



## A STUDY TO ASSESS THE EFFECTIVENESS OF AWARENESS PROGRAMME ON KNOWLEDGE REGARDING SMOKELESS CHULAH AND ITS ADVANTAGES AMONG PEOPLE IN SELECTED SLUMS OF PUNE CITY

### Nursing

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### ABSTRACT

**BACKGROUND:** Worldwide more than three billion people continue to depend on solid fuels, including biomass fuels (wood, dung, agricultural residues) and coal, for their energy needs. Cooking and heating with solid fuels on open fires and/or traditional stoves may result in high levels of health-damaging pollutants (including particulates and carbon monoxide). The use of traditional stoves in poorly ventilated houses may cause particulate pollution. According to the World Health Report 2002, indoor air pollution (IAP) is responsible for 3.9% of the global burden of diseases such as chronic bronchitis, pulmonary disease and lung cancer.

**OBJECTIVES:** To assess pre interventional knowledge regarding smokeless chulah among people of slums. To assess the effectiveness of awareness programme.

**MATERIALS AND METHODS:** pre-experimental design was conducted on 60 villagers in Mohal Nagar who were using traditional chulah to cook food. In pre-test knowledge level of villagers regarding smokeless chulah was assessed with the help of set of questionnaire. On 7th day after awareness programme post-test was conducted using the same tool.

**RESULT:** Paired t-test used and was found to be 3.82 with 59 degrees of freedom at this 0.05 level which is more than the table value and also the corresponding p-value was small (less than 0.05), hence the null hypothesis is rejected. Awareness programme was effective among the villagers.

**CONCLUSION:** In this study we got to know that the knowledge of villagers was very poor regarding smokeless chulah. They were still using traditional chulah to cook food which may result in one or the other health problems. After providing awareness programme in the form of a role play, their knowledge level regarding smokeless chulah increases as compared to the previous reviews.

### KEYWORDS

traditional stoves, carbon monoxide, indoor air pollution, particulate pollution, biomass fuels.

### INTRODUCTION

Most of the houses in the village have kitchen outside the house and one of the reasons of having it outside is to avoid smoke inside the house. Smoke from the traditional chulhas during cooking is one of the major causes for ill health of rural women. Acute Lower Respiratory Infections (ALRI) refers to various infections of lower respiratory tract mainly caused by bacteria in developing countries- the most serious case of which is pneumonia. According to WHO, 36 per cent of all ALRI is attributed to Indoor Air Pollution (IAP) from the use of biomass fuels (fuel wood, animal dung, crop residues etc.) for cooking, heating and light. In a typical household, cooking with biomass fuels, the level of particulate matter (LOPM), which is one of the health damaging pollutants due to IAP, is as high as two to twenty times higher than what the US Environmental Protection Agency (US EPA) considers a safe level and ALRI is not the only burden due to IAP. Studies have shown that Chronic Obstructive Pulmonary Disease (COPD) in women above 45 years has a strong and consistent association with IAP; COPD is estimated to claim 106,000 Indians every year. Other outcomes for which evidence is moderate or tentative include otitis, asthma, low birth weight, tuberculosis, cataract, parental prenatal mortality, nasopharyngeal cancer and laryngeal cancer.<sup>[1]</sup> The use of traditional stoves in poorly ventilated houses may cause particulate pollution. According to the World Health Report 2002, indoor air pollution (IAP) is responsible for 3.9% of the global burden of diseases such as chronic bronchitis, pulmonary disease and lung cancer.<sup>[2]</sup> Worst health leads to high health expenses and lower produce and thus lower income. Poverty exacerbates the dependence on more polluting energy sources and means less resource for pollution abatement and health care.<sup>[3]</sup> Interventions to eradicate IAP require orchestrated action that range from change in national energy policy and infrastructure of energy supplies, to the changes at grassroots level such as promoting trained health workers or changes in housing structure (better ventilated houses) and cooking behaviours. Some of these actions are resource intensive others may require more time to actualize.<sup>[4]</sup> One of the solutions that many believe can have an

immediate effect is the adoption of smokeless chulhas. The smokeless Chulha is simple in design and mechanism and operates similarly as the traditional chulhas used by many families except that it has a chimney. Its fuel efficiency is also high thus reducing the quantity of fuels. Keeping this point in view the present study had been undertaken to access the knowledge and adoption by rural women of Mohal Nagar village in Pirangut, about various aspects of smokeless chulhas.

**Need of the study:** Smoke from traditional chulhas during cooking is one of the major causes for ill health of rural women. Few women know about smokeless chulah and the big number have no knowledge about health hazards economic cause of using traditional chulah. The cook stoves and the soot that arises from burning biomass — firewood, dung and agricultural residues — are now the focus of a global community fighting climate change as well. The soot — or black carbon — is a killer. It causes respiratory problems and leads to premature deaths. Women and children in poor households are the worst hit.

The black carbon particles also contribute to global warming. The Indian government has begun promoting the search for solutions again but the challenge remains to find low-cost solutions which also adjust to the fuel supply options possible across the bio-geographical variance in the country.<sup>[5]</sup> Therefore there is need of study to assess and create awareness about smokeless chulah to solve global health and environmental problems caused by traditional chulah.

### OBJECTIVES:

- To assess pre interventional knowledge regarding smokeless chulah among people of slums.
- To assess the effectiveness of awareness programme.

### INCLUSION CRITERIA:

- Family members who can speak Hindi or Marathi
- Family members who are available during data collection

**EXCLUSIVE CRITERIA:**

- Family members who can't speak Hindi or Marathi language
- Family members who are not willing to participate

**DATA COLLECTION:** A formal letter seeking approval to conduct the main study was taken from the Panchayat of Mohal Nagar, Pune. The data collection was carried out from 19th February 2018. A systematic plan was prepared for the study and efforts were made to stick to the planned schedule. Post-test was conducted after 7 days that is on 27th February 2018.

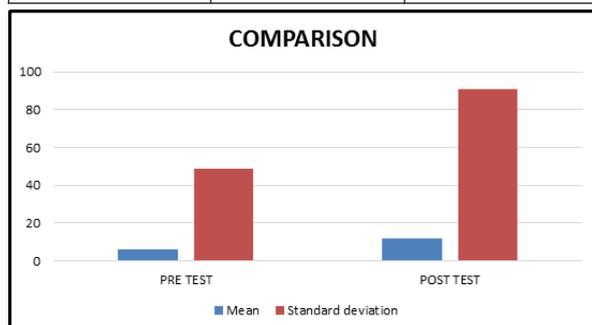
**RESULTS****SECTION I: Demographic variables**

N=60

DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE
<b>Number of family members</b>		
2 members	5	8.33%
3 members	7	11.66%
4 members	19	31.66%
More than 4 members	29	48.33%
<b>Type of family</b>		
Nuclear family	31	51.66%
Joint family	29	48.33%
<b>Dietary pattern</b>		
Vegetarian	23	38.33%
Non- vegetarian	37	61.66%
<b>Type of house</b>		
Kutcha house	42	70%
Pucca house	18	30%
<b>Annual family income</b>		
Below Rs.50,000	60	100%
Rs.50,000 – 70,001	0	0%
Rs.70,000 – 1,00,001	0	0%
Above Rs.1,00,000	0	0%
<b>Religion</b>		
Hindu	48	80%
Muslim	5	8.33%
Christian	3	5%
Other	4	6.66%
<b>Doors and windows</b>		
1 door	24	40%
1 door 1 window	18	30%
1 door 2 windows	11	18.33%
1 door 3 windows	7	11.66%
<b>Type of fuel</b>		
Paper with wood	20	33.3%
Plastic with wood	5	8.3%
Cow dung with wood	20	33.3%
Only wood	15	25%

**SECTION II: Pre test and post test comparison**

TESTS	PRE TEST	POST TEST
Mean	6.3	11.8
Standard deviation	48.6	91.1

**CONCLUSION**

This study is conducted by using pre experimental design. In this study we assessed the knowledge regarding smokeless chulah among people of slum area. After assessing we got to know that their knowledge is very poor regarding smokeless chulah. After providing knowledge in the form of a role play, their knowledge level increases as compared to the previous reviews.

**Conflict of interest:** Nil**Source of Funding:** self funded

**Ethical consideration:** Permission has been taken from the Institute Ethical Committee of Symbiosis International (Deemed University). Panchayats of village permission has been taken prior to the pilot and main study. Informed consent has been taken from the each subject. Confidentiality of the subject has been maintained.

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