



PREVENTION OF OCCUPATIONAL HEALTH HAZARDS AMONG AUTOMOBILE MECHANICS IN PUNE

Health Science

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ABSTRACT

Aims:To assess the effectiveness of planned teaching programme on occupational health hazards in relation to knowledge and practices of automobile mechanics.

Material and Methods: Pre-experimental research study was carried out from Jan - May, 2018, sample size was 100. Pre-tested, validated structured questionnaires and checklist was used to collect the data. Purposive sampling technique was used. The data analyzed using the Statistical Package for the Social Sciences (SPSS) version 21.

Results: The average age of the participants found 24.6 years. Gross negligence was found (64%) among mechanics in regards to use of PPE. Planned teaching programme was found effective. Paired t-test applied for comparison of pretest and post knowledge and practice score. P value (<0.05) null hypothesis is rejected.

Conclusions: Study found that level of education is very low among automobile mechanics. It is desirable to impart training and education education to them.

KEYWORDS

Occupational Hazards; Automobile Mechanics; Structured Teaching Program.

INTRODUCTION:

Recently industrialization and urbanization are changing the Indian occupational morbidity drastically (ILO -2016). According to International Labour Organization (ILO) work has become more dangerous than before. ILO estimates that 317 million workers are victim of accident & work related disease (ILO -2016). Occupational hazards poses major public health problem resulting in serious social & economic consequences. In India only 8.8% enjoy benefits of labor welfare which ensure safe and better working condition (Pandve - 2008). Occupational accident are grossly under reported in India, Statistics show that 23 injuries per 1000 factory workers (Joshi Sonopant 2007). This figure far exceeds in automobile sector. Unshielded machinery, unsafe structure in work place, sharp tools, and electrical hazards are some of the most prevalence work hazard in developing countries. Several studies in developing & developed countries have shown that accidents emerge as a significant occupational health problem. The main reasons were illiteracy of workers, inadequate knowledge of health hazards & unavailability of preventive measures (Vyas -2011). Occupational accident is very common in road side automobile workshop most of the accident are related to finger, hand, head, eye, palm and leg. Most of the accident are not reported to appropriate authority. Major cause of under reporting is due to very low awareness among workers occupational safety and health is a becoming major challenge in automobile sector because of lack of supervision, lack of training and education as well as carelessness of workers (Thangaraj S. 2017). In view of this a study was conducted to assess the effectiveness of structured teaching programme on knowledge and practice regarding selected occupational health hazards and its prevention among automobile mechanics, in Pune city.

MATERIAL AND METHODS:

Study Design/ Population

This study was conducted in Pune city, Maharashtra (INDIA). A pre-experimental research study was carried out in May, 2018 involving automobile mechanics in the Pune city, in Maharashtra, India research approach adopted for the study was quantitative design. Sample size included was 100 automobile mechanics (two wheeler). Sampling technique used was non-probability purposive sampling. Two workshop was selected for the study and from each workshop 50 mechanics where enrolled. the exclusion criteria were being sick and workers absent on that period.

Data Collection and study variables

The study adopted pre-experimental, one group pretest posttest design. Study was conducted at selected road side automobile workshop. The interview schedule was prepared and semi-structure questionnaire were administered. The data collection tool was prepared, tool consists

of three section, section one consists of demographic data on age, gender, education status, job duration, total working hours per day. Training and awareness on occupational hazards. Section two consists of knowledge questionnaire having 21 items in semi-structure format. Scoring was done based on their correct and incorrect response. Correct response was given score one whereas incorrect response was given zero score, section three consists of practice checklist having 30 items. The face to face was interview conducted by the researcher at the workplace after obtaining sign written informed consent. Ethical approved obtained from institutional review committee. The structure interview schedule was followed by planned teaching session prevention of occupational health hazards at work. The content validity of tool and planned teaching programme was determined by 9 expert from various field. Reliability was conducted on 10 workers. Reliability of tool was tested by using test-retest method and it was found 80% (0.80) which is reliable. The data collection done on month of Jan-May 2018. A structure interview schedule was used to assess knowledge and practices of workers. verbal responses received from the respondent where filled into the data sheet, after administering pretest plan teaching was administered into two session and after one week of gap posttest was administered.

Statistical Analysis

Statistical analysis was done using Statistical Package for the Social Sciences (SPSS) version 20. Frequencies and percentage were reported for the demographic variable. Student t-test and chi-square test was applied to test the hypothesis at significant level of 0.05. All 50 participant were male mean age was found 24.64(SD=5.1) years

RESULTS:

Descriptive statistics

A total of 100 auto mechanics participated in the study. the mechanics from 23-25 years were in high majority i.e 46 (46%), 64 (64%) were a completed secondary education, 58 (58%) were completed diploma in automobile mechanic, none of the mechanic under gone any health and safety training programme, 44 (44%) were work related experience in 3-4 yrs, 72 (72%) were a monthly family income of Rs, up to 10000,

Knowledge and practices of auto mechanics

Of 100 automobile mechanics 62% reported that they were aware of occupational accident and hazards. Cuts and abrasion found most common hazards (57%) followed by electric hazards 47%, chemical 42%, and welding fumes 38%. Finding shows that 34% of automobile mechanics were aware of PPE used but unfortunately none of the mechanic found using PPE. Our result further showed that having work experience and education prior to joining work were not dependent factor for awareness of occupational health hazards.

Effectiveness Of Planned Teaching Programme On Prevention Of Occupational Health Hazards

The findings revealed that overall pretest mean knowledge score was 6.66 (31.71%) and posttest mean knowledge score found 14.1 (67.14%) it clearly indicated that planned teaching programme on prevention of occupational health hazards found effective. Knowledge of the mechanics improved drastically in view of planned teaching programme on them.

Effectiveness of planned teaching programme on prevention of occupational health hazards

The findings revealed that overall pretest mean practices score was 14.1 (47%) and posttest mean practices score found 16.92 (56.4%) it clearly indicated that planned teaching programme on prevention of occupational health hazards found effective. Practices of the mechanics improved drastically in view of planned teaching programme on them.

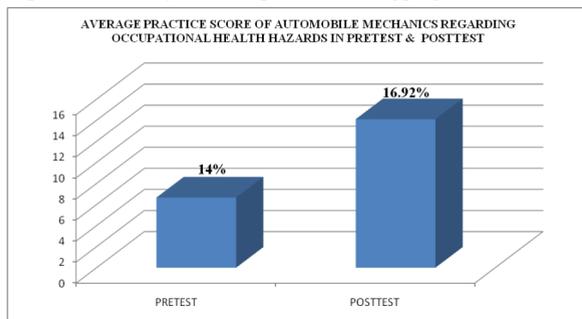


FIG II: Bar Diagram Showing The Average Practice Score Of Automobile Mechanics Regarding Occupational Health Hazards In Pretest & Posttest.

Further it was also observed that in the pretest poor knowledge shown among 66% of participant. whereas in the posttest none of the mechanics fall under category poor knowledge. Researcher applied paired t-test to verify the structure teaching programme on the knowledge and found that calculated value was greater than table value hence null hypothesis was rejected. Hence it is proved that structure teaching programme was significantly effective in improving the knowledge of automobile mechanics.

Association between demographic variables

Researcher tried to find out association of demographic variables with knowledge and practices of automobile mechanics, fortunately none of the demographic variables is associated.

DISCUSSION:

Occupational hazards and accident are common in all workshops. (OSH -2016) These minor and major injuries may cause damage to workers and work environment, it also affect national productivity and cumulative effect on social fabric. (Acharya -2014) Scientific knowledge on Occupational hazards in an unorganized structure it is need of hour. Researcher found that lack of information about safety and health on occupational hazards among the automobile mechanics. The study supports a study conducted by Selvi Thangaraj (Thangraj 2017) on occupational health hazards among automobile mechanics in an urban area of Bangalore. She further notice that there is need to understand risk factor of occupational health hazards. She also expressed concerned regarding appropriate training and education to the mechanics working in unorganized sector. This will increased workers efficiency and decreased absenteeism at work. (Thangraj 2017)

In the present study it was observed that study participant were only male. The study conducted by Sujana Maratha (Marahatta SB – 2018) in Nepal also found that no female worker is working in an unorganized automobile sector the reason may be this job involves predominantly involve masculine structure and female are rarely engaged in vehicle repairs. This result is consistent with finding from Ghana (Monney 2014 and Oranusi 2013) mean age of participant in current study was 24-64 years. Majority of were young and energetic. This finding resemble with the study conducted by Vyas (Vyas 2011)

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