

To Estimate the Prevalence of Work Related Musculoskeletal Morbidity amongst Tailors: A Cross Sectional Study in a Rural Area of Tamilnadu

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Abstract:-

➤ *Introduction:*

This study has been conducted to assess the prevalence and factors associated with musculoskeletal morbidity amongst the workers involved in the tailoring occupation

➤ *Aim & Objectives:*

- 1.To assess the prevalence of musculoskeletal morbidity amongst tailor in a rural area of Tamil Nadu.
- 2.To assess their ergonomical factors in the workplace.

➤ *Materials and Methods:*

A Cross sectional study was conducted in a rural area of Tamil Nadu over a period of 3 months from March to May 2019. The sampling frame comprised of tailors in a rural area of TamilNadu. A total of 50 subjects who were willing to participate in the study were interviewed (p=66%). The sampling method was simple random sampling and the data collection tool was a questionnaire and the data collection technique was the interview method. Data entered in excel sheet and exported to SPSS for windows , version 16.0 software for analysis

➤ *Results:*

In this study, 50 questionnaires were returned by the individuals involved in the tailoring occupation in Chennai. The prevalence of the various musculoskeletal morbidity risk factors in tailors were found to be significant. Working hours has been found to cause trouble in the last 12 months in 26% individuals who work more than 8-10 hours per day, chair without backrest has caused trouble which hasn't allowed a person to do work in the past 12 months in 28% individuals, and unsatisfactory workstation ergonomics has caused trouble in the past 12 months in 34% individuals, apart from others. Musculoskeletal morbidities were found in individuals 52% , and is found to have a significant relationship with being a tailor.

➤ *Conclusion:*

To recommend suitable ergonomical alternatives and reduce associated musculoskeletal morbidities

I. INTRODUCTION

Musculoskeletal disorders (MSD) consist of a conditions affecting the muscles, tendons, joints , ligaments associated nerves and blood vessels. Work related MSDs usually occur when the person can't cope with the work as they don't have the physical competence or due to improper workstation ergonomics. Work related musculoskeletal disorders have been known to affect workers in a wide variety of occupations eg. Tailors^[1] . These musculoskeletal disorders are a major causes of pain and disability. The global prevalence of MSDs ranges from 14% to as high as 42%; on the other hand in India, epidemiological studies indicate the community-based prevalence of 20% and occupation-specific prevalence found to be as around 90% in various studies, heavy lifting , twisting and bending , Repeating an action too frequently , Uncomfortable working position , Exerting too much force during work, Working too long without rest^[2] ,Adverse work environment (eg hot or cold) ,Psychosocial factors (eg high job demands, lack of contro land time pressures) , not acting on reports of symptoms quickly enough

Indian textile industries are one of the largest industries in India. It is the second largest industry in terms of providing employment to more than 35 million people in the country. Many of the people in the textile industry are at risk of developing some kind of work related disease due to long working hours and low pay etc. Tailoring involves repetitive tasks like , assembly , cutting, sewing ,embroidery,alterations, pressing and finishing work, performed in a sitting working posture with back curved and head and neck bent over the sewing machine. Working in this awkward posture for a long duration increases the chance of developing musculoskeletal disorders in them. It provides employment for both men and women, who are majorly from the lower socioeconomic classes.

The present study was conducted to explore the prevalence of musculoskeletal morbidities amongst tailors in a rural area of Tamil Nadu and the relation is has with certain risk factors their ergonomical factors in the workplace such as good lighting , properly tilted tables and proper backrest. The three primary ergonomic risk factors are high task repetition , forceful exertions and repetitive and awkward postures

II. Methodology

This is a cross sectional study which was conducted in a rural area of Tamil Nadu over a period of 3 months from March to May 2019. The sampling frame comprised of tailors in a rural area of Tamil Nadu. A total of 50 subjects who were willing to participate in the study were interviewed (p=66%) . The sampling method was convenience sampling

Data collection: and the data collection tool was a questionnaire which was divided into 3 parts , Part A was about the sociodemographic details , Part B was about the ergonomic factors in the workplace , Part C was about the trouble that was caused due to the musculoskeletal morbidity and the data collection technique was the interview method by which i conveniently selected tailors for my study and interviewed them after obtaining necessary consent

➤ Analysis :

Data entered in excel sheet and exported to SPSS for windows , version 16.0 software for analysis

III. Results

A total of 50 workers participated in the study. Majority of the workers were between ages 40 to 49 (42%) and belonged to class II socio economic class (74%) Among the workers, 20% were illiterate and 34% studied till middle school , 36% studied till high school and only 10% of them graduated and got a degree. Musculoskeletal problem in last

12 months was found to be 78%. The most commonly affected site was neck (36%) and lower back (40%), hand/arms (12%), knees (12%) etc. Out of the total 50 workers having MSD, 21 persons (42%) complained of discomfort for the last 7 days. 58% of people who complained of discomfort did not have any trouble in the past 7 days before the interview

Out of the 50 people interviewed , 22 people did not have backrests (44%) while 28 people did have backrests (56%), 14 people who did not have backrests were prevented from doing there work due to musculoskeletal morbidity (63.63%)

When the table was not tilted towards the worker there was an increase in the discomfort which prevented the tailor from working over the past year 43.33% of them had an increased risk of developing a musculoskeletal disorder

Out of the 50 people interviewed , 35 of them (70%) were males and 15 of them were females (30%) , 13 males were prevented from working in the past 12 months due to the pain (37.14%) , while 7 females were prevented from working in the past 12 months due to pain (46%) , so , MSD were more common among females as compared to males

Musculoskeletal disorders were more common among those who were of the age 30 - 59 and 96% of these people were prevented from doing there work due to due to the pain that they had

		Frequency	Percentage
Age	20-29	1	2.0
	30-39	17	34.0
	40-49	21	42.0
	50-59	10	20.0
	60-69	1	2.0
	Total	50	100.0
Education	illiterate	10	20.0
	middle school	17	34.0
	high school	18	36.0
	graduate	5	10.0
	Total	50	100.0
Gender	Male	35	70.0
	Female	15	30.0
	Total	50	100.0
Type of Family	nuclear	29	58.0
	joint	21	42.0
	Total	50	100.0
Socioeconomic Status	Lower middle class	13	26.0
	Upper middle class	37	74.0
	Total	50	100.0

Table 1 – Sociodemographic variables

		Frequency	Percentage
Years of working	<10 years	1	2.0
	>10 years	17	34.0
	Total	21	42.0
Timing Of Job	part time	4	8.0
	full time	46	92.0
	Total	50	100.0
Working hours per day	5	4	8.0
	6	4	8.0
	7	7	14.0
	8	5	10.0
	9	7	14.0
	10	11	22.0
	11	12	24.0
Total	50	100.0	

Table 2 – Working Nature

		Frequency	Percentage
Chairs with/without backrest	with backrest	28	56.0
	without backrest	22	44.0
	Total	50	100.0
Lighting	with lighting	35	70.0
	without lighting	15	30.0
	Total	50	100.0
Table tilted towards worker	tilted	4	8.0
	not tilted	4	8.0
	Total	7	14.0
Workstation Ergonomics	satisfied	27	54.0
	not satisfied	23	46.0
	Total	50	100.0

Table 3 – Facility at work

		Frequency	Percentage
In the last 12 months have you been prevented from doing your work	yes	20	40.0
	no	30	60.0
	Total	50	100.0
Trouble in the last 7 days	yes	21	42.0
	no	29	58.0
	Total	50	100.0

Table 4 – Trouble in the past

IV. DISCUSSION

The textile industry is the largest manufacturing sector in India, So adequate importance should be given to the health of the tailors and people employed in this sector, which is one of the pillars of this sector. Health risks that the tailors face increases over time due to many factors such as number of years of working, number of working hours and ergonomic factors. In this study, the prevalence of MSD among the tailors was reported to be significant, most common site being the neck and lower back^[4,6], then knees and hands/arms. Apart from age, sex and duration in the profession, MSD was associated with age, sex, number of hours of working in a day. Long hours of bending down with neck flexed and continuous eye straining due to inadequate lighting of the workplace probably explains the high prevalence of neck involvement among the studied workers.

Tailors of the lower socioeconomic classes was associated with elevated risk of musculoskeletal disorders as, these people were more likely to have a small work space, increased years of working, unsatisfactory lighting and seating arrangement in combination with increased working hours^[4]

This study revealed age over 45 years and duration of work for more than 8 hours per day were significantly associated with increased Musculoskeletal disorder. The development of such disorders in people was caused due to a combination of poor work environment and unsatisfactory ergonomic conditions such as lighting and seating of the tailors in the place of working for extended periods of time throughout the day consistently

In our study, it was found that women were suffering from Musculoskeletal disorders more than men^[7,8], gender had a strong relationship with Musculoskeletal pains of the neck and the back related to the spine which could be due to gender related biological differences e.g. muscle strength and distribution, and increased incidence of osteoporosis after menopause. This has been attributed to physiological structure and regarding their monthly menstrual periods and menopause causing porosity and weakness of the skeletal system

In our study, majority of the women workers had to perform their household activities in addition to their work, so that involved less time to take rest, and to attend to personal health issues, which might have made them more susceptible to MSD than the male tailors.

Workstation ergonomics, as revealed by our study was significantly associated with MSD^[9,10]. In a day, tailors work for multiple hours, if they do not have proper backrest on the chair, over the years, it will definitely lead to back pain over time. The inadequate lighting also plays a roll in it. Prolonged sitting and standing while cutting/ironing were reported by the participants. Sitting these chairs for long or standing to work with it may pose a strain on the which they had to do throughout the work day, which could have been

responsible for the development of pain in the neck, back, shoulders, the arms and knees. As a result of excessive bending, majority of them complained of pain in the lower back, the neck and knees. The chairs used by the majority of the operators were not cushioned for their comfort when seated for long hours. The tailors must be made aware of these things. It has been reported that garment workers may experience a decline in neck/shoulder pain if they are provided with adjustable height chairs with proper backrest or cushioning.

V. CONCLUSION

This study talks about the prevalence of musculoskeletal morbidities amongst tailors and the factors associated with the development of these disorders and the associated ergonomic factors. This should be corrected early or else over time, these will add-on to further disability. All of these can also affect their earning power, Thus leading to a cycle of them not being able to work, and earn money, and eat proper food which is necessary for staying fit and healthy. Intervention at the work place like providing the workers improved workstations with regards to lighting and the seating combined with ergonomic advising the tailors to take regular breaks, walk around and stretch and do certain exercises that have been instructed /or change position in between their working hours, and task rotation through tasks that do not require constant pressure and awkward leg and neck posture would definitely help in reducing the incidence of MSD among them.

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