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Visual and physical problems faced by women workers in hosiery units of Ludhiana city

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Abstract

The present study was carried out to assess the visual and physical problems faced by women workers by conducting experiments on 40 women workers in 12 hosiery units of Ludhiana city. Perceived exertion and intensity of body pains were assessed using rated perceived exertion scale and body map. Results revealed that performed activities led to medium exertion however, which no more be termed as 'medium' as it has been done continuously for 8 hours daily in an occupational work setting; thus requiring some intervention. Maximum (95.00 percent) subjects experienced pain in lower arm followed by 80.00 percent subjects who felt pain in shoulders, fifty percent subjects felt pain in mid back and lower back and 45 percent feel pain in neck too. About one third subjects complained of occasional blurring of eyes, few pinpointed difficulty in prolonged eye concentration and extreme eye fatigue but hardly any one complained of watering eyes.

Keywords: Women workers, hosiery units, visual and physical problems

Introduction

A large number of women are involved in the unorganized sector such as agriculture, construction, industries, domestic work etc. The working conditions of women in this sector are not good and women's work is rarely recognized. Women workers in the unorganized sector deserve special emphasis in view of the double burden of work that distinguishes women from men. The prevalence of physical problems among women workers in unorganized sector particularly when they are engaged in finer work is common. They generally reported visual and physical Problems.

Hosiery industry is the hub of Ludhiana city, where women work as casual workers to do minor hand operations on manufactured hosiery garments. Jobs like spinning, weaving, knitting, stitching, embroideries, crocheting and finishing the garments are mostly done by women workers. The main risk factors for women worker in hosiery industry are work-related musculoskeletal and vision related disorders mainly due to awkward work postures, repetitive nature of work, time pressures, psychological stress and improper job organization. In present study, women working in hosiery units were assessed for analysing their visual fatigue, perceived pains and exertion, and intensity of their body pains.

Materials and Methods

For conducting experiments 12 hosiery units of Ludhiana city were randomly selected. A sample of 40 women workers having the permissible limits of physiological parameters were selected for the field experiment. Three most intensively performed hosiery activities were selected to assess the visual and physical problems. Those activities were: thread cutting of the stitched garment, stitching buttons and hooks, hemming the finished garment. To determine the permissible limits, weighting machine, and anthropometer were used. Those three selected activities were performed by the respondents for 30 minutes and parameters were assessed at rest and after work. The results were tabulated and analysed using simple percentages, averages and was presented in the form of tables.

Results and Discussion

Rated Perceived Exertion

Vergheese Modified Scale of Rated Perceived Exertion (RPE) rates feeling of exertion at 5 point scale. It was used after subjects finished with thread cutting, button stitching and hemming which took 30 minutes.

Score of RPE was 2.1; and according to the interpretation of the scale, it indicates that performance of these activities led to 'medium exertion'. However, since the activities were carried out for approximately 15-16 times more and for 8 hours daily and also included doing some embroidery, crochet work, mending, stitching and packing etc; the 'medium exertion' no longer remained medium and fatigued the workers.

Table 1: Perceived exertion and pains felt by selected subjects while performing selected hosiery related activities (n=40)

Feeling of Exertion	No.	Percentage	Mean score
Very light feeling	Nil	Nil	2.1*
Light feeling	11	27.50	
Medium feeling	14	35	
Heavy/high feeling	15	37.50	
Very heavy feeling	Nil	Nil	

*Light exertion according to RPE scale

Moreover, the repetitive nature of these tasks does induce actual fatigue; as indicated by general responses of the subjects apart from straining the particular set of muscles which have been repeatedly overused. However 37.50 percent of the subjects did agree to feeling of 'heavy or high feeling of exertion' and 35.00 percent were confessing to medium feeling of exertion. These findings are in line with results of Gupta (2012)^[1], Kaur (2014)^[2], and Nauriyal (2006)^[4] who also presented similar narration.

Intensity of Body Pains

Body pains can be reported by 'use of 'Body Map'. It is a subjective tool to measure the localized discomfort,

Table 2: Mean score of intensity of body pains felt by selected subjects in hosiery work (n=40)

Body part	Intensity of pain		Overall discomfort due to pain
	Mean (\pm S.D.)	Percentage of sample	
Upper extremities			
Upper back	3.00 (\pm 0.00)	7.50	Moderate
Mid back	2.62 (\pm 0.74)	50.00	Mild to moderate
Lower arm	2.10 (\pm 0.69)	95.00	Mild to moderate
Upper arm	2.00 (\pm 0.00)	50.00	Mild
Neck	1.83 (\pm 0.62)	45.00	Very mild to mild
Shoulder	1.62 (\pm 0.68)	80.00	Very mild to mild
Lower extremities			
Lower back	1.87 (\pm 0.64)	50.00	Very mild to mild

It can thus be concluded that overall discomfort due to pains was from 'very mild to mild' in neck, shoulders and lower back, 'mild' in upper arms; 'mild to moderate' in lower arms, lower back and 'moderate' in upper back. Gupta (2012)^[1] too found out that the pain was felt by the different body parts, as respondents felt very severe pain in lower back, severe pain in upper back, wrist and hands, moderate pain in lower arms, neck and shoulder joints and mild pain upper arms, elbows, ankles and feet. Nauriyal (2006)^[4] also found out that most of the women worker felt severe to moderate pain in shoulder joints, elbow, lower arm, wrist, upper back and knees, moderate to mild pain was experienced in neck, upper arm and thighs. Mehrotra and Sharma (2003)^[3] also in their study reported that 72 percent workers experienced severe pain in low back and 93.9 percent experienced severe musculo-skeletal disorders in various other body parts while working in brass factory.

musculoskeletal problems, and intensity of pain in different body parts resulting from postural discomfort. Intensity of body pain reported in each body part was determined on a 5-point continuum. Scores of subjects were used to get total mean score.

Indicating pain points on a 'Body Map' is a very precise way to pinpoint pain and its intensity by any worker. It can be seen from Table2 that although a very small segment of subjects (7.50 percent) complained of pain in upper arm and upper back but felt intensely by them as revealed by high mean score (3.00). Half the number of subjects (50.00 percent) felt such pain in mid back (mean score 2.62) and upper arm (mean score 2.00). The reason for the pain in back can also be due to prolonged sitting posture with neck bend forward and thus spine attained kyphosis which puts pressure on intervertebral discs. When the posture is retained in this shape for long duration then pain is inevitable. Pain arising in arms can be due to arms working in raised position, putting static load on arm muscles. Almost all the subjects (95.00 percent) agreed for having pain in lower arm but its intensity does not seem to be very severe as indicated by the mediocre mean score earned by this body part (mean score 2.10) followed by 80.00 percent subjects highlighting pain in shoulders too. Since mean score was 1.62, so did not seem to adversely affect the health of workers. It clearly indicated that weaker and not well trained muscles of arms of the workers induce static muscular strain. Moreover, due to static muscular effort lactic acid cannot be removed from working arm's muscles and induces pain which is termed as accumulated fatigue. Pain in neck as revealed by 45.00 percent subjects may also be due to same reason with mean score of 1.83.

Visual Discomfort

Symptoms of visual discomfort included unpleasant somatic and perceptual effects, such as eye-strain, headache, and blurred text, despite normal visual acuity this condition has been called visual discomfort.

It was also seen in Table3 that 35.00 percent subjects felt that their eyes were extremely fatigued, 32.50 complained of difficulty in prolonged eye concentration and more than one fourth (27.50 percent) of them disclosed of occasional blurring of eyes. However hardly any subjects (5.00 percent) agreed that they had 'watering eyes' after doing thread cutting, button stitching and hemming for 30 minutes.

Table 3: Visual discomfort felt by selected subjects while performing selected hosiery work (n=40)

Visual discomfort	No.	Percentage (percent)
Occasional blurring	11	27.50
Difficulty in prolonged eye concentration	13	32.50
Extreme eye fatigue	14	35.00
Watering of eyes	2	5.00

Snehlatha (2007) ^[5] also revealed in her study on female users of computers, who did typing work for long office hours had similar eye related problems. Computer users complained of tiredness in eyes, heaviness, frequent headache, itchy eyes, double vision and glare in eyes. Kaur (2014) ^[2] also highlighted visual discomfort in her study on musculoskeletal and visual problems faced by female video display terminal (VDT) users and disclosed that respondents were having problems like 'tiredness' in eyes, 'heaviness' and frequent headache or migraine pain and dry eyes disease.

Conclusion

Mean score of Rated Perceived Exertion (RPE) was 2.1 and accordingly thread cutting, button stitching and hemming for 30 minutes was rated as 'medium exertion'; however, which no more be termed as 'medium' as it has been done continuously for 8 hours daily in an occupational work setting; thus requiring some intervention. Maximum (95.00 percent) subjects experienced pain in lower arm followed by 80.00 percent subjects who felt pain in shoulders, fifty percent subjects felt pain in mid back and lower back and 45 percent feel pain in neck too. Only 7.50 percent subjects felt pain in upper arms and upper back. About one third subjects complained of occasional blurring of eyes, few pinpointed difficulty in prolonged eye concentration and extreme eye fatigue but hardly any one complained of watering eyes.

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