

Major Health Risk Factors prevailing in Garment Manufacturing Units of Jaipur

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Abstract

The study analyzed the types and extent of occupational health hazards of the garment workers in cutting, stitching and finishing section. Thirty five garment factories from Jaipur were selected purposively. The sample consisted of 210 workers taking 6 randomly from each garment manufacturing unit. Data were collected through personal interviews with the selected samples. It was found that work in the garment factory severely affected worker's health, as they were restrained in a closed environment. Nature of work in Garment factories created various types of health hazards among the selected respondents such as headache, musculoskeletal pain, eye strain etc. Results of the study showed that workers in the cutting section were more prone to accidents than the ones in stitching and finishing sheds. 55 percent of the respondents from the stitching shed opined that they suffered from severe musculoskeletal pain, whereas vibration induced syndrome was only faced by the respondents in the cutting shed.

Keywords: Health hazards; Garment; Garment workers

Introduction

The Readymade Apparel Industry in India had its beginning during the first half of the 20th century and has witnessed impressive growth during the last four decades. There are around 70,000 Apparel manufacturing units in the country providing employment to more than 3 million persons [1]. Jaipur poses a good export potential, there are approximately 356 Apparel manufacturing units in Jaipur. According to WHO (1948), "Health is a state of complete physical, mental and social wellbeing and not merely the absence of diseases or infirmity". Occupational health hazard is concerned with health hazard in relation to work environment. The science of occupational health hazards covers a wide field, like work physiology, occupational hygiene, occupational psychology, occupational toxicology etc. [2]. If work tasks and equipment do not include ergonomic principles in their design, workers may have exposure to undue physical stress, strain, and overexertion, including vibration, awkward postures, forceful exertions, repetitive motion, and heavy lifting [3,4]. Recognizing ergonomic risk factors in the workplace is an essential first step in correcting hazards and improving worker protection [3,4]. Nigam et al. [5] conducted a study on "Safety and health in chemical industry". The study addressed the present global industrial scenario, for any industry to be successful, it is essential to inculcate safety culture, health consciousness and environmental awareness in every employee of the organization. Paul-Majumder [6] conducted a study on the physical and mental health status of garment workers and how problem affect labour productivity, competitiveness of the garment industry in the world market and the working life of the workers, particularly of female workers. It showed that various illnesses and diseases were widespread among the garment workers. A large number of workers were found to continue their work even they were suffering from various diseases and illness. Though the garment workers were very young they suffered from anemia, female diseases, dysentery, etc. Moreover, the competitiveness of the garment industry in the world market was seriously affected by the ill health of the workers, since ill health decreases the labour productivity to a great extent. Most of the health problems that the garment workers suffered from arose from the occupational hazards including long working hours, absence of leave facilities, congested and over-crowded

working conditions, absence of health facilities and safety measures, absence of staff amenities, lack of safe drinking water etc. [7] Views that better lighting pays off through higher efficiency. Improvements in lighting conditions in number of industries have often resulted in 1% productivity growth and a reduction in errors by 30 percent. Also, accidents are not only the result of hazardous conditions but also result of unsafe working practices. The major health and safety concerns in the apparel industry are related to general conditions of work environment. The work in the Apparel units requires prolonged hours of standing or sitting in forward bending posture. The work in these units are highly repetitive in nature, requiring a combination of both state and rhythmic muscular activity. When such tasks are repeated several times in a day, this leads to disorders. Empirical evidence suggest that the workers in the Apparel units suffer from work related musculoskeletal disorders, particularly of neck, back and upper extremities are the most frequently reported work related health problems among garment workers [8]. Garment workers make up a major share of the total labor force in the country, which bring most of the country's foreign currency. But workers were subjugated easily due to lack of technical knowledge and training. So, keeping the above view in mind the present study is instigated with the following objectives: To document the working motion of the workers working in garment units.

- To study the health status of the workers identifying the types of hazards.
- To identify MSD's prevailing amongst the workers of the garment manufacturing units.

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Methodology

A descriptive research was planned using a survey method. 35 garment manufacturing units of Jaipur were selected purposively. Data was collected using an interview schedule and observation method. The total number of manufacturing units was 350 (medium scale enterprises) in Jaipur. 10% units of the total units i.e. 35 were selected for the study. A sample of 120 respondents taking 6 from each unit was chosen randomly.

Results and Discussion

Demographic data of the respondents showed that 61% workers belongs to the age 40-50 years who working in these units for 6-10 years, 29% workers belongs to the age 20-30 years who working in these units. Out of the total 95.23% workers were male and 5% workers were female. All the workers were belonging to Hindu community. Educational qualification of the workers was low. 12% workers qualified primary education and 88% of the respondents were secondary educated. The average working hour of the respondents ranged from eight to nine.

Results of the study showed that majority of the respondents who faced injury were working in cutting and stitching sheds followed by the finishing shed of the garment manufacturing units (Table 1). The common accidents which took place in cutting section were cutting of hand while operating the cutting machines. Use of electrical equipments such as band knife and straight knife cutting machines also lead to number of accidents in the apparel industry. Few of the workers were aware of the hand glove made of flexible metallic strings to protect their fingers from accidents, cuts and injuries. In the sewing section, piercing of wound was the most common type of injury at the time of stitching. The workers injure their eyes while stitching as the broken needle flying into the eyes. Injury at both index finger and middle fingers was common for women in thread cutting section. Accidents commonly occur in laundry section is because of inadequate safety system especially while washing and spin drying the garments. In ironing section, numbers of cases were reported for burning of fingers and arms.

The unsafe acts of the workers were identified and it was found that the loose clothing, improper tying of hair, rings, improper lifting and gripping of material, lack of use of safety devices such as guards and non use personal protective equipment and material stored haphazardly causing frequent falls and accidents.

The Statistics in (Table 2) indicated that in the cutting section the maximum number of workers (35%) expressed musculoskeletal disorder. Vibration induced syndrome and respiratory problems was found in 20% of the workers. 15% of the workers complained about the headache and skin problem. Only 5% of the workers expressed hearing and visual discomfort. In the cutting section there is handling of fabric roll and poorly designed furniture and awkward posture due to high table and too long awkward posture for a long time leads to musculoskeletal problems. Due to continuous use of cutting machines the workers complain about vibration induced syndrome and headache. Breathing difficulty is due to dust and loose fibers in the cutting section causing allergies and byssionosis. There is cornification of skin of fingers because of excessive use of shears. This leads to swelling of fingers. Many of the workers in the cutting section wrap the handles of the shears with a piece of cloth/cotton to reduce the friction of the metallic handle on the muscles resulting in fatigue.

In stitching section majority of workers (55%) complained about musculoskeletal problem. This was followed by neural problem such as headache (40%), respiratory (30%), skin problem (13%), numbers of hands and fingers (8%), hearing (5%) and visual discomfort (2%). In the sewing section, the sewing machine operators in the apparel manufacturing industry typically sit with sharp forward flexed torso which places them at risk to musculoskeletal disorders. Prolonged sitting in unnatural posture is common and is often accompanied with seats that have no back rests. Rather the seats were hard and wooden, without a cushion to prevent tissue compression. Sharp bending of neck was common combined with sharp bending of trunk among taller workers or moderate bending among shorter workers were the observations. High prevalence rate of problems in upper body (neck, shoulder, arm, hands and back) have been observed by Balder et al. [9], Punnett et al. [10] and Nag et al. [11]. Hearing disability was attributed due to noise from the machines and when numbers of sewing machines are compounded it makes the environment noisy for the workers the improper selection of lighting fixtures and their placements further contributes to neural problems. The dust and loose fibers lead to respiratory problems. Piercing of fingers; it was one of the most common occurring accidents. Though, it was observed that none of the worker used thimble. It was also observed that the machines were not properly maintained resulting in hand arm vibration. This leads to fatigue, pain, numbness and tingling of fingers and arms and headache. In case of finishing section, skin problem was faced by maximum number of workers (30%) followed by visual discomfort (25%) and neural discomforts (24%). Respiratory discomfort was in 13% of the workers followed by hearing problem (10%). In the finishing section, the workers have to work really fast. Noise and musculoskeletal problems were also common because of repetitive nature of job and lack of furniture and constrained posture. In the washing section, the workers are exposed to chemicals, particularly bleaches and detergents and are not aware of their health hazards leading to skin allergies. In the quality section, there is a lot of stress on the eyes leading to headache and visual discomfort. Working in humid conditions because of steam ironing, the workers had respiratory problems such as asthma

	Cutting Section		Stitching Section		Finishing Section	
	n=70	%	n=70	%	n=70	%
Total No. of Workers	n=70	%	n=70	%	n=70	%
Accidents Experienced	11	53.33	8	11	7	10

Table 1: Distribution of accidents faced under the various sheds (n= Number of respondents).

Health problems	Cutting Section		Stitching Section		Finishing Section	
	n=70	%	n=70	%	n=70	%
Neural	11	15	28	40	18	25
Hearing	3	5	3	5	7	10
Skin	11	15	9	13	21	30
Visual	3	5	1	2	18	25
Respiratory	14	20	21	30	9	13
Muscular Skeleton	24	35	39	55	28	40
Vibration induced syndrome	14	20	6	8	-	-

Table 2: Frequency of health related problems of the workers (n= Number of respondents).

and breathing difficulty and due to excessive noise the workers had a common problem of hearing.

The musculoskeletal disorders (MSDS) are the most common work related problems. It affects the body muscles, joints, tendons, ligaments, bones and nerves. The monotonous work lead to increased worker fatigue due to continuous handling of loads, prolonged standing, repetitive movement of both hands and wrists and awkward postures.

The data in Figure 1 shows that most of the workers in cutting room had discomfort at neck shoulder and back (28.5%) as they have to lean forward on the cutting table for performing their task. This was followed by discomfort of arm (14.5%). As can be seen from the above table, most of the reported evidence was in back; neck and shoulders were relatively high and are most likely the result of working with constrained postures, poorly dumped workstations and non ergonomic tools.

The stitching section, the majority of the workers had the back problems (27.2%) followed by stiffness at neck and shoulder (22.7%), leg (27%), elbow (7%), arm (6%) and wrist and leg (12%). The operators of the sewing machines reported discomfort in the left shoulder, the neck, the back and the lower extremities [9,12,13]. These complaints may be caused or aggravated by the seated working posture which is characterized by an elevated lift upper arm posture, a forward inclined posture of head and trunk, and non optimum (relatively unfavorable) ankle and knee angles respectively. In the finishing section, the workers complained for the leg (50%), followed by shoulder and back (33%). As the work in the finishing section is movement. The main stress factors were identified as repetitive movements and noisy environment.

Table 3 reveals that 20% of the workers in cutting section were unsatisfied with the working condition such as light, noise and temperature. In sewing section the maximum number of workers complained about noise and only 10% of the workers complained

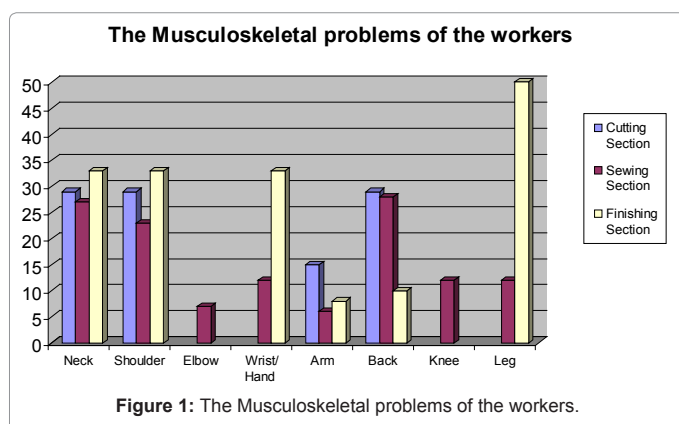


Figure 1: The Musculoskeletal problems of the workers.

Physical working conditions	Cutting Section		Stitching Section		Finishing Section	
	n= 70	%	n=70	%	n=70	%
Illumination	14	20	7	10	16	22.5
Temp.	14	20	-	-	-	-
Noise	14	20	20	28.3	-	-

Table 3: Working environment of the manufacturing units (n= Number of respondents).

about light. In finishing section the diffused light was again problem for 23% of the workers. The above table further reveals that the workers in all the three section were unsatisfied with the lighting followed by noise and temperature. Continuous exposure to high level of noise over a period of time result in noise induced loss of hearing among the workers. Due to continuous use of steam iron, the workers face respiratory problems.

Conclusion

In developing countries, the scale of use of human resources in small- medium scale in labor-intensive industries is enormous. In this situation, it must be obvious that very small improvements in working conditions, implements, tool design or working methods can lead to large benefits. It is believed that occupational health programs should focus more on the informal sector, which employs a large proportion of workers. Paying attention to occupational health and safety in this sector and improving working conditions will undoubtedly have considerable impact on the national economy and the quality of people's life.

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