**Association between the type of fuel use with acute respiratory infections among children under-five in Bangladesh**

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**Abstract:**

Acute respiratory infections (ARI) is a leading cause of mortality in under five children in Bangladesh. Low-income families often depend on fuels such as wood, coal, and animal dung for cooking. It is not clear whether the use of other fuel has health advantage over biomass fuels. Therefore, we aim to conduct a study to detect the effects of fuel usage on ARI in children. Using the Bangladesh Demographic & Health Survey (BDHS) 2014 data, we estimated the effect of fuel use on ARI by constructing logistic regression models. A multiple logistic regression model was used to assess risk factors of ARI due to fuel use. From the analysis, we found the crude (only type of fuel in the model) odds ratios (OR) for the ARI were 1.63 (95% confidence interval (CI): 1.16-2.36). That means children in households using polluting fuels were 63% more likely to have an ARI event than children from households using fossil fuels. After adjusting for child’s sex, age and place of residence; mother’s education, and household wealth index, indicated that the effect of biomass fuels is also more acute as adjusted odds ratio (AOR) for the ARI were 1.19 (95% CI: 0.78-1.87) compared with the effect of fossil fuel. Children belonging to age group 0-11 months were significantly more likely to have ARI (AOR = 1.92; 95% CI: 1.44-2.53) as compared to children belonging to 24-59 age groups. Mother’s education level is another major factor in this field. There is an association between fuel usage and ARI in children. This study also identified various socio-demographic, nutritional and environmental risk factors for ARI which can be tackled by effective education of the community and appropriate initiatives taken by the government.

Keywords: