



# A Nurse Led Health Promotion Programme on Prevention and Management of Occupational Health Problems among Field Farmers

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**Abstract:** Agrarian occupational health is a neglected primary care service of India. A nurse led health promotion programme is planned based on a conceptual Model for the Occupational health Nurse Specialist prepared by Ms. Janice Dees (1984)<sup>7</sup> inspired from Orem's self care theory. The interventions included are- range of motion exercise, progressive muscle relaxation technique, foot and palm massage, and literacy on safety practices. Wellness of field farmers is expected by following this programme plan.

**Key words:** Occupational, Health Problems, Field Farmers, Health Promotion Programme, Nurse

## Introduction

Agriculture is a dangerous occupation engaging world's largest labour force containing half of the total world labour force. Only 15% workers have access to basic occupational health services worldwide<sup>1</sup>. Moreover farmers are highly exposed to biological, chemical, physiological and environmental hazards. Primary health care approaches multi directionally and occupational health is a scope for intervening primary health care<sup>2</sup>. Farmers can sustain life by taking home remedies as well as breathing fresh air but the risk associated with chemicals, heat, musculoskeletal injuries, noise, poisonous insects, reptiles, grain bins and silos still prevail<sup>3</sup>. Agriculture is one of the most hazardous occupations worldwide. In several countries the fatal accident rate in agriculture is double the average for all other industries. According to ILO estimates, workers suffer 250 million accidents every year. Out of a total of 335,000 fatal workplace accidents worldwide, there are some 170,000 deaths among agricultural workers<sup>4</sup>. The intensive use of machinery and of pesticides and other agrochemicals has raised the risks. Machinery such as tractors and harvesters has the highest frequency and fatality rates of injury. In developing countries, accident rate in agriculture is increasing. Such accidents occur mainly among migrants and daily workers, as well as women and children whose numbers in waged labour are constantly rising<sup>5</sup>. Most prevalent occupational diseases need attention for prevention and health promotion. In musculoskeletal problems muscle, tendons, ligaments, joints, supporting cartilage become affected due to static effort and highly repetitive work. Common symptoms are numbness, carpal tunnel syndrome, pain<sup>6</sup>. Occupational dust exposure leads to lung disease and exposure to pesticides like pentachlorophenol, formaldehyde, chromium,

arsenic etc. exert a full body effect. Skin disorders like contact dermatitis, fungal infections, and irritant based allergy are very common among farmers. Long working hours, financial burden, low profit, high debt and loan lead to occupational stress, hypertension, and Diabetes mellitus so easily with other non-communicable diseases. Anaemia is also common among farmers due to lack of personal protection and bite of insects, Scorpio and high rate of worm infestation.

## Conceptual framework

A conceptual framework based on Conceptual Model for the Occupational health Nurse Specialist prepared by Ms. Janice Dees (1984)<sup>7</sup> inspired from Orem's self care theory was followed to prepare this health promotion programme for prevention and management of occupational health problems among field farmers.

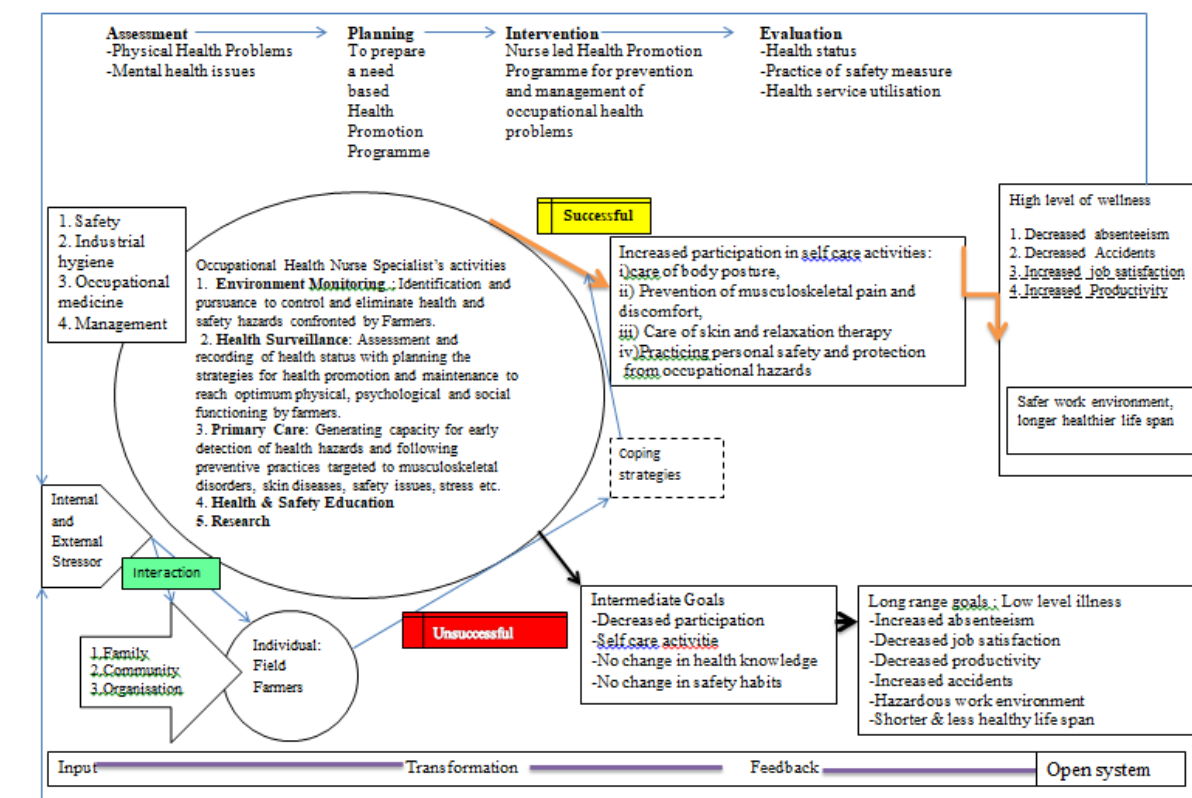


Figure1: Conceptual framework based on Conceptual Model for the Occupational health Nurse Specialist prepared by Ms. Janice Dees (1984)

This conceptual framework shows that concepts of safety, industrial hygiene, occupational medicine and management of occupational health issues are basic of any healthy occupation. Occupational health nursing is a specialized activity for guiding occupational health and safety. Healthy occupation can be run through the components like

- Environment monitoring: Environment always harbors some effective and some harmful factors that need control and continuous identification to avoid any deterioration and hassle among the workers. The farmers confront the hazards from nature, machinery, agrochemicals, live stock etc.
- Continuous health surveillance: Health surveillance is needed for assessing and recording health status of individual farmers that may help to plan strategies for health promotion and maintenance to reach optimal physical, psychological and social functioning by the farmers.
- Generating capacity: For early detection of health hazards and following preventive practices targeted to musculoskeletal disorders, skin disease, stress and anxiety due to uncertainty, non communicable diseases, and farmers are in need of capacity for practicing occupational health by support of primary health care services.

- iv) Health and safety education is always required for ergonomics to adopt the advancements.
- v) Continuous research on safety and health is basic of any professional growth.

In this module the physical health problem, mental health issues will be assessed and based on the sound issues a need based health promotion program for farmers was planned. After intervention, reassessment of health status, practices of safety measures are in plan.

The course of activities occupational health nurses are to interact with individual workers, their family, community and organization which help them for being more equipped with knowledge education and positive attitude. If individual farmers are able to cope with occupational health nursing activities they will be able to participate more in self care activities like care of body posture, prevention of musculoskeletal pain and discomfort, care of skin and protection through practicing personal safety and safety from occupational hazards. On the other hand if farmers are not able to cope up with safety intervention and practices there will be decreased participation in self care activities; their practice and knowledge for safety will have little change over time and in long term, there will be low level of wellness, increased absenteeism, decreased job satisfaction, decreased productivity, increased accidents. Overall useful occupational health nursing lead to high level of wellness and safer work environment, longer and healthier life span with increased job satisfaction, increased productivity among the farmers there will be less weight of job and shift into any other occupations.

### Components of Health Promotion Programme

Health promotion programme enables individual and communities to control over their own health. This health promotion programme is composed of following nursing procedures<sup>8</sup>.

Table 1: List of Nursing interventions for health promotion of field farmers

Sl. No.	Health effects due to occupational exposure	Nursing Intervention	Expected preventive outcome
1	Musculoskeletal pain and discomfort	-Hot and cold application -Range of motion exercise	-flexible joints -Less pain and discomfort -Less chances of disability
2	Stress	Continuous /Progressive muscle relaxation technique	-Improved coping mechanism -Improved lifestyle
3	Skin diseases	Foot and palm massage	-Improved skin integrity -Improved circulation -Improved reduction of waste materials
4	Accident, injuries and safety issues	Literacy on Safety practices	-Less accidents -Less numbers of diseases

### Discussion

PatilSA et al performed a cross sectional analytical study on randomly selected sample of 1150 farmers. Musculo skeletal disorders among farmers were found in body parts like knee(34%), lower back (33%), neck (24.7%), upper back (24.5%), shoulder (23.7%), hip /thigh (18.5%), feet (17.5%), wrist / hand (9.7 %) and elbow (6.2 %). This musculoskeletal disorders were prevalent in respect to postural activities like weeding with squatting (71.6%), picking crops (67.5%), weeding with bending(64.7%), carrying seeds (63.5%), riding (53.5%), planting seeds (53.2%), spading (52.8%), sprinkling water (52.1 %) and carrying crops (47.2 %). Musculoskeletal disorders were significantly common among farmers above 50 years of age; all three lower limb joints were significantly high among persons with underweight people (chi square=20.7, p value= 0.00); tobacco addiction (chi square = 53.65, p =0.00). 79.1% farmers required medical treatment, 78.2 % and 13.2% farmers respectively took medication for pain relief by consulting doctor and self<sup>9</sup>.

Lugar T et al proved the significance of short breaks during work and it was able to increase working ability and reduce musculoskeletal discomfort among the workers<sup>10</sup>. Mertens GM conducted a systematic review and meta-analysis that discussed the highlights that exercise therapy is effective in improving range of motion function reducing pain. The range of motion movements help to keep joints flexible, reduce pain, improve balance and strength. The work related musculoskeletal disorders are world wide public health problem leading to temporary and permanent disability<sup>11</sup>. Sushanto T et al conducted a randomised controlled trial to evaluate the effects of progressive muscle relaxation and stretching exercises for managing blood pressure over three months period among rural agriculture workers. There is significant reduction of blood pressure in experimental group and difference in systolic blood pressure in pretest and posttest group is (z value = - 5.3 81 with p value= 0.001) and diastolic blood pressure difference is (z value = -5.038 with p value =0.001).<sup>12</sup>

## Conclusion

Occupational Health Nursing is a budding issue globally till date. This content of Nurse led health promotion programme is prepared based on nursing research evidences. A change and effectiveness is expected for occupational health promotion and management of diseases.

**Conflict of interest:** Nil

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