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## Effect of Occupational Health Hazards with regards to Farm women

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### Introduction

Woman is the backbone of agricultural workforce but worldwide her hard work has mostly been unpaid. She does the most tedious and back-breaking tasks in agriculture, animal husbandry and homes. Therefore, without intellectual and physical participation of women, it may not be possible to popularize alternative system of land management to shifting cultivation and promote the care of soil and health of economic plants and animals. It is a fact that the women of rural areas contribute to agricultural work in addition to their domestic work. Presently they contribute one-third of the agricultural labour force and about 48 per cent of self employed farmers. Furthermore, management and involvement of Indian women in farming enterprise has been on rise recent years especially in better endowed rural regions. (Praveen et al. 2005).

More than half of the world's food is grown by women. Women's work is both wide ranging and multifaceted throughout the year and they perform multiple tasks in the sphere of agriculture. Women's indigenous

knowledge of seed preparation and soil management, plants and pest control, post-harvest processing and storage, animal husbandry as well as food processing and meal preparation are significant, crucial also in ensuring food security through sustainable agriculture.

However, there is little recognition of their significant role and contribution to the socio-economic development of a nation. The entrenched social and religious norms that define women's role as secondary and subordinate keep women vulnerable and dependent and allow women's exploitation as agricultural workers and farmers. Agricultural tasks range from highly mechanized operations employing state-of-the-art technology to maintenance of subsistence plots. (Fenske and Simcox, 2000). Given the vast diversity of agricultural activities, this represents a challenge to health care providers. The identification of occupational health hazards and the development of systems to evaluate intervene and decrease the risk factors and resulting disorders can be quite labor intensive and will require extensive occupational health knowledge.

## Categories of farmwomen

Mainly rural women are engaged in agricultural activities in three different ways depending on the socio-economic status of their family and regional factors.

They are work as:

- (i) Paid Labourers
- (ii) Cultivator doing labour on their own land and
- (iii) Managers of certain aspects of agricultural production by way of labour supervision and the participation in post harvest operations.

Women Workers in Agriculture (Million)		
Agriculture	1981 Census	1991 Census
Cultivators	14.8	21.5
Agriculture Labourers	20.8	28.2

The participation of rural women in agriculture is increasing.

## What is OHH?

A hazard is something that can cause harm if not controlled. It is an unplanned, unforeseen or uncontrolled event- generally one which has unhappy consequences. **Occupational health hazards** refer to the potential risks to health and safety for those who work outside and inside the home. As farm women involve both in household and farm activities, they are more

prone to this. They are exposed both outdoor and indoor environment.

## Type of hazards

- a) **Physical hazards:** Heat, cold, light, noise, vibration, ultraviolet radiation and ionizing radiation are all known to give rise to problems if the individual is exposed to levels beyond acceptable limits without protective measures.
- b) **Chemical hazards:** Toxic corrosive, allergenic and carcinogenic chemicals act by local action, inhalation and ingestion on exposure to concentrations beyond the threshold limit value (TLV)
- c) **Biological hazards:** Workers may be exposed to infections and parasitic agents at the workplace. Persons working with animal products and agricultural workers are likely to be exposed to biological hazards.
- d) **Mechanical hazards:** The mechanical hazards in industry centre round machinery, protruding and moving parts and the like. About 10% of industrial accidents are due to mechanical causes.
- e) **Psychosocial hazards:** These arise from the worker's failure to adapt to an alien psychosocial environment. Frustration, lack of job satisfaction, insecurity, poor human relationships and emotional tension are some of the psychosocial factors that may undermine both the physical and mental health of workers.



## **OHH of farmwomen in Agriculture**

The following are important OHH of farmwomen in Agriculture:

### **Physical Hazards**

Physical factors in the work place such as noise, vibration, poor illumination, ionizing and non-ionizing radiation and microclimatic conditions can all affect health adversely. Noise-induced hearing loss is one of the most prevalent occupational health effects in both developing and developed countries. Contact with wild and poisonous animals: insects, spiders, scorpions, snakes, certain wild mammals can affect health.

### **Chemical Hazards**

About 100 000 different chemical products are in use in modern environments and number is growing. Exposure varies widely. Health effects include damage to the central nervous system and liver (caused by exposure to solvents), pesticides poisoning, dermal and respiratory allergies, dermatomes, cancers and reproductive disorders. Women exposed to toluene have reported a greater frequency of menstrual dysfunction including dysmenorrhea, irregular cycles and spontaneous abortions.

### **Biological Hazards**

Exposure to some 200 biological agents, viruses, bacteria, parasites, fungi, moulds

and organic dusts occurs in selected occupational environments lead to chronic diseases among agricultural workers.

### **Mechanical hazards**

There are numerous types of work-related musculoskeletal disorders that are reported in agriculture. Women on an average have a smaller stature and have less physical strength; their vital capacity is 11% less; their hemoglobin is app. 20% less; their skin area is larger as compared to circulating volume; they have larger body fat content. They have lower heat tolerance and greater cold tolerance So they are more prone to mechanical hazards. These include disorders of the back pain, neck pain, tendon, shoulder disorders, cumulative trauma disorder, repetitive motion disorder, carpal tunnel syndrome. Mechanical hazards, unshielded machinery, unsafe structures in the workplace and dangerous tools are some of the most prevalent workplace hazards in developed and developing countries. Approximately 30% of the workforce in developed countries and between 50%-70% in developing countries may be exposed to a heavy physical workload or ergonomically poor working condition, involving much lifting and moving of heavy items, or repetitive manual tasks. These can lead to injuries and musculoskeletal disorders. Such disorders are the main cause of both short-term and permanent work disability and lead to economic losses.



## Psychosocial hazards

Occupational stress is one of the major problems from a gender perspective. Stress caused by time and work pressures has become more prevalent during the past decade. Monotonous work, work that requires constant concentration, irregular working hours, shift-work, and seasonal-work can also have adverse psychological effects. Psychological stress and overload have been associated with sleep disturbances, burn-out syndromes, depression and hypertension. Social conditions of work such as gender distribution, segregation of job and equality in the workplace raise concerns about stress in the workplace. Besides farm activities farmwomen involve in domestic activities. Cooking is one of the major occupations of rural woman. She spends around 6 hours in the kitchen everyday. Therefore, she is most likely to be affected by indoor air-pollution which can cause both respiratory and non-respiratory effects. Many studies have reported alterations in lung function, chronic cough and phlegm in women exposed to bio-mass smoke. Chronic obstructive pulmonary disease (COPD) though a disease of smokers can also be caused by indoor air pollution (a combination of domestic fuel smoke and passive smoking). Adverse pregnancy outcome, such as still birth, early neonatal death, pre-term and term low birth weight

have been found to be related to exposure to biomass smoke.

## Technologies for addressing OHH of farmwomen

### i- Improved tools and equipment for farmwomen

There are more than 50 improved hand tools/ manually operated equipment developed by various research organizations in the country. Out of these 21 hands tools/equipment have been ergonomically evaluated at DRWA CIAE/SAUs and found suitable for farmwomen. These can suitably be taken for commercial manufacture for making available to farmwomen for reducing drudgery and hazards.

### ii-Safer Alternatives to Pesticides

Synthetic pesticides are usually toxic for human and domestic animals. There are natural substances and herbs, those will not only reduce the hazards but also enhance the eco-system.

### iii- Protective Measures

There are protective wears i.e. apron, goggles, face mask/respirator, gloves, ear muffs are available in market. Use of above devices will prevent the hazards.

### iv- Improved Chula

### v- Institutions & Manufactures

## How productivity will increase by



## analyzing and addressing OHH of farmwomen.

### 1-Improved tools and equipment help to achieve.

- Reduce drudgery
- Increase utilization efficiency of inputs
- Ensure timeliness in field operations and reduce turn around time for next crop
- Increase productivity of worker-machine system
- Conserve energy
- Improve quality of work and also quality of produce
- Enhance the quality of work life of agricultural workers

### 2-Stipulations of rest periods.

Every function of the human body can be seen as a rhythmical balance between energy consumption and energy replacement or between work and rest. This dual process is an integral part of the operation of muscles of the heart and of the organism as a whole. Rest pauses are indispensable for farm workers as they do more grueling job and repetitive motions during agricultural activities. Farm women are exposed bending, squatting, stooping or standing posture for long periods during their work. Lifting or carrying heavy loads are also part of agricultural activities. These awkward postures and heavy work cause musculoskeletal injuries.

Turner (2004) affirmed that instituting micro pausing might reduce discomfort and pain by reducing muscle and nerve tension. Swanson and Sauter (1992) have also showed that frequent breaks increased productivity and decreased musculoskeletal; stress.

### 3-Improvement of Workstations and Work methods

By improving work station and work methods, it will increase the productivity. Simply a good working posture, which requires a minimum of static muscular effort, will be better and the body discomfort will be less.



### Occupational Health Hazards of Agricultural Work in Developing Countries

EXPOSURE	HEALTH EFFECT	SPECIFICITY TO AGRICULTURE
Weather, climate	Dehydration, heat cramps, heat exhaustion, heat stroke, skin cancer	Most agricultural operations are performed outdoors
Snakes, insects	Fatal or injurious bites and stings	Close proximity results in high incidence
Sharp tools, farm equipment	Injuries ranging from cuts to fatalities, hearing impairment from loud machinery	Most farm situations require a wide variety of skill levels for which workers have little formal training and there are few hazard controls on tools and equipment
Physical labor, carrying loads	Numerous types of (largely Un-reported) musculoskeletal disorders, particularly soft-tissue disorders, e.g., back pain	Agricultural work involves awkward and uncomfortable conditions and sustained carrying of excessive loads
Pesticides	Acute poisonings, chronic effects such as neurotoxicity, reproductive effects, and cancer	More hazardous products are used in developing countries with minimal personal protective equipment (PPE)
Dusts, fumes, gases, particulates	Irritation of the eyes and respiratory tract, allergic reactions respiratory diseases such as asthma chronic obstructive pulmonary disease, and hypersensitivity pneumonitis	Agricultural workers are exposed to a wide range of dusts and gases from decomposition of organic materials in environments with few exposure controls and limited use of PPE use in hot climates.
Biological agents and vectors of disease	Skin diseases such as fungal infections, allergic reactions and dermatomes	Workers are in direct contact with environmental pathogens, fungi, infected animals and allergenic plants



## Suggestions & Policy recommendation

The challenges for reducing OHH among farmwomen are significant.

- 1- There is a need for researches to make agricultural health and safety as priority along with musculoskeletal disorders among farmwomen at the most
- 2- There is a need to develop low cost technologies for the critical field problems of repetitive and forceful tasks such as weeding, harvesting, lifting and carrying heavy loads and so on.
- 3- There is an urgent need to train farm women about using women friendly technologies and operating improved tools and equipment.
- 4- There is a need for conducting awareness, intervention and prevention programs about OHH for farm women.
- 5- Setting up of industries in rural areas to produce gaseous and liquid fuels from biomass should be encouraged in terms of availability of easy finance and tax benefits.

## Conclusion

Occupational Health Hazards have been a widespread problem in agriculture in more than a decade. Occupational risk factors include static position, forward bending, heavy lifting and carrying, kneeling and vibration in agriculture. The identification

of occupational health hazards and development of systems to evaluate intervene and decrease musculoskeletal risk factors and resulting disorders is quite crucial for safety of farm women. Role of women in agriculture is increasingly understood and recognized in agriculture. Women play a substantial role in decision making in farm related tasks. There is need to initiate women oriented researches in agriculture. As woman has different ergonomical characteristics than man, design of women friendly tools and equipment is required. Work station should be adjustable to make it comfortable for women during performing agricultural activities.

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