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### Musculoskeletal disorders among farm women engaged in agricultural tasks

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#### Abstract

Over the years, there is a gradual realization of the key role of women in agricultural development and their vital contribution in the field of agriculture. Agriculture ranks among the most hazardous industries. The study was conducted on farm women doing agricultural tasks. The sample size comprised of 75 farm women engaged in harvesting of wheat. Questionnaire schedule related to MSDs, observation technique and Body Map were used as a tool for collecting data. Purposive sampling technique was adopted to identify the workers who were suffering from MSDs. In farming activity, squatting, stooping, standing, walking, bending are the main postures adopted by farmers which causes pain in various parts of the body and this leads to MSDs. The continuation of work for long working hours was also the main cause of MSD. The results showed that the prevalence of MSDs was very high among the farm workers and the most affected area were back, knees, shoulder, neck, hand, wrist, thighs, legs and foot. From this study it has been recommended that workers should avoid bad work postures, should take rest period in between the working hours and avoid long working hours as far as possible during their work for reducing job related health.

**Keywords:** Musculoskeletal Disorders (MSDs), Body map, repetitive motion

#### Introduction

Rural Women form the most important productive work force in the economy of majority of the developing nations including India. Women play a vital role in building this economy. Over the years, there is a gradual realization of the key role of women in agricultural development and their vital contribution in the field of agriculture. Agriculture ranks among the most hazardous industries. Hasalkar *et al.* (2004) [3] estimated that about 70% of the Indian females are engaged in agricultural work either in their own fields or as hired laborers. In West Bengal the participation of female in agriculture are about 46.3% (Census of India, 2001) [6]. Farmers are at very high risk for fatal and non-fatal injuries; and farming is one of the few industries in which family members (who often share the work and live on the premises) are also at risk for fatal and non-fatal injuries (NIOSH 2013) [5]. Rural women are usually employed in arduous field operations like sowing, transplanting, weeding, harvesting, inter-culture and threshing. While performing these agricultural tasks in a field they adopt different postures like sitting, squatting, bending, standing and sitting cum standing. In farming activity, squatting, stooping, standing, walking, bending are the main postures adopted by farmers. Many of the farming activities call for mobility in squatting and are very stressful cause early fatigue of back muscles. If the activities are continued, ligaments and the bony architect balance the stresses. For a long time then it becomes MSDs work related factors that present the greatest risk for Musculoskeletal Disorders (MSDs) involve fixed and constraints postures that frequently result from awkward, uncomfortable postures, repetitive and forceful hand movements at high pace of work. Such movements strain gradually causing “wear and tear” on the muscles and tendons in the forearms, wrists and affect the back and neck. People who do repetitive work with their bodies in fixed and static positions are even more susceptible to getting work related health problems. Such problems continue to be one of the leading causes of preventable injuries in the workplace. Alain & Delisle (2006) [1]. Found that obstruction of the blood vessels can result in fatigue and degeneration of the muscles fibers that are recruited at low intensity and over long periods of time. Jyotsna *et al.* (2005) [4] stated that during wheat harvesting activity from morning till evening women usually adapts squatting posture and they continue to work in this posture for long duration without adapting any other posture due to

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which they reported severe pain in lower back and knees. Gomez *et al.* (2003) [2] found that prevalence of low back trouble among farmers was 41%. While the prevalence in specific specialties of farming has not been completely identified, there is no doubt that tasks being performed by farm workers contribute significantly to the development of low back pain.

### Objective

To study musculoskeletal disorders in various body regions among farm women engaged in agricultural task.

### Methodology

The study was conducted in three villages Asaltpur Farakhnagar, Bhanera Khurd and Fatiyabad Nihaura of Loni Block, Ghaziabad District, U. P. were selected for the study. The sample size was comprised of 75 farm women aged between 25-60 years to identify the workers involved in harvesting activity of wheat. 25 farm women from each village were selected for data collection. Purposive sampling technique was adopted to identify the workers who were suffering from MSDs. The Body Map was used to identify the site of pain whether it is related to joint and muscles. Questionnaire schedule related to MSD was also prepared.

### Results and discussion

The table 1 given below shows the incidences of pain in various body parts and this leads to musculoskeletal disorders. It was revealed that 33.3% farm women were suffering from back pain, 29.3%, 21.3%, 20.0% and 14.6% were suffering from knees pain, shoulder pain, neck pain and hand pain respectively. It was concluded that these were the symptoms of some musculoskeletal disorders which occur due to repetitive motions and awkward postures adopted while doing agricultural tasks. In farming activity most of the task performed in standing, sitting, squatting and standing cum bending positions. They work in such positions for long hours which cause MSDs.

**Table 1:** Distribution of workers according to their incidences of pain in their body parts

MSD in various body parts	Frequency (n=75)	Percentage (%)
Shoulder*	16	21.3
Neck*	15	20.0
Back*	25	33.3
Wrist	8	10.6
Hand	11	14.6
Leg	9	12.0
Thigh	6	8.0
Knees*	22	29.3
Ankles	8	10.6
Head	5	6.6
foot	1	1.3

\*Multiple responses recorded

The table 2 shows that the incidences of pain experienced by workers and till how long the pain remains in the body. It reveals that maximum number 33.3% of workers experienced pain 3-4 times in a week, 28.0% workers faced problem 1-2 times in a month 13.3% complained pain once in every day, 12.0% experienced pain several times a day whereas 9.3% constantly feel pain in their body parts. A very meager 4.0% of workers said they do not feel pain.

**Table 2:** Distribution of workers according to their frequency of pain

Frequency of pain	Frequency (n=75)	Percentage (%)
Several times a day	9	12.0
Once every day	10	13.3
3-4 times in a week	25	33.3
1-2 times in a month	21	28.0
constant	7	9.3
No pain	3	4.0

The table 3 shows that the level of discomfort experienced by the farm women. The data revealed that majority of workers 38.6% felt severe discomfort due to pain, 25.3% experienced moderate pain whereas 10.6% faced worst discomfort due to pain. A lesser 4.0% workers were not feeling discomfort due to pain in their body parts.

**Table 3:** Distribution of workers according to their level of discomfort during the work time

Level of discomfort	Frequency (n=75)	Percentage (%)
Mild	16	21.3
Moderate	19	25.3
Severe	29	38.6
worst	8	10.6
No discomfort	3	4.0

### Conclusion

Farm women suffer from multiple musculoskeletal problems that are caused by over use or misuse of muscles, bones and nerves and significantly impair their activities of daily living. High incidence of pain as reported by farm women in various body parts viz. back, knees, shoulder, neck, hand and wrist. The maximum number of farm women experienced severe discomfort 3-4 times in a week due to pain. The pain in various body parts were the symptoms of some musculoskeletal disorders which occur due to repetitive motions and awkward postures adopted while doing agricultural tasks.

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