

# IMPACT OF AN IMPROVED BIOMASS STOVE (PATSAARI) INTERVENTION ON CHILDREN'S HEALTH

**Astrid Schilmann**, *Instituto Nacional de Salud Pública, México*

**Karina Ramirez-Sedeño**, *Instituto Nacional de Salud Pública, México*

**Horacio Riojas-Rodríguez**, *Instituto Nacional de Salud Pública, México*

**Isabelle Romieu**, *International Agency for Research on Cancer, France*

**Rogelio Pérez-Padilla**, *Instituto Nacional de Enfermedades Respiratorias "Dr. Ismael Cosío", México*

**Background and Aims:** In México, about 27 million people use wood as primary source of energy. One approach to decrease the health burden related to indoor air pollution has been implementation of improved wood-burning chimney stoves. The aim of this study is to assess the impact of the introduction of Patsari stoves on the respiratory health of younger than 4 years of age children in highlands Michoacán.

**Methods:** Households (n=668) in six rural communities in a fuel wood using region were selected and randomized to receive an improved stove (Patsari) early on or keep their traditional wood fire until the end of the follow up including 10 monthly visits. During each home visit, a questionnaire was applied to the mother asking for a two week recall of signs and symptoms of the index child and the field worker observed and measured signs and symptoms. Longitudinal data was analyzed using population averaged modified Poisson regression.

**Results:** More than half of the children were younger than 24 months of age. No severe cases of acute respiratory infections (ARI) were detected and only a few moderate cases of ARI were observed by field workers. During follow up, adherence to the intervention was low (50%) and an analysis according to the reported stove use was performed. The younger than 24 months of age children of mothers who reported using the Patsari stove most of the time compared to those using the open fire had a slightly lower risk of respiratory symptoms (nasal secretion RR=0.90, 95%CI 0.74, 1.09; wheezing and/or breathing difficulty RR=0.80, 95%CI 0.36, 1.77) adjusting for relevant confounders.

**Conclusions:** The intention to treat analysis showed no impact of the improved stove intervention on children respiratory outcomes, but considering the stove use reported by the children mothers' a small effect was observed.