

# A Effectiveness of Planned Teaching Programme on Knowledge of Construction Workers Regarding Occupational Health Hazards at Selected Construction Sites, Bangalore

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**Abstract:-** Evaluation of the planned teaching program's impact on construction employees' understanding of occupational health risks at a few key construction sites in Bangalore is the goal. **Methods:** A one-group, pre- and post-test quasi-experimental design with 60 numbers was chosen from a list of Bangalore building sites for this evaluative research approach. The pre-test total knowledge score of construction employees about occupational health hazards was 43.7 percent, with a mean and standard deviation of 2.3. This was revealed by the study's findings. Construction employees' post-test total knowledge score was 76.0 percent mean with a 2.7 standard deviation. As a result, there was a 32.3 percent difference between the pretest and post-test general knowledge scores. Accordingly, the study's findings revealed a difference between construction employees' knowledge scores about occupational health before and after the exam.

**Keywords:-** Construction Workers, Occupational Health Hazards

## I. INTRODUCTION

In order to create and maintain a safe and healthy working environment, occupational health refers to the identification and control of risks resulting from physical, chemical, and other workplace hazards. Chemical agents and solvents, heavy metals like lead and mercury, loud noises or vibrations, and physical agents like electricity or dangerous machinery are only a few examples of these dangers. Since 1986, the NIEHS has provided funding for training and educational initiatives aimed at preventing workers' and communities' exposure to toxic materials encountered during the management of hazardous waste and the response to chemical emergencies. This includes thorough training and environmental rehabilitation for citizens who live close to extremely polluted areas as well as safety and health training for those involved in the disposal of hazardous trash. even though business.

## II. MATERIALS AND METHODS

### ➤ Hypothesis

Tested at 0.05 significance level

**H<sub>1</sub>:** There will be a significant difference in the level of knowledge of construction workers regarding the occupational health hazards before and after planned teaching programme.

**H<sub>2</sub>:** There will be a significant association between pre-test and post-test knowledge of construction workers regarding the occupational health hazards with their selected demographic variables.

### ➤ Research Approach

In this study an evaluative research approach was used to assess the knowledge of construction workers regarding occupational health hazards.

### ➤ Research Design

The research design is selected for this study one group pre-test post-test quasi experimental research design.

### ➤ Population

The population of the present study consists of construction workers in selected construction sites.

### ➤ Sample

The sample of the present study includes construction workers.

### ➤ Sample Size

The sample size of this study is comprises of 60.

## III. PLAN FOR DATA ANALYSIS

### ➤ Descriptive Statistics

Includes percentage (%) mean, median, frequency and standard deviation for prevention of occupation injuries among the construction workers of selected construction sites at Bangalore.

➤ *Inferential statistics*

Includes paired “t” test and chi-square test for the assessment knowledge of construction workers and to association with socio-demographic variables.

**IV. RESULTS**

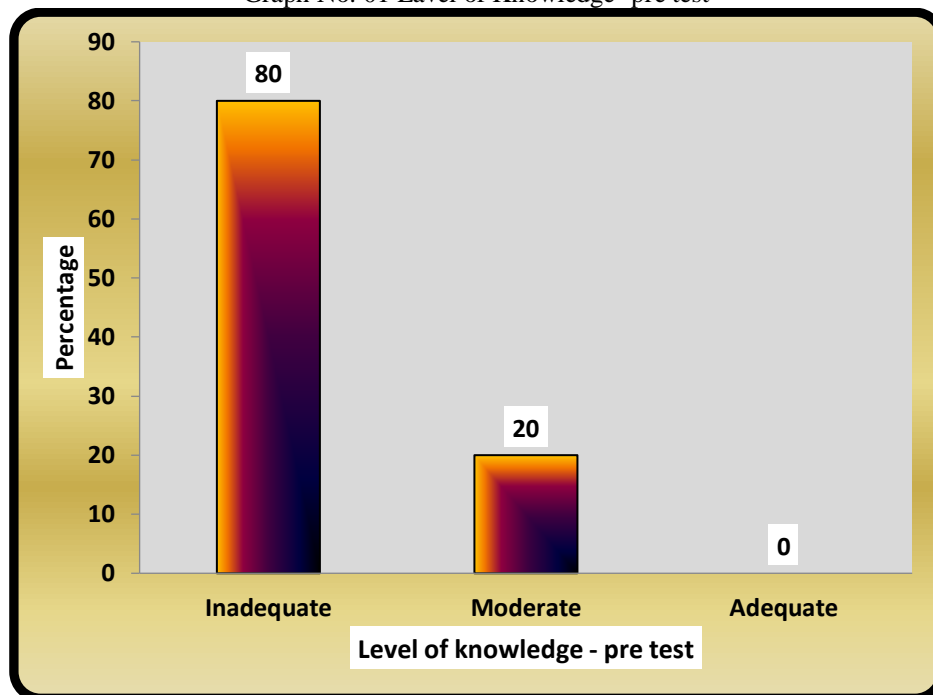
Table No: 01 Frequency &amp; Percentage of Construction Workers regarding Occupational Health Hazards N: 100

SI No	Sociodemographic Profile	Frequency	Percentage
<b>1</b>	<b>Age in years</b>		
	a) 15-25 years	20	20
	b) 26-35 years	30	30
	c) 36-45 years	35	35
	d) 46 years and Above	15	15
	<b>Gender</b>		
	a) Male	71	72
	b) Female	29	29
	<b>Religion</b>		
	a) Hindu	64	64
	b) Christian	16	16
	c) Muslim	20	20
	d) Others	00	00
	<b>Educational Qualification</b>		
	a) Illiterate	07	07
	b) Primary school	23	23
	c) High school	34	34
	d) PUC	30	30
	e) Degree and above	06	06
	<b>Marital Status</b>		
	a) Married	70	70
	b) Unmarried	30	30
	c) Divorced	00	00
	<b>Total Work Experience</b>		
	a) 1-3 years	14	14
	b) 3-5 years	46	46
	c) 5 years and above	40	40
	<b>Nature of Work</b>		
	a) Mason	20	20
	b) Helper	80	80
	<b>Monthly Income</b>		
	a) 2000/- 4,000	16	16
	b) 5,000-7,000/-	65	65
	c) 8,000-10,000/-	14	14
	d) 10,000 and above	05	05
	<b>Which among the following hazards did you have?</b>		
	a) Crush injuries	08	08
	b) Fatigue	21	21
	c) Muscle cramps	28	28
	d) Backache	33	33
	e) Skin infection	10	10
	f) Head injury	00	00
	<b>Source of Information</b>		
	a) Hospital	16	16
	b) Mass media-T.V, Journals, Newspaper etc.	33	33
	c) Friends and relatives	26	26
	d) No Information	25	25

Table No. 02 Classification of knowledge regarding occupational health hazards among construction worker’s pre-test knowledge score N: 100

Level of knowledge score	Score	No. of Respondents	
		Frequency	Percentage
Inadequate	<50%	80	80%
Moderate	51-75%	20	20%
adequate	>75%	00	00
Total		100	100

Graph No: 01 Level of Knowledge- pre test



The above table no. 02 and graph no. 01, shows the pre-test score on knowledge of health hazards among construction workers, in table no.02 noticeable that majority of the construction workers had inadequate knowledge score 80 (80%) and where as 20 (20%) of workers had moderate knowledge on health hazards and none of had adequate score regarding health hazards among construction workers.

Table No: 03 Aspect Wise Pre-test Mean score on Knowledge of Construction Workers regarding Occupational Health Hazards. N=100

Domain	Max statements	Max Score	Range	Mean	SD	Mean%
General Aspects	7	7	3--5	3.8	1.2	54.3
Occupational injuries	15	15	5--10	5.5	1.4	36.7
Prevention	8	8	2--4	3.8	1.2	47.5
Overall	30	30	9-16	13.1	2.3	43.7

The above table no: 03 describes the mean score and standard deviation score of knowledge obtained by construction workers regarding occupational health hazards before administration of structured protocol. It is noticeable in the table that the construction workers had obtained significantly low score in each aspect of occupational health hazards before administration of structured protocol, that is score ranges from 9-16 with overall mean 13.1(43.7%) and standard deviation 2.3.

Graph No: 02 Aspect Wise Pre-test Mean Knowledge Scores of Construction Workers regarding Occupational Health Hazards

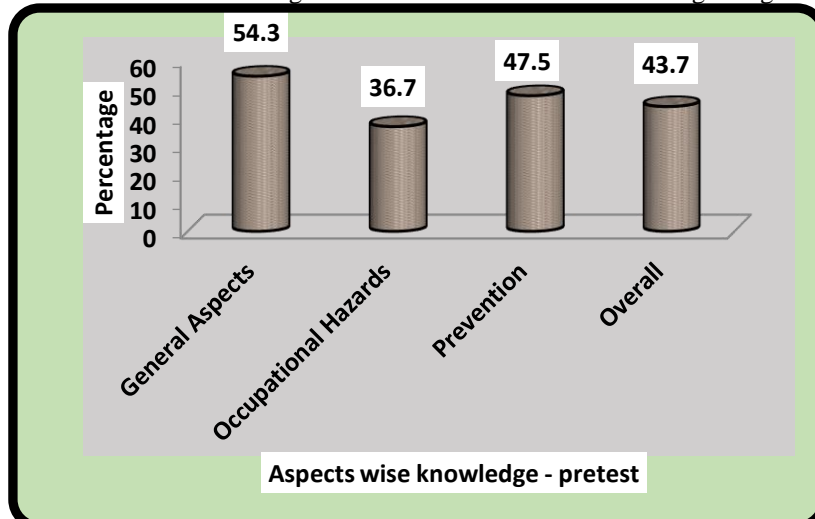
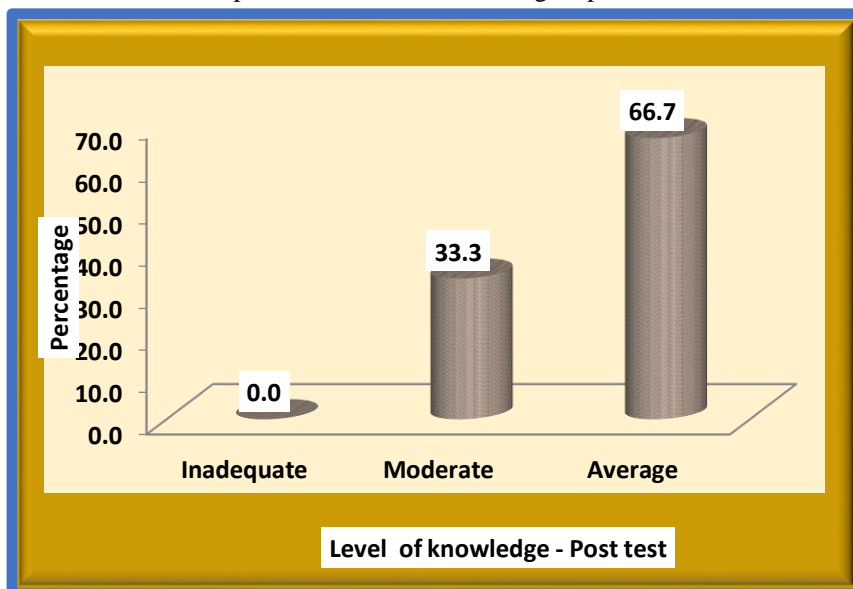


Table No: 04 Classification of post-test Knowledge Level score of Occupational Health Hazards among construction workers. N: 100

Level of knowledge	Score	No of Respondents	
		Frequency	Percentage %
Inadequate	< 50%	0	0.00
Moderate	50--75%	33.3	33.33
Average	>75%	66.7	66.67
<b>Total</b>		<b>100</b>	<b>100</b>

Graph No: 03 Level of knowledge – post test



The above table no: 04 and graph no: 03 shows that, the post-test level of knowledge of construction workers on occupational health hazards, in which majority of construction workers 66.7 (66.67%) had average level knowledge on occupational health hazards whereas 33.3 (33.33%) of construction workers had moderate level knowledge and none of construction workers had inadequate knowledge regarding occupational health hazards after administration of structured protocol.

Table No: 05 Aspect Wise Post-test Mean score of Knowledge regarding Occupational Health Hazards among Construction Workers. N: 100

Domain	Max statements	Max Score	Range	Mean	SD	Mean%
General Aspects	7	7	4--7	5.9	1.1	84.3
Occupational injuries	15	15	8--14	10.6	1.5	70.7
Prevention	8	8	3--7	6.3	0.9	78.8
Overall	30	30	11--23	22.8	2.7	76.0

The above table no: 05 and graph no. 04 shows that, the mean and standard deviation score of knowledge regarding occupational health hazards among construction workers obtained score after administration of structured protocol. It is noticeable in the table that the construction workers have obtained significantly high score in each aspect of occupational health hazards after administration of structured protocol that is score ranges from 11-23 with overall mean 22.8(76.0%) and standard deviation 2.7.

Graph No: 04 Aspect Wise Post-test Mean score of Knowledge regarding Occupational Health Hazards among Construction Workers

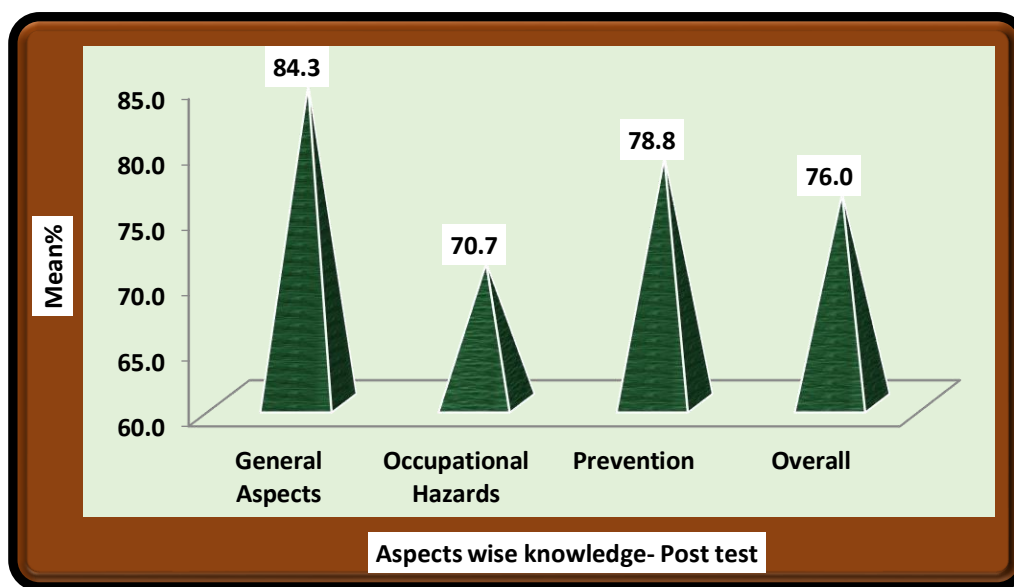


Table No: 06 Comparison of Knowledge regarding Occupational Health Hazards among Construction Workers, Comparison of Pre-test score with Post-test score. N: 100

Level of Knowledge	Score's	Pre-test		Post-test	
		Frequency	percentage%	Frequency	percentage%
Inadequate	<50%	80	80.00	0	0.00
Moderate	50--75%	20	20.00	33.3	33.33
Adequate	>75%	00	0.00	66.7	66.67
Total	100	100	100	100	100

The above table shows the comparison of pre test score and post-test score on knowledge regarding occupational health hazards among construction workers. The pre-test score tables depicts that, pre-test level of knowledge regarding health hazards among construction workers. In the table it is noticeable that majority of construction workers 80 (80%) had inadequate level of knowledge about occupational health hazards, whereas 20 (20%) of construction workers had moderate level of knowledge and none of construction workers had adequate or moderate knowledge regarding occupational health hazards before administration of structured protocol.

The post-test score table depicts that, post-test score level of knowledge regarding occupational health hazards among construction workers, in which majority of construction workers 66.67(66.67%) of construction workers had adequate level of knowledge whereas 33.3(33.37%) had moderate level of knowledge about occupational health hazards and none of construction workers had inadequate knowledge regarding occupational health hazards after administration of structured protocol

Hence the data reveals the effectiveness of Structured Protocol

Table No: 07 The Associations between Demographic Variables and Pre-Testscore's Knowledge Level regarding Occupational Health Hazards among Construction Workers.

S.No	Demographic variables	No	%	Knowledge				Chi-square
				Median (<31)		Median (>29)		
				F	P(%)	F	P(%)	
<b>1</b>	<b>Age in Years</b>							
	a) 15-25 years	20	20.0	6	50	6	50	4
	b) 26-35 years	30	30.0	11	61.1	7	38.9	df 3
	c) 36-45 years	35	35.0	12	57.1	9	42.9	N.S
	d) Above 45 years	15	15.0	2	22.2	7	77.8	
<b>2</b>	<b>Gender</b>							
	a) Male	71	71.7	21	48.8	22	51.2	0.5
	b) Female	29	28.3	10	58.8	7	41.2	df 1 N.S
<b>3</b>	<b>Religion</b>							
	a) Hindu	64	63.3	24	63.2	14	36.8	5.99
	b) Christian	16	16.7	4	40.0	6	60.0	df 2
	c) Muslim	20	20.0	3	25.0	9	75.0	S
	d) Others	00	0.0	0	0.0	0	0.0	
<b>4</b>	<b>Educational Qualification</b>							
	a) Illiterate	07	6.7	4	100	0	0.0	11.8
	b) Primary school	23	23.3	9	64.3	5	35.7	df 3
	c) High school	34	33.3	12	60.0	8	40.0	S
	d) PUC	30	30.0	6	33.3	12	66.7	
	e) Degree and above	06	6.7	0	0.0	4	100	
<b>5</b>	<b>Marital Status</b>							
	a) Married	70	70.0	26	61.9	16	38.1	5.8
	b) Unmarried	30	30.0	5	27.8	13	72.2	df 1
	c) Divorced	00	0.0	0	0.0	0	0.0	S
<b>6</b>	<b>Total work Experience</b>							
	a) 1-3 years	14	13.3	5	62.5	3	37.5	8.2
	b) 3-5 years	46	46.7	19	67.9	9	32.1	df 2
	c) 5 years and above	40	40.0	7	29.2	17	70.8	S
<b>7</b>	<b>Nature of Work</b>							
	a) Mason	20	20.0	5	41.7	7	58.3	0.6
	b) Helper	80	80.0	26	54.2	22	45.8	df 1 N.S
<b>8</b>	<b>Monthly Income</b>							
	a) Rs.2000/- Rs. 4,000	16	16.7	6	60.0	4	40.0	4.5
	b) Rs. 5,000/- Rs. 7,000/-	65	65.0	22	56.4	17	43.6	df 3
	c) Rs. 8,000/- Rs. 10,000/-	14	13.3	3	37.5	5	62.5	N.S
	d) Rs. 10,000/- and above	05	5.0	0	0.0	3	100.0	
<b>9</b>	<b>Which among the following hazards did you have?</b>							
	a) Crush injuries	08	8.3	3	60.0	2	40.0	1.8
	b) Fatigue	21	21.7	8	61.5	5	38.5	df 4
	c) Muscle cramps	28	28.4	7	41.2	10	58.8	N.S
	d) Backache	33	33.3	11	55.0	9	45.0	
	e) Skin infection	10	8.3	2	40.0	3	60.0	
	f) Head injury	00	0.0	0	0.0	0	0.0	
<b>10</b>	<b>Source of Information</b>							
	a) Hospital	16	16.7	6	60.0	4	40.0	1.9
	b) Mass media-T.V, Journals, Newspaper etc.	33	33.3	9	45.0	11	55.0	df 3
	c) Friends and relatives	26	26.7	7	43.8	9	56.3	N.S
	d) No Information	25	23.3	9	64.3	5	35.7	

N.S-Not Significant S- Significant at P&lt;0.05 level

Table No 7 shows the association of knowledge level of construction workers towards occupational health hazards before administering the structured protocol with their selected socio-demographical variables, using Chi square test. The analysis revealed that there is significant association was found with **religion, educational qualification, marital status and total work experience** at  $p < 0.05$  and no association found with other demographic variables of construction workers.

## V. CONCLUSION

The major findings of the study revealed that, majority of construction workers 80 (80%) had inadequate level of knowledge about occupational health hazards and their prevention, whereas 20 (20%) of construction workers had moderate level of knowledge and none of construction workers had adequate knowledge regarding occupational health hazards and their prevention before administration of planned teaching programme. However, significant increase in the post-test knowledge score of construction workers after the administration of planned teaching programme. The post test data revealed that, majority of construction workers 66.7 (66.67%) had average level of knowledge about occupational health hazards and their prevention whereas 33.3 (33.33%) of construction workers had moderate level of knowledge and none of construction workers had inadequate knowledge regarding occupational health hazards and their prevention after administration of planned teaching programme. From the data analysis and findings of the present study, it is concluded that there is significant difference between the pre-test knowledge level and post-test knowledge level of construction workers regarding occupational health hazards and their prevention. The mean knowledge score of 60 construction workers during the pre-test was 39.3% where as it had increased up to 76.0% during the post-test as an effectiveness of planned teaching programme. Therefore, the difference assessed was 32.3% between pre-test and post-test. Hence on-going teaching and health education programs can further improve the knowledge of construction workers.

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