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CHALALAI HANCHENLAKSH : IMPROVEMENT OF WORKSTATION  
FOR REDUCING MUSCULAR FATIGUE AMONG FEMALE HAND-WEAVING  
OPERATORS. THESIS ADVISORS: CHALERMCHAI CHAIKITTIPORN, Dr.P.H,  
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The objectives of this study are to identify the condition of muscular fatigue among female hand-weaving operators and to improve the workstation to reduce muscular fatigue while hand-weaving. Thirty female hand-weaving operators represented the study sample. The mean age of the subjects was 29.6 years and mean weight and mean height were 54.3 kgs, 154.7 cms, respectively. The operators had experience of hand-weaving work for 8.6 years and they had no history either muscle or bone disease or accidents. The subjects were objectively and subjectively assessed for fatigue while hand-weaving at non-improving workstations and improving workstations. Each workstation had 5 working hours (10.00 a.m.–3.00 p.m.). The objective assessment was carried out by the percentage of maximum voluntary contraction (MVC) measured by electromyography every 30 minutes and the subjective feeling of fatigue was assessed by questionnaire at 0,2,3 and 5 working-hours.

The results of this study illustrated that while hand-weaving at improving workstations, the subjective feeling of fatigue of the general body, shoulder muscle, and back muscle were significantly less than at non-improving workstation ( $\alpha = 0.05$ ). The percentage of MVC by electromyogram of the shoulder muscle (trapezius muscle) and the back muscle (erector spinae) during hand-weaving at improving workstations were significantly less than the percentage by electromyography during hand-weaving at non-improving workstations ( $\alpha = 0.05$ ). Finally, there was no relationship between subjective feeling of fatigue assessed by questionnaire and muscular fatigue measured by electromyography. This study can conclude that improving workstations could reduce shoulder and erector spinae muscular fatigue of hand-weaving operators.