DRUDGERY OF FARM WOMEN IN AGRICULTURE AND ANIMAL HUSBANDRY OPERATIONS

Chhaya Badiger[1], Suma Hasalakar[2] & Gayatridevi Patil[3]

In India out of 30 million women work force, 20 million live in rural areas. The rural women play a significant role in agriculture and other agro based activities. The daily work schedule of rural women is very demanding and arduous. It is very estimated that during peak period women work for 8-9 hours in agriculture and 4 hours in household activities (Bhople and Pattai, 1998). There are certain agricultural operations in which female agricultural workers are considered better than male workers.

Women carryout such jobs as tilling, weeding, transplanting, harvesting, threshing and storing grains, tending animals and providing fuel and water (swami nathan 1993). These took often have serious consequences for women due to the uncomfortable technologies or technology of performance.

Ergonomics is the new discipline in developing countries applied to the assessment of workload in various activities performed by women in home and form. From physiological point of view, the workload referes to the demands placed on the cardio respiratory system and is determined from the energy cost and cardiac cost of work (chauhan 1999).

Studies conducted by CIAE, Bhopal have revealed that very less efforts have been made to design, develop and popularize suitable tools and implements for the women and most of the designers of farm tools and machines are men, as a result of which the designers are biased for design than are suitable for men. The occupational health and safety of farmwomen is the most neglected area in agriculture. The technological empowerment of farmwomen with occupational safety and better work output is the need of the day.

The present research was conducted with the following objectives.

1. To study the mean physical characteristics of women in agriculture and animal husbandry.
2. To introduce the improved technologies for various agricultural and animal husbandry activities and study the circulatory stress which using the traditional and improved technologies.
3. To study the work out put while using the traditional and improved technologies.

METHODOLOGY

The study was conduct in Hubli and Dharwad talukas on Dharwad district during 2002–2003.

Three tested technologies were introduced to ten farmwomen or experimental basis. The technologies introduced were improved chaff cutter, sickle and bhindi plucker. Care was taken to select non-pregnant farmwomen without any respiratory or chronic diseases and with in the working age.

All the physical characteristics of subjects like age, height, weight, blood pressure and body temperature were recorded before starting the experiment on ergonomic analysis of selected activities. The heart rate was measured by using the polar heart rate monitor.

The energy expenditure, total cardiac cost of work, physiological cost of work was estimated based on the heart rate.

The heart rate of the subject was measured

1. PI,2. Co-PI, 3. S. R.F., NATP, (Home Sc. Ext.), College of Rural Home Sc., UAS, Dharwad. Karnataka.

for 50 minutes continuously by giving an initial rest of 15 minutes, then they were asked to work for 30 minutes and lastly a recovery heart rate for 5 minutes was recorded which using both the traditional and improved technologies (two trials).

RESULTS AND DISCUSSION

The table 1. presents the physical characteristics of the farm women selected for the ergonomic analysis of the use of traditional and improved technologies. The mean age was 35:80 years and height was 148.53cms, with the weight of 41.17 kgs. The mean blood pressure was 101.93/ 70.00 and body temperature was observed to be 36.48 C.

Table 1. Physical characteristics of the farm women selected for the ergonomic experiments on use of traditional and improved agricultural and animal husbandry technologies N=30

Sl. No.	Physical Characterists	Mean units
1	Age	35.80 years
2	Height	148.53 cms
3	Weight	41.17 kgs
4	Blood pressure	101.93 / 70.00
5	Body temperature	36.48 C

The table 2. depicts the photographic presentation of improved technologies introduced for the farmwomen.

Table 2. Circulatory stress while performing various agricultural activities with traditional and improved agricultural and animal technologies N=30

Sl. No.	Circulatory parameter	Agricultural Technologies					
		Chaff cutter (n=10)		Sickle (n=10)		Bhindi plucker (n=10)	
		T.	I.	T.	I.	T.	I.
1.	Average resting heart rate (beats/Min.)	93.25	91.44	91.28	91.98	97.97	98.82
2.	Average Working heart rate	113.93	107.83	104.57	105.62	102.63	102.30
3.	Average Energy Expenditure(kj/Min.)	9.08	8.63	7.91	8.07	7.50	7.55
4.	Average total cardiac cost of work	563.68	483.45	402.35	257.93	236.12	135.97
5.	Average physiological cost of work	16.08	13.84	11.49	11.15	6.73	3.89

T = Traditional I= Improved

Circulatory stress and energy expenditure are presented in table 3. The average working heart rate with improved chaff cutter was observed to be less compared to the work with the traditional chaff cutter. This was observed to be almost equal for both the traditional and improved sickle while harvesting wheat and harvesting bhindi without and with the bhindi plucker. Both the average total cardiac cost of work and physiological cost work were reduced with use of all the three improved technologies. Maximum reduction was observed with the use of bhindi plucker for harvesting bhindi followed by use of improved chaff cutter while cutting fodder. The improved technologies have reduced the circulatory stress and drudgery of farm women while performing the selected activities.

Table 3: Work out put while performing various agricultural activities with traditional and improved technologies.

Quantity of Work output	Sample size	Technologies used	
		T	I
Quantity of fodder chaffed	N=10	27.73 Kgs	7.28 Kgs
Distance covered while wheat harvesting.	N=10	17.10 Mts	21.00 Mts
Quantity of Bhindi harvested.	N=10	3.97 Kgs	4.00 Kgs

T = Traditional I= Improved

The work efficiency is measured in term of out put with the traditional and improved technologies for the selected activities and presented in table 4. Significant increase in work out put was observed while using the improved sickle for harvesting of Wheat campared to the traditional sickle, where as the bhindi harvested is observed to be almost all same quantity with the both traditional and improved methods. The improved chaff cutter showed a reduced out put, which is because of the type of fodder and used for cutting. Here fodder used for cutting is the maize and jawar stalk, which were quite brittle, and the improved chaff cutter made very small pieces. Certain modification is essential for improved chaff cutter to suit the local fodder material.

CONCLUSION

Most of the agricultural and animal husbandry activities are performed by the farmwomen. Due to the traditional technologies they use, the work efficiency is reduced and they have remained as shadow workers. There is a greater need to bridge the gap between the technology producers and the users. Many technologies have not reached the women at grass root level. The improved technologies if properly used can reduce the drudgery of farmwomen and increase the work efficiency. The gender bias modifications can be incorporated if new technologies are introduced. This will bring the farmwomen into the main stream of national development.

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