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A study to assess effectiveness of health teaching programme on occupational hazards and safety practices among farmers in Erarumanaglam

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Abstract

The present aim was to assess the effectiveness of health teaching programme on occupational hazards and safety practices among farmers in Erarumanaglam. A quantitative approach with one group pretest and post test research design was used for the present study. by using non probability convenience sampling technique, a total of 50 farmers were selected. A Self structured questionnaire method was used to collect the both the demographic data and the existing level of knowledge on occupational hazards and safety health practices among farmers. The results of study revealed that, The mean score of existing level of knowledge was 27.37 with standard deviation 1.91 and the effectiveness of health teaching programme on occupational hazards and safety health practices was calculated using paired 't' test, value of $t = 15.653$ was found to be statistically highly significant at $p < 0.001$ level. The study concluded that there was significant difference in the existing level of knowledge on occupational hazards and safety practices among farmers after the health teaching programme.

Keywords: Occupational hazards, safety health practices, farmers

Introduction

Occupational health is essentially preventive medicine [1]. Consider the following facts from India: total population is 1.324 billion (2016); gross national per capital income (PPP) is 6490\$; life expectancy at birth (Male/Female) is 67.3/69.8 years; probability of dying under the age of five (per 1000 live births) is 48; total expenditure on health per capital is 75\$; and total expenditure on health as a percentage of GDP is 4.7 [2]. National Institute of Miners' Health (NIMH), an autonomous Institute under the Ministry of Mines, Government of India, conducts applied research in occupational health and hygiene and specializes in providing technical support services to mining and mineral-based Industry with special reference to the metalliferous sector and endeavours for safe mines and healthy miners through research and development. As per NIMH, the prevalence of pneumoconiotic opacities in chest radiographs in open cast mine workers in 2005 and 2011 were 5.7% to 12% and 5.3% to 13%, respectively [4].

In 2011, out of 101 workers in a stone mining area suffering from respiratory diseases, 73 suffered from silicosis, of whom 16 had silicosis with progressive massive fibrosis (PMF). A survey conducted in an underground metal mine has shown that almost 75% of mine workers had evidence of noise-induced hearing loss. In a recent survey conducted by NIMH in various mines, out of 117 HEMM (Heavy earth moving machinery), 100% dozers, 95% loaders, 90% dumpers and tippers, 15% excavators and 8% shovellers showed moderate to high health risks to operators due to whole-body vibrations. Of 48 HEMM operators, 85% complained of various musculoskeletal disorders related to back, shoulder, neck and knees. In India, major occupational diseases are pneumoconiosis (including silicosis, bagassosis, anthracosis and byssinosis), asbestosis, other chronic lung diseases, musculoskeletal injuries, noise-induced hearing loss, pesticide poisoning and accidents. Occupations related to construction, mining and agriculture have high levels of related diseases. Occupational health nurses are the largest single group of health professionals involved in delivery of health services at the workplace. They are at the front line in helping to protect and promote the health of working population [5].

The concept of occupational health nursing is new to India. It is non-existent in unorganized sectors. Even the public sector and private employers have not yet realized its importance.

Subsequent reviews of the policy and action programme is planned for once in five years. Assistance was taken from the report of the working group on occupational safety and health for the 11th and 12th five-year plans under the Ministry of Labour and Environment, Government of India. As per the data available, the number of working factories for the years 2003 to 2007 has increased by about 46% with the increase in average daily employment from 4.92 million to 8.02 million. The number of injuries also decreased by about 7% i.e. from 16,432 to 15,290; however, the fatalities during the period increased from 525 to 821. It may be noted that the frequency rate of injuries significantly reduced by about 30% during the above period. The number of reportable accidents in major ports from 2003–2007 decreased from 191 to 158 thus registering a decrease of about 17%. The number of fatal accidents also decreased from 29 to 23, thus registering a decrease of about 20% during the same period. Significant data on five yearly reviews of policy could not be gathered ^[10].

In India in 1998–99, the prevalence of silicosis was 6.2–34% in mica miners, 4.1% in manganese miners, 30.4% in lead and zinc miners, 9.3% in deep and surface coal miners, 27.2% in iron foundry workers, and 54.6% in slate-pencil workers. Prevalence of asbestosis was extended from 3% in asbestos miners to 21% in mill workers. In textile workers, byssinosis was as common as 28–47%. Nutritional status in terms of body mass indices (BMI) of the workers was also significantly low ^[10]. Despite the existing knowledge, the understanding of the effectiveness of occupational hazards and safety practices among farmers remains inadequate. This study focused on assessing the existing knowledge on occupational hazards and safety practices among farmers and to educate the farmers on occupational hazards and safety practices

The purpose of the study was

1. To assess existing level of knowledge on occupational hazards and safety health practices among farmers,
2. To determine the effectiveness of health teaching programme regarding occupational hazards and safety health practices,
3. To compare the pre-test and post test level of knowledge regarding impact of occupational hazards and safety health practices among farmers
4. To find the association between the post-test level of knowledge regarding occupational hazards and safety health practices among farmers with their selected demographic variables.

Methods and materials

A quantitative approach with one group pretest posttest design was used for the present study. After obtaining ethical clearance from the institutional ethical committee (IEC) of saveetha institute of medical and technical sciences and a formal permission from the health authorities of community area (erarumangalam). Total 50 samples were selected by using non probability convenience sampling

technique by investigator. The inclusion criteria for the study participants was farmers between the age group of 30 years and above, who were willing to participate in the study, who are available during the time of data collection, and are able to read, write and understand Tamil. The exclusion criteria for the study participants Farmer who were not willing to participate in research study and doesn't know Tamil. The purpose of the study was explained by investigator to each of the study participant and a written informed consent was obtained from them. The demographic data and the existing level of knowledge was collected by using self structured questionnaire. The collected data were tabulated analyzed using descriptive and inferential statistics. The sample characteristics were described using frequency and percentage. Chi-square used to associate the post test level of occupational hazards and safety health practices with the selected demographic variables.

Results and Discussion

Section- A: Demographic characteristics

Among 50 study participants, with regards to age 30(60%) were in the age group of 46 – 50 years, with regards to gender 30(60%) were male, with regards to religion 30(60%) were Hindus, with regards to educational status 36(72%) were illiterates, with regards to type of family 27(54%) belonged to joint family, with regards to marital status 25(50%) were widower, with regards to farming experience 48(96%) had less experience on farming, place of residence 32(64%) were residing in rural area, with regards to family history of occupational hazards 43(86%) had no family history of occupational hazards

Section B: Assessment of level of knowledge regarding impact of occupational hazards and safety health practices among farmers

The existing level of knowledge shows that in the pre-test, with regards to knowledge on impact 41(82%) had moderately adequate knowledge, 8(16%) had adequate knowledge and 1(2%) had inadequate knowledge regarding impact of occupational hazards among farmers whereas in the post test, most of them 49(98%) had adequate knowledge and 1(2%) had moderately adequate knowledge on impact of occupational hazards.

With regards to knowledge on safety health practices in the pre-test, 35(70%) had moderately adequate knowledge, 11(22%) had adequate knowledge and 4(8%) had inadequate knowledge whereas in the post test, most of them 49(98%) had adequate knowledge and 1(2%) had adequate knowledge.

The overall pre-test level of knowledge regarding impact and safety health practices on occupational hazards showed that most of them 40(80%) moderately adequate knowledge, 7(14%) had adequate knowledge and 3(6%) had inadequate knowledge whereas in the post test, most of them 49(98%) had adequate knowledge and 1(2%) had adequate knowledge.

Table 1: Frequency and percentage distribution of existing level of knowledge on regarding impact of occupational hazards and safety health practices among farmers.

Knowledge Domains	Pre-test						Post Test					
	Inadequate		Moderately Adequate		Adequate		Inadequate		Moderately Adequate		Adequate	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Impact	1	2.0	41	82.0	8	16.0	-	-	1	2.0	49	98.0
Safety health practice	4	8.0	35	70.0	11	22.0	-	-	1	2.0	49	98.0
Overall	3	6.0	40	80.0	7	14.0	-	-	1	2.0	49	98.0

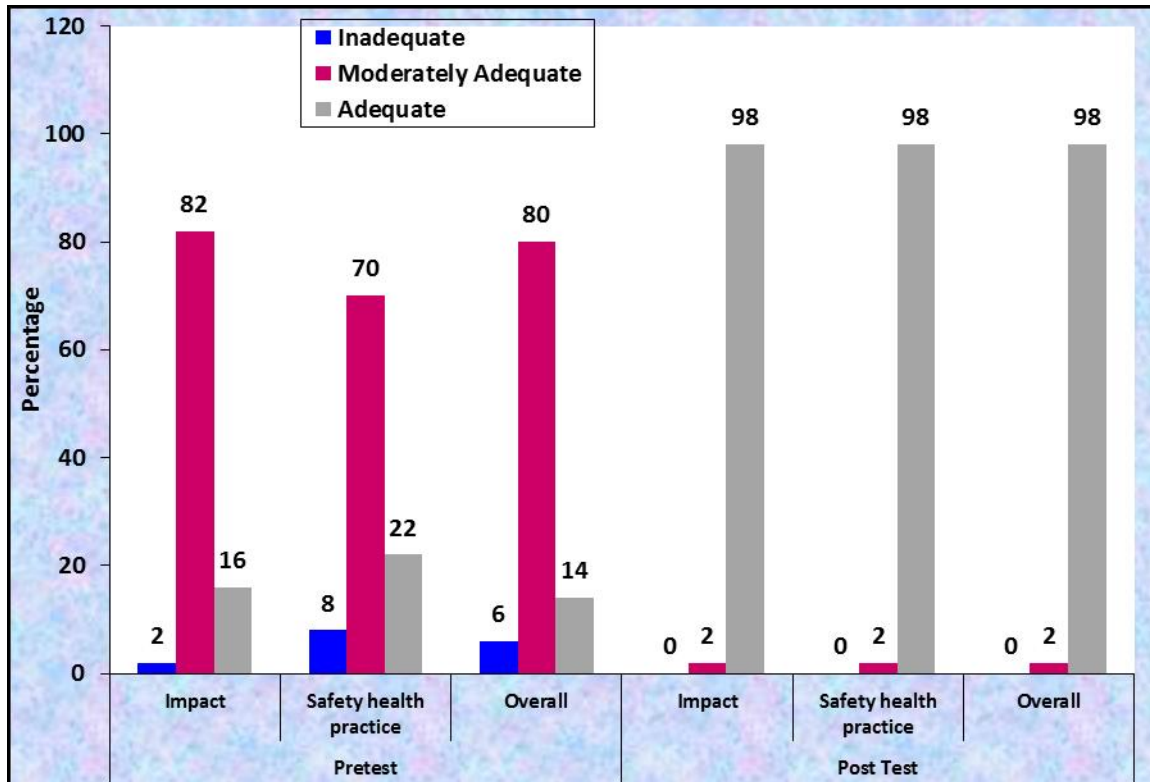


Fig 1: Percentage distribution of pre-test and post test level of knowledge regarding impact of occupational hazards and safety health practices among farmers

The present study findings was supported by Arasi Senthil, *et al.* (2015) a cross sectional design and total of 482 HCWs participated. Thirty nine percent did not recognize work-related health hazards, but reported exposure to at least one hazard upon further probing. Among the 81.5% who reported exposure to biological hazard, 93.9% had direct skin contact with infectious materials. Among HCWs reporting needle stick injury, 70.5% had at least one in the previous three months. Ergonomic hazards included lifting heavy objects (42%) and standing for long hours (37%). Psychological hazards included negative feelings (20.3%) and verbal or physical abuse during work (20.5%)^[12].

Section C: Effectiveness of health teaching programme on knowledge regarding impact of occupational hazards and safety health practices among farmers

In the present study, the pre-test mean score of knowledge on occupational hazards was 10.48±1.36 and the post test mean score was 13.98±1.04. The calculated paired‘t’ test value of t = 15.782 was found to be statistically significant at p<0.001 level.

The table 2 also depicts that the pre-test mean score of knowledge on safety health practices was 10.28±1.73 and the post test mean score was 13.34±1.27. The calculated paired‘t’ test value of t = 11.327 was found to be statistically significant at p< 0.001 level.

The overall pre-test mean score of knowledge was 20.76±2.67 and post test knowledge score was 27.32±1.91.

Table 2: The calculated paired‘t’ test value of t = 15.653 was found to be statistically significant at p< 0.001 level.

Knowledge	Test	Mean	S.D	Paired ‘t’ test Value
Occupational Hazards	Pre-test	10.48	1.36	t = 15.782 p = 0.0001 S***
	Post Test	13.98	1.04	
Safety Health Practices	Pre-test	10.28	1.73	t = 11.327 p = 0.0001 S***
	Post Test	13.34	1.27	
Overall	Pre-test	20.76	2.67	t = 15.653 p = 0.0001 S***
	Post Test	27.32	1.91	

***p< 0.001, S – Significant

Table 2 Frequency and percentage distribution of pre-test and post test level of knowledge regarding impact of occupational hazards and safety health practices among farmers.

The finding was supported by P. Lavanya Kumari, *et al.* (2013) conducted a descriptive cross - sectional study to assess the level of knowledge on impact and safety practices among 300 farmers including both the male and female

farmers. the findings of the study revealed that the good knowledge on safety use of pesticides is significantly influenced by education level of farm workers that reveals there is a significant correlation ($r = 0.525$; $p < 0.001$) between the knowledge score and the practice score on protective measures. 71.3% of the participants reported wearing protective clothes and special gloves; among them only 42.5% are practice the same, 86% reported wearing of special face mask; among them only 46.1% are wearing the special face mark while working, 81.3% reported not eating, drinking and smoking during application of pesticides but only 52.9% are practicing, out of 66.7% who reported reading and following label instructions only 48% are implementing that practice, 84.7% of the participants indicated that they used leftover pesticide solutions on the same day but only least percentage 33% are really doing, out of 55.0% of the participants who knew to not keep the leftover pesticide in a drinking container for later use only 35% are following. All most all (100%) participants stated that they wash hands after pesticide application and they used to wash contaminated clothes separately but only 45 to 50 percent are following, which shows the rigorous gap between knowledge and practice ^[11].

Section D: Association of post test level of knowledge regarding occupational hazards and safety health practices among farmers with their selected demographic variables.

The demographic variables age and family history of occupational hazards had shown statistically significant association with post test level of knowledge regarding occupational hazards and safety health practices among farmers at $p < 0.05$ level and the other demographic variables had not shown statistically significant association with post test level of knowledge regarding occupational hazards and safety health practices among farmers.

Conclusion

This indicates that there was significant improvement in the level of knowledge regarding occupational hazards and safety health practices among farmers which clearly infers that health education regarding knowledge on occupational hazards and safety health practices imparted to farmers resulted in a significant improvement in their post test level of knowledge

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