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Research Article

A Pre Experimental Study to Assess the Effectiveness of Information Booklet on Knowledge Regarding Prevention of Respiratory Illness among Employees Working in Cotton Industries of Metropolitan City

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ABSTRACT

Introduction: Exposure to cotton dust has profound effect on pulmonary function. Study shows that the prevalence of self-reported respiratory symptoms was higher among exposed to cotton dust than unexposed. Thus reducing exposure to dusts, adequate ventilation and improving hygiene of the working department are needed to reduce respiratory problems. **Aim:** The aim of the study was to evaluate the effectiveness of information booklet on knowledge regarding prevention of respiratory illness among employees working in cotton industries and to find out the association between pre-test and post-test knowledge regarding prevention of respiratory illness among employees working in cotton industries in metropolitan city with selected demographic variables. **Materials and Methods:** A pre-experimental descriptive evaluative approach, one group pre-test and post-test design were used which consisted 100 employees of cotton industries, non-probability convenient sampling technique, Semi-structured knowledge questionnaire was used before and after distributing Information booklet. **Result:** In pre-test level of knowledge regarding prevention of respiratory illness among employees having 29% good knowledge level and in post-test level of knowledge regarding prevention of respiratory illness among employees were 26% having excellent knowledge level after distributed information booklet it was improved, respectively. The mean of pre-test knowledge levels 5.06 and standard deviation was 2.97. The mean of post-test knowledge levels was 12.06 and standard deviation was 3.74. Mean difference was 7.00, for comparison paired t-test was applied. The calculated t-value was found to be 56.868 and is more than tabulated t-value for the 0.0001 level of significant. **Conclusion:** Information booklet is an effective tool to increase the knowledge regarding prevention of respiratory illness among employees working in cotton industries.

Keywords: Cotton industry, Employees, Information Booklet, Knowledge, Respiratory illness

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Introduction

Breathing is accomplished by skeletal muscle alteration of the thoracic space. The diaphragm is the primary muscle of breathing and serves as the lower boundary of the thorax. The respiratory system brings oxygen through the airways of the lung into the alveoli, where it diffuses into the blood for transport to the tissues. Respiratory problem is associate with many causes: Allergies, occupational factors, genetic factors, smoking, and tobacco. The airways are the region through which air passes on its way to the exchange areas of the lungs.[1]

According to online article published in May 17, 2019 by Nayyar and Shukla Team India Blogs. Invest India, Cotton textiles industry in India, Textiles and Garments, One of mankind's great discoveries, cotton is one commodity that is available virtually everywhere - testifying both to its utility, as we as the awe-inspiring impact capitalism, has had human production and consumption. Cotton production in India has focused on textile for over thousands of years, generating significant employment for both skilled and unskilled labor – thus helping strengthen the country's economy. The states of Gujarat, Maharashtra, Telangana, Andhra Pradesh, Karnataka, Madhya Pradesh, Haryana, Rajasthan, and Punjab are the major cotton producers in India.[2]

According to Egyptian journal of chest diseases and tuberculosis published in April, 2017 by Mohamad Awad, Iman Ahmad and Mohammad Hegazy, Textile industry is one of the most vital industries in Egypt. The workers are exposed to different environmental factors especially in the spinning and weaving sections which play a role in the high incidence of industrial health hazards. Respiratory symptom was the highest prevalent in spinning and weaving workers. Cough, expectoration, and chest tightness were the highest prevalent symptoms in cotton exposed groups. Byssinosis is characterized clinically as occasional (early) and then regular (late) chest tightness toward the end of the 1st day of work week (Monday chest tightness).[3]

According to an online article cotton sector cultivation in India: Conditions, type, production, and distribution published in August 1, 2019, by International Cotton Advisory Committee. The area under cotton cultivation in India in 2018-2019 remained almost the same as a previous season at 122 lakh hectares. Cotton production in India is estimated at 330 +/- lakh bales of 170 kg each in 2018-2019. In 2018-2019, the total supply of cotton including carrying forward inventory from the previous year and imports in the current year is likely to be 395 lakhs bales vis-à-vis 410 lakh bales in 2017-2018 Reduced supply in the current year has led to prices remaining firm in India compared to other Cotton producing countries. Considering the price disparity between India and the rest of the world, India is likely to import around 30 lakh bales, which if realized will be the highest volume of imported Cotton by India.[4]

Need of the study

A research conducted by Balakrishnanv *et al*., (2020) about pulmonary function among cotton industry workers shows that there is decreased functioning of lungs of workers because of continuous exposure to cotton related dust, there is evidence of 11–33% of workers suffering with chronic bronchitis and more exposure to cotton dust increases rate of more occurrence of respiratory problems. Safety and health measures play an important role in any industry.[5]

According to the article, Singh and Sharma (2018), reviewed about respiratory disease burden in India, developing countries have to bear burden of both communicable and non-communicable diseases simultaneously. The recent global burden of disease survey data has shown that both acute and chronic respiratory diseases are prevalent in substantial number in India. Chronic respiratory diseases, especially asthma and chronic obstructive pulmonary disease (COPD), are of particular importance for having wide variations in morbidity and mortality in various Indian states. The impact of seasonal trends in occurrence or exacerbation of these diseases is also not known.[6]

Objectives of study

Primary objective

The primary objective of the study was to assess the effectiveness of information booklet on knowledge regarding prevention of respiratory illness among employees working in cotton industries of metropolitan city.

Other objectives

The objectives are as follows:

- To assess the pre-test knowledge regarding prevention of respiratory illness among employees working in cotton industries before distribution of information booklet
- To assess the post-test knowledge regarding prevention of respiratory illness among employees working in cotton industries after distribution of information booklet
- To compare the pre-test and post-test knowledge regarding prevention of respiratory illness among employees working in cotton industries
- To find out the association between pre-test and post-test knowledge regarding prevention of respiratory illness among employees working in cotton industries with selected demographic variables.

Materials and Methods

A pre-experimental descriptive evaluative approach, one group pre-test and post-test design was used. 100 employees of cotton industries were selected through semi-structured knowledge questionnaire used. Non-probability convenient sampling technique was used.

They were selected on the basis of following inclusion and exclusion criteria

Inclusion criteria

The following criteria were included in the study:

1. The employees working in cotton industries who are willing to participate in the study
2. The employees working in cotton industries who are available at the time of data collection

3. The employees working in cotton industries who are in age group between age 21 and 58 years
4. Employees who are able to understand Marathi and Hindi.

Exclusion criteria

The employees who have partial or complete visual and auditory deficit were excluded from the study.

Description of tools

TOOL- 1 Semi-structured knowledge questionnaires

It will consist 20–25 questions which scores 1 mark for each question right answer. This tool has two sections:

SECTION A – It includes the demographic variables of employees working in cotton industries as follows: Age, religion, education, type of family, economical status, source of health information, department of work.

SECTION B – It includes 20 questions of the knowledge regarding prevention of respiratory illness. Are based on-

1. Meaning of respiratory illness
2. Classification of respiratory illness caused by cotton exposure
3. Burden of respiratory illness
4. Signs and symptom respiratory illness
5. Management of respiratory illness
6. Prevention of respiratory illness

TOOL- 2: Information booklet

Information booklet regarding prevention of respiratory illness was prepared based on - meaning of respiratory illness, classification of respiratory illness, burden of respiratory illness, sign and symptom of respiratory illness, management of respiratory illness, and prevention of respiratory illness.

Validity

Content validity refers to the extent to which the items on a test are fairly representative of the entire domain the test seeks to measure. The validity of the tool was obtained by giving them to the experts in the various fields.

Reliability

Semi-structured knowledge questionnaire with interview schedule was conducted on 100 samples and reliability of the tool was computed using Spearman-Brown Prophecy Coefficient test (Split-Half Reliability). The reliability coefficient was found to be r = 0.841.This shows acceptance and tool is reliable.

Pilot study

The researcher introduced herself and discussed the study in detail with employees one by one and obtained their consent for the participation in the study. After taking the consent and confirming the participant, the semi-structured questionnaire was given. Thirty minutes time was given to the sample to fill up the questionnaire. Then they were given the Information Booklet of Prevention of respiratory illness among cotton industries workers. The post-test was given using the structured questionnaire after 7 days.

Data collection

The present study was approved by the institutional ethics committee. The informed written consent was taken from sample after explaining the procedure. The study was done at spinning and weaving mill with permission from the management of the mill. Workers were treated with due respect during all the meeting. The tool used for the study consisted of two parts demographic variables, technique was used self-report.

The obtained results were organized and presented in three parts:

There is three part in result - Part-I , Part-II and Part-III

Part I

Description of demographic characteristics of employees working in cotton industry.

Part II

Knowledge of employees working in cotton industry regarding prevention of respiratory illnesses.

Section A

Aspect-wise analysis of knowledge scores

Section B

Assessment of the level of knowledge of employees working in cotton industry regarding prevention of respiratory illnesses.

Section C

Effectiveness of information booklet on prevention of respiratory illnesses among employees of cotton industry.

Part III

Association the level of knowledge of employees working in cotton industry regarding prevention of respiratory illnesses with Demographic variable.

Table 1 study shows distribution of demographic variables of employees working in cotton industries, observed that 23% samples belongs to 21–30 years, 52% samples belongs to 31–40 years, and 25% samples belongs to 41–50 years. About 100% of the samples were males. About 51% samples were Muslim religion, 39% samples were Christian religion, and 10% sample were Hindu religion. About 75% samples were 1–10th std., 25% samples have completed HSC and none of them where graduation, post-graduation and above. About 55% samples had Joint family, 44% samples had extended family, and 1% had Nuclear family. About 62% of samples have monthly income between Rs. 5000 and 10,000, 38% samples have monthly income between Rs. 10,001 and 15,000. About 66% samples were working in weaving department and 34% samples were working in ginning department. Source of Heath Information 45% samples were Mass media, 43% samples were Friends, and 12% samples were Health worker. About 54% samples were 6–10 years' experience, 45% samples were 1–5 years' experience, and 1% sample was less than 1 year experience. About 63% samples was 8–10 h, 36% samples was 1–8 h, 1% sample was 11–13 h, and none of the employees were work more than 14 h/day.

Table 1: Description of demographic characteristics of employees working in cotton industry

Particulars	Frequency (%)
Age in years	
21–30	23 (23)
31–40 years	52 (52)
41–50 years	25 (25)
50 years and above	0 (0)
Sex	
Male	100 (100)
Female	0 (0)
Transgender	0 (0)
Religion	
Hindu	10 (10)
Christian	39 (39)
Muslim	51 (51)
Others	0 (0)
Education	
1–10th std.	75 (75)
HSC	25 (25)
Graduation	0 (0)
Post-graduation and above	0 (0)
Type of family	
Joint family	55 (55)
Extended family	44 (44)
Nuclear family	1 (1)
Broken family	0 (0)
Monthly income	
Below Rs. 5000	0 (0)
Rs. 5000–10,000	62 (62)
Rs. 10,001–15,000	38 (38)
Above 15,001	0 (0)
Department of work	
Spinning	0 (0)
Ginning	34 (34)
Weaving	66 (66)
Dyeing	0 (0)
Any other, Kindly mention	0 (0)
Source of Health Information	
Mass media	45 (45)
Health worker	12 (12)
Friends	43 (43)
Other	0 (0)
Total no. of experience in cotton industry in years	
Less than 1 year	1 (1)
1–5	54 (54)
6–10	45 (45)
More than 10 years	0 (0)
Duration of work per day	
1–8 h	36 (36)
8–10 h	63 (63)
11–13 h	1 (1)
More than 14 h	0 (0)

Part-1

Description of demographic characteristics of employees working in cotton industry as shown in Table 1.

Part II

Section C: Effectiveness of information booklet on prevention of respiratory illness among employees working in cotton industry

Knowledge of employees working in cotton industry regarding prevention of respiratory illness as shown in Table 2.

Part III

Association the level of knowledge of employees working in cotton industry regarding prevention of respiratory illnesses with demographic variables

Results

Table 2: Que. 1–3 consisted majority of samples 26.3% have knowledge in pretest and 63.7% in post-test Que. 4, 5 consisted majority of samples 6% have knowledge in pre-test and 55.5% in post-test Que. 6 consisted knowledge 30% in pre-test and 88% in post-test. Que. 7 and 8 majority of samples consisted 26.5% in pre-test and 64.5% in post-test. Que. 9 and 10 majority of samples consisted knowledge 14.5% in pre-test and 61% in post-test. Que. 11–20 majority of sample consisted knowledge 30.3% in pre-test and 56.5% in post-test. Table 3: In pre-test level of knowledge regarding prevention of respiratory illness among employees working in cotton industries of metropolitan city majority sample, that is, 71% was having poor knowledge level and 29% sample was having good knowledge level.

Table 2: Knowledge of employees working in cotton industry regarding prevention of respiratory illness

Knowledge questionnaires	Max score	Pre-test		Post-test	
		n	%	n	%
Knowledge regarding meaning of respiratory illness					
Q1 Which is the most important organ of respiratory system	100	52	52.0	71	71.0
Q2 What do you mean by occupational respiratory illness?	100	24	24.0	50	50.0
Q3 Which among the following are the common respiratory illnesses among cotton industrial workers?	100	3	3.0	70	70.0
Total (Q1 – Q3) =3×100	300	79	26.3	191	63.7
Knowledge regarding classification and causes of respiratory illness					
Q4 Workers working in which is the following dept. of cotton industries are more prone for respiratory illness?	100	2	2.0	45	45.0
Q5 What is the common cause of respiratory illnesses among cotton industrial workers?	100	10	10.0	66	66.0
Total (Q4 – Q5) =2×100	200	12	6.0	111	55.5
Knowledge regarding Burden of respiratory illness					
Q6 What are the effects of Burden of respiratory illness at Individual level?	100	30	30.0	88	88.0
Total (Q6) = 1×100	100	30	30.0	88	88.0
Knowledge regarding sign and symptoms of respiratory illness					
Q7 Which is a symptom of respiratory illness?	100	47	47.0	100	100.0
Q8 Which among the following is NOT a common respiratory illness among cotton industry workers?	100	6	6.0	29	29.0
Total (Q7 – Q8) =2×100	200	53	26.5	129	64.5
Knowledge regarding management of respiratory illness					
Q9 Which among the following can be done to manage respiratory illnesses?	100	23	23.0	81	81.0
Q10 Which among the following is one of the alternatives to prevent respiratory illness among people working in cotton industry?	100	6	6.0	41	41.0
Total (Q9 – Q10) =2×100	200	29	14.5	122	61.0
Knowledge regarding prevention of respiratory illness					
Q11 What can be done to reduce cotton dust levels among cotton industrial workers?	100	22	22.0	66	66.0
Q12 Which of the following protective devices can prevent respiratory illness among working in cotton industry?	100	75	75.0	95	95.0
Q13 Which of the following measure can be adopted for prevention of respiratory illness among cotton industry workers?	100	3	3.0	37	37.0
Q14 Which is an important preventive measure to be taken for prevention of respiratory illnesses?	100	16	16.0	81	81.0
Q15 Which among the following is a correct way to wear a mask while working in cotton industry?	100	49	49.0	45	45.0
Q16 Which of the following practice can be practiced to maintain respiratory hygiene in cotton industry workers?	100	36	36.0	73	73.0
Q17 Which of the following is NOT a healthy practice to prevent respiratory illness among cotton industry workers?	100	45	45.0	38	38.0
Q18 Why regular hand washing has needed to be done by cotton industrial workers?	100	40	40.0	55	55.0
Q19 Which of the following is a measure of primary health promotion for cotton industrial workers?	100	8	8.0	38	38.0
Q20 What is the use of face mask while working in cotton industry?	100	9	9	37	37.0
Total (Q11–Q20)= 10×100	1000	303	30.3	565	56.5
Grand Total (Q1–Q20) = 20 × 100	2000	506	25.3	1206	60.3

Table 3: Pre-test level of knowledge regarding prevention of respiratory illness among employees working in cotton industries of metropolitan city

Level of knowledge	Score	Frequency	Percentage
Poor	0–5	71	71
Good	6–13	29	29
Excellent	14–20	0	0

Table 4: Mean of pre-test knowledge levels 5.06 and standard deviation was 2.97. Table 5: In post-test level of knowledge regarding prevention of respiratory illness among employees working in cotton industries of metropolitan city majority sample, that is, 74% were categorized good knowledge level and 26% sample were categorized into excellent knowledge level after distributed information booklet it was improved, respectively.

Table 6: Mean of post-test knowledge levels was 12.06 and standard deviation was 3.74.

Table 7: In pre-test level of knowledge regarding prevention of respiratory illness among employees working in cotton

industries of metropolitan city majority sample, that is, 71% was having poor knowledge level and 29% sample was having good knowledge level. In post-test level of knowledge regarding prevention of respiratory illness among employees working in cotton industries of metropolitan city majority sample, that is, 74% were categorized good knowledge level and 26% sample were categorized into excellent knowledge level after distributed information booklet it was improved, respectively.

Table 8: Pre-test mean (SD) score was 5.06 (2.97) and post-test mean (SD) score was 12.06 (3.74). Mean difference was 7.00, for comparison paired t test was applied. The calculated t value was found to be 56.868 for over-all knowledge regarding prevention of respiratory illness. The calculated *t*-value 56.868 is more than tabulated *t*-value for the 0.0001 level of significance, thus, we reject the null hypothesis and accept the research hypothesis, that is, there is statistically significant difference between pre-test and post-test knowledge regarding prevention of respiratory illnesses among employees working in cotton industries. Thus, it has been evaluated that there was an improvement in knowledge regarding respiratory illness among employees working in cotton industries after giving information booklet.

Table 4: Pre-test Mean and SD of Level of knowledge regarding prevention of respiratory illness among employees working in cotton industries of metropolitan city

Level of knowledge	Score	Mean	SD
Poor	0–5	5.06	2.97
Good	6–13		
Excellent	14–20		

Table 5: Post-test level of knowledge regarding prevention of respiratory illness among employees working in cotton industries of metropolitan city

Level of knowledge	Score	Frequency	Percentage
Poor	0–5	0	0
Good	6–13	74	74
Excellent	14–20	26	26

Table 6: Post-test Mean and SD of Level of knowledge regarding prevention of respiratory illness among employees working in cotton industries of metropolitan city

Level of knowledge	Score	Mean	SD
Poor	0–5	12.06	3.74
Good	6–13		
Excellent	14–20		

Table 9: There is statistically significant association between education, monthly income, Department of work, source of health information, and duration of work per day whereas age group, religions, type of family, work experience is not significantly associated with pre-test level of knowledge score of employees regarding prevention of respiratory illness. On the other hand, the demographic variable was found to be significant as calculated χ^2 is more than tabulated χ^2 value thus we reject the null hypothesis and accept research hypothesis by stating there was statistically significant association between pre-test knowledge regarding prevention of respiratory illness with selected demographic variables.

Table 10: There is statistically significant association between age group, Education, Monthly income, Department of work, source of health information, duration of work and religion, type of family, work experience found not significantly associated with demographic variables and post-test level of knowledge score of employees regarding prevention of respiratory illness. On the other hand, the demographic variable was found to be significant as calculated χ^2 is more than tabulated χ^2 value thus we reject the null hypothesis and accept research hypothesis by stating there was statically significant association between post-test knowledge regarding prevention of respiratory illness with selected demographic variables.

Discussion

Gladis and Samuel (2019) study was revealed that majority of workers (61.33%) had good knowledge regarding respiratory problems. The knowledge was maximum in the area of organ of respiration and function and minimum in the area of preventive measures and treatment. Gender, education status, monthly income, working hours, and smoking habits had significant relationship, with knowledge of workers.[7]

Dosi *et al*. (2018), cotton mill workers were pre dominantly found to have COPD stage 2 and 3 which was seen 70% of the subjects and bronchial asthma seen in 30% of the subjects. Study showed that respiratory symptoms and pulmonary function abnormalities are seen more frequently in cotton workers compared to controls. More aggressive measures must be taken in the work place with regular sampling of the work place and regular medical check-up of all cotton mill workers should be done to prevent the harmful respiratory effects of cotton dust exposure on lung function.[8]

Nagar *et al*. (2018) study reported nearly 78% had respiratory complaints. Most of the workers had a more than

Table 7: Distribution of employees working in cotton industry based on overall knowledge level about respiratory illness

Level of knowledge	Score	Pre-test		Post-test	
		Frequency	Per. %	Frequency	Per. %
Poor	0–5	71	71	0	0
Good	6–13	29	29	74	74
Excellent	14–20	0	0	26	26

Table 8: Evaluation of the effectiveness of information booklet on knowledge regarding prevention of respiratory illness among employees working in cotton industries of metropolitan city

Variables	Pre-test	Post-test	Mean difference	Paired *t*-test
Mean	5.06	12.06	7.00	*P*=0.0001; *t*=56.868
SD	2.97	3.74		

10 years exposure to cotton dust. Majority of symptoms were dyspnea and expectorations. Nearly 95% had the habit of consumption of smokeless tobacco. It can be concluded from the study that the risk factors for respiratory diseases are highly prevalent among workers employed in industrial set ups involving reparable dusts. More than 80% of the workers had 10 years or more years of exposures to cotton dust and association of the exposure with the respiratory problems was proved statistically significant.[9]

Table 9: Association level of pre-test knowledge regarding prevention of respiratory illness among employees working in cotton industries with selected demographic variables

Variables	Pre-test knowledge				Chi-square test	*P*-value	Significant at 5% level
Age group (years)	Poor (0–5)	Good (6–13)	Excellent (14–20)	Total			
21–30	13	10	0	23	4.394	0.111	Not
31–40	37	15	0	52			
41–50	21	4	0	25			
Total	71	29	0	100			
Sex							
Male	71	29	0	100	-	-	-
Female	0	0	0	0			
Total	71	29	0	100			
Religion							
Hindu	7	3	0	10	0.358	0.836	Not
Christian	29	10	0	39			
Muslim	35	16	0	51			
Total	71	29	0	100			
Education							
SSC and below	47	28	0	75	10.118*	<0.001	Yes
HSC	24	1	0	25			
Graduate	0	0	0	0			
Post Graduate and above	0	0	0	0			
Total	71	29	0	100			
Types of family							
Nuclear	37	18	0	55	1.121	0.571	Not
Joint	33	11	0	44			
Extended	1	0	0	1			
Total	71	29	0	100			
Monthly family Income (Rs.)							
<5000	0	0	0	0	25.034**	<0.001	Yes
5001–10,000	33	29	0	62			
10001–15,000	38	0	0	38			
>15,000	0	0	0	0			
Total	71	29	0	100			
Departmental work							
Spinning	0	0	0	0	49.610**	<0.001	Yes
Ginning	9	25	0	34			
Weaving	62	4	0	66			
Dyeing	0	0	0	0			
Total	71	29	0	100			
Sources of Health Information							
Mass media	39	6	0	45	11.862*	<0.001	Yes
Health worker	9	3	0	12			
Friends	23	20	0	43			

(Contd...)

Table 9: *(Continued)*

Variables	Pre-test knowledge				Chi-square test	*P*-value	Significant at 5% level
Age group (years)	Poor (0–5)	Good (6–13)	Excellent (14–20)	Total			
Others	0	0	0	0			
Total	71	29	0	100			
Working experience (years)							
<1 year	1	0	0	1	1.067	0.587	Not
1–5	40	14	0	54			
6–10	30	15	0	45			
>10	0	0	0	0			
Total	71	29	0	100			
Duration (hours) work per day							
1–8	33	3	0	36	13.408*	<0.001	Yes
8–10	38	25	0	63			
11–13	0	11	0	1			
>13	0	0	0	0			
Total	71	29	0	100			

*Statistically significant at 5% level, that is, $P<0.05$. **Statistically highly significant at 0.01% level, that is, $P<0.001$

Table 10: Association level of post-test knowledge regarding prevention of respiratory illness among employees working in cotton industries with selected demographic variables

Variables	Post-test knowledge				Chi-square test	*P*-value	Significant at 5% level
Age group (years)	Poor (0–5)	Good (6–13)	Excellent (14–20)	Total			
21–30	0	13	10	23	10.160*	<0.001	Yes
31–40	0	37	15	52			
41–50	0	24	1	25			
Total	0	74	24	100			
Sex							
Male	0	74	24	100	-	-	-
Female	0	0	0	0			
Total	0	74	24	100			
Religion							
Hindu	0	8	2	10	0.246	0.884	Not
Christian	0	29	10	39			
Muslim	0	37	14	51			
Total	0	74	24	100			
Education							
SSC and below	0	49	26	75	11.712*	<0.001	Yes
HSC	0	25	0	25			
Graduate	0	0	0	0			
Postgraduate and above	0	0	0	0			
Total	0	74	24	100			
Types of family							
Nuclear	0	38	17	55	1.744	0.418	Not
Joint	0	35	9	44			
Extended	0	1	0	1			
Total	0	74	24	100			
Monthly family income (Rs.)							
<5000	0	0	0	0	21.534	<0.001	Yes
5001–10,000	0	36	26	62			
10,001–15,000	0	38	0	38			
>15,000	0	0	0	0			
Total	0	74	24	100			
Departmental work							
Spinning	0	0	0	0	53.232**	<0.001	Yes
Ginning	0	10	24	34			

(Contd...)

Table 10: *(Continued)*

Variables	Post-test knowledge				Chi-square test	*P*-value	Significant at 5% level
Age group (years)	Poor (0–5)	Good (6–13)	Excellent (14–20)	Total			
Weaving	0	64	2	66			
Dyeing	0	0	0	0			
Total	0	74	24	100			
Sources of health information							
Mass media	0	39	6	45	7.853*	<0.001	Yes
Health worker	0	9	3	12			
Friends	0	26	17	43			
Others	0	0	0	0			
Total	0	74	24	100			
Working experience (years)							
<1 year	0	1	0	1	2.499	0.287	Not
1–5	0	43	11	54			
6–10	0	30	15	45			
>10	0	0	0	0			
Total	0	74	24	100			
Duration (hours) work per day							
1–8	0	35	1	36	17.727**	<0.001	Yes
8–10	0	39	24	63			
11–13	0	0	1	1			
>13	0	0	0	0			
Total	0	74	24	100			

*Statistical Significant at 5% level, that is, $P<0.05$. **Statistically highly significant at 0.01% level, that is, $P<0.0$

Nalawade and Nalawade (2017) study found reduced prevalence of byssinosis among the cotton textile mill workers exposed to cotton dust. This reduced prevalence is due to proper precautions taken in mill machineries and workers. This supports association between reduced chances of respiratory diseases and proper precautions taken in mill and by workers.[10] Hinson *et al*. (2016) study allowed us to estimate the prevalence of respiratory diseases and symptoms including byssinosis and abnormal lung function. The prevalence of byssinosis in the Beninese Company of textiles was 44.01%. This prevalence varies in the company according to the age and to sectors of activities of the subject. Even the unexposed workers also have byssinosis symptoms. That demonstrates the public health impact of cotton dust exposure in Benin. It is not just the workers directly working with cotton who are affected; it is those working in administration and even neighbors who are affected. These results should lead to prioritizing medical interventions and technical prevention especially as the textile industry occupies such a dominant place in the economies of developing countries.[11]

It has been concluded that the factory workers had a need to improve knowledge regarding occupational related health problems about importance of protective devices and proper maintenance of health.

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