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Research Paper

Occupational health hazards of textile workers of Pali district

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■ **ABSTRACT :** The present study was undertaken to study the occupational health hazards faced by the workers in textile processing units of Pali district. A sample of 120 workers employed in 40 textile processing units in different sections were selected and interviewed. The result highlighted the fact that detrimental work practices in the textile units without the use of protective clothing resulted in various types of physical, chemical, ergonomically, mechanical, biological and psychological hazards among textile workers.

■ **KEY WORDS :** Health hazards, Textile processing

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Pali is the largest erstwhile hand processing clusters, now gradually moving to power processing machines. The area constituting Pali district has been known for a number of industries, best known for dyeing and printing of cotton and synthetic fabric. According to joint survey of District Industries Centre (DIC), Pali and Pollution Revenue Association in the year 2008-2009, there were 867 registered units, engaged in various cotton and synthetic textile processing operations. The dyeing and printing is the major source of livelihood in this region. These industries provide substantial contribution to the economy in terms of income and employment generation.

Textile processing units consists of number of subunits engaged in different processes like pre-treatment dyeing, printing, finishing and number of other processes that are required to convert grey fabric into finished fabric. The workers in the industry are facing various health hazards due to harmful chemicals and abysmal working conditions.

The present paper is an outcome of attempt made to study the health problems of the workers and underlying the causative factors with the following objectives:

- To identify the health problems of workers in textile processing units.
- To suggest remedial measures to overcome such health problems.

■ RESEARCH METHODS

An analytical survey design was carried out to study the occupational health hazards of workers in the textile processing units. The study was carried out in Pali, Rajasthan. Among a sample of 120 workers employed in 40 textile processing units in different sections like Scouring, Mercerizing, Bleaching, Dyeing, Printing and Finishing were selected and interviewed at the time of working to have a clear picture of the health hazards faced by workers in different sections.

■ RESEARCH FINDINGS AND DISCUSSION

The workers in the textile processing units reported several health problems ranged from minor discomforts to major ones. The health complaints of the workers are classified into physical, chemical, ergonomical, mechanical, biological and psychological hazards.

Physical hazards :

Physical health hazards include workplace hazards of exposure of dust, heat, cold, light, noise and radiations. In textile industry, mainly lung diseases, eye diseases, skin diseases and noise induced ear diseases were faced by respondents (Table 1).

Table 1: Physical health hazards faced by the respondents in textile processing units (n= 120)

Sr. No.	Physical hazards	Parameters	F	%
1.	Lung disease	Difficulty in breathing	46	38.33
		Chest tightness	20	16.66
2.	Eye disease	Weak eye sight	30	25.00
		Watering of eyes	56	46.66
		Burning of eyes	42	35.00
3.	Skin disease	Burns	45	37.50
		Itching of skin	40	33.33
4.	Ear disease	pain in ear	2	1.6
		Hearing problem	23	19.16

Table 1 shows that majority of the respondents suffered from various physical ailments related to lungs, eyes, skin and ear. Out of these, halves of the respondents suffered from watering of eyes followed by difficulty in breathing and skin burns problems.

The data highlight that 38.33 per cent respondents experienced breathing difficulty due to inhalation of dust of chemicals and dyes at the time of processing. 46.66 per cent complained about watering of eyes and burning of eye (35%) due to chemicals, volatile solvents and working environment and burns faced by 37.50 per cent respondents due to heat and chemicals. Hearing problem was reported by 19 per cent respondents

Chemical hazards :

Workers in textile industry are exposed to a number of chemicals, especially those engaged in the activities of dyeing, printing and finishing, contact of the chemicals with skin as well as inhalation of the chemicals can lead to several serious health effects.

Table 2 reveals that 83.33 per cent respondents knew that chemicals are hazardous to human health. Majority of respondents (66.66%) were aware about the mode of chemicals exposure *i.e.* through inhalation, skin and ingestion as most of them have suffered from some injury due to chemical in textile processing units.

Table 2: Frequency and percentage distribution of the respondents by their knowledge about chemicals hazards (n = 120)

Sr. No.	Chemical hazards	N	Per cent
Chemicals are hazardous			
	a. Yes	100	83.33
	b. No.	20	16.66
Mode of chemicals exposure			
(a)	Inhalation	20	16.66
(b)	Skin	10	8.33
(c)	Ingestion	10	8.33
(d)	All of these	80	66.66

Table 3 shows that majority of occupational health hazards in textile processing units were due to chemicals. 39.16 per cent of respondents suffered from Itching of skin and 35 per cent had the problem of dry skin, rashes and burning sensation (32.50%). 20 per cent respondents showed the problem of breathing due to inhalation of chemicals at the time of processing. Headache (74.16%) and dizziness (41.66%) were the common problems among respondents. Eye problem was reported by. 45.83 per cent of respondents.

Table 3 : Distribution of the respondents by health problems faced due to chemicals (n = 120)

Sr. No.	Health problems		N	Per cent
		Itching	47	39.16
		Dry skin, cracks	42	35.00
1.	Skin problems	Blisters	12	10.00
		Burning sensation	39	32.50
		Dermatitis	24	20.00
		Pimple acne	20	16.66
2.	Respiratory problems	Difficulty in breathing	24	20.00
3.	Physical problems	Headache	89	74.16
		Dizziness	50	41.66
4.	Eye problem	Itching of eyes	55	45.83

The findings seek support from the research conducted by Sarkar *et al.* (2004), who reported that the exposure to toxic chemicals causes various skin problems, respiratory problems and eye problems in textile industry.

Ergonomic hazards :

The researcher also observed ergonomic issues in majority of subunits of textile processing units. Most of these textile processing units had a working environment that is unsafe and unhealthy for the workers.Table 4 depicts the various health problems due to poor ergonomic conditions. The working environment in various subunits of textile processing units is also one of the major issues affecting not only the work output but also the health of the workers.

Textile workers usually suffered from hand, shoulder, cardio-vascular and lower limb problems. The respondents under study also suffered from shoulder problems (16.66%) followed by stiffness (20.83%) owing to the activity performed during the job. Stressful and long working hours, repetitive to and fro motion of hands, improper work posture and weak physical built of workers resulted in pain in legs (58.33%) and joints (29.16%) as shown in Table 4. Improper lighting and

ventilation, excessive heat in working area, unsuitable furniture or no furniture for rest were the main reasons behind ergonomic hazards.

Table 4 : Distribution of the respondents about health hazards problems faced due to ergonomic condition (n = 120)

Sr. No.	Ergonomic hazards		N	Total (%)
(a)	Shoulder problem	Pain in shoulder	20	16.66
	Stiffness		25	20.83
	Tremors in hands		-	-
(b)	Hand problem	Weakness	27	22.50
		Tingling	-	-
		Pain in fingers	10	8.33
		Stiffness	22	18.33
(c)	Lower limb problem	Pain in legs	70	58.33
		Pain in joints	35	29.16
(d)	Cardio-vascular problem	Chest pain	7	5.83
(e)	Eye problem	Tiredness/Redness	55	45.83
(f)	Back pain		52	43.33
(g)	Neck pain		41	34.16

Biological hazards :

Workers may be exposed to biological agents, viruses, bacteria, parasites, fungi, moulds and organic dust at the place of work which affect their health also.

Table 5 indicates that about 20 per cent respondents frequently suffered from various gastro-intestinal problems. Abdominal pain (5.83%), vomiting (5.00%) and diarrhoea (10.00%) were reported by these textile workers due to unhygienic conditions prevailed there and lack of knowledge about personal hygiene.

Table 5 : Percentage distribution of the respondents about health problems faced due to biological hazards (n=120)

Sr. No.	Health problems		N	Total (%)
1.	Gastro-intestinal problems	Abdominal pain	7	5.83
		Frequent vomiting	5	4.16
		Diarrhoea	12	10.00

Mechanical hazards :

The researchers also explored the reasons behind the happening of accidents in textile units. The respondents revealed that there were number of reasons behind mechanical hazards at workplace. Table 6 depicts that more than 35 per cent respondents mentioned that the major cause behind mechanical hazards and accident was carelessness and lack of concentration. Other factors were lack of training (33.33%), protruding moving parts (20.83%) and improper handling of machine (29.16%) as reported by respondents.

Table 6 : Percentage distribution of the respondents about reasons behind the happening of accidents in textile unit (n = 120)

Sr. No.	Reasons for accidents	N	Total (%)
(a)	Improper handling of machine	35	29.16
(b)	Protruding moving parts	25	20.83
(c)	Lack of training	40	33.33
(d)	Lack of concentration	42	35.00
(e)	Carelessness	45	37.50

The finding of the study get support from the study conducted by Bal (2004) that revealed about carelessness, inattentiveness, overconfidence, ignorance, inexperience, emotional stress were some of the mental factors which might involve a person in accidents.

Psychological hazards :

The psychological hazard arises from the workers failure to adapt to psychosocial environment. Frustrations, lack of job satisfaction, insecurity, poor human relationship, emotional tension are some of the psychosocial factors which may undermine both physical and mental health of the workers. The data about satisfaction of job have been presented in Table 7.

Table 7 : Percentage distribution of the respondents about satisfaction of job (n = 120)

Sr. No.	Satisfaction with job	N	Total (%)
1.	Yes	70	58.33
2.	No	50	41.66

The findings of the study (Table 7) showed that 58.33 per cent of respondents were satisfied with their present job because it was their sole source of livelihood, but some of the respondents (41.66%) were dissatisfied with their job.

The data in Table 8 portray the reason behind their dissatisfaction with job.

The data of Table 8 show the various reasons behind disliking the job. Major reasons as stated by workers were work pressure (100%), long working hours (96%), monotonous work (100%), low pay scale (88.00%), lack of recognition (60.00%) poor relations with supervisor (64.00%), low level of participation in decision (100%), insufficient communication of information (50.00%) and poor working condition (100%) The above findings get decisive support from the study

conducted by Roscow and Wilson (2005), who reported that the high risk factors for workplace stress were over workload, poor relations with supervisors, a low level of participation in decision and insufficient communication of information etc.

Table 8 : Percentage distribution of the respondents dissatisfaction (n=50)

Sr. No.	Reasons behind dissatisfaction	N	Total (%)
(a)	Work pressure	50	100%
(b)	Long working hours	48	96.00
(c)	Monotonous work	50	100.00
(d)	Low pay scale	44	88.00
(e)	Lack of recognition	30	60.00
(f)	Poor relations with supervisor	32	64.00
(g)	Low level of participation in decision	50	100.00
(h)	Insufficient communication	25	50.00
(i)	Poor working condition	50	100.00.

In view of the above findings, it is necessary to impart awareness training to textile workers about proper safe use of machineries, personal protective devices, regular health checkup, maintenance of hygienic environment, air filters and other devices as per needs of several of textile processing units to prevent occupational health hazards among textile workers.

Remedial measures :

Following are some of the suggestive remedial measures:

- Use of personal protective equipments (PPE) like mask, hand gloves, goggles, earplugs, gumboots and apron should be made mandatory when threat to workers health and safety is observed.
- Lighting and ventilation should be proper at work place.
- Machinery should be well maintained in order to reduce noise and avoid accidents.
- Height of the printing table should be will so there is no musculo-skeletal strain.
- Fire extinguishers and fire alarms should be available at the place of work.
- Training of workers should be imparted to educate about the harmful effects of chemicals and processes.
- Job rotation and adequate rest allowances are to be planned to ensure the workers health and safety at work.
- Trained medical personnel and first aid facilities as well as safety equipments should be provided.
- medical examination should be conducted for the workers from time to time, if significant occupational health problems are observed, appropriate measures should be taken by management.
- The plant should be mechanized to the fullest possible extent to reduce the hazards of contact of harmful substances like hand mixing should be replaced by mechanical devices.

Conclusion :

Safety and health measures play an important role in textile industry. It is essential that the workers be aware of the various occupational hazards in the industry. At the same time, it is necessary that the management take the necessary steps to protect workers from potential hazardous situations.

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