

Occupational Health & Safety in MMF Spinning Industry

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ABSTRACT: The study of Occupational Health and Safety in spinning industry examines to promote Health and safety to the workers in India. The Hazards and risk involved in the spinning industry is high compared with other industries and least importance is given to spinning industries. Most of accident does not come to the legal formalities. The People are not aware of Health & safety is due to the workers are uneducated and management not given importance due to promote OHS in spinning industry becomes a barriers in implementing OHS. The major hazards happen are physical, chemical, ergonomically & physiologically Hazards along with these some of things which can create hazards are more working hours, improper ventilation, dust and noise.

KEYWORDS: MMF, OHS, MWF, RPM, PPE,ECB

I. INTRODUCTION

Spinning in conversion of fibers into yarn. These fibers can be natural fibers (cotton) or manmade fibers (polyester). Spinning also entails production of manmade filament yarn (yarn that is not made from fibers). Final product of spinning is yarn. Cotton value chain starts from Ginning that adds value to it by separating cotton from seed and impurities. Spinning is the foundation process and all the subsequent value additions i.e. Weaving, Knitting, Processing, Garments and Made ups, depend upon it. Any variation in quality of spinning product directly affects the entire value chain.

Thousands of workers are employed in Spinning industries under different job categories including Ginning, Carding, combing, spinning, packing. The Spinning industry workers are exposed to a number of chemicals including dyes, solvents, optical brighteners, finishing agents and numerous types of natural and synthetic fibre dusts which affect their health. In this paper an attempt has been made to summarize the self-reported health problems among a group of Spinning industry workers. Before getting to the main subject of occupational health and safety, it is important to look at the Spinning industry workers' health, and their access to health care services. Workers come from various suburbs to spinning industry and the villages beyond them, and are generally aged between 18 and 45 years.

Their lower socioeconomic status, coupled with the lack of other viable livelihood options, puts them at a particular disadvantage while dealing with health related problems. In a random survey conducted by the Employees State Insurance Corporation (ESIC) in 2014, it was found that 60.6% workers of those surveyed were anemic.

Various occupational health issues, such as breathing problems and respiratory illnesses that result from inhaling cotton dust, are common in the industry. Although major accidents are not common, minor accidents such as puncture wounds from needles are a daily occurrence. Health needs to be looked at from the broader context of a worker's daily routine.

Workers wake up early to cook for the family, commute long distances to get to work and back, skip breakfast and other meals to save time, drink less water to avoid visiting the restroom and work without pause to meet high

production targets. Stress caused by abusive behavior from supervisors, the repetitive nature of their work and the occupational hazards that they face daily, coupled with minimum wages of less than INR 400 per day that barely allow them to make ends meet and the resulting low nutrition status, have a deeply negative impact on their general health.

II. LITERATURE REVIEW

S. NO	PAPER	AUTHOR, YEAR OF PUBLISH	REVIEW
1	Occupational Hazards and Illnesses of Filipino Women Workers in Export Processing Zones	Jinky Leilanie Lu, 2008	Many of the small- and large-scale companies reportedly had health and safety committees, none of them functioned properly.
2	Frequency of hearing loss among textile industry workers of weaving unit in Karachi, Pakistan.	Ashraf HD, Younus MA, Kumar P, Siddiqui MT, Ali SS, Siddiqui MI, 2009	noise level is more than acceptable limit of 85 dB(A) for 8 hours exposure stipulated. There is an immediate need to develop and implement noise regulations in Pakistan.
3	Reduced lung cancer mortality and exposure to synthetic fluids and biocide in the auto manufacturing industry	Mehta AJ, Malloy EJ, Applebaum KM, Schwartz J, Christiani DC, Eisen EA., 2010	The protective effect of synthetic MWF(Metal Working Fluid) against lung cancer mortality persisted through the extended period of follow-up, although attenuated, and was observed only among workers with co-exposure to biocide and synthetic MWF.
4	Vibration and noise caused by lawn maintenance machines in association with risk to health	P. Tint, S. Kalle G. Tarmas, T. Koppel, K. Reinhold, 2012	Whole-body vibration levels can often be reduced by using vibration isolation and by installing suspension systems between the operator and the vibrating source.
5	Unsafe work environment in Garment industries, Tirupur, India	Padmini D.S. Venmathi A, Sep 2012	The medium and small sized garment industries in Tirupur were found to have poor illumination, improper ventilation, excessive noise, congested work area, unergonomic workstations. The workers were exposed to dust, chemicals mainly in the form of solvents, ergonomical problems, psychosocial problems, etc.
6	A Study Of Pulmonary Functin Tests In Cotton Mill Workers Of Guntur District	Prabhakara Rao.K, srinivasa Rao.CH, Sumangali.P 2013	Inhalation of cotton dust causes release of histamine from mast cells. Histamine acts on the smooth muscles resulting broncho constriction. Air way mucus glands secrete more amount of mucus in the presence of histamine
7	Cotton Dust level in Textile industries and its impact on Human	B.M.Sangeetha M.Rajeswari, S.Atharsha, K.Saranyaa Sri, S.Ramya, April 2013	Knitting process produces the maximum dust level compared to other process, so we suggest that the preventive measures in the knitting session particularly should be more effective than other sections.
8	A Study of Occupational Health and Safety in the Garment Industry in	Laura Ceresna-Chaturvedi, Anand Kumar, October 2015	Health and safety provisions available to workers at their workplace were very rudimentary. Occupational health and safety

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	Bangalore		needs to be also addressed from the care perspective, i.e., through the ESI.
9	Health Status of Textile Industry Workers: Prevalence and Socioeconomic Correlates of Different Health Problems	Zorawar Singh, 2015	Textile fibre dusts are known for their health affects including cancer. Skin problems, asthma and memory loss were found to be associated with tobacco chewing, smoking and diet respectively.

III. OBJECTIVE

- ❖ The main objective of the study is conducted due to the Reasons
- ❖ Measure work environment issues such that noise, temperature, lighting humidity.
- ❖ Detect unsafe working condition in the Spinning industry.

IV. HAZARD

There are Many health issues and safety issues happened to MMF spinning industry.

- ❖ Noise – High noise level, No Lubrication
- ❖ Chemical- Skin allergy, Eye pain
- ❖ Electrical – Low light Illumination, old wires, No proper Earthing
- ❖ Psychosocial issues – Night shift, Over Time, Polluted water, No employee motivation
- ❖ Ergonomic- unsafe work place, unable to Sit

V. REMEDIAL

S.No	HAZARD	CONSEQUENCES	REMEDIAL ACTION
1	Physical hazards a)Noise	Noise makes hearing loss	1.proper maintenance lubricating control noise 2.Isolation of the machine
2	b)Dust	Causes Byssinosis	1.workers should wear PPE. 2. Increase the no. of Dust collector 3.Proper Housekeeping
3	c)Light	Eye pain and getting visibility loss	1.Increase the bulb luminance. 2. Increase visibility roofing sheet
4	d)Lifting Heavy weight	Muscular-Skeletal Disorders	1.Lift by 2 perons. 2.keep your backbone straight while lifting load. 3. Use Lifting vehicle
5	E)Improper Ventilation	Gets Tired	Increase the ventilation fans
6	Fire Hazards	Loss of life, Damages to the equipments.	1.Fire alarm with ups connection 2.Sprinkler system with ups connection 3. Increase the fire safety cylinders 3.Give training to workers.

7	a)Welding operation	Spark ignition is very dangerous.	1.Use safety equipments 2. Allowed to do with proper Training persons
8	b)Electrical short circuit happens	If no trip occurs its get fire.	Use MCB (Miniature circuit breaker).
9	c) Smoking	Easily gets fire	Security not allowed to bring inside of the mill.
10	Electrical hazards: a)Improper Earthing	Trip occurs	Avoid improper ear thing and loose connection,
11	b)Improper isolation	Electric shock	All circuits to be enclosed in a proper Isolation cover.
12	c)Moisture	Proper wiring	Moisture to kept in control.
13	d)Motor high speed rotating Due to high voltage	Machine can gets failure	Circuit breaker must be individual for all the machine wise and Department wise.
14	e)Usage of old wire	Not proper current flow	Use of wires as per Electrical standard.
15	f)Looping in the running line.	Gets electrical shock and gets trip due to over load	Avoid looping in main line
16	g)Electrical Maintenance	ECB board Check the connection Grease the motor frequently,	Monitor maintenance routine card by floor supervisor
17	Chemical	Not good to health, Eye, skin	1.Wear proper safety gloves and equipments. 2. Check the blood samples of the workers and advised to remedial action.

VI. CONCLUSION

The Project was done with an intention to study the hazardous effects over people working in the Spinning industry. The major hazards happen are physical, Electrical, Chemical , ergonomically & physiologically Hazards, along with these some of things which can create hazards are more working hours, noise, dust and improper ventilation.

The human body capacity and the proper design of the equipment are effective only if the environment is congenial. With aiming for continual improvement the project work will focusing give the solution for Manmade fiber spinning industry workers to realize their health and safety at work place.

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