

ENVIRONMENTAL EXPOSURES, LUNG FUNCTION, AND RESPIRATORY HEALTH IN RURAL LAO PDR

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Abstract. Although the individual contributions of smoked tobacco and indoor air pollution have been identified, there are very few studies that have characterized and measured the effects of inhaled particles from a wide range of personal, household, and community practices common in rural Asia. The objective of our study was to examine the association between environmental inhaled exposures and lung function among rural males of Lao PDR. In a sample of 92 males from rural Lao PDR, study subjects completed a survey on household exposures, a physical exam, and the following measures of lung function: FEV1, FVC, and the ratio of FEV1/FVC. Our findings were as follows: a) > 80% of the subjects were exposed to indoor cooking fires (wood fuel), animal handling, dust and dirt; b) 57.6% of subjects were in the impaired range (FEV1/FVC < 0.7); and c) animal handling was negatively associated ($p < 0.03$) with FEV1 and FVC. Among males in rural Lao PDR, we found a high prevalence of chronic exposure to inhaled particles (animal handling, dust/dirt, smoke) and a high prevalence of impaired lung function. Findings from this pilot study indicate that associations between exposure to multiple sources of particulate matter common in rural areas and lung function need further investigation.

Keywords: air pollution, lung function, respiratory disease, tobacco use, Lao PDR

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