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Research Article

REDUCING DRUDGERY OF FARMWOMEN THROUGH APPROPRIATE FARM IMPLEMENTS IN UTTAR PRADESH, INDIA

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Abstract- Agriculture is a primary unorganized sector in which farmwomen perform the majority of the drudgery prone work. This study was conducted in three villages (Ramnagar Karjahan, Laxmipur and Gahila Dudhaila) of two districts namely Gorakhpur & Deoria of Uttar Pradesh, India. A sample of 75 farmwomen in the age group of 28-55 years who were involved in various agricultural activities was selected for this study. A self-structured and pre-tested interview schedule was used to collect primary & secondary data. The results revealed that participation of farmwomen was higher in activities like seed treatment, transplantation, raising nursery, weeding, pruning, grain storage, manual harvesting, picking of vegetables, collection of animal dung and its transportation to fields. The knowledge level of participants about drudgery reducing implements was almost nil. After trainings, the farmwomen had 74.6 percent gain in knowledge and skill about drudgery reduction. Increased efficiency of the introduced tools saved their time, which they used for resting and taking better care of themselves and their children.

Keywords- Farmwomen, Drudgery Reducing Implements, Awareness on drudgery, SHGs.

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Introduction

In India, around 75% of the population earns their livelihood from agriculture farming. Rural Indian women are extensively involved in agricultural works. A woman is the nucleus of the family, particularly, in rural India. Women represent only 46% of the total population; they contributed 65% to the development of our society while men contributed only 35%. Unfortunately, in spite of their laudable and vulnerable roles, which cannot be substituted by machine or men, women have been neglected since generations. About the rural women, the day starts early in the morning with the responsibilities of fetching water, sanitation of home & cloths, animal fodder, cook fuel and cooking food. She takes care of the children and other members of the family, their health, orientation and education and attends to various incomes generation agricultural activities such as seed treatment, rising of nursery, transplantation of seedlings, weeding, harvesting etc. However, the nature and extent of their involvement differs with the variations in agro-production systems. The mode of farmwomen participation in agricultural production varies with the land-owning status of farm households. Their roles range from managers to landless labourers. In overall farm production, women's average contribution is estimated at 60 to 65percent of the total labour with percentages much higher in certain regions. Still today, agriculture ranks as one of the most hazardous industry as it is very much oriented towards manual labour and agricultural workers are exposed to a tremendous variety of hazards that are potentially harmful to their health and well-being. Rural communities often lack education and information on the health hazards they may face. Farmwomen often view pain as a normal part of work and seek care when the condition becomes severe or disabling. This same issue carries over to preventive measures designed to reduce the incidence of musculoskeletal injuries or other hazardous work exposures [3]. Frequently, workers do not understand the association of a problem with its source because of cultural misunderstandings. In most cases, the basic factors - inadequate education and training, poverty and lack of awareness - hinder attempts to deal with the occupational related health problems. Muscular-skeletal disorder is the leading cause of the occupational ill health. An awkward and static posture has been recognized as a risk factor for work related muscular-skeletal problems. From an occupational point of view, the cervical spine, head and shoulders, elbow and wrist joint can be considered to be interrelated as far as the problems of efficiency, design and comfort are considered. It is well known that certain jobs causes' pain at the work to the people with disorder and the symptoms are amplified or exposed by the demands of the job. Muscular-skeletal pains of these types are said to be work related because it is partially caused by the work conditions. It is clear that poor work place and tool design can increase the discomfort of both the healthy and less fit individuals. The design of tools and workspaces can have a profound effect on the posture of the body and long-term exposure to hazardous working conditions, which alters the physiological and psychological functions of an individual and produces many types of musculoskeletal problems. In developing countries, agricultural activities are expected to cause muscular-skeletal [10]. Under the changing dynamics, economical and industrial growth, agriculture has to undergo changes with new approaches; therefore, experiential system in agriculture has strong potential for imparting better training of the farmwomen with high level of skills. Agriculture being a family activity, women had contributed significantly to the agricultural development of the state. The operations once performed by female members of the family are now being carried out by hiring female wage labours. The women of lower socio-economic families work as wage labours in farms of big farmers and perform the operation such as weeding, hoeing, grass cutting, harvesting, picking etc. They have been intensively involved in agriculture and its allied fields. They put in 10-11 hours of work per day in agricultural fields. In cash crops, like all vegetable crops, maize, pulses crops, sugarcane and cotton, the

participation of female labour forces is very high. The payment in grains during harvest of wheat and rice and cash for other crops form the major part of the resources for the family survival. It was reported [7] that the share of women labour force in agricultural operations is expected to be 55 percent by 2025 A.D. They participate in different farm operations putting many hours of productive manual labour daily. Keeping these points in view, present study was planned with the following objectives: –

- To assess the type of activities performed by farmwomen and drudgery involved.
- To identify and introduce drudgery reducing implements.
- To train and promote use of drudgery reducing implements by farmwomen.

It was reported [2] that women share abundant responsibilities to perform wide spectrum of duties both in the home and outside but there participation is considered normal by the society. They are extensively involved in various farm operations like transplanting, weeding, harvesting, processing, marketing and selling of food grains, fruits and vegetables etc. These tasks not only demand considerable time and energy but also sources of drudgery. Drudgery is generally conceived as physical and mental strain, agony, monotony and hardship experienced by farmwomen while performing these farm operations. The drudgery prone condition leads to various health and mechanical hazards, which creates physical exhaustion fatigue and low productivity. Through various tools and equipment are available for these activities but maximum of them are designed according to requirement of men. This would require the introduction and adoption of drudgery reducing farm technologies to alleviate the sufferings of women in farm operations and to enable them to participate more energetically and enthusiastically. Therefore, All India Co-ordinate research project on Home Science-FRM Component monitored various drudgery related factors, which can be used for accessing the health of the farmwomen. For this purpose, 75 farmwomen were selected from five different villages of Ludhiana district. The introduced tools were maize Sheller, improved sickle and ring cutter. The parameters for assessment of drudgery experience were drudgery scores, Ovako Work Assessment System. Cardiac Strain Index and Angle of Deviation, The results showed significant reduction in these parameters when improved tools were used as compared to traditional tools.

It was also reported [6] that Indian farmwomen do many difficult tasks. Besides, there are many drudgery prone activities, which are usually performed by female labourers. To solve this problem, Krishi Vigyan Kendra (KVK), Ratlam conducted Front Line Demonstrations on "improved twin-wheel hoe "in soybean weeding. The basic objective of these demonstrations was to reduce drudgery with muscular stress and fatigue. The focus of the demonstration was to change the attitude, skill and knowledge towards recommended practices in the work. Farmwomen adopted the improved technique as it had increased the efficiency to work, reduce the drudgery and helped in avoiding bending or squatting posture. It lessened the exertion and fatigue to make the farmwomen conformable.

As pointed out in the paper [2] entitled, "Interventions of drudgery reducing technologies in agriculture and impact evaluation" that agriculture is main source of livelihood for rural population in India. The study assessed intervention of drudgery reducing technologies. The researchers identified the drudgery areas and activities in agriculture. Participatory field level skill training for proper use of ergonomically improved farm technologies was given to men and women in separate groups. Data were collected to quantify the impact of intervention on the level of drudgery of worker before and after the technology intervention from sample of 30 respondents (15 male and 15 female). Gain in knowledge and change in awareness level were calculated after the training. A significant gain in awareness was observed among both men (2.6) and women (3.0) whereas gain in knowledge more among men (6.6) than women (4.5).

The All India Co-ordinate Research Project (AICRP) on home science is in operation in 10 states agricultural universities. The main aim of the project is on empowerment of farmwomen for enhancing the quality of life of farm families. It focused on development of gender specific database and training modules for farmwomen, technology interventions for drudgery reduction in agriculture, nutritional security and health promotion of farm families promoting vocational skills among adolescent girls, value addition of underutilized natural fibre resources, and utilization of degradable and non-degradable farm waste and empowerment of rural women. All these efforts led to empowerment of women for quality living.

Deplorable condition of rural women [6] in Pakistan has also been described. Her day becomes from pre-dawn with crushing. Their traditional role of housekeeping has been extended to collect fire wood, fodder and working on farms. Owing to social taboos, ignorance, financial constraints, inadequate education facilities, rural women have remained backward. Agriculture dependent rural economies have struggled to improve their economic conditions.

Need and scope of the study: This application is the study of how agro - equipments and others material can be arranged in order that farmwomen can do farming works more efficiently and comfortably. Farmwomen in rural India are the major work load in agriculture and their involvement almost all the agricultural activities. Since, it is most necessary to develop technologies that can improve their labour efficiency and reduce drudgery. Technology intervention means the application of scientific methods as solutions to practical problems. In agriculture, it means to introduce labor saving implements, their uses for various agricultural activities. It may comprise of mechanical power, or a combination of these.

Therefore, technology interventions in agriculture shall –

- Improve technology options available to farmers.
- Improve effectiveness of technologies.
- Alleviate women from burdensome labour at work.

Women are extensively involved in farm activities related to production, processing, preparation, marketing and selling of food-grains, fruits, vegetables and fishes, dairy and other animal products. These tasks not only demand considerable time and energy but also are sources of drudgery for farmwomen, which are yet not identified and quantified precisely. The result is that women's needs for comfortable work participation remain neglected. The problem of women relates to physical and mental fatigue, monetary hardship, exploitation, pain, economic stress, malnutrition, unemployment/ underemployment is very often encountered in the society. Therefore, drudgery can be reduced by providing gender friendly farm tools and implements, which increase the productivity of worker with safety and comfort. Time scheduling is also needed for achieving such tasks.

Methodology and Implements: Agriculture is a primary unorganized sector in which women farm workers perform the majority of the drudgery prone work. This study was conducted in three villages (Ramnagar Karjahan, Laxmipur and Gahila Dudhaila) of two districts namely Gorakhpur & Deoria of Uttar Pradesh State. A sample of 75 farmwomen in the age group of 28 -55 years who were involved in various agricultural activities was selected for this study. A self-structured and pre-tested interview schedule was used to collect primary and secondary information required to fulfil the scope of the study. The interview schedule comprised both open and close-ended questions. In-depth interviews were conducted and both quantitative and qualitative data were generated. Apart from interviews, the field observations were also made to observe the farm activities of farmwomen involved in the study. Based on these observations a number of drudgery reducing implements were identified and introduced [Fig-1, 2, 3, 4, 5, 6 and 7] in the project area.

Results and Discussion: According to [Table-1] the animal dung collection & its disposal is an activity in which participation of women is 97 percent. The participation of female labour was found to be more in activities such as manual harvesting (96%), storage (95%), picking of vegetables (92%), Transplanting of seedlings (91%), Seed treatment & Nursery raising 73 & 83%, respectively. In drying and cleaning of grains and in weeding, participation of women was found to be 88 percent and 93 percent, respectively. Similar findings have been reported elsewhere [8,4,5,1].

Table-1 *Participation of farmwomen in agricultural activities (N = 75)* -

S. No.	Farm activity	Number	Percentage
1.	Seed treatment	55	73.0
2.	Nursery raising	62	83.0
3.	Put up the seedlings in nursery	57	76.0
4.	Transplanting of seedlings	68	91.0
5.	Weeding	70	93.0
6.	Thinning	66	88.0
7.	Manual harvesting	72	96.0
8.	Picking of vegetables	69	92.0
9.	Threshing	41	55.0
10.	Winnowing	59	77.0
11.	Drying & cleaning of grains	66	88.0
12	Grading	64	85.0
13.	Storage	71	95.0
14.	Animal dung collection and transportation	73	97.0

Fig-1 Use of Groundnut decorticator by farmwomen at Laxmipur, Gorakhpur

Fig-2 Use of Zero till ferti-seed drill with farmers at Ramnagar Karjahan,Gorakhpur

Fig-3 Use of Paddy drum-seeder in project villages in Gorakhpur after the training

Fig-4 Traditional back-breaking transplanting of rice seedling in the project area

Fig-5 Training cum awareness of farmwomen on drudgery reducing implements

Fig-6 Single wheel barrow for collection and transportation of animal dung by farm women at project village Gahila- Dudhaila, Deoria

Fig-7 Early raising of vegetable nursery by using Shade net with farm women at project village Ramnagar Karjahan, Gorakhpur

Table-2*Testing of knowledge, skill gained in using drudgery reducing implements*

S. No.	Knowledge about drudgery reduction tools and methodology	Before training	After training	Increase in knowledge (In %)
1.	Paddy drum seeder	36	67	86.1
2.	Conoweeder	22	39	77.2
3.	Winnower	26	47	80.7
4.	Zero till seed drill machine	28	45	60.7
5.	Naveen dibbler	31	50	61.2
6.	Tubular Maize Sheller	27	46	70.3
7.	Improved sickle	32	54	68.7
8.	Hand Ridger	38	63	65.7
9.	Bhindi Plucker	29	48	65.5
10.	Groundnut decorticator	26	43	65.3
11.	Weed hand hoe	25	47	88
12.	Wheel barrow	30	58	93.3
13.	Shade net	30	50	66.6
14.	Low tunnel poly house	25	46	84.0
15.	Trolley for animal dung collection & its disposal	36	67	86.1
Total score		**441**	**770**	**74.6**

Village level trainings of farmwomen, about the use of drudgery reducing implements, were organized by Participatory Rural Development Foundation (PRDF). These organization trained farmwomen to reduce work related fatigue in agricultural activities. It is evident from [Table-2] that female labourers had 74.6 percent gain in drudgery reduction techniques. The findings are in agreement with the results quoted by others [9].

Conclusion:-It can be concluded from the results that the participation of farmwomen was found to be more in activities such as seed treatment, raising of nursery, transplantation of seedlings, harvesting, storage, manual harvesting, picking of vegetables, animal dung collection and its transportation, drying and cleaning of grains and weeding. The study also inferred that farmwomen successfully used tools and instruments in agriculture for reduction of drudgery. The above findings indicate that organization is realizing the objectives of their mandated activities in terms of achieving desired outcomes and impact. They value the hardship these implements reduce in their daily chorus and thus keen to learn its use. Minimize of drudgery of farm women can lead to empowerment of rural women in terms of physical and mental stress. The follow up of participants by the organization will provide much needed instructions and persuasion to the farmwomen labour so that they can uses these implements in a proper way and safe manner.

Application of research: The outcome of the project will help in planning project related to farmwomen in their economic empowerment, drudgery reduction and overall welfare. This also shows how small intervention results into big impact on the weaker section of the society.

Research Category: Awareness and uses of drudgery reducing tools by farmwomen.

Abbreviations: SHGs – Self Help Groups.

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