

# **Point Prevalence of Respiratory Infection in Relation to Indoor Air Pollution**

**A Rural Study in Karnataka, India**

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# Introduction

- ❖ 70% of Indian Population is rural
- ❖ 28% of deaths are due to indoor air pollution
- ❖ 84% of women and children bear the burden of indoor smoke
- ❖ 0.5 million deaths of children and women is due to indoor air pollution
- ❖ 60% of asthma attacks can be prevented by effective control of indoor air pollution
- ❖ Indoor air pollution is a major health and socio-economic burden in the developing countries with high mortality rates

# Aim of Our Study

- To find out the prevalence of respiratory infection in children under 5 years of age in the selected rural area.
- To correlate the prevalence and incidence of infections with the living environment, type of cooking fuel used and tobacco smoking habits of the parents.

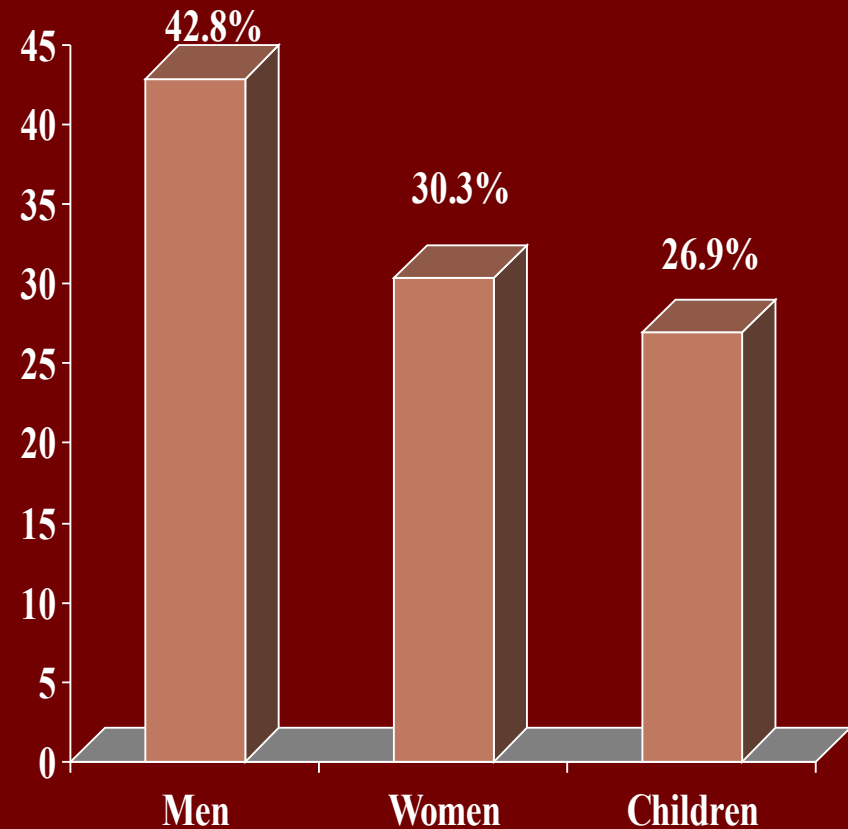
# Material and Methods

- A prospective study conducted in 3 villages. 25 km south of the Metropolitan City of Bangalore situated 6 km inside the highway.
- The study used a questionnaire survey with clinical evaluation by physicians
- 612 huts were visited, and of the 2917 total population 1121 people were evaluated. This included 301 children less than 5 years of age
- All were agricultural farm workers
- All of them used dung cakes and agricultural waste as fuel for cooking purposes.

# Results:

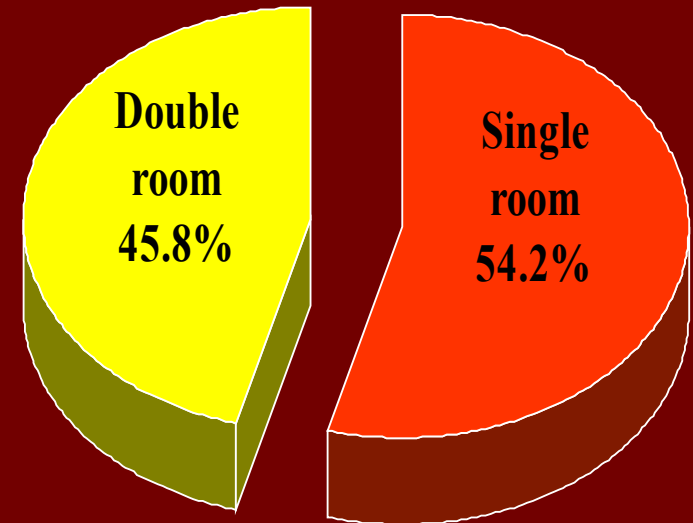
## Details of the Population Study

Population surveyed	Number	%
Men	480	42.8
Women	340	30.3
Children	301	26.9
Total	1121	100.0



# Type of Dwelling

Type of dwelling	Number	%
Single room	332	54.2
Double room	280	45.8
Total	612	100.0



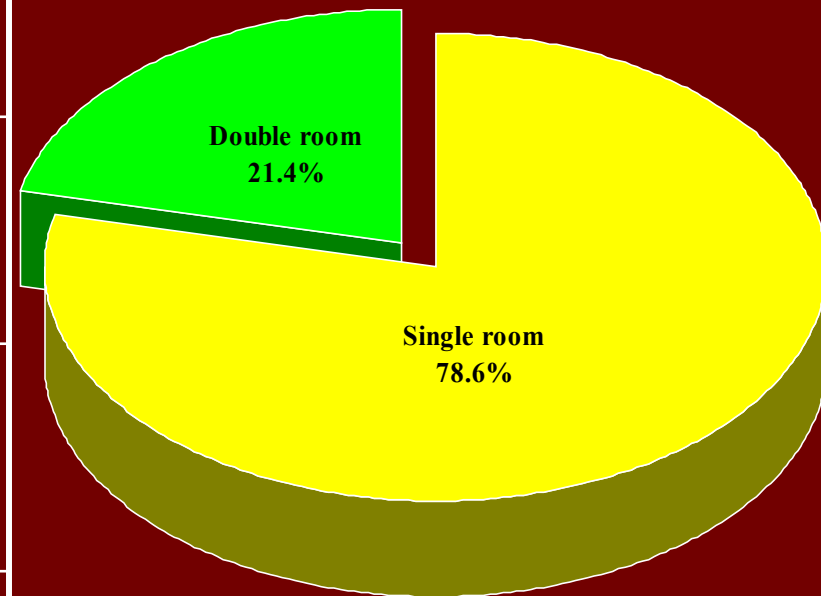
Single dwelling is statistically significant: 95% CI (50.3-58.2%)

# Use of Agricultural Waste and Dung Cake for Cooking

Use of agricultural waste and dung cake for cooking	Number of houses	%
Yes	612	100.0
No	-	-
Total	612	100.0

# Type of dwelling of Children with Respiratory Infection

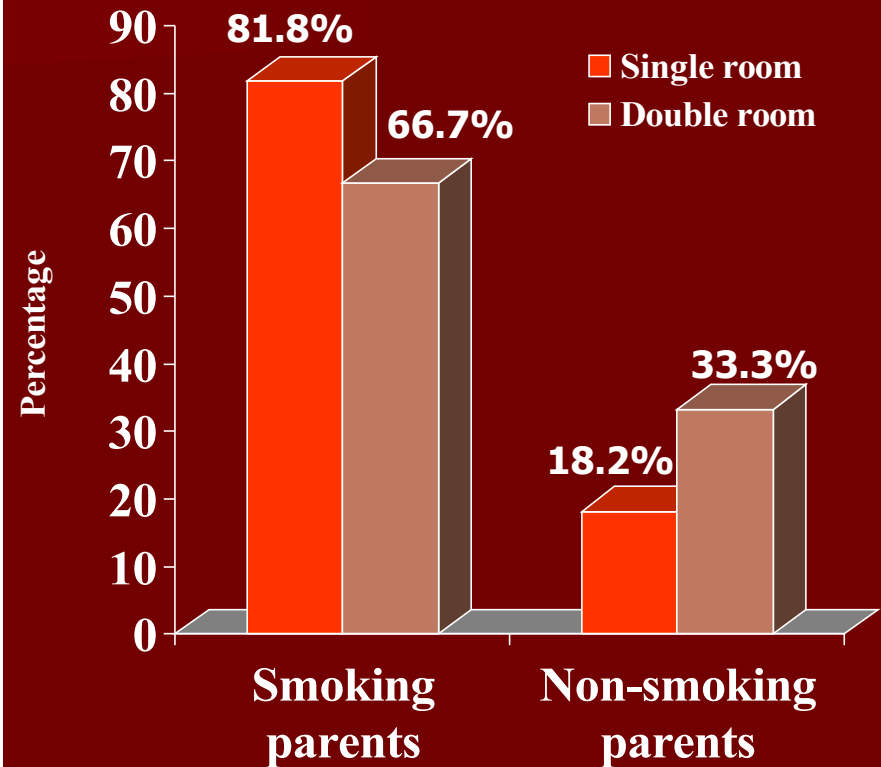
Type of dwelling	Number	%
Single Room	132	78.6%
Double Room	36	21.4%
Total	168	100.0%



Respiratory Infection is significantly associated with single room dwelling with 95% CI

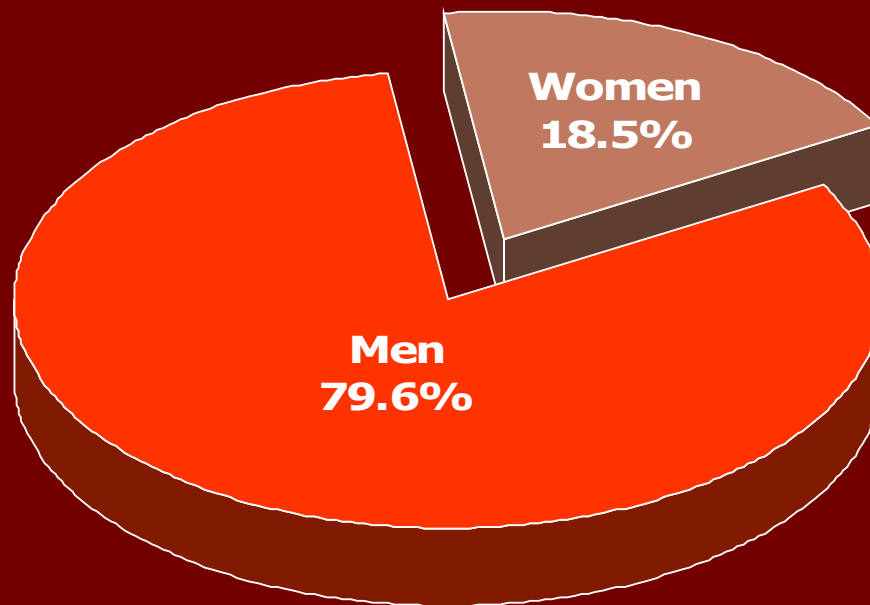
# Incidence of Respiratory infection in Children in Relation to Parents' Smoking Habits and Type of Dwelling

Children with Respiratory Infections	Type of dwelling	
	Single	Double
Smoking parents	108 (81.8%)	24 (66.7%)
Non-smoking parents	24 (18.2%)	12 (33.3%)
Total	132	36



Children with smoking parents living in single room are 2.3 times more likely to have respiratory infections when compared to children with non-smoking parents. (P=0.050\*)

# Smoking Habits



Population	Total No.	Smokers	Percentage
Men	480	382	79.6%
Women	340	63	18.5%

# Conclusion

- In this prospective rural study 301 children under 5 years of age were evaluated for Point Prevalence of Respiratory Infection
- Dung cakes and agricultural waste were used as fuel to cook, which has high levels of carbon monoxide, polyorganic material and polyorganic hydrocarbons and formaldehyde
- 78.6% in single room dwelling and 21.4% in double room dwelling children showed respiratory infection
- Children living in single room dwelling are 9.88 times more likely to develop respiratory infection from indoor air pollution ( $P < 0.001$ )
- Children living with smoking parents in a single room dwelling are 2.3 times more prone to respiratory infection ( $P 0.050$ )

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Thank you

