

## “Effectiveness of Self Instructional Module on Knowledge Regarding Prevention and Management of Occupational Health Hazards Among Marble Factory Workers In Selected Marble Factories At Udaipur city, Rajasthan”

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**Abstract**– A Pre experimental One group pre-test post-test study to assess the effectiveness of self instructional module on knowledge regarding prevention and management of occupational health hazards among marble factory workers in selected marble factories at Udaipur, Rajasthan The sample consisting of 200 marble factory workers in selected marble factories at Udaipur by using convenient sampling technique method. The tool comprised of by using structured knowledge questionnaire. The pretest was conducted and the self instructional module was administered .The post test was conducted after one week .The data obtained were analyzed by using differential and inferential statistics. The mean score of post-test knowledge 27.58 )86.18 (%was apparently higher than the mean score of pre-test knowledge 13.69 )42.78 (% , suggesting that the self instructional module was effective in increasing the knowledge of the marble factory workers regarding prevention and management of occupational health hazards .The mean difference 5.14 between pre-test and post-test knowledge score of the marble factory workers was found to be significant.

**Key words** –Marble factory workers, and prevention and management of occupational health hazards Pre experimental research design (One group pre –test post –test.)

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### I. Introduction

Occupational health is a multidisciplinary activity aimed at the protection and promotion of the health of workers by preventing and controlling occupational diseases and accidents and by eliminating occupational factors and conditions hazardous to health and safety at work. The development and promotion of healthy and safe work, work environments and work organizations. Occupational health has gradually developed from a mono-disciplinary, risk-oriented activity to a multi-disciplinary and comprehensive approach that considers an individual's physical, mental and social well-being, general health and personal development.<sup>1</sup> Occupational health hazards deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards. The health of the workers has several determinants, including risk factors at the workplace leading to cancers, accidents, musculoskeletal diseases, respiratory diseases, hearing loss, circulatory diseases, stress related disorders and communicable diseases and others. Employment and working conditions in the formal or informal economy embrace other important determinants, including, working hours, salary, workplace policies concerning maternity leave, health promotion and protection provisions, etc.<sup>2</sup> Individuals working in dusty environment face the risk of inhaling particulate materials that may lead to adverse respiratory effects. All construction sites generate high level of dust typically from concrete, silica, asbestos, cement, wood, stone, sand and the workers are exposed to this airborne dust. Dust and cement particles which are inhaled are lodged in the lung and causes lung irritation, mucus hyper secretion initially, followed by lung function impairment, lung inflammation chronic obstructive lung disease, restrictive lung disease and pneumoconiosis and so on. Street sweeping is associated with exposure to dust, during sweeping the streets with brooms, and by vehicular movement as well as other human activities raised several quantum of dust which are inhaled by the workers resulted in respiratory problems and lung cancer as well as other types of cancer.<sup>3</sup> Occupational health is concerned with health in it is relation to work and the working environment. Occupational health implies not only health protection but also health promotion, emergency care, wide range of preventive, curative services, rehabilitative services, a concept which includes everything that can apply to promote the health and working capacity of worker. Occupational

health nursing is concerned with the nursing component of comprehensive occupational health care and contributes health promotion, protection of the health of disabled workers. The nurses dealing with occupational health can play a major role in promotion, protection, prevention and control of diseases and disabilities.<sup>5</sup>

## II. Research Elaborations

Statement of problem –

"A study to assess the effectiveness of self instructional module on knowledge regarding prevention and management of occupational health hazards among marble factory workers in selected marble factories in Udaipur City, Rajasthan"

## III. Objectives

- [1]. To assess the pre - test knowledge score of the marble factory workers on prevention and management of occupational health hazards.
- [2]. To administer self instructional module for marble factory workers on prevention and management of occupational health hazards.
- [3]. To assess the post -test knowledge score of the marble factory workers on prevention and management of occupational health hazards.
- [4]. To determine the effectiveness of self instructional module on prevention and management of occupational health hazards.
- [5]. To find out the association between pre – test knowledge with selected socio demographic variable.

## IV. Hypothesis

**H<sub>1</sub>**- There is significant difference between the pre-test and post-test knowledge scores regarding prevention and management of occupational health hazards among marble factory workers

**H<sub>2</sub>**- There is significant association between pre-test knowledge score with selected socio demographic variables.

## V. Materials and Methods

Population – Marble factory workers.

Sample– Marble factory workers in selected marble factory at Udaipur, Rajasthan”.

Sample Size – 200 .

Setting –Ashoka Marbles, Jai Shree marbles art and Aravali Indian marbles at Udaipur Rajasthan.

The conceptual framework for the present study is based on WHO’s System Model

## VI. Research Design

The research design selected for the present study was a Pre- experimental research design (one group pre-test post-test research design)

| PRE-TEST                             | TREATMENT                   | POST –TEST                          |
|--------------------------------------|-----------------------------|-------------------------------------|
| )Dependent variable(<br>O1           | )Independent variable(<br>X | )Dependent variable(<br>O2          |
| Knowledge of marble factory workers. | Self instructional module.  | Knowledge of marble factory workers |

**Table 1** :Pre experimental one group pre and post-test research design

The interpretations of the symbol are as below:

O1 - Administration of pre-test knowledge questionnaire

O2 - Administration of post-test knowledge questionnaire

X - Intervention, treatment )independent variable( i.e. Self instructional module

## ETHICAL CONSIDERATION

After obtaining permission from research committee of Geetanjali College of Nursing, prior permission was obtained from Manager of Ashoka Marbles, Jai Shree marbles art and Aravali Indian marbles at Udaipur Rajasthan.Consent was taken from each participant who had participated in the study.

**DESCRIPTION OF THE TOOL**

The structured knowledge questionnaire consisted of two parts i.e .Part –I & II .

Part -I :consisted of 7 items on socio- demographic data such as age, gender, educational status ,habitat, monthly income, years of work experience, attended any seminar or workshop regarding occupational hazard, Source of information regarding occupational health hazards.

Part -II :consisted of 30 knowledge items .Each item was multiple choices in nature with 4 choices.

**SCORING**

The knowledge of marble factory workers regarding the outcomes of prevention and management of occupational health hazards was scored as follows, one mark for each correct answer and zero marks for incorrect answer .The maximum score was 30, to interpret level of knowledge the score was distributed as follows;

Interpretation of knowledge:

|                      |          |
|----------------------|----------|
| Level                | Range    |
| Inadequate knowledge | 0-50 %   |
| Moderate knowledge   | 51-75 %  |
| Adequate knowledge   | 76-100 % |

An answer key was prepared for scoring answer to the structured knowledge questionnaire.

**DATA COLLECTION AND DATA ANALYSIS**

The data was presented under the following sections

Section-I :Description of socio-demographic variables of the respondents.

Section-II :Findings related to knowledge scores of respondents on prevention and management of occupational health hazards

Section-III :Findings related to association between pre-test knowledge score and selected demographic variables of respondents.

**VII.Results**

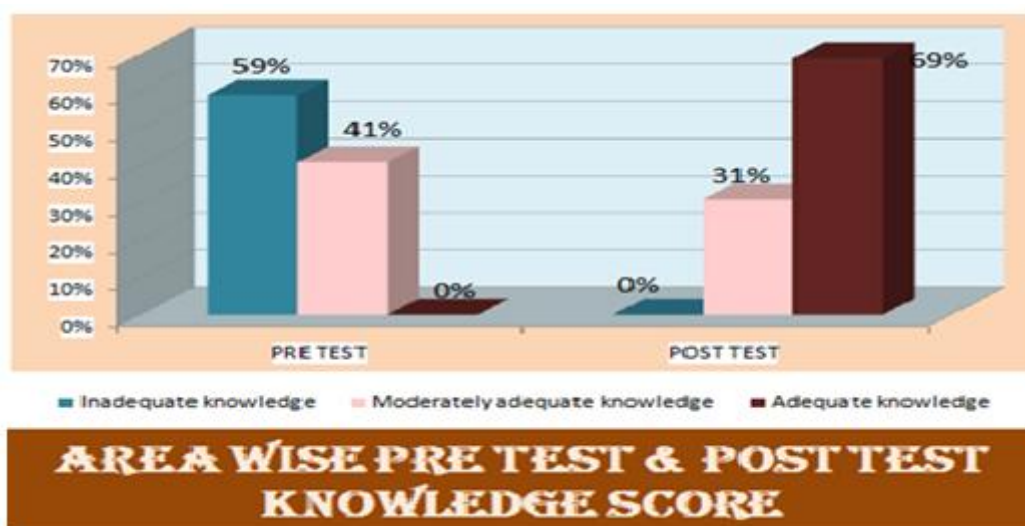
**Table 2:-** Area wise pretest and post test knowledge score of Respondents regarding prevention and management of occupational health hazards. N= 200

| Area of Knowledge  |    | Pre-test   |        |      | Post-test |        |      |
|--|----|------------|--------|------|-----------|--------|------|
|  |    | Mean score |        |      |           |        |      |
| Introduction And Definition of Occupational Health Hazards | 2  | 1.48       | 37     | 0.48 | 2.62      | 65.50  | 1.03 |
| Incidence And Prevalence                                   | 2  | 0.59       | 29.5   | 0.55 | 1.74      | 87.00  | 1.06 |
| Legislative And Laws                                       | 3  | 0.78       | 26     | 0.26 | 2.64      | 88.00  | 0.92 |
| Risk Factors And Causes                                    | 3  | 1.02       | 34     | 0.57 | 2.73      | 91.00  | 0.49 |
| Classification Of Occupational Health Hazards              | 8  | 3.78       | 47.25  | 0.33 | 7.06      | 88.25  | 0.78 |
| Prevention Of Occupational Hazards                         | 6  | 3.06       | 51     | 0.97 | 5.06      | 84.33  | 0.64 |
| Management Of Occupational Health Hazards                  | 6  | 2.98       | 49.66  | 0.52 | 5.73      | 95.5   | 0.83 |
| Total  | 30 | 13.69      | 274.41 | 3.68 | 27.58     | 569.58 | 5.75 |

Table 2: projected that in pre-test the mean percentage obtained by the respondents was 73.81% and SD=0.69 in the aspect of introduction to and definition of osteoporosis, mean percentage obtained by the respondents was 59.59% and SD=1.44 in the aspect of Causes and risk factors & mean percentage obtained by the respondents was 60.00% and SD=1.77 the aspect of signs and symptoms, the mean percentage obtained by the respondents was 61.42% and SD= 0.65 the aspect of Diagnostic evaluation and the mean percentage obtained by the respondents was 53.21% and SD=0.74 the aspect of Pathophysiology , the mean percentage obtained by the respondents was 55.00% and SD=0.5 in the aspect of complications, the mean percentage obtained by the respondents was 54.89% and SD=2.24 the aspect of prevention. Projected that in post –test the mean percentage obtained by the respondents was 87.61% and SD=0.55 in the aspect of Introduction and definition of osteoporosis, mean percentage obtained by the respondents was 75.71% and SD=0.06 in the aspect of Causes and risk factors & mean percentage obtained by the respondents was 77.85% and SD=0.55 the signs and symptoms, the mean percentage obtained by the respondents was 78.92% and SD=0.55 the aspect of Diagnostic evaluation and the mean percentage obtained by the respondents was 77.64% and SD=0.57 the aspect of Pathophysiology, the mean percentage obtained by the respondents was 70.71% and SD=0.46 the aspect of complication, the mean percentage obtained by the respondents was 72.69% and SD=1.6 the aspect of prevention.

**Table 3:-** Distribution of Respondents by the level of knowledge. N=200

| LEVEL OF KNOWLEDGE           | FREQUENCY |           | PERCENTAGE |           |
|------------------------------|-----------|-----------|------------|-----------|
|                              | Pre test  | Post test | Pre test   | Post test |
| Inadequate knowledge (0-50%) | 118       | 00        | 59         | 00        |
| Moderate knowledge (51-75%)  | 82        | 63        | 41         | 31.5      |
| Adequate knowledge (76-100%) | 00        | 137       | 00         | 68.5      |
| Total                        | 200       | 200       | 100        | 100       |



**Figure 1:** Distribution of Respondents by the level of knowledge.

**Table 3 & Figure 1:** represents the post test knowledge level of respondents regarding occupational health hazards. The result showed that 31 % of the respondents had moderately knowledge and 69 % of the respondents had adequate knowledge regarding occupational health hazards.

**Table 4:-** Effectiveness of self instructional module regarding prevention and management of occupational health hazards by comparing pre-test and post-test knowledge score of respondents. N=200

|           | Mean  | Mean Percentage (%) | SD   | Enhancement | Enhancement percentage (%) | df  | T     | Inference |
|-----------|-------|---------------------|------|-------------|----------------------------|-----|-------|-----------|
| Pretest   | 13.69 | 42.78               | 3.68 | 13.89       | 43.40                      | 199 | 19.34 | S         |
| Post test | 27.58 | 86.18               | 5.75 |             |                            |     |       |           |

**S = Significant**

**Table 4:-** The result reveals that the mean post test knowledge score 27.58(86.18 %) is greater than the mean pre test knowledge score 13.69 (42.78 %). The above table also depicts that the enhancement in the knowledge of respondents is 13.89 (43.40 %) supporting the post test knowledge score are higher than the pretest knowledge score. The data further represent that the ‘t’ value of 19.34 is significantly higher than the table value 1.96 at 0.05 level of significance. This indicates that there was difference in pre test and post tests knowledge score and further the data supports that self instructional module regarding prevention and management of occupational health hazards is effective in improving the knowledge score of respondents.

**H<sub>1</sub>** - There is a significant difference between the pre and post test knowledge score of marble factory workers on prevention and management of occupational health hazards. Hypothesis was tested at 0.05 levels. The calculated ‘t’ value 19.34 is significantly higher than the table value 1.96 at 0.05 level of significance. This indicates that there is significant difference between the pre test and post test knowledge score hence the hypothesis H<sub>1</sub> is accepted.

**H<sub>2</sub>:** There is a significant association between pre-test knowledge score regarding prevention and management of occupational health hazards with selected demographic variables. The Chi-square test was carried out to determine the association between the pre test knowledge score and demographic variables such as demographic data such as age, gender, educational status, habitat, monthly income, years of work experience, attended any seminar or workshop regarding occupational hazard, Source of information regarding occupational health hazards. Out of which age, gender, educational status, habitat, monthly income, years of work experience, attended any seminar or workshop regarding occupational hazard, Source of information regarding occupational health hazards

were found to be significantly associated with pre test knowledge at 0.05% level. Hence research hypotheses H<sub>2</sub> is partially accepted.

### VIII. Conclusion

This study concludes that there is improvement in the level of knowledge of marble factory workers which indicates that the self instructional module was effective. The demographic variables of marble factory workers significantly associated with the pre test knowledge score. The development of self instructional module will help the marble factory workers to enhance their knowledge.

### Reference

- [1]. Occupational health for all. In: Biological monitoring of chemical exposure in the workplace, Vol. 2, Geneva, World Health Organization, 2006 available at [http://www.who.int/occupational\\_health/regions/oehemhealthcareworkers.pdf](http://www.who.int/occupational_health/regions/oehemhealthcareworkers.pdf)
- [2]. Jeyaratnam J, Koh D. Textbook of occupational health, Singapore, World health organization, 1996. available at [http://www.who.int/topics/occupational\\_health/en/](http://www.who.int/topics/occupational_health/en/)
- [3]. Rom WN, ed. Environmental and occupational medicine, 3rd ed. Philadelphia, Lippincott Williams & Wilkins, 2008.
- [4]. TNAI. A community Health Nursing Manual. 3rd edition (TNAI Publication 1998).
- [5]. Gullani K K. Occupational health nursing. Community health nursing, principle and practices, first edition (Kumar publishing house 2005).

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