

**EFFECTS OF INDOOR AIR POLLUTION ON RISK OF ACUTE
RESPIRATORY INFECTION AND OTHER RESPIRATORY
PROBLEMS IN CHILDREN UNDER FIVE IN THIMPHU,
BHUTAN**

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**A Thesis Submitted in Partial Fulfillment of the Requirements
for the degree of Master of Public Health in Health Systems Development**

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By : Mr. Nima Sangay

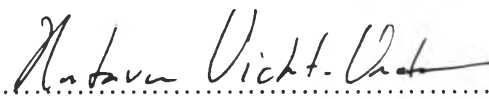
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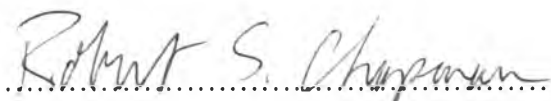
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A cross-sectional study was conducted from 5th February to 3rd March 2005 at health centers in the area of Thimphu, Bhutan. The objective of the study was to investigate whether indoor air pollution from household cooking or heating was associated with increased risk of acute respiratory infections and respiratory symptoms in children under five years of age.

The study was health centers based with a sample of 211 children. (The information collected was from 180 mothers.) Trained interviewers used a standardized questionnaire to collect the information, which included the socio-demographic, environmental, child factors and information on acute respiratory infection and other respiratory conditions in children < 5 years old. Analysis was based on 211 children in this study. Children who suffered from cough accompanied by short, rapid breathing during the 2 weeks preceding the survey were defined as having suffered from ARI during this period. Prevalences of illness with cough in the last 6 weeks, cough and sputum of any duration, and wheeze were also assessed. Descriptive statistics and chi-square test were used to describe associations and significance of findings.

The results showed that over all prevalence of ARI in last two weeks was 19.0%. 16.2 % of children exposed to biomass (wood) smoke suffered from ARI during the 2 weeks preceding the survey interview. But, there was no association on biomass fuel burning with very recent ARI. There were limited positive associations of household burning of biomass fuel (wood) with the other respiratory disorders studied. In this study the prevalence of respiratory symptoms was very high. Illness with cough in the last 6 weeks was reported in 66.4 % of children, cough and sputum of any duration was reported in 21.8 % of children. Wheezing was reported in 28.4% of children.

The study results suggest that indoor air pollution has effects on respiratory symptoms but not in recent ARI. The observed associations need to be further investigated using more direct measures of smoke exposure and clinical measures of ARI and respiratory conditions.

Field of study Health Systems Development Student's signature *Nima Sangay*
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