Effect of Common Musculoskeletal Problems on the Quality of Life among Female Garment Workers.

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Abstract

Background

Objectives: To identify the prevalence of common musculoskeletal problems and its effect on the quality of life among female workers in garment sectors.

Methods: The Cross sectional descriptive study was conducted in small and medium sized garment factories among 384 female garment workers. The common musculoskeletal problems and its effect on quality of life was assessed using the pretested tools.

Results: Totally nine regions were assessed for musculoskeletal problem, the female garment workers reported that 29.2% had one or both the knees, 24.7% reported lower back and ankle or feet problem respectively. It was also evident that only 8.9% were receiving medical treatment. Regarding the quality of life eight components were assessed among that physical functioning showed the highest score with 72.59. Statistically significant association was found between Age, BMI, family income and duration of work.

Conclusion: The female garment factory workers are involved in dual activity in workforce and at home. Repetitive work in the work place leads to common musculoskeletal problem. The health problem if not notice affects the quality of life .Therefore it is necessary to plan appropriate intervention to prevent the musculoskeletal problem.

Keywords: Female workers, Garment factory, musculoskeletal problems, Quality of life.

Introduction

Today is an era of women who have diverse roles to play in the society. Majority of the women handle two or more tasks simultaneously. Hence, they are prone to suffer from work-related diseases that lead to further complications by social, psychological and physiological issues. It is reported that roughly, 1 out of 300 females are suffering from some occupation related disease. The working condition of women in India is currently similar to those found in early 19th century in industrial countries[1]. In India the garment industry has become the largest contributor of export revenue,

surpassing traditional exports such as tea, rubber and coconut.

A study conducted in turkey revealed that the average working hours of women employees was 9.8hours a day and 52.2 hours a week [2]. To keep up with the production demands, the workers are under pressure, working long shifts, at night and overtime in order to achieve the production targets. It may be noted that the quality assessment workers also stand throughout their shifts to see that they complete the work on time[3].

Additional to the work performed by the workers by standing and sitting, they also perform these tasks in repetition. Performing the same task in the same position for a longer duration leads to discomfort in the musculoskeletal region [4].

It was evident from the literature review that the garment factory workers are exposed to various health problem. It was also identified that musculoskeletal pain has been shown to be the most common medical problem for long term absence due to severity of pain. ([5]. The musculoskeletal disorder is considered as one of the major causes for morbidity, which has a substantial influence on health and quality of life.

Work is an integral part of a person's everyday life and it is a person's livelihood or career or business. On average, a person spends around twelve hours daily at work. One third of a person's entire life is spent in the workplace and it influences the overall quality of the person's entire life. It should yield job satisfaction, give peace of mind, a fulfillment of having done a task as it is expected, without any flaw and having spent the time fruitfully, constructively and purposefully. Even if it is a small step towards a person's lifetime goal, at the end of the day it gives satisfaction and eagerness to look forward to the next day [6].

Quality of life (QoL) is an important indicator of the burden of musculoskeletal (MSK) disease. The goal of the Bone and Joint Decade 2000–2010 is to improve the health related quality of life for people with musculoskeletal disorders throughout the world [7]. All musculoskeletal diseases involve pain and reduced physical functioning. The coexistence of more than one musculoskeletal disease is important to recognize because it is relatively common and has a substantial impact on health-related quality of life.

This study is aimed to find the effects of common musculoskeletal problems on their health-related quality of life.

Methods

A Cross sectional descriptive research design was conducted among 384 female garment workers in small and medium sized factories. To recruit the female workers simple random sampling technique was adopted. The Female workers were recruited from various factories from different geographical areas such as Yeshwanthpur, Srirampuram and Goraguntepalya. Division were drawn from each area; two garment factories (one small size and one medium sized factories) were selected using random sampling technique. The female garment factory workers fulfilling the selection criteria were enrolled by random sampling method from 6 garment factories. The enrolment of the subjects is shown in figure .1. Inclusion criteria included, female worker above 20 -50 years and who can read, write and speak in English, Kannada, and Tamil. Exclusion criteria signs of nerve compression, scoliosis more than 1 lumbar kyphosis, high-degree spondylolisthesis, and female workers with hip fracture.
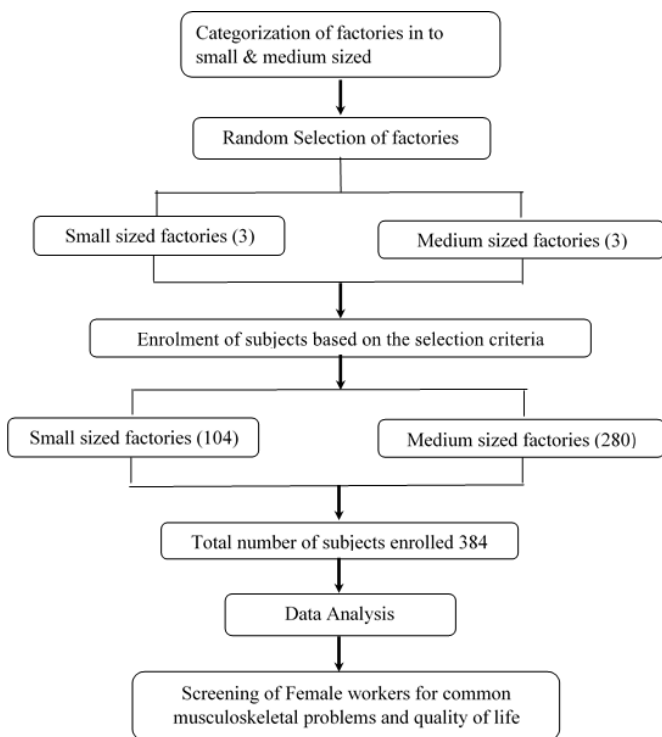
Figure 1: Schematic representation of the enrolment of the study subject.

All the female garment workers were administered the following tool to measure the outcomes. The tools included were:

- Section A: Socio-demographic profile to obtain the baseline data

- Section B: Standardized Nordic questionnaire (SNQ) (Kourinka et al., 1987)

- Section C: SF 36V2 [standardized] to assess the quality of life.

The data collection instruments were pre-tested using an identical sample of respondents who did not feature in the main study. The questionnaire were administered after the formal permission was obtained from the selected garment factories. Given a brief introduction about the purpose of the study, written consents were obtained from the recruited subjects and those who fulfilled the selection criteria. The socio-demographic data was collected followed with the Standardized Nordic questionnaire (SNQ) to assess the common musculoskeletal problem and SF 36V2 to assess the quality of life. Each participant had taken around 30-45 minutes to complete the questionnaire.

Statistical analysis was performed with SPSS (20.0 version). The ethics committee of M.S Ramaiah Medical College and Hospital, Bangalore approved this study. Descriptive statistics of the socio-demographic variables, work related characteristics, of the study population were presented as numbers, percentages, and mean, standard deviation. The inferential statistics were carried out using chi-square test.

Results

Three hundred and eight four female workers from small and medium sized factories answered to the questionnaire. Table 1 presents the socio-demographic characteristics of the subjects, Out of that less than half of the female workers 39.3% were aged 31-40 years with mean age of 34.25 (SD $\pm$ 8.97). It was interesting to note that one fourth of the female workers from each type of factory, 32.1% and 33.1 %, weighed 50kg to 59 kg and 60 to 69 kg respectively with mean weight of 58.5 (SD $\pm$ 11.67). Around 55.7% of subjects receive up to Rs. 10000/month. 83.3% of the female workers are from Nuclear family and it was surprising to note that none of female workers had the habit of smoking. Of the total subjects, 39.1% had other health problems (as detailed in Table 1.1).

With regards to the work related characteristics among the total female garment workers, half of the subjects 58.1% performed the job of sewing, and 96.6% of the female workers work for 6-8 hours per day. The average working hours was 8.02 (SD $\pm$0.39), more than half of the subjects had 1 to 10 years of experience in the present job with the mean 7.53 (SD$\pm$ 8.95). 60.9 % of the subjects had taken rest during the working hours, 55.5% had taken rest for less than 30minutes, and

54.6% had done over time for 21 to 30 hours in a month.

It is evident from table 3 that, among all the nine body regions assessed, neck 66 (17.2%), shoulder 92 (24.0%), upper back 86 (19.4%), lower back 95 (24.8%) and one or both the knees 112(29.2%) are the regions that are sometimes or always reported for ache, pain, discomfort and numbness during the past 12 month.

Table 4 gives the scores of the quality of life (SF-36V2). The scores from the quality of life measures 8 components, the different scores obtained by the female garment workers are presented in the table as follows, for physical functioning the female workers secured a score of 72.59, role limitations due to emotional

problems and Role Physical 71.92 and 68.85 respectively, Social functioning 68.20, Pain 58.02, General Health 61.08 and Mental Health 62.10. It showed that highest score fell into the physical functioning.

Table 5 depicts the association between common musculoskeletal problems in the different body region and quality of life such as general health, mental health and social functioning. Statistically significant association was found between Elbow (p=0.007), Wrist/Hands (p=0.046), Upper Back (p=0.000), One or both knees (p=0.042) and quality of life.

Table 1: Socio demographic characteristics (n=384)

S. No	Socio Demographic Factors	Categories	Number	Percentage	Mean ± SD
1	Age (in Years)	20-30	146	38.0	34.25 ± 8.97
		31-40	151	39.3	
		41-50	73	19.0	
		51-60	14	3.6	
2	BMI	Up to 18.5	42	10.9	23.94 ± 4.46
		18.6 - 25.0	194	50.5	
		25.1 - 30.0	116	30.2	
		30.1 and above	32	8.3	
3	Family Monthly Income (in Rs)	Up to 10,000	214	55.7	11554 ± 8257
		10,001 - 20,000	149	38.8	
		20,001 - 30,000	14	3.6	
		30,001 and above	7	1.8	
4	Family Type	Nuclear	320	83.3	
		Joint	59	15.4	
		Extended	5	1.3	
5	Habit of Smoking	Yes	0	0.0	-
		No	384	100.0	
6	Habit of Alcohol	Yes	0	0.0	-
		No	384	100.0	
7	Other health Problems	Yes	150	39.1	-
		No	234	60.9	

Table No 2: Work related Characteristics (n=384)

Sl. No	Type of job	Frequency	Percentage (%)	Mean and standard deviation
8	Sewing	223	58.1	
	Ironing	25	6.5	
	Packing	13	3.4	
	Printing	3	0.8	
	Dyeing	4	1.0	-
	Cutter	14	3.6	
	Helper	71	18.5	
	Checking	21	5.5	
	Quality control	4	1.0	
	Supervisor	6	1.6	
9	Duration of work per day (Hrs)			8.02
	6 to 8	371	96.6	±0.39
	9 to 11	13	3.4	
10	Years of experience			
	1 - 5 years	186	48.4	
	6 -10 years	123	32.0	7.53
	11 - 15 years	51	13.3	± 8.95
	16 - 20 years	16	4.2	
	above 20 years	8	2.1	
11	Rest period during working (Hrs)			
	No	150	39.1	
	Yes	234	60.9	19.40
	If yes duration of rest period			±18.375
	Less than 30 mins	213	55.5	
	More than 30 mins	21	5.5	
12	Over time			
	No	254	66.1	
	Yes	130	33.9	
	If yes duration of overtime last month in hrs			
	zero	14	10.76	7.65
	0 to10 hrs	8	6.15	± 12.021
	11 to 20 hrs	35	26.9	
	21 to30 hrs	71	54.61	
	more than 30 hrs	2	1.5	

Table No 3: Common musculoskeletal problems among female garment.

Workers (n= 384)

Table 4: Quality of Life of female workers based on the quality metric SF36V^2 norms n=384

Scale	Items	Mean	SD	Physical components summary	Mental component summary
Physical functioning	10	72.59	20.85		
Role physical	4	68.85	22.13		
Bodily pain	2	58.02	28.52		
General Health	5	61.08	16.40	47.91	44.07
Vitality	4	56.04	15.19	± 6.70	± 8.05
Social functioning	2	68.20	23.04		
Role emotion	3	71.92	23.76		
Mental Health	5	62.10	16.69		

Table 5: Association between the common musculoskeletal problem and Quality of life among female garment workers (n=384)

S. No	Musculoskeletal Problems	Category	General Health		P-Value	Mental Health		P-Value	Social Functioning		P-Value
			Less than 48	More than 48		Less than 44	More than 44		Less than 43.75	More than 43.75	
1	Neck	Present	16	50	0.126	9	57	0.133	8	58	0.974
		Absent	52	266		25	293		39	279	

Area	Never		Some times		Always	
	No	%	No	%	No	%
Neck	318	82.8	51	13.3	15	3.9
Shoulder	292	76.0	69	18.0	23	6.0
elbows	349	90.9	27	7.0	8	2.1
wrist/hands	339	88.0	34	8.9	11	3.1
Upper back	298	77.6	66	17.2	20	5.2
Lower back	289	75.3	71	18.5	24	6.3
One or both hips/thighs/buttocks	297	77.3	43	11.2	44	11.5
one or both knees	272	70.8	72	18.8	40	10.4
one or both ankles/ feet	293	76.3	60	15.6	31	8.1

2	Shoulder	Present	19	73	0.396	7	85	0.630	9	83	0.410
		Absent	49	243		27	265		38	254	
3	Elbows	Present	12	23	0.007	5	30	0.235	5	30	0.698
		Absent	56	293		29	320		42	307	
4	Wrist/hands	Present	13	33	0.046	8	38	0.030	8	38	0.256
		Absent	55	283		26	312		39	299	
5	Upper back	Present	21	65	0.064	11	75	0.145	12	74	0.582
		Absent	47	251		23	275		35	263	
6	Lower back	Present	20	75	0.325	13	82	0.056	10	85	0.557
		Absent	48	241		21	268		37	252	
7	One or both hips/thighs/buttocks	Present	19	68	0.251	12	75	0.065	14	73	0.213
		Absent	49	248		22	275		33	264	
8	One or both knees	Present	24	88	0.042	13	99	0.459	13	100	0.777
		Absent	43	228		21	250		34	237	
9	One or both ankles/ feet	Present	21	75	0.217	10	86	0.534	11	85	0.787
		Absent	47	241		24	264		36	252	

Discussion

The result of this study shows that out of the 384 female workers who participated in the study the average age of female workers was 34.25 years and had worked an average of 7.53 years which was consistent with the previous study conducted in turkey, with the average age as 30.2 years and 13 years of experience (Salik& Özcan, 2004). In this 83.3% of female workers are from Nuclear families.

This study has also assessed the work culture of the subjects. Half of the female workers reported that they had taken less than 30 minutes of rest during the working hours and sometimes the female workers had performed overtime for around 21 to 30 hours during the last one month. The finding coincides with the study conducted among sewing machine operators in Turkey which revealed that the women work 9.8 hours a day and 52.2 hours a week (Berberoğlu& Tokuç, 2013). These findings reveal that in order to compensate the financial need as well to achieve the target of the factory needs the female workers do overtime.

Among all the female garment workers, majority had experienced common musculoskeletal problem in various parts of the body in the last 12 months. The areas of complaint as identified by most female garment workers, were both the knees (29.2%), lower back (24.8%), Shoulder (24%), upper back (19.4%) and Neck (17.2%). Similar Studies have also revealed that the most common site of musculoskeletal problem was back and shoulder pain in which a study conducted in two textile factories in Turkey revealed that the one-year prevalence of self-reported pain including lower back, upper back and neck among 35 to 45 year-old Swedish residents was 69.5% for women and 63.2% for men. It was stated that, in physically strenuous tasks, women had a higher risk of this problem than the men (Berberoğlu& Tokuç, 2013).

Physical and mental health is not important for a worker only in her personal life. A worker's health is also very important for the productivity of the garment

sector (Shanbhag et al., 2012). On assessing the quality of life among the female garment workers it was observed that the participants had secured a score of 518.8 out of 800. The score fall in the physical functioning to 47.02 that is slightly lower than the cut-off norms. Therefore, it depicts the relationship between quality of life and common musculoskeletal problems.

Henceforth based on the studies. It is clearly evident that the women working in the garment sectors have a risk of developing musculoskeletal problems. Therefore, this study will help the other researchers to plan appropriate intervention for common musculoskeletal problems based on the study result among garment workers.

This study has provided evidence that environmental factors and personal factors have an effect on the occurrence of common musculoskeletal problem. Based on the reviews and our study, the findings reveal that significant associations were found. Significant association found between the common musculoskeletal problem and risk factors can be improved through health risk reduction training programme for the workers on ergonomics.

This study has several limitations. The presence of common musculoskeletal problems is only the self-reported symptoms. The disease condition is not diagnosed. The study has been carried among healthy individuals.

With regard to the quality of life, the study reports that physical domain is affected predominantly.

In conclusion, it is paramount to understand that the musculoskeletal problem witnesses not only affect the workers' quality of life, but also results in continued reduced productivity of work. Which ultimately has an impact on profits, and therefore on the revenue. So it is a need for more enlightenment programs/education to possibly reduce the menace of Musculoskeletal Problems among the workers.

Acknowledgement

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