

SMOKELESS CHULHA - AN IMPORTANT DRUDGERY REDUCING TECHNOLOGY FOR FARM WOMEN

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ABSTRACT

In Rajasthan wood is the most common fuel used in rural homes for which the farm women possess the traditional chulhas which causes health hazards to them. It was therefore felt essential to introduce smokeless chulha in the villages. The study was an action on oriented research in which training was given to the farm women through lecture cum demonstration method, intervention was done at their homes and then data were taken on gain in knowledge & skill after training and intervention, appropriateness of chulha as perceived by farm women and lastly symbolic adoption of it. Findings of the study indicated that after training gain in knowledge was good (MPS - 91.92) & it increased from 91.92 to 97.55 after intervention. Similarly majority of farm women acquired good skills and 13.35% showed average skills after training but after intervention the MPS increased to 98.21 percent & all were excellent in performance test. Smokeless Chulha was perceived highly appropriate in terms of time & fuel saving, cost wise feasibility, healthy environment & keeps food hot for longer time. Majority expressed willingness to install chulha within 3-6 months. An important outcome of 2 pot chulha was that farm women developed habit to plan menu in advance.

Key words: Intervention; Drudgery Reduction; Appropriateness; Symbolic Adoption

INTRODUCTION

Wood is the most common fuel used in rural homes of Rajasthan because women get them from forest free of cost. Due to continuous deforestation women have to go to far off places which cause considerable drudgery in terms of time and energy. Smokeless chulha is an improved version of traditional chulha and has many advantages over it. Its proper use and care relieves an individual from different problems like smoke free kitchen which is safe for eyes as well as lungs of the user. Fire sparkles do not come out so safe for human beings, no need to plaster it frequently & saves fuel. The models developed by Renewable Energy Dept., CTAE, MPUAT, Udaipur were introduced - (i) Chetak - One Pot (ii) Udairaj - Two Pot. These chulha have thermal efficiency of 20-35 percent as compared to traditional chulha which have efficiency not more than 8-10 percent. The present investigation was conducted with following specific objectives.

1. To assess the impact of training on gain in knowledge & skill of farm women about Smokeless Chulha.
2. To find out the appropriateness of Smokeless Chulha as perceived by farm women.
3. To assess the symbolic adoption of Smokeless Chulha.

METHODOLOGY

Study was carried out in Bhilwara district which is a part of "Agro-climatic zone IV - B" of the state Rajasthan. Out of eleven Panchayat Samities, two panchayat samities were randomly selected which were Kotri and Suwana. Two villages from each panchayat samiti were selected purposively keeping

in mind the ease in approach and familiarity with the area. A sample of 120 respondents (30 from each village) was drawn who were interested to participate in training and intervention. A group of thirty was considered appropriate size to organise training effectively within suitable resources-time, transport and cost. Interview & observation method were used to collect data.

RESULTS AND DISCUSSION

1. *Gain in knowledge:* Knowledge test was developed on the following main components : (a) Correct identification and name of technology. (b) Purpose of using it. (c) Major parts. (d) Advantages. (e) Precautions. (f) Care and Maintenance.

The respondents were asked to reply on each item. There were 23 scores for it. This test was administered thrice before training, after training and after intervention. The data in table indicates the majority of the respondents (75.83%) were in the category of poor knowledge about smokeless chulha and one fourth had average knowledge. The respondents who possessed average knowledge had seen the single pot smokeless chulha and knew it as "chimney wala chulha".

All the respondents knew the difference between smokeless chulha and ordinary chulha in terms of having chimney. As the model chulha was shown to them, all could tell correctly about the constructional material. None of the respondents had the knowledge about precautions in use and care of smokeless chulha and its various advantages. They were also not aware about need of frequent cleaning of chimney pipe.

Data pertaining to knowledge after training depicts clearly

that there was tremendous gain in knowledge as all the respondents shifted to the category of good knowledge. The mean scores also increased to 91.92 per cent. All the respondents provided correct response for majority of the aspects of smokeless chulha.

Some of the aspects like agency who assist in chulha installation, frequency to clean chimney pipe, height of chimney, advantages like no fire sparkles hence safe for human being, no need to plaster it frequently, saves time and fuel and precautions were still not recalled by few respondents (16.66 per cent).

The data pertaining to knowledge after intervention period indicates that knowledge improved as a result of the intervention. The mean per cent scores showed an improvement from 91.92 to 97.35. Almost all of the respondents gained correct knowledge about different aspects of smokeless chulha.

Table 1. Distribution of respondents by their knowledge of smokeless chulha-initial, post training and post intervention (N = 120)

S. No.	Categories	Initial Knowledge		Post Training Knowledge		Post intervention Knowledge	
		N	%	N	%	N	%
1.	Good	-	-	120	100	120	100
2.	Average	29	24.16	-	-	-	-
3.	Poor	91	75.83	-	-	-	-
	MPS	29.23		91.92		97.35	

2. *Gain in Skill* : Skill in this study dealt with use of smokeless chulha accurately by following the steps given in the skill test. The performance was observed and scored with the help of observation schedule.

Perusal of table 2 points out that none of the respondents could use smokeless chulha correctly. Even though the women were so used to traditional chulha but they could not perform the important steps of using smokeless chulha. None of them possessed nor had seen double pot chulha hence could not use it correctly but all could perform two steps i.e. selection of utensil according to size of chulha and also what can also be done of utensil that is small.

Table 2. Distribution of respondents by their skill of smokeless chulha-initial, post training and post intervention N = 120

S. No.	Categories	Initial Skill		Post Training Skill		Post intervention Skill	
		N	%	N	%	N	%
1.	Good	-	0	104	86.66	120	100
2.	Average	-	0	16	13.33	-	-
3.	Poor	120	100	-	-	-	-
	MPS	28.57		92.11		98.21	

The post training data show the majority (86.6 per cent)

of the respondents could use the chulha correctly and MPS were 92.61. Only few (13.3 per cent) respondents showed average skill in use of smokeless chulha. In other words these women performed some step correctly but did not follow the following steps like (i) covering both the pots of chulha before beginning (ii) adequate pre-preparation of food and collect them near chulha and (iii) removed ash from chulha. This shows that it takes time for some of the respondents to learn new steps. The post intervention data show very good impact of intervention in terms of acquisition of skills as the MPS increased to 98.21 per cent. All the respondents exhibited good skill in using smokeless chulha. In other words they were excellent in the performance test and followed all the steps correctly and performed the job effectively.

3. *Appropriateness of Smokeless Chulha*: Appropriateness of the chulha was judged after the intervention period because it is after that period only the respondents can judge the appropriateness easily and correctly as they had used the technology in their own situations:

Table 3. Appropriateness of smokeless chulha in terms of benefits perceived by farm women. N = 120

S.No.	Benefits perceived	Mean weighted scores
1.	Easy in use	1.56
2.	Fuel saving	2.00
3.	Time saving	1.70
4.	Smoke free kitchen	2
5.	No irritation in eyes	2
6.	Keeps food hot for longer time	1.7
7.	Feasible cost wise	1.8

Perusal of table 3 reveals that after intervention period all the respondents perceived the benefits of smokeless chulha and reported it highly appropriate in terms of time saving and fuel saving (1.70-2.00), economically feasible and keeps food hot for longer time. Smokeless chulha was considered somewhat appropriate in terms of ease in use. Highly appropriateness was also reported in terms of healthy environment of kitchen. i.e. (i) Kitchen is free from smoke, (ii) No irritation in eyes.

4. *Symbolic adoption* : The parameters included for symbolic adoption were convinced with use of technology, benefit perceived and plan of purchase

Table 4. Symbolic adoption of smokeless chulha by farm women N = 120

S. No.	Categories	No. of respondents	
		N	%
1.	Low	-	-
2.	Medium	12	10
3.	High	108	90
	MPS	78.66	

Perusal of table 4 reveals that 90 per cent of the

respondents were in the category of high symbolic adoption whereas the remaining (10%) exhibited medium level of symbolic adoption. The MPS were 78.66.

The reasons for such finding i.e. high symbolic adoption was that respondents used smokeless chulha in their homes during intervention hence they could perceive pros and cons and also by using it in their own situation and among family members to take decision to adopt it. Another reason could be that frequent visit of researcher helped in developing confidence and competence in use of this technology.

Majority of the respondents expressed willingness to install chulha within 3-6 months. It was encouraging to find that 20 innovative respondents got the two pot chulha installed at the start of intervention period.

An informal discussion revealed interesting points regarding use of two pot chulha. Respondents said that they boiled milk on one pot and cooked vegetables on the second pot. When milk got boiled vegetable was shifted to that pot

and on first pot they prepared chapati. They said that due to double pot chulha they developed habit to plan the menu before hand, do pre-preparation and plan cooking which saved time as well as fuel. They were very happy with the benefits of the chulha. Their kitchen remained free of smoke and utensils were not blackened which saved their time and energy in cleaning the utensils. Thus it reduced drudgery in terms of time and energy saving.

CONCLUSION

The findings of the study revealed that farmwomen gained good knowledge & skill after training. But after intervention the mean percent scores increased more, which clearly depicts that for introduction of any new technology training, and than intervention is a must. The KVK personnels providing training should keep in mind that the clientele will go for adoption of a new technology only if they perceive its appropriateness and gets convinced with it.

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