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Impact of Musculoskeletal Pain/ Discomfort of tailoring activities performed by the tailors

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ABSTRACT

Self employed garment worker or tailor (Darzi) is a person, whose work relates to sewing, joining or finishing of clothing. They may create new pieces of clothing from patterns and designs or alter existing garments to fit to the customers. Tailors in reporting of shoulder, mid back, lower back, thighs and legs, where the pain in home based tailors was less in comparison to shop based tailors. Present study was planned to assess the job related musculoskeletal disorders (MSDs) among tailoring workers. Therefore, study was conducted at Allahabad with the main objective to study to calculate the stress of various tailoring operations. Total 114 respondents were purposively selected for the collection of subjective data whereas 57 male tailors and 57 female tailors were randomly selected for the ergonomic assessment. The findings of level of postural discomfort showed that more than 108.7 percent of the respondents from male and female tailors were suffering from severe problem of upper back pain during stitching of clothes. Furthermore designing part of the material handling devices revealed that male and female were performing the tailoring task with various materials handling devices which were Inappropriate and causing awkward body postures which lead to severe postural discomfort.

Key words: *musculoskeletal disorders, postural discomfort.*

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INTRODUCTION

Stress may also cause psychosomatic diseases such as hypertension, ulcers, asthma, skin disorders and headache. Research identifies heart disease, stroke, tuberculosis, arthritis, diabetes, leukaemia, cancer, various types of infectious diseases, and common colds have also been related to stress. Besides this, poor work pattern and working environment gives unnecessary physical efforts, which reduce efficiency and productivity also. Sustaining any static posture, such as sitting, increases the demand on the muscles, ligaments, and other soft tissues of the musculoskeletal system. The overall discomfort and pain in the back, neck, and shoulders are common symptoms reported by workers who sit for most of their workday. Sitting alters the normal curvature of the spine and puts pressure on the discs. With prolonged sitting this pressure can cause compression of the discs. These resulting chronic back pain and possible nerve damage can impact on workers ability degeneration of the cervical spine, sometimes known as cervical spondylitis, can have serious consequences. Compression of the spinal cord at the level of cervical spine can take place, resulting in weakness and wasting of the upper limbs. This may then spread to the lower limbs. High percentages were suffered from MSDs commonly associated with poor ergonomic design in the workplace. MSDs are commonly associated with poor ergonomic design in the workplace. Without the application of ergonomic principles, tools, machines, equipment, the workstations are often designed without much consideration of the fact that people are of all different heights, shapes, and sizes and have different levels of strength **(Tiwari *et al.*, 2012).** Musculoskeletal disorders (MSDs) are a common health problem throughout the world and a major cause of disability. The economic loss due to such disorders affects not only the individual but also the organization and society as a whole. At the present time, MSD is one of the most important problems ergonomists are encountering in the workplace all over the world. Carpet weaving is one of the most tedious professions, requiring long hours of static work and can be a high-risk occupation for developing MSDs as awkward posture, repetitive movements and contact stress are common **(Agency report, 2000).**

MATERIAL AND METHODS

Selection of subjects and location: The study was conducted in Allahabad city of Uttar Pradesh. Total 114 respondents were selected and out of them 57 respondents were male and 57 respondents were female in the age group of 20-50 male and 18-47 female tailors who were performing tailoring tasks for 9 hours per day.

Assessment of postural discomfort and musculoskeletal disorders:

Standardize Nordic questionnaire was used to determine the prevalence of self reported musculoskeletal pain/ discomfort. NORDIC questionnaire was developed by **Kuorinka *et al.* (1987).** It is a multiple page questionnaire and used for evaluation of musculoskeletal problems. Categorical Yes/ No questions were administered to address the incidence included body parts trouble (ache, pain, discomfort) during the whole life span, during last 12 months, one month and during last 7 days.

RESULT AND DISCUSSION

The results depict (Table 4.5) the prevalence of musculoskeletal problems among the selected respondents of male and female tailors. The work-related musculoskeletal problems and the body pain perceived by the workers were determined by administering of standardized Nordic questionnaire. All the selected workers had given their responses, which were analyzed. Workers were asked few questions about perceived pain/discomfort. Pain was inquired for measuring past 12 months, and for 7 days. Majority of the respondents were feeling pain and discomfort in different body parts.

S.No.	Body part	Pain / discomfort during last 12 months			Pain / discomforting during last 7 days		
		Male	Female	Total	Male	Female	Total
1.	**Neck**	16 (28.07%)	26 (45.61%)	42 (73.68%)	26 (45.61%)	14 (24.56%)	40 (70.17%)
2.	**Shoulder**						
	Right	9 (15.78%)	8 (14.03%)	17 (29.82%)	15 (26.31%)	11 (19.29%)	26 (45.61%)
	Left	5 (0.08%)	3 (5.26%)	8 (14.03%)	9 (15.78%)	5 (0.08%)	14 (24.56%)
	Both	6 (10.52%)	11 (19.29%)	17 (29.82%)	18 (31.57%)	17 (29.82%)	35 (61.40%)
3.	**Elbow**						
	Right	8 (14.03%)	6 (10.52%)	14 (24.56%)	8 (14.03%)	1 (1.75%)	9 (15.78%)
	Left	2 (3.50%)	1 (1.75%)	3 (5.26%%)	2 (3.50%)	9 (15.78%)	11 (19.29)
	Both	4 (7.01%)	4 (7.01%)	8 (14.03%)	2 (3.50%)	7 (12.28%)	9 (15.78%)
4.	**Wrist/hands**						
	Right	1 (1.75%)	4 (7.01%)	5 (0.08)	18 (31.57	15 (26.31)	33 (57.89%)
	Left	4 (7.010%)	4 (7.01%)	8 (14.03)	9 (15.78%)	5 (0.08%)	14 (24.56%)
	Both	0 (0%)	0 (0%)	0 (0%)	8 (14.03%)	11 (19.29%)	19 (33.33%)
5.	**Upper back**	30 (52.63%)	32 (56.14%)	62 (108.7%)	5 (0.08%)	12 (21.05%)	17 (29.82%)
6.	**Low back**	36 (36.15%)	44 (77.19%)	80 (140.35%)	31 (54.38%)	25 (43.85%)	56 (98.24%)
7.	**Hips/thighs**	28 (49.12%)	23 (40.35%)	51 (89.47%)	25 (43.85%)	21(36.84%)	46 (80.70%)
8.	**Knees**	21 (36.84%)	23 (40.35%)	44 (77.19%)	14 (24.56%)	11 (19.29%)	25(43.85%)
9	**Anklets/ feet**	24(42.10%)	31(54.38%)	55(96.49%)	15(26.31%)	17(29.82%)	32(56.14%)

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Table 4.5 clearly envisages that since last 12 months, 28.07 percent male workers and 45.61 percent female workers were involved in tailoring operation had pain and discomfort in neck. This study is also supported by **Gangopadhya *et al* (2007)** that due to occupational exposure such as highly repetitive hand exertions had risk factors for MSD. When asked about pain in right shoulder 15.78 percent of male workers and 14.03 percent female respondents reported discomfort during the activity whereas, regarding pain and discomfort in left shoulder, total 0.08 percent male and 5.26 percent female workers respectively reported pain and discomfort during the tasks. Besides this, when asked about pain in both shoulders 10.52 percent of male workers and 19.29 percent female respondents reported discomfort while performing the activities which shows that female workers face more exertion and pain during performing tailoring activities.

Total 14.03 percent male workers and 10.52 percent female population reported pain in right elbow and 3.50 percent of the total male workers and 1.75 female respondents were suffering from pain and discomfort in left elbow. When asked about the pain in both elbow total 7.01 percent male workers and 7.01 percent female workers reported discomfort whereas, 1.75 percent male tailoring workers and 7.01 percent female workers reported pain and discomfort in Right wrist/ hand and total 7.01 percent male tailors and 7.01 percent female tailors reported pain and discomfort in left wrist/hand. The study indicates that both male and female tailors have to undergo pain and discomfort in wrist/hand in tailoring business/job.When asked about the pain in upper back total 52.63 percent male tailors and 56.14 percent female workers reported discomfort whereas 36.15 percent male tailors and 77.19 percent female tailors reported pain and discomfort in lower back. Majority of male tailoring workers (49.12 percent) reported pain in hip/ thighs but only 40.35 percent female workers were suffering from pain and discomfort in the same region. Total 77.19 percent of male and female tailors reported pain in knee whereas 96.49 percent male and female tailors had pain and discomfort in ankles/ feet. The study reveals that due to work in sitting posture both male & female tailors suffered pain in upper back, lower back and knees.Choobineh *et al.* (2004) reported that an awkward leg posture could be a reason for injury, swelling, and pain in weavers' lower extremities. Further they analyzed that musculoskeletal symptoms in thighs, knees and legs were significantly more prevalent among those who worked in those non-neutral or dangling leg postures as compared to those with well-supported legs. In addition, insufficient legroom causes weavers to be in a constrained position without the possibility to move and results in posture fixation. Posture fixation causes the worker not to be able to vary posture and reduce fatigue and can be very uncomfortable and fatiguing (Clark, 1996; Kroemer *et al.,* 1999).

CONCLUSION

The present investigation showed that there was a high rate of poor working postures and musculoskeletal problems among tailors. Therefore, control of musculoskeletal disorders risk factors and up gradation of working environment seem essential. Type of tailoring equipments, rest, working postures, daily working hours etc. are the most important and considerable factors which are directly associated with prevalence of musculoskeletal disorders among tailors. The majority of ergonomic shortcomings and important factors for musculoskeletal symptoms in tailoring operations originated from ill-designed tailoring workstations. Therefore, it can be concluded that any working conditions improvement program in this industry can be regulated and should be focused on designing of ergonomic-oriented tailoring workstations. This would minimize the fatigue and drudgery among tailors and significantly enhance their productivity and working efficiency.

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