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Evaluate the effectiveness of structured teaching programme regarding prevention of Byssinosis disease among cotton mill workers in selected mills at Bijapur, Karnataka.

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ABSTRACT

Background of the study

Occupational *health* is branch of community medicine which deals with the effects of occupation on health. Every occupation is associated with one or other ill effects on health. One such occupational group is cotton workers. Generally cotton dust is found in the air when handling or processing cotton. Cotton and synthetic textile industry in India is the largest industry in the country accounting for 20 percent of industrial output and providing employment to around 20 million workers. The workers are at risk of suffering from various chronic respiratory illnesses including byssinosis.

AIM: The aims are to enhance safety and care to the cotton mill workers in relation to occupational hazards; and to support public health programmes by providing reliable, balanced information for the effective assessment of occupational hazards and its prevention.

Methodology

The pre-experimental, one group pre-test-post-test design was used to evaluate the knowledge of 60 cotton mill workers regarding Byssinosis disease. The structured questionnaire schedule was used to collect the data from the respondents. The pre-test was followed by implementation of structured teaching programme and post-test was conducted on 7th day after STP, to evaluate the effectiveness of teaching programme.

Result

The overall mean knowledge score of post-test 90.57% with the SD of 10.08 is comparatively greater than the overall mean knowledge score of pre-test 41.72% with the SD of 11.60. Further, the enhancement of the overall mean knowledge score is 48.85% with the SD of 14.38%. Paired 't' test has been computed to find the significant difference between mean knowledge score of pre-test and post-test are found to be significant at

0.001 level ($t = 26.3103$). Therefore the finding reveals that the planned teaching programme on Byssinosis disease was effective teaching in improving the knowledge of cotton mill workers. Hence, the stated hypothesis is accepted.

Conclusion

After analyzing the gathered information, the researcher got to know the facts about knowledge of Cotton mill workers regarding prevention of Byssinosis disease. Based on the outcome of the study, following suggestions are made to the various fields of nursing such as nursing practice, nursing education, nursing administration and nursing research.

Keyword: Byssinosis disease, STP, Cotton Mill worker, Effectiveness

INTRODUCTION

Occupational health is branch of community medicine which deals with the effects of occupation on health. Every occupation is associated with one or other ill effects on health. One such occupational group is cotton workers. Cotton textile workers are susceptible to various morbid conditions by virtue of workplace and working conditions. These morbid conditions may range from chronic respiratory diseases due to cotton dust inhalation. 1

Generally cotton dust is found in the air when handling or processing cotton. The high proportion of micro-dust arises in the course of processing in cotton industry. Exposure of workers to fine dust in cotton industry usually results in to development of respiratory symptoms in industry workers such as chronic cough, progressive dyspnea, chest tightness, cough and dyspnea and it also may lead to chronic bronchitis, emphysema. If the worker ignores the recurrent respiratory problems and symptoms it may lead to many complications such as asthma, Pneumothorax, lung cancer etc. 5

Cotton and synthetic textile industry in India is the largest industry in the country accounting for 20 percent of industrial output and providing employment to around 20 million workers. The workers are at risk of suffering from various chronic respiratory illnesses including byssinosis, chronic bronchitis due to exposure to the cotton dust in the worksites. In a prospective study from Mumbai the prevalence of chronic bronchitis was reported to be 11-33 percent among individuals working in cotton textile mill with various types of cotton fibres. In other study, it was found that the prevalence increased from 1.3 percent to 18 percent with prolongation in duration of exposure from less than 15 years to more than 40 years. Even though quite a few studies have been conducted in textile mills in India, enough emphasis has not been given on the epidemiological aspects of chronic

respiratory illnesses among the workers in these mills. In Pondicherry there are about 8,000 textile workers⁴. But no study whatsoever has been conducted in this area. Hence this study was undertaken to find out the epidemiological aspects of the chronic respiratory illnesses especially chronic bronchitis among textile mill workers with the objective to determine the prevalence of chronic bronchitis and other chronic respiratory illnesses among textile workers and to determine the risk of chronic bronchitis with regard to some biological and environmental factors 7

The majority of researches carried out in the health sector are basic medical research or research into disease, disease process and their treatment. Research into preventive measures is performed to a substantially less extent and there is hardly any research at all into the social mechanism of ill health. There is a need for research into control of Byssinosis disease.¹⁰

METHODOLOGY

Objectives

- [1]. To assess the knowledge of cotton mill workers regarding prevention of Byssinosis disease by administering a structured knowledge questionnaire.
- [2]. To prepare and administer a structured teaching programme on prevention of Byssinosis disease among cotton mill workers
- [3]. To find out the association between knowledge level of cotton mill workers and selected demographic variables.
- [4]. To find out the effectiveness of structured teaching programme on prevention of Byssinosis disease as measured by gain in post-test knowledge score.

Hypothesis

H₁ The mean post-test knowledge score of the cotton mill workers attending Structured teaching programme on prevention of Byssinosis disease will be significantly higher than their mean pre-test knowledge score.

H₂: There will be a significant association between pretest score of knowledge and selected demographic variables.

Methodology

The pre-experimental, one group pre-test-post-test design was used to evaluate the knowledge of 60 cotton mill workers regarding Byssinosis disease. The structured questionnaire schedule was used to collect the data from the respondents. The pre-test was followed by implementation of structured teaching programme and post-test was conducted on 7th day after STP, to evaluate the effectiveness of teaching programme.

Results

Majority of the respondents (48.33%) belong to the age group of 31 to 40 years, according to gender, 60% of respondents were females and 40% were males, Maximum number of the respondents (58.33%) were Muslim, Majority of the subjects (60%) were uneducated, The marital status of respondents indicates that 62% were married, With regard to length of service 46.67% had 1 - 5 years of service, Highest number (46.67%) of workers had 3000 - 4000 Rs as their monthly income and 46.7% of workers were working in spinning section, With regard to type of residence highest number (53%) of cotton mill workers were residing outside the campus of cotton mill, In relation to type of habits 33.33% of workers had habit of tobacco chewing and 33% of cotton mill workers had information of Byssinosis from mass media, In relation to health problem (45%) workers were approached to nurses.

Table 1: Distribution of study subjects according to levels of pre and post test knowledge

| Knowledge | N = 60 | | | | | |
|---------------------|----------------------|-------|----------------------|-------|-------------------|-------|
| | Inadequate (<50%) | % | Moderate (51-75%) | % | Adequate >75%) | % |
| Pre test knowledge | 51 | 85.00 | 7 | 11.67 | 2 | 3.33 |
| Post test knowledge | 1 | 1.67 | 4 | 6.67 | 55 | 91.67 |

Maximum score = 29

The data in Table 2 shows the distribution of the subjects according to categories of the pre-test knowledge scores of the subjects, majority (85%) of the subjects had inadequate knowledge scores, where as 11.67% and 3.33% of the subjects had moderately adequate knowledge scores and adequate knowledge scores respectively. However the post test knowledge scores of the subject's shows that (91.67%) had adequate knowledge scores, where as 6.67% and 1.33% of the subjects had moderately adequate post test knowledge scores and inadequate knowledge scores respectively.

Association between levels of knowledge scores with demographic data

Association between pre-test knowledge scores of the subjects with selected demographic variables. The association between pre-test knowledge score and age ($\chi^2 = 10.1330$, P =

0.0383), were highly significant. However the association between knowledge score and other demographic variables like gender, educational status, length of service, type and area of work in cotton mill and source of information were not significant at 0.05 level.

Association between levels of post test knowledge scores with demographic data

The data presented in table 5 shows the association between post-test knowledge scores of the subjects with selected demographic variables. The association between post-test knowledge score and length of service ($\chi^2 = 9.4880$, P = 0.0465), source of information ($\chi^2 = 21.8182$, P = 0.0013) were highly significant. However the association between knowledge score and other demographic variables like age, gender, educational status, type and area of work in cotton mill were not significant at 0.05 level.

Table 2: Enhancement in knowledge scores in pre and post test scores

| Variable | Max score | Pre test | | Post test | | % of enhancement (Pre-post) |
|--|-----------|--|-------|-----------|-------|-----------------------------|
| | | Mean | SD | Mean | SD | |
| | | Knowledge towards definition and cause | 11 | 55.76 | 7.75 | |
| Knowledge towards symptoms & diagnosis | 5 | 53.33 | 17.53 | 95.00 | 12.00 | 41.67 |
| Knowledge towards treatment and prevention | 13 | 25.38 | 20.88 | 88.59 | 14.48 | 63.21 |
| Total knowledge | 29 | 41.72 | 11.60 | 90.57 | 10.08 | 48.85 |

The result reveals that mean knowledge scores of pre-test found maximum in aspect of definition and cause (55.76%) and least found (25.38%) in the aspect of treatment and prevention of byssinosis disease. Mean knowledge score of post test found maximum in the aspect of sign & symptoms and

diagnosis (95%) and least found in the aspect of treatment and prevention. However the level of enhancement in knowledge score found maximum (63.21%) in treatment and prevention aspect of Byssinosis.

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

| Variable | Test | Mean | Std. Dv. | Mean Diff. | SD Diff. | % of change | Paired t-value | p-value |
|--|-----------|-------|----------|------------|----------|-------------|----------------|---------------|
| Knowledge towards definition and cause | Pre test | 55.76 | 7.75 | | | | | |
| | Post test | 90.91 | 10.72 | 35.15 | 11.16 | 63.04 | -24.3953 | 0.0000 *** |
| Knowledge towards symptoms & diagnosis | Pre test | 53.33 | 17.53 | | | | | |
| | Post test | 95.00 | 12.00 | 41.67 | 20.60 | 78.13 | -15.6686 | 0.0000 *** |
| Knowledge towards treatment and prevention | Pre test | 25.38 | 20.88 | | | | | |
| | Post test | 88.59 | 14.48 | 63.21 | 25.06 | 248.99 | -19.5365 | 0.0000 *** |
| Total knowledge | Pre test | 41.72 | 11.60 | | | | | |
| | Post test | 90.57 | 10.08 | 48.85 | 14.38 | 117.08 | -26.3103 | 0.0000 *** |

***p<0.001

The overall mean knowledge score of post-test 90.57% with the SD of 10.08 is comparatively greater than the overall mean knowledge score of pre-test 41.72% with the SD of 11.60. Further, the enhancement of the overall mean knowledge score is 48.85% with the SD of 14.38%.

Paired 't' test has been computed to find the significant difference between mean knowledge score of pre-test and post-test are found to be significant at 0.001 level (t = 26.3103). Therefore the finding reveals that the planned teaching programme on Byssinosis disease was effective teaching in improving the knowledge of cotton mill workers. Hence, the stated hypothesis is accepted.

DISCUSSION AND CONCLUSION

As silent and preventable in nature, Byssinosis disease awareness should be raised among cotton mill workers prior to an irreversible respiratory complications. We therefore decided to assess the knowledge regarding prevention of Byssinosis disease among cotton mill workers.

The present study is conducted to evaluate the effectiveness of structured teaching programme regarding prevention of Byssinosis disease among cotton mill workers in selected mills at Bijapur, Karnataka, In order to achieve the objectives. The pre-experimental, one group pre-test-post-test design was used to evaluate the knowledge of 60 cotton mill workers regarding Byssinosis disease.

The structured questionnaire schedule was used to collect the data from the respondents. The pre-test was followed by implementation of structured teaching programme and post-test was conducted on 7th day after STP, to evaluate the effectiveness of teaching programme. The findings of the study had been discussed with reference to the objectives and with findings of other related literature. The findings are discussed in the following section.

Section A; Demographic variable

Section B; Objectives of the study

Section C; Discussion of the hypothesis testing

MAJOR FINDINGS OF THE STUDY

Section A; Findings related to demographic characteristics

Majority of the respondents (48.33%) belong to the age group of 31 to 40 years, according to gender, 60% of respondents were females and 40% were males, Maximum number of the respondents (58.33%) were Muslim, Majority of the subjects (60%) were uneducated, The marital status of respondents indicates that 62% were married, With regard to length of service 46.67% had 1 - 5 years of service, Highest number (46.67%) of workers had 3000 - 4000 Rs as their monthly income and 46.7% of workers were working in spinning section, With regard to type of residence highest number (53%) of cotton mill workers were residing outside the campus of cotton mill, In relation to type of habits 33.33% of workers had habit of tobacco chewing and 33% of cotton mill workers had information of Byssinosis from mass media, In relation to health problem (45%) workers were approached to nurses

Section-B; Objectives of the study

In this section, objectives of the study were discussed. The objectives were achieved by the related analyzed data

[1]. The first objective was the knowledge of cotton mill workers regarding prevention of Byssinosis disease.

The pre-test knowledge scores of the subjects, majority (85%) of the subjects had inadequate knowledge; where as 11.67% and 3.33% of the subjects had moderately adequate knowledge adequate knowledge respectively.

[2]. The second objective to find out the association between pretest score knowledge level of cotton mill workers and selected demographic variables The analysis was done to find out the association between the knowledge of cotton mill workers and selected demographic variables by using Chi-square test. The Chi-square values shows that there is association between the association between the pretest score knowledge of cotton mill workers and selected demographic variables

[3]. The third objective was to find out the effectiveness of structured teaching programme on prevention of Byssinosis disease as measured by gain in post-test knowledge score.

The post test knowledge scores of the subject's shows that (91.67%) had adequate knowledge; where as 6.67% and 1.33% of the subjects had moderately adequate post test knowledge s and inadequate knowledge respectively.

The statistical paired't' test was used. The mean post test pain score was found to be significant.

Section-C; Discussion of the hypothesis testing

H1; The mean post-test knowledge score of the cotton mill workers attending Structured teaching programme on prevention of Byssinosis disease will be significantly higher than their mean pre-test knowledge score

Paired 't' test has been computed to find the significant difference between mean knowledge score of pre-test and post-test are found to be significant at 0.001 level ($t = 26.3103$). Therefore the finding reveals that the planned teaching programme on Byssinosis disease was effective teaching in improving the knowledge of cotton mill workers. Hence, the stated hypothesis is accepted The pretest score and the post test score

H2; There will be a significant association between pretest score of knowledge and selected demographic variables.

The analysis was done to find out the association between the pain before massage among staff nurses and their selected demographic variable by using Chi-square test .The chi-square value shows that there significant association between the pre test level of knowledge of cotton mill workers and their demographic variable. Hence the stated hypothesis H1 is accepted since there was significant association between the pre test level of knowledge of cotton mill workers and demographic variable.

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