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A DESCRIPTIVE STUDY TO ASSESS THE OCCUPATIONAL HEALTH HAZARDS AND THE KNOWLEDGE, ATTITUDE, AND, PRACTICE REGARDING THE PREVENTION OF OCCUPATIONAL HEALTH HAZARDS AMONG WORKERS IN SELECTED HANDLOOM WEAVING INDUSTRIES, KERALA.

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ABSTRACT

The present study aimed to, assessing the occupational health hazards and the knowledge, attitude, and practice regarding the prevention of occupational health hazards among the workers in the handloom weaving industries of Kerala. Among the 20 units surveyed, 98% of the respondents were females, and 79% were engaged in weaving. 65% of the units, surveyed have less than 50 workers and 60% of the units are engaged only in weaving and winding. Of the 20 units, **physical hazards** detected in the workplace were noise (75%), inadequate space (65%), insufficient ventilation (40%), and poor lighting (30%). Regarding **chemical hazards**, the majority (80%) of the units had dust accumulated on all the surfaces. concerning **ergonomic hazards**, all workers used awkward postures, all the work in the units require repetitive body movements, and poor housekeeping was observed in the majority (80%) of the units. Regarding safety measures adopted, none of the units hold earplugs and face masks. The majority (80%) of the units had no first aid facility; none of them had trained medical personnel, annual medical checkups, or health records for the workers, the majority (80%) of the units had no canteen facility and safety information posters were lacking in all the units. About **psychological hazards**, most (76%) of the workers are not satisfied with their wages and 34% of the workers lack social support. Regarding knowledge attitude and practice, the majority of the workers have adequate knowledge (73%), positive attitude (79%), but have poor practice (83%) regarding the prevention of occupational health hazards.

KEYWORDS

handloom weaving, occupational health hazards, knowledge, attitude, and practice.

INTRODUCTION

The handloom weaving industry in India is amongst the oldest. Occupational hazards in this industry remain relatively neglected across the country. There are over 30 lakhs of people engaged in handloom weaving in India. Out of which, co-operative societies accommodate over 1.5 lakhs (5.2%). At, an all India level, co-operative societies (70.3%) dominate in the type of units (Ministry of Textiles Government of India, 2019). Kannur district of Kerala is famous for its handloom industry. In this industry, workers are engaged in various activities such as dyeing, warping, winding, twisting, weaving, etc. Handloom requires workers to indulge in repetitive hand movement to move the shuttles, along with repetitive leg movement to operate the pedals. Also, these operations require a sitting position without any back support with a forward head posture. Awkward posture with limited freedom of movement, continuous noise exposure, closely packed loom arrangement with poor ventilation, and dust pollution are some of the occupational hazards the workers face in this industry. Though these are the realities of the workers, very few studies have been conducted in this area.

RELATED LITERATURE

A study conducted to evaluate the health problems and socioeconomic conditions of handloom weavers of West Bengal observed that all types of weavers belong to low socioeconomic condition and suffered from several health problems like pain in different body parts, ENT and eye problems, respiratory problems, and cardiovascular problems (Durllov et al., 2019, p. 199). Another study conducted to understand the impact of work station on low back pain of the weavers found that nearly 83.3 percent of the workers had work stations which did not permit them to have a full range of movement while working. 83% of the weavers reported pain in the right and left buttocks, 70% of them felt pain in the back or legs and 83% felt weakness in the hip (Lakshmi et al., 2018, p. 46). Another study on the prevalence of low back pain among handloom weavers in West Bengal found that the most affected part was the lower back (68%), followed by arm (49.7%), upper back (44%), knee (38%), shoulder (39.4%), wrist (35.4%) and neck (35.4%). And there was a positive significant association between the intensity of back pain and an increase in years of experience (Durllov et al., 2019, p. 199).

The findings of a descriptive study on health problems and issues faced by traditional handloom weavers at Pondicherry, India, says that back, knee and, joint pain are the major health problems due to long working hours in various harmful positions in the loom (Sarkar, 2016, p. 2). Assessment of health hazards faced by handloom weavers in Odisha shows that around 89% of the workers suffer from musculoskeletal pain in the neck, shoulder, and elbows (Parida, 2019). An analysis of

the impact of low illumination and high noise level on occupational health of handloom weavers of Odisha shows that prolonged exposure to a high level of noise and low level of illumination would significantly affect the physiological and psychological health of the weavers engaged in handloom workstation (Kumar & Surendra, 2018). Cotton dust enhances respiratory problems like byssinosis characterized by shortness of breath and feeling of chest tightness and chronic obstructive pulmonary diseases (Sangeetha et al., 2013, p. 3). An analysis of the impact of low illumination and high noise level on occupational health of handloom weavers of Odisha shows that prolonged exposure to a high level of noise and low level of illumination would significantly affect the physiological and psychological health of the weavers engaged in handloom workstation (Kumar & Surendra, 2018).

STATEMENT OF THE PROBLEM

A descriptive study to assess the occupational health hazards and the knowledge, attitude, and practice regarding the prevention of occupational health hazards among workers, in selected handloom weaving industries at Kannur district, Kerala.

OBJECTIVES

1. To estimate the occupational health hazards in handloom weaving industries.
2. To assess the knowledge, attitude, and practice regarding the prevention of occupational health hazards among workers of handloom weaving industries.

METHODOLOGY

A descriptive study with a survey approach was used. The survey was conducted in December 2019 in Kannur district, Kerala. Among the total 34 handloom weaving units, 20 units were selected randomly representing both small scale (with less than 50 workers) and medium scale (with 50 to 200 workers) industries. The physical hazards, chemical hazards, ergonomic hazards, safety measures adopted, and health and medical facilities available were assessed by the observation method using a checklist. Psychological hazards, knowledge, attitude, and practice regarding the prevention of occupational health hazards were assessed by collecting self-reported data from 100 subjects who were selected using a purposive sampling technique. A structured questionnaire, a five-point Likert scale, and a three-point rating scale were used to assess the knowledge, attitude, and practice regarding the prevention of occupational health hazards respectively.

FINDINGS

The major findings of the survey were as follows

1. Profile of handloom weaving units**Table 1: Frequency and percentage distribution of handloom weaving units based on industrial profile. N=20**

Number of workers	Frequency	%
< 50	13	65
50 and above	7	35
Type of work		
Weaving and winding	12	60
Dyeing weaving and winding	8	40
Type of yarn used		
Only cotton	0	0
Cotton and poly cotton	20	100
Working hours per day		
< 8 hours	0	0
8 hours	20	100
> 8 hours	0	0

The above table shows that most of the units (65%) have less than 50 workers, 60% of the units are engaged only in weaving and winding, all of the units use both cotton and poly cotton yarn and all the units work for 8 hours per day.

1. Demographic profiles of the workers :**Table 2: Frequency and percentage distribution of workers based on demographic variables N=100**

Demographic variables	Categories	Frequency	%
Gender	Male	2	2%
	Female	98	98%
Age in years	<30 years	3	3%
	31-40	25	25%
	41-50	36	36%
	51-60	22	22%
	61-70	10	10%
	>71	4	4%
Education	Primary education	4	4%
	Upper primary education	26	26%
	High school education	48	48%
	Higher secondary education	15	15%
	Degree and above	7	7%
Type of work	Weaving	79	79%
	Winding	13	13%
	Dyeing	5	5%
	Warping	2	2%
	Stitching	1	1%

Most (98 %) of the respondents surveyed were females, a typical weaver was found to be mostly (36%) in the age group 41-50 years and the majority having high school education (48%), and 79% of the workers are engaged in weaving.

3. Occupational health hazards among handloom weaving industries**A. Physical hazards****Table 3: Frequency and percentage distribution of handloom weaving units based on physical hazards. N=20**

Physical hazards.	Yes		No	
	Frequency	%	Frequency	%
Poor light	6	30	14	70
Unsatisfactory noise level	15	75	5	25
Insufficient ventilation	8	40	12	60
Insufficient space	13	65	7	35

The above table shows that poor lighting condition was present in 30% of the units. The noise levels were unsatisfactory in most (75%) of the working units. Insufficient ventilation was observed in 40% of units and 65% of the weaving units had insufficient workspace.

B. Chemical hazards:**Table 4: Frequency and percentage distribution of handloom weaving units based on chemical hazards. N=20**

Chemical hazards.	Yes		No	
	Frequency	%	Frequency	%
Dust accumulated on all the surfaces	16	80	4	20
Chemicals used for bleaching and dyeing	8	40	12	60

The above table shows that the majority (80%) of the units had dust accumulated on all the surfaces and only 40% of the units did dyeing while all of it uses chemicals for the process.

C. Ergonomic hazards:**Table 5: Frequency and percentage distribution of handloom weaving units based on ergonomic hazards. N=20**

Factor	Yes		No	
	Frequency	%	Frequency	%
Work surfaces are in proper height	20	100	0	0
Awkward work posture	20	100	0	0
Repetitive body movement during work	20	100	0	0
Poor housekeeping	16	80	4	20

The above table shows that in all the units the work surfaces are maintained in proper height and workers used an awkward body posture while working. All these units had most of its work require repetitive body movement and the majority (80%) of premises the housekeeping is poor.

D. Health and safety measures were adopted.

Table 6: Frequency and percentage distribution of handloom weaving units based on Health and safety measures adopted. N=20

Factor	Yes/not applicable		No	
	frequency	%	frequency	%
Use face mask	0	0	20	100
Use earplugs	0	0	20	100
Use apron	1	5	19	95
Keep cotton material in a closed container	4	20	16	80
Use gloves	20	100	0	0
Store chemicals properly	20	100	0	0
Chemical wastes disposed of following safety guidelines	20	100	0	0

The above table shows that none of these weaving units made use of the much required, face mask, and earplugs, only one unit (5%) had its workers use an apron and 20% of the units kept cotton materials in closed containers. All the units with dyeing operation used gloves and stored chemicals properly as well as chemical wastes were disposed of following safety guidelines.

E. Health and medical facilities available**Table 7: Frequency and percentage distribution of handloom weaving units based on Health and medical facilities available. N=20**

Factor	Yes		No	
	Frequency	%	Frequency	%
First aid	4	20	16	80
Trained medical personnel	0	0	20	100
Annual medical checkups	0	0	20	100
Health record	0	0	20	100
Hand washing	18	90	2	10
Drinking water	12	60	8	40
Canteen	4	20	16	80
Toilet	19	95	1	5
Safety information posters	0	0	20	100

The above table shows that, while the majority (80%) of the units had no first aid facility, none of them had trained medical personnel, annual medical checkups, or health record for the workers. The majority

(80%) of the units had no canteen facility, few units (40%) had no drinking water facilities and safety information posters were lacking in all the units.

D. Psychological hazards.

Table 8: Frequency and percentage distribution of the workers based on Psychological hazards. N=100

Factors	Yes		No	
	Frequency	%	Frequency	%
Unpleasant working climate	4	4	96	96
Experience of sexual violence bullying / in the workplace	0	0	100	100
Not satisfied with wages	76	76	24	24
Lack of social support	34	34	66	66
Excessive workload	15	15	85	85
Lack of welfare benefits	5	5	95	95
No flexibility for time off	0	0	100	100

The above table shows that most (76%) of the workers are not satisfied with their wages, 34% of the workers lack social support, the excessive workload was reported by 15% of the workers, 5% lack welfare benefits and only 4% perceived the working climate as unpleasant.

4. Knowledge attitude and practice regarding the prevention of occupational health hazards.

Table 9: Frequency and percentage distribution of the workers based on Psychological hazards. N=100

Knowledge category	Frequency	Percentage
Inadequate knowledge (≤ 10)	27	27.0
Adequate knowledge (> 10)	73	73.0
Attitude category		
Negative attitude (≤ 40)	21	21.0
Positive attitude (> 40)	79	79.0
Practice category		
Poor practice (≤ 16)	83	83
Good practice (> 16)	17	17.0

The above table shows that majority of the workers have adequate knowledge (73%), positive attitude (79%), and poor practice (83%) regarding the prevention of occupational health hazards.

DISCUSSION

The present study revealed the presence of many hazards in the handloom weaving industries such as physical, chemical, ergonomic, and psychosocial hazards. The present study also found that none of the units hold personal protective equipment such as earplugs and face masks and only one (5%) industry had provided apron. The majority (80%) of the units had no first aid facility; none of them had trained medical personnel, awareness programs, and annual medical checkups or health record for the workers. Regarding knowledge attitude and practice, the majority of the workers have adequate knowledge (73%), positive attitude (79%), but have poor practice (83%) regarding the prevention of occupational health hazards.

Similar findings have been reported in a study to assess the occupational health hazards among the handloom weavers at Uttarakhand, which reported that all the work activities include certain risk factors such as awkward postures, repetitive movements, inadequate rest, poor lighting, poor hygienic condition, accumulation of dust near the loom and poor ventilation (Goel, & Tyagi, 2012, p.22).

The results are consistent with the findings of a study conducted in Pakistan to assess the hazards and safety practices for workers in the textile industry. Respondents in that study agreed to a great extent that there was the existence of hazards like noise and cotton dust. Also, awareness programs about hazards, periodic medical tests, personal protective equipment, and training on hazard prevention were not available in the industry (Shaikh et al., 2018, p. 346).

The findings of this study are also supported by an inspection and measurement study conducted among textile industries in Tamilnadu, which observed that the main risks in the textile industry are physical, chemical, ergonomic, more working hours, incorrect ventilation, dust, and noise (Kishor, 2019, p. 4978).

A cross-sectional study conducted in Karachi, Pakistan to determine the prevalence and predictors of good knowledge, appropriate attitude, and appropriate protective practices regarding respiratory symptoms among textile workers also showed similar findings. They found the prevalence of good knowledge in 48.9% of workers and appropriate attitude in 81% while only 21% were practicing these measures appropriately (Khoso, A. & Nafees, A. (2015) 17-23).

The findings of another study, among garment workers in Tamil Nadu to assess the level of awareness of health problems and their attitude and practice to prevent the same, is also consistent with the present study findings. More than half of the workers in this study were aware of the benefits of PPE but only a few workers were using PPE and there was a wide gap between their knowledge level and practice with protective devices (Parimalam et al., 2007 p. 528–534).

CONCLUSION

Continuous exposure to these hazards and unhealthy environment causes severe health problems to the workers. These diseases decrease the quality of life of the workers. Weavers in India on average are of low socioeconomic status and the health problems developed due to the occupational exposure add their economic burden. From the study, it can be concluded that handloom weavers are exposed to many health hazards and constraints at the workplace. Providing awareness programs, personal protective equipment, and conducting regular health checkups and improvement in the indoor environment need to be given more attention. Comprehensive health promotion interventions that can be implemented in the workplace need to be developed and evaluated for its effectiveness.

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