Research Paper Medical Science

Educational Interventional Study of Chemical Industrial Hazards and its Prevention Among the Workers of Dye Industry

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ABSTRACT

Purpose:Work plays a central role in people's lives, since most workers spend at least eight hours a day in the workplace. Therefore, work environments should be safe and healthyThe proper use of safety measures by dye workers is an important way of preventing and/or reducing a variety of health hazards .Work plays a central role in people's lives, since most workers spend at least eight hours a day in the workplace. Therefore, work environments should be safe and healthy. The aim of this study was to assess delay in the treatment in AMC area.

Methodology:Thiseducational Interventional study was carried out in Dye Stuff Industries, Vatva, Ahmedabad during April 2012 to August 2012. We included those workers who gave verbal consent and remain in job during study period. Total 96 workers were educated by Audio-Visual technique on use of Personal protective equipments for 2 times with 20 days interval. Pre and post intervention knowledge was assessedby using same Pre-designed proforma.

Results:

Total 96 male workers were included in study. Mean age of workers was 32.2 year with SD 7.2 year. Out of 96, 17 workers (17.7%) were illiterate. Majority of workers 77(78.1%) had one or more forms of addiction. Hypertension was found in 15.6% workers. Overall improvement observed was 45.7% regarding basic knowledge of PPMs and chemical hazards. However only 14 workers were aware about all PPEs.About three fourth (74.5) of workers were using PPEs. Number of poster regarding hazard and PPEs were less and not properly visible.

Conclusion: Present As demonstrated in this study, Majority of workers were not aware regarding health hazards of dye and use of Personal Protective Equipments (PPEs). Therefore, Health education regarding use of PPEs and chemical hazards should be given regularly.

KEYWORDS | Personal protective equipment, health education, occupational hazard

Introduction:

Occupational health aims at the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations.[1]HAZARD is defined as the intrinsic property or ability of a specific factor (e.g. working materials or equipment, working methods or practices) to potentially cause harm. occupational health and safety encompasses the social, mental and physical well-being of workers.[2]Work plays a central role in people's lives, since most workers spend at least eight hours a day in the workplace, whether it is on a plantation, in an office, factory, etc. Therefore, work environments should be safe and healthy. Baloyi (1991) identified the following as some of the main reasons for not implementing the safety policy by most developing countries: lack of effective enforcement system, lack of information and accurate records of occupation[3]

Hazards arising from workplaces could impair the health and well-being of the workers; therefore, it is necessary to anticipate, recognise, evaluate and control such hazards.[4]The proper use of safety measures by dye workers is an important way of preventing and/or reducing a variety of health hazards .The use of personal protective.Two epidemiological studies have reported that exposure to dyes produce cancer.5-6.

Aims & Objectives:

The objectives were to assess the knowledge of chemical factory workers regarding chemical hazard and Personal protective measures.(PPMs) and evaluate the impact of this Educational Intervention (EI) on their knowledge and practice after 1 month of education.

Methodology:

This**e**ducational Interventional study was carried out in Dye Stuff Industries, Vatva, Ahmedabad during April 2012 to August 2012. We included those workers who gave verbal consent and remain in job during study period. Total 96 workers were educated by Audio-Visual technique on use of Personal protective equipments for 2 times with 20 days interval. Pre and post intervention knowledge was assessed by using same Pre-designed proforma.

Results:

Total 96 male workers were included in study.Table-1 shows socio-demographic profile of patients. Overall literacy rate was found to be 90.6%. Mean age of workers was 32.2 year with SD 7.2 year. Half of workers' per capita income less than 1500 Rs. Out of 96, 17 workers (17.7%) were illiterate.Majority of workers 77(78.1%) had one or more forms of addiction. Hypertension was found in 15.6% workers.

Majority of workers were not aware regarding health hazards of dye and use of Personal ProtectiveEquipments (PPEs). More than half of workers had never used any PPEs.

Overall improvement observed was 45.7% regarding basic knowledge of PPMs and chemical hazards. However only 14 workers were aware about all PPEs.About three fourth (74.5) of workers were using PPEs. Number of poster regarding hazard and PPEs were less and not properly visible.

Table 1: Distribution of worker according Socio demographic profile

		No.	Percentage (%)
Age (years)	≤25	16	16.6
	26 to 44	51	53.1
	≥45	19	19.7
	Median ± SD	32.3 ± 7.2	
	Minimum	20	
	Maximum	55	
Education	Illiterate	17	17.7
	Primary	19	19.8
	Secondary	50	52.1
	Higher secondary	10	10.4
Marital status	Married	83	86.5
	Unmarried	12	12.5
	Widow	1	1
Working Hours	< 8	6	6.3
	8 to 10	81	84.5
	>10	9	9.3

Table 2: Distribution of workers according health related problems

		No.	Percentage (%)
Ever addiction of some or other forms of Tobacco 75 (78.1) *	Tobacco chewing	54	56.2
	Smoking	30	36.5
	Chewing Gutka	33	34.5
	Alcohol	6	6.3
Health related problems	Hypertension	15	15.6
	Some eye related problem	8	8.4
	Diabetes	5	5.2
	Allergic skin disease	4	4.2
	Asthma	3	3.1
	IHD	2	2.1

***Multiple addiction were present**

Table 3:Awareness about PPEs among worker

	Pre Education intervention (%)	Post Education intervention (%)	Z value	p value
Awareness regarding PPEs				
At least one	47.9	98.9	8.1	<0.05
Gloves	39.6	87.4	7.8	<0.05
Mask	35.4	90	9.3	<0.05
Shoes	26	98.9	10.4	<0.05
Apron	8.3	34.5	4.5	<0.05
Goggles	6.3	27.6	3.9	<0.05
Cap	5.2	56.3	8.9	<0.05
Awareness regarding Health hazard of dye industry				
Respiratory problems	22.9	84	5.3	<0.05
Skin diseases	30	73	4.2	<0.05
Eye condition	9.3	44.4	7.4	<0.05
Uses of PPEs				
At least one	20.8	62.5	5.1	<0.05
Gloves	14.6	39.6	4.5	<0.05
Mask	17.7	30.7	4.2	<0.05
Shoes	24	56.1	4.6	<0.05
Apron	5.2	4.4	1.2	>0.05
Goggles	3.1	11.0	3.8	<0.05
Cap	3.1	37.4	4.8	<0.05

Discussion:

Total 96 male workers were included in study. Overall literacy rate was found to be 90.6%. Half of workers' per capita income less than 1500 Rs. Majority of workers 77(78.1%) had one or more forms of addiction. Hypertension was found in 15.6% workers. Majority of workers were not aware regarding health hazards of dye and use of Personal Protective Equipments (PPEs). More than half of workers had never used any PPEs. Overall improvement observed was 45.7% regarding basic knowledge of PPMs and chemical hazards. Similar finding were observed in other studies. [7-8]However only 14 workers were aware about all PPEs. About three fourth (74.5) of workers were using PPEs.

Recommendation:

As demonstrated in this study, Majority of workers were not aware regarding health hazards of dye and use of Personal Protective Equipments.Health education regarding use of PPMs and chemical hazards should be given regularly and posters regarding health hazard should be available in the factory.Pre placement examination and periodic examination shouldat regular interval.

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