



## A STUDY ON MUSCULOSKELETAL DISORDERS IN FEMALE TOBACCO PROCESS WORKERS IN JAYSINGPUR CITY OF MAHARASHTRA, INDIA

Wali B. S.<sup>1</sup>, Patil V. N.<sup>2</sup> and Raut P. D.<sup>3</sup>

<sup>1</sup>YP Science college Solankur MH India.

<sup>2</sup>DKTE's Textile and Engineering Institute Ichalkaranji MH India.

<sup>3</sup>Department of Environmental Science ,  
Shivaji university Kolhapur MH India.



### ABSTRACT

*Female tobacco workers are suffering from work related musculoskeletal disorders, facing severe health effects leading to deleterious health problems. Work related musculoskeletal disorders are pain full conditions of muscle tendons and nerves. This health conditions is mainly because repetitive body movements and awkward body postures. These working conditions lead to pain in various body parts at rest. Standing for prolonged period in static postures, bending, twisting of body, duration of work and inadequate rest are the causes for Musculoskeletal disorders (MSDs). Present work describes various musculoskeletal disorders in female tobacco process workers as per age group and years of working. Subjects were compared with control of similar socio economic status and age. The present study explores the effect of work related musculoskeletal disorders in female tobacco workers.*

**KEYWORDS:** *musculoskeletal, stress, female, tobacco, workers.*

### INTRODUCTION:

Health aspects of workers is neglected many times in work units especially in unorganized processing industry. A national development in terms of social, economic and industrial growth is possible only when the women are healthy and living in high socioeconomic background and leading healthy life style. The apprehension women health is most important responsibility among developing countries like India. Due to predominance of infant, child, maternal mortality and unhealthy life style. In some research studies it is noticed that poor reproductive health, illiteracy, infant mortality, malnutrition makes India stay one step behind the growth rate. Indians has 16 % of the world's population and its 70% of the population having shelter in rural areas. Jaysingpur city is semi urban and has clustered tobacco process units with women workers and most of the women are migrated from nearby states. Tobacco processing units are operated under unorganized sectors. Working in unorganized units and living in poor socioeconomic conditions are the main causes of poor health conditions of these workers. Characteristic of occupational workload and stress of Tobacco processing workers are consistent according to their unhealthy life style and heavy muscular work. The present study is focusing on Work related musculoskeletal disorders and their effect on women's body. These are painful disorders of muscles, tendons and nerves. The causes are repetitive body postures, working in awkward body postures and heavy muscular work beyond their ability. Physical fitness is directly related with Musculoskeletal disorders (MSDs). Physical stress along with unhealthy workplace conditions oozes severe health complications. Numbness and tingling are the symptoms of neuritis, in the area of the body supplied by the nerve. Various factors like impaired nerve function. Damage of tissue may cause muscle weakness. These conditions lead to body pain during rest or at rest period. Women perform their work in awkward body postures like standing, bending, twisting, duration

of work and inadequate rest leading to health problems. The present study evaluates effects of work related musculoskeletal disorders on female tobacco workers.

Normally women in tobacco processing units work 9 hours to 10 hours during peak time, 5 to 6 hours at domestic work. It is known that women work more than men and are more dedicated to work. Hence, these tobacco processing units operated under unorganized sectors and don't have any work schedule. The workplace environments don't match demands of workers can cause pain in muscles resulting in weakness. Malnutrition is also another cause for health problems. Study depicts workers are facing serious health problems and reduced physical fitness. While cleaning tobacco and also during using household appliances women have to sit in wrong body postures for prolonged period leading to joint pain. Work must be completed within a deadline. Noise pollution is also a serious problem causing noise-induced hearing loss. Vibration of tobacco processing machines causes carpal tunnel syndrome and muscle fatigue. By neglecting all the above mentioned health problems women are working in tobacco processing units. Women are very much concerned about their jobs. Some cases of permanent disability are also noticed during my research work.

Symptoms of MSDs include

- Local and generalized pain, aching and discomfort
- Loss of hypersensitivity
- Loss of muscle strength
- Loss of ability to perform work.

#### MATERIALS AND METHOD:

This study is carried out at various unorganized tobacco processing units at Jaysingpur, Maharashtra, India. The data is collected for three years. 100 exposed women were selected randomly. The standard questionnaire was distributed among women to study their health history, marital status and family income etc. Various physical tests were conducted. Body map is used to study the intensity of pain and discomfort during work as well as at rest. The results were tabulated and analyzed. Out of 100 female tobacco workers 40 workers were selected particularly for this study.

#### RESULTS AND DISCUSSION:

Effects of work related musculoskeletal disorders are upper body parts like neck, shoulder, joint, upper arms, elbow, lower arm, palm, fingers, thoracic region including ribs back and pelvic region. Lower body parts affected by work related musculoskeletal disorders are buttocks, upper legs, thigh, knees, calf muscles, ankles, shanks and feet.

Table 1 shows that 77% of female tobacco workers reported pain in upper body parts like shoulder, arms, elbows, and wrists. Pouring tobacco into the cutter machine, which is 25 feet high. Cleaning tobacco with hands and giving support to tobacco bales are the major cause of pain. Apart from all the above work at workplace women have to lift and carry tobacco bales over their head and transport them to godowns section. The weight of the tobacco bale is about 70 to 80 kg. Carrying load on their head, supporting the load is the main cause for fatigue in muscles of upper body parts, inviting various musculoskeletal disorders.

**Table 1-Frequency and percentage of subjects showing pain in upper body parts**

Sr.	Body Parts	Severity of pain				Total
		Very severe	Severe	Moderate	Light	
1	Neck	7 (17.5)	15(37.5)	5(12.5)	4(10)	31 (77.5)
2	Shoulder	2 (5)	9 (22.5)	4 (10)	7 (17.5)	22 (45)
3	Upper arm	3 (7.5)	6 (15)	0 (0)	5 (12.5)	14 (35)
4	Elbow	0 (0)	9 (22.5)	10(25)	6(15)	25(62.5)

5	Wrist	8 (20)	8 (20)	5 (12.5)	5 (12.5)	26 (65)
6	Hands	0 (0)	2 (5)	6 (15)	4 (10)	12 (30)

(Figures in bracket indicate % of respondents to disorder)

Repetitive body movements, awkward body postures and heavy muscular work leads to continuous compression of nerves. This effect is gradually affects all body parts. Back pain is very common problem reported by female tobacco workers. Gangopadhyay and Sen, (1997) reported on accident in some industries without processes in West Bengal an ergonomic study. Illness complained by female tobacco workers. Snook, (1983) has studied that MSD are causes of illness of health and partial disability. Heavy muscular work, over exertion can cause severe musculoskeletal disorders. Vincent and Hocking, (2013), described factors that give rise to musculoskeletal disorders when mothers lift children at home. This pain in shoulder and hands may be because of holding hands in upward direction and pouring tobacco into the cutter machine. Working with hands over the limited height causes stress on the shoulder resulting into rotating cuff. Ahlberget *al.*, (1995) explained Social support, job strain and musculoskeletal pain among female health care personnel. This disorder cause pain in restricted areas and resulting in weakness.

**Table 2- Frequency and percentage of subjects showing thoracic pain**

Sr.	Body parts	Severity of pain				Total
		Very severe	Severe	Moderate	Light	
1	Ribs	0 (0)	13 (32.5)	6 (15)	7 (17.5)	26 (65)
2	Upper back	0 (0)	9 (22.5)	5 (12.5)	10 (25)	24 (60)
3	Mid back	9 (22.5)	9 (22.5)	7(17.5)	9 (22.5)	34 (85)
4	Lower back	10 (25)	12 (30)	4 (10)	2 (5)	28 (70)
5	Pelvic region	0 (0)	2 (5)	0 (0)	5 (12.5)	7 (17.5)

(Figures in bracket indicate % of respondents showing disorder)

Table 2 represents % of workers reported back pain. Pain in spinal cord is major health problem among female tobacco workers. Every day they have to perform jobs like drying tobacco leaves, cleaning tobacco, pouring loaded tobacco bales into cutter machine, carrying heavy tobacco bales. Along with occupation over load of domestic work like sweeping, cooking, rolling chapattis, cleaning utensils and blowing are also extra burden for women. To perform all mentioned work requires repetitive body movements.

**Table 3-Frequency and percentage of workers showing pain in lower body parts**

Sr.	Body parts	Severity % of pain				Total
		Very sever	Severe	Moderate	Light	
1	Thighs	5 (12.5)	4 (10)	6 (15)	7 (17.5)	22 (55)
2	Knees	2 (5)	5 (12.5)	6 (15)	6 (15)	19 (47.5)
3	Calf muscles	6 (15)	7 (17.5)	2 (5)	6 (15)	21 (52.5)

(Figures in bracket indicate % of respondents showing disorder)

Table 3 shows that 55% of women workers are suffering from pain in thighs and 48 % of women listed their problems in their knees. Lifting and carrying heavy loads frequently affect neck muscles, nerves and spinal cord. The injury and fatigue is gradually extending up to lower body parts and lower back region. Musculoskeletal disorders in Industrial workers in Delhi was studied by Joshi *et al.*, (2001).Multitasking, over exertion at work place can lead to severe work related musculoskeletal disorders. Holding hands above horizontal plane for long period prone to injury of upper body, bones and joints. A study on MSD in textile workers was carried by Gunning and coworkers, (2001).They have reported factors such as repetition, force,

posture and vibrations are associated with high rates of injury. Poor posture at work is major cause of workplace stress, repetitive strain resulting in reduced productivity. All work related musculoskeletal are arising by awkward body postures, heavy muscular work beyond normal limits, and repetitive body movements.

#### CONCLUSION:

Female tobacco workers undergoing various work related musculoskeletal disorders. These hazards are affecting their health and routine activities. Their illiteracy, lack of knowledge about health practices making them to tolerate all problems at workplace. Musculoskeletal disorders making them partial or totally disable. By suggesting some preventive measures bad health practices can be minimized and leading them to hazard free life. Ergonomic hazards like bending, lifting, twisting, climbing the tobacco processing machines with heavy loaded tobacco bags on their heads, slippery machine surfaces leads to accident. Multitasking at workplace as well at home, restless work, workplace stress are major causes for musculoskeletal disorders among female tobacco workers at various tobacco processing units.

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