

Effectiveness of Self Instructional Module (Sim) on Knowledge of Automobile Mechanics Regarding Occupational Safety at Selected Workshops in Hubballi

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Abstract

A study was conducted to evaluate the effectiveness of self instructional module on knowledge of automobile mechanics regarding occupational safety at selected workshops in Hubballi. Totally 50 automobile mechanics were selected by non probability purposive sampling technique. The Knowledge was assessed by using structured knowledge questionnaire. The study results reveal that during pre test, 38(76%) mechanics had inadequate knowledge, 12 (24%) had moderate knowledge regarding occupational safety. After introduction of Self Instructional Module all automobile mechanics (100%) had adequate knowledge. The paired 't' test value revealed that the gain in the knowledge is statistically significant at 5% level. The χ^2 value revealed that the gain in knowledge and socio demographic variables is independent. The study findings concluded that Self Instructional Module on occupational safety is effective in improving knowledge of automobile mechanics.

Keywords: Self Instructional Module; Occupational Safety; Automobile Mechanics; Workshops.

Introduction

India is a vast country with a huge population. As in many parts of the world, 'health' is synonymous with curative services. The majority of the working population belongs to the unorganized sector, which is not in the purview of current legislation in occupational health. Further, the working population being largely illiterate is unaware of the hazards associated with their occupation [1]. Creating awareness in prevention of industrial hazards is the need of the hour as they play an important role in their prevention. The magnitude of mortality and morbidity due to occupational disease can be prevented by imparting knowledge regarding

occupational health hazards to the workers and helps them to take precautionary measures [2].

We all know mechanics have a hard job. It's loud and full of dangers. Automobile mechanics work with heavy equipment and caustic chemicals they face a number of safety hazards every time they go to work [3]. Mechanics are exposed to a wide range of chemicals that include heavy metals such as the ones contained in brake fluids, detergents, lubricants, degreasers, paints, metal cleaners, solvents and fluids. Constant exposure to these chemicals will lead to chronic poisoning [4].

According to WHO, the leading occupational causes of death among risk factors are unintentional injuries (41%) followed by COPD (40%) and cancer of the trachea, lung (13%) [4]. According to ILO in 2009 one worker dies in 15 sec. 6,300 workers dies daily, asbestos kill 1,00,000 people and other hazardous chemicals and substances kill 3,50,000 every year. Over 2.3 million deaths occur due to accidents and around 337 million workers injured in workplace accidents [5].

Proper training is one of the best ways to prevent accidents and injuries in auto shops. Every shop should have a formal safety training programme that every employee must complete. The safety programme should include information on wearing

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personal protective equipment, identifying workplace safety hazards, reducing the risk of electrocution, working with hazardous chemicals, and procedures for reporting safety hazards to management [3]. Hence study has been conducted to evaluate the effectiveness of Self Instructional Module regarding occupational safety on knowledge of automobile mechanics.

Objectives of the Study

1. To assess the knowledge of automobile mechanics regarding occupational safety.
2. To evaluate the effectiveness of Self Instructional Module on knowledge of automobile mechanics regarding occupational safety.
3. To find an association between pre test level in knowledge of automobile mechanics regarding occupational safety with their selected demographic variables.

Methodology

Research Approach

Evaluative research approach

Research Design

Pre-experimental one group pre-test post-test design

Sampling Technique

Non probability; purposive sampling technique

Sample Size: 50

Setting of the Study

Selected automobile workshops in Hubballi

Tool Used

Structured knowledge questionnaire to assess the

knowledge regarding occupational safety among automobile mechanics.

Section I: Socio demographic variables

Section II: Knowledge items on occupational safety

Procedure of Data Collection

The written consent was obtained by subjects. The pre test includes structured knowledge questionnaire to assess the knowledge of subjects. Self Instructional Module was administered at the end of the pre test. The post test of the study was carried out 7 days later, using the same tool as the pre test. Data collected was then tabulated and analyzed.

Results

The Findings Related to Socio-Demographic Variables of Subjects

Majority 76% (38) of the subjects were in the age group of 20 – 30 years, Majority 84% (42) of the subjects were males, Majority 82% (41) of the subjects were pursued I.T.I, Majority 70% (35) of the subjects were married, Majority 72% (36) of the subjects were belong to Joint family, Majority 80% (40) of the subjects were belongs to Hindu religion, Majority 52% (26) of the subjects had 0 – 5 years of experience, Majority 46% (23) of subjects had monthly family income between Rs. 15,001 – 20,000, Majority 78% (39) of subjects had habit of smoking, Tobacco chewing and Majority of 56 % (28) subjects were receiving information from mass medias

Analysis and Interpretation of Knowledge Scores of Automobile Mechanics Regarding Occupational Safety

Table 1 reveals that the percentage of gain in knowledge scores in the area of General preventive measures was 35.54, prevention of mechanical injuries was 25.96, prevention of asbestos exposure was 27.02, prevention of Diesel Engine Exhaust Emissions was 44.02, prevention of Lead Exposure was 42.29 and Effects of Welding light Exposure was 43.66.

Table 1: Pre test and post test percentage of knowledge scores of subjects in different items of occupational safety n=50

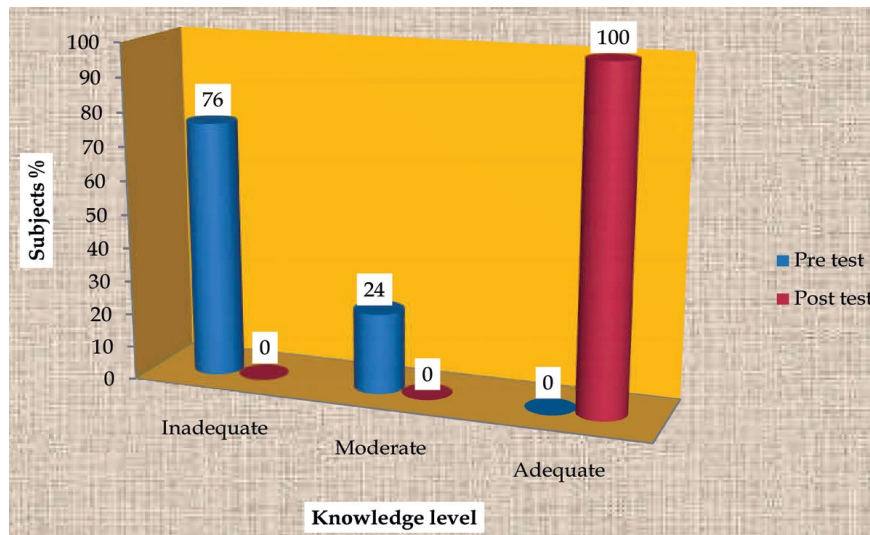
SI. No.	Items on Occupational safety	Mean % of knowledge scores of subjects		
		Pre test (x)	Post test (y)	Gain in Knowledge
1	General preventive measures	63.24	98.78	35.54
2	Prevention of mechanical injuries	52.36	78.32	25.96
3	Prevention of a sbestos Exposure	45.63	72.65	27.02

4	Prevention of Diesel Engine Exhaust Emissions	35.23	79.25	44.02
5	Prevention of Lead Exposure	38.21	80.50	42.29
6	Effects of Welding light Exposure	48.67	92.33	43.66

Table 2: Reveals that in pre test majority of subjects 38 (76%) had inadequate knowledge; 12 (24%) had moderate knowledge, where as in post test all subjects 50 (100%) had adequate knowledge

Knowledge score	Pre test		Post test	
	Frequency	%	Frequency	%
Inadequate	38	76	00	00
Moderate	12	24	00	00
Adequate	00	00	50	100

Table 2: Reveals that in pre test majority of subjects 38 (76%) had inadequate knowledge; 12 (24%) had moderate knowledge, where as in post test all subjects 50 (100%) had adequate knowledge



Graph 1: Cylindrical graph shows the percentage distribution of knowledge scores of subjects regarding occupational safety

Analysis and Interpretation of Data to Evaluate the Effectiveness of Self Instructional Module on Knowledge of Automobile Mechanics Regarding Occupational Safety

Paired "t" test_(cal) value 14.28 is greater than Paired "t" test_(tab) value, hence the Self Instructional Module is more effective to increase the knowledge of automobile mechanics regarding occupational safety.

Analysis and Interpretation of Data to Find out Association between Pretest Knowledge Scores with Selected Demographic Variables

Since χ^2_{cal} value < χ^2_{tab} value. Hence, there is no association between pre test knowledge and selected demographic variables.

Conclusion

The following conclusions were drawn on the basis of the findings of the study

1. Overall pre test knowledge scores about occupational safety was inadequate
2. There was a need for Self Instructional Module for automobile mechanics on occupational safety
3. Post test results showed that there was significant gain in knowledge of automobile mechanics regarding occupational safety. Thus it can be concluded that Self Instructional Module is effective to improve the knowledge of automobile mechanics regarding occupational safety.
4. Study results revealed that there is no association between pre test knowledge and socio demographic variables.

Recommendations

1. A replication of present study can be conducted with a larger population to generalize the findings.
2. A descriptive study can be conducted to assess the knowledge, attitude and practice of automobile mechanics regarding occupational safety with larger sample.
3. Manuals and information booklets may be developed to enhance knowledge regarding occupational safety.
4. A structured teaching programme on occupational safety can be used to improve the knowledge.

References

1. Occupational Health and Services – Indian Scenario [online]. Available from: <http://www.amrc.org.hk/system/files/Occupational%20status%20report%20-%20India.pdf> (Occupational status).
 2. Dr.Kasthurisundar Rao.An introduction to community health nursing.4th edition.B.I publication private limited.Chennai.2004.P-708.
 3. A resource guide to workplace safety for mechanics [online]. Availablefrom: www.partsgreek.com/mmpart/resource_guide_to_workplace_safety.htm.
 4. Marisol Concha-Barrientos et.al. Selected occupational risk factors. Available from:www.occup.WHO.pdf.
 5. International Labor Organization. Online article [2009]. Available from: www.safety-security-crazy.com.
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