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ORIGINAL ARTICLE

Gender-based Health Profile of Garment Workers at Bengaluru: Who Fare Better?

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ABSTRACT

Background: In India, the garment industry is an unorganized sector, mostly run by private establishments. It provides employment for both men and women, mainly those from the lower socioeconomic classes. The employees of this industry hardly ever benefit from occupational health-and-safety provisions. As a result, they are prone to many comorbidities; majority of them come under the cover of Employees State Insurance Scheme (ESIC) from Ministry of Labour and Employment, Government of India. The ESIC hospitals in the areas create awareness and advocate the employees to utilize the services efficiently through mobile health camps. During this camp, the employees are screened for any morbidity through verbal screening of symptoms, physical examination, and basic laboratory investigations. **Objectives:** The objectives of the study were to describe and compare the health profile of garment factory workers based on gender working at industrial areas in Bengaluru, Karnataka. **Methods:** A cross-sectional descriptive study was conducted at eight different garment factories in the industrial areas of Bengaluru during February 2015–January 2016. Apart from verbal screening for diseases, we performed basic investigations such as hemoglobin percentage, random blood sugar, and peak expiratory flow rate (PEFR). **Results:** A total of 631 workers were screened during the period, of which 446 (71%) were female and 145 (39%) were male. Our study reveals that nearly three in four garment factory workers are female and 30% of them are found be anemic and 67% of them had the median PEFR value of lesser the median. The health profile of males is comparatively better than females. **Conclusions:** The female garment workers are vulnerable population for various morbidities at garment industry. Due care should be given by the policy-makers and the industries to uplift the health of females, provide safe working environment, and empower them to perform skilled activities.

Key words: Anemia, garment factory workers, health, industry, peak expiratory flow rate

INTRODUCTION

In recent years, India has begun to make a firm footing in the global economy and is gradually progressing from a developing toward a developed nation. Despite this, there is gross disparity in the socioeconomic conditions of the population and there is substantial proportion of working class people who falls in the bracket of poor. In developing countries, great efforts are directed toward the advancement of small-scale industries as these are considered the engine for their economic growth. The "garment" industry of India is one such industry. It is an unorganized sector, mostly run by private establishments. It provides employment for both men and women, mainly those from the lower socioeconomic classes.[1]

In India, this industry offers a wide range of opportunities including entry level jobs for unskilled labor in developing countries.[2]

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The employees of this industry are deprived of occupational health-and-safety provisions and they suffer from many morbidities.[1] The workers in the garment factories are mainly exposed to prolonged sitting, prolonged standing, highly repetitive work, lifting of heavy objects, working with their hands lifted to shoulder level or even higher, and working with their back twisted or bent forward that have been shown to predict impaired work ability and enhance long-term sickness.[3]

The health-care provider for those eligible workers (insured persons) in these industries is provided by the Employees State Insurance Scheme (ESIC) from Ministry of Labour and Employment, Government of India. The workers contribute nearly 0.75%[4] of their monthly salary toward this scheme. The ESIC conducts regular health camps at the workplace of these industries to generate awareness regarding the schemes as well as provide basic health-care services to the insured persons. The mobile health camps are conducted on mutual understanding of the dates by the hospital and the industry. During these camps, the employees are screened for any morbidities by verbal screening of symptoms, physical examination, and through basic laboratory investigations such as random blood sugar (RBS) and hemoglobin estimations.[5] The team of mobile health camps consists of senior and junior doctors, along with laboratory technicians, pharmacist, medicosocial workers, and paramedical staff.

In this study, we report the gender-based health profile of garment workers who were evaluated during the health camps conducted by ESIC Medical College and PGIMSR, Bengaluru.

METHODS

A cross-sectional descriptive study was conducted at eight different garment factories in the industrial areas of Bengaluru during February 2014–January 2015. The camps were conducted at the workplaces of the garment industries. A designated site was identified for the camp at the industry. A temporary health set up was established and an organized way for the screening of employees was made. At first, the health workers were registered and the height and weight of the workers were recorded. The workers move to the next counter wherein they were screened verbally for any morbidities and the workers were evaluated based on the presentation. A single recording of blood pressure using sphygmomanometer was done in sitting position.[6] Based on the presentation, the workers were subjected to laboratory investigations such as hemoglobin and RBS. The peak flow expiratory meter was performed to all those workers who were screened.

The height and weight were recorded using a portable stadiometer and a weighing machine. The RBS was performed by a trained technician using Accu-Chek glucometer test device after taking adequate aseptic precautions.[7] The peak expiratory flow rate (PEFR) at the first second was measured using portable handheld spirometer. The subjects were made to sit comfortably and asked to breathe in air, hold it for a few seconds, and breathe out as hard as they can through the mouth piece (expiratory air) after which the reading was recorded. Single reading was considered.[8] The mouth piece was sanitized after every use, using 70% isopropyl alcohol. The study population included all those workers who were screened during the period.

Data Entry and Analysis

All the data were entered into EpiData Entry software and were analyzed using EpiData analysis (V2.2.2.2.182 Odense, Denmark) software which is freely available. For the purpose of this analysis, we took the cutoff for blood pressure recordings based on American Heart Association.[9] The cutoff values for hemoglobin were based on the World Health Organization standards.[10] The standard formula was used to calculate body mass index (BMI).[11] The median PEFR values were considered to stratify the cases as below median or above median value.

RESULTS

A total of 631 workers were screened during the period, of which 446 (71%) were female and 145 (39%) were male [Table 1]. The median age for females and males was found to 34.5 years and 30.84 years, respectively. About 55% of males and 72% of females had been working in the factory for <2 years. The BMI of 23% of females and 15% were found to be in the normal range; while 23% of females were underweight and 24% of males were overweight. Nearly five of both males and females were found to be obese.

Blood Pressure

The readings of 21% of males and 37% of women were found to be below 120/80 mm of Hg. Only 4% of males and 3% of females had the recording of more than 140/90 mm of Hg.

RBS

Only 25% of the workers were subjected to RBS testing of which 19% of all workers had value of <110 mg and 4% of them had the reading of more than 126 mg.

Hemoglobin

Nearly 203 (32%) workers were subjected to hemoglobin test and nearly 1%, 5%, and 19% of female subjects were found to have severe, moderate, and mild anemia.

Table 1: The demographic variables and health profile of garment workers stratified by gender at Bengaluru, India (*n*=631)

Variables	Male (%) *n*=185 (30)	Female (%) *n*=446 (70)	*P*-value
Age group (years)			
15–24	24 (13)	129 (29)	<0.001
25–34	54 (29)	144 (32)	
35–44	81 (43)	135 (30)	
45–54	25 (13)	34 (8)	
55–64	1 (0.5)	4 (1)	
Duration			
<2 years	102 (55)	319 (72)	<0.001
>2 years	83 (45)	127 (28)	
BMI			
Underweight	28 (15)	104 (23)	Ref
Normal	104 (56)	230 (52)	
Overweight	44 (24)	90 (20)	
Obesity	9 (5)	22 (5)	
Hypertension			
<120/80	38 (21)	163 (37)	Ref <0.001
120–129/<80	20 (11)	30 (7)	
130–139/80–89	8 (4)	29 (6)	
>140/90	6 (3)	12 (3)	
Not done	113 (61)	212 (47)	
RBS			
<110	37 (20)	85 (19)	Ref
110–126	5 (3)	3 (0.7)	
>126	11 (6)	17 (4)	
Not done	132 (71.4)	341 (76.5)	
Hemoglobin level			
0–8	0 (0)	4 (1)	
8.1–10.9	1 (0.5)	22 (5)	
11–12	0 (0)	85 (19)	
>12	14 (7.6)	77 (17)	
Not done	170 (92)	258 (58)	
PEFR			
<250	32 (17)	299 (67)	<0.001
>250	104 (56)	86 (19)	
Not done	49 (26)	61 (14)	

*Statistically significant (<0.001), BMI: Body mass index, RBS: Random blood sugar, PEFR: Peak expiratory flow rate

PEFR

Nearly 454 (72%) of workers were subject to PEFR. It was found that 17% of male workers and 67% of female workers had PEFR reading of below the median value for this group.

DISCUSSION

Our study reveals that nearly three in four garment factory workers are female and 30% of them are found be anemic and 67% of them had the median PEFR value of lesser the median. The health profile of males is comparatively better than females.

Dominance of Female Workers

The garment industry is one of the biggest job creators in India, this sector makes one out of every six households to depend on them either directly or indirectly. Majority of the workers are uneducated and do not require special skills to make them suitable for their job. The workers are unaware of their basic rights and their health problems are generally left unaddressed.[12] In the present study, there was a female worker dominance of about 70% which was in contrast with studies by Saha *et al*. and Ravichandran *et al*.[12,13] About 87.5% of both male and female workers were in the age group of 15–45 years which is in agreement with studies done in Kolkata.[13]

Work Experience

Majority of the male and female work experience was <2 years which was in disagreement with the other studies.[14,15] There could be large attrition among the workers which might lead to difficulty in understanding their rights and benefits. Anecdotal evidences suggest that people with longer duration are aware the health-care facilities and services offered to them by ESIC.

Co-morbidities

a. Diseases related to lifestyle habits: In our study, 24% of males and 20% of females were found to be overweight and only 5% of male and female workers were obese. The results of our study are comparable with studies done by Ravichandran *et al*.[12] in Tamil Nadu and Joseph *et al*.[16] in Karnataka. About 16.2% of study subjects had hypertension which was in comparison with Saha *et al*.[11] and in disagreement with other studies.[12,14,15] The workers if not educated for healthy lifestyle may land up in non-communicable disease such as hypertension and diabetes in the coming years. About 10% of the workers in the age group of 18–40 years were found to be diabetic and are a worrisome factor
b. Anemia: Nearly one in four women were found to be anemic, though it is found to be more common among females in India; it is more common among the working class. The reasons for the same could be lack of awareness regarding nutritious diet, loss of blood during menstrual cycles, poor hygiene, and long working hours at workplace as well as at home
c. PEFR: The value of PEFR was comparatively lower than the males. The long-term implications could be that the females are more exposed to fibrous particles in the garment factory which might lead to fibrosis to lungs. The females should be further evaluated by a pulmonary physician to rule out any chronic lung diseases.

Recommendations

We urge the policy-makers and industries to consider the following: (a) The pre-placement examination should be made mandatory and to implement on a stern basis in all the garment factories. (b) The workers with comorbidities should be given priority and importance in terms of regular health check-up and amenities. (c) Provision of safe workplace environment to the workers which includes good ventilation, comfortable temperature, and lighting arrangements, maintenance of appropriate air change hours in sections generating dusts. (d) Health education and counseling of the workers on diseases of public health importance should be imparted every month for at least an hour.

Strengths and Limitations

The strength of our study is that it was conducted under routine programmatic settings and reflects the ground reality of the industrial workers. The limitations of the study were that we were not able to conduct all the investigations and recording for all patients due to feasibility of implementation at camp settings. The findings of the study might be interpreted with caution as we had not designed the study to look for any association based on the sample size.

CONCLUSIONS

The female garment workers are vulnerable population for various morbidities at garment industry. Due care should be given by the policy-makers and the industries to uplift the health of females, provide safe working environment, and empower them to perform skilled activities.

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