

Cultural Context of Acceptability of Improved Cookstoves in Rural India: Programmatic Implications

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Presentation outline

- › Background
- › Study objectives
- › Methods
- › Results
- › Implications for interventions





Background

- › Exposure to household air pollution (HAP) – 3rd largest contributor to the global burden of disease
- › Largest contributor in South Asia
- › Primary cause of HAP – incomplete combustion of biomass fuels using traditional cookstoves
- › 75% of South Asian use biomass fuels for cooking
- › Women & young children are most exposed to HAP
- › 'Improved' cookstoves (ICS) can potentially reduce HAP exposure
- › Understanding cultural/behavioral aspects of ICS helps design intervention





Objectives

- › Understand the barriers/facilitators to ICS adoption
 - Existing cooking practices
 - Social and cultural determinants that influence cooking behaviours
 - End-users preferences and needs of cookstoves
 - Community perceptions of health impact of HAP
- › Generate recommendations for ICS intervention

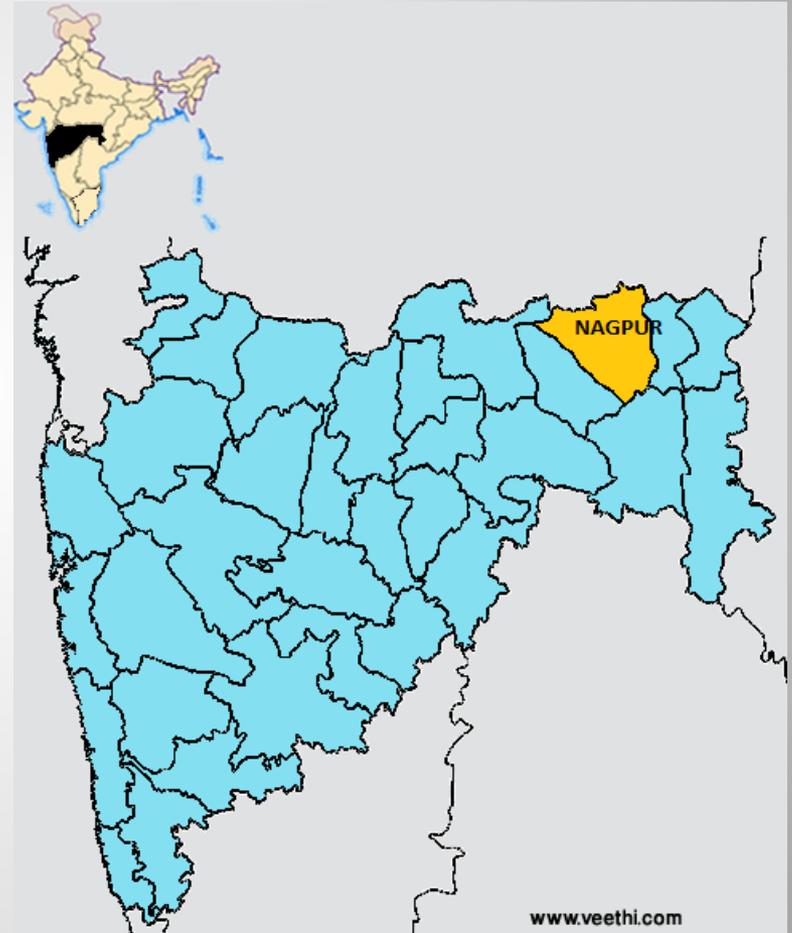




Methods

Study location

Two rural villages in Nagpur
Districts of Maharashtra,
India





Methods..

- › In-depth interview
 - Self-identified primary family cook (women)
 - Senior women in household
 - Structured observation of kitchens
- › Key-informant interview
 - 'Anganwadi Workers'
 - Accredited Social Health Activists (ASHA)
 - Auxiliary Nurse Midwives (ANM)
- › Focus Groups Discussion
 - Husbands
- › Structured observation of kitchens
- › Trials of Improved Practices of ICS





Methods..

› Trials of Improved Practices of ICS

- Field-tested five locally available improved cookstoves models
- Each model was provided to 20 households for one week, and then rotated
- Counseling/ training of users (advantages, risks and trouble shooting)
- Counseling based on findings of initial interviews
- Pictorial leaflet with illustrations for troubleshooting
- Follow up interview with the user (women)





Methods.

1. Envirofit B-1200 WOOD (Black)



2. Envirofit G-3300 WOOD (Red)



3. Greenway Grameen



4. Onil Plancha



5. Purti pellet stove



Findings

Awareness of HAP exposure

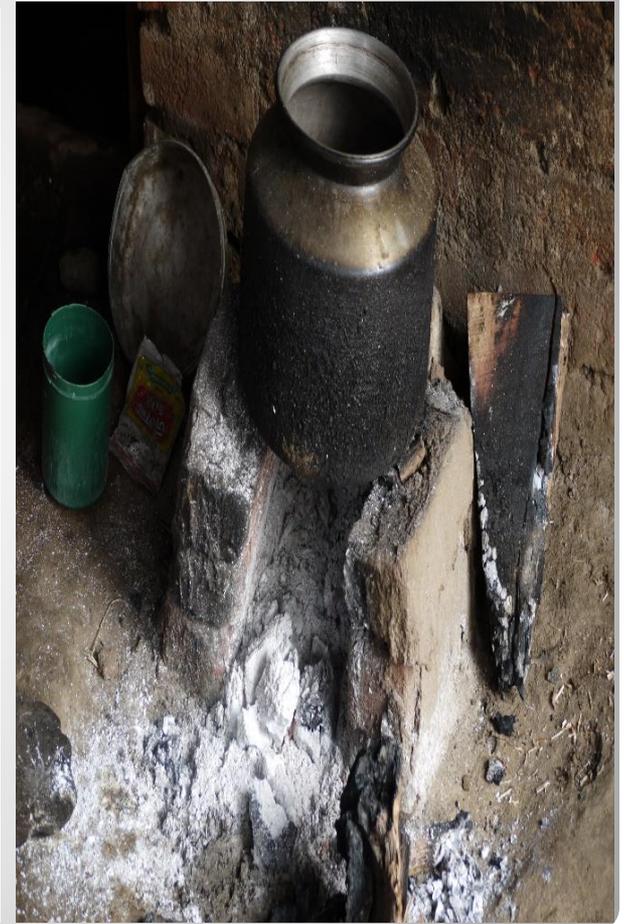
- › Some awareness of HAP exposure
- › Described through experience of symptoms, **rather than knowledge of HAP risks**
 - *"Whenever I prepare food for a large number of people my eyes get sore and irritated. Yes eyes get sore, watery, inflammation of eyes, sometimes feels dizziness, cough, etc."* An elderly women
- › Vague awareness among CHWs
 - *We can't say exactly what happens but possibilities are there. No, we don't know much about that. We never realized that in our lifetime. ... Yes, there may be some effect of that on health of them. Burning of eyes, coughing, etc."* An ASHA



Findings..

Current Stove and Fuel Practices

- › Traditional **clay stove with two burners**
- › Many homes also had an LPG stove
- › Several had a kerosene stove
- › LPG/kerosene stoves used **for quick & small cooking**
 - *"In the morning time I use LPG and in the evening time mud stove. Because morning time has very much busy schedule and my husband has to go for work, for that I need to cook fast." A woman*



Findings..

Cooking Practices

- › Two major and 2-3 small food preparations a day
 - *"In the morning I prepare tea, boil water for all five members, then meal like dal, chapatti, rice and vegetables. This cooking finishes at 11 [a.m.]. Then the chula [stove] again lits in the evening at 5 for preparing tea, dal, chapatti, rice and vegetables. Sometimes for tea, I lit chula in the afternoon. We have only one chula that we use for all purposes."*A woman

- › Occasional mass cooking
 - *"When a large number of relatives comes to house we build separate large cook stove of bricks outside of the house for cooking. Also when we prepare 'papad', 'dhapode' [in large quantities], similarly we build large cookstove of bricks outside."*A woman



Findings..

Reasons for Traditional Stove Use

- › 'Tradition'
- › No alternatives
- › Cost (cheaper)
- › Easy access to fuel
 - *"Look, our financial condition is not good, so we don't have much options. Right from the beginning I am using the clay cook stove; in my maternal home also we had that clay stove. We don't have options, so we use that. Also, we have abundant firewood, cow dung, [and] agricultural waste which can easily be used as fuel, so we are using them. Even though we have LPG, we still are using the clay stove. [Because of all these factors] we are much comfortable with our clay stove."* A woman



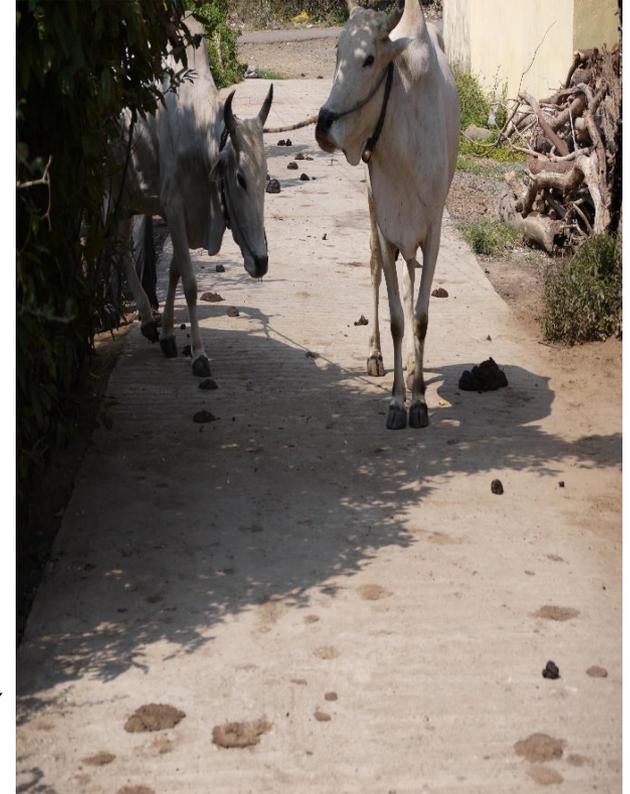


Findings

Dissatisfaction of Traditional Stove Use

- › Inconvenience
 - Pots being charred; black soot staining walls; room becoming hot/smoky; delayed ignition; large fuel required; seasonality
- › Health annoyances
 - Eye redness and irritation; coughing; allergy type symptoms; chest pain; feeling dizzy when cooking; and accidental burns for women & children

"We are not happy with the use of the current cookstove. In rainy season more smoke is generated and in summer, due to heat, temperature rises so we have trouble in both seasons. ... My wife's eyes burn from the smoke generated [by the clay stove]. It blackens the pots, burns hands and burns cloths. Mainly we don't have option so we are using the current clay stoves." A husband

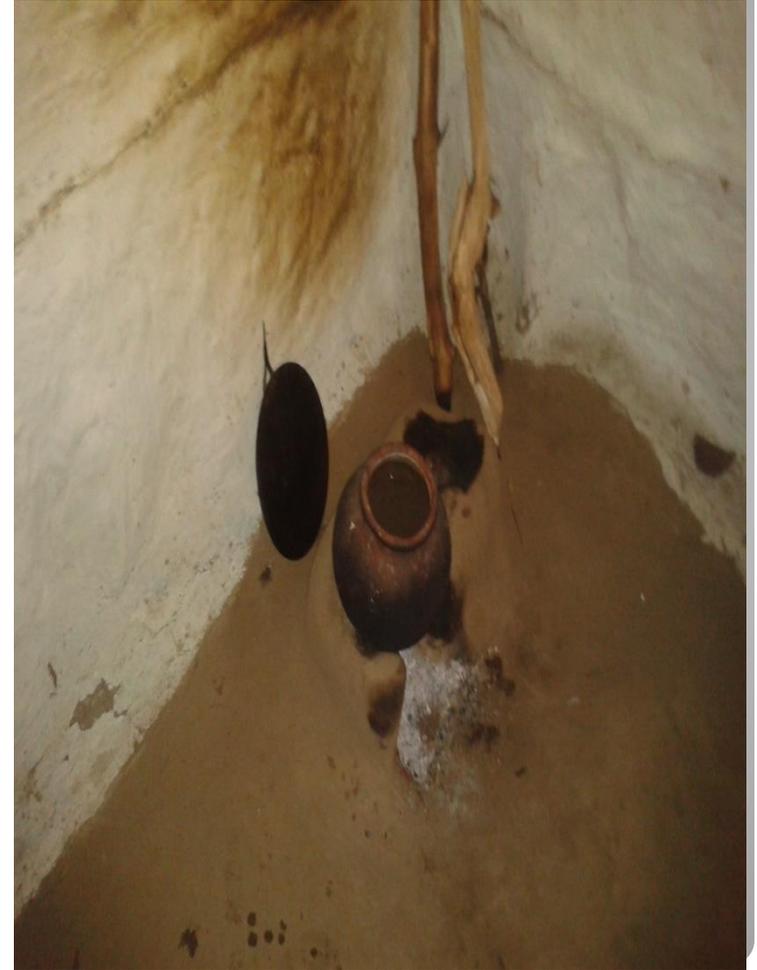




Findings

Kitchen observation

- › Most often located in the main house
- › Mostly **made of mud**
- › Very **poor ventilation**
- › Walls/ceiling covered in **black soot**
- › Striking poor-rich differences
- › Some **seasonal difference** in placement of stove





Findings

Trial of Improved Practices

- › Key qualifiers:
 - Taste of food
 - Number of burner
- › Convenience
 - Reduced smoke
 - Reduced cooking time
 - Reduced pot and utensil charring
 - Fast ignition
 - Portability (for seasonal changes)
- › Costs
 - Less fuel consumption
 - **Locally available fuel** use
- › Health advantages
 - Less eye irritation
 - Child safety



Recommendations for intervention design

- › Comprehensive counselling
 - Health impact on mothers and infants
- › Expanded training and refresher trainings ASHAs/AWs
 - Health impacts of HAP
- › Utilize cultural reasoning and positive perceptions to motivate mothers/families
 - Health convenience
 - Reduced cooking time
- › Use portable ICSs that have more than one burners
- › Regular communication and relationship with health care providers

Study team

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Reference

Alam A, Tawale N, Patel A, Dibley M, Jadhao M, & Raynes-Greenow C. (2016). "Household Air Pollution intervention implications: findings from qualitative studies and a field trial of clean cookstoves in two rural villages in India." *International Journal of Environmental Research and Public Health* 13(9):893.



Thank you!

