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## WORK RELATED MUSCULOSKELETAL PAIN AMONGST MATHADI WORKERS – A PREVALENCE STUDY

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### ABSTRACT

**Background:** We expect the job to be rewarding, but every occupation has its own harmful effects. Manual handling task still continues to be the principle source of musculoskeletal pain in the industry. **Methodology:** A questionnaire based survey was conducted amongst Mathadi Workers. Functional Ability Confidence Scale (FACS) was used on 30 subjects. Data was analysed to determine the prevalence of musculoskeletal pain and their influence on the activities of daily living. **Results:** 26.6% workers had neck pain while 73.33% had low back pain. 60% were in acute pain, 86.7% had a radiating pain and 43.33% complained of paraesthesia. In the FACS, activities like sitting, standing and walking showed greater confidence compared to strenuous tasks. **Conclusion:** An increased prevalence of musculoskeletal pain to the low back and neck in Mathadi Workers was noted. FACS indicated that lifting and carrying weights, loading and unloading activities demonstrate moderate to severe loss of confidence.

### KEYWORDS

Mathadi workers, Work related injuries, FACS, Low back pain and Neck pain.

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### INTRODUCTION

For a country like India, economic development and social justice are planned and evolved catering to the explicit needs, which are a prerequisite in various financial situations. This lead to the development of a two-fold agenda - industrial peace and labour welfare. India faces multiple challenges especially in the unorganized sector of the economy, where there is intensive labour with reduced satisfaction and

returns, in comparison to the efforts put in manufacture<sup>1</sup>.

The sector of unorganized labour consists mainly of self-employed individuals working odd jobs, agriculture operatives, casual and contract personnel, migrant employees and also small scale home based artisans. The undefined nature of their employment leaves them vulnerable to many distressing circumstances<sup>2</sup>.

Mathadi worker is a Marathi language term to denote a head-loader. Mathadi labourers are individuals who carry material load either on their head (Matha) or on his back to stack at the appropriate place. These operations include loading, unloading, stacking, carrying, weighing, measuring or such other tasks including work, preparatory or incidental to such operations<sup>3</sup>.

The workforce in this unorganised sector are susceptible to multifaceted musculoskeletal affection. They are exposed to diverse risk factors perceived from physical, physiological, ergonomic and psychosocial domains, affecting the health of the worker as characterized by the World Health Organization<sup>4,5</sup>. The musculoskeletal disorders being multifactorial in nature are a major cause of concern in industrialized countries. They represent a major liability and cause prolonged pain and disability in the unorganized work force<sup>6-12</sup>.

Thus, this study was designed to study the prevalence of work related musculoskeletal pain amongst the Mathadi workers and to determine their confidence levels while performing various tasks.

## METHODOLOGY

The study was approved by the Institutional Review Board. A cross-sectional survey was conducted amongst 30 Mathadi workers visiting the Physiotherapy Out Patient Department of a Tertiary care hospital after obtaining a written informed consent. A semi-structured questionnaire was designed and face validated by experts in the field. The self-made questionnaire was customized to include - 1) Socio-demographic data, 2) Job characteristics and 3) Distribution, duration and severity of work related musculoskeletal pain. In addition to this the Functional Ability Confidence

Scale (FACS) was applied to appraise the worker's confidence levels for various tasks carried out when on the job.

In accordance to the study conducted by Bernard et al at the National Institute of Occupational Safety and Health (NIOSH), the Mathadi worker was considered to suffer from Musculoskeletal disorder if he had any one symptom such as- pain, aching, tingling, numbness or burning, in the past year that lasted at least a week or more with a pain scale rating of moderate intensity<sup>13</sup>. The inclusion criteria of our study was based on this. Workers with any previous history of work related injury, trauma, medical or surgical conditions were excluded from the study.

## Functional Ability Confidence Scale (FACS)

It is a standardized measure developed for assessing patients with low back pain. It is a 15 item scale, takes only 10 minutes to complete and measures the patient's current level of confidence to perform an activity in various situations. It demonstrates good reliability and validity. The scores obtain can guide the therapists in understanding the worker's performance levels and fears. Lesser the scores more are the fears. The patient is asked to mark his confidence on a scale depicting 0 to 100 percentage<sup>14</sup>.

After initial interviews and dialogues with the Mathadi Workers, each of them were asked to complete the questionnaire. The data thus obtained was recorded, tabulated and analysed statistically.

## RESULTS

There was an overwhelming response during the study. The labourers expressed their gratitude that their problems were being noted.

## DISCUSSION

The Indian Ministry of Labour identifies the major work force in India is to be found in the informal sector<sup>14</sup>. The qualitative development of the Indian socio-economic status largely depends on the unorganized labour work force. This informal work sector demonstrates a tendency for illiteracy, casual nature towards employment, low capital gains and cheap labour. Characterized by jobs of local nature, the workers in this sector face numerous issues like

heavy work load, lack of specific duties, poor working conditions, lack of fixed wages, exploitation by employers etc. They work in at times in hazardous situations with no proper work schedules<sup>15</sup>. Ramanujam and Rawal have identified the distinguishing features for unorganized worker class which include limited health and legal benefits<sup>16</sup>. On account of ever increasing work related injuries, there is an urgent need to evaluate the worker's fitness levels and confidence to perform the desired tasks for the job.

Work related multifactorial diseases are injuries associated with organization of work and the tasks related to it. This category of injury was classified by World Health Organization (WHO). It includes various other risk factors which are physical, psychosocial and also sociocultural in nature<sup>17</sup>. Work related musculoskeletal disorders in industrialized countries have become a major concern for morbidity with symptoms causing pain and loss of function amongst the work force<sup>18-21</sup>. The demographic details of the Mathadi workers who participated in the study are described in Table No.1. The subjects were relatively healthy with respect to their general body characteristics.

Table No.2 depicts the characteristics of pain noted by the workers.

Acute nature of pain with paraesthesia's most commonly occurring at the low back region was mainly noted. Chatterjee and Sahu, in their study involving construction workers found that most of them had pain in low back, neck and wrist similar to our study. They hypothesised this to be on account of habitual awkward operational stance<sup>22</sup>. Low back pain is a growing concern due to its constant influence on the individuals of the working age group. This can lead to loss of productivity and early withdrawal from the active work force<sup>23</sup>. The use of manual labour in instead of machinery for moving heavy objects, lack of proper ergonomic positioning etc. are the most common contributing factors for the involvement of the back. Improper exertion of forces and abnormal loadbearing further increase the risk factors<sup>24,25</sup>. In India, the prevalence of low back pain is noted to be as high as 92% amongst construction workers and were found to loose 1447 days of work in a year owing to low back pain<sup>26,27</sup>.

The confidence percentages of the workers being low for certain activities indicate their readiness levels for those physical activities as illustrated in Table No.3. By identifying the individuals with low self-confidence and the task involved therapists can focus on the self-efficacy enhancement of such individuals and regularly monitor their progress.

**Table No.1: Physiognomies of the Mathadi Workers**

S.No	Features	Mean	Standard Deviation
1	Age (Years)	35.5	5
2	Height (cms)	166.5	10
3	Weight (kg)	56	13
4	BMI	23.2	7

Inference: The above table shows the descriptive data.

**Table No.2: Pain characteristics**

S.No		Percentage	
1	Region of Pain	Neck	26.67%
		Low Back	73.33%
2	Nature of Pain	Acute	60%
		Chronic	40%
3	Type of Pain	Radiating to extremities	33.34%
		Non-Radiating	23.33%
		Paraesthesia	43.33%

Inference: The above table illustrates that the prevalence of low back pain was greater with more people presenting acute symptoms mainly paraesthesias.

**Table No.3: Analysis of the Functional Abilities Confidence Scale**

FACS	Confidence Percentage										
	0	10	20	30	40	50	60	70	80	90	100
Activities	0	10	20	30	40	50	60	70	80	90	100
Sitting	3.3	3.3	0	10	3.3	43.3	0	20	0	0	16.6
Standing	0	3.3	3.3	10	10	23.3	13.3	6.6	3.3	0	26.6
Walking	3.3	0	3.33	10	10	13.3	6.6	3.3	16.6	6.6	26.6
Climbing up and down Stairs	0	6.66	0	6.66	10	20	0	13.3	13.3	3	20
Getting Up and down from ground	3.3	3	13.3	3.3	0	16.6	16.6	6.6	6.6	3.3	20
Pushing and Pulling an object	10	3.3	10	20	3.3	6	3.3	0	6.6	3.3	16.6
Travelling	3.3	3.3	26.6	3.3	3.3	10	6.66	10	6.6	3.33	23.3
Sleeping	3.3	0	10	10	3.3	6.6	3.3	6.6	13.3	6.6	36.6
Lifting weight above head	30	6.6	6.6	6.6	10	0	3.3	0	6	6.6	10
Carrying 50 kg weight	36.6	3.3	0	3.3	6.6	3.3	0	6.6	10	6.66	20
Carrying 100 kg weight	56.6	10	6.6	0	0	6.66	0	10	10	0	0
Bending Down	23.3	3.3	3.3	10	6.6	6.6	3.3	3.3	6.6	6.6	23.3
Loading and Unloading a Truck	26.6	0	3.3	20	3.3	10	3.3	10	10	0	13.3
Lifting weights from floor	36.6	3.3	0	13.3	16.6	3.33	6.6	3.3	3.3	0	13.3
Squatting	3.3	13.3	3.3	10	0	16.6	3.3	3.3	10	6.6	23.3

Inference: This table shows the percentage distribution of activities affected with moderate to severe loss of confidence in carrying weights, lifting weight above head, and loading and unloading a truck.

### CONCLUSION

Substantial prevalence of musculoskeletal pain especially to the low back and neck amongst the Mathadi Workers was noted. FACS indicated that lifting, carrying weights and loading and unloading activities demonstrate moderate to severe loss of confidence. Appropriate job pacing with emphasis on the work - rest schedule, alterations in working pattern and use of ergonomically appropriate postures and state of the art equipment may reduce the occurrence of the work related musculoskeletal disorders amongst the Mathadi workers.

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### CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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