

WOMEN IN FISH PROCESSING INDUSTRY : A WORK STRESS ANALYSIS : (PART- II : WORK INTERVENTION)

Participating Staff

Scientific

Dr. A. Nag, S R O
Dr. P.K. Nag, D D (SG)
Dr. A. Saha, R O

Technical

Dr. S.P. Ashtekar, L T

(In cooperation with the Dept. of Fisheries, Govt. of Gujarat)

Sea fish and prawn catchments, culture and processing are promising export-oriented business, employing nearly two hundred thousand women workers in the coastal regions of India. These women, in general, are socio economically poor, less educated or illiterate and suffer from lack of awareness and knowledge of occupational health and safety, including their personal hygiene, as encountered in their occupational involvement. Due to the nature of the job, women in fish processing work are exposed to cold environment, chlorinated water and other fish protein related bioagents. Use of improper hand tools and implements, and awkward working postures are the contributory factors for musculo-skeletal pain and discomfort of the body parts. The occupational injuries and illnesses are very much prevalent among these women. In Gujarat alone, there are approximately 65 processing units located at the coastal cities like Veraval, Mangrol, Porbandar and Dwarka. About 15000 skilled and unskilled women workers are employed in these units. The workforce is primarily migrated. The women workers have about 10 hours standing duties for the purpose of cleaning, grading, peeling, deveining, packing and freezing of different sea fishes mainly prawns, squids etc. The objectives of the study are to find out:

- The work related stresses of women in fish processing units (reported in Annual report 2002 – 03)
- Analysis of work and assessment of relative work aspects towards contribution of stresses

- Implementation of suitable intervention program to reduce at least one of the various occupational hazards

Four fish processing units were selected in the coastal area of Gujarat. In a preliminary study, the fish processing industries were examined using a multi-method ergonomics checklists, covering 185 women fish processing workers (age: 24.4 ± 7.4 yrs; experience: 3-11 yrs), work method and tool and equipments involved in job operation, workplace and working condition. The structured interviewing covered mechanistic, biological, environmental, perceptual and motor, technical and psychosocial aspects of work. The relative weightages of the above aspects of the work were obtained from a 5-point scale anchored with agreement/disagreement scale.

An intervention program was implemented for hand protection against exposure to ice-cold water. The temperature profile of the bare hand of the women while working has already been reported (annual report 02-03). Among the women who were diagnosed as showing the Raynaud's phenomena, 24 women were selected for longitudinal intervention program in the fish processing units (Fig.1).

Fig. 1. Injuries in hands of women in fish processing activities

The group of women wore rubberised hand gloves and had undergone their usual routine work for similar duration in the first half of the morning shift. Therefore, the women served as their own control in the experiment. The initial and after 2-hour work exposure, the skin temperatures of the hand were measured. Also, the palms of the women were examined after 2-hour work exposure, for any signs of Raynaud's phenomena. The women were also advised to continue using the gloves for the remaining workday to monitor cold-related symptoms of the hand. The gloves were chosen considering the size of the hand and rubberised material that may be suitable for the tasks to be performed.

The risk potential of fish processing industries is a culmination of multiple adverse influences, such as methods of work, working conditions and environmental stresses. The work analysis of the women in fish processing suggests that biological and environmental aspects of work had relatively greater weightages among the work stressors. This finding was supported by the high prevalence of musculo-skeletal pain and discomfort among these women (67%). The lower back (45%) is the most affected area, followed by the shoulder (20%) and upper back (25%). The cold induced blanching and numbness of hands, and Raynaud's like phenomena (61%) were observed among the women workers.

Based on the observed health hazards, it was planned to introduce suitable ergonomics intervention in order to mitigate the work-related hazards. Data indicated that the wearing of gloves substantially improved the skin temperature profile of the hand, compared to those situations when working bare hand. This observation was further substantiated by the remarkable improvements in the onset of

Raynaud's phenomena. As large as 84% of the women did not show any blanching of fingers and Raynaud's phenomena with the wearing of gloves (Fig. 2). With the continuing use of the gloves for the rest of the workday, all the women, including 16% women those who had still developed the cold-induced symptoms in spite of wearing the gloves, expressed satisfaction in their voting in comfort scale. The supervisors were also asked to assess the work out put of these women for the workday and they had no complain of their work performance and productivity.

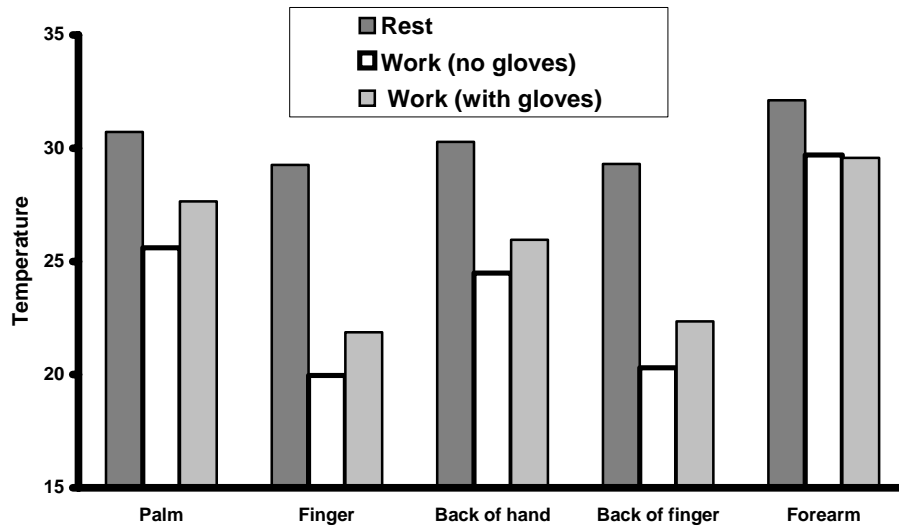


Fig. 2: Shows the temperature of different areas of hand before and after using the gloves

This preliminary investigation amply indicates that gloves might be one of the major work interventions, which could be successfully implemented in the fish processing industries. The efforts are on to find out the appropriate type of gloves (e.g., durability and affordability), which will be accepted by the employer and the employee alike.