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## Health problems prevailing among the female workers in a garment factory, Bengaluru

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### Abstract

**Background:** Garment workers are susceptible to various health problems by virtue of their workplace and working conditions. The present study was conducted to assess the morbidity profile of female workers of garment factory in Bengaluru.

**Methodology:** A cross-sectional descriptive study was conducted among all the females working in the garment factory. An interview was conducted using a semi-structured pretested questionnaire. Clinical examination was done to measure height, weight. Visual acuity was tested using Snellen's chart. The data was compiled in Microsoft (MS) Excel worksheet and analyzed using SPSS.

**Results:** The mean age of the study participants was 30.33 ±7.06 years. Musculoskeletal problems were the most common problems present among 110(51.4%) study participants. 61.22% of the females worked in standing posture.

**Conclusion:** In the present study found that the most common problem was musculoskeletal disorders. Regular periodic medical examination would help in early diagnosis and treatment of morbidities among the workers.

**Keywords:** garment factory, musculoskeletal problems, females, morbidity

### 1. Introduction

Textile and clothing are considered as the oldest, largest and most global industries in the world and in India, it is also considered as the second largest employment sectors [1].

According to ILO estimates, at least 2 million deaths per year are accounted to occupational diseases and injuries [2]. Every occupation is associated with one or other ill affects on health [3]. One such occupational group, causing a wide range of co-morbid conditions are the garment industry. Garment workers are susceptible to various health problems by virtue of their workplace and working conditions [4].

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 [5].

Workers with high physical work demands are well documented to be at elevated risk for impaired work ability, musculoskeletal problems, cardiovascular disease, long-term sickness absence, early retirement and all-cause mortality. Specifically, the workers with repetitive nature of work due to the physical demands are prone to get physical, psychological and nutritional health problems [6, 7]. The most common health hazards are respiratory problems, cardio vascular diseases, gastrointestinal diseases, gynecological diseases, and neurological, musculoskeletal and nutritional problems [1].

Approximately 60% of the population employed in the garment industry is women [1]. Today is an era of women who have diverse role to play in society. Often they handle two or more tasks simultaneously. They are therefore prone to suffer from work related diseases, which are further complicated by social, psychological and physiological issues. Roughly, 1 out of 300 female is suffering from some occupation related disease [8].

Studies have reported that women perform a dual role and often end with stress, which result in psychological related problems [1]. They also struggle to combine their roles to look after their families. Women household workers have a double burden as there is greater demand for their skills as care-givers and service workers outside home [9].

Information on the existing morbidity pattern of the garments workers is essential to provide need based health care delivery to any population [10]. Hence the present study was conducted to assess the health problems among female workers of garment factory in Bengaluru

**2. Objective**

To assess the health problems prevailing among the female workers in a garment factory in a field practice area of a teaching hospital, Bengaluru.

**3. Materials and Methods**

- A cross-sectional descriptive study was conducted among females working in a garment factory in the field practice area of a teaching hospital, Bengaluru. The study was conducted during October to December 2016. Considering the study done by Saha K T *et al.* [11] prevalence of musculoskeletal problems is 69.64% by using formula  $4pq/L^2$  with an allowable error of 10% and alpha error of 5% the estimated sample size is 177. Complete enumeration of the female workers of the garment factory was done (214).
- **Inclusion criteria:** Workers  $\geq 18$  years of age who have been working for minimum one year duration in the same factory.

**3.1 Methodology**

- Data was collected after obtaining clearance from the institutional ethics committee. A written informed consent was obtained from the workers after which an interview was conducted using a semi-structured pretested questionnaire.
- Questionnaire included variables like demographic details of the study participants, socio-economic status (Modified Kuppaswamy classification 2017), Morbidity pattern.
- Information on visual problems, hypertension, and diabetes were collected, followed by clinical examination to measure height, weight for assessment of body mass index (BMI). Blood Pressure was recorded and classification was done using JNC – VII criteria. 6 Visual acuity for distant and near vision was tested using Snellen’s chart.
- Participants who had been identified with problems were referred for further assessment and treatment to higher centers.

**3.2 Statistical analysis**

The data was compiled in Microsoft (MS) Excel worksheet and analyzed using SPSS (Statistical Package for Social Sciences) software version 20.0. The descriptive statistics- All qualitative variables was presented as frequency and percentages. All quantitative variables were presented as mean and standard deviation. Appropriate tests of significance were applied where ever necessary. P values of less than 0.05 would be considered statistically significant.

**4. Results**

A total of 214 study participants were examined in the

study. The mean age of the study participants was  $30.33 \pm 7.06$  years. Most of the study participants i.e. 101 (47.2%) belonged to 21-30 years age group and 112 (52.3%) had completed their high school education. Majority i.e. 161 (75.2%) were married. It was found that 95 (44.4%) and 103 (48.1%) belonged to Class II and class III socioeconomic status respectively (Table 1). It was found that 40.1% were tailors and 59.9% of the workers were working in those sections which involved prolonged hours of standing. Figure 1 shows different health problems among the study participants. Musculoskeletal problems were the most common problems present among 110(51.4%) study participants. 91 (42.5%) study participants have anemia. In the resent study, 6 (2.8%) participants were found to have normal blood pressure. 8(3.7%) had history of diabetes mellitus. Body mass index among the study participants was measured and it was found that 131(61.2%) had normal BMI and 8(3.7%) participants were obese. The work profile of the workers was shown in Table 2 which shows that 64.5% had less than 3 years of total experience in the garment factory and 61.22% of the females worked in standing posture. The workers had a leisure time of 1 hour and 30 minutes and the mean duration of working hours was 8 hours per day. 89% had no history of tobacco use. It was observed that musculoskeletal problems were more common among the age group  $>35$  years (Table 3). The difference among them was found to be statistically significant ( $p < 0.05$ ). Among the study participants who were working in standing posture 63(57.27%) had musculoskeletal problems. The difference was not found to be statistically significant.

**Table 1:** Socio demographic profile of the study participants (N=214).

Variable	Number	Percentage
<b>Age (years)</b>		
<20	19	8.9
21-30	101	47.2
31-40	80	37.4
>41	14	6.5
<b>Religion</b>		
Hindu	198	92.5
Muslim	13	6.1
Christian	3	1.4
<b>Literacy</b>		
Illiterate	29	13.6
Primary/Middle school	70	32.7
Higher secondary/Intermediate	112	52.3
Graduate	3	1.4
<b>Socio economic status</b>		
Class I	-	-
Class II	15	7.0
Class III	95	44.4
Class IV	103	48.1
Class V	1	0.5
<b>Marital status</b>		
Married	161	75.2
Unmarried	34	15.9
Widowed/Divorced/Separated	29	8.9
Total	214	100.0

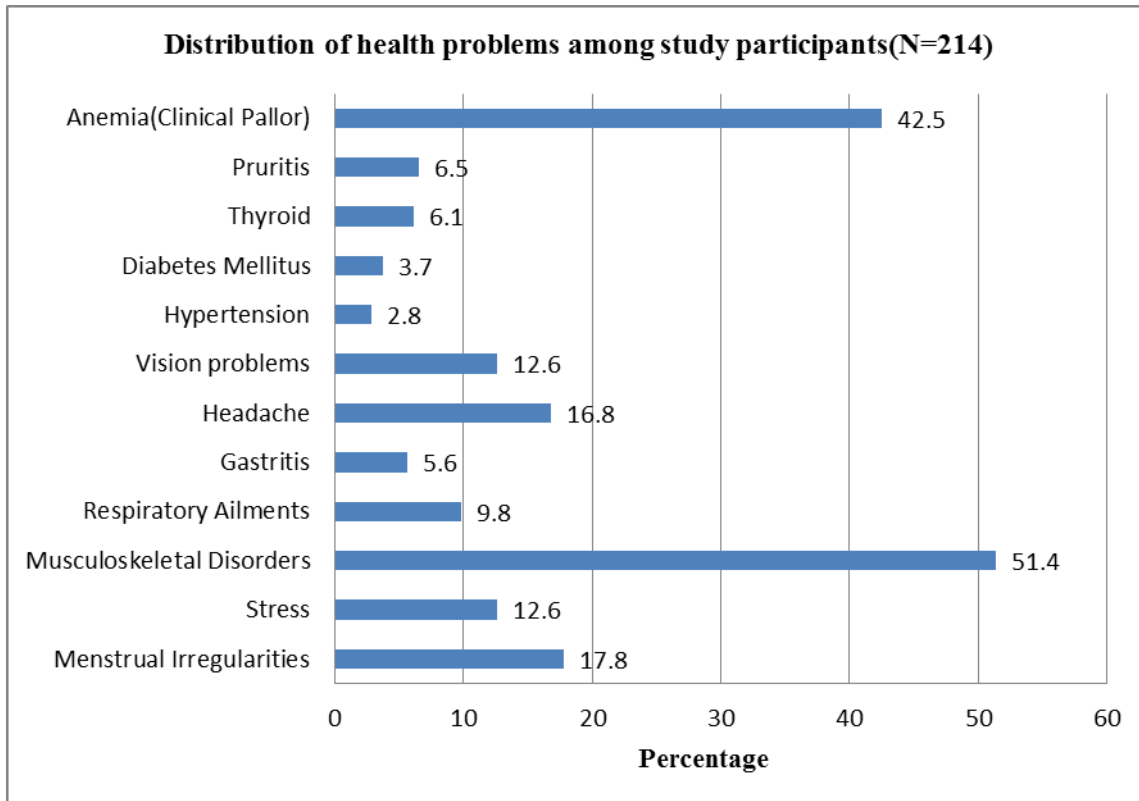


Fig 1: Bar diagram showing the distribution of health problems among study participants (N=214)

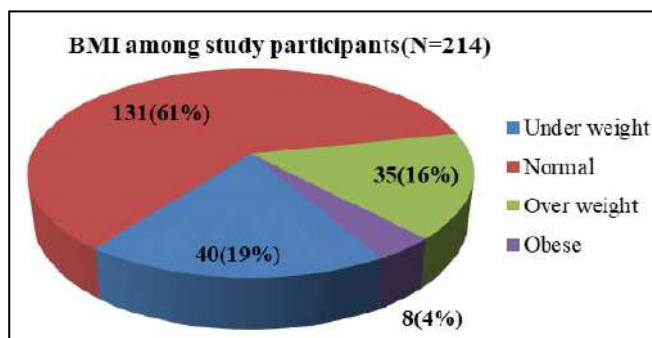


Fig 2: Pie chart showing the distribution of study participants according to BMI (N=214)

Table 2: Distribution of study subjects according to the work profile (N=214)

characteristics	Frequency	Percentage
<b>Work experience in years</b>		
<3years	138	64.50
>3years	76	35.50
<b>Work posture</b>		
Standing	131	61.22
Sitting	83	38.78
Total	214	100.00

Table 3: Association of Musculoskeletal problems with Age and work posture (N=214)

Age (Years)	Musculoskeletal problems		Total	Chi square	df	P Value
	Present (%)	Absent (%)				
<35	71(64.5)	88(84.6)	159(74.3)	11.27	1	0.001
>35	39(35.5)	16(15.4)	55(25.7)			
Total	110(100)	104(100)	214(100)			
<b>Posture</b>						
Standing	63(57.27)	68(65.38)	131(48.09)	1.482	1	0.22
Sitting	47(42.73)	36(34.62)	83(51.91)			
Total	110(100)	104(100)	214(100)			

**5. Discussion**

Being 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. The workers are unaware of their basic rights and their health problems are generally left unaddressed. In this study the mean age of the study participants was 30.33 ±7.06 years. This corresponds with the studies done by Ravichandran SP *et al* [12], Kumary P *et al*. [9].

Most of the participants (64.5%), in our study were

employed in sections which involved prolonged hours of standing. These results are comparable with a study done by Tiwari RR *et al*. [13], where 60.7% of the study subjects adopted a standing posture during majority of their working hours.

Among the various health problems, musculoskeletal disorder was more common (51.4%). Anemia was reported in 42.5% of the study participants. In a study done in Tamil Nadu [4] it was reported musculoskeletal problem as common health problem (77.6%) followed by anemia

(57.1%). In a study done by Saha KT *et al.* [11] in Kolkata it was observed that musculoskeletal problems were the commonest health problem (69.64%) followed by sleep disturbances and gastrointestinal problems. These variations may be due to difference in the socio demographic characteristics and occupational setting.

2.8% of the participants were found to have hypertension in the present study these results corroborates with the studies done by Yerpude *et al.* [3] and Joseph *et al.* [14].

In the present study 16% of the study participants were overweight and 4% were obese these results were comparable to the study done by Joseph *et al.* [14] where 11.9% were overweight and 2.9% were obese. The participants were explained about the risk of obesity and advised to follow regular exercise and diet.

In the current study Musculoskeletal disorders were significantly more among participants <35 years age group. These results differed from the other studies by Bandyopadhyay L *et al.* [15], Ravichandran SP *et al.* [12] where musculoskeletal disorders were more among workers in age group above 35 years. This difference may be due to the more number of study participants in age group above 35 years in present study.

#### 6. Limitation

The study was conducted in one garment factory hence results cannot be extrapolated to all the workers of the different garment factories.

#### 7. Conclusion

Success of the garment factory has been made at the cost of worker's health. The health problems prevailing among garment workers is quite high with the most common being musculoskeletal problem and anaemia. The study has highlighted the possibility of age as a significant factor in the development of various musculoskeletal problems.

#### 8. Recommendation

Screening by pre-placement examination and periodic health check-ups of the workers, so as to ensure early diagnosis and prompt treatment of symptoms. Proper posture adoption at work place will help in reducing musculoskeletal disorders.

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