

RESEARCH PAPER

Occupational health problems of workers in the ginning mills of Dharwad district

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Abstract: India is the third largest producer of cotton after China and the United States. Ginning factories discharge large amounts of cotton dust, which leads to various occupational health problems in the exposed subjects. Keeping this in view a study was conducted to occupational problems faced by the workers in ginning mill in Dharwad taluka, Karnataka. A survey was conducted by interview method from ginning mill workers to elicit information regarding occupational health problems and use of personal protective equipment. It was revealed that majority of the respondents suffered from various occupational health problems like eye irritation (43.33%), irritation to ear (33.33%), back ache(30%), pain in hands (23.33%), and breathing problems and only 20percent of the respondents were use mask and apron.

Keywords: Coughing, Fibre health Problems, Ginning mill, Women

Introduction

Women throughout the world play critical role in economic growth and development and their contribution have an impact on households, communities and national economies. Women contribute to the family economy, by participating in the labour force, thereby earning an income and contributing to the family and also by undertaking the primary responsibility for household maintenance, childcare and there by sustain the family¹. The economic status of women is now accepted as an indicator of a society stage of development. Participation of women in the work force has also been found to be an important element in the adoption of the small family norm essential for the achievement of the twin goals of economic development and population planning. It is of utmost importance therefore that the country makes full and effective use of its human resources by providing economic empowerment to women who constitute 50 per cent of it. The women are ready to work for very low wages and for longer hours under exceedingly inhospitable conditions of work. Textile industry is the only industry to have employed women workers since long time (Sridevi and Radhai 2015). Occupational health is branch of community medicine which deals with the effects of occupation (or) work place on human health. Every occupation is associated with one or other ill effects one such occupational group is cotton textile worker. Ginning is one of the un organized occupation of textile industries, which employs more number of women. Ginning textile women workers are susceptible to various health hazards by the more inhalation of cotton dust (Rajat 2015). Hence this study was under taken to assess the occupational health problems of selected working women in ginning mills.

Material and methods

The present study was undertaken in Dharwad district, Karnataka during the year 2016-17. A self structured interview schedule was administered on 90 ginning mill workers to gather the general and specific information, highlighting on the use of personal protective equipment. The data was further analyzed and tabulated by calculating frequency, percentage.

Results and discussion

Age of the selected workers in ginning mill - I revealed that, equal percentage (30 % each) of the workers belonged to the age group of less than 37 years and 38-49 years respectively. Further, in ginning mill-II, majority of the workers belonged to the age group of less than 37 years (43.3 %). In ginning mill-III, 66.66 per cent of the workers belonged to the age group of 38-49 years and equal per cent (16.66 %) of the workers belonged to less than 37 years and more than 49 years of age group.

Thus, irrespective of the ginning mills, higher percentage (44.4 %) of the workers belonged to the age group of 38-49 years followed by less than 37 years (30 %) and more than 49 years (24.4 %) of age group. Sebsibe *et al.* (2016) also found in their study that majority of the workers were middle aged. Chaudhry *et al.* (2015) in the study also revealed that majority of the workers belonged to middle age group 51-60 years (Table 1).

With regard to level of education, in ginning mill-I findings revealed that more number of (40 %) workers were illiterate Whereas, in ginning mill- II, equal per cent (33.3 % each) of the women were illiterate as well as had education up to primary but attended school for at least one to two years, In ginning mill-III 63.33 per cent of the workers were illiterate. Thus, irrespective of the ginning mills, majority of the workers (44.44 %) were illiterate followed by education up to primary but attended school for at least one to two years (28.8 %) and primary education but less than 10th class (14.4 %). These findings are comparable with the results of Thoreia *et al.* (2005) in this study who formed majority of the women workers (18.5 %) were illiterate (Table 1).

Higher percentage of the women workers (63.3 %) in ginning mill - I belonged to the nuclear family, followed by joint family (36.77 %). The workers of ginning mill-II reported that 76.77 per cent of them had nuclear family, whereas 23.33 per cent of them belonged to joint family. The workers of ginning mill-III reported that 70 per cent of them were living in nuclear family, followed by joint family (30%). Irrespective of ginning mills, it

Table 1. Socio economic characteristics of ginning mill workers

N = 90

Age	Characteristics	Ginningmill I (n1=30)	Ginning mill II (n2=30)	Ginning mill III (n3=30)	Total n=90
Education	<37 years	9 (30.00)	13 (43.33)	4 (16.66)	27 (30.00)
	38 – 49 years	9 (30.00)	11 (36.77)	20 (66.66)	40 (44.44)
	>49	12 (40.00)	6 (20.00)	4 (16.66)	23 (24.44)
	Illiterate	12 (40.00)	10 (33.33)	19 (63.33)	41 (44.44)
	Just literate but no schooling	4 (13.33)	2 (6.66)	1 (3.33)	7 (7.77)
	primary but attended school for at least one to two year	10 (33.33)	10 (33.33)	6 (20.00)	26 (28.88)
	Primary but <10th	3 (10.00)	6 (20.00)	4 (13.33)	13 (14.44)
Type of family	10thClass pass but < graduation	1 (3.33)	2 (6.77)	-	3 (3.33)
	Nuclear	19 (63.33)	23 (76.77)	21 (70.00)	63 (70.00)
	Joint	11 (36.77)	7 (23.33)	9 (30.00)	27 (30.00)
Family size	Small (<4)	13 (43.33)	16 (43.33)	14 (46.66)	43 (47.77)
	Medium (4-8)	14 (46.66)	13 (44.44)	14 (46.66)	41 (44.44)
	Large (>8)	3 (10.00)	1 (3.33)	2 (6.66)	6 (6.44)
Caste	Tribal	3 (10.00)	-	-	3 (3.33)
	Dalits	3 (10.00)	-	1 (3.3)	4 (4.44)
	OBC	11 (36.77)	19 (63.33)	10 (33.33)	40 (44.44)
	Upper cast	13 (43.33)	11 (36.77)	19 (63.33)	43 (47.77)
Total family annual income (₹)	< 60000	12 (40.00)	7 (23.33)	6 (20.00)	24 (27.77)
	60000-1,20,000	4 (13.33)	13 (43.33)	9 (30.00)	26 (28.88)
	>1,20,000	14 (46.66)	10 (33.33)	14 (40.00)	39 (43.33)

is clear from the table that, 70 per cent of the workers belonged to the nuclear family. Vastrad *et al.* (2013) also found in their studies that majority of the workers (90 %) belonged to nuclear family (Table 1).

In ginning mill-I, 46.66 per cent of the workers had medium family size (4-8 members), followed by small family size (43.3 %) with less than four members, large family size (10 %) with more than eight members. In ginning mill-I, good number of workers (43.33 %) were from small family (<4 members). In ginning mill-III equal per cent of the workers (43.33 %) reported that they had small (<4 members) and medium family (4-8 members) size (Table 1). Over all findings showed that higher percentage of workers *i.e.*, 47.77 per cent belonged to small family size followed by medium family (44.4 %) and large family (6.4 %). Indumathy and Kamalraj (2012) revealed the similar findings that majority of the workers (36.66 %) belonged to medium size family.

Majority of the workers (43.33 %) in ginning mill-I belonged to upper caste followed by OBC (36.7 %) and equal per cent (10.00 %) of the women were tribal and dalits. In ginning mill-II majority of workers (63.33 %) belonged to OBC In ginning mill-III, 63.33 per cent of the women belonged to upper caste. Irrespective of ginning mills, 47.77 per cent of the women belonged to the upper caste, followed by OBC (44.44 %), dalits (4.4 %) and tribals (33.33 %). The findings of the study are in line with the results of Samata (2009), who reported that majority of the workers belonged to the OBC (Table 1).

In ginning mill - I 46.66 per cent of the women workers had their annual family income more than ₹ 1,20,000 followed by less than ₹ 60,000 (40.00 %) and ₹ 60,000 to 1, 20,000 (13.3 %). Further, in ginning mill-II, 43.33 per cent women workers had annual family income between ₹ 60,000 to 1,20,000. In ginning

mill-III 40.00 per cent of the women workers had their annual family income more than ₹ 1, 20,000. Thus, irrespective of the ginning mills highest percentage (43.33 %) of the workers had their annual family income more than ₹ 1, 20,000, followed by ₹ 60,000 to 1, 20,000 (28.88 %) and ₹ 60,000 (27.7 %). The findings are in line with the results of Sekar *et al.* (2012), who reported that majority of the workers had their annual family income between ₹ 60,000 to 1,20,000 (Table1)

It is inferred from Table 2 that more than half of the workers (60 %) in ginning mill - I were doing Pressing and packing of cotton bundles followed by shedding of lint with gunny bag (53.33 %), preliminary cleaning of cotton (43.33 %), loading of cotton to machine (40 %), picking cotton from gunny bags (30 %). In ginning mill II, majority of the workers (66.66 %) were involved in loading of cotton to the machine Only 33.33 per cent of them were doing shedding of lint with gunny bag and collecting cotton from machine (23.33 %). Majority of the workers (62.22 %) in ginning mill-III were found to be involved in loading of cotton to the machine followed by preliminary cleaning (48.88 %), pressing and packing of cotton bundles (43.33 %), picking cotton from gunny bags (41.11 %). Further, it is observed from the table that, irrespective of ginning mills majority of the workers (62.22 %) were performed activities like loading of cotton in machine followed by preliminary cleaning (48.88 %), pressing and packing of cotton bundles (43.33 %). The results are in contradictory with results of the study conducted by Vastrad *et al.* (2013) who reported that majority of the workers were involved in loading of cotton to the machine and pressing and packing of cotton bundles (Table 2)

Majority of the workers (43.33 %) in ginning mill - I always suffered from irritation of eyes followed by irritation of ear

Occupational health problems of workers in the

Table 2. Activities performed by women workers in ginning mills

N = 90

Type of activities	Ginning mill I (n1=30)	Ginning mill II (n2=30)	Ginning mill III (n3=30)	n=90
Preliminary cleaning	13 (43.33)	14 (46.66)	17 (56.66)	44 (48.88)
Loading cotton in machine	15 (50.00)	20 (66.66)	21 (70.00)	56 (62.22)
Collecting cotton from machine	6 (20.00)	7 (23.33)	8 (26.66)	21 (23.33)
Picking cotton from bags	9 (30.00)	13 (43.33)	15 (50.00)	37 (41.11)
Pressing and packing cotton bundles	18 (60.00)	12 (40.00)	9 (30.00)	39 (43.33)
Shedding of lint with gunny bag	16 (53.33)	10 (33.33)	5 (16.66)	31 (34.44)

(Note: Figures in parentheses indicate percentage multiple responses are obtained)

(33.33). Equal per cent of the workers experienced pain in feet and back ache (30 %). Similarly 23.33 per cent respondents had low back ache and pain in leg. Whereas 20 per cent of the workers reported that, they had pain over neck, eye strain

(13.33%), asthma (16.66%), while 13 per cent of the workers reported that, they had pain in fingers, pain in knees, physical stress and strain. Only 10 per cent of the workers suffered from heat exhaustion, extreme fatigue, irritation to the respiratory

Table 3. Occupational health problems experienced by the women workers in ginning mills

N = 90

Problems	Ginning mill I(n1=30)			Ginning mill II(n2=30)			Ginning mill III(n3=30)		
	Always	sometimes	never	Always	Sometimes	Never	Always	Sometimes	never
Eyes									
Blurred vision	-	3 (10.00)	27 (90.00)	-	2 (6.66)	28 (93.33)	-	2 (6.66)	28 (93.33)
Irritation of eyes	13 (43.33)	7 (23.00)	10 (33.3)	6 (20.00)	11 (36.66)	13 (43.33)	3 (10.00)	12 (40.00)	15 (50.00)
Burning sensation	-	19 (63.3)	21 (70.00)	12 (40.00)	-	18 (60.00)	-	17 (56.66)	-
Eye strain	4 (13.33)	9 (30.00)	17 (56.66)	17 (56.66)	13 (43.33)	-	6 (20.00)	10 (33.33)	16 (47.77)
Nose									
Running of nose with fever	-	12 (40.00)	28 (93.33)	-	9 (30.00)	21 (70.00)	-	13 (43.33)	17 (56.66)
Sneezing	-	15 (50.00)	15 (50.00)	2 (6.66)	12 (40.00)	16 (53.33)	-	5 (16.66)	25 (83.33)
Irritation of nose	1 (3.33)	9 (30.00)	17 (56.66)	8 (26.66)	7 (23.33)	15 (50.00)	-	5 (16.66)	25 (83.33)
Ears									
Loss of hearing	1 (3.33)	-	27 (90.00)	4 (13.33)	-	26 (86.66)	2 (6.66)	-	28 (93.33)
Irritation of ears	10 (33.33)	10 (33.33)	10 (33.33)	13 (43.33)	8 (26.66)	9 (30.00)	11 (36.66)	13 (43.33)	6 (20.00)
Throat									
Irritation of throat	1 (3.33)	12 (40.00)	17 (56.66)	-	7 (23.33)	23 (76.66)	-	11 (36.66)	19 (63.33)
Neck									
Repeated pain over the neck	6 (20.00)	13 (43.33)	11 (36.66)	11 (36.66)	17 (56.66)	2 (6.66)	3 (10.00)	11 (36.66)	17 (56.66)
Muscle ache	-	7 (23.33)	23 (76.66)	-	13 (43.33)	17 (56.66)	-	11 (36.66)	19 (63.33)
Fingers									
Hands									
Pain in hands	7 (23.33)	18 (60.00)	5 (16.66)	6 (20.00)	13 (43.33)	11 (36.66)	1 (3.33)	5 (16.66)	24 (80.00)
Chest									
Repeated pain over chest	-	7 (23.33)	21 (70.00)	-	5 (16.66)	25 (83.33)	-	4 (13.33)	26 (86.66)
Breathlessness	-	3 (10.00)	27 (90.00)	-	2 (6.66)	28 (93.33)	-	1 (3.33)	29 (96.66)
Stomach									
Abdominal pain	-	8 (26.66)	22 (73.33)	1 (3.33)	12 (40.00)	17 (56.66)	-	14 (46.66)	16 (53.33)
Back									
Backache	9 (30.00)	12 (40.00)	9 (30.00)	6 (20.00)	17 (56.66)	7 (23.33)	7 (23.33)	9 (30.00)	16 (53.33)
Low backache	7 (23.33)	17 (56.66)	6 (20.00)	8 (26.66)	16 (53.33)	6 (20.00)	6 (20.00)	15 (50.00)	9 (30.00)
Legs and feet									
Pain in knees	4 (13.33)	9 (30.00)	17 (56.66)	8 (26.66)	3 (10.00)	-	2 (6.66)	5 (16.66)	23 (76.66)
Pain in feet	9 (30.00)	8 (26.66)	13 (43.33)	7 (23.33)	12 (40.00)	11 (36.66)	11 (36.66)	15 (50.00)	4 (13.33)
Respiratory system									
Irritation to the respiratory system	1 (3.33)	12 (40.00)	17 (56.66)	1 (3.33)	17 (56.66)	12 (40.00)	-	18 (60.00)	12 (40.00)
Other problems									
Physical stress and strain		1 (3.33)	8 (26.66)	21 (70.00)	15 (50.00)	5 (16.66)	10 (33.33)	4 (13.33)	12 (40.00)
14 (46.66)									
Nausea	-	17 (56.66)	13 (43.33)	-	2 (6.66)	28 (93.33)	-	5 (16.66)	25 (83.33)

(Note: Figures in parentheses indicate percentage multiple responses are obtained)

Table 4. Personal protective tools used by the women workers while working in ginning mill

N = 90

Types of personal protective tools	Ginning mill I (n1=30)			Ginning mill II (n2=30)			Ginning mill III (n3=30)			N=90		
	Always	Some times	Never	Always	Some times	Never	Always	Some times	Never	Always	Some times	Never
Mask (cotton cloth)	7 (23.33)	3 (10)	20 (66.66)	9 (30.00)	-	21 (70.00)	6 (20.00)	-	24 (80.00)	22 (24.44)	3 (3.33)	65 (72.22)
Apron (shirt)	10 (33.33)	-	20 (66.66)	9 (30.00)	-	21 (70.00)	6 (20.00)	-	24 (80.00)	25 (27.77)	-	65 (72.22)
Hand gloves	-	2 (6.66)	28 (93.33)	-	1 (3.3)	29 (96.66)	-	3 (10.00)	27 (90.00)	-	6 (6.66)	84 (93.33)
Ear plug	1 (3.33)	1 (3.33)	29 (96.66)	1 (3.33)	-	29 (96.66)	-	2 (6.66)	28 (93.33)	2 (2.22)	3 (3.33)	85 (94.44)

(Note: Figures in parentheses indicate percentage and multiple responses are obtained)

system, irritation of throat, irritation of nose and loss of hearing. Whereas, more than 40 per cent of the workers sometimes had burning sensation of eyes. More than fifty per cent of the workers never suffered from running nose with fever (93.33 %), blurred vision, breathlessness and loss of hearing (90 %). In second ginning mill, 46.66 per cent of the respondents always suffered from eye strain. In ginning mill-III, equal per cent of the workers (36.66%) always faced problems like irritation to ear and pain in feet. Sometimes more than fifty per cent of the workers suffered from burning sensation of eyes (43.33 %). The results are in contradictory with results of the study conducted by Vastrad *et al.* (2013) that majority of the workers are suffering from eye strain, burning sensation of eyes and physical stress and strain (Table 3).

It was observed from the data that in ginning mill-I, few per cent of the workers always wear mask (23.33%), about 10 per cent of them sometimes wear mask, apron (33.33%) and ear plug (3.33%). In ginning mill-II equal per cent of the workers always wear mask and apron, followed by hand gloves sometimes (3.33%). Similarly in ginning mill-III, equal per cent of the workers (20%) always wear mask and apron, followed by

hand gloves (10 %) and ear plug sometimes (6.66 %). It is interesting to note that majority of them never used any personal protective tools while working. n=90

Thoreia *et al.* (2005) revealed the similar findings that majority of the workers always wear mask (Table 4 and Fig 1).

Conclusion

Majority of workers in all the three ginning mills were illiterate and they had nuclear family. Workers in the ginning mill were suffering from various health problems like eye irritation, coughing, back ache, headache, hearing and breathing problems. All these health problems are caused due to inhalation of cotton fibres and dust in the ginning mill and they are not giving importance to their health. In addition to these, they are also facing hearing problems this may be attributed due to exposure of high level noise and also due to non-usage of any kind of personal protective equipment at work place. Hence, it is necessary to educate the workers regarding health hazards caused due to ginning operations. Further, there is a need to create awareness among the workers for usage of personal protective equipment.

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