

Research Paper :

An ergonomic assessment of activities done by female workers at kitchen workstation

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ABSTRACT

Study was undertaken to do ergonomic assessment of kitchen workstation for females engaged in cooking activities, with objective to assess the physiological parameters of female workers engaged in selected cooking activities and to evaluate the design of selected work station in-terms of ergonomic standards. Study was conducted in Ludhiana district for which sixteen respondents having similar physical and physiological parameters were selected. For experimentation, five activities; cutting, grating, kneading, rolling and dish-washing were selected. The per cent increase in heart rate was maximum for grating 38.56 and minimum for rolling 16.20. Reduction in grip and pinch strength of right hand was found more as compared to the left hand. The per cent deviation in thoracic and in lumbar region was maximum during kneading and minimum during rolling.

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Key words : Cooking activities, Ergonomics, Physiological parameters, Work station

Ergonomics contributes to the designing and evaluation of tasks, jobs, products, environments and systems in order to make them compatible with the needs, abilities and limitations of the people. To obtain maximum efficiency in work with least cost to the body, there should be an ideal relationship between work, worker and work place (Steidl and Bratton, 1968). The homemaker is the predominant figure in the home and household work is an indispensable part of the homemaker. She requires a lot of energy and time to complete work inside and outside the home with satisfaction and desired standards. Researchers have proved that any work station design or work environment that helps to perform the work with minimum energy and put minimum stress on cardio-vascular system and muscular system is the best design of work (Verghese *et al.*, 1995). So, the kitchen workstation should be adequately designed and properly arranged in order to reduce the physical, physiological and temporal costs of the homemaker. If the body fails to maintain the equilibrium while doing work, it adds to the human energy cost and physiological dynamics such as energy expansion, physiological cost of work, muscular effort etc.

EXPERIMENTAL PROCEDURE

Selection of respondents:

Study was conducted in Ludhiana district For study, sixteen respondents having similar physical and physiological parameters were selected. Selected homemakers had mean age 33.7 years, mean height 156.87, mean weight 61.42 kg and mean heart rate 74.7 (beats/min).

Standardization of activities:

Five activities in which the respondents faced maximum problems were selected. These were cutting, kneading, rolling, grating and dish washing. Each of the activity was performed for fifteen minutes. For cutting and grating activities carrot were taken. Kneading was done of wheat flour weighing 500 g. For dish washing, medium sized utensils including skillet, *patila*, full plates, bowls, glasses, serving bowls, different types of spoons etc. of stainless steel were used.

Collection of data:

A preformed questionnaire was used to record personal data, and readings during the experiment. Prior appointments were fixed with the selected subjects, and then as per the convenience of the subjects, visits were