

Risks and health hazards among rural families in Uttarakhand

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ABSTRACT

Women have long occupied a central place in agriculture production in developing countries, ensuring food security for their household and communities, but this role is not performed without adverse consequences for health. The major consequences include health risks owing particularly to women's use and exposure to hazardous agro-chemicals/ pesticides, farm-related accidents due to use of poorly designed agricultural implements which leads to physical risk and injuries. Indoor air pollution in developing world from biomass smoke is considered to be a significant source of public health hazard, particularly to the poor and vulnerable women and children. Another source of high risk of ill health in rural India is exposure to spray of pesticides in the fields. In India, 70% of the population is farmers and they are the target group to be affected by the hazards of pesticide applications. Descriptive cum experimental research design was chosen for the study. The study was carried out in district Udham Singh Nagar. Purposive cum Random sampling design was used to select the study area. The unit of enquiry was family and the key informant was rural women. Total sample size was comprised of 240 women from rural areas of Uttarakhand state in India. Experimental data was recorded through various scientific instruments and descriptive data was collected through interview schedule, awareness scales, and observation sheet.

Key Words : Risk, Hazards, Interior environmental pollution, Pesticide spraying, Personal protective equipments

INTRODUCTION

In developing countries, women and children face the greatest exposure to the harmful health effects of pollution. Women traditionally carry out most household chores and spend a considerable part of their time indoors. The pollution also affects young children under their mothers' care. In India, 70% of the population is farmers and they are the target group to be affected by the hazards of pesticide applications. Moreover, in developing countries the users are rather careless in handling pesticides. The high risk groups exposed to pesticides include the production workers, formulators, sprayers, mixers, loaders and agricultural farm workers. During manufacture and formulation, the possibility of hazards may be more because

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the processes involved are not risk free. In India, 70% of the population is farmers and they are the target group to be affected by the hazards of pesticide applications. Moreover, in developing countries the users are rather careless in handling pesticides. All pesticides in a given chemical group generally affect the human body in the same way; however, severity of the effects varies depending on the formulation, concentration, toxicity and route of exposure of the pesticide.

Objectives :

- To study the demographic profile, migration and its impact on health status of rural women.
- To collect epidemiological data (medical profile), indoor-outdoor environmental quality, and statistics of occupational accidents from indoor-outdoor environment and management practices related to pesticide.

METHODOLOGY

Descriptive cum experimental research design was selected to find out relationship between environmental hazards of rural women and adoption of occupational health and safety related practices.

RESULTS AND DISCUSSION

It was observed that majority of sample women *i.e.* 80.8 per cent sample women were permanently migrated and 19.1 per cent temporary migrated. None of them were seasonally or forced migrators from their old place (Fig.1)..

Majority of families were having concrete walls and kitchen inside their house without windows, ventilators and chimney in their house. Besides this all respondents were using

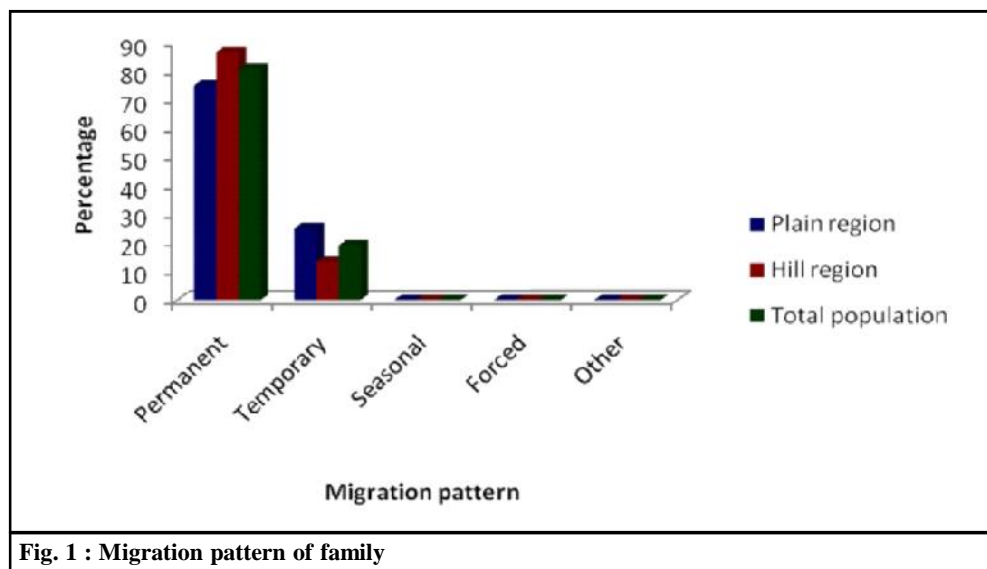


Fig. 1 : Migration pattern of family

mud traditional chulahs which produce more smoke, by which they were suffering lot of health problem due to smoke which originated combustion of firewood in chulahs. These conditions lead to health problems of women and children such as respiratory problems, allergies etc. due to smoky house (Plate 1 A,B).

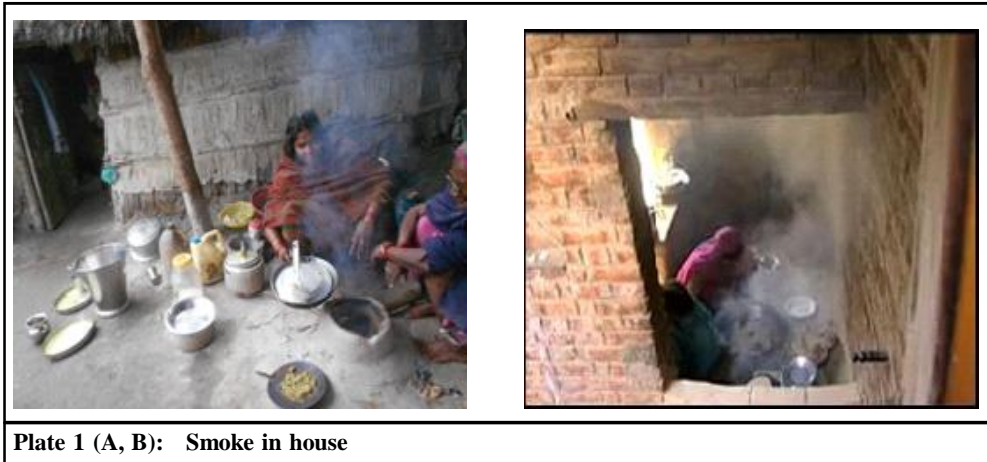


Plate 1 (A, B): Smoke in house

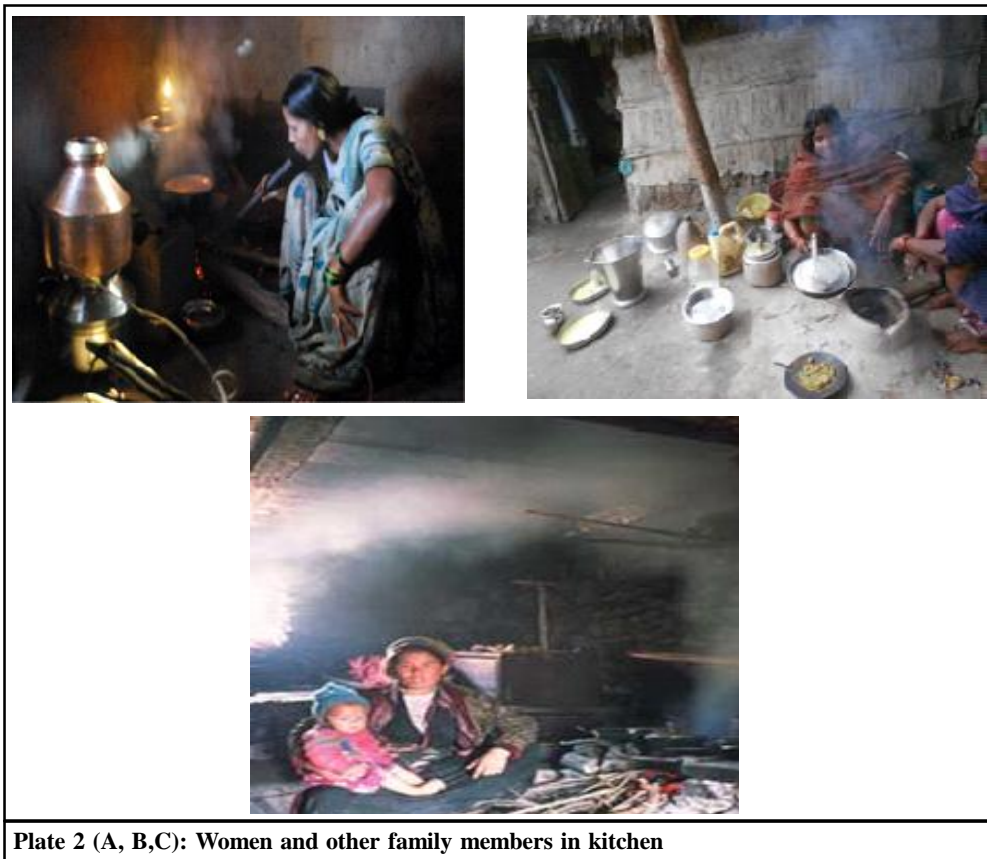


Plate 2 (A, B,C): Women and other family members in kitchen

Table 1: Illness and related symptoms of last 5 years due to indoor air pollution (N=240)

Illness/ Symptoms	Plain region						8Hill region												
	Occurrence			Appeared after arrival in present place			Increases after arrival			Occurrence			Appeared after arrival in present place			Increases after arrival			
	Women	Family member	Occasionally	Women	Family member	Often	Women	Family member	Often	Women	Family member	Often	Women	Family member	Often	Women	Family member	Often	
Cough, cold, fever	9 (7.5)	3 (2.5)	6 (5)	8 (6.66)	2 (1.66)	7 (5.83)	7 (5.83)	2 (2.5)	3 (2.5)	3 (2.5)	3 (2.5)	3 (2.5)	3 (2.5)	2 (1.66)	7 (5.83)	2 (2.5)	3 (2.5)	3 (2.5)	3 (2.5)
Headache	46 (38.3)	5 (4.16)	7 (5.83)	32 (26.6)	3 (2.5)	21 (17.5)	21 (17.5)	5 (4.16)	3 (2.5)	5 (4.16)	3 (2.5)	5 (4.16)	3 (2.5)	2 (1.66)	14 (11.6)	2 (1.66)	2 (1.66)	2 (1.66)	2 (1.66)
Body-ache	32 (26.6)	12 (10)	24 (20)	29 (24.1)	11 (9.16)	22 (18.3)	22 (18.3)	13 (10.8)	4 (3.33)	9 (7.5)	7 (5.83)	18 (15)	6 (5)	5 (4.16)	13 (10.8)	5 (4.16)	5 (4.16)	5 (4.16)	5 (4.16)
Back pain	48 (40)	9 (7.5)	27 (22.5)	41 (34.1)	8 (6.66)	34 (28.8)	34 (28.8)	9 (7.5)	3 (2.5)	11 (9.16)	9 (7.5)	11 (9.16)	7 (5.83)	5 (4.16)	26 (21.6)	5 (4.16)	5 (4.16)	5 (4.16)	5 (4.16)
Wounds	35 (29.1)	17 (14.1)	22 (18.3)	31 (25.8)	13 (10.8)	26 (21.6)	26 (21.6)	11 (9.16)	13 (10.8)	8 (6.66)	8 (6.66)	17 (14.1)	8 (6.66)	7 (5.83)	13 (10.8)	7 (5.83)	7 (5.83)	7 (5.83)	7 (5.83)
Diabetes mellitus	2 (1.66)	1 (0.83)	1 (0.83)	1 (0.83)	0 (0.00)	2 (1.66)	2 (1.66)	1 (0.83)	0 (0.00)	1 (0.83)	0 (0.00)	1 (0.83)	0 (0.00)	1 (0.83)	1 (0.83)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Heart disease	24 (20)	16 (13.3)	11 (9.16)	21 (17.5)	9 (7.5)	14 (11.6)	14 (11.6)	7 (5.83)	5 (4.16)	3 (2.5)	3 (2.5)	6 (5)	4 (3.33)	3 (2.5)	7 (5.83)	3 (2.5)	3 (2.5)	3 (2.5)	3 (2.5)
BP problem	27 (22.5)	14 (11.6)	16 (13.3)	22 (18.3)	7 (5.83)	21 (17.5)	21 (17.5)	9 (7.5)	4 (3.33)	2 (1.66)	2 (1.66)	4 (3.33)	2 (1.66)	3 (2.5)	5 (4.16)	3 (2.5)	3 (2.5)	3 (2.5)	3 (2.5)
Asthma	1 (0.83)	0 (0.00)	1 (0.83)	2 (1.66)	0 (0.00)	1 (0.83)	1 (0.83)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Respiratory disorder	27 (22.5)	16 (13.3)	13 (10.8)	24 (20)	11 (9.16)	16 (13.3)	16 (13.3)	8 (6.66)	2 (1.66)	2 (1.66)	2 (1.66)	7 (5.83)	7 (5.83)	1 (0.83)	6 (5)	1 (0.83)	1 (0.83)	1 (0.83)	1 (0.83)
Hyper tension	39 (32.5)	22 (18.3)	15 (12.5)	23 (19.1)	15 (12.5)	31 (25.8)	31 (25.8)	13 (10.8)	7 (5.83)	3 (2.5)	3 (2.5)	8 (6.66)	4 (3.33)	4 (3.33)	7 (5.83)	4 (3.33)	4 (3.33)	4 (3.33)	4 (3.33)
Eye irritation	37 (30.8)	9 (7.5)	18 (15)	28 (23.3)	12 (10)	25 (20.8)	25 (20.8)	11 (9.16)	2 (1.66)	5 (4.16)	4 (3.33)	10 (8.33)	4 (3.33)	2 (1.66)	12 (10)	2 (1.66)	2 (1.66)	2 (1.66)	2 (1.66)
Muscle tightness	41 (34.1)	18 (15)	28 (23.3)	37 (30.8)	11 (9.16)	32 (26.6)	32 (26.6)	20 (16.6)	9 (7.5)	4 (3.33)	4 (3.33)	15 (12.5)	9 (7.5)	7 (5.83)	11 (9.16)	7 (5.83)	7 (5.83)	7 (5.83)	7 (5.83)
Dizziness	37 (30.8)	22 (18.3)	23 (19.1)	39 (32.5)	26 (21.6)	21 (17.5)	21 (17.5)	17 (14.1)	11 (9.16)	12 (10)	12 (10)	16 (13.3)	10 (8.33)	9 (7.5)	17 (14.1)	9 (7.5)	9 (7.5)	9 (7.5)	9 (7.5)
Tiredness	49 (40.8)	53 (44.1)	21 (17.5)	45 (37.5)	33 (27.5)	42 (35)	42 (35)	25 (20.8)	10 (8.33)	8 (6.66)	8 (6.66)	11 (9.16)	11 (9.16)	3 (2.5)	9 (7.5)	8 (6.66)	8 (6.66)	8 (6.66)	8 (6.66)
Excessive perspiration	25 (20.8)	34 (28.8)	11 (9.16)	15 (12.5)	30 (25)	21 (17.5)	21 (17.5)	27 (22.5)	6 (5)	2 (1.66)	2 (1.66)	3 (2.5)	3 (2.5)	4 (3.33)	3 (2.5)	4 (3.33)	4 (3.33)	4 (3.33)	4 (3.33)

Figures in parentheses indicate the percentage values

Such situation was hold up by smoke walls and roof by and whole house seems to be dark and full of smoke. This smoke contains Carbon monoxide (CO), aerosol particulates, water vapor etc. which increases diseases like eye problem, breathing problems for women and their children, since women and children spent more time in the house, so they were the most sufferers. In this way darkness of houses due to smoke and no ventilation facility in house was increase the chances of occupational hazards.

All families were using kerosene for lightening the lamp. Beside this for their living room sizes were too small according to their family size. When people were inhaling fumes and smoke released from kerosene lamp, some people became dizzy and sound to had breathing problem. Regular breathing of fumes long term can create health problems *i.e.* neurological or kidney damage, including blood clots which can damage their brain, heart and other organs.

Majority of people were suffering headache, back pain, heart disease, respiratory problem, eye irritation, tiredness etc. in plain region. The reasons may be that poor ventilation facility in house and as kitchen was located inside the house, there was no provision of chimney in kitchen and there exist the mud tradition chulah. So, smoke was releasing in excessive amount and whole house seem to be dark and smoky. In this condition all family members were affected from the smoke (Table 1).

Conclusion :

Majority of the respondents work permanentaly migrated and the higher percentage of them were from hill region.as far as illness and related symptoms because of poor interior environment is concerned the higher percentage of respondents migrated from hill region were in the grip of illness nd poor health.

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