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PREVENTION OF LUNG CANCER AMONG CEMENT FACTORY EMPLOYEES

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Abstract

Background of the study:

The past two decades have witnessed revolutionary changes in the nature of the workplaces and the global economy. India is one of the competitive countries among other countries. Industrialization and globalization are changing Indian occupational morbidity drastically with an ever increasingly demand for a comfortable living. In recent days the numbers of industries are increasing. In India there are approximately 60 million workers over the age of 18 years are involved in various kinds of industrial works. Types of industries include cement factory, textile and cotton industries etc.

Lung cancer this has been known in industrial workers from the late 19th century. According to WHO reports between 1960 and 1980 the death rate due to lung cancer increased by 76% in men and by 135% in women (53 .36). At present lung cancer (Including cancers of the trachea and bronchus) is the most common cancer in the world with 51% of cases occurring in men. Globally, 85% of cases in men and 46% in women are due to smoking in developed countries the proportions are 91% for men and 62% for women and in developing countries 76% for men and 24% for women of present trends continue lung cancer is likely to be the most common fatal cancer in western women in 10 years or so out stripping even breast cancer. Lung cancer accounts for 6.8% of all malignancies in India.

Complete Title: "A STUDY TO EVALUATE THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ABOUT PREVENTION OF LUNG CANCER AMONG EMPLOYEES OF CEMENT FACTORY KALADAGI (TAL & DIST) BAGALKOT".

OBJECTIVES:

1. To assess the knowledge about prevention of lung cancer among cement factory employees.
2. To evaluate the effectiveness of planned teaching programme about prevention of lung cancer.
3. To find out the relationship between the pretest knowledge about lung cancer with selected socio-demographic variables.

CONCEPTUAL FRAMEWORK

For the present study the conceptual framework is used based on General systems theory by Von Lund wing Bertlantfy

METHOD

This was quasi experimental study with 50 subjects were selected through simple random sampling technique. One group pre test post test design was used.

Data was collected by means of a structured interview schedule which was divided into 2 sections (socio- demographic data and knowledge regarding prevention of lung cancer).The reliability of the tool was established by Split Half method. The Karl pearson's coefficient of correlation $r = 0.7999$. Planned teaching programme on prevention of lung cancer was developed. After content validity of the tool was established by six experts.

Data was analyzed by using descriptive and inferential statistical in terms of frequency, percentage, mean, standard deviation, student 't' test values.

RESULT

It was proved that there was increase in the knowledge level of employees after implementing planned teaching programme, thus planned teaching programme on prevention of lung cancer among cement factory employees was effective. Out of 50 subjects 29(48%) of subjects had satisfactory knowledge, 20(40%) subjects had a inadequate and only 01(2%) had adequate knowledge regarding prevention of lung cancer before teaching programme (pre test). However after teaching programme (post test) about 45(90%) subjects had an adequate knowledge and 5(10%) subjects had satisfactory knowledge regarding prevention of lung cancer.

CONCLUSION:

The study proved that Planned teaching programme on prevention of lung cancer among cement factory employees was scientific, logical and cost effective strategy.

KEY WORDS:Employees, prevention of lung cancer, planned teaching programme.

Introduction

Human body is the most beautiful and generous creation of God. It has the ability to adapt to the various situations provided, and vigorous climate conditions but sometimes, some conditions or factors, especially the one resulting from vigorous industrialization can harm it drastically and force it to death.

Ever since man appeared on this earth, he remained occupied with intentions to satisfy his basic needs. The nature of his occupation, which was initially simple and crude, has changed with growing needs and skills into more risky and dangerous. History bears testimony to the fact that as more centuries passed. Occupations become more and more varied, complex and demanding. Currently occupational environment in the industrialized world is challenging to the health and safety of man¹.

The aim of occupation health as stated by W.H.O (1953) is “The promotion and maintenance of the highest degree of physical, mental, social well being of the workers in all occupation the prevention among workers of departures from health caused by their working conditions; the protection of workers in their employment from risks resulting from factors adverse to health; the placing and maintenance of the worker in an occupational environment adapted to his physical and psychological equipment and to summarize the adaptation of work to man and of each man to his job”².

In the past, it was customary to think of occupational health in relation to factories and mines, hence the term “industrial hygiene” or “industrial health” were in vogue. The modern concept of occupation health now embrace all type of employment including mercantile and commercial and include the subjects of industrial hygiene, industrial disease, industrial accidents, industrial asthma, industrial rehabilitation and occupational psychology. It is essential to safe

guard the workers as well as to speed up the industrial production effectively³.

An industrial worker is exposed to the risk of occupational diseases and accidents, which create a feeling of physical, economic and social insecurity³⁸. Occupation cancers are concentrated among specific groups of the working population, for whom the risk of developing a particular form of cancer may be higher than for the general population. About 20-30% of the male and 5-20% of the female working population (people aged 15-64 years) may have been exposed to lung carcinogens during their working lives, accounting for about 10% lung cancers world wide⁴.

Cancer is emerging as a major problem globally both in more developed and in less developed countries. Annually there are over 10 million new cases of cancer and more than 6 million deaths occur due to cancer (12% of the deaths) throughout the world wide. The contribution of the developing world to this figure is more than half; by 2020 the number of new cancer cases is expected to reach at least 15 million a year and cancer deaths to 10 million a year⁵.

REASEARCH METHODOLOGY

REASEARCH APPORACH: Evaluative approach

REASEARCH DESIGN; Quasi Experimental that is one group pre test post test design

SCHEMATIC PRESENTATION OF REASEARCH DESIGN

R -----> **0₁** **X** **0₂**

R = Experimental Group

X = Administration of planned teaching programme

0₁ = Conducting pre – test

0₂ = Conducting post – test

VARIABLES:

A variable is any phenomenon or characteristics are attitudes under study. These are the measurable characteristics of concepts and consist of logical group of attitude.

a) Dependent variables:

These response behavior are outcome that researcher wishes to predict or explain. In the proposed study dependent variables are:

- ❖ Knowledge of cement factory employees regarding prevention of lung cancer.

b) Independent variables:

The treatment or experimental variable that is manipulated or varied by the researcher to create an effect on dependent variables.

In this study the planned teaching programme was independent variable.

c) Extraneous variables:

That exists in all studies and can affect measurement of study variable and the examination of the relationship with study. These extraneous variables are identified from the study area:

- ❖ Health professionals
- ❖ Mass media (News paper, radio, T.V etc)
- ❖ Family members, friends and relatives

d) Attributed variable:

Pre existing characteristics of study participants, which the researcher simply observe or measures. In this study the socio demographic variables such as age in years, gender, year of experience, educational status, religion, marital status, duration of work in hours per day, diet, and income per month. Since these are considered to influence the knowledge on prevention of lung cancer among cement factory employees

SETTING OF THE STUDY:

The study was conducted in a Keshav cement factory Kaladagi (Tal & Dist) Bagalkot. The researcher selected this setting for the following reasons.

- Availability of the sample.
- Familiarity with the setting.

Economic feasibility for conducting the study.

POPULATION:

The target population of the study is the employees working at cement factories of Bagalkot District.

The accessible population of the study is the employees working at Keshav cement factory Kaladagi (Tal & Dist) Bagalkot.

SAMPLE AND SAMPLING TECHNIQUE:

Sample:The sample for the present study composed of 50 employees working at Keshav cement factory Kaladagi (Tal & Dist) Bagalkot, Karnataka.

Sampling technique: simple random sampling technique was used.

SAMPLING CRITERIA**INCLUSIVE CRITERIA:**

1. Employees who are willing to participate in the study.
2. Employees who are present at the time of data collection.

EXCLUSIVE CRITERIA:

1. Who are not willing to participate in the study.
2. Not available at the time of data collection.
3. Don't know kannada.

RESULTS***Presentation of data***

The data was presented under following sections.

Section I: Findings related to socio demographic variables

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Section II: Testing of hypothesis for the evaluation of effectiveness of P.T.P

Section III: Association between the knowledge and socio demographic variables.

Section I: Findings related to socio demographic variables: In this study the data

collected was organized, tabulated, analyzed and interpreted by means of statistical tables and graphs and is presented under the following headings

Section I

Table 1: Frequency and percentage distribution of employees according to socio-demographic variables
N = 50

Socio-Demographic variables	Frequency	% of respondents
Age (in years)		
20-29 years	20	40.00
30-39 years	24	48.00
40 and above years	6	12.00
Gender		
Male	40	80.00
Female	10	20.00
Work Experience (in years)		
< 1 year	15	30.00
1-5 years	22	44.00
6 and above years	13	26.00
Educational qualifications		
Illiterate	9	18.00
Primary	13	26.00
Secondary	5	10.00
Diploma / ITI	12	24.00
PUC	7	14.00
Graduate and above	4	8.00
Religion		
Hindu	41	82.00
Muslim	5	10.00
Christian	4	8.00
Marital status		
Married	36	72.00
Unmarried	14	28.00
Duration of work hour per day		0.00
6-8 hours	46	92.00
9-10 hours	4	8.00
Diet		
Mixed	15	30.00
Vegetarian	35	70.00
Monthly Income		
Rs. 2000-4000	15	30.00
Rs. 4001-6000	21	42.00
Rs. 6001-8000	10	20.00
Rs. 8001 and above	4	8.00
Total	50	100.00

Section II: Testing of hypothesis for the evaluation of effectiveness of P.T.P

Distribution of knowledge level according to scores

Knowledge level	Scores
Inadequate	1 to 12
Satisfactory	13 to 24
Adequate	24 to 36.

Table 2: Distribution of study subjects according to levels of knowledge in pre test and post test

Test	Levels of knowledge	Number	%
Pre test	Inadequate	20	40.00
	Satisfactory	29	48.00
	Adequate	01	02.00
	Total	50	100.00
Post test	Inadequate	0	0.00
	Satisfactory	05	10.00
	Adequate	45	90.00
	Total	50	100.00

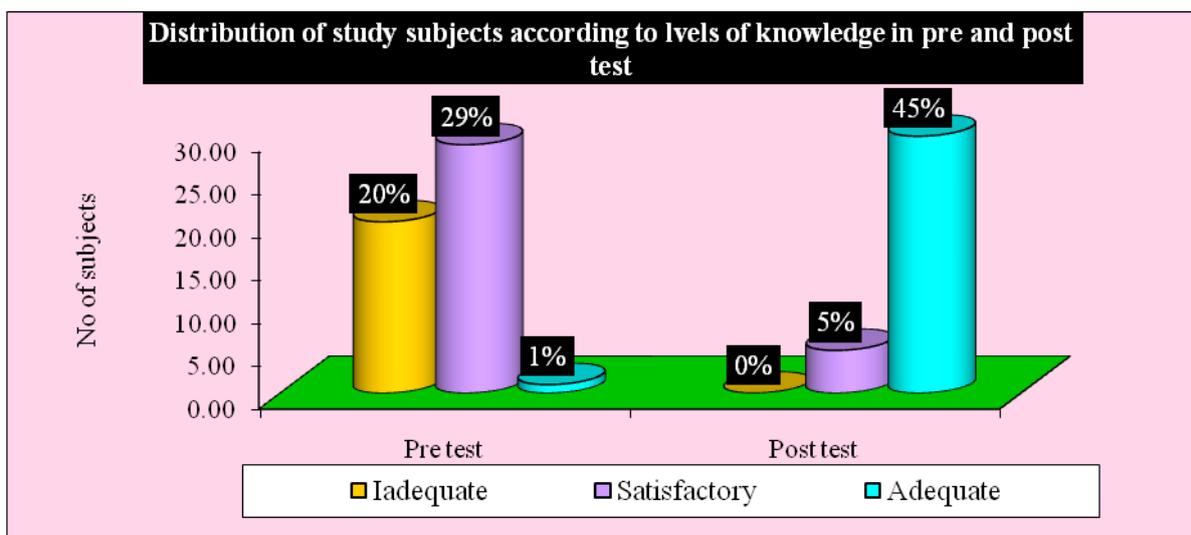
1. Assessment of pretest and post test knowledge level:

Level of knowledge:

Table 2 represents that, out of 50 subjects 29(48%) of had satisfactory knowledge, 20(40%) had inadequate and only 01(2%) subjects had adequate knowledge before implementation of teaching programme (pre test). However after teaching programme (post test) about 45(90%) subjects had adequate knowledge and 5(10%)

satisfactory knowledge regarding prevention of lung cancer.

The above findings states that “Research hypothesis H₁: There is significant difference in the knowledge of employees regarding prevention of lung cancer before and after administration of planned teaching programme” as stated by the investigator earlier was accepted.



Cylinder diagram depicting the assessment of pretest and post test knowledge level distribution of the study sample.

Table 3: Comparison of pre and post test scores of knowledge and its dimensions by students paired

t-test

Variables	Test	Mean	Std. Dv.	Mean Diff.	SD Diff.	Paired t-value	p-value
General information about lung cancer	Pre test	6.3800	1.9989	-6.2000	2.2315	-19.6463	0.0000*
	Post test	12.5800	1.7034				
Knowledge about prevention of lung cancer	Pre test	7.2200	2.7501	-8.6400	2.3190	-26.3445	0.0000*
	Post test	15.8600	2.0405				
Total knowledge	Pre test	13.6000	3.6365	-14.8400	2.5019	-41.9417	0.0000*
	Post test	28.4400	3.0583				

p<0.001

* Significant at 0.001% Level

Section III: Findings related to association between demographic variables and pre-test and post-test mean percentage knowledge scores

Association was calculated between post test level of knowledge and demographic variables among employees by 'F' test. All the demographic variables' Age in years, Gender, Year of experience, Educational status, Religion, Marital status, Duration of work in hours per day, Diet, and Income per month, showed significant association with the pre test and post test knowledge of employees. Therefore, the research hypothesis H_2 : "There is significant association between knowledge level of employees regarding knowledge about prevention of lung cancer with selected variable" as stated by the investigator earlier was accepted.

CONCLUSION

The conclusions drawn from the study are as follows:

Majority of employees were willingly to participated in the study. The employees had some knowledge about prevention of lung cancer. They gave free and frank responses regarding prevention of lung cancer.

Further, the conclusion drawn on the basis of the findings of the study includes:

1. Knowledge of employees regarding the prevention of lung cancer was inadequate before the administration of P T P.
2. The P T P was effective in increasing the knowledge of employees, i.e., overall and in all various aspects of lung cancer and its prevention.

3. There was significant association between the gain in knowledge scores and selected demographic variables.

Implications of the Study:

The findings of the study can be used in the following areas of nursing profession.

1. Nursing Practice:

Nurses are the key personnel of health team, who play a major role in health promotion and maintenance. Nursing is a practicing profession, so, the investigator generally integrates findings in to practice.

- ⇒ Nursing professional working in the community as well as in the hospital can understand the importance of health education regarding prevention of lung cancer.
- ⇒ Nursing professionals can play a key role in enhancement of knowledge of employees regarding prevention of lung cancer.
- ⇒ Nurses can provide the knowledge to the community through health education by using audio visual aids and through the mass media programmes to improve the knowledge of the community to maintain health status of the community.
- ⇒ Nurses working in the hospital and other institutions without using protective devices should be discouraged.

2. Nursing Education:

This study emphasis on the enhancement of knowledge regarding prevention of lung cancer among the employees which is leading cause of death in the developing countries. In order to achieve these employees should follow the idea that prevention is better than cure in the health care settings as well as community level with their participation in the community health services through improving their knowledge by the quality of education.

- ⇒ As a nurse educator, there are abundant opportunities for nursing professionals to educate the employees regarding prevention of lung cancer.
- ⇒ The study emphasizes significance of information related prevention of lung cancer in cement factory.
- ⇒ Various education programmes can held by nurse, education to develop awareness regarding health.

3. Nursing Administration

In nursing administration, In the era of development of advanced technology, demand for quality and competent care, improved awareness on dignity of life, possess a challenge to nurse administrators to demonstrate their efficiency in providing care to the cement factory employees in community towards the prevention of lung cancer through provision of health education.

The nursing administrator can take part in developing protocols, standing orders related to designing the health education programmes and strategies for employees regarding prevention of lung cancer.

- ⇒ The nursing administrator can mobilize the available resource, personnel towards the health education of employees regarding prevention of lung cancer and its prevention.
- ⇒ The nurse administrator should take interest in providing information on prevention of lung cancer. The nurse administrator should plan and organize educational programme for community nurses to motivate them in conducting teaching programmes on employees' practices against prevention of lung cancer. He or she should be able to plan and organize programmes taking into consideration the cost effectiveness and carry out successful educational programmes.
- ⇒ The nurse administrators should explore their potentials and encourage innovative ideas in

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the preparation of an appropriate teaching material. He or she should organize sufficient manpower; money and material for disseminating health information.

4. Nursing Research:

- ⇒ This study helps nurse researchers to develop appropriate health education tools for educating the employees regarding lung cancer and its prevention according to their demographic, socio-economic, cultural and political characteristics.
- ⇒ Nurses should come forward to take up unsolved questions in the field of lung cancer and its prevention to carryout studies and publish them for the benefit of youth, patients, public and nursing fraternity. The public and private agencies should also encourage research in this field through materials and funds.

Limitations of the Study

- ⇒ The study is limited to employees who are working in keshav cement factory (Tal & Dist) Bagalkot.
- ⇒ The study did not use any control group.
- ⇒ The study did not assess the attitude and practice of employees regarding prevention of lung cancer.
- ⇒ Small number of subjects limits generalization of the study.
- ⇒ Only a single domain that is knowledge is considered in the present study.
- ⇒ The sample for the study was limited to 50 employees only.

Recommendations:

On the basis of the findings of the study following recommendations have been made:

- ⇒ A similar study can be replicated on a large sample to generalize the findings.

- ⇒ A comparative study on the effectiveness of the practices used currently should be carried out.
- ⇒ A study on the attitude and practices of employees on prevention of lung cancer may be helpful for developing for specific strategies of education.
- ⇒ An experimental study can be undertaken with a control group for effective comparison of the result.

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