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Strategies of prevention health care related to occupational health hazards among workers at cement governmental factories in Holly AL-Najaf Governorate

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Abstract---Introduction: Occupational Health and Safety, a set of policies for all programs related to workers were announced to work on the decisions of the World Health Organization and how to promote occupational health and safety for workers who are exposed to risks in the work environment, which in turn limits or prevents those risks. Methods: The descriptive design cross-sectional study was conducted in three government places where cement is manufactured in the governorate of Najaf Al-Ashraf. It is the example of the honorable Najaf cement factory - the Koufa cement factory - the section of stone crushers (crushers), which included about 200 workers from various collaborators and age groups who were selected from 1,000 workers working in those factories. The data was collected through the use of the questionnaire and data analysis by SPSS version 22. Results: The study showed that workers are exposed to great hazards (physical - chemical - biological - electrical - mechanical) during the performed of their tasks inside the factory about 55.5% considered High Hazard, so it became perfect that workers who use occupational prevention strategies are less exposed to the risk of occupational risks that occur with the worker during the work environment. While the study found an important statistical relationship with workers regarding psychological risks during work and the study concluded that there is a very important relationship between physical risks and their impact on workers in the working environment. Conclusions: This study concluded that there was an important statistical relationship between workers' chemical risks and how they were affected and the study found a high level of correlation between knowledge about

protective equipment and personal safety and workers' exposure to risks in the working environment.

Keywords---Prevention, Health Care, Occupational Health Hazards.

Introduction

The International work Organization assesses that work related infections kill six fold the number of individuals every year as work related injuries¹; Canadian examinations propose a lot higher proportion in the discourage primary of the impact perils on the specialist that openness to the climate work (Harrison, J., & Dawson, L. 2016). Notwithstanding being to a great extent preventable, the human, cultural, and financial effects of these infections are tremendous and incorporate, for instance, a destitution of the laborers and with the relatives, decreased usefulness & work limit, laborers' pay advantages, and medical care uses (Abd Wahid . 2020). Some researchers of the Social Work Organization in Quebec have come up with some measures and annual costs for all occupational diseases resulting from exposure to the risks that workers are exposed to in that capital for the period from 2005 to 2007. It was estimated at the time about 834 million US dollars in Canada and was There is an average mortality associated with these risks to workers, representing about 128 million US dollars (Takaro, T. K., & Demers, P. A. 2016). Remuneration figures, for example, these generously under-represent the genuine weight of work related illnesses and are lacking as a reason for research or as an aide for public approach (Singh. S., 2021). During the Alma Ata Conference on Occupational Health and Safety, a set of policies for all programs related to workers were announced to work on the decisions of the World Health Organization and how to promote occupational health and safety for workers who are exposed to risks in the work environment, which in turn limits or prevents those risks. Which workers are exposed to in the work environment, thus increasing the health promotion capacity of workers who are in contact with the hazards (Beijing, 2016). In the decade or so in the 1980s, everyone has noticed occupational diseases and their effects, and has conducted extensive discussions on worker health and safety issues. Research on occupational diseases is no longer limited to medical caregivers. Experts in the field of industrial hygiene have also contributed a lot to this change (He, X., & Song, 2014). As the ability to analyze the concentration of trace substances has increased, occupational disease researchers have learned many substances, biological sources, or energy that are still harmful to the human body although they are very small. Exposure to trace amounts of industrial raw materials may also harm the health of workers (Wegman & D. H , 1992). Now when engineers are responsible for designing and constructing industrial facilities and manufacturing processes related to operations, they must take into account the health of workers. For new substances or new manufacturing processes that are continuously introduced, the health effects must be paid attention to in the design stage. Engineers should not sacrifice health considerations in order to adapt to reality (Schaller, H. E., & Lotter, O , 2012). The public's increasing attention to such issues has had positive effects. For example, most workers pay more attention to health issues and realize the need to educate relevant practitioners (such as engineers) on health issues.

This book hopes to understand the relevant (Sritharan, J., MacLeod, J. S., McLeod, 2019).

Methods

The descriptive design / cross sectional study was conducted with an analytical utility in order to achieve the stated objectives in terms of assessing the risks to which workers are exposed at work and how to implement prevention strategies. During the period from 2021-2022. The present study was conducted in three governmental places where cement is made in Najaf governorate, namely the Najaf cement factory and the Kufa cement factory, as well as the crushers department, which in turn relates to stone production for both factories). The study included cement factories only with the study causes they contain wholly the risks required in the research study concerning hazards and prevention strategies for those hazards that workers are exposed to within the work environment. Najaf Cement Factory. Factory name Najaf Cement Factory: It is one of the factories affiliated to the Iraqi Ministry of Industry and is classified within the Southern Cement Industry Company Location Najaf Governorate / Kufa District / Al-Barakia Production Type Ordinary Portland cement Number of production lines Design capacity (156000) tons per year Establishment date 1975 Production start 1975 Executing company Indian ACC Manufacturing method humid. By utilizing non-likelihood testing strategy a (purposive example) of 200 specialists have been chosen out of 1000 laborers chipping away at transportation standards or the internal system in the factories intended for the study and the hazards they are exposed to in those factories and according to the following sections (Management Department - Putty Mills Department - Furnaces Department, which in turn consists of 5 thermal furnaces - Department Packaging - production department - maintenance department - mechanics department - production department, as well as the rest of the departments of cement factories. All sections were covered during the stage of collecting the research sample to obtain the aims of study phenomena (strategies of prevention occupational health related hazard among workers. The data was collected through the use of the questionnaire and data analysis by SPSS version 22.

Results

Table (1)
Distribution of the Workers by their Socio-Demographic Characteristics through Frequency and Percentage

No.	Variables	Groups	(n = 200)	
			F.	%
.1	Age	- (Less than 18) years	2	1.0
		- (18-35) years	70	35.0
		- (More than 35) years	128	64.0
		Total	200	100
.2	Residency Area	- Urban	173	86.5
		- Rural	27	13.5
		Total	200	100.0

.3	Level of Education	Illiterate	3	1.5
		Literate (read & write)	12	6.0
		Graduate of Primary School	28	14.0
		Graduate of Intermediate/Secondary School	52	26.0
		Graduate of Institute/ College	15	7.5
		Graduate of Institute/ High Education	90	45.0
		Total	200	100.0
.4	Monthly Income	- Sufficient	76	38.0
		- Barely sufficient	39	19.5
		- Insufficient	85	42.5
		Total	200	100.0
.5	Gender	Male	188	94.0
		Female	12	6.0
		Total	200	100.0
.6	Marital Status	- Single	149	74.5
		- Married	7	3.5
		- Divorced	12	6.0
		- Widow	32	16.0
		Total	200	100.0
.7	Number of years in service	Less Than 1 Year	20	10.0
		(1-5) Years	27	13.5
		More Than 5 Years	153	76.5
		Total	200	100.0
.8	Job Title	Worker	41	20.5
		Chief Workers	28	14.0
		Observer Technician	29	14.5
		Chief Observers Technician	34	17.0
		Assistant Engineer	9	4.5
		Engineer	29	14.5
		Chief Engineer	30	15.0
		Total	200	100.0
.9	Level of Education	Illiterate	3	1.5
		Literate (read & write)	12	6.0
		Graduate of Primary School	28	14.0
		Graduate of Intermediate/Secondary School	52	26.0
		Graduate of Institute/ College	15	7.5
		Graduate of High Education	90	45.0
		Total	200	100.0
.10	Workplace	Malls	94	47.0
		security clearances	3	1.5
		Queries	3	1.5
		Crushers	21	10.5

		Ovens	15	7.5
		The mills	26	13.0
		Administration	5	2.5
		Awareness	14	7.0
		Guidance	7	3.5
		Technical Section	5	2.5
		Quality Section	2	1.0
		Mechanical Section	5	2.5
		Total	200	100.0
.11	Working Hours/day	Less Than 6 Hours	10	5.0
		(6-8) Hours	187	93.5
		More Than 8 Hours	3	1.5
		Total	200	100.0
.12	Shift of work	Morning Shift	169	84.5
		Night Shift	31	15.5
		Total	200	100.0

Table (2)
Distribution of the Workers by their Medical History through Frequency and Percentage

No.	Variables	Groups	(n = 200)	
			F.	%
.1	Did you Absenteeism due to sickness	Yes	127	63.5
		No	73	36.5
.2	Did you leave the work due to a handicap	Yes	172	86.0
		No	28	14.0
.3	Did you eliminate from work due to chronic disease	Yes	169	84.5
		No	31	15.5
.4	Did you stop from work due to previous surgical operation	Yes	146	73.0
		No	54	27.0
.5	Do you intake any Medicine or Treatment or Physical therapy:	Yes	123	61.5
		No	77	38.5
.6	Did you had any skin disease (eczema or allergy):	Yes	139	69.5
		No	61	30.5
.7	Did you have any breathing issues (asthma, tuberculosis or continuous cough) in the last year	Yes	143	71.5
		No	57	28.5
.8	Did you eliminate from work due to infectious disease	Yes	154	77.0
		No	46	23.0
.9	Is there a place designated for eating	Yes	169	84.5
		No	31	15.5

Table (3)
Overall of the Medical History Workers at Cement Government Factory

Ratings	(n= 200)			
	F.	%	M.S.	Assessment
No Hazard	170	85.0	1.2544	Good
Low Hazard				
Moderate Hazard				
High Hazard	30	15.0		
Total	200	100%		

M.s. (mean of scores)}, Hazard rate of (equal and less than 1) = (No Hazard). Hazard rate (less than 1.5) = (Low Hazard). Hazard rate (1.5) = (Moderate Hazard). Hazard rate (More than 1.5) = (High Hazard), cut off point (1.5).

Table (4)
Distribution of the Workers by their Health Care Facilities through Frequency and Percentage

No.	Variables	Groups	(n = 200)	
			F.	%
.1	Did you do a regular health checkup (monthly, bi-monthly, weekly)	Yes	115	57.5
		No	85	42.5
.2	Is there a permanent presence of the doctor or nurse inside the laboratory	Yes	141	70.5
		No	59	29.5
.3	Have you ever used a treatment for chronic diseases that you suffer from	Yes	132	66.0
		No	68	34.0
.4	Did you take maternity leave (for women):	Yes	183	91.5
		No	17	8.5
.5	Do you have health insurance	Yes	100	50.0
		No	100	50.0
.6	Have you ever received viral liver vaccinations	Yes	132	66.0
		No	68	34.0
.7	Is there a health care center inside the workplace	Yes	64	32.0
		No	136	68.0
.8	Is there a first aid box at the work site	Yes	79	39.5
		No	121	60.5
.9	Is there a place designated for eating	Yes	81	40.5
		No	119	59.5

Discussion

The table (1) summarizes the occupational characteristics of the study participants, the higher proportion of the study participants of the Cement Workers percentage were (64%) and numbers (128) were (more than 35) years old whereas the minority of them (1 %) were (less than 18) years old and the residence area indicates that the majority of the Cement Workers percentage (86.5%) and numbers (173) were (urban) whereas the minority of them (13.5%) were (rural). The monthly income variable reveals that the majority of the Cement Workers percentage (42.5%) and numbers (85) were (Insufficient) whereas the minority of them (19.5%) were (Barely Insufficient). The marital status shows that the majority of the Cement Workers percentage (74.5%) and numbers (149) were (single) whereas the minority of them (7%) were (married), and also the level of educational present that the majority of the Cement Workers percentage (45%) were (Graduate of Institute/ High Education) whereas the minority of them (1.5%) were (illiterate). In addition, the gender of workers reveals that the majority of the Cement Workers percentage (94%) were (male) whereas the minority of them (6%) were (female), and the number of years of service presents that the majority of the Cement Workers percentage (76.5%) were (More Than 5 Years) whereas the minority of them (10%) were (less Than 1 Year), and the title of job presents that the majority of the Cement Workers percentage (20%) were (workers) whereas the minority of them (5%) were (assistant engineer), and the numbers of work hours presents that the majority of the Cement Workers percentage (93.5%) were (6-8) hours whereas the minority of them (5%) were (less than 6 hours). Also Regarding the workplace of workers shows that the majority of the Cement Workers percentage (47%) were (malls section) whereas the minority of them (1%) were (quality section), and the shift of work shows that the majority of the Cement Workers percentage (84%) were (morning shift) whereas the minority of them (16%) were (night shift). This table (2) reveals in light of mean of scores 1.5 that the subjects responses regarding the Medical History items are good at (5) items means of scores ≥ 1.5 . The subjects responses were poor at (1, 2, 3, 4, 6, 7, 8, and 9) items means of scores ≤ 1.5 conclusive medical history of cement factories. This table (3) indicates that the majority of Medical History (85 %) was poor of health and minority of them (15 %) were good. The study in Nigeria (Ademola, E., Akinbode, J., & Sokefun, E. , 2018). The review uncovered that the recurrence level of work related risks affected specialists execution; a tremendous contrast exist between execution levels of solid specialists to undesirable workers ; and that protected specialists had high inclinations of performing at work than laborers who were hazardous working in the concrete business. That was compatible with current study Regarding the hazards to which workers are exposed and how to prevent them in cement factories. The current study (Huang et al ., 2018) was agree about to the worker's exposure to respiratory problems in cement factories and the importance of their impact on the worker's life. The study was conducted on 147 workers exposed to chemical dust in the work environment. The study concluded that a large number of workers are affected by future respiratory problems that have a significant impact on the worker's life. As now the reasons indicate that the worker mistakes in how to apply respiratory protection equipment from those hazards and how to apply to reduce those chemical dust issued from one of the production stages in cement factories.

Conclusions

This study concluded that the study found that the majority of cement workers who participated in the study are in the 35-year age group and are in the male category and the study found a moderate correlation between variables relating to workers' medical history of absenteeism due to ill health during work.

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