

An Evaluation of the Occupational Risks among Workers in Woolen Textile Company at Al_Nasiriya Government_Iraq

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Abstract:

The textile factories most dangerous among industry sectors for the occurrence and diversity of occupational hazards which, where the workers exposed directly to cotton dust which causes many respiratory problems. The distribution of workers for both gender in to five groups. The highest percentage of age group between(41-50 years) was found in the study where it was (45.2%), while the lowest percentage for the age group less than or equal to 20 years (0.8%). The study showed the highest percentage of workers who live in the city and it was (69.6%), while the percentage of workers who live in the rural was (30.4%) The study showed that the workers suffer from emotional pressures at work due to the bullying of their managers and not taking sufficient freedom to express opinion and open working hours during the day . The main results of the current study indicate that the most common occupational hazards among workers in the textile factory in Nasiriya were physical risks, which included high temperatures, high humidity and noise, as well as mechanical hazards for standing for long periods and bending during work and also being exposed to dust hazards as a result of their constant handling of wool and cotton.

Key words:Occupational hazards , Health hazards , woolenTextile.

1.1 Introduction:

Employment is valued as an integral part of one's life; most people spend about a third of their time at work(Rogers, 2015)

Work that is rewarding, reasonably paid, stable, and secure will help people live longer and happier lives, as well as improve families and neighborhoods. While some actors can only experience minor health consequences as a result of their work, such as occasional eye strain caused by poor office lighting, every industry faces serious risks.Since no job is entirely risk-free, all health care providers can have some basic information about worker demographics, jobs, and related risks, as well as strategies for reducing risks and improving health (Stanhope&Lancaster, 2016).

According to the International Labor Organization (ILO), the World Health Organization (WHO), and the United Nations (UN), there are 270 million people who are exposed to occupational health threats, and 2 million people die as a result of these risks. An estimated 440,000 employees are killed by hazardous substances. In the United States, nearly 2 million

employees were victims of workplace abuse in a single year. In the same year, 1.7 out of every 100 working adults (357,000 workers) in the UK were victims of occupational risks. In total, the projected economic loss due to work-related hazards and diseases was equal to 4% of the global gross domestic product(Mousa *et al.*, 2014; Hughes and Ferrett 2016).

Risks in the workplace can be classified into five different categories.

Chemical (dusts, liquids, fabrics, gases, mists, and smoke), physical (noise, vibration, ionizing and non-ionizing radiation, vibration, and temperature extremes), biological (bacteria, viruses, fungi, and protozoa), ergonomic and mechanical (lifting, repetitive action, military skills, and traps),), psychosocial and organizational (work demand and conditions, work environment and organizational).

These may produce an immediate or delayed response dictated largely by workers' inherent characteristics and the intensity and frequency exposure(Smedley *et al.*, 2013; Popov *et al.*, 2016).

Because of the variety of substrates, methods, equipment, and components used, and finishing steps performed, the textile manufacturing industry is one of the most valuable and technologically complex of all industries(Hasanbeigi&Price, 2012).

The most common raw material is cotton, followed by synthetic yarns (rayon and nylon) . Fiber preparing, spinning (twisting/Texturing), weaving, pretreatment processing (singeing, de-sizing, scouring, mercerizing, carbonizing, and bleaching), dyeing, printing, and finishing of yarns and fabrics are all part of the manufacture of cotton threads and materials (Rameshbabu *et al.*, 2007; Zabaniotou&Andreou, 2010).

Workers in the textile industry are exposed to a variety of hazards and threats, including noise, chemicals such as dyes, solvents, optical brighteners, finishing agents, and a variety of natural and synthetic fiber dusts, both of which are harmful to their health, as well as airborne particulates. Similarly, employees who perform physical care or deal with machines are at risk of developing a variety of health problems. Byssinosis, which is characterized by chest tightness, breathing problems, asthma, and inflammation in the respiratory track, is one of the most common and severe diseases associated with the fabric industry and cotton dust (Lai & Christiania, 2014; Saramon, 2014; Singh, 2016).

There were various types of hazards in the textile industry, including physical, biological, chemical, and ergonomic hazards. These dangers contribute to an unsafe working climate, a high number of injuries, and infectious diseases. (Malik, 2010).

Several diseases affect textile workers, including lung cancer, tuberculosis, kidney stones, and ENT (ear, nose and throat) (Rana, 2005).

Aims of the study:

The aim of the study is to assess workers' occupational health hazards at a textile factory in AL-Nasiriya City

1-To detect the occupational health hazards at the textile factory in AL-Nasiriya City.

2-To identify the effects of the occupational health hazard exposure on workers' health at the textile factory in AL-Nasiriya City.

3-To determine the safety measures that the workers use at the textile factory in AL-Nasiriya City.

Methodology

Study design

This descriptive study was conducted in the spinning factory , A cross-sectional study was adopted for that purpose. Study was conducted during the period the first of November 2020 in AL-Nasiriya wool textile factory .

The study sample:

This study was conducted on a sample of 250 production workers of both genders

Data collection :

First part :

Interview questionnaire application which consists of demographic data duration of the work(age , gender, years of work , work nature and level education)

Second parts :

Question about types of occupational risks questions about injuries occupational diseases resulting from these risks. Questions about personal protection methods and the reasons for workers not adhering to them.

Ethical considerations:

This study obtained the approval of the textile laboratory administration in Nasiriya governorate to conduct the study according to the task facilitation order issued by the Southern Technical University College of Graduate Studies. Prior to any inclusion, participants gave informed consent to participate in the study .Through the study participants were allowed to voluntarily withdraw if they wished.The researcher also attached an explanation of each questionnaire in Arabic language

Data Analysis:

The data was entered using Microsoft Excel 2007 and the statistical program (Spss) (Statistical Package for Social Sciences) /version 24 was used to analyze and reach the results analyzed and applying descriptive statistics(This approach included the measurement of frequencies and percentage) , and statistical analysis (P. value , means, standard deviation,) and tests of significance (Chi-square). P. values were considered as statistically significant when less than 0.05. A test was also used Alpha- Cronbach to know the validity and reliability of the questionnaire.

Result and Discussion :

In the table 1, The current study showed that the majority of workers are males and their percentage is 76%. These findings agreed with what has been stated by(Tadesse *et al.*, 2016) in southern Ethiopia .

In the table 2 , The results demonstrated that 45.2% of textile workers were in the age group(41-50)years, These findings agreed with what has been stated by(Tetemke *et al.*, 2014) in Adwa town ,Ethiopia.

In the (Table 3) , showed that most of the workers are holders of high school diplomas. These results are agreement with another study conducted by (Tetemke *et al.*, 2014) in Adwa town ,Ethiopia .

In the table 4 , study showed that most of the workers are residents of the city,

In the table 5 ,The study showed that the temperature is high, the high temperature is considered a dangerous indicator for workers as it causes weakness, headache, severe sweating , confusion and dizziness, in comparison with another study in Turkey (Soytas , 2006) , it showed that workers are exposed to the dangers of overheating , The study also showed that there is a weakness in the levels of lighting and the humidity is high these agreement with study conducted by (Shaikh *et al.*, 2018)

In the table 6 , showed that workers are exposed to mechanical risks that affect their health , including standing for long periods , Carrying heavy weights while working and bending for long periods during work, and this causes joint spasms , The researcher also noticed that the machines are not permanent and these lead to many risks threatening the health of the worker and these results agreement with another study conducted by (Ateya *et al.*, 2017) in Damietta city

In the table 7 , shows that the workers in spinning industry are exposed to high levels of cotton dust, Because of their permanent dealings with cotton, especially in the sections of lightening and washing wool, and also their exposure to dust is high, as the dust causes respiratory diseases and also affects the eye this result agreement with another study conducted by (Hinson *et al.*, 2016) in the Southern part of Benin

Table 1: Distribution of textile workers according to the gender .

Gender	Frequency	Percentage
Male	192	76.8
Female	85	23.2
Total	250	100%

Table 2: Distribution of textile workers according to the age

Age Groups	Frequency	Percentage
≤ 20 years	2	0.8
(21-30)years old	27	10.8
(31-40)years old	49	19.6
(41-50)years old	113	45.2
(51-60)years old	59	23.6
Total	250	100%

Table 3: Distribution of textile workers according to the educational level.

Education level	Frequency	Percentage%
Primary	24	9.6
Mediated	55	22.0
Secondary	124	49.6
Diploma	28	11.2
University	19	7.6
Total	250	100%

Table 4: Distribution of textile workers according to the residency.

Residency	Frequency	Percentage%
Urban	174	69.6
Rural	76	30.4
Total	250	100%

Table (5) Results of textile workers answers about physical hazards.

No	Questions	Freq(%)					Mean	S.D	P. Value
		SA	Agree	Neutral	Disagree	SD			
1	Is the temperature high?	44(17.6)	78(31.2)	65(26)	38(15.2)	25(10.0)	2.69	1.215	0.000
2	Is the Ventilation bad	39(15.6)	70(28)	60(24)	44(17.6)	37(14.8)	2.88	1.290	0.002
3	Is the noise loud	78(31.2)	69(27.6)	45(18.0)	25(10.0)	33(13.2)	2.46	1.368	0.000
4	Is the lighting dark and weak	54(21.6)	69(27.6)	69(27.6)	31(12.4)	27(10.8)	2.63	1.252	0.000
5	Is the humidity high	39(15.6)	74(29.6)	83(33.2)	34(13.6)	20(8.0)	2.69	1.133	0.000

SA: Strongly agree, S.D: standard deviation and SD: Strongly disagree

Table(6) Results of textile workers answers about mechanical hazards

No	Questions	Freq					Mean	S.D	P. Value
		SA	Agree	Neutral	Disagree	SD			
1	Prolonged standing	89(35.6)	72(28.8)	55(22)	27(10.8)	7(2.8)	2.16	1.113	0.000
2	The floor is convenient for work	67(26.8)	108(43.2)	32(12.8)	34(13.6)	9(3.6)	2.24	1.101	0.000
3	The nature of the building is suitable for work	87(34.8)	81(32.4)	48(19.2)	26(10.4)	8(3.2)	2.15	1.108	0.000
4	Bending for a long time	76(30.4)	115(46)	29(11.6)	19(7.6)	11(4.4)	2.10	1.056	0.000
5	Carrying heavy weights while working	56(22.4)	71(28.4)	56(22.4)	45(18.0)	22(8.8)	2.62	1.256	0.000
6	Machines and machines are safe and sustainable	38(15.2)	78(31.2)	50(20.0)	47(18.8)	37(14.8)	2.87	1.300	0.000

Table(7) Results of textile workers answers about dust hazards.

No	Questions	Freq	Mean	S.D	P.
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		SA	Agree	Neutral	Disagree	SD			Value
1	Always exposed to dust	50(20.0)	64(25.6)	62(24.8)	43(17.2)	31(12.4)	2.76	1.294	0.005
2	Sometimes exposed to dust	43(17.2)	103(41.2)	34(13.6)	50(20)	20(8)	2.60	1.212	0.000
3	You are very affected by dust	37(14.8)	95(38)	61(24.4)	34(13.6)	23(9.2)	2.64	1.164	0.000
4	The percentage of you affected by dust is normal	26(10.4)	53(21.2)	83(33.2)	59(23.6)	29(11.6)	3.05	1.154	0.000

Conclusions:

- 1- The results of the analysis reached by the study were that the majority of workers were male and the majority of workers were in the age group of 41-50 years, and most of them were city dwellers and most of them had a high school diploma.
- 2- The workers were exposed to many occupational hazards, including physical risks that included exposure to temperatures. And high noise, the humidity was high, the lighting level was weak, and also mechanical hazards as a result of standing and sitting for long periods of time, and were also exposed to inhaling high amounts of dust as a result.

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