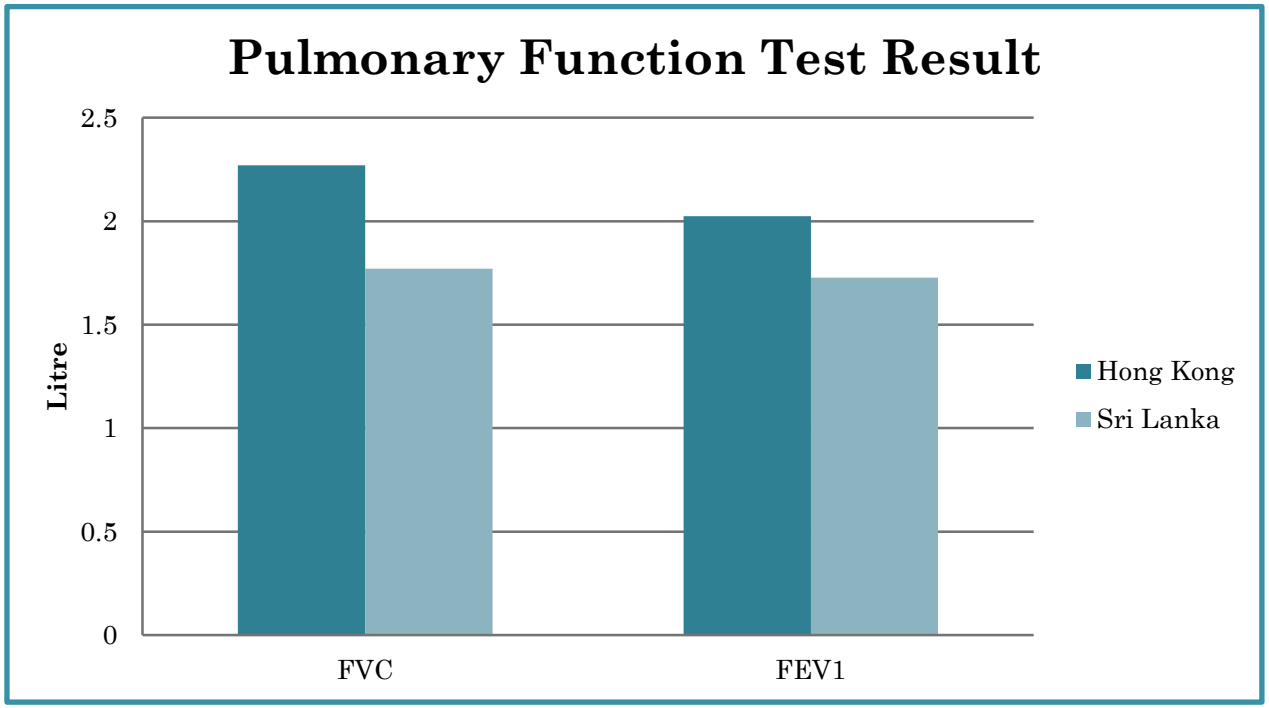
Hong Kong Measurement Result

- 147 students from Hong Kong
- Average age :11.1 years old
- Average height : 148.5 cm
- Average weight : 41.6 kg
- Average BMI : 18.8 kg/m^2

Sri Lanka Measurement Result

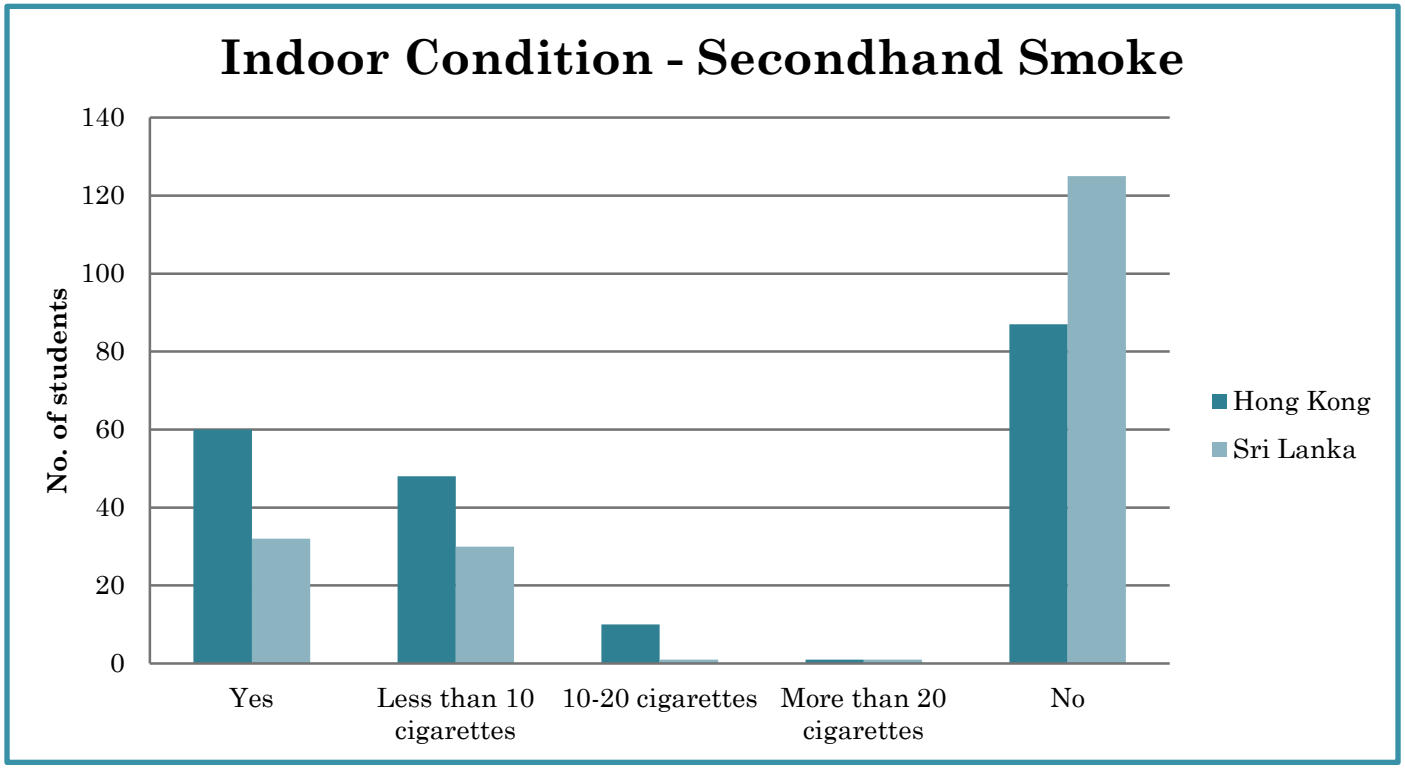
- 185 students from Sri Lanka
- Average age :10.9 years old
- Average height : 143.6 cm
  - which was around 2 cm shorter than HK students
- Average weight : 31.9 kg
  - lower than similar age HK children by 10 kg
- Average BMI : 18.8 kg/m^2 in Hong Kong
  15.5 kg/m^2 in Sri Lanka
  - both within the normal range

Results Comparison between Sri Lanka and Hong Kong



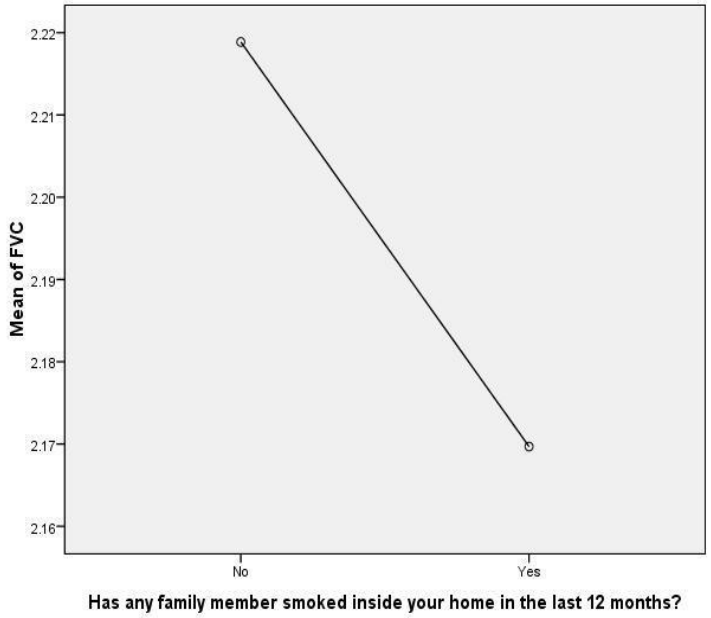
Statistical t-test showed that there was significant difference on the pulmonary function between Hong Kong children and Sri Lanka children.

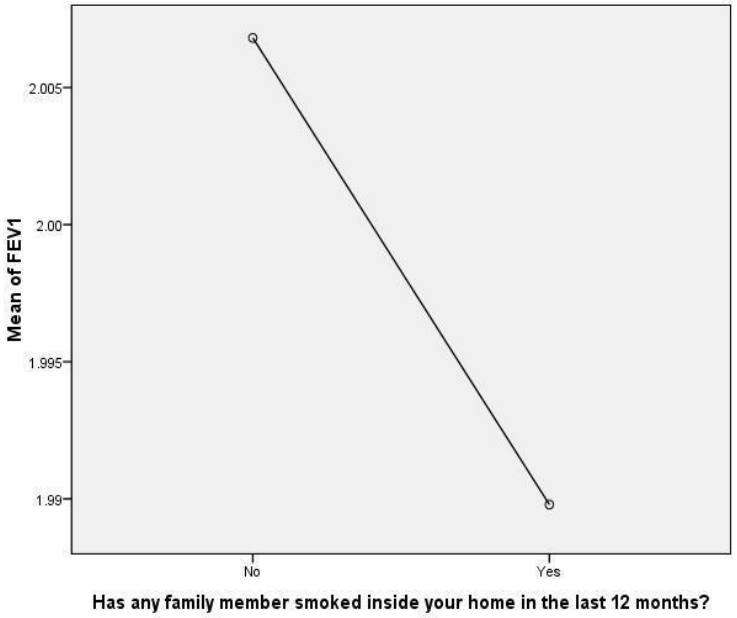
Tobacco Smoke Condition At Home of Sri Lanka and Hong Kong Students



There are more household tobacco smoke in Hong Kong than in Sri Lanka.

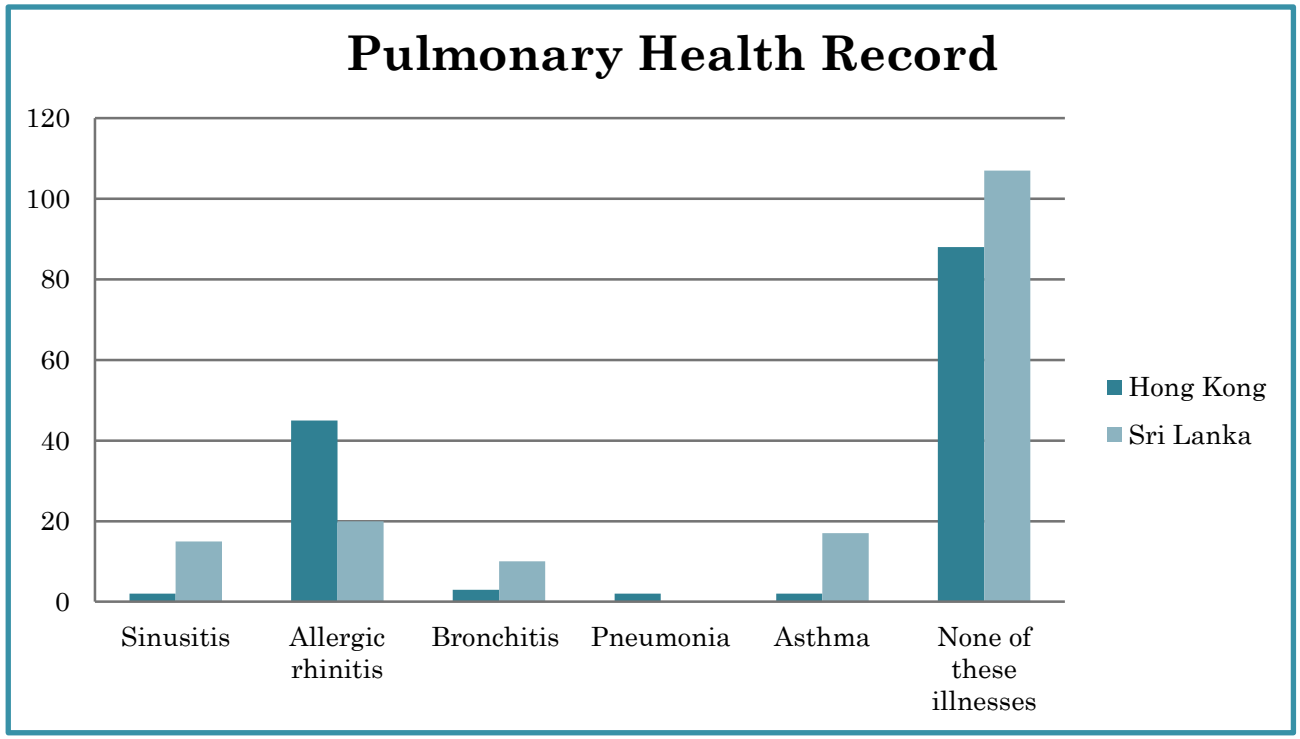
Relationship Between Tobacco Smoke and Pulmonary Function





We found that there is significant difference of pulmonary function between parental smoke and non-parental smoke family (p-value: 0.049 and 0.007). Those students have parents who smoke, they appear to have a poorer pulmonary function.

Pulmonary Health Record of Sri Lanka and Hong Kong Students



High correlation were recorded between respiratory diseases of schoolchildren and the number of cigarettes that being smoked per day by the smoking family member.

Conclusion

- Students' have smokers as family members has a significantly lower pulmonary function in mean than those without smokers at home in both Sri Lanka and Hong Kong.

- The medical histories such as bronchitis, asthma, pneumonia, etc were recorded. High correlation were recorded between respiratory diseases of schoolchildren and the number of cigarettes that being smoked per day by the smoking family member.

Conclusion

- The weight, height and indoor conditions are different from students in Sri Lanka and Hong Kong
  - we cannot have a concrete conclusion on the reason of poorer pulmonary function of students

- We need to have further investigation on the air pollution level to have a more detail of the air pollution exposure of children
  - to find out the relationship between air pollutants and pulmonary function between Hong Kong and Sri Lanka.

Thank you !

Acknowledgements

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