International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2020): 7.803

A Study to Assess the Effectiveness of Structured Teaching Program on Knowledge Regarding the Silicosis among the Workers Working in Selected Stone Industries at Bharatpur

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Abstract: ***"Pneumono ultramicroscopic silicovolcanoconiosis" is the disease with world's lengthiest name. It is a lung disease caused by the inhalation of very fine silica dust, causing inflammation in the lungs. This condition is normally known as Silicosis. Silicosis has been a human scourge since antiquity. In 1870, Visconti introduced the term silicosis, derived from Latin silex, or flint. The research approach used for the study was an explorative approach one group pretest and posttest quasi experimental design was used to evaluate the effectiveness of structured teaching programme regarding silicosis among industrial workers in selected stone industries in Bharatpur. Random sampling is a probability sampling which involves selection process stone industries in Bharatpur. The analysis of level of knowledge of subjects regarding silicosis shows that in the pretest 23 (38.33%) subjects had inadequate knowledge, 14 (23.33%) subjects had adequate knowledge, 23 (38.33%) subjects had good knowledge. Where as in post test 19 (31.66%) subjects had good knowledge and 41 (68.33%) subjects had very good knowledge regarding silicosis. The calculated "t" value (t59=15.623) was greater than the table value at 0.001 level of significance. Therefore, the research hypothesis H1 was accepted at 0.001 level of significance, association between pretest knowledge and selected baseline variables shows that there was significant association between pretest knowledge and gender (p<0.05). There was no significant association between pretest knowledge and other variables such as age, marital status, education, years of experience, monthly income, section of working and awareness regarding silicosis (p>0.05).***

Keywords: Knowledge, silicosis, stone industries

1.Introduction

Silicosis is one of the oldest occupational diseases known to man. This is caused by inhalation of dust containing free crystalline silica. It is irreversible and the disease progresses even when exposure stops. Silicosis is preventable. However, it continues to pose a very real threat to some people on a daily basis and still kills thousands around the world every year.4 Crystalline silica, or silicon dioxide (SiO2), is the basic component of sand, quartz and granite rock. The three most common forms of crystalline silica encountered in industry are quartz, tridymite, and cristobalite. Silica is also found in sandstone, flint, slate and many common building materials including clay bricks, concrete, mortar and tiles. Silica causes disease when workers breathe in tiny silica particles released into the air with the dust created by cutting, grinding, drilling or blasting rocks.

Need for study: A study by Mohan and Patel (1992) in Northern India, an annual incidence of 17 million injuries per year, (2 million moderate to serious) and 53, 000 deaths per year in agriculture sector alone was estimated. A report by National Institute of Occupational Health [1999], records more than 3 million people working in various type of mines, ceramics, potteries, foundries, metal grinding, stone crushing, agate grinding, slate pencil industry etc. These workers are occupationally exposed to free silica dust and are at potential risk of developing silicosis. There are very few epidemiological studies on silicosis in India where the prevalence of silicosis varies from 3.5% in ordnance industries to 54.6% in slate pencil industry. The varying prevalence in various sectors is attributed to the silica concentration in the work environment and duration of exposure to Silica. Silicosis is the oldest recorded chronic challenging public health problem globally and particularly in developing countries. Disease silicosis is not curable. silicosis is the only option for its control. Community awareness towards silicosis becomes more important tool in this situation. There are many more factors which influence the control activities of this disease in the communities. Awareness and practices about the disease among the quarry workers are the most important factors.

2.Objectives of the Study

1. To determine the pre-test knowledge regarding the silicosis among the workers working in selected stone industries at Bharatpur
2. To determine the post-test knowledge regarding the silicosis among the workers working in selected stone industries at Bharatpur.
3. To evaluate the effectiveness of the structured teaching program regarding the silicosis among the workers working in selected stone industries at Bharatpur.
4. To find the association of pre-test knowledge score of the workers regarding the silicosis with selected demographic variables among the workers working in selected stone industries at Bharatpur.

3.Methodology

Research approach: Research approach is systematic, controlled empirical and critical investigation of natural phenomena guided by theory and hypothesis about the presumed relations among the phenomena. The research approach used for the study was an explorative approach.

Research design: One group pretest and posttest quasi experimental design was used to evaluate the effectiveness of structured teaching programme regarding silicosis among industrial workers in selected stone industries in Bharatpur.

Setting: Setting is a physical location in which data collection takes place in a study the setting of the study was at stone industries in bayana Bharatpur.

Variables: Research variables are concepts at various levels of abstraction that are measured, manipulated and controlled in the study.

Independent variable: In this study, the structured teaching programme on silicosis is the independent variable.

Dependent variable: the dependent variable is the knowledge of stone industries worker on silicosis.

Population: Stone industries workers are the population of the study.

Sampling technique: Researcher selected workers from stone industries by using the simple random sampling technique.

Sample and Sample size: The present study was conducted among 60 stone industries worker from a stone industries in Bayana Bharatpur.

Sampling criteria:

Inclusion criteria

Industrial workers between the ages of 20-50 Years.
Industrial workers with minimum 3 years of job exposure.
Industrial workers who are willing to participate in the study

Exclusion criteria

Industrial workers who are not willing to participate in the study.
Industrial workers who are not available at the time of study
Industrial workers who have any psychiatric problems or sensory impairment

4.Result

Analysis of data is organized and presented under the following sections:

Section i: Analysis of baseline characteristics of subjects.

Section ii: Analysis of level of knowledge of subjects regarding silicosis. SECTION III: Analysis of effectiveness of structured teaching programme on knowledge regarding silicosis.

Section iii: Association between pretest knowledge and selected baseline variables.

Aspect wise pretest and posttest knowledge regarding silicosis.

S NO	Aspect wise knowledge	Maximum score	Pretest		Posttest	
			mean	SD	mean	SD
1	Anatomy and physiology of lungs	6	1.05	0.811	1.7	0.497
2	Causes	7	2.1	1.446	5.1	1.020
3	Signs and symptoms	4	1.18	0.965	2.78	0.884
4	Diagnosis	3	1	0.882	2.3	0.849
5	Prevention and management	10	4.3	2.264	7.98	1.431

Mean SD and t value of Pretest and Posttest Knowledge score of subjects

Knowledge score	Mean	MD	SD	„t" value	Df	P value
Pretest	9.63	10.500	5.205	15.623	59	<0.001*
Posttest	20.13					

(N=60)
* Significant (P<0.001 levels)

5.Conclusion

The findings of the study revealed that there was a significant gain in the knowledge of stone industrial worker regarding silicosis following structured teaching programme. The study also revealed that, there was significant association between pretest knowledge and gender. There was no significant association between pretest knowledge and other variables such as age, marital status, education, and years of experience, working section and pre test knowledge score.

References

[1] Saiyed N, Tiwari R. Qccupational health research in India. Industrial health. Febrauary 2004 (42); 141-148
[2] Pollution and environmental sciences. Recent research in science & technology.2010, 2 (3); 50-57.
[3] Wragner Norbert. Safety and health in stone crushing industry. A practical manual for preventing accidents.2009, 9-12
[4] Nwibo AN. Ugwuja EI. Nwambuke NO. Pulmonary problems among quarry workers of stone crushing industrial site. International journal of occupation and health. Envt medicine; 2012. oct. volume: 3 (4)
[5] Article related to Silicosis. [homepage on the Internet].2011 [cited 2011 Nov 14]. Available from: http://www.en.wikipedia.org
[6] Article related to complications of Silicosis and their prevention. [homepage on the Internet].2011 [cited

2011 Nov 14]. Available from: http://www.en.wikipedia.org
[7] Article related to Air sampling and prevention of Silicosis. [homepage on the Internet].2011 [cited 2011 Nov 14]. Available from: http://www.en.wikipedia.org
[8] S. P. Yadav. Silica induced occupational disorders. journal of occupational health [homepage on the Internet].2003 [cited 2011 Sep 1]; 186 (1) Available from: http://www.ncbi.nlm.gov/pubmed.com.
[9] Bela Shah. Involvement of lung and lung function tests in stone quarry workers. Indian journal of Tuberculosis [homepage on the Internet].2011 [cited 2011 Oct 6]. Available from: http://www.ncbi.nlm.gov/pubmed.com.
[10] Saiyed HN, Tiwari RR. Occupational health research in India. Indian health [homepage on the Internet].2004 [cited 2011 Apr 5]; 42 (2): Available from: http://www.ncbi.nlm.gov/pubmed.com.
[11] Bakan ND, Ozkan G, Camsari G. Silicosis in denim sandblasters.chest. [homepage on the Internet].
[12] 2001 [cited 2011 Nov 3]. Available from: http://www.ncbi.nlm.gov/pubmed.com
[13] Tiwari RR, Narain R, Sharma YK. Comparison of respiratory morbidity between present and ex-workers. Indian journal of occupational and environmental medicine [homepage on the Internet].2009 [cited 2011 Sep 22]; 24 (8) Available from: http://www.ncbi.nlm.gov/pubmed.com.
[14] Nasrullah M, Mazurek JM, Wood JM. Silicosis mortality with respiratory tuberculosis in the United States. American journal of epidemiology [homepage on the Internet].2010 [cited 2011 Oct 3]; 76 (2) Available from: http://www.ncbi.nlm.gov/pubmed.com.
[15] Kurihara N, Wada O. Silicosis strongly increases lung cancer risk in silica-exposed workers. Indian health [homepage on the Internet].2004 [cited 2011 Jul 2]; 22 (5) Available from: http://www.ncbi.nlm.gov/pubmed.com.