

Assessment of pain and discomfort among agricultural workers involved in floriculture

■ ABHA SINGH, POONAM SINGH, PRAGYA OJHA AND MANISHA MISHRA

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■ **ABSTRACT :** In Indian agricultural sector, lots of human resource is involved. Most of the agricultural activities are performed by rural women. The women are the backbone of agricultural workforce. In floriculture, more than half of the harvest and post harvest activities are performed by rural women. During these activities, rural women are involved in various kinds of drudgery prone activities for prolonged time. Keeping the above issues in mind, the present study was planned to assess the level of postural discomfort and musculoskeletal disorders among rural women involved in floriculture sector. The results revealed that more than half of the rural women (59%) were suffering from hand and finger pain. Besides this, total 39 per cent rural women were suffering from back pain. Further, it was also observed that the main causes of postural discomfort and musculoskeletal disorders were manual operations, long working hours, prolonged activities and awkward working postures, lack of breaks, inadequate working environment, traditional agricultural tools and equipments. On the basis of present study, it was concluded that women friendly and drudgery reducing tools and technologies should be designed to reduce the level of postural discomfort, musculoskeletal disorders and human drudgery. Awareness programmes and trainings should be provided to empower the rural women at gross root level.

See end of the paper for authors' affiliations

ABHA SINGH

Department of Family Resource Management, College of Home Science, N.D. University of Agriculture and Technology, Kumarganj, FAIZABAD (U.P.) INDIA

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According to 2011 census, women constitute 48.46 per cent of the total population in India and about 25.67 per cent of female population is designated as workers. It is further stated that the unorganized sector in India, will be a woman dominant sector. At present however, the plight of women in this sector needs immediate attention as they work for extremely low wages and longer hours. This includes lack of job security and social security benefits, long working hours and

unsatisfactory working conditions (Rao, 2014). Floriculture is also an important unorganized sector in India. Women's participation in floriculture shows much heterogeneity at the regional level. Evidence suggests that women are often paid less than men, for the same work. It has been observed that land less women work full time in fields but women of land owner's family work as unpaid, seasonal and part-time worker on their own farm. A number of manually operated farm tools have

been designed and developed by different organizations in the country. These are mainly designed for the male workers keeping their physical and physiological parameter into consideration (Mohanty *et al.*, 2012). Women play a major role in the floriculture sector throughout the world. Flower cultivation in agricultural field is time consuming and involves lot of fatigue and drudgery. Keeping the above facts in mind, the present study was planned to assess the level of human drudgery among female farm workers who were using traditional tools and equipments in floriculture.

RESEARCH METHODS

Selection of subject and field :

Purposive and random sampling without replacement was used to select the study area and sample size of 100 respondents from Faizabad district of Uttar Pradesh State. Most of the female workers were from the 20-55 years of age and they were performing the floriculture operations more than 10 hours per day which is not permissible.

Personal and demographic profile :

Survey method was adopted to collect the data. Socio-economic status scale developed by Aggarwal *et al.* (2005) and interview schedule was used to elicit information from the agricultural workers who were actively involved in floriculture activities.

Assessment of postural discomfort and musculoskeletal disorders :

Pain in musculoskeletal system is recorded by showing the Corlett and Bishop (1976) body map to the subjects and asking them to identify the region of any pains/aches in the body parts after the performance of the activity.

RESEARCH FINDINGS AND DISCUSSION

On the basis of arbitrary classification, the social status was categorized into six groups, *i.e.* upper high, high, upper middle, lower middle, poor and very poor or below poverty line. Majority of the agricultural workers belonged to lower middle class *i.e.* 55 per cent, whereas 30 per cent agricultural workers falls in Upper Middle category, followed by 10 per cent agricultural workers who were from high class category and 5 per cent agricultural workers of upper high class category,

respectively (Table 1).

Table 1 : Distribution of the agricultural workers according to socio economic status (n=100)

Sr. No.	Category of socio-economic status	Respondents
1.	Lower middle	55 (50)
2.	Upper middle	30 (30)
3.	High	10 (10)
4.	Upper high	5 (5)

*Figure in parentheses indicate the percentage value

Physical and physiological characteristics of the subjects selected for the study are depicted in Table 2. The mean age of the respondents was found to be 25.01±3.567 years and ranged from 20 to 59 years and the range of height of the respondents was 147 to 189 cm and average value of height was found as 168.69±6.16 cm. The mean body weight was 64.52±9.093 kg. The mean body mass index (BMI) was 22.27±2.44 kg/m² with the range as 15.57 to 32.95 kg/m².

The mean blood pressure of the respondents was 129.75/84.36±10.68/3.58 mmHg which is normal in Indian population. The resting heart rate (HR work) of the subjects ranged from 72.95 to 81.35 beats/min with a mean value of 76.56±6.89 beats/min whereas the range of HR max was varied from 125.78 to 153.85 beats/min and the average rate was calculated as 129.75/84.36±10.68/3.58 mmHg.

Table 2 : Physiological parameters of selected subjects (n=100)

Physical characteristics of the subjects	Range	Mean± S.D.
Age	20-59	25.01±3.567
Weight	41-94	64.52±9.093
Height	147-189	168.69±6.16
BMI	15.57-32.95	22.27±2.44
HR rest, beats/min	72.95-81.35	76.56±6.89
HR max, beats/min	125.78-153.85	135.69±7.45
Blood pressure (Sys/Dias), mmHg/ mmHg	120/72- 143/95	129.75/84.36±10.68/3.58

Table 3 presents the percentage of women experiencing musculoskeletal problems after performing the various operations in floriculture with conventional methods. While performing the floriculture activities in traditional method majority of the women complained ‘Very Severe’ and ‘Severe’ pain in neck, shoulder, upper back, lower back, upper arm, wrist/hands, thighs, knees

Table 3 : Average incidence of musculoskeletal problems after performing floriculture activity

Body parts	Incidence of pain in floriculture				
	5	4	3	2	1
Neck	-	55 (55)	45 (45)	-	-
Shoulder	65 (65)	20 (20)	10 (10)	5 (5)	-
Upper back	-	65 (65)	25 (25)	10 (10)	-
Lower back	70 (70)	10 (10)	20 (20)	-	-
Upper arm	-	50 (50)	20 (20)	30 (30)	-
Wrist/hands	35 (35)	20 (20)	45 (45)	-	-
Thighs	25 (25)	55 (55)	20 (20)	-	-
Knees	-	70 (70)	30 (30)	-	-
Lower legs	55 (55)	35 (35)	10 (10)	-	-

*Figure in parentheses indicate the percentage value

and lower legs as they adopted bending and squatting body posture for longer duration and performed the tasks in repetitive motions.

As depicted in table during various floricultural activities more than half of the population reported severe pain and discomfort in neck region. In shoulders, 65 per cent farm workers reported very severe pain during activities. When asked about the pain in upper back total 65 per cent workers were reported severe pain during operations.

In context of pain in lower back region, 70 per cent agricultural farm women reported that they suffered from very severe body pain during various activities of floriculture. Half of respondents reported very severe pain in the upper arm activity. In wrist/ hands, total 85 per cent workers reported severe pain and discomfort. More than half of the total population had severe pain in thighs, knees and lower legs region during the performance of activities with traditional method.

Conclusion:

Considering the above facts in mind, it was concluded that modern agricultural technologies play a vital role in developing countries. Mechanization increases land productivity by timely completion of farm operations. It increases labour productivity and reduce drudgery of human and animals. It increases production by precision and efficient placement of inputs such as seed, fertilizer, chemicals and irrigation water. Mechanization and modernization of tools and equipments decreases cost

of production by reducing labour needed for particular operation and economy of power and other inputs (Das, 2012). Though modernization of agriculture is taking place at a rapid pace, but the jobs attended by women remain more or less the same (Kishtwaria *et al.*, 2009). So, there is dire need to create awareness about tools and equipments among female farm workers.

Authors' affiliations:

POONAM SINGH, PRAGYA OJHA AND MANISHA MISHRA,
Department of Family Resource Management, College of Home Science,
N.D. University of Agriculture and Technology, Kumarganj, FAIZABAD
(U.P.) INDIA

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