



OCCUPATIONAL HEALTH PROBLEMS AMONG WORKERS OF TEXTILE INDUSTRIES IN KANNUR DISTRICT KERALA.

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ABSTRACT A cross-sectional study to identify the occupational health problems among the workers of the textile industry was conducted in Kannur district, Kerala. A structured questionnaire was used to collect self-reported data from 210 textile workers from 4 randomly selected industries. The majority of the workers were females (84.3%), above 51 years of age (44.8%), and had secondary education (55.2%). Regarding the workplace variables 69% of the workers engaged in weaving, 51.4% earned Rs.201-300 per day and 79% worked 4-6 hours a day. The common health problems reported by the workers were musculoskeletal (85.7%), eye problems (62.4%), digestive problems (45.7%), and respiratory problems (35.4%). The major musculoskeletal problems (MSP) were upper extremity pain (58.1%), lower extremity pain (52.4%), and low back pain (51.4%). Vision problems (53.3%) and eye pain (15.2%) were the major eye problems. The analysis also revealed that a significant association exists between musculoskeletal problems and variables such as work experience and income; respiratory problems and cardiovascular problems (CVP) with education and work experience; digestive problems with work type; and eye problems, and skin problems with work type and working hours. In conclusion, there is a need to educate the workers regarding the prevention of occupational health problems, as well as make preventive medical services available and accessible to them in the workplace.

KEYWORDS : textile industry, occupational health problems, musculoskeletal problems.

INTRODUCTION:

The textile industry in India is the very old and second-largest manufacturer in the world after China. 75% of the country's total textile production is contributed by the traditional handloom and small-scale power loom units. This industry has emerged recently as the biggest contributor to the country's export and foreign earnings (Ministry of textiles, Government of India, 2019 Oct.). There are various units under this industry where different activities such as spinning, weaving, dyeing, printing, finishing and other associated activities are carried out. This sector provides employment opportunities for a significant number of people including women and the rural population. However, the vulnerable working environment of these industries is a big threat to the workers' health and safety.

Background And Related Literature:

The different activities in the textile industry involve repetitive monotonous high-speed activities in awkward postures. Exposure to these hazards places the workers at high risk for developing many musculoskeletal problems. Moreover, the workers are exposed to cotton dust, noise, and chemicals. An exploratory cross-sectional study was conducted among the textile workers (n=114), and employees (n=96) within a plant north of the Democratic Republic of Congo (DRC). The findings showed high frequencies and exposure rates for workers compared to employees for many health problems. The odds ratio was 5.1, 2.9, 2.6, 2.4, 4.8, 3.8, 2.2, and 2.5 for cough, respiratory difficulty, thoracic pain, fever, upper limb pain, neck-shoulder pain, ocular diseases, and cutaneous diseases respectively. The study concluded that these differences could be due to the working conditions (Panda & Brouwer, 2010, p. 513-20.)

A cross-sectional study was conducted to assess the effect of cotton dust exposure on the health of the textile workers in the southern part of Benin, West Africa. The study was done with 656 textile workers, exposed to cotton dust and 113 non-exposed subjects. The study findings showed that subjects exposed to cotton dust had more (36.9%) respiratory symptoms than unexposed subjects (21.2%). The prevalence of chronic cough (16.8%), expectorations (9.8%), dyspnea (17.3%), asthma (2.6%), and chronic bronchitis (5.9%), were high among textile workers compared to the unexposed subjects. Only 2.5% of unexposed subjects had a chronic cough, 0.8% had expectorations, 16.8% had dyspnea, 0.8% had chronic bronchitis and none of them have asthma (Hinson et al., 2016, p. 895).

Another study done to assess health problems prevailing among the textile industry workers in Ludhiana city, Punjab, India found that the textile industrial workers have an elevated risk to develop various health-related problems including cough, cold, depression, headache, sleep disturbances, and skin allergies. The most frequent health problem among workers was headache (67.5%) followed by cough

(47.5%) depression (45%) and dryness of the mouth (45%). Different health problems were found to be positively correlated with duration of exposure, smoking, alcohol drinking, tobacco chewing, and dietary pattern (Sing, 2015, p. 137-43).

A survey on occupational health hazards related to weaving and related activities was done in Udham Singh Nagar, Uttarakhand. Data were collected through personal interviews with the weavers. The assessment of the working conditions revealed that the workers weave in seated or standing positions for long periods with back unsupported. The investigator observed that the repetitive movement of the hand and shoulder increase the risk of muscular-skeletal problems in the neck, upper arm, and shoulder, and the use of awkward posture continuously with the cervical vertebra in forwarding flexion may lead to long term health hazards. The majority of the participants reported backache (50%) and pain in the palm and stiffness of hand and joints (45.71%). The other health problems reported were shoulder pain (42.86%), knee pain and pain in calf muscles (42.86%), breathing problems and chest pain (35.71%), spondylitis (31.42%), headache (24.29%), hearing problems (14.29%) and obesity (7.14%) (Goel, & Tyagi, 2012, p. 22-28).

The findings of another study done to evaluate the prevalence of low back pain among the handloom weavers in West Bengal, India reported that the workers suffer from pain in different body parts such as lower back (68%), arm (49.7%), upper back (44%), knee (38%), shoulder (39.4%), wrist (35.4%) and neck (35.4%). Severe disabilities were reported by 2% of the participants, 46% reported moderate disabilities and 52% of the participants reported minimal disabilities.

A significant positive association ($p=0.02$) was reported between the intensity of the low back pain and an increase in the years of work experience (Durlav et al., 2014. P. 333-39) There are different issues faced by the workers in the textile industry such as exposure to cotton dust, exposure to chemicals, noise, and ergonomic issues (Singh, 2016, p. 38-40). Many studies have been conducted in different parts of the world regarding the health issues of textile workers but few in India and none in Kerala. The present study focused on the occupational health problems and the associated factors of the textile workers at Kannur district Kerala.

Statement Of The Problem:

A study to identify the occupational health problems among workers of selected textile industries in Kannur district, Kerala.

OBJECTIVES:

1. To identify the occupational health problems among the workers of textile industries.
2. To find the association between occupational health problems and demographic and workplace variables.

Methodology:

A descriptive cross-sectional study was done among the workers of the cotton textile industries in Kannur district Kerala. A total of 210 workers from 4 cotton textile industries were selected randomly for the study. A structured questionnaire was used to collect data regarding the demographic and workplace variables, and health problems faced by the workers. Statistical tests such as frequency, percentage, and Chi-square/Fishers exact were used for the study using the statistical package SPSS version 16.

Findings:

Description Of Demographic And Workplace Variables Of The Study Subjects

Table 1: Frequency And Percentage Distribution Of Workers Based On Demographic And Workplace Variables. N=210

Variables	Frequency (f)	Percentage (%)
Age in years	< 40	40 19.1
	41- 50	76 36.2
	51- 60	94 44.8
Gender	Female	177 84.3
	Male	33 15.7
Education	No formal education	7 3.3
	Primary education	52 24.8
	Secondary education	116 55.2
	Higher secondary education	32 15.2
Work Experience	Graduation and above	3 1.4
	<5 years	47 22.4
	6- 10 years	23 11.0
	11- 15 years	42 20.0
	16- 20 years	49 23.3
Work Type	> 21 years	49 23.3
	Weaving	145 69.0
	Winding	44 21.0
	Dyeing	7 3.3
	Warping	1 .5
	Twisting	2 1.0
	Stitching	6 2.9
Daily wages	Packing and others	5 2.4
	< Rs/- 200	16 7.6
	Rs/- 201 -300	108 51.4
	Rs/- 301- 400	79 37.6
Working Hours	Rs/- 401-500	7 3.3
	< 4 hours	4 1.9
	4- 6 hours	166 79.0
	6-8 hours	40 19.0

Table 1. shows that majority of the workers are above 51 years old (44.8%), females (84.3%), and had secondary education (55.2%). Analysis of the workplace variables shows that the majority (79%) worked 6-8 hours per day and most of them had a daily wage between Rs/-201-300 (51.4%) and engaged in weaving (69%).

Occupational Health Problems Among Workers Of Selected Textile Industries.

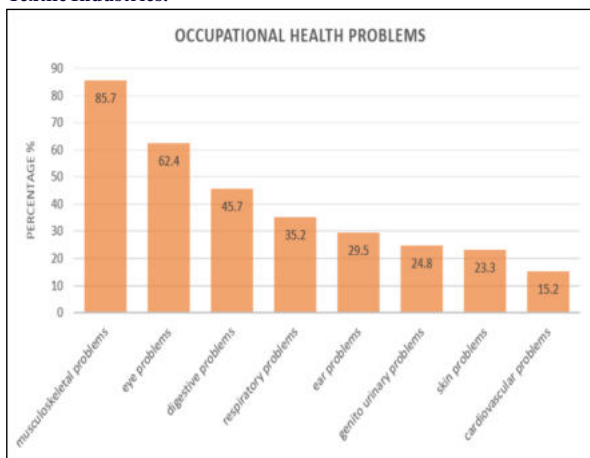


Figure 1. Bar Diagram Presenting The Percentage Distribution Of Study Subjects Based On Occupational Health Problems. N= 210

Figure 1. shows that the most common occupational health problem reported were musculoskeletal (85.7%), followed by eye problems (62.4%), digestive problems (45.7%), and respiratory problems (35.2%). Other less common problems were ear problems (29.5%), genitourinary problems (24.8%), skin problems (23.3%), and cardiovascular problems (15.2%).

Association Between Occupational Health Problems And Demographic And Workplace Variables.

The association between various occupational health problems and demographic and workplace variables is studied using the Chi-square test and Fisher's exact test.

Table 2. Association Between Musculoskeletal Problems (MSP) and Demographic And Workplace Variables N=210

Variables	MSP		Chi-square test/ Fisher's exact test	p-value	
	Absent	Present			
Age in years	< 40	7	33	0.517	0.772
	41- 50	11	65		
	51- 60	12	82		
Gender	Female	23	154	1.534	0.216
	Male	7	26		
Education	No formal education	1	6	5.396 [Fisher's exact test]	0.213
	Primary education	7	45		
	Secondary education	13	103		
	Higher secondary education	8	24		
	Graduation and above	1	2		
Work experience	<5 years	12	35	10.553	0.029*
	6- 10 years	2	21		
	11- 15 years	8	34		
	16- 20 years	6	43		
	> 21 years	2	47		
Work Type	Weaving	21	124	5.568 [Fisher's exact test]	0.416
	Winding	5	39		
	Dyeing	3	4		
	Warping	0	1		
	Twisting	0	2		
	Stitching	1	5		
	Packing and others	0	5		
Daily wages	< Rs/- 200	0	16	10.119 [Fisher's exact test]	0.012*
	Rs/- 201 -300	15	93		
	Rs/- 301- 400	11	68		
	Rs/- 401-500	4	3		
Working Hours	< 4 hours	1	3	4.293 [Fisher's exact test]	0.102
	4- 6 hours	27	139		
	6-8 hours	2	38		

*Significant (p<0.05)

Table 2. shows that the workplace variables, work experience (X^2 10.553 at $P < 0.05$), and income (fishers exact 10.119 at $P < 0.05$) are significantly associated with musculoskeletal problems.

DISCUSSION:

The present study revealed that many health problems exist among the workers of textile industries, including musculoskeletal (85.7%), eye problems (62.4%), digestive problems (45.7%), respiratory problems (35.2%), and ear problems (29.5%). A significant association was found between musculoskeletal, respiratory, and cardiovascular problems and years of work experience. Also, there exists a significant association between the skin and eye problems and working hours and type of work.

Similar findings have been reported in a study conducted among handloom weavers in West Bengal, where most affected body parts were lower back (68%), followed by arm (49.7%), upper back (44%),

shoulder (39.4%), knee (38%), and wrist and neck (35.4%). They also found that a significant positive correlation between the intensity of low back pain and an increase in years of work experience (Durløv et al., 2014, P. 333-39).

The results are consistent with the findings of another study done among weavers in Uttarakhand, which reported that the majority of the participants had backache, and pain in the palm and stiffness of hand and joints, shoulder pain knee pain, and pain in the calf muscle (Goel, & Tyagi, 2012, p. 22-28). Most of the musculoskeletal problems are caused by prolonged repetitive movements, unhealthy work postures, and working conditions (Parida, 2015, p. 7-8). Therefore, immediate preventive measures need to be taken to protect the health of the workers.

CONCLUSION:

In this study, occupational health problems of workers employed in textile industries at Kannur district were analysed. It was found that the workers faced various health problems, predominantly associated with their years of work experience and working hours among other variables. To prevent occupational health problems awareness programs are to be conducted. Also, preventive health services and infrastructural developments shall be implemented. Although, in reality, there are many existing developmental and welfare schemes implemented in this sector, the health and living conditions of the workers are found to be neglected. The present industry environment requires the government to implement legislation focusing on the occupational health and safety of the workers. It is to be also emphasized that a proper standard/guideline regarding occupational health and safety is prepared and given. Steps must be taken to make sure that the workers are aware of health issues at the workplace to follow the guidelines provided.

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